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FACULDADE DE FILOSOFIA DE BRAGA

“INTERNET” E CANCRO DA MAMA: IMPLICAÇÕES BIOÉTICAS DA INFORMAÇÃO VEICULADA

- ANEXOS -

Francisca Marcelina Meireles Carneiro Pinto

TESE APRESENTADA PARA OBTENÇÃO DO GRAU DE MESTRE EM FILOSOFIA -
ÁREA DE ESPECIALIZAÇÃO EM BIOÉTICA, SOB A ORIENTAÇÃO DO
PROFESSOR DOUTOR JOSÉ HENRIQUE SILVEIRA DE BRITO

BRAGA
2007

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Today's artwork was donated by Amanda, a pediatric cancer patient

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Types of Cancer

Types of Cancer > Breast Cancer > Overview

Breast Cancer: The Basics

Christopher Dolinsky, MD
Affiliation: Abramson Cancer Center of the University of Pennsylvania
Posting Date: May 29, 2002

What is the breast?

The breast is a collection of glands and fatty tissue that lies between the skin and the chest wall. The glands inside the breast produce milk after a woman has a baby. Each gland is also called a lobule, and many lobules make up a lobe. There are 15 to 20 lobes in each breast. The milk gets to the nipple from the glands by way of tubes called ducts. The glands and ducts get bigger when a breast is filled with milk, but the tissue that is most responsible for the size and shape the breast is the fatty tissue. There are also blood vessels and lymph vessels in the breast. Lymph is a clear liquid waste product that gets drained out of the breast into lymph nodes. Lymph nodes are small, pea-sized pieces of tissue that filter and clean the lymph. Most lymph nodes that drain the breast are under the arm in what is called the axilla.

What is breast cancer?

Breast cancer happens when cells in the breast begin to grow out of control and can then invade nearby tissues or spread throughout the body. Large collections of this out of control tissue are called tumors. However, some tumors are not really cancer because they cannot spread or threaten someone's life. These are called benign tumors. The tumors that can spread throughout the body or invade nearby tissues are considered cancer and are called malignant tumors. Theoretically, any of the types of tissue in the breast can form a cancer, but usually it comes from either the ducts or the glands. Because it may take months to years for a tumor to get large enough to feel in the breast, we screen for tumors with mammograms, which can sometimes see disease before we can feel it.

Am I at risk for breast cancer?

Breast cancer is the most common malignancy affecting women in North America and Europe. Every woman is at risk for breast cancer. Close to 200,000 cases of breast cancer were diagnosed in the United States in 2001. Breast cancer is the second leading cause of cancer death in American women behind lung cancer. The lifetime risk of any particular woman getting breast cancer is about 1 in 8 although the lifetime risk of dying from breast cancer is much lower at 1 in 28.

Risk factors for breast cancer can be divided into those that you cannot change and those that you can change. Some factors that increase your risk of breast cancer that you cannot alter include being a woman, getting older, having a family history (having a mother, sister, or daughter with breast cancer doubles your risk), having a previous history of breast cancer, having had radiation therapy to the chest region, being Caucasian, getting your periods young (before 12 years old), having your menopause late (after 50 years old), never having children or having them when you are older than 30, and having a genetic mutation that increases your risk. Genetic mutations for breast cancer have become a hot topic of research lately. Between 3% to 10% of breast cancers may be related to changes in either the gene BRCA1 or the gene BRCA2. Women can inherit these mutations from their parents and it may be worth testing for either mutation if a woman has a particularly strong family history of breast cancer (meaning multiple relatives affected, especially if they are under 50 years old when they get the disease). If a woman is found to carry either mutation, she has a 50% chance of getting breast cancer before she is 70. Family members may elect to get tested to see if they carry the mutation as well. If a woman does have the mutation, she can get more rigorous screening or even undergo preventive (prophylactic) mastectomies to decrease her chances of contracting cancer. The decision to get tested is a highly personal one that should be discussed with a doctor who is trained in counseling patients about genetic testing. For more information on genetic testing, see Let the Patient Beware: Implications of Genetic Breast-Cancer Testing, Psychological Issues in Genetic Testing for Breast Cancer, and To Test or Not to Test? Genetic Counseling Is the Key.

Certain factors which increase a woman's risk of breast cancer can be altered including taking hormone replacement therapy (long term use of estrogens with progesterone for menopause symptoms slightly increases your risk), taking birth control pills (a very slight increased risk that disappears in women who have stopped them for over 10 years), not breastfeeding, drinking 2 to 5 alcoholic drinks a day, being overweight (especially after menopause), and not exercising. All of these modifiable risk factors are not nearly as important as gender, age, and family history, but they are things that a woman can control that may reduce her chances of developing a breast malignancy. Remember that all risk factors are based on probabilities, and even someone without any risk factors can still get breast cancer. Proper screening and early detection are our best weapons in reducing the mortality associated with this disease. For further information about breast cancer risk factors, see Breast Cancer Risk Assessment Tool,and Risk Factors and Breast Cancer.

How can I prevent breast cancer?

The most important risk factors for the development of breast cancer cannot be controlled by the individual. There are some risk factors that are associated with an increased risk, but there is not a clear cause and effect relationship. In no way can strong recommendations be made like the cause and effect relationship seen with tobacco and lung cancer. There are a few risk factors that may be modified by a woman that potentially could influence the development of breast cancer. If possible, a woman should avoid long-term hormone replacement therapy, have children before age 30, breastfeed, avoid weight gain through exercise and proper diet, and limit alcohol consumption to 1 drink a day or less. For women already at a high risk, their risk of developing breast cancer can be reduced by about 50% by taking a drug called Tamoxifen for five years. Tamoxifen has some common side effects (like hot flashes and vaginal discharge), which are not serious and some uncommon side effects (like blood clots, pulmonary embolus, stroke, and uterine cancer) which are life threatening. Tamoxifen isn't widely used for prevention, but may be useful

OncoLink
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Today's artwork was donated by Beverly, a pediatric cancer patient who received treatment for cancer at The Children's Hospital of Philadelphia

Visit the Children's Art Gallery

in some cases. There are limited data suggesting that vitamin A may protect against breast cancer but further research is needed before it can be recommended for prevention. Other things being investigated include phytoestrogens (naturally occurring estrogens that are in high numbers in soy), vitamin E, vitamin C, and other drugs. Further testing of these substances is also needed before they can be recommended for breast cancer prevention. Right now, the most important thing any woman can do to decrease her risk of dying from breast cancer is to have regular mammogram screening, learn how to perform breast self exams, and have a regular physical examination by their physician. For more information on breast cancer prevention, see NCI/PDQ Physician Statement: Prevention of breast cancer.

What screening tests are available?

The earlier that a breast cancer is found, the more likely it is that treatment can be curable. For this reason, we screen for breast cancer using mammograms, clinical breast exams, and breast self-exams. Screening mammograms are simply x-rays of each breast. The breast is placed between two plates for a few seconds while the x-rays are taken. If something appears abnormal, or better views are needed, magnified views or specially angled films are taken during the mammogram. Mammograms often detect tumors before they can be felt and they can also identify tiny specks of calcium that could be an early sign of cancer. Regular screening mammograms can decrease the mortality of breast cancer by 30%. The majority of breast cancers are associated with abnormal mammographic findings. Woman should get a yearly mammogram starting at age 40 (although some groups recommend starting at 50), and women with a genetic mutation that increases their risk or a strong family history may want to begin even earlier.

Between the ages of 20 and 39, every woman should have a clinical breast exam every 3 years; and after age 40 every woman should have a clinical breast exam done each year. A clinical breast exam is an exam done by a health professional to feel for lumps and look for changes in the size or shape of your breasts. During the clinical breast exam, you can learn how to do a breast self-exam. Every woman should do a self breast exam once a month, about a week after her period ends. If you find any changes in your breasts, you need to contact your doctor. About 15% of tumors are felt but cannot be seen by regular mammographic screening.

There are some experimental screening modalities that are currently being studied. These include MRI, ductal lavage, ultrasound, optical tomography, PET scan, and digital mammograms. For more information on these experimental techniques, see Advanced Breast Imaging, Penn Leads International Study on Breast Cancer Detection, and Komen Foundation Focuses Attention on the Need for Improved Breast Imaging and Early Detection Technologies: OncoLink Talks with President and CEO Susan Braun and Director of Grants Anice Thigpen, PhD

What are the signs of breast cancer?

Unfortunately, the early stages of breast cancer may not have any symptoms. This is why it is important to follow screening recommendations. As a tumor grows in size, it can produce a variety of symptoms including:

- lump or thickening in the breast or underarm
- change in size or shape of the breast
- nipple discharge or nipple turning inward
- redness or scaling of the skin or nipple
- ridges or pitting of the breast skin

If you experience these symptoms, it doesn't necessarily mean you have breast cancer, but you need to be examined by a doctor.

How is breast cancer diagnosed and staged?

Once a patient has symptoms suggestive of a breast cancer or an abnormal screening mammogram, they will usually be referred for a diagnostic mammogram. A diagnostic mammogram is another set of x-rays; however, it is more complete with close ups on the suspicious areas. Sometimes, particularly if your doctors think that you may have a cyst or you are young and have dense breasts, you may be referred for an ultrasound. An ultrasound uses high-frequency sound waves to outline the suspicious areas of the breast. It is painless and can often distinguish between benign and malignant lesions.

Depending on the results of the mammograms and/or ultrasounds, your doctors may recommend that you get a biopsy. A biopsy is the only way to know for sure if you have cancer, because it allows your doctors to get cells that can be examined under a microscope. There are different types of biopsies; they differ on how much tissue is removed. Some biopsies use a very fine needle, while others use thicker needles or even require a small surgical procedure to remove more tissue. Your team of doctors will decide which type of biopsy you need depending on your particular breast mass.

Once the tissue is removed, a doctor known as a pathologist will review the specimen. The pathologist can tell if it is cancer or not; and if it is cancerous, then the pathologist will characterize it by what type of tissue it arose from, how abnormal it looks (known as the grade), whether or not it is invading surrounding tissues, and if the entire lump was excised, the pathologist can tell if there are any cancer cells left at the borders (also known as the margins). The pathologist will also test the cancer cells for the presence of estrogen and progesterone receptors as well as a receptor known as

HER-2/neu. The presence of estrogen and progesterone receptors is important because cancers that have those receptors can be treated with hormonal therapies. HER-2/neu expression may also help predict outcome. There are also some therapies directed specifically at tumors dependent on the presence of HER-2/nue.

In order to guide treatment and offer some insight into prognosis, breast cancer is staged into five different groups. This staging is done in a limited fashion before surgery taking into account the size of the tumor on mammogram and any evidence of spread to other organs that is picked up with other imaging modalities; and it is done definitively after a surgical procedure that removes lymph nodes and allows a pathologist to examine them for signs of cancer. The staging system is somewhat complex, but here is a simplified version of it:

Stage 0 (called carcinoma in situ)

Lobular carcinoma in situ (LCIS) refers to abnormal cells lining a gland in the breast. This is a risk factor for the future development of cancer, but this is not felt to represent a cancer itself.

Ductal carcinoma in situ (DCIS) refers to abnormal cells lining a duct. Women with DCIS have an increased risk of getting invasive breast cancer in that breast. Treatment options are similar to patients with Stage I breast cancers.

Stage I ? early stage breast cancer where the tumor is less that 2 cm across and hasn't spread beyond the breast

Stage II - early stage breast cancer where the tumor is either less than 2 cm across and has spread to the lymph nodes under the arm; or the tumor is between 2 and 5 cm (with or without spread to the lymph nodes under the arm); or the tumor is greater than 5 cm and hasn't spread outside the breast

Stage III ? locally advanced breast cancer where the tumor is greater than 5 cm across and has spread to the lymph nodes under the arm; or the cancer is extensive in the underarm lymph nodes; or the cancer has spread to lymph nodes near the breastbone or to other tissues near the breast

Stage IV ? metastatic breast cancer where the cancer has spread outside the breast to other organs in the body

Depending on the stage of your cancer, your doctor may want additional tests to see if you have metastatic disease. If you have a stage III cancer, you will probably get a chest x-ray, CT scan and bone scan to look for metastases. Each patient is an individual and your doctors will decide what is necessary to adequately stage your cancer.

What are the treatments for breast cancer?

Surgery

Almost all women with breast cancer will have some type of surgery in the course of their treatment. The purpose of surgery is to remove as much of the cancer as possible, and there are many different ways that the surgery can be carried out. Some women will be candidates for what is called breast conservation therapy (BCT). In BCT, surgeons perform a lumpectomy which means they remove the tumor with a little bit of breast tissue around it but do not remove the entire breast. BCT always needs to be combined with radiation therapy to make it an option for treating breast cancer. At the time of the surgery, the surgeon may also dissect the lymph nodes under the arm so the pathologist can review them for signs of cancer. Some patients will have a sentinel lymph node biopsy procedure first to determine if a formal lymph node dissection is required. Sometimes, the surgeon will remove a larger part (but not the whole breast), and this is called a segmental or partial mastectomy. This needs to be combined with radiation therapy as well. In early stage cancers (like stage I and II), BCT is as effective as removal of the entire breast via mastectomy. Most patients with DCIS that have a lumpectomy are treated with radiation therapy to prevent the local recurrence of DCIS (although some of these DCIS patients may be candidates for close observation after surgery). The advantage of BCT is that the patient will not need a reconstruction or prosthesis to appear like she did before the procedure.

More advanced breast cancers are usually treated with a modified radical mastectomy. Modified radical mastectomy means removing the entire breast and dissecting the lymph nodes under the arm. Patients with DCIS that have a mastectomy do not need to have the lymph nodes removed from under the arm. Some patients are candidates for BCT but choose modified radical mastectomy for personal reasons. Your surgeon can discuss your options and the pros and cons of either procedure. Most women who have modified radical mastectomies choose to undergo a reconstruction. There are many different procedures for creating a new breast mound, and you should talk to your plastic surgeon before your surgery to discuss your options and decide on how you would like to proceed. For more information on breast reconstruction, see Breast Reconstructive Surgery Options.

Chemotherapy

Despite the fact that the tumors are removed by surgery, there is always a risk of recurrence because there may be microscopic cancer cells that have spread to distant sites in the body. In order to decrease a patient's risk of recurrence, many breast cancer patients are offered chemotherapy. Chemotherapy is the use of anti-cancer drugs that go throughout the entire body. The higher the stage of cancer you have, the more important it is that you receive chemotherapy; however, even stage I patients may benefit from chemotherapy in certain cases. In early stage patients, the risk of recurrence may be small, and thus the benefits of the chemotherapy are even smaller. However, the option to receive chemotherapy should be offered to most patients with breast cancer and they can decide if the potential benefits of chemotherapy outweigh its side effects in their own particular case.

There are many different chemotherapy drugs, and they are usually given in combinations for 3 to 6 months after you receive your surgery. Depending on the type of chemotherapy regimen you receive, you may get medication every 3 or 4 weeks; and you may have to go to a clinic to get the chemotherapy because many of the drugs have to be given through a vein. Two of the most common regimens are AC (doxorubicin and cycolphosphamide) for 3 months or CMF (cyclophosphamide, methotrexate, and fluorouracil) for 6 months. There are advantages and disadvantages to each of the different regimens that your medical oncologist will discuss with you. Based on your own health, your personal values and wishes, and side effects you may wish to avoid, you can work with your doctors to come up with the best regimen for your lifestyle.

Sometimes patients have a recurrence of their cancer, or present in stage IV with disease outside of their breast. These patients will all need chemotherapy, and a variety of different agents may be tried until a response is achieved. Sometimes we give chemotherapy before surgery, and this is called neoadjuvant chemotherapy. This is usually reserved for very advanced cancers that need to be shrunken before they can be operated on.

Radiotherapy

Breast cancer commonly receives radiation therapy. Radiation therapy uses high energy rays (similar to x-rays) to kill cancer cells. It comes from an external source, and it requires patients to come in 5 days a week for up to 6 weeks to a radiation therapy treatment center. The treatment takes just a few minutes, and it is painless. Radiation therapy is used in all patients who receive breast conservation therapy (BCT). It is also recommended for patients after a mastectomy who had large tumors, lymph node involvement, or close/positive margins after the surgery. Radiation is important in reducing the risk of local recurrence and is often offered in more advanced cases to kill tumor cells that may be living in lymph nodes. Your radiation oncologist can answer questions about the utility, process, and side effects of radiation therapy in your particular case.

Hormonal Therapy

When the pathologist examines your tumor specimen, he or she finds out if the tumor is expressing estrogen and progesterone receptors. Patients whose tumors express estrogen receptors are candidates for therapy with an estrogen blocking drug called Tamoxifen. Tamoxifen is taken by pill form for 5 years after your surgery. This drug has been shown to drastically reduce your risk of recurrence if your tumor expresses estrogen receptors. However, there are side effects commonly associated with Tamoxifen including weight gain, hot flashes and vaginal discharge that patients may be bothered by. There are also very uncommon side effects like blood clots, strokes, or uterine cancer that may scare patients from choosing to take it. You need to remember that your chances of having a recurrence of your cancer are usually higher than your chances of having a serious problem with Tamoxifen, but the decision to undergo hormonal therapy is a personal one that you should make with your doctor. There are also newer drugs, called aromatase inhibitors that act by decreasing your body's supply of estrogen; these drugs are reserved for patients who have already gone through menopause. Talk to your doctors about these new therapies.

Biologic Therapy

The pathologist also examines your tumor for the presence of HER-2/neu overexpression. HER-2/neu is a receptor that some breast cancers express. If your cancer expresses it, you usually have a higher chance of having your tumor recur after surgery. A compound called Herceptin (or Trastuzumab) is a substance that blocks this receptor and helps stop the breast cancer from growing. Some patients are candidates for this medicine. Talk to your medical oncologist to see if Herceptin is right for you.

Follow-up testing

Once a patient has been treated for breast cancer, they need to be closely followed for a recurrence. At first, you will have follow-up visits every 3-4 months. The longer you are free of disease, the less often you will have to go for checkups. After 5 years, you could see your doctor once a year. You should have a mammogram of the treated and untreated breasts every year. Because having had breast cancer is a risk factor for getting it again, having your mammograms done every year is extremely important. If you are taking Tamoxifen, it is important that you get a pelvic exam each year and report any abnormal vaginal bleeding to your doctor.

Clinical trials are extremely important in furthering our knowledge of this disease. It is though clinical trials that we know what we do today, and many exciting new therapies are currently being tested. Talk to your doctor about participating in clinical trials in your area.

This article is meant to give you a better understanding of breast cancer. Use this knowledge when meeting with your physician, making treatment decisions, and continuing your search for information. You can learn more about breast cancer on OncoLink through the related links mentioned in this article.

References

The American Cancer Society *All About Breast Cancer Overview* http://www.cancer.org/.

Armstrong, K., Eisen, A., & Weber, B. (2000) *Primary Care: Assessing the Risk of Breast Cancer*. The New England Journal of Medicine, 342(8), 564-571.

Goldhirsch, A., Glick, J.H., Gelber, R.D., Coates, A.S., Senn, H-J. (2001) *Meeting Highlights: International Consensus Panel on the Treatment of Primary Breast Cancer*. Journal of Clinical Oncology, 19(18), 3817-3827.

Hortobagyi, G.N., (1998*) Drug Therapy: Treatment of Breast Cancer*. The New England Journal of Medicine, 339(14), 974-984.

National Cancer Institute. *What You Need To Know About Breast Cancer.* http://www.cancer.gov/.

Rhodes, D. (2002) *Identifying and Counseling Women at Increased Risk for Breast Cancer.* Mayo Clinic Proceedings, 77(4), 355-361.

Rubin, P. and Williams, J.P., (Eds): *Clinical Oncology: A Multidisciplinary Approach for Physicians and Students 8th ed*. (2001). W.B. Saunders Company, Philadelphia, Pennsylvania.

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Risk and Prevention

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Psychological Issues in Genetic Testing for Breast Cancer

Risk Factors and Breast Cancer

Study for Patients at High Risk for Developing Breast Cancer

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Art Gallery

Confronting Cancer Through Art is an exhibition by people whose lives have been touched by cancer.

Today's featured work:
Self Portrait During Treatment "Phaze"
by Priscilla Taylor Rosenberger

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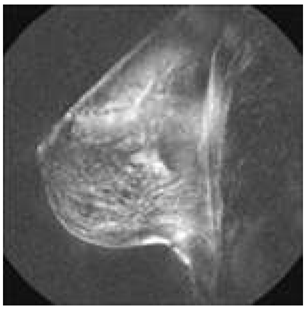
Types of Cancer

Types of Cancer > Breast Cancer > Risk and Prevention

Advanced Breast Imaging

Affiliation: The Hospital of the University of Pennsylvania
Posting Date: July 2, 2002
Last Modified: May 14, 2003

This pamphlet is designed to provide you with the information you need to decide if one of our research studies would be of interest to you.



An example of an image using an MRI, which uses magnets and radio waves to take pictures of the breast.

Who is Eligible for Our Studies?

If you have had one or more relatives diagnosed with breast cancer, or have had breast cancer yourself you may be eligible for participation in a project that is looking at ways to detect breast cancer.

If you or your doctor has found a suspicious lump in your breast or if you have had a recent mammogram that showed a suspicious area and a biopsy is recommended you may be eligible for a trial of techniques to diagnose the abnormality.

If you have recently been diagnosed with breast cancer you may be eligible for a trial of techniques to determine the amount of cancer present.

If you are interested in high risk screening, please call 215.662.6081. If you are interested in diagnosing a lesion, please call 215.746.0352. If you are interested in staging an already diagnosed cancer, please call 215.898.0191.

Under the leadership and with the help of several experts in breast imaging, our breast imaging center has enjoyed tremendous success. We have revolutionized the field of breast imaging and continue to present our patients with the most recent options in diagnostic and treatment programs. Imaging modalities may include:

- Digital Mammography
- Ultrasound
- MRI
- PET Scan

An example of mammography, which is a form of imaging that takes pictures of the breast using x-rays.

Imaging Benefits

Making medical pictures or images of the breast is very important to breast health. Images are used to detect and diagnose breast cancer. It is also known that breast imaging may help detect early cancers in the breast. If a woman is found to have breast cancer, imaging plays an important role in planning treatment by showing the amount of cancer in the breast.

The most common way to obtain breast images is mammography. Mammography uses x-rays to take a picture of the breast. Yearly mammogram screening is now recommended for all women over the age of 40. Studies have shown that adherence with mammogram screening can reduce the chance of a woman dying of breast cancer.

A Better Alternative

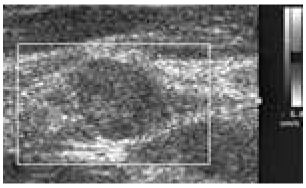
Although mammography is valuable, it is not perfect. There are many other ways to image the breast that have been developed. These include digital mammography, ultrasound (uses sound waves), MRI (uses magnets and radio waves), and PET (uses a labeled sugar to light up cancer). Although all of these new techniques have shown some promise, choosing which technique or techniques to use for each woman is confusing to doctors and patients.

A PET (Positron Emission Tomography) scan uses a sugar to "light up" cancer.

The Advanced Breast Imaging (ABI) program at the University of Pennsylvania has been a leader in the development of many new techniques to image the breast. It has been funded by the National Cancer Institute to investigate these new techniques and clear up confusion about how they should be used.

Ultrasound uses sound waves to find areas of concern in breast tissue.

In order to accomplish this goal, women with certain breast health issues are being recruited into a research study that



involves getting multiple types of breast images in a single morning. The imaging examinations are free. Because the equipment used to take these images is very specialized, all of the exams will take place at the Hospital of the University of Pennsylvania. Information about you obtained from these research studies will be made available to you and your doctor.

If you are interested in high risk screening, please call 215.662.6081. If you are interested in diagnosing a lesion, please call 215.746.0352. If you are interested in staging an already diagnosed cancer, please call 215.898.0191.

Advanced Breast Imaging as a PDF. You will need Adobe Acrobat Reader which is available free online.

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Types of Cancer > Breast Cancer > Risk and Prevention

Breast Cancer Risk Assessment Tool

Affiliation: The Abramson Cancer Center of the University of Pennsylvania
Posting Date: December 3, 1998
Last Modified: January 21, 2005

Scientists at the National Cancer Institute (NCI) and the National Surgical Adjuvant Breast and Bowel Project (NSABP) Biostatistics Center have developed this Breast Cancer Risk Assessment Tool, a computer program that allows you to project a woman's individualized estimate of risk for invasive breast cancer over a 5-year period and over her lifetime (to age 90).

To run this program, you must download it to your computer. (Minimum requirements: Windows 3.1 or later, 486 or higher processer, 33 MHz, 4MB RAM.) Please read the directions below and then click on the "Setup.exe" link to begin the process.

Directions

1. Click on the "Setup.zip" link below. Your browser will prompt you to save the file.
2. Choose a location on your computer to download the file to, and make a note of it.
3. Quit your web browser and any other programs you have open.
4. Open the folder that contains the "Setup.zip" file, unzip the folder and then double-click on the Setup.exe icon.
5. Follow the on-screen directions for installing the program.
6. When the installation is complete and the new window appears called Breast Cancer Risk Assessment, it should display two items: the tool itself, and the utility that will remove the program and it's associated files if you should ever wish to do so.
7. The Setup program may still be in the background at this point; click "Finish" to close it, and click on the Breast Cancer Risk Assessment Tool to begin!

Setup.zip (1 MB; 2.34 MB after installation)

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Psychological Issues in Genetic Testing for Breast Cancer

Lerman, C. and Croyle
Last Modified: November 1, 2001

Reprinted with Permission From: Archives of Internal Medicine, 154:609-616. Funded by AHCPR Grant HS06660 From No. 176, July 1994 Research Activities of the Agency for Health Care Policy and Research, p. 28

Susceptibility

Although hereditary breast cancer (HBC) accounts for only about 5-10% of all breast cancers, up to 25% of early-onset cases are attributable to HBC. One of the greatest potential benefits of genetic tests for breast cancer susceptibility is the identification of young women who may benefit from mammogram surveillance initiated at an earlier age and/or on a more frequent basis than usual.

Previous studies suggest that notifying persons about their risks for cancer can have serious negative psychological consequences that may impair adherence to prevention recommendations, either because of denial or fear of discovering cancer. This poses unique challenges for genetic counselors who must inform patients of their breast cancer risk based on genetic testing results, according to the authors. They recommend that genetic counselors provide patients with pretest counseling, ensure the patient's informed consent before testing, be aware of and minimize adverse psychological consequences, provide or arrange for followup care, and promote breast cancer prevention and surveillance techniques. The authors also caution that genetic information has implications, not only for the individuals who undergo testing but also for their partners, children, siblings, and parents and followup support should be extended to family members as well.

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Types of Cancer > Breast Cancer > Risk and Prevention

Risk Factors and Breast Cancer

OncoLink Team
Affiliation: The University of Pennsylvania Cancer Center
Last Modified: June 21, 2002

Risk Factors and Breast Cancer

The risk of an American woman developing breast cancer during her lifetime is approximately 11%, with approximately 3-4% dying of the disease. Several factors appear to increase the risk of developing breast cancer, including family history, reproductive history, diet, hormone usage, and radiation exposure. Despite the recognition of these risk factors, approximately 70% of the women who develop breast carcinomas do not have any of these identifable risk factors.

Many studies link breast cancer incidence with the age of menarche and the establishment of of regular ovulatory cycles. On study infers a 20% decrease in breast cancer risks for every year that menarche is delayed. The late onset of menarche is associated with a delay in the establishment of regular ovulatory cycles, which may have some sort of protective effect. This is a hotly contested theory. A woman's physical activity level, even if moderate, can have an impact on the likelihood of ovulatory cycles and may later breast cancer risk. The age-specific incidence of breast cancer rises at a steep rate with age up to the time of menopause and then slows to a rate one sixth of that seen in the premenopausal period. It has been suggested that this age-specific incidence curve is shaped largely by the effects of ovarian activity.

Age at menopause is another factor of breast cancer risk, with a slightly decreased risk of breast cancer for a woman with natural menopause before age 45 (0.73) compared with a woman with natural menopause between the ages of 45-54. Oophorectomy before the age of 50 decreases breast cancer risk. This data indicates the total duration of menstrual life is an important factor in breast cancer risk, although the mechanisms to explain this observation are presently unclear.

Parity (having children) and the age of the woman at the birth of her first offspring are other enodgenous hormonal factors that influence breast cancer. Women who have never had children (nulliparous) are at greater risk for the development of breast cancer than women who have had children (parous), with a risk factor of approximately 1.4. The effect of term pregnancy on breast cancer risk varies with the age of the mother's first birth, with women whose first pregnancy occurs **after age 30** having a 2-5 fold increase in breast cancer risk compared with women having a first term pregnancy before age 18 or 19. Abortion, whether spontaneous or induced, before full-term pregnancy, appears to have no protective effect. In some studies, premature termination of pregnancy appears to increase breast cancer risk. This apparent contradiction might be explained by the sustained level of hormones in a term pregnancy. Breast tissue may undergo differentiation as a result of hormonal changes of pregnancy. These differentiated cells are less likely to undergo malignant transformation. In incomplete pregnancy, the breast is exposed only to the high estrogen levels of early pregnancy and thus may be responsible for the increase risk seen in these women.

The associations between the use of oral contraceptives and postmenopausal estrogen replacement and breast cancer have been studied. Many studies attempting to link oral contraceptives with increased breast cancer have been inconclusive. While there are isolated incidences of heightened breast cancer where oral contraceptives have been implicated, the Centers for Disease Control's Cancer and Steroid Hormone study failed to find any increase in risk related to duration of oral contraceptive use or in users with a family history of breast cancer or a personal history of benign breast disease. Currently, there is no compelling evidence to avoid the use of oral contraceptives for any subgroup of patients. These studies are complicated by the inclusion of women treated with higher doses of estrogen in their contraceptive pills. Since 1960, the average estrogen content of estrogen pills has dropped from 150 to 35mg.

The use of postmenopausal estrogen replacement therapy may be associated with a small increase in breast cancer risk in the range of 1.5 - 2.0 for moderate dose conjugated estrogen therapy lasting for 10 to 20 years. While the use of short term estrogen replacement therapy appears to be safe, there is little information available pertaining to the long term, low dose therapy. In evaluating the potential risks of breast cancer from estrogen therapy, the proven benefits in reducing osteoporosis and susequent fracture and lowering the risk of coronary artery disease must be taken into account.

A possible relationship between breast cancer and diet has been suggested due to the variation of breast cancer in societies with different national diets. That these differences are not solely due to genetics is suggested by a study of migrants. Japanese women immigrating to the United States and first-generation American born Japanese women were found to have an incidence almost identical to whites in the same area and considerably higher than that of women in Japan. Although this observation implicates environmental factors as playing an important role in breast cancer incidence, it does not implicate breast cancer as the sole cause of the observed differences.

A comparison of vegetarian versus meat-eating women produced inconclusive results. Breast cancer mortality among Seven Day Adventists, a religious group that eats a diet low in animal fats, is not significantly different from women who consume an average American amount of dietary fats. In the largest prospective study dietary fat, 89,538 nurses between the ages of 34 and 59 were studied. No relation between breast cancer risk and total fat, saturated fat, linoleic acid, or cholesterol was found. The differences in fat intake between the highest and lowest fat consumers was only 25%, suggesting dietary fat reduction in the context of the usual American diet is unlikely to reduce breast cancer.

A positive, but modest association between alcohol use and breast cancer risk is seen in most studies. There appears to be a relative risk of breast cancer risk of 1.4 for women with an alcohol intake of two drinks per day. While a large study sponsored by the American Cancer Society found no increase in risk for occasional users of alchohol, the risk was elevated in all other categories of alchohol use. Several studies have found alcohol to have its greatest effect on breast cancer risk in women under the age of 30.

Women with a family history of breast cancer in a first- or second-degree relative are at a higher risk for developing breast cancer. The risk of developing breast cancer is 1.5 to 3.0 times higher if a mother or sister has the disease, and the risk may be greater if a sibling is affected (versus the mother). The higher incidence doesn't seem to matter whether the relative's occurrence was premenopasual or postmenopausal. Bilateral premenopausal breast cancer in a relative has been associated with the highest risk of breast cancer development. For most people with a family history of breast cancer, the lifetime probability of developing breast cancer is rarely greater than 30%, and the magnitude of risk conferred by a positive family history is similar to that seen with many other risk factors. Only 5% of carefully studied breast cancer patients are thought to have a pedigree consistent with hereditary brast cancer. Breast cancer is observed as part of cancer family syndromes in association with other tumors, as listed below:

Breast Cancer in Hereditary Syndromes

Syndrome	Sites of Other Tumors
Li-Fraumeni Syndrome	Sarcomas (e.g. soft tissue, bone), brain tumors brain tumors, leukemia, adrenocortical carcinoma
Cowden's Disease	Facial trichilemmomas, papillomatosis of lips and oral mucosa, acral keratoses, gastrointestinal polyps, uterine leiomyomata
Muir Syndrome	Basal cell carcinoma, benign and malignant gastrointestinal tumors

Epidemiologic studies of women exposed to ionizing radiation due to nuclear war or diagnostic or therapeutic procedures have an increased risk for the development of breast carcinomas. Multiple chest fluroscopies, breast irradiation for mastitis, and thymic irradiation increase breast cancer risk. There is a long latent period for radiation-induced breast cancer, and the risk of developing the disease is related to the age of the radiation exposure. Radiation after the age of 40 results in a minimal increase in risk, and radiation in adolescence is associated with the greatest risk of breast cancer development. Girls irradiated during infancy for thymic enlargement had a linear dose-response risk for subsequent breast cancer development.

Correlating breast cancer risk with benign breast disease cannot be made without specific knowledge of the histological features of the biopsy. Fibrocystic disease includes a heterogeneous group of pathological changes associated with various degrees of breast cancer risk. Benign breast conditions are classified as nonproliferative or proliferative and on the basis or a review of more than 10,000 breast biopsies, relative risks of breast cancer were determined. Women with proliferative disease were found to have a relative risk of 1.9, and the subcategory of women with atypical hyperplasia were found to have a relative risk of 4.4. Nonproliferative breast disease was associated with no excess of breast cancer. Sixty-nine percent of the reviewed biopsies were found to hasve nonproliferative breast disease, and of the biopsies demonstrating nonproliferative changes, only 3.6% were atypical. These were classified as follows:

Classification of Benign Breast Disease

- Nonproliferative
  - adenosis

    - cysts, macro or micro
    - duct ectasia
    - fibroadenoma
    - fibrosis
    - mastitis
    - metaplasia, apocrine or squamous
    - mild hyperplasia
- Proliferative
    - moderate or florid hyperplasia
    - papilloma with fibrovascular core
    - atypical hyperplasia, ductal or lobular

There are no interventions proven to decrease risk. The data on the use of exogenous hormones are controversial enough that a firm recommendation to avoid their use cannot be made. Similarly, the link between dietary fat and breast cancer is weak, and there is little evidence to suggest that altering the diet or alcohol consumption in the adult life changes breast cancer risk. Patient education, with instructions in breast self-examination, regular physical examinations every four to six months, and mammography in accordance with standard guidelines are appropriate surveillance techniques.

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Types of Cancer

Study for Patients at High Risk for Developing Breast Cancer

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: August 18, 2002

We are currently conducting a study of Tamoxifen in combination with enhanced screening using MRI for women between the ages of 25-45. The purpose of the study is to determine whether Tamoxifen will reduce breast density in women prior to menopause, improving the ability to see changes in the breast as well as possibly lowering breast cancer risk directly. We are currently enrolling high-risk women at sites in Philadelphia, Boston, Detroit, Chicago, and Los Angeles and would like to invite you to participate. Study participants will receive a mammogram and MRI every 6 months for the 2-year study period and will take either Tamoxifen or a placebo (sugar pill) for the first year of the study. All procedures and study medications will be paid for by the study. Participants will also be compensated for their time.

If you would like to discuss the study or if you have any questions, please call toll free 1-888-666-6002 or email: preventionstudy@cceb.med.upenn.edu.

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by Kathleen F. Chapman

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Histologic Classification of Breast Cancer

Li Liu, MD
Affiliation: OncoLink
Posting Date: December 12, 1999
Last Modified: November 1, 2001

The basic component of the breast is the "mammary gland". Each mammary gland is made of multiple lobules connected to ducts and surrounding tissue which includes blood vessels.

Malignant tumors may arise from any of the above structures. Ductal carcinomas are the most common ones, followed by lobular carcinomas, and malignancies arising from other connective tissues. The following is a list of breast cancer histologic classifications from American Joint Committee on Cancer (AJCC).

Carcinoma, NOS (not otherwise specified)

Ductal
- Intraductal (in situ)
- Invasive with predominant intraductal component
- Invasive, NOS
- Comedo
- Inflammatory
- Medullary with lymphocytic infiltrate
- Mucinous (colloid)
- Papillary
- Scirrhous
- Tubular
- Other

Lobular
- In situ
- Invasive with predominant in situ component
- Invasive

Nipple
- Paget's disease, NOS
- Paget's disease with intraductal carcinoma
- Paget's disease with invasive ductal carcinoma

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All This Joy
by Kathleen Wixted Francis

- Other
  - Undifferentiated carcinoma

Histopathologic evaluation of a breast cancer is necessary to provide the diagnosis of the tumor, to help determine a patient's prognosis, and to help understand the nature of breast cancer overall.

Invasive (infiltrating) ductal carcinoma is the most common cell type, comprising 70% to 80% of all cases. The tumors occur throughout the age range of breast carcinoma, being most common in women in their middle to late 50s. It is characterized by its solid core, which is usually hard and firm on palpation. An associated ductal carcinoma in-situ is frequently present and comedo necrosis may occur in both invasive areas and areas of intraductal carcinoma. Invasive ductal carcinoma commonly spreads to the regional lymph nodes and carries the poorest prognosis among various ductal types. Nuclear and histologic grade have shown to be effective predictors of prognosis.

Ductal carcinoma in-situ (DCIS) consists of malignant epithelial cells confined to the mammary ducts, without microscopic evidence of invasion through the basement membrane into the surrounding tissue. According to the tumor differentiation, DCIS can be further divided into low, intermediate, and high grade. Such stratification has prognostic implications.

There are five histologic subtypes of DCIS, namely comedo, papillary, micropapillary, cribriform, and solid. The comedo subtype carries the higher probability of high nuclear grade, microinvasion, and over expression of the her-2/neu oncogene. The most characteristic mammographic abnormality associated with DCIS is "clustered microcalcifications". New classification systems using a combination of architecture, nuclear grade, and necrosis have been proposed, but the merits of these systems remain to be proved.

Invasive lobular carcinoma is relatively uncommon, comprising only 5% to 10% of breast tumors. Invasive lobular carcinomas are characterized by greater proportion of multicentricity in the same or the opposite breast. The lesions tend to have ill-defined margins, and occasionally the only evidence is subtle thickening or induration. Patients with infiltrating lobular carcinoma are especially prone to have bilateral carcinoma. Stage by stage, invasive lobular carcinoma has a similar prognosis to infiltrating ductal carcinoma.

Lobular carcinoma in-situ (LCIS) generally lacks specific clinical or mammographic signs, and occurs more frequently in premenopausal women. By definition, these cancer cells are confined to the mammary lobules without invasion. LCIS is characterized microscopically by a solid proliferation of small cells. The cells have a low proliferative rate, are typically estrogen receptor positive, and rarely over express the her-2/neu oncogene. Since there is a reported risk of bilaterally in this disease, some investigators have recommended treatment with bilateral simple mastectomy with immediate breast reconstruction. If watchful waiting is elected, lifetime observation is mandatory since the increased risk of breast cancer persists indefinitely.

Tubular carcinoma is also known as a well-differentiated carcinoma. The frequency of axillary lymph node metastases is approximately 10%, lower than that of ductal carcinoma. The prognosis is considerably better than for invasive ductal carcinoma.

Medullary carcinoma is characterized by a prominent lymphocyte infiltrate. Patients with medullary carcinoma tend to be younger than those with other types of breast cancer. The prognosis is also believed to be better than for invasive ductal cancer.

Inflammatory Breast Carcinoma is characterized by diffuse skin edema, skin and breast redness, and firmness of the underlying tissue without a palpable mass. The clinical manifestation is primarily due to tumor embolization to dermal lymphatics (skin lymph channels) with associated engorgement of superficial capillaries. Inflammatory breast cancer carries a poor prognosis.

Paget's disease of the nipple is a rare form of breast cancer that is characterized clinically by eczematoid changes of the nipple. It is believed that Paget's disease represents the migration of malignant cells from subjacent mammary ducts in the nipple. The prognosis of patients with Paget's disease appears to be similar to that of women with other types of breast carcinoma, stage for stage.

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Penn Leads International Study on Breast Cancer Detection Using

Affiliation: University of Pennsylvania Cancer Center
Posting Date: November 16, 1997
Last Modified: November 1, 2001

For Immediate Release, October 23, 1997

(Philadelphia, PA)--Researchers at The University of Pennsylvania Cancer Center are leading an international, multi-site study on the performance characteristics of Magnetic Resonance Imaging (MRI) in detecting and diagnosing lesions in approximately 3,000 patients with suspicious mammograms. The study will also examine the extent of cancer growth within affected breasts and will investigate the feasibility of using MRI to assess patients who carry a genetic risk of inheriting breast cancer.

Approximately $5 million has been provided by the National Cancer Institute in support of this study, which marks the largest grant given to date for breast MRI research

Physicians at Penn have long been at the forefront of MR and other imaging research. "This study should prove that MRI is by far the best diagnostic tool for detecting breast cancer," says principal investigator Mitchell Schnall, MD, PhD, who serves as Chief of the MRI Section at the Hospital of the University of Pennsylvania. "Breast MRI has the capability of finding small cancerous lesions often missed by regular mammograms and routine self examinations, thereby increasing a patient's chance for survival."

Breast cancer is the most frequently diagnosed malignancy in the United States and ranks as the second leading cause of cancer deaths in women. Most missed cancers, however, occur in patients with dense breast tissue. Compared to mammography, breast MRI provides higher soft tissue contrast, which allows for more accurate lesion detection and better image enhancement.

MRI is not routinely used in clinical practice because of its expense, but its use for catching cancer at its earliest stage may ultimately prove cost-effective. Surgical biopsies could be avoided if breast MRI can show that a lesion is definitely benign. Separate studies have already demonstrated the potential for breast MRI to distinguish benign from malignant breast lesions and to detect clinically mysterious cancer.

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LISA
by Tania Karpowitz

Another added advantage for using breast MRI is its potential for determining how far the cancer has spread within the breast. "Knowing the extent of cancer within a breast would impact a patient's decision on the type of breast conservation therapy chosen--and that would mean the difference between choosing a mastectomy and a lumpectomy," Schnall explains. "We hope to confirm the results of smaller populated studies, which have proven that breast MRI is extremely effective in image enhancement and very specific in small lesion detection," he concluded.

The 14 clinical sites involved in the four-year study include experts in breast imaging, clinical MRI and MR physics and technical industry experts in the use of MRI equipment and contrasting agents.

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Types of Cancer

To Test or Not to Test? Genetic Counseling Is the Key

Jill Stopfer, MS Certified Genetic Counselor
Affiliation: University of Pennsylvania Cancer Risk Evaluation Programs
Posting Date: January 11, 1998
Last Modified: November 1, 2001

Is it better to know you're at increased risk of getting breast or ovarian cancer, or not? Is it helpful for a family to know why so many women developed breast and ovarian cancer at early ages, and have a way to identify who is at high risk and who is at average risk? Should women have the right to learn whether or not they've inherited an altered gene, even if there is no guarantee that risk can be reduced?

The key to these questions is that there are no "right" or "wrong" answers, because the answers will depend on individual beliefs, values, coping styles, and preferences. Genetic testing can sometimes raise more uncertainty about the future than provide answers. Genetic counselors can help people wrestling with these difficult questions to try to reach the best possible decision, given each person's unique perspective and life experiences.

Genetic counselors in the United States are nationally certified health professionals who can interpret complex family histories and genetic test results for patients and health providers. They educate women and their families about what genetic testing can tell them, as well as what it can't. In addition, genetic counselors, who have training in psychosocial counseling, help to promote autonomous decision making among the individuals they counsel. Recently, genetic counselors have become members of multidisciplinary teams offering risk assessment and counseling to individuals and families at increased risk for cancer. [1] Rather than being viewed as a "health care frill," the process of genetic counseling should be considered a mandatory step in the process of genetic testing. The potential for harm from genetic testing is real, and the benefits can be interpreted subjectively. [2]

Breast and Ovarian Cancer Risks

Genetic testing for mutations in the recently identified BRCA1 (for breast cancer 1) and BRCA2 genes can help some families determine who is at high risk and who is at average risk. A woman who has a BRCA1 or 2 mutation faces about a 60 to 85 percent lifetime chance of breast cancer, while the average woman has about a 10 to 11 percent chance. A woman with a BRCA1 or 2 mutation also has a 20 to 60 percent lifetime chance of ovarian cancer, compared to a 1 to 2 percent chance for the average woman. [3] While greater than 90 percent of breast and ovarian cancer is not caused by a single susceptibility gene, women who are found to have one may find their lives permanently altered by the introduction of this powerful predictive information into their family.

What Genetic Counselors Do

Beyond providing a cognitive grasp of the technical information, genetic counseling offers a forum for potential test subjects to personally consider the psychosocial and familial impact of testing. Whom in their family might they tell, and how might they react? Genetic testing information may bring families together, but it can also become a point of contention. One family member may pressure another to be tested. Conversely, there may be pressure not to bring this information into the family. Depending on individual coping styles, women in similar circumstances who have similar risks and understanding of the issues may reach different decisions. This aspect of the genetic counseling is critical, and cannot be achieved by handing a patient a pamphlet, or briefly presenting the cancer risks associated with finding a gene mutation.

Some genetic counselors report an influx of women into their clinics who were tested first and referred for genetic counseling only after a mutation was found. This can only be considered inappropriate and substandard medical care. Some of these women are largely misinformed and have erroneous beliefs about the significance of their results. Some say, if they had known what information testing can't provide, they might have declined having testing, rather than living with the anxiety it unleashed.

There is concern about high risk but cancer-free women who are tested in the absence of a known family mutation. It is critical that they continue to be screened for cancer, even if they are not found to have a detectable BRCA1 or BRCA2 mutation. Some of these women mistakenly believe their cancer risk has now been reduced, when it hasn't. A negative result can be truly reassuring in the presence of a known family mutation. In this scenario, misunderstanding of a test result's significance could be life-threatening if an opportunity to benefit from early cancer detection is missed because of a false sense of reassurance.

Benefits and Risks of Testing

Imagine the predicament of a 45-year-old high-risk woman, a single mother of two children, who learns that she has a cancer-predisposing mutation, and is then informed by her health insurance company that her rates will be increased to a monthly premium she can no longer afford. What good is having information about cancer risk if it effectively cuts off your access to health care? Due to the expense, not having access to affordable health insurance in the United States can severely limit access to quality medical care. All too frequently, the decision to test or not is based on fears such as these. While no data exist to tell us realistically what the risks are for genetic discrimination, the sheer possibility of it dissuades many women from testing. Clearly, we must push for more effective national legislation to protect those with identifiable predisposing gene alterations. [4]

An equally compelling story, which illustrates the benefits of genetic testing, is that of the 38-year-old woman who is recently married. Her new husband understands that the cancer that afflicted her mother and two sisters at early ages may one day affect his bride. Since the family mutation had been discovered through first testing an affected sister, she decides to proceed and learn whether or not she too inherited the high-risk mutation. She learns she didn't. What a relief for her and her family. While still facing the same cancer risks as the average woman, an 11 percent risk for breast cancer is considerably lower than a 60 to 85 percent risk in mutation carriers. In addition, this woman felt that she would have prophylactic oophorectomies soon, if she were found to have a mutation, since ovarian cancer took her beloved sister at the age of 42. Now she plans to have several children, and puts away all thoughts of prophylactic surgery. Even this woman, who receives good news, may feel guilty for escaping the problems affecting her loved ones, but she and her new husband also have an opportunity to take a different approach and have a new outlook to planning their lives together.

Research or Clinical Testing?

The clinical value of genetic testing for breast and ovarian cancer susceptibility is an issue that seems to be polarizing both the medical and cancer advocacy communities. Some claim it to be of little significant value, since we have no known, proven method of eliminating cancer risk once it has been identified. And without significant revision to current federal legislation [5], the risk to insurability for some outweighs any possible benefit that testing could offer. For these reasons, some believe that testing should be offered only through structured research protocols, and that it is premature to offer commercial testing through cancer risk programs or physician offices.

Research participants are afforded several layers of protection: Their results do not have to be included in a medical record, so the risk of genetic discrimination for people who learn they have a mutation may be minimized. However, research results do not always remain confidential. Once a person starts to use the information to justify health care decisions, such as prophylactic surgery, sometimes revealing genetic test results provide the only mechanism to convince an insurer to pay for intensive and often expensive follow-up. In addition, even research results may become available to an insurer if a health care provider records the information in a medical chart - and women often appropriately feel the need to inform their physicians about test results, since they want advice and guidance in managing their cancer risks.

Participants in research protocols now are also most likely to receive adequate information and genetic counseling prior to and after being tested, since funded proposals go through a peer review process. In addition, there are well-trained professionals at cancer risk assessment programs - many of them located in NCI-designated comprehensive cancer centers - who are providing adequate genetic counseling, outside of a purely research protocol. Although there are serious limitations and drawbacks to genetic testing to consider, those who have received genetic counseling and who understand what testing can and cannot tell them should be able to chose whether or not to proceed with the test. As with many of life's more complex choices, the possible benefits for some may clearly outweigh the risks, while for others, testing would not provide useful information, and could in fact be harmful.

Many families learn that the chance of finding an altered BRCA1 or BRCA2 gene is remote, and elect to forgo testing. However, for those who are candidates for testing, it is usually optimal to delay the decision to be tested until there has been time to think carefully about the potential ramifications. Families tell us that just grasping concepts like genetic susceptibility, dominant inheritance, and genetic testing are difficult, and it is better to hear the information more than once. Providing written materials is also helpful. Many programs schedule a second session, at which time the decision to proceed with testing, or decline or delay testing, is reached. Results are often given in person to maximize the opportunity to communicate accurate information.

Counseling Is the Key

Common threads in counseling for genetic susceptibility to disease are the complexity of the information and the ability of the information to impact not just the person being tested, but the family as well. Personal risk information has the potential to motivate a high-risk woman to adopt screening that may promote early detection of cancer. The information may also devastate the mother with breast cancer who learns that all three of her adult daughters have also inherited this cancer susceptibility.

Every person considering cancer predisposition testing should have the opportunity to receive appropriate information and genetic counseling. Testing decisions are not only highly personal - they can also be permanent. One cannot "unlearn" a test result revealing the presence of a cancer predisposing mutation. Testing decisions may be easier in the future, as the options improve for those found to carry a gene mutation. Better treatment, early detection, and even prevention strategies based on our knowledge of how these genes are linked to cancer are on the way. Knowledge can be empowering when it helps to cope more effectively with a situation. Genetic testing can provide that for some families. However, genetic test results are powerful and can have the opposite effect. Anxiety, despair, and fear of the future and the possibility of genetic discrimination may await those who would be better off not knowing. Until "fixing" the genetic alteration becomes a simple, routine procedure, cancer predisposition testing must not be construed as a simple or routine blood test. Skilled genetic counseling is not just for individuals and families where a gene mutation has been found. It should be offered before as well as after testing so that thoughtful and personal decisions can be made about whether receiving this powerful insight to future health risks will be of benefit or not.

Jill Stopfer is a certified genetic counselor and the familial cancer coordinator at the University of Pennsylvania Cancer Center.

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Cross platform comparison of multigene predictors of response to neoadjuvant paclitaxel/FAC chemotherapy in breast cancer generated by cDNA arrays and Affymetrix GeneChips

Emerging science: Prospective validation of gene expression profiling-based prediction of complete pathologic response to neoadjuvant paclitaxel/FAC chemotherapy in breast cancer

Gene expression profiles predict pathologic complete response to preoperative chemotherapy with gemcitabine, epirubicin, and docetaxel in primary breast cancer.

Increased Risk of Acute Leukemia After Adjuvant Chemotherapy for Breast Cancer: A Population-Based Study

Older women with node positive (N+) breast cancer (BC) get similar benefits from adjuvant chemotherapy (adj) as younger patients (pts): The Cancer and Leukemia Group B (CALGB) experience

Paclitaxel (T) following doxorubicin/cyclophosphamide(AC) as adjuvant chemotherapy for node positive breast cancer: Results from NSABP B-28

Patterns of Recurrence by Sequence of Chemotherapy and Radiotherapy in Early Stage Breast Cancer

Prediction of the therapeutic response to paclitaxel by gene expression profiling in neoadjuvant chemotherapy for breast cancer

Preliminary Analysis of Radiotherapy Data from CALGB 9082: Variability of Treatment Fields for Local/Regional Breast Cancer and the Impact of High Dose Chemotherapy on the Ability to Deliver Radiation Therapy

Preliminary Results of High-Dose Chemotherapy in Primary Breast Cancer Show Equivalency to Intermediate-Dose Treatment; 3 Years of Additional Follow-up Required

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Randomized trial of adjuvant ovarian suppression in 926 premenopausal patients with early breast cancer treated with adjuvant chemotherapy

Scandinavian Study Finds No Overall Survival Benefit to High-Dose Chemotherapy in Primary Breast Cancer

Sequencing of Chemotherapy and Radiation Therapy for Patients with Early Stage Breast Cancer: Updated Results of a Prospective Randomized Trial

Small French Study Shows Longer Time to Relapse for High-Dose Chemotherapy in Metastatic Breast Cancer

South African Study Finds Survival Benefit to High-Dose Chemotherapy in Primary Breast Cancer

Standard Chemotherapy Shows Increased Toxicity for Elderly with Node-Positive Breast

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Study of High-Dose Chemotherapy in Metastatic Breast Cancer Finds No Survival Benefit

Timing of Radiation and Chemotherapy with Breast Cancer

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Age and comorbidities affect prognosis and treatment options in breast cancer

Posting Date: February 21, 2001
Last Modified: November 1, 2001

In a study by the National Institute on Aging (NIA) and the National Cancer Institute, Dr. Rosemary Yancik from the NIA in Bethesda, Maryland and colleagues performed a retrospective chart review of 1800 postmenopausal women with breast cancer, ages 55 and older. In total, 73% of the women had stage I or stage II breast cancer, 10% had stage III or stage IV disease, and 17% were not assigned a stage.

Nearly all patients with stage I or stage II node-negative breast cancer received treatment that was consistent with National Institutes of Health (NIH) recommendations. However, a significant inverse relationship was noted between patient age group and likelihood of receiving NIH-consistent therapy. In addition, on logistic regression analysis, women aged 70 years and older were significantly less likely to undergo axillary lymph node dissection.

The presence of diabetes, renal failure, stroke, liver disease, a previous malignant tumor, and smoking were statistically significant predictors of early mortality when age and disease were included. Just over half of all deaths were from breast cancer. Heart disease and previous cancers were the next most common causes. By the end of the 30-month followup period, 15% of subjects had died.

"This paper is really a surveillance report, documenting, with population-based data, the magnitude not only of the cancer burden but of the age-related burden of other issues," Dr. Yancik told Reuters Health. "Breast cancer rates peak in the upper age segment of the population," she said. "A lot of people don't really know that."

"The other important message is that breast cancer doesn't occur by itself," Dr. Yancik noted. "In older women, it is occurring in a woman's body that may have preexisting illnesses." However, Dr. Yancik went on to say that she believes "it is important to emphasize the heterogeneity of aging and of the tumor stage."

"As long as prevention and cure of breast cancer remain elusive, postmenopausal women will require additional health resources to promote early detection, optimum treatment, long-term followup, and supportive care," the researchers conclude in the journal.

Reference

- JAMA 2001;285:885-892. (Abstract not available online at time of posting.)

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Breast Reconstructive Surgery Options

Don LaRossa MD, Professor of Surgery
Affiliation: The University of Pennsylvania Medical Center
Posting Date: October 20, 1997
Last Modified: February 7, 2002

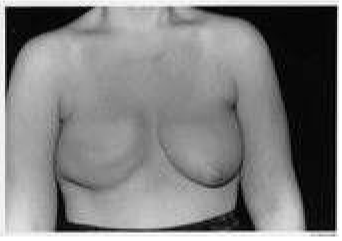
OncoLink Advisory: Photographs on this page graphically illustrate the results of breast reconstruction therapy. Since they depict actual patients, some OncoLink readers may choose not to view them.

Reconstruction of the breast following mastectomy has become an integral part of the holistic treatment of breast cancer. Many patients are candidates for reconstruction simultaneous with mastectomy, though it can be done at a later date as a separate operation depending on various factors. These factors would include the type of tumor, need for radiation or chemotherapy, or the patient's wishes. These decisions will be made by the patient in consultation with her surgeon, oncologist, and plastic surgeon.

Breast reconstruction can be viewed as occurring in stages, the first of which is reconstruction of a breast mound. This can be accomplished in one of several ways depending on the patient's general medical condition, body, and breast shape, and the patient's desires. The methods fall into two general categories: implant type restorations and those using the patient's own tissues.

Implant type restorations: In this method, an implant of silicone filled with silicone gel or saline (IV solution) or a combination of both is placed beneath the skin and the pectoral muscle. Some surgeons prefer to first use a tissue expander (a silicone balloon) to stretch the skin over a period of weeks or months followed by the replacement with a breast prosthesis (gel, saline, or a combination) at a second operation. It should be noted here that all implants made of silicone polymers are currently being evaluated by the FDA. Although both saline filled and gel implants are permitted for breast reconstruction by the FDA. All patients are required to read and sign a manufacturer's consent for implant use. The form reviews the potential risks of silicone implants.

Implant Procedure with Tissue Expander



"Tissue Expander"

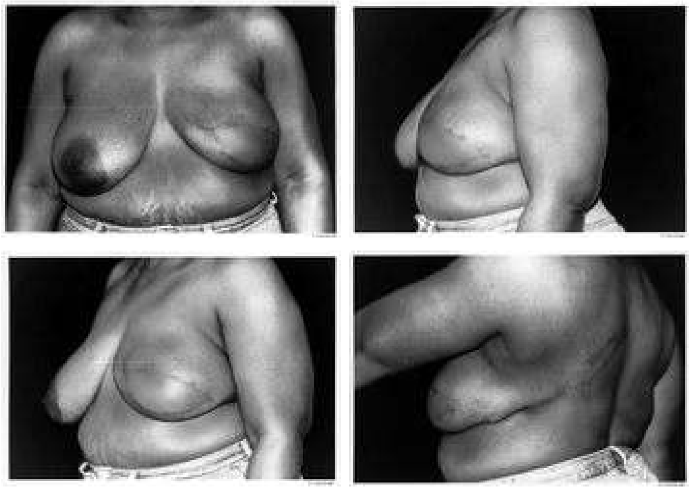
After implant procedure

Tissue Reconstruction: A breast mound can be recreated from the patient's own tissues. the most common donor site is the abdomen, the so called TRAM (transverse rectus abdominus skin-muscle) flap. In this operation, an area of skin around and below the umbilicus (belly button) is transferred to the site from which the breast has been removed. Most commonly, the skin and fat remains attached to one or both of the rectus abdominus muscles which provide it's blood supply, much like an electrical cord supplies power for an appliance. On some occasions, the muscle and skin can be detached entirely and reconnected to the blood vessels in the armpit using microsurgery. This is usually done when the more commonly used method is not possible as when someone has had a scar from previous abdominal surgery as from removal of a gallbladder. However, some surgeons use this as their preferred method. The transferred skin and fat is shaped to resemble the opposite breast or into two breasts if both breasts have been removed.

TRAM (transverse rectus abdominus skin-muscle) Flap Procedure

The abdomen is closed and leaves a scar that extends from hip to hip, much like that seen in a "tummy-tuck" operation. The missing muscle is often replaced with a surgical mesh material to reduce the risk of a hernia or bulging of the abdomen. Another approach is the use of a large, flat, broad muscle from the back, the latissimus dorsi muscle, and overlying skin. Although the skin and muscle may provide sufficient bulk to reproduce a small breast, an implant is usually needed to restore a larger breast. A scar remains on the back but can sometimes be designed to be hidden under a brassier strap. Some flattening of the back remains from removal of the muscle, but use of the arm remains essentially unimpaired.

Latissimus Dorsi Flap Procedure



Finally, soft tissue can be transferred from the buttock or thigh using microsurgery. These represent the most sophisticated and complex methods of breast reconstruction and are generally reserved for specific indications.

The second phase of breast reconstruction is the creation of symmetry. Many patients wish to have a nipple or areolar complex reconstruction which is done several months after the breast mound reconstruction. This can be done with the patient's own tissues or by tattooing color into the skin at the nipple areolar site simulating the nipple areolar complex. Tattooing is done in the doctor's office while the nipple reconstruction is done using the patient's own tissues is done as an outpatient procedure in the hospital operating room. The creation of symmetry may involve lifting of the opposite breast or making it smaller or larger to match the reconstructed breast.

Nipple Tattoo Reconstruction Procedure

These methods vary in their complexity, risk, complications, length of surgery, and length of time for recovery. Please see Table I, which outlines these parameters.

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Cosmetic Outcomes: Breast Reconstruction and Radiation Therapy

Christopher Dolinsky, MD
Affiliation: Abramson Cancer Center of the University of Pennsylvania
Posting Date: May 1, 2002

When women are diagnosed with breast cancer, they are immediately faced with a large number of new challenges. The vast amount of information that they are presented with can be overwhelming. The most important thing that must be decided on with their team of oncologists is how to best treat the cancer and reduce their risk of a recurrence or spread. However, another important issue to consider is what to do about their ultimate cosmetic outcome. There have been studies that show that the final cosmetic outcome of a women's procedure for breast cancer therapy will greatly influence their quality of life. One of the questions that frequently comes up among patients and doctors is how to best time the different therapies that are going to be administered: both for optimal management of the cancer and for creating an excellent cosmetic result.

The first decision that must be made by a woman is whether she will be offered a mastectomy or breast conservation therapy. Many studies have shown equivalent rates of survival comparing these two strategies in early stage breast cancer. Breast conservation therapy involves removing just the tumor from the breast, followed by a course of radiation therapy. With modern techniques, an acceptable cosmetic outcome can be achieved in almost all patients without compromise of the local tumor control. However, not every woman is a candidate for breast conservation. Women who have two or more tumors in separate quadrants of their breast, a history or prior radiation therapy to the region, are pregnant, or have positive margins after an attempt at excision are usually not candidates for breast conservation. Some other reasons that breast conservation may not be recommended include patients with a history of scleroderma or other collagen vascular diseases, and patients with large tumors in small breasts. Patients should discuss their options with their team of oncologists to pick a strategy that is best suited to them and their disease.

If a patient is not a candidate for breast conservation, or chooses to undergo a mastectomy, there are a number of options that they can chosen for breast reconstruction. Patients can get saline breast implants, with or without tissue expanders, or what are called autogenous tissue reconstructions. Autogenous tissue reconstructions are reconstructions that use the patient's own tissues to create a new breast. TRAM flaps, latissimus dorsi flaps, and gluteal free flaps are all different types of autogenous reconstructions. The most commonly employed type of autogenous tissue reconstruction is a TRAM flap, because or their consistent reliability and excellent cosmetic result. These options can be explored in OncoLink's Reconstructive Surgery Section.

An important question arises concerning the use of radiation therapy when a patient has undergone or will undergo a breast reconstruction procedure. Not all women will need post mastectomy radiation therapy, but a large percentage of patients who undergo mastectomy may be offered radiation therapy. In particular, patients with four or more positive axillary lymph nodes, T3 or T4 tumors, positive deep margins, or locally advanced breast cancer should be offered post mastectomy radiation therapy. There is some debate about radiation therapy for patients with 1 to 3 positive axillary lymph nodes, but doctors may recommend radiation therapy in this case dependent on the individual case.

If a patient is going to get radiation, then a decision will need to be made if radiation will be offered before or after they have their reconstruction. Patents can have their reconstructions done immediately after their mastectomy, while they are still anaesthetized, and this is called an immediate reconstruction. Patients can also have their radiation after the mastectomy, with the reconstruction following the radiation and this is called a delayed reconstruction. Radiation can ultimately influence the quality of the cosmetic outcome, so it is important to understand the optimal way to time radiation therapy and breast reconstructions. It is best to meet with a team of physicians, including a radiation oncologist and plastic surgeon, who are experienced in the issues of radiation and breast reconstruction.

Data shows that TRAM flaps are generally the best method of reconstruction in terms of cosmetic outcome. This is especially true for patients who are going to get radiation therapy, or have already had radiation therapy. There is some debate in the academic community as to the ideal timing of a TRAM when radiation is going to be necessary. Newer studies have shown that women who have delayed TRAM reconstructions following radiation therapy have a better long-term cosmetic outcome than women who have immediate TRAM reconstructions followed by radiation. However, some people think that there are more early complications with doing a TRAM flap after a patient has already had radiation. It is generally agreed upon that it is a technically more difficult procedure to do if a patient had already had radiation, but skilled surgeons can usually perform the operation with very few complications. However, one of the problems with a delayed TRAM flap is that a woman will need to go for a significant time (usually at least 6 months to a 1 year) without any type of reconstruction at all. This may not be an ideal solution for all patients. Many women like the ease of an immediate reconstruction because they wake up with a reconstructed breast already in place. The decision to do a delayed versus immediate reconstruction is a highly personal one, that can only be made on an individual basis. Women need to have access to all of the facts, and then they can decide what they desire with their oncologists and families.

The other option for reconstruction is an implant. Not all women are candidates for a TRAM flap, and some women want to avoid a TRAM flap because it is a much bigger surgery than having an implant placed. Implants can tolerate radiation therapy, but tend to produce worse cosmetic outcomes when they are radiated than TRAM flaps. They often scar and move upwards, producing significant asymmetry. This isn't always the case and it doesn't mean that it will definitely happen; however, there is a higher chance that it won't look as good as a TRAM flap in the long run. There hasn't been too much experience with tissue expanders and radiation, but it is generally held that patients who have already had radiation do not do very well with tissue expanders. There is a higher chance of a poor cosmetic outcome when tissue expanders are used in patients who have already had radiation therapy.

The amount of information that each patient needs to hear is staggering. Women need to be informed about their options so that they can make these highly personal decisions with all of the facts. It is also important for women to have their families involved in these decisions, or at least to be present to hear everything their oncologists have to say. There are many skilled physicians who have devoted their careers to helping women with these issues. As time goes on, the amount of data we have will only increase. Armed with the right knowledge and the right doctors, women with breast cancer will be able to make the decisions that will influence their lives with confidence and assurance.

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Eli Lilly and Company
Posting Date: March 18, 2002

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Introduction

A diagnosis of cancer can be devastating. It is nearly impossible to prepare for and difficult to adequately describe what you may be feeling in response. This site addresses some of the feelings associated with the diagnosis of cancer. You might be surprised to learn that you are not alone in your feelings and that many people have the same responses.

Having reliable information about your disease, current research, and your treatment options is important. Choosing a health care team, knowing which questions to ask, and understanding how to live with and beyond cancer will help you learn to take control of your situation. Understanding your disease is one of the strongest weapons you have in fighting your illness.

This site discusses a variety of ways to get the information you need to become an informed, active participant in your cancer treatment. A **Glossary** of the terms that appear in the text in *italics* can be found at the end of this discussion. Please consult your health care team to discuss any questions that may come up after reading the information provided on this website. This information is not intended to replace the advice of your health care team.

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Confronting Cancer Through Art is an exhibition by people whose lives have been touched by cancer.

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Why do I feel this way?

There is no typical way to feel when you are told that you have cancer. Everyone feels and responds differently. Some people experience several emotions at once, ranging from fear, sadness, or even anger, to motivation and determination. There is, however, one feeling that seems consistent for many people who are diagnosed with cancer--and that is a loss of control. One way to regain a sense of control in your life is by learning as much as you can about your disease so that you can discuss it openly with your health care team.

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by Frank Talarico

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Seeking support

Becoming a *self-advocate* is one way to approach your diagnosis and treatment. Being self-supportive requires that you understand what is best for you. You may want to consider spending some time evaluating your needs to determine how you would like to approach your treatment.

One way to become acquainted with your needs is through self-assessment. Your experience with cancer is a very personal journey, and it is helpful to try to understand your feelings. Keeping a journal can provide a way for you to document this period in your life, record questions and thoughts, and express concerns about your cancer treatment. Getting acquainted with your needs is a good first step in approaching your cancer therapy.

Knowing when to ask for help is another important aspect of being a self-advocate. As the primary supporter of your cause, it is up to you to determine when (and whom) to ask for help. Often, an individual's first request for help is when they are scheduled to visit the doctor. You may request that a friend or family member go with you to your first few appointments to help take notes, clarify information, or simply be there as a source of support. Your care partner does not have to be the same person all of the time, but it should be someone who can help you gather and understand the large amount of information you will receive.

Consider allowing yourself to depend on others for awhile. By building a network of support, your ability to take control of your life will actually be enhanced. Sometimes, learning to ask for help is just as important as receiving it. Accept that people really do want to help you and that by accepting their help, you may both benefit. Keep a list of things that you need help with so that when someone asks you how he or she can help, you can let him or her know. This list can include such things as shopping, cooking, laundry, childcare, or transportation. You may wish to keep a calendar and have your family, friends, or members of your community (church members, members of your support group, neighbors) sign up to provide dinner, transportation for you to your appointments or for your children and their activities, or childcare for an hour in the afternoon so that you can take a nap. Save your energy for yourself, your family, and friends. Acknowledging that you need assistance and identifying the specific tasks that need to be accomplished make it easier for others to help you.

Today's featured work:
Untitled
by Heather Darcy

You may want to consider sharing your diagnosis with others. Many people feel comfortable telling family and close friends about their diagnosis of cancer, but choosing to share this information and the people you want to share it with is a personal decision. You may want to consider talking with your employer or anyone else who may be directly affected by your disease or your treatment. You may find that an even stronger support system will be available to you once you begin to communicate with others.

You may also consider talking to other cancer patients who have received treatment. Support groups meet regularly and can provide valuable information for cancer patients, their families, and significant others. At the end of this discussion, you will find a list of groups that may be a good starting point in your search for information. Some of these groups meet in person, others communicate over the telephone, and all of these groups will send you information through the mail. Please remember that it is important to choose your sources of information and support wisely and to discuss the information you collect with your health care team. Gathering information about your cancer and its treatment will reduce uncertainty and assist you in understanding your situation.

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Choosing a health care team

Finding the best available health care is crucial. Your primary care doctor will have an ongoing role in your cancer treatment and may refer you to an *oncologist*, a specialist in cancer care. Your oncologist should be someone who listens carefully to your needs and concerns, relates to you with consideration and respect, and will work with you to select the cancer treatment that is right for you. Many people choose to seek a second opinion. If you feel that this is an option you would like to pursue, ask your primary care doctor or oncologist for help in referring you to another specialist. Taking a few days to meet with more than one doctor is always appropriate and is a positive step toward taking control of your cancer therapy. Physicians understand that this is necessary for many newly diagnosed patients and should be supportive of your need to explore this option. After meeting with and talking to different physicians, you should feel free to move forward with the health care provider who best fits your needs and will work with you to meet your goals. Remember, building a comfortable relationship with your health care team is an important part of your cancer care.

Your health care team may also include an *oncology nurse*. This is the person who will administer your chemotherapy treatments, help you understand your disease, and assist you in managing the *symptoms* of your disease or its treatment. Other members of your health care team may include a *dietitian* to help you with your nutritional needs, a *social worker* to help you with emotional support, financial needs, and identifying other resources, or an *oncology pharmacist* to help explain how you may be affected by the drugs used in your treatment. They are interested in your care and will be able to answer your questions in a way that makes sense to you. You need to make sure that you communicate your needs as clearly as you can to everyone on your health care team so they can help you make the best decisions.

Some questions to ask when choosing a health care team

1. Am I comfortable with my health care team? Do they make me feel like I am a central part of the decision-making process?
2. Does the doctor communicate to me in terms that I can understand?
3. Am I comfortable with the information that is provided to me?
4. Do I feel comfortable asking questions? Does the doctor listen to my concerns?
5. Are the office surroundings comfortable?

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6. Do I have to wait long after my appointment time to see the doctor?
7. Besides the doctor, what other specialists are available to me? A dietitian, social worker, nurse, or pharmacist?
8. When and how can I contact my health care team?

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Seeking information

There is a wealth of information available to you. Please look at the list of resources at the end of this discussion for information ranging from general information about your disease to clinical trials to survivor issues. In addition to the resources listed at the end of this discussion, you will find that information is readily available from such places as libraries, bookstores, your doctor's office, the Internet, community centers, and pharmaceutical companies. These materials can be found in various forms, such as pamphlets, booklets, Internet web sites, books, audiotapes, and videotapes. You should select the formats that you are most comfortable learning from. It is important to work with your health care team to make decisions that are best for your particular situation, and there is no need to rush those decisions. Most important decisions do not have to be made in one day. Take some time to think about your options. You may find that you need a little extra time to make your decisions. Be patient with yourself.

Seek information in quantities that you can manage. We all feel overwhelmed when presented with too much information at one time. As you review information and think of questions, write them down and take them to your next appointment. You may want to make a special appointment with your doctor just to devote time for this. Before your appointment, discuss these questions with your care partner and give them a copy so he or she can help to ensure that you get the answers you need. Refer to the section below on **Tips for communicating effectively** to help you with this.

Tips for communicating effectively

1. Prepare for your appointment. Write down questions when you think of them and take them with you to discuss with your health care team.
2. Be as clear as you can when asking questions or communicating your needs.
3. If you bring books, articles, or information you have printed from the Internet to your appointment, highlight important information that you would like to discuss.
4. Listen carefully to what you are being told. Take notes or make an audiotape of your conversation.
5. Do not be afraid to ask for clarification if you do not understand some of the information that you receive. Ask questions until you are satisfied that you understand the information being provided to you.

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What do I need to know about clinical trials?

One of the first decisions you may want to make is whether to participate in a *clinical trial*. It is important to make this decision prior to starting any treatment because you may not qualify for certain clinical trials if you have already received treatment for your cancer. If your doctor does not bring up this subject with you, you may want to ask him/her if participating in a clinical trial is an option for you. If you take part in a clinical trial, you will receive treatment in your doctor's office, a clinic, or a hospital. As part of the study, your health care team will carefully monitor your progress. Some clinical trials may ask you to fill out questionnaires in order to gather information about the way you feel while you are on treatment. It is important that you fill out these questionnaires if it is requested. These questionnaires provide valuable information to cancer researchers about how your cancer treatment is affecting your condition as well as your daily life.

Clinical trials are carried out following a plan of very strict scientific guidelines, called a *protocol*. The protocol explains everything that will happen in the study. It must be approved by review boards composed of health care professionals and other qualified individuals before the study can enroll patients. Following preclinical or laboratory phases of studies, there are 4 possible phases of cancer clinical trials in humans, each addressing different questions about the treatment being studied.

Preclinical studies, which are conducted in a laboratory setting, help to assess whether an experimental drug is safe to test in humans. During this stage, the drug is usually studied in animals to answer questions about how a drug works, how it is eliminated, and how the drug might affect pregnancy and offspring.

In **phase I** clinical trials, doctors are studying the safety of giving drugs to humans along with looking for the best way to give a medication (for example, as a pill, an injection, or an *infusion*). They will usually study how the drug is eliminated from the body in humans. In addition, doctors are looking to determine appropriate doses for further testing. They carefully watch for any *side effects*. Phase I study drugs are usually given to small groups of humans. During this phase, for drugs used to treat cancer, investigators may be able to identify in which *tumors* a treatment works best.

In **phase II** clinical trials, the drug is studied in a larger group. The focus is to

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study specific cancers to see how well the drug or treatment works. The investigator will watch closely for side effects and will also watch how the disease responds to the treatment.

In **phase III** clinical trials, a study drug or treatment is generally compared to a standard existing treatment. Patients are usually randomly assigned to receive either the standard treatment or the new treatment. During the trial, patients are not told which treatment they are receiving but are told what to expect and what to watch for. Also, sometimes the doctor will not be aware of which treatment each patient is receiving so that he or she can remain objective about how the disease is responding to the treatment and any side effects that patients may be experiencing.

Phase IV clinical trials study a drug that has already been approved by the Food and Drug Administration (FDA). Pharmaceutical companies often sponsor these trials to study expanded uses of drugs already available.

Before patients enter a clinical trial, all of the procedures that are to be done in the trial will be explained, and patients will be asked to sign an *informed consent*. By signing the document, patients are acknowledging that they understand the potential risks and benefits of the treatment they are to receive or of any tests that may be required. It is important to remember that patients may change their minds and withdraw from a clinical trial at any time. Non-English-speaking patients may ask for consent documents in their own language.

Some patients have said that they chose not to participate in a clinical trial because they thought that their health insurance would not cover the cost of their treatment. There are a number of new laws and programs, which vary from state to state, that may help pay for all or part of the costs of treatment. It is important to have all of your questions answered by your insurance representative, your health care team, or one of the groups listed in the resource list at the end of this discussion before agreeing to participate in a clinical trial. To obtain additional information about clinical trials, contact the organizations listed below.

Additional information about clinical trials

As a resource to our visitors, Lilly is providing links to the websites listed below. These websites are independent from Eli Lilly and Company. Because we do not control the content of the websites we may link to, and due to their constantly changing nature, we cannot be responsible for the content, accuracy, practices or standards of these non-Lilly sites. Lilly does not endorse the content of any third-party websites.

- NCI-PDQ (National Cancer Institute-Physician Database Query) at http://cancernet.nci.nih.gov/ or 1-800-4-CANCER (1-800-422-6237) (TTY: 1-800-332-8615)
- Centerwatch at http://www.centerwatch.com/
- National Institutes of Health at http://www.oncolink.upenn.edu/books/%20http://www.clinicaltrials.gov
- Association of Cancer Online Resources at http://www.acor.org/
- Pharmaceutical company websites

Your decision to take part in a clinical trial is up to you, your family, and your health care team. There are potential risks and benefits associated with clinical trials that you will want to discuss with your doctor before deciding to participate in a clinical trial. A list of questions to guide your discussions with your doctor about clinical trials appears below. If you choose not to participate in or do not qualify for a clinical trial, treatment options are still available for you, which are discussed in the next section, **Understanding your treatment options**.

Some questions to ask your health care team about clinical trials

1. Do you participate in clinical trials?
2. Do I qualify (meet the eligibility criteria) for any current clinical trials?
3. If I do qualify for a clinical trial, what is known about the effectiveness of the treatment being studied? What are the side effects? What is the purpose of the study?
4. How long does the clinical trial last? Can I stop participating in the clinical trial at any time I choose?
5. What costs am I responsible for if I participate in a study?
6. If I do not qualify for any current clinical trials, what are my options?
7. Will my privacy be protected?

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Understanding your treatment options

Determining which particular treatment is right for you depends on several factors, including your general physical health, the type of cancer you have and at what *stage* it was diagnosed, and the goal of therapy that you and your doctor have agreed upon. *Goal of therapy* refers to what you and your doctor expect from your treatment. If your goal of therapy is to treat your cancer as aggressively as possible, your treatment may be different from that of someone whose disease is more advanced or severe or who cannot tolerate certain side effects of therapy. Some people may determine that their goal of therapy is to be as comfortable as possible or to maintain their normal activities of daily living for as long as possible. Choosing a treatment with few side effects or choosing not to receive treatment may also be an option for you to discuss with your doctor.

Treatment options could include *surgery*, *chemotherapy*, *biotherapy*, *radiation therapy*, and *hormonal therapy*, or a combination of any of these, depending on the type and stage of cancer that you have. With some tumors, surgical removal of all or as much tumor as possible is considered the best treatment depending on the size and location of the tumor and whether the cancer cells have spread to other parts of your body, referred to as *metastasis*. If there is evidence that tumor cells have spread or if some of the tumor could not be removed during surgery, then one or more of the other available therapies may be used.

You should ask your doctor to talk with you about at least 2 treatment options. These options may be a combination chemotherapy regimen, chemotherapy with other kinds of therapy, or some combination of the above therapies. After your doctor has provided this information, ask about the potential benefits and risks associated with each therapy. Be sure to ask your doctor questions about how each therapy relates to your goal of therapy. Ask your doctor to write down the information he or she shares with you about how effective a therapy is and what the side effects are--regardless of which is most important to you. Take time to compare this information to your goal of therapy, and then discuss it with your doctor.

The following work sheet may be a useful tool to help you and your doctor decide which treatment is best for you, based on a comparison of benefits, risks, side effects, and treatment schedules for the alternatives suggested.

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Other considerations

Information about symptom management can be very lengthy and is specific to every individual. A symptom is something that you experience that is different from what is normal for you. It may be the result of the disease or may be due to the treatment. Some examples of common symptoms that you may experience include pain, nausea, vomiting, diarrhea, fatigue, rash, hair loss, numbness or tingling in the extremities, mouth sores, or changes in taste. Be sure that you inform your health care team of any symptoms that you may be experiencing. Your health care team are experts in providing information and individualized ways to manage your symptoms so that you can resume your usual daily activities.

Alternative and complementary therapies
Alternative and complementary therapies have many different definitions. A general definition of an alternative or complementary therapy is a treatment used for the control of cancer in place of or in addition to conventional medical therapy. One type of complementary therapy is supplementation of your diet with herbs or vitamins. Other alternative and/or complementary therapies involve using mental or physical techniques that may reduce stress, enhance your health, or stimulate the release of hormones that may be helpful in boosting your immune system. Some techniques include meditation, listening to motivational tapes, imagery, massage, acupuncture, yoga, and Tai Chi, among many others. Information on alternative or complementary therapies can be found in the media, in books, and on the Internet. Because of the large volume of information available on alternative and complementary therapies, this information is not discussed in detail here. Although some patients feel uncomfortable discussing these therapies with their doctor, your doctor should be willing to discuss alternative or complementary therapy options with you.

It is important that you let your health care team know if you are currently participating in any alternative or complementary therapies. These may have an unwanted effect on you or may alter the effectiveness of the cancer treatment that you are receiving. By being aware of these additional therapies, your health care team can better monitor your progress.

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Living beyond a cancer diagnosis: Finding your "new normal"

You have prepared yourself, made informed decisions, and actively participated in your treatment. As your treatment nears its end, you may experience many feelings, just as you did when you were informed of your cancer diagnosis. You are not alone. There are nearly 8.9 million *cancer survivors* in the United States. As your last treatment is completed, you may expect that things will suddenly return to normal and you may go back to your life as you knew it before you were diagnosed with cancer. You may discover, as many cancer survivors do, that you need to establish a "new normal."

Of course you would like your daily routine to return to the way it was before your illness, but you may find that you are more likely to have a new set of expectations and priorities as a result of your cancer, its treatment, and redefining your life after diagnosis. Consider the following tips from the American Cancer Society.

- Be kind to yourself. Focus on what you can do.
- Reach out to others. Reaching out to someone else can reduce stress.
- Don't be afraid to say no. Polite but firm refusals help you stay in control of your life.
- Talk about your concerns.
- Learn to pace yourself. Stop before you get tired.
- Give in sometimes. Not every argument is worth winning.
- Get enough exercise. It's a great way to get rid of tension in a positive way.
- Take time for activities you enjoy.
- Set priorities. You can't do everything at once.
- Take one thing at a time. If you're feeling overwhelmed, divide your list into manageable pieces.
- Having a plan can reduce the stress of the problem.
- Eat properly.
- Get enough sleep.

Survivorship issues
As a cancer survivor, you may be introduced to a whole new set of concerns such as fear of cancer recurrence, body image changes, issues related to sexuality and spirituality, and insurance, financial, and work-related concerns. Some cancer survivors report feeling guilty that they made it through their

cancer treatment while others they have met in their journey have not.

What people commonly fear most is the unknown. Share your fears with your health care team, your family, and your friends. Knowledge is powerful. Once you have identified your fears, accurate information can help to reduce them.

A major concern for cancer survivors is that their cancer will return. As your cancer treatment comes to an end and the time for your checkup approaches, or as the anniversary date of your cancer diagnosis nears, you may feel anxious. Be sure to ask your doctor what symptoms you should watch for and immediately report anything unusual. Whether you are still being monitored by your oncologist or have been referred back to your family doctor, follow their advice and continue to get regular checkups.

Your physical appearance may have changed as a result of your cancer or its treatment. Although these physical changes may be hard to accept at times, it is important for you to try to accept these changes as part of your "new normal". You may want to consider seeking the assistance of a therapist, another cancer survivor, or a loved one to help you adapt to these changes. In some cases, your health care team may be able to tell you about things that can be done to help your particular situation.

If you experience sexual difficulties as a result of your cancer treatment, discuss this with your health care team. You do not have to give up intimacy and affection during cancer therapy. Communication with your significant other is extremely important during this time. Providing each other with love, support, and comfort is important at this time in your life.

Many people find comfort in spiritual inspiration. Some turn to prayer or to a house of worship, while others turn to nature or the arts (such as painting, writing, or music) or meditative exercise (such as yoga). The form of expression you use is very personal and unique, and whatever form of expression you choose, you may find an inner strength to help you through this difficult time.

Nearly 80% of people diagnosed with cancer return to work. If this is a possibility for you, consider communicating your wants and needs with your employer or others who are directly affected by this change in your life. Maintaining honest, open communication can be healing. Many resources are available to help you through this time, including those listed in the **Education and support** section.

Hospice
Despite the many advances in cancer diagnosis and treatment in the last decade, some people will not survive their cancer diagnosis. If it appears that despite treatment, your cancer has advanced or you have chosen comfort care over treatment, you may be eligible for hospice care. Hospice focuses on providing physical, emotional, and spiritual support to patients and families of patients who are near the end of life. The goal of hospice is to help you live and to help make the end of life as comfortable as possible. Hospice can help your family care for you at home if that is what you and your family decide upon. Hospice offers respite care so that your caregivers can have occasional time off. Both inpatient and outpatient services may be available on a 24-hour basis. Hospice care is usually a team approach with doctors, nurses, pharmacists, social workers, home health care aides, and the clergy involved.

Find your focus. Build a network. Embrace the future.
You may have read all of the topics in this discussion, or you may have chosen to focus only on the parts that were important to you. Your journey may not be a continuous progression and you may have to make several decisions at

once, or you may have to re-evaluate and adjust your decisions. The network of support that you have developed may have long-lasting effects. The people you have met along the way, friendships you may have developed, and connections with your family and friends are all a part of your future. Embrace the future.

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- Alliance for Lung Cancer Advocacy, Support, and Education
  1.800.298.2436 or http://www.alcase.org/
- American Cancer Society
  1.800.ACS.2345 (1.800.227.2345) or http://www.cancer.org/
- Cancer Care
  1.800.813.HOPE (1.800.813.4673) or www.cancercare.org
- Cancer Research Foundation of America
  1.800.227.CRFA (1.800.227.2732) or http://www.preventcancer.org/
- Colon Cancer Alliance
  1.877.422.2030 or http://www.ccalliance.org/
- Cure for Lymphoma Foundation
  1.800.CFL.6848 (1.800.235.6848) or www.cfl.org
- The Leukemia and Lymphoma Society
  1.800.955.4572 or http://www.leukemia-lymphoma.org/
- National Alliance of Breast Cancer Organizations
  1.888.806.2226 or http://www.nabco.org/
- National Breast Cancer Coalition
  1.800.622.2838 or http://www.stopbreastcancer.org/
- National Brain Tumor Foundation

Today's featured work:
Self Portrait
by Anthony Ciambella

1.800.934.CURE (1.800.934.2873) or http://www.braintumor.org/

- National Cancer Institute*
  1.800.4CANCER (1.800.422.6237) or http://www.nci.nih.gov/
- National Coalition for Cancer Survivorship
  1.877.NCCS.YES (1.877.622.7937) or http://www.cansearch.org/
- National Colorectal Cancer Research Alliance
  1.800.872.3000 or http://www.nccra.org/
- Ovarian Cancer National Alliance
  202.331.1332 or http://www.ovariancancer.org/
- Pancreatic Cancer Action Network
  1.877.2PANCAN (1.877.272.6226) or http://www.pancan.org/
- Patient Advocate Foundation
  1.800.532.5274 or http://www.patientadvocate.org/
- Susan G. Komen Breast Cancer Foundation
  1.800.I'M AWARE (1.800.462.9273) or http://www.breastcancerinfo.com/
- The Wellness Community--National Headquarters
  1.888.793.WELL (1.888.793.9355) or http://www.wellness-community.org/
- US TOO! International, Inc.
  1.800.808.7866 or http://www.ustoo.com/
- Y-Me National Breast Cancer Organization
  1.800.221.2141 or http://www.y-me.org/

*These sites are government-sponsored resources

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Glossary

Biotherapy: Treatment to stimulate or restore the ability of the immune system to fight infection and disease. Also used to lessen side effects that may be caused by some cancer treatments. Also known as immunotherapy, biological therapy, or biological response modifier (BRM) therapy.

Cancer survivor: Anyone who has been diagnosed with cancer, from diagnosis to end of life, is considered a cancer survivor.

Chemotherapy: Treatment with medication, sometimes given orally, but more commonly by injection, into a vein or muscle to destroy cancer cells. Usually, it is a systemic treatment that reaches every organ of the body through the bloodstream.

Clinical trial: Research study that seeks to answer scientific questions and to find better ways to prevent or treat cancer.

Combination therapy: The use of more than one therapy to treat cancer.

Dietitian: A specialist trained to recommend specific diets or additions to your diet.

Goal of therapy: The result that you and your doctor seek to achieve from your treatment.

Hormonal therapy: Treatment or prevention of cancer by removing, blocking, or adding hormones that affect the growth of a tumor.

Informed consent: The process in which a person learns key facts about a clinical trial and voluntarily agrees to take part in it by signing a consent form describing the potential risks and benefits of treatment.

Infusion: Slow and/or prolonged delivery of a drug or fluids through a vein or artery.

Metastasis: The spread of cancer from one part of the body to another.

Oncologist: A doctor who specializes in treating cancer.

Today's featured work:
Ella
by Michele Szoka

Oncology nurse: A nurse with special training in caring for cancer patients and administering cancer treatments.

Oncology pharmacist: A pharmacist who specializes in preparing and dispensing cancer drugs and who can provide information about how a drug works and its side effects.

Protocol: An action plan for a clinical trial. The plan states what will be done in the study and why. It outlines how many people will take part in the study, what types of patients may take part, what tests they will receive and how often, and the treatment plan.

Radiation therapy: A treatment method that uses high-energy x-rays to destroy cancer cells.

Self-advocate: Working on behalf of oneself to take an active role in one's own cancer care treatment.

Side effects: Signs or symptoms that can occur with treatment. Common side effects of cancer treatments may include fatigue, nausea, vomiting, diarrhea, decreased blood cell counts, hair loss, numbness or tingling in the extremities, rash, and mouth sores.

Social worker: A professional who works with patients to help them with emotional, financial, insurance, and other resources that they may need during the course of their cancer care.

Stage: A term used to describe the extent of a cancer and whether it has spread from the original site to other parts of the body.

Surgical intervention: An operation to remove a tumor or to decrease the symptoms caused by the tumor.

Symptom: Something that you experience that is different from what is normal for you and may be the result of the disease or its treatment.

Tumor: An abnormal growth of tissue. Tumors may be either benign (not cancerous) or malignant (cancerous).

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Confronting Cancer Through Art is an exhibition by people whose lives have been touched by cancer.

Today's featured work:
Untitled
by Heather Darcy

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Breast Cancer Overview

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About Breast Cancer: An Overview

Breast cancer is the most common type of cancer among American women. Breast cancer is a group of related diseases in which cells within the breast become abnormal and divide without control or order. The most common types of breast cancer occur in the lining of the ducts or in the lobules of the breast.

One in nine women will develop breast cancer in her lifetime. Approximately 160,000 new cases of breast cancer are diagnosed each year. Most breast cancer occurs in women over the age of 50 years. With earlier detection methods, breast cancer is now found at an early stage of development in the majority of women.

All women are at risk for breast cancer. But women with a strong family history of breast cancer, a personal history of breast cancer, early first menstruation, late menopause, or first full-term pregnancy after age 30 are at a higher risk. The risk of developing breast cancer also increases with age. Long-term estrogen therapy, a high-fat diet and alcohol use have been reported as possible risk factors, but their relationship to breast cancer is uncertain. Many women who get breast cancer have none of the known risk factors. In most cases, the disease is probably the result of several factors -- known or unknown -- acting together.

The key to cure is early detection and prompt treatment. Physical exams by health care professionals, mammograms and monthly breast self-exams are the important keys to early detection. Women should report any physical changes in their breasts to a doctor. Warning signs include a lump or thickening of the breast or armpit; a change in the size or shape of the breast; a discharge from the nipple; or a change in the color or feel of the skin of the breast or nipple.

To find out the causes of these symptoms, a doctor performs a thorough physical exam. He or she may order blood tests and X-rays. The doctor also may need to remove a piece of breast tissue and look at it under the microscope to see if there are cancer cells present.

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Art Gallery

Today's artwork was donated by Laura, a pediatric cancer patient who received treatment for cancer at The Children's Hospital of Philadelphia

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There are many treatments for breast cancer. Treatment depends on the size and location of the tumor in the breast and extent of the disease in the armpit and the rest of the body. To develop a treatment plan to fit each patient's needs, the doctor also considers the woman's age and general health, as well as her feelings about the treatment options. Treatments used either alone or in combination include: surgery, radiation therapy, chemotherapy and hormonal therapy. Clinical trials that test new treatments also may be offered.

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Chemotherapy

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About Chemotherapy

This "Helpful Facts" sheet is designed to give you basic information on chemotherapy. More detailed information can be provided by your doctor or nurse. If you have other questions, or would like additional information, please talk to your doctor or nurse.

What is chemotherapy?

- Chemotherapy is the use of drugs to kill cancer cells.
- Depending upon the kind of cancer and its stage of development, chemotherapy can be used to:
  - Cure cancer
  - Prevent the spread of cancer to other parts of the body
  - Kill cancer cells that have spread to other parts of the body
  - Decrease the size of a cancerous tumor
  - Relieve symptoms caused by the cancer.

How does chemotherapy work?

- Chemotherapy drugs attack cancer cells and slow or stop the cell's ability to grow and multiply.
- Cancer cells go through many steps to grow. There are many types of chemotherapy drugs and each interferes with cell growth at a different step. Certain chemotherapy drugs are given only for certain diseases.

How is chemotherapy given?

- Chemotherapy drugs travel throughout the body in the blood stream. The most common ways to give chemotherapy are:
  - Oral (taking pills or capsules by mouth)
  - Intravenous (IV) (injecting medication into a vein).
  - Intramuscular (IM) (injecting medication into the muscle)
  - Subcutaneously (injecting medication into the skin)
- Chemotherapy drugs can be delivered to specific body areas by using special techniques. Some examples are:
  - Intrathecal: Chemotherapy is placed directly into the central

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    - nervous system (brain /spinal cord)
    - Intra-arterial: Arteries are used to deliver chemotherapy directly to the organs
    - Intraperitoneal: Chemotherapy is delivered directly into the abdomen.
    - Intravesical: Chemotherapy is placed in the bladder.

What if my veins are hard to find?

- If you requires frequent IV insertions, have veins that are hard to find or need to receive multiple drugs a semi-permanent type of IV called a vascular access device (VAD) may be recommended by your doctor or nurse. Examples of these devices include portacaths, PICC lines and hickman catheters .
- Chemotherapy, IV fluids and blood products can be administered through the VAD. Blood can be drawn from them as well.
- These devices are removed after all your treatments are completed.

Will it hurt to receive the chemotherapy?

- Most chemotherapy drugs do not cause discomfort during the IV administration. Some people report a feeling of "coolness" as the drug is started.
- A few drugs can "irritate" the veins causing pain at the IV site or along the vein.
- A few drugs are capable of causing skin blisters and damage if the drug leaks into the skin.
- Tell your nurse or doctor immediately if you experience any feelings of pain, burning, discomfort or skin changes at the IV site.

How long will I receive chemotherapy?

- Chemotherapy is given in "cycles". Each cycle consists of the days of your treatment followed by a set time for normal cells to recover. Then the cycle is repeated.
- Your doctor will select the best chemotherapy schedule for you based on factors including:
    - The type of cancer and its stage
    - The chemotherapy drugs received
    - Other treatments received
    - The goals of treatment
    - The response to treatment

How much chemotherapy will I receive?

- Most chemotherapy drug doses are based on the patient's height and weight, while others are based only on weight.
- Doses occasionally need to be adjusted during your treatment depending on side effects.

Will chemotherapy be the only treatment I receive?
Chemotherapy may be the only treatment. Sometimes it is used with surgery, radiation therapy, immunotherapy or hormonal therapy.

What are the side effects of chemotherapy?

- Your reaction to chemotherapy will depend on :
    - The specific chemotherapy drug(s) received
    - The chemotherapy dose received
    - Other treatments received

- Normal cells of your GI tract, skin, hair and bone marrow grow rapidly, like cancer cells, and are also affected by chemotherapy. Consequently, the most common side effects of chemotherapy are: low blood counts, nausea, vomiting, diarrhea, hair loss, mouth sores and skin changes.
- Other side effects include: fatigue, allergic reactions, infertility/changes in sexual function, nerve damage, secondary cancers and damage to heart, lung, kidney, bladder or liver.
- Most side effects from chemotherapy are temporary.
- Many patients have few or no side effects.
- Your doctor and nurse will discuss ways to prevent or control many of these side effects.

>Why do I need regular blood tests?

- Since many chemotherapy drugs can significantly lower blood counts your doctor and nurse will be watching for changes in your White Blood Count (WBC), Red Blood Count (RBC), and platelet count. A low WBC indicates a risk for developing an infection. A low RBC may indicate anemia. A low platelet count may indicate a risk for bleeding.
- A Complete Blood Count (CBC) checks the WBC, RBC and platelet count. A CBC is usually done at the beginning of each treatment cycle. If the WBC, RBC or platelet counts are too low, your chemotherapy treatment may need to be delayed until your blood counts have normalized.
- A CBC is also sometimes checked between treatments.

Where are chemotherapy treatments given?

- Most chemotherapy can be given in the outpatient chemotherapy suite, which is on the same floor as where you see your Penn medical oncologist. (14 and 15 Penn Tower) These chemotherapy suites provide comfortable settings where patients can receive their treatment and can be carefully watched by their chemotherapy nurse, who is specially trained and certified in giving chemotherapy
- You may be hospitalized if your chemotherapy treatment requires long infusion times, is given for multiple days in a row or requires close monitoring.
- Some chemotherapy treatments are given at home.

What can I do to make the chemotherapy visit more pleasant?
Bring reading materials, books on tape, small hand crafts (needlepoint, knitting, drawing materials), CD player or radio with headphones, and other items that can help pass the time. Some of the chemotherapy rooms have TV's and VCR's so feel free to bring a video. Some patients get a metal taste in their mouth as a result of the chemotherapy; mints or mint-flavored gum can help relieve this taste. You may also want to bring a sandwich, small packets of crackers or cookies, and something to drink depending on the length of your visit.

Family members and friends are welcome. It is helpful to have a friend or family member drive you to and from treatment in case you are not feeling well.

When do I see my doctor?
You will see your medical oncologist throughout your chemotherapy treatment, usually just before your chemotherapy treatment. Your medical oncologist will discuss with you how often your doctor appointments will occur.

What happens if I need to cancel an appointment?
It is very important for you to stick to your treatment schedule. Treatment schedules can sometimes be adjusted for holidays and special events; just let

your doctor or nurse know.

What happens if I miss an appointment?
If you miss an appointment, call your doctor or nurse immediately.

Your Chemotherapy Treatment Plan

The chemotherapy you will receive is:____________________________________.
Your treatment will be _____day(s) every __________ weeks. You will receive a total of treatments.
You will receive chemotherapy by:___________________________(i.e., injection, pill, port catheter)
Other:____________________________________.

Other Resources

- Chemotherapy and You
- Radiation Therapy and You
- What You Should Know About (NCI series)
- Feeling Better Again
- What You Should Know About Low Blood Counts
- Information sheets on: Constipation, Diarrhea, Hair loss/Alopecia, Mouth Sores, Nausea and Vomiting, Fatigue, Pain, Vascular Access Devices

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Types of Cancer

Coping: Intimacy Fact Sheet

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

Breast Cancer, Intimacy and Sexuality

Because of the physical changes in the body, breast cancer can make a woman feel differently about herself. It may also affect feelings about relationships, particularly physical intimacy. These are very real-and, also, very natural feelings. Be attuned to how you are feeling and find ways to discuss these concerns with your partner, doctor, nurse, friend, another patient with breast cancer, or a counselor. It is important to understand and address these concerns so that they do not have a long-term effect on you and people close to you.

Will my relationship change?
Breast cancer brings on many stresses for both you and your partner. By sharing the experience and your feelings, you can develop an even closer, more open relationship than ever before. This takes communication and work, but it has been done over and over by many couples.

How will my partner feel?
Studies have shown that partners care most about their loved one being with them and a part of their lives. Some partners, however, will feel a loss about the change in your body. You may as well. It is important to acknowledge these feelings, which may include guilt or anger. As you want your partner to understand and accept the changes you are experiencing, you need to assure your partner that you accept their range of fears, concerns and feelings.

Will my sexual desire change?
It is possible that both of you may need to accept less sexual activity for a while and to find different ways of expressing intimacy. There are many physical reasons for a decrease in sexual desire. The most common physical reason is that treatment can reduce hormone levels. Others include nausea and discomfort related to chemotherapy.

Emotional issues can be a major factor as well. Because of the physical change in your body, your feelings about yourself may change and this can lead to a loss of desire. Becoming more comfortable and accepting of physical changes, and recognizing that you as a person have not changed, is key. Understanding

OncoLink Art Gallery

Confronting Cancer Through Art is an exhibition by people whose lives have been touched by cancer.

Today's featured work:
Restraining Order
by Nancy Citrino

how you and your partner are feeling, and accepting them, is part of the process toward finding different ways to feel close and loved. Many of the factors that contribute to a personal change in sexual desire resolve over time so that you can return to your prior level of desire and activity.

Will I feel depressed?
Depression may be a result of your cancer experience. Your feelings about yourself and your life can change significantly during your cancer experience. Depression can be treated with counseling and/or medication to help you regain a sense of control and enjoyment in your life. It is important to tell your doctor or nurse about how you feel so that the needed steps can be taken.

What can I do?
It is very important to talk with your partner so that you are both comfortable discussing the physical and emotional aspects throughout your cancer experience. Reading books, booklets, and information on the Internet, combined with attending seminars on the subject, can provide important information and a context for understanding your emotions. This material can also provide useful ways of addressing issues as they arise.

The University of Pennsylvania Cancer Center offers programs that cover this subject. We also offer a Counseling Service where you and/or your partner can comfortably discuss these issues with an experienced, caring professional. The American Cancer Society has an excellent booklet, Sexuality and Cancer, which is available for free by calling your local ACS.

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■ Types of Cancer

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Exercise

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: February 10, 2002

The following document is a PDF. You will need Adobe Acrobat Reader which can be downloaded for free from Adobe.

Helpful Exercises After Breast Cancer

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Today's artwork was donated by Peter, a pediatric cancer patient who received treatment for cancer at The Children's Hospital of Philadelphia

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Helpful Exercises After Breast Surgery

The following exercises are to help you regain your normal shoulder and arm movement (range of motion) after your breast surgery. Check with your doctor, nurse or physical therapist **before you** begin these exercises.

These exercises are not designed for patients who have had breast reconstruction. If you have had reconstruction you will be given a different set of exercises.

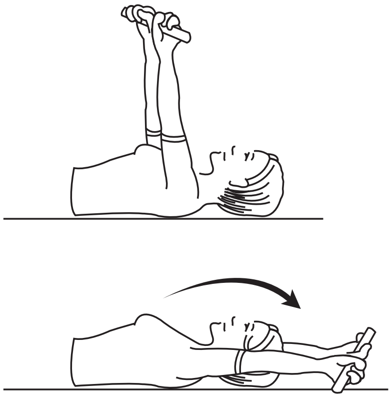
Helpful Guidelines

- If you are experiencing pain, discontinue exercises and notify your doctor or nurse.
- If your arm becomes swollen or very tender after these exercises, contact your doctor, nurse or physical therapist.
- After your surgery it may take about 2-3 months to recover full motion and strength in your arm.
- The best way to regain motion is to work gradually, increasing your movement in small steps.
- It may be helpful to do exercises when your muscles are warm, such as after bath or shower. Do not use a heating pad on your affected arm.
- After surgery or radiation you may have tightness in your chest tissue or armpit. This is normal. Continue the exercises until the feeling of tightness is gone.
- You may notice a burning, tingling or soreness to the back of your arm and along your chest wall. Do not be alarmed. This is caused by irritated nerve endings. These sensations may become stronger 2 to 3 weeks after your surgery and usually subside. Movement may temporarily increase these sensations. It is important that you continue your exercises to maintain your normal arm movement.
- If possible, do exercises in front of a mirror to keep your correct posture and motion
- Be sure to breathe during your exercises you may not realize your are holding your breath.

Remember:

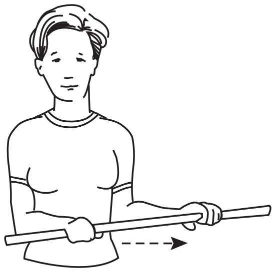
- Do not lift heavy objects after your surgery. Your doctor will let you know when you may resume activities such as housework, etc.
- You are encouraged to use your elbow and hand in performing your daily activities, as long as these activities involve light to normal use of your arm.

  The instructions below are a guide. Start gradually if needed, and work up to the recommended repetitions.



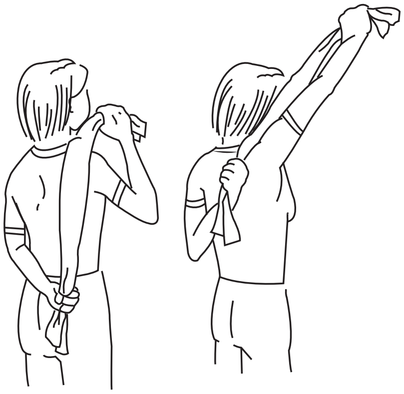
Exercise 1 of 5
Shoulder External Rotation/Abduction

1. Lie on back as shown, holding stick with both hands
2. Raise both hands overhead, so that you feel a stretch
3. Hold 10 seconds
4. Do 10 repetitions, 2 times a day



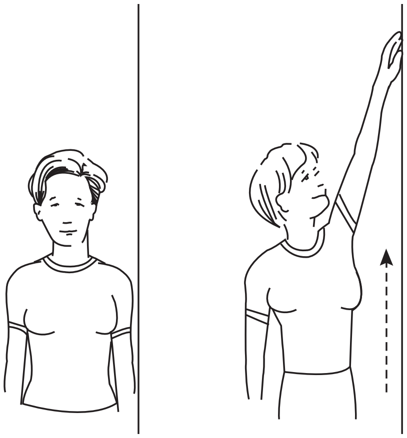
Exercise 2 of 5
Shoulder External Rotation

1. Stand with elbows bent to 90 degrees, holding stick in front of you
2. Using stick for assistance, rotate your affected hand and forearm out away from your body
3. Keep your elbow at your side. You should feel a stretch in your shoulder
4. Hold 10 seconds
5. 10 repetitions, 2 times a day



Exercise 3 of 5
Shoulder Internal Rotation

1. Stand with towel as shown, affected arm behind your back
2. Stretch the arm up behind your back by pulling upward on the towel with the other hand for assistance until you feel a stretch
3. Hold 5-10 seconds
4. 5 repetitions, 2 times a day



Exercise 4 of 5
Diagonal Wall Climbing

1. Stand at a diagonal with affected side toward wall about 6 inches away from wall
2. Slowly "walk" fingers up the wall
3. Stop when you feel it pulling on your incision
4. Slowly walk back down wall, then repeat. Goal is to reach the same height as your unaffected arm
5. 10 repetitions, 1-2 times day

Exercise 5 of 5
Pectoral Stretch

1. Stand in a corner about 1-2 feet from wall with hands on wall as shown
2. Gently lean into corner until you feel a stretch in your chest
3. Hold 10-15 seconds
4. 5 repetitions, 2 times a day

Types of Cancer

Types of Cancer > Breast Cancer > Preparing for Breast Surgery: Helpful Facts

Glossary

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

Adjuvant Therapy
Treatment that is added to increase the effectiveness of a primary therapy. It usually refers to hormonal therapy, chemotherapy, or radiation added after surgery to increase the chances of curing the disease or keeping it in check.

Antiestrogen
A substance (for example, the drug tamoxifen) that blocks the effects of estrogen on tumors. Antiestrogens are used to treat breast cancers that depend on estrogen for growth.

Axillary Dissection
A surgical procedure in which the lymph nodes in the armpit (axillary nodes) are removed and examined to find out if breast cancer has spread to those nodes and to remove any cancerous lymph nodes.

Biopsy
A tissue sample, examined under the microscope.

Breast Conservation Therapy
Surgery to remove a breast cancer and a small amount of benign tissue around the cancer, without removing any other part of the breast. This procedure is also called lumpectomy, segmental excision, or limited breast surgery. The method may require an axillary dissection and usually requires radiation therapy in addition to the breast conservation surgery.

Breast Reconstruction
Surgery that rebuilds the breast contour after mastectomy. A breast implant or the woman's own tissue provides the contour. If desired, the nipple and areola may also be re-created. Reconstruction can be done at the time of mastectomy or any time later.

Carcinoma in Situ
An early stage of cancer, in which the tumor is still only in the structures of the organ where it first developed, and the disease has not invaded other parts of the organ or spread (metastasized). Most in situ carcinomas are highly curable.

OncoLink
Art Gallery

Today's artwork was donated by Jackie, a pediatric cancer patient who received treatment for cancer at The Children's Hospital of Philadelphia

Visit the Children's Art Gallery

Chemotherapy
Treatment with drugs to destroy cancer cells. Chemotherapy is often used in addition to surgery or radiation to treat cancer when metastasis is proven or suspected, when the cancer has come back (recurred), or when there is a strong likelihood that the cancer could recur.

Cyst
A fluid-filled mass that is usually benign. The fluid can be removed for analysis.

Duct
A hollow passage for gland secretions. In the breast, a passage through which milk passes from the lobule (which makes the milk) to the nipple.

Ductal Carcinoma in Situ
The most common type of non-invasive breast cancer. Cancer cells have not spread beyond the ducts.

Estrogen
A female sex hormone produced primarily by the ovaries and in smaller amounts by the adrenal cortex. In women, levels of estrogen fluctuate on nature's carefully orchestrated schedule, regulating the development of secondary sex characteristics, including breasts, regulating the monthly cycle of menstruation; and preparing the body for fertilization and reproduction. In breast cancer, estrogen may promote the growth of cancer cells.

Fibroadenoma
A type of benign breast tumor composed of fibrous tissue and glandular tissue. On clinical examination or breast self-examination, it usually feels like a firm, round, smooth lump. These usually occur in young women.

Fibrocystic Changes
A term that describes certain benign changes in the breast; also called fibrocystic disease. Symptoms of this condition are breast swelling or pain. Signs that a health care professional can observe on clinical breast examination are the presence of nodularity (nodules), lumpiness, and sometimes, nipple discharge. Because these signs sometimes mimic breast cancer, diagnostic mammography or microscopic examination of breast tissue may be needed to show that there is no cancer.

Fibrosis
Formation of fibrous (scar-like) tissue. This can occur anywhere in the body.

Her-2/Neu
A gene that produces a type of receptor that helps cells grow. Breast cancer cells with too many Her-2/new receptors tend to be exceptionally fast-growing.

Hormone
A chemical substance released into the body by the endocrine glands, such as the thyroid, adrenal, or ovaries. The substance travels through the bloodstream and sets in the motion various body functions. For example, prolactin, which is produced in the pituitary gland, begins and sustains the production of milk in the breast after childbirth.

Hormone Receptor Assay
A test to see whether a breast tumor is likely to be affected by hormones or if it can be treated with hormones.

Hormone Therapy
Treatment with hormones, drugs that interfere with hormone production or

hormone action, or surgical removal of hormone-producing glands to kill cancer cells or show their growth. The most common hormonal therapy for breast cancer is the drug tamoxifen. Other hormonal therapies include megestrol, aminoglutethimide, androgens and surgical removal of the ovaries (oophorectomy).

Intraductal Papillomas
Small, finger-like, polyp-like, noncancerous growths in the breast ducts that may cause a bloody nipple discharge. These are most often found in women 45 to 50 years of age. When many papillomas exist, breast cancer risk is slightly increased.

Latissimus Dorsi Flap Procedure
A method of breast reconstruction that uses the long flat muscle of the back, by rotating it to the chest area.

Lobular Carcinoma in Situ
Also called lobular neoplasia. Cancer that has not spread beyond the lobules.

Lumpectomy
Surgery to remove the breast tumor and a small amount of surrounding normal tissue.

Lymph Nodes
Small bean-shaped collections of immune system tissue such as lymphocytes, located along lymphatic vessels. They remove waste and fluids from lymph and help fight infections. Also called lymph glands.

Lymphedema
An infrequent complication after breast cancer treatment. Swelling in the arm caused by excess fluid that collects after lymph nodes and vessels are removed by surgery or treated by radiation. This condition is usually persistent although not painful.

Mastectomy
Removal of the entire breast. In a simple or total mastectomy surgeons do not cut away any lymph nodes or muscle tissue; in a modified radical mastectomy, surgeons remove the breast and some armpit lymph nodes; in a radical mastectomy (now rarely performed) surgeons remove the breast, armpit lymph nodes, and chest wall muscles under the breast.

Menopause
The time in a woman's life when monthly cycles of menstruation cease forever and the level of hormones produced by the ovaries decreases. Menopause usually occurs in the late 40s or early 50s, but it can also be caused by surgical removal of both ovaries (oophorectomy), or by some chemotherapies that destroy ovarian function.

Metastasis
The spread of cancer cells to distant areas of the body by way of the lymph system or bloodstream.

Neoadjuvant Therapy
Systemic therapy, such as chemotherapy or hormone therapy, given before surgery. Adjuvant therapy can shrink some breast cancers, so that surgical removal can be accomplished with a less extensive operation that would otherwise be needed.

Nodal Status
Indicates whether a breast cancer has spread (node-positive) or has not

spread (node-negative) to lymph nodes in the armpit (axillary nodes). The number and site of positive axillary nodes can help predict the risk of cancer recurrence.

Oophrorectomy
Surgery to remove the ovaries.

Ovary
Reproductive organ in the female pelvis. Normally a woman has two ovaries. They contain the eggs (ova) that, when joined with sperm, result in pregnancy. Ovaries are also the primary source of estrogen.

Palpation
Using the hands to examine. A palpable mass in the breast is one that can be felt.

Progesterone
A female sex hormone released by the ovaries during every menstrual cycle to prepare the uterus for pregnancy and the breasts for milk production (lactation).

Prognosis
A prediction of the course of disease; the outlook for the cure of the patient. For example, women with breast cancer that was detected early and received prompt treatment have a good prognosis.

Sentinel Node Biopsy
In a sentinel lymph node biopsy, the surgeon injects a radioactive substance and/or blue dye into the area around the tumor. Lymphatic vessels carry these materials to the sentinel lymph node (also called the sentinel node). The doctor can see the blue dye or detect the radioactivity (with a geiger counter) in the sentinel node, which is cut out and examined. If the sentinel node contains cancer, more axillary lymph nodes are removed. But, if it is free of cancer, the patient can avoid additional axillary surgery and its potential side effects.

S-Phase Fraction (SPF)
The percentage of cells that are replicating their DNA. DNA replication usually indicates that a cell is getting ready to split into two new cells. A low SPF is a sign that a tumor is slow-growing; a high SPF shows that the cells are dividing rapidly and the tumor is growing quickly.

Stages
Indicate how far a breast cancer has spread.

Stereotactic Needle Biopsy
A method of needle biopsy that is useful in some cases in which calcifications or a mass can been seen on mammogram but cannot be located by touch. Computerized equipment maps the location of the mass and this is used as a guide for the placement of the needle.

Supportive Care
Measures taken to relive symptoms and improve quality of life, but not expected to destroy the cancer. Pain medication is an example of supportive care.

Systemic Therapy
Treatment that reaches and affects cells throughout the body; for example, chemotherapy.

Tamoxifen (Brand Name: Nolvadex)
This drug blocks the effects of estrogen on many organs, such as the breast. Blocking estrogen is desirable in some cases of breast cancer because estrogen promotes their growth. Recent research suggests that tamoxifen may lower the risk of developing breast cancer in women with certain risk factors.

Transverse Rectus Abdominus Muscle Flap Procedure
A method of breast reconstruction in which tissue from the lower abdominal wall which receives its blood supply from the rectus abdominus muscle is used. The tissue from this area is moved up to the chest to create a breast mound and usually does not require an implant. Moving muscle and tissue from the lower abdomen to the chest results in flattening of the lower abdomen (a "tummy tuck"). Also called a TRAM flap or rectus abdominus flap procedure.

Ultrasound
High frequency sound waves used to produce images of the breast.

For a more comprehensive glossary, you may access the ACS web site at http://www.cancer.org/

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Types of Cancer > Breast Cancer > Preparing for Breast Surgery: Helpful Facts

Managing Symptoms: Bowel Laxative Regimen

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

To Prevent or treat constipation your doctor or nurse may recommend the following schedule of laxatives and stool softeners. **DO NOT TAKE ANY MEDICATIONS UNLESS INSTRUCTED BY YOUR DOCTOR OR NURSE.**

- Routinely take 2 tablets of Senekot-S® at bedtime. This can be increased by your doctor or nurse to 2-3 times per day, if needed.
- If you have not had a bowel movement for 1-2 days (days 1-2):
  - Continue the Senekot-S®
  - Take 2 tablespoons of Milk of Magnesia at dinner time and bedtime
- If no bowel movement by the next morning (day 3):
  - Continue the Senekot-S®
  - Take 2 Ducolox® tablets 3 times during the day and at bedtime
- If no bowel movement by the next morning (day 4):
  - Continue the Senekot-S®
  - **Contact your doctor or nurse** who may instruct you take 1/2 - 1 bottle of Magnesium Citrate in the morning
  - If still no bowel movement by the afternoon, contact your doctor or nurse again. You might be instructed to take a Fleet's® enema or Ducolox® suppository, unless your white blood cell or platelet count is low
- If no bowel movement by the next morning (day 5):
  - **Contact your doctor or nurse again**

Call your doctor or nurse at any time if you have:

- Nausea or vomiting
- Abdominal pain, cramping or swelling
- Blood in stool
- Rectal pain

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Confronting Cancer Through Art is an exhibition by people whose lives have been touched by cancer.

Today's featured work:
Wave Bye-Bye
by Sue Markley Okamoto

- Loose or watery stool
- Fever greater than 100.5F

If you have any questions about the bowel laxative regimen or need additional information or instruction, ask your doctor or nurse. Please let your doctor or nurse know if you would like information on other topics.

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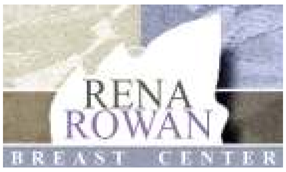

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Types of Cancer > Breast Cancer > Preparing for Breast Surgery: Helpful Facts

Managing Symptoms: Constipation

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

What is constipation?
Constipation is a decrease in the number of daily bowel movements and/or the difficult passage of hard stool.

What causes constipation?

- Decreased fluid and food intake
- Decreased activity
- Some medications
- Cancer treatments (chemotherapy)
- Cancers of the digestive system

When should I call the doctor or nurse?
Call your doctor if you have any of the following:

- Decrease in number of stools passed daily or hard stool
- No bowel movement in 2 days
- Blood in the stool
- Rectal pain
- No bowel movement within 1 day of taking a laxative prescribed by the doctor
- Nausea/vomiting
- Abdominal pain, cramping or swelling

What can I do?

- Increase the amount of high fiber foods in your daily diet, such as:
- Fresh raw vegetables and fruits, especially those with skins (apples, pears, plums) and seeds - unless your white blood cell count is low.
- Bran, whole grains and cereals, granola, wheat germ flakes
- Dried fruits, especially dates, prunes and apricots
- Prune juice
- Dried beans
- Drink 6-8 glasses of fluid per day, such as:
- Fresh fruit juices, except apple juice
- Warm or hot fluids, especially in the morning

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Today's featured work:
Portrait of a New Life
by Nancy Fried

- Increase your physical activity as much as possible. Even short walks will help decrease constipation
- Attempt a bowel movement at a regular time each day, preferably after breakfast.
- Talk with your medical oncologist or nurse before using over-the-counters laxatives, stool softeners or enemas.
- Avoid chocolate, cheese, eggs or fatty fried foods.

How is Constipation Treated?
Treatment of constipation will depend on its cause. Your doctor or nurse may recommend a bowel regimen.

- Do not take any medications unless instructed by your doctor or nurse.

- If you have any questions about constipation or need additional information, ask your doctor or nurse. Please let your doctor or nurse know if you would like information on other topics.

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Managing Symptoms: Pain

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

This "Helpful Facts" sheet is designed to give you basic information on pain. More detailed information can be provided by your doctor or nurse. If, you have other questions or would like additional information, please talk to your doctor or nurse.

What is Pain?

- Pain is an unpleasant sensation of hurt. Pain is whatever the person says it is and exists whenever the person says it does. It can be described as causing a vague discomfort or significant distress. It can be stabbing, aching, pinching, throbbing or shooting in nature.
- Acute pain is temporary and lasts for a relatively short time. It is usually confined to one area and is easy to describe.
- Chronic pain lasts for long periods of time. It is not always confined to one area and can be difficult to describe. Often patient's with chronic pain "don't look like they are in pain."
- Pain can decrease your activity and appetite, cause difficulty sleeping, and make you feel anxious or depressed.

What Causes Pain?

Pain is caused by damage to the body's tissues. Some common causes include:

- Cancer itself putting pressure on or damaging organs, nerves or bones.
- Some cancer treatments like surgery, radiation, chemotherapy and growth factors.
- Other diseases (e.g. arthritis).
- Infections.
- Blocked blood vessels.

When Should I Call the Doctor or Nurse?

If you have:

- Any new pain, especially if it is persistent or severe.
- An increase in the amount or frequency of pain that you experience.
- Pain that does not improve after taking pain medication or returns before the next scheduled dose.

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Today's featured work:
Examination
by Mark Barmak Shetabi

- Side effects from pain medications (e.g. sleepiness, nausea, constipation).
- Pain that is accompanied by numbness, tingling or weakness of arm or leg; difficulty walking, urinating or having a bowel movement.

What is a pain scale?
A pain scale is a way of describing how bad the pain is so that the pain can be treated correctly. On the 0 to 10 scale, 0 means no pain and 10 means the pain is as bad as it can get.

How is Pain Treated?
Medications are usually used to treat cancerrelated pain. Do not take any medications, even over the counter medications, unless instructed by your doctor or nurse. Some commonly used medications are:

Non-prescription (Over the Counter) Medications

	Acetaminophen (Tylenol)	**Salisytates** (Aspirin)	**Non-Steroidal Anti-Inflammatory Drugs** (NSAID'S) (Ibuprofen, Motrin, Advil, Trilisate, Toradol, Naprosyn)
Acts by:	Blocks pain transmission	Decreases swelling and inflammation	Decreases swelling and inflammation
Used for:	Mild-moderate pain	Mild-moderate pain	Mild- moderate pain
Side effects:	Liver damage	Stomach irritation, hearing changes, bleeding	Stomach irritation, bleeding, kidney damage

Prescription Medications

	Narcotics (Morphine, Dilaudid, Oxycodone, Methadone, Fentanyl)	**Anti-convulsants** (Dilantin, Tegretol, Neurontin, Topamax)	**Anti-depressants** (Elavil, Pamelor, Trazedone, Desyrel)	**Steroids** (Decadron, Prednisone)
Acts by:	Blocks pain transmission	Action in pain relief is unclear	Action in pain relief is unclear.	Decreases swelling and inflammation
Used for:	Moderate-severe pain	"Nerve pain" (tingling, burning or shooting pain)	"Nerve pain" (tingling, burning or shooting pain)	Pain caused by pressure and swelling
Side effects:	Constipation, nausea and drowsiness for the first few days, dry mouth	Drowsiness	Constipation, drowsiness, dry mouth	Fluid retention, stomach irritation, facial flushing, excitation, increased

				blood sugar, muscle weakness

Remember: Do not take any medications, even over the counter medications, unless instructed by your doctor or nurse.

How often should I take my pain medications?

- Take the medication as prescribed by your doctor. Most pain medications start to work in 3060 minutes and last 46 hours. Other medications, such as the anticonvulsants and antidepressants take a few days to start working.
- It is also important to take the medication as soon as you start to feel the pain. If you wait until the pain is severe, it will take more medication and a longer period of time to control the pain.
- If you require multiple doses a day of narcotic pain medication, your doctor may prescribe a "long acting" pain preparation.
- You should keep a record of how often you take your pain medication and how much relief you feel. Share this record with your doctor and nurse.

Will I become addicted to my narcotic pain medications?

- No. Addiction happens with use of the drug for nonmedical purposes (getting high). You are taking it for pain, which is what it is for.
- Anyone taking narcotic pain medications on a regular basis for as little as 37 days may experience physical withdrawal symptoms if the medication is stopped quickly. Withdrawal can be avoided by gradually decreasing the amount of pain medication as directed by your nurse or doctor.

If I take pain medication now will it work later "when I really need it"?
Yes. The medication dose can be increased as necessary.

Can I drive while taking pain medications?
Initially, some pain medications can cause sleepiness. Your doctor or nurse may recommend not driving. Avoid or limit the use of alcohol and other sedating medications.

Are there any other ways to treat pain?

- If the pain is being caused by a cancerous tumor your doctor may recommend treatments such as surgery, chemotherapy or radiation therapy to remove the tumor or decrease its size.
- A nerve block is a method of injecting a medication into or around a nerve that is causing pain.
- Other ways to decrease pain include:
  - Heat and cold applications
  - Massage
  - Acupuncture and acupressure
  - Relaxation techniques
  - Guided imagery
  - Biofeedback
  - Hypnosis
  - Counselling
  - Diversionary activities (watching TV, listening to music)

Other Resources

- Questions and Answers About Pain Control
- Pain Management Guidelines for Patients
- Feeling Better Again
- Information sheets on: Chemotherapy, Constipation, Bowel Laxative Regimen, Nausea/Vomiting, Fatigue.

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Types of Cancer

Types of Cancer > Breast Cancer > Preparing for Breast Surgery: Helpful Facts

Managing Symptoms: Weight Gain

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 13, 2002

Weight Gain in Breast Cancer Patients

Will my weight change as a result of my breast cancer treatment?
Some breast cancer patients find that their weight does not change during treatment, while others find that they gain weight. This is typically due to certain medications, hormone treatment, lack of activity, or a particular type of chemotherapy that is being used. These treatments can increase appetite and fluid retention.

What can I do to avoid weight gain?
Talk to your doctor about the chances of possible weight gain. A low-fat, calorie controlled diet is generally recommended for many breast cancer patients. Some general tips include:

- " Emphasize fruits, vegetables, as well as whole-grain breads and cereals.
- " Eat lean meats, such as lean beef, no pork, and chicken without the skin. Fish is naturally low in fat.
- " Use low-fat dairy products (skim milk, fat free yogurt).
- " Chose low-fat, cooking methods, such as broiling, braising and steaming.
- " Avoid snacking on high-calorie foods. Choose fruits and vegetables which are high in fiber and have no fat.
- " Do not add fat, salt, or sugar to your food.
- " If you feel well enough, include some exercise to help maintain muscle.

Setting realistic goals in light of your treatment program and overall sense of well-being is probably the most important thing you can do for yourself.

What should I do if I notice a significant weight gain?
Let your doctor know so that you can find out what is causing the change. Sometimes, the drugs you are taking cause your body to hold excess fluid, which may cause weight gain. In such cases, you may be advised to reduce your salt intake and to take a diuretic which can help your body get rid of the water. Together you can decide on a weight control strategy that is right for you.

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Today's featured work:
Mother-Daughter Dresses
by Nina Rake

Should I take vitamins?

A well-balanced diet should provide your daily vitamin and mineral needs. However, your treatments and the stress from treatments could increase those needs. A multi-vitamin that provides the Recommended Daily Allowances is a good idea. Not all vitamins are alike, however, so it's a good idea to talk to your doctor, nurse or nutritionist about which vitamins you are taking to ensure that they won't have a negative health impact.

Can I get help?

Yes. The Cancer Center's nutrition counselors can help you develop a diet that is healthy and appropriate for you. They can also meet with you throughout your treatment to discuss adjustments to your diet so that you can reach or maintain your desired weight and nutrition goals. The nutrition counselor can provide information and advice on different diet plans, vitamins, and herbal therapies you may have heard about or are considering. We also have periodic seminars on nutrition for our patients and families. Call 215-615-0538 for information or to schedule an appointment.

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Types of Cancer

Types of Cancer > Breast Cancer > Preparing for Breast Surgery: Helpful Facts

Preparing for Surgery: Sentinel Lymph Node Biopsy

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About Sentinel Lymph Node Biopsy

This "Helpful Facts" sheet is designed to give you basic information on sentinel lymph node biopsy. More detailed information can be provided by your doctor or nurse. If, you have other questions or would like additional information, please talk to your doctor or nurse.

What is the Lymph System?

The lymph system is important in your body's defense against infection. It is made up of lymph vessels and lymph nodes. The lymph vessels collect fluid and protein from surrounding body tissues. This fluid then goes through the lymph nodes, which act to filter out and trap bacteria, viruses, cancer cells, and other unwanted substances. Lymph nodes can be found clustered in various parts of the body, including the neck, axilla (underarm area) and groin.

What is a Sentinel Lymph Node Biopsy?

The sentinel lymph node biopsy is an alternative to the axillary lymph node dissection when all of the lymph nodes are removed. The sentinel lymph node is the first node or nodes that are "standing guard" for your breast. If cancer cells are breaking away from the tumor and traveling through the lymph system, the sentinel node(s) are the first lymph nodes to which cancer cells would spread. In a sentinel node biopsy for breast cancer, your surgeon looks under the arm (axilla) for the first lymph node(s) that drain the breast. Only those lymph nodes identified as sentinel lymph nodes are removed. If the sentinel node(s) do not have cancer, chances are the other nodes in the axilla have not been affected and can be left alone. If the sentinel lymph node biopsy is positive, however, spread to other lymph nodes is possible and a full axillary dissection would be recommended.

How is a Sentinel Lymph Node Biopsy Performed?

On the morning of surgery, you will go to Radiology where the mammographers will give you an injection of a small amount of radioisotope dye (a low-level radioactive substance) around the tumor. Ultrasound will be used to guide the injection. You will then go to Nuclear Medicine where a lymph node scan will be done. This scan traces the flow of the radioisotope through the lymph system to find the approximate location of the sentinel node(s). This part of the procedure takes 60 to 90 minutes.

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You will then be taken to the operating room where the surgeon injects a blue dye into the tumor area or under the nipple. The blue dye then flows through the lymph system into the sentinel lymph node(s), coloring them blue. The surgeon has a small device, called a gamma probe, that can be used like a geiger counter to look at the activity of radioisotope in the various lymph nodes that drain the breast. This probe helps the surgeon find the location of the sentinel lymph node(s). Through a small incision under the arm, the surgeon identifies any lymph nodes that are blue or that have the radioactive dye, and these lymph nodes are removed. The number of sentinel lymph nodes vary but in general, one to four lymph nodes are removed. The pathologist then analyzes the lymph nodes under the microscope. The results are usually available in seven to ten days

NOTE: Remember that the radioisotope dye and lymph node scan does not tell you that the cancer has spread. They only mark the first node(s) that the cancer cells might have spread to so that the surgeon can remove them to be tested. Only the pathologist, by looking under the microscope, can tell whether cancer cells have spread to the lymph nodes.

What are the Risks of a Sentinel Lymph Node Biopsy?

As with any surgery there is a risk of bleeding, infection and poor wound healing. Fluid or blood could accumulate and require drainage. A small percentage of patients, less than 1%, may have an allergic reaction to the blue dye. There will be some blue staining in the breast skin for a few weeks up to two months. You will also have blue urine for a few days, which is normal.

How Will I Look and Feel After the Sentinel Lymph Node Biopsy?

You will have a small scar under your arm. Initially there will be some swelling and discomfort.

How Long Will I Be in the Hospital?

You will be discharged from the Ambulatory Procedure Unit on the same day. Following surgery, you will be in the recovery room until your discharge. You will need to be picked up by a responsible adult at the time of discharge. Please inform family members that this process will take most of the day.

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Preparing for Surgery: Breast Biopsy

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About Breast Biopsy

This "Helpful Facts" sheet is designed to give you basic information on breast biopsy. More detailed information can be provided by your doctor or nurse. If you have other questions or would like additional information, please talk to your doctor or nurse.

What is a breast biopsy?
A biopsy is a surgical procedure that removes a sample of tissue from the body. The tissue is examined under the microscope by a pathologist to determine if there is cancer present. Pathologists are physicians who are specially trained to diagnose diseases using tissue or other samples from the body.

When is a breast biopsy recommended?
A biopsy is typically recommended when a surgeon finds a suspicious breast lump or abnormality. It will help your doctor to determine if a breast lump is benign (non-cancerous) or malignant (cancerous). A biopsy is done after you have had a physical examination by the surgeon, a mammogram, an x-ray of the breast, and/or ultrasound (a study done in Radiology that uses waves to take pictures of the inside of your body). The biopsy is used to make a precise diagnosis and develop a treatment plan that is best for you. If no lump can be felt on physical exam you may require a needle localization procedure in order to perform the biopsy. Please refer to Helpful Facts sheet on Needle Localization Biopsy.

What is an excisional biopsy?
An excisional biopsy involves the removal of the entire lump in your breast. This is usually done as an outpatient procedure (Ambulatory Procedure Unit). In surgery, you will be given sedation through a needle in your arm to make you sleep through the procedure. You will also be given a local anesthetic to numb your breast. An incision (cut) is then made above the lump. The breast lump is removed, and sent to pathology for review. A dressing is then placed over your incision and you will be taken to the post anesthesia care unit (PACU) to recover. In general, you can expect to be in the operating room for 60 to 90 minutes and in the PACU for about 1-2 hours.

What are the risks of this procedure?

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All surgery involves risk. Your surgeon will discuss the risks of the biopsy with you. There can be some scarring or change in the shape of the breast, depending on the size and location of the lump.

Your surgeon will discuss what you can expect. Other risks and complications associated with breast surgery are listed below:

- Wound infection: Infections are not common but when they occur they are usually easily treated with antibiotics
- Poor wound (incision) healing: Although uncommon, blood and/or clear fluid can collect in the breast/wound area. This might require drainage of the blood or fluid.
- Bleeding: Bleeding during or after an excisional biopsy is rare
- Reactions to anesthesia: There are always risks associated with anesthesia, such as breathing problems or a reaction to the medications used for anesthesia. However, these risks are low.

When do i learn the results?
It takes approximately 5 to7 working days to get pathology results. The results will be discussed with you at your first post-operative visit.

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Radiation Therapy

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About Radiation Therapy for the Treatment of Breast Cancer

This "Helpful Facts" sheet is designed to give you basic information about radiation therapy for breast cancer. More detailed information can be provided by your doctor or nurse. If you have other questions or would like additional information, please talk to your doctor or nurse.

What is radiation therapy?
Radiation therapy is the type of cancer treatment using beams of high energy waves or streams of particles called radiation to destroy cancer. Radiation damages the material inside cells called DNA. DNA enables cells to reproduce. When cells try to reproduce with damaged DNA, they die. With each additional radiation treatment, more cells die. This makes the tumor shrink.

The goal of radiation therapy is to kills the cancer cells with as little risk as possible to normal cells. Healthy cells targeted by the radiation are affected, but they begin to repair themselves two hours after treatment. The radiation passes through your body and does not remain in you.

Why is radiation necessary after a mastectomy or lumpectomy?
Research has shown that patients who receive radiation after surgery may have a lower rate of recurrence of breast cancer in the breast or chest wall area.

What are the steps in my radiation treatment?

- " The first step is a consultation visit with a breast radiation oncologist. Radiation oncologists are physicians who are specialize in using radiation therapy in treating cancer. Your radiation oncologist works closely with your other specialists, which may include a surgical and/or medical oncologist. During the consultation, the radiation oncologist will review all of your medical documents, examine your breast, and talk to you about treatment recommendations.
- " After radiation therapy is selected as a part of your treatment, your radiation therapy team plans, or maps out, the actual treatment. You will be positioned on the treatment table. Molds, casts or other devices may be selected to keep you in the proper position during treatment. In

addition, the spot targeted for treatment will be marked, or tatooed. This is done so that the radiation beam will hit the same spot each time. This treatment planning process is also called "simulation" or "set up."

- " Based upon the information gathered during simulation, your radiation oncologist will develop a plan of action, including the amount of dosage per visit, number of visits, and frequency of visits. Your upcoming treatment visits will then be scheduled.

Why is the treatment for so many days?
Normal cells are able to repair their damaged DNA far better after small doses of radiation. Small doses also minimize side effects. While inconvenient, the long treatment period is the only way to give enough total radiation to destroy the cancer without permanently hurting normal tissue.

How long will each treatment take?
Each treatment takes only a few minutes. Positioning you properly will take another few minutes.

Does the treatment hurt?
No. You cannot feel, smell or see this radiation. This kind of radiation treatment is called "external beam radiation treatment." The equipment used for this kind of treatment is called a linear accelerator. The linear accelerator produces the radiation that can destroy tumors.

Does radiation therapy cause side effects?
Yes. Radiation unavoidably affects healthy tissue. This is what causes side effects. The side effects are manageable, and your doctor and nurse will help you find ways to minimize them.

Tiredness, or fatigue, is a common side effect. Your pre-treatment level of energy will return. Some patients experience the side effects of breast soreness, swelling and reddening of the skin; these usually disappear in 1-2 months. Longer term side effects may include a darkening of the breast skin, change in the sensitivity of the breast skin, a thickening of the breast skin, enlargement of the pores in the skin of the breast, and change in breast size. If you notice that your shoulder feels stiff, ask your doctor or nurse about exercises.

The risk of side effects is usually less than the benefit of killing cancer cells. Talk to your doctor if you have concerns about the risks versus benefits of radiation therapy.

What can I do to feel better during treatment?
Some general tips are:

- " Get plenty of rest and to eat a well-balanced diet during the course of your treatment.
- " Tell your radiation oncologist about any medications, vitamins or herbal preparations you are taking.
- " Ask your doctor or nurse about using soaps, lotions, deodorants, medicine, perfume, powder or other substances in the treated area.
- " Keep the treated part of the body covered and protected from the sun's rays since it will be far more sensitive as a result of treatment.
- " Wear loose, soft clothing over treated area.
- " Avoid scratching or rubbing treated skin.
- " Do not apply heat or cold to area.
- " Whenever possible, do not wear a bra. If it makes you uncomfortable, wear a soft cotton bra.

Your radiation oncologist and nurse will provide additional advice and can

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answer any specific questions you may have.

Types of Cancer

Types of Cancer > Breast Cancer > Preparing for Breast Surgery: Helpful Facts

Tests: Fine Needle Aspiration

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About Needle Localization Biopsy

This "Helpful Facts" sheet is designed to give you basic information on needle localization biopsy. More detailed information can be provided by your doctor or nurse. If, you have other questions or would like additional information, please talk to your doctor or nurse.

What is a breast biopsy?
A biopsy is a surgical procedure that removes a sample of tissue from the body. The tissue is then examined under the microscope by a pathologist to determine if there is cancer present. Pathologists are physicians who are specially trained to diagnose diseases using tissue or other samples from the body.

When is a needle localization breast biopsy recommended?
A needle localization biopsy is done when an abnormality is seen on mammogram but no lump can be felt on physical exam. The biopsy is used to make a precise diagnosis and develop a treatment plan that is best for you.

What is a needle localization biopsy and how is it done?
A needle localization biopsy involves the removal of the entire lump, or area of concern, in your breast. This is usually done as an outpatient procedure (Ambulatory Procedure Unit). You will start the day in Radiology where the radiologist uses mammography or ultrasound to guide the needle into the area of concern. The needle is then removed and a flexible wire is left in place in your breast. This is called "needle localization". The wire is then covered with a dressing to hold it in place. The average time for this part of the procedure is 30-60 minutes. You are then taken to the operating room where you will receive a local anesthetic to numb your breast, as well as, sedation through a needle in your arm to make you sleep through the procedure. The surgeon uses the wire as a guide to precisely locate the lump. An incision (cut) is made and the abnormal tissue, along with the wire, is removed. The tissue is then sent to pathology for review. When the surgery is complete, a dressing is placed over the incision and you are taken to the post anesthesia care unit (PACU) to recover. In general, you can expect to be in the operating room for 60 to 90 minutes and in the PACU for about 1-2 hours.

What are the risks of this procedure?

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All surgery involves risk. Your surgeon will discuss the risks of the biopsy with you. There can be some scarring or change in the shape of the breast, depending on the size and location of the lump.

Your surgeon will discuss what you can expect. Other risks and complications associated with breast surgery are listed below:

- Wound infection: Infections are not common but when they occur they are usually easily treated with antibiotics
- Poor wound (incision) healing: Although uncommon, blood and/or clear fluid can collect in the breast/wound area. This might require drainage of the blood or fluid.
- Bleeding: Bleeding during or after a biopsy is rare
- Reactions to anesthesia: There are always risks associated with anesthesia, such as breathing problems or a reaction to the medications used for anesthesia. However, these risks are low.

When do i learn the results?
It takes approximately 5 to 7 working days to get pathology results. The results will be discussed with you at your first post-operative visit.

Post-operative Instructions for Needle Localization Breast Biopsy

Francis Spitz, MD

1. You may wish to bring a bra with you to wear when you go home. Most people prefer a soft cotton, stretch bra, or athletic bra. Some women also find it comfortable to wear the bra when sleeping.
2. You will have a dressing on the area of the incision. Please leave this clean and dry for 48 hours. After 48 hours you may remove the bandage and shower (you may not bath until the sutures are out). Use a gentle soap and pat dry the incision. Do not apply any lotions, antibiotic ointments, or deodorant to the incision while it is healing. You may keep a clean, dry gauze dressing on the incision until you are seen in the office. Change the dressing as needed.
3. You should call the doctor if you have a fever greater than 101.0, redness along the incision, or drainage from the incision area.
4. You will be given a prescription for pain medication prior to being discharged from the hospital. Please have this filled on the way home from the hospital. Take the medication as needed for pain. If you feel the prescribed medicine is too strong for your needs you may take Tylenol instead, or Advil if your stomach can tolerate it.
5. Resume your normal activities as tolerated.
6. During the first week or so at home, you may expect to have some incisional tenderness and mild swelling of the area. This is normal. You may also notice that under the incision the breast tissue is firm or hard. This is also normal and will subside within 1-3 months.
7. Please call the Rowan Breast Center at 215-662-7900 to schedule an appointment for 7-10 days following the date of your surgery. If you have any difficulty scheduling the appointment please contact your surgeons office.

Appointment Date: ☐

Appointment Time: ☐

Location: The Rowan Breast Center
14 Floor, Penn Tower

Who to call in case of emergency:

During normal business hours, call Dr. Spitz's office at 215-614-0857

On weekends, nights and holidays, call the Hospital Operator at 215-662-4000 and ask for the "Surgery A" resident on call.

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Types of Cancer

Types of Cancer > Breast Cancer > Preparing for Breast Surgery: Helpful Facts

Tests: Mammogram

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About Mammography

This "Helpful Facts" sheet is designed to give you basic information on mammography. More detailed information can be provided by your doctor or nurse. If you have other questions or would like additional information please talk to your doctor or nurse.

What is a mammogram?
A mammogram is a safe, low-dose X-ray procedure that produces pictures of the inside of the breasts. Mammography can detect some suspicious breast changes that are too small or too deep to be felt on breast examination.

How effective is a mammogram in diagnosing breast cancer?
Mammography is considered the best method available today to detect breast cancer in its earliest, most curable stage. Early detection is the best weapon since breast cancer is most treatable when discovered early.

Is there a risk in having a mammogram?
A mammogram uses low-dose X-rays, so there should not be a risk from radiation exposure.

What happens during the mammogram?
During the mammogram, each breast is placed between two hard surfaces that are attached to an X-ray machine. The breasts are pressed firmly while the X-rays are being taken. This compression is necessary to view all of the breast tissue. Typically, two or three pictures are taken of each breast.

Will the mammogram hurt?
Although you may find the pressure on your breast to be somewhat uncomfortable, it takes only a few seconds for each picture. If you are feeling anxious or experience discomfort, talk to the technologist. She will make you as comfortable as possible and can answer any questions you may have.

How long does the procedure take?
The entire mammography procedure takes about 15 minutes.

Why do I need to wait after the procedure?

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Today's artwork was donated by Lauren, a pediatric cancer patient who received treatment for cancer at The Children's Hospital of Philadelphia

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The technologist will immediately process your mammogram films. If the films are fuzzy or less readable than needed, it may be necessary to repeat some views.

Why is it helpful to bring older mammograms that were done elsewhere?
The breast radiologist can compare the old pictures with the new ones to determine if there are any significant changes in your breast tissue.

Who reads mammograms at Penn?
At Penn, we have a team of full-time, dedicated breast radiologists who will review your mammograms.

When do I learn my results?
A report of your mammogram results will be sent to your referring physician shortly after your visit. In some cases, the radiologist may discuss the results with you at the time of your study. However, for routine screening studies, the radiologist will not discuss the results but you will receive a letter in the mail telling you the results of the mammogram. In addition, your doctor will share the results and discuss with you the breast radiologist's recommendations.

How often should I have mammograms?
If you're a woman 40 years of age or older, you should get a mammogram every year. Whatever your age, if you have questions about getting a mammogram, talk to you doctor because he or she knows your medical history best.

If you have other questions about breast ultrasound or would like additional information please ask your doctor or nurse.

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Types of Cancer

Tests: MRI

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About MRI of the Breast

This "Helpful Facts" sheet is designed to give you basic information on MRI of the breast. More detailed information can be provided by your doctor or nurse. If you have other questions or would like additional information please talk to your doctor or nurse.

What is a Breast MRI?

A breast MRI (Magnetic Resonance Imaging) uses magnets and radio waves to create clear detailed pictures of the inside of your breasts. The breast is in mild compression during the procedure and you are lying on your stomach. Frequently, an intravenous injection is necessary for the best imaging.

When is breast MRI performed?

In some patients, MRI may helpful to diagnose breast cancers that may be difficult to detect by mammography or breast ultrasound. A breast MRI may also be used to further evaluate questionable areas seen on a mammogram or breast ultrasound.

Are there any risks to having a breast MRI?

People with cardiac pacemakers cannot have a MRI nor should they be in the MRI area. This is also true for people with some forms of metal in their bodies, like artificial joints, cochlear ear implants and artificial heart valves.

Is there any preparation for the breast MRI?

Do not bring anything metallic into the room. This includes jewelry, watches, credit cards, hearing aids, removable dental work, pins or zippers.

If you get uncomfortable in small places (claustrophobia) you may want to ask your referring doctor to prescribe a sedative to take shortly before the test. If you experience pain when lying flat you may want to ask your doctor to prescribe pain medication to take shortly before the test. In these situations, make sure that you have someone who can drive you to and from the hospital.

What happens during the breast MRI?

You will be asked to undress and change into a patient gown. You will lie down on a table. The table will then be slid inside a tunnel-like tube. This tube is inside a large scanner that contains the imaging magnets. You will be asked to remain still throughout the test. Several pictures will be taken of your breast.

Will the breast MRI hurt?

The table may be hard and cold. A pillow or blanket can be provided as long as it doesn't interfere with the test. The machine is noisy and you may hear loud thumping or humming sounds. Earplugs can be used to reduce the noise. Since the space inside the tube is small some people will experience anxiety (claustrophobia). Taking a sedative if necessary before the test will help.

Why must I remain still during the MRI?

Any movement could make the images less clear. You must stay still and in the same position during the entire test.

Will I be alone during the breast MRI?

The technologist will watch you throughout the entire procedure from just outside the room and will be able to hear you and answer any questions via an intercom. The technologist will periodically tell you what is about to happen and how much longer the test will be. The technologist will also ask how you are doing.

How long will the breast MRI take?

The complete tests take about 30-60 minutes.

When do I learn breast MRI results?

A breast MRI report will be sent to your doctor shortly after the test is completed. Your doctor will discuss the results with you.

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Today's featured work:
In the Unfolding of Life, Every Minute is Precious
by Hollis Sigler

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Types of Cancer > Breast Cancer > Preparing for Breast Surgery: Helpful Facts

Tests: Ultrasound

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About Breast Ultrasound

This "Helpful Facts" sheet is designed to give you basic information on breast ultrasound. More detailed information can be provided by your doctor or nurse. If you have other questions, or would like additional information, please talk to your doctor or nurse.

What is breast ultrasound?
A breast ultrasound is a test that uses sound waves to take pictures of the inside of your breasts. A breast ultrasound can determine if a breast lump is a hollow, fluid filled cyst or a solid mass.

When is a breast ultrasound performed?
A breast ultrasound may be done to evaluate abnormal areas seen on a mammogram. It may also be done to evaluate a breast lump or other breast changes that are not seen on a mammogram.

Are there any risks to having a breast ultrasound?
No.

Is there any preparation before a breast ultrasound?
If possible, wear a two piece outfit the day of the ultrasound so you do not have to completely undress.

What happens during the breast ultrasound?
You will be asked to undress from the waist up. After lying down on a table, a clear gel is placed on your breast (this gel is removed easily with water after the test). A hand-held scanner, called a transducer, is placed on the skin by the radiologist. The transducer is moved around on the breast to get good images of the breast tissue. The sound wave images appear on a bedside monitor.

Will the breast ultrasound hurt?
The gel may be cool. You may experience minor discomfort as the transducer is moved around on the breast and slight pressure is applied.

How long will the breast ultrasound take?

The breast ultrasound takes about 15 minutes.

When do I learn the breast ultrasound results?
A breast ultrasound report will be sent to your doctor shortly after the test is completed and the radiologists will also discuss the results with you. In addition, your doctor will discuss the results with you.

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Types of Cancer

Types of Surgery: Axillary Lymph Node Dissection

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About Axillary Lymph Node Dissection

This "Helpful Facts" sheet is designed to give you basic information on axillary lymph node dissection. More detailed information can be provided by your doctor or nurse. If, you have other questions or would like additional information, please talk to your doctor or nurse.

What is the Lymph System?

The lymph system is important in your body's defense against infection. It is made up of lymph vessels and lymph nodes. The lymph vessels collect fluid and protein from surrounding body tissues. The fluid is then filtered through the lymph nodes, which are clustered in various parts of the body. Lymph nodes act to filter out and trap bacteria, viruses, cancer cells, and other unwanted substances.

What is an Axillary Lymph Node Dissection?

The lymph nodes under your arm are called "axillary" lymph nodes. These lymph nodes drain and filter fluid from the arm and chest area. An axillary lymph node dissection is the surgical removal of these lymph nodes. This procedure is done to determine if the cancer has spread beyond the breast. If there is cancer in the lymph nodes, it may influence additional treatment recommendations.

Does Everyone with Breast Cancer Require an Axillary Lymph Node Dissection?

Very early breast cancer, such as ductal carcinoma in situ, is "noninvasive" breast cancer. This means that the abnormal cells are found only in the lining of the milk ducts or lobules of the breast and have not yet invaded the surrounding breast tissues, lymph vessels or blood vessels; therefore, these abnormal cells can not spread to other areas of the body. Patients with noninvasive breast cancers generally do not require an axillary lymph node dissection.

What are the Risks of an Axillary Lymph Node Dissection?

As with any surgery there is a risk of bleeding, infection and poor wound healing. Fluid or blood could accumulate around the breast or underarm area and require drainage. Numbness and tingling in the underarm and arm can occur due to nerves cut during surgery. Muscle tightness of the underarm and

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shoulder can occur. Lymphedema, or swelling of the arm, can occur weeks, months or years after surgery. There is also a life-long risk of developing arm infections following a lymph node dissection.

How Long Will I Be in the Hospital?
You will be discharged from the hospital within 48-72 hours of the surgery even if a mastectomy or lumpectomy is performed. If a mastectomy is performed with immediate reconstruction the hospital stay is usually four to five days.

How Will I Look and Feel After the Dissection?
You will have an incision in the underarm area. Initially there will be some swelling and discomfort. Drains, or thin plastic tubes with a plastic "balloon" at the end, will be in place to collect fluid from the breast and underarm area. The drain(s) will stay in for approximately one week. You or your family will need to learn how to care for these at home. A referral will be made for home care visits to assist you and your family in your care (visits may vary according to insurance). A "Preparing for Breast Surgery" class is held weekly at the Rowan Breast Center. The class provides an opportunity for you and your family to learn, before your surgery, how to care for your drains and incision. Check with your nurse or doctor to register for the class.

Your underarm and arm may be numb and tingling after the surgery. Most women get a significant amount of this sensation back, but not usually full sensation. Your skin may also feel tight on your chest and underarm area. This is due to the skin being pulled tightly during the surgery. Your skin has elastic components and will loosen as time goes on. Muscle tightness of the underarm and shoulder may also occur. Once your drains are removed, it will be important to exercise that arm. You will be shown some arm exercises at your first post-operative visit.

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Types of Surgery: Breast Reconstruction

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About Breast Reconstruction Surgery

Breast reconstruction surgery is performed to reshape a woman's breast following mastectomy. Most women have many questions and concerns about reconstruction surgery. This "Helpful Facts" sheet is designed to give you basic information about breast reconstruction surgery. More detailed information can be provided by your doctor or nurse.

Breast reconstruction surgery is performed to reshape a woman's breast following mastectomy. Most women have many questions and concerns about reconstruction surgery. This "Helpful Facts" sheet is designed to give you basic information about breast reconstruction surgery. More detailed information can be provided by your doctor or nurse.

Is breast reconstructive surgery right for me?
Women elect reconstructive surgery for a wide variety of reasons. They include: enhancing body image and self-esteem; improving body posture and balance; increasing comfort in clothing; and eliminating the need to wear a breast prosthesis. Following breast reconstruction women are often more comfortable in bras, bathing suits, and evening ware. They may also be more comfortable performing activities such as swimming and exercising.

Women who elect to not have reconstructive surgery do so for such reasons as a desire to avoid additional surgery, or conflicting medical problems. It is important to get the guidance of your whole medical team - including your medical oncologist, surgical oncologist, radiation oncologist, and counselor - as well as the plastic surgeon, so that you can make the decision that is right for you.

Can reconstruction be done at the same time as a mastectomy?
Breast reconstruction is usually done at the same time as mastectomy. For this reason it is important to meet with a plastic surgeon before the mastectomy is performed. The breast surgeon and plastic surgeon will then coordinate your care. Some advantages of "immediate reconstruction" include:

- Having a breast immediately after mastectomy
- Fewer operations
- Fewer scars

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Types of Surgery: Lumpectomy

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About Lumpectomy for Breast Cancer

This "Helpful Facts" sheet is designed to give you basic information on lumpectomy for breast cancer. More detailed information can be provided by your doctor or nurse. If you have other questions or would like additional information please talk to your doctor or nurse.

What is a Lumpectomy?

A lumpectomy (also known as a partial mastectomy or breast conserving surgery) is the surgical removal of a breast lump or abnormal area seen on mammogram. This procedure keeps the breast looking much the same as it did prior to surgery. When removing the lump, a small amount of surrounding normal tissue is also removed. This is done to make sure that all of the cancerous tissue has been removed. The tissue is then examined by a pathologist to see if any cancer cells are present in the surrounding normal tissue that was taken out. If there are no cancer cells in the tissue from around the tumor, this is called "clean margins." If cancer cells are found, your surgeon will recommend additional steps, which may include a "re-excision" to remove the additional cancer tissue.

Lumpectomy with Needle Localization for Non-Palpable Lumps

If the lump or abnormal area is not palpable (not able to be felt), you will begin in Radiology on the day of your procedure. The radiologist will use mammography or ultrasound to guide a needle into the area of concern and will then place a wire in your breast to help pinpoint the specific area to be removed. The wire is then covered with a dressing to hold it in place. The average time for this part of the procedure is 30-60 minutes. You are then taken to the operating room where you will receive a local anesthetic to numb your breast, as well as, sedation through a needle in your arm to make you sleep through the procedure. The surgeon uses the wire as a guide to precisely locate the lump. An incision (cut) is made and the abnormal tissue, along with the wire, is removed. When the surgery is complete, a dressing is placed over the incision and you are taken to the post anesthesia care unit (PACU) to recover. In general, you can expect to be in the operating room for 60 to 90 minutes and in the PACU for about 1-2 hours.

What are the Risks of Lumpectomy?

All surgery involves risk. Your surgeon will discuss the risks of the lumpectomy with you. There can be some scarring or change in the shape of the breast, depending on the size and location of the lump. Your surgeon will discuss what you can expect. Other risks and complications associated with breast surgery are listed below:

- " Wound infection: Infections following surgery can usually be treated with antibiotics.
- " Swelling Around the Incision: Although very uncommon, an accumulation of blood and/or clear fluid in the wound could occur. This condition might require drainage of the blood or fluid.
- " Bleeding: Bleeding during or after breast cancer surgery is rare.
- " Reactions to anesthesia: There are always risks associated with anesthesia such as breathing problems, or a reaction to the medications used for anesthesia. However these risks are extremely low.

How Long Will I Stay in the Hospital?

Most women do not need to stay overnight in the hospital unless an axillary lymph node dissection is performed. An axillary lymph node dissection is the surgical removal of the lymph nodes in the underarm area to determine if breast cancer has spread beyond the breast to the lymph nodes.

How Will I Look and Feel After Lumpectomy?

Post-surgery breast size depends on how much tissue is removed. There will be a scar from the incision. Initially, there may be some swelling and discomfort. You will be given prescription pain medication to take at home if needed.

When Do I Learn the Results of the Lumpectomy?

It takes approximately 5 to 7 working days to get pathology results. The results will be discussed with you at your first post-operative visit.

Will I Need Radiation Therapy After a Lumpectomy?

After a lumpectomy, most women receive six to seven weeks of radiation therapy, in order to eliminate any cancer cells that may remain after surgery.

What is Radiation Therapy?

Radiation therapy is a highly targeted, effective way to destroy cancer cells. Radiation therapy decreases the chance of breast cancer coming back after surgery. Despite what some people may believe, radiation therapy is relatively easy to tolerate. Most side effects are restricted to the area being treated. Side effects of radiation therapy may include:

- " A reaction around your breast skin that may be similar to a sunburn, with a mild to moderate pink color, or redness, and/or itching, burning, soreness, and peeling.
- " Fatigue during the final weeks of treatment.
- " Fullness, swelling, and stiffness of the breast. Once treatment is over, these symptoms will diminish and go away.
- " Brief shooting pains in the chest area. This is due to swelling and irritation of the tissue. Soon after treatment is over, they will go away.

You will have a more detailed discussion about radiation therapy with the Radiation Oncologist. To find out more about radiation therapy, please request the "Helpful Facts" sheet called About Radiation Therapy for Breast Cancer.

Is Lumpectomy an Effective Cancer Treatment?

A lot of research has been done in recent years to determine if lumpectomy is as effective as mastectomy for treating breast cancer. Evidence shows that lumpectomy followed by radiation is likely to be equally as effective as a mastectomy for someone who has:

- " One site of cancer in their breast, and
- " A tumor less than four centimeters, which is removed with "clear margins" (no cancer cells in the tissue immediately surrounding the tumor).

Your surgeon will advise you when a lumpectomy is an option for you to consider, and will help you weigh your options.

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Types of Surgery: Mastectomy

Affiliation: The University of Pennsylvania Cancer Center
Posting Date: January 22, 2002

About Mastectomy

This "Helpful Facts" sheet is designed to give you basic information on mastectomy. More detailed information can be provided by your doctor or nurse. If, you have questions or would like additional information, please talk to your doctor or nurse.

What is a mastectomy?
A mastectomy is the surgical removal of breast tissue. It is done to remove all evidence of breast cancer. Since a mastectomy will not remove any microscopic (too small to be seen) cancer cells that may be beyond the removed area, additional treatments, chemotherapy and hormonal therapy, may also be recommended.

When is a mastectomy recommended for the treatment of breast cancer?
In general, a mastectomy is recommended if:

- The breast tumor is more than 4-5cm in size.
- There are multiple tumors in the breast that can not be removed from one incision.
- There is a history of radiation therapy to the breast or chest wall.
- There is a history of connective tissue diseases.
- The breasts are small and/or the tumor is large such that the breast would be badly disfigured following the lumpectomy.
- The patient chooses not to have radiation therapy, which is necessary with lumpectomy.
- The patient prefers a mastectomy for personal reasons.

Are there different types of mastectomies?
There are a few different types of mastectomies. Your doctor and nurse will explain which mastectomy is being recommended for you and why.

- A **simple mastectomy** involves removal of the entire breast, skin and nipple.

- A **modified radical mastectomy** involves removal of the entire breast, skin, lining over the chest muscles and the nipple. Some axillary (underarm) lymph nodes are also removed. This is called an axillary lymph node dissection. This procedure helps to determine if the breast cancer has spread beyond the breast area to the lymph nodes. The Helpful Facts sheet, About Axillary Lymph Node Dissection, will give you more information about this procedure.

- A **skin-sparing mastectomy** involves the removal of the entire breast tissue and nipple. The breast skin is left. This surgery is usually done at the same time as breast reconstruction. Much of the breast's natural shape and feeling is retained. An axillary lymph node dissection may also be performed.
- A **radical mastectomy** involves removal of the entire breast, surrounding lymph nodes, chest wall muscles and fatty tissue.

What are the risks of a mastectomy?

As with any surgery, there is a risk of bleeding, infection and poor wound healing. Fluid or blood can accumulate and require drainage. Numbness and tingling across the chest can occur due to nerves cut during surgery. If an axillary lymph node dissection is performed, then lymphedema (swelling of the arm), numbness and tingling of the underarm and arm, and muscle tightness of the underarm and shoulder may occur. There is also a life-long risk of developing arm infections following an axillary lymph node dissection.

How long will I be in the hospital?

Most patients are discharged from the hospital one to two days after surgery. If immediate breast reconstruction is performed, the hospital stay is usually four to five days.

How will I look and feel after the mastectomy?

The chest area will be flat, have a scar and no longer have a nipple. Initially, there will be some swelling and discomfort. Some drains (thin, flat rubber tubes a few inches long) will be in place for a few days to a week to collect fluid. The chest area may be numb and tingling. Removal of breast tissue can cause body weight to shift resulting in neck and back pain. If an axillary lymph node dissection is performed, lymphedema (swelling of the arm), numbness and tingling of the underarm and arm, and muscle tightness of the underarm and shoulder may occur.

What are my options for re-creating my breast?

There are many issues to consider when deciding if and when you may want breast reconstruction. Some women prefer reconstruction surgery at the same time as their mastectomy, while others decide to wait because of the need for additional treatment. Medical considerations along with personal feelings lead ultimately to a decision that is best for you. Your doctors, nurses, counselors and family can help you make the choice with which you will be most comfortable.

After a mastectomy you may choose to wear a breast prosthesis. This is a soft form, shaped liked a breast, that is worn under a bra. Most forms are made of silicone or cotton and come in different sizes and weights. A proper fit is essential for your clothing fit, self-image, posture and body alignment, and comfort. A breast prosthesis can be obtained in The Boutique at the Rena Rowan Breast Center or through a surgical supply or lingerie store.

Surgical reconstruction surgery is performed to reform the shape of your breast. You can decide about reconstruction months or even years after your breast surgery. Make the decision when you feel ready. It's important to get the guidance of your whole medical team including your medical oncologist, surgical oncologist, and radiation oncologist, as well as your plastic surgeon *The Helpful Facts sheet, About Breast Reconstruction*, will give you more information on surgery to reconstruct your breast.

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What is Chemotherapy?

OncoLink Editors
Abramson Cancer Center of the University of Pennsylvania
Last Modified: November 1, 2001

Chemotherapy is the use of medications or chemicals with cancer-fighting abilities. This why chemotherapy is often called an anti-cancer agent.

It all begins with normal cells versus cancer cells. Normal, healthy cells divide and grow in a patterned, controlled behavior. As they divide, replicas are produced. Cancer cells, on the other hand, grow out of control.

There is no apparent pattern at all. When in contact with a normal cell, the cancer cell takes over and copies itself many times over. In this way, the body becomes overburdened with cancer cells. Chemotherapy destroys cancer cells with drugs.

How does Chemotherapy Work?

Chemotherapy drugs interfere with the cancer cells' ability to grow or multiply. Different groups of drugs act on cells in different ways. Identification of the type of disease is important because certain chemotherapies work best for certain diseases. For example, a patient treated for acute myelogenous leukemia is treated with different agents than one treated with Hodgkin's disease. Even patients diagnosed with the same disease may be treated with different agents, depending on what is known to be most effective for the particular circumstances.

Chemotherapy can damage normal cells as well as cancer cells. Those normal cells most effected are ones which divide rapidly. These include the hair follicles, cells in the gastrointestinal (GI) tract, and bone marrow. Consequently, side effects can occur including: hair loss, mouth sores, difficulty in swallowing, nausea, vomiting, constipation, diarrhea, infection, anemia, and increase risk of bleeding. These side effects will be discussed in greater detail later.

How is Chemotherapy Given?

Chemotherapy can be given in different ways. The five most common methods

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Today's featured work:
The Red Hat, Santa Fe, New Mexico
by Evelyn H. Lauder

are:

- intravenous (IV)
- oral (PO)
- intramuscular (IM)
- intrathecal (IT)
- intraperitoneal (IP)

The **intravenous route** or **IV** is a very common way of giving medicine directly into a vein. A small plastic needle is inserted into one of the veins in the lower arm. There is some discomfort during insertion because a needle stick is required to get into the vein. After that, the administration of the medication is usually painless.

Chemotherapy flows from the IV bag/bottle, through the needle and catheter into the bloodstream. Sometimes a syringe is used to "push" the chemotherapy through the tubing.

The **oral method** takes the form of either a pill, capsule or liquid taken by mouth. This is the easiest and most convenient method and can usually be done at home. Under certain special circumstances, chemotherapy given by other routes may also be administered at home.

Intramuscular means that the chemotherapy is given by way of an injection into the muscle. There is a slight sting as the needle is placed into the muscle of the arm, thigh or buttocks. Although, this procedure only lasts a few seconds, the effect of the intramuscular chemotherapy may last much longer. This is because the chemotherapy may be absorbed slowly through the muscular tissues and into the bloodstream.

Certain forms of cancer have a tendency to spread to the nervous system. To treat cancer that spreads to the spinal cord or brain, doctors may perform a spinal tap and inject chemotherapy into the spinal fluid. This is known as the **intrathecal** method of administration.

Permanent and Temporary Catheters

For some patients, IV insertions can eventually damage the veins in the arm. Some patients have small veins and some have very few accessible veins. Frequent IV insertions and too small or too few veins may prompt the doctor to recommend a permanent type of IV catheter. Permanent catheters allow patients to go home and receive chemotherapy without needing other IV's placed. Along with receiving chemotherapy and IV fluids through this catheter, patients can receive blood products and even have their blood drawn without painful needle sticks.

A common type of permanent catheter is the "**Hickman**" catheter. The terms "**Broviac**" or "**Groshong**" refer to a similar type of catheter made by different manufacturers. All work in similar ways.

Care of these catheters may be a little different, but the principle of insertion is similar. A thin, flexible tube is inserted into one of the central veins, commonly the external jugular vein. While under general or local anesthesia, the tube is tunneled through surface skin tissue between the neck and shoulder to another separate incision, usually on the chest or stomach wall.

The entrance site will have stitches and a small bandage to facilitate healing. The exit site for the catheter is easy to see and care for, and patients must change their dressings regularly to prevent infection.

Frequent heparin flushes -- washing out the device with an anti-clotting drug -- are required to prevent blockage. Many patients learn to care for their catheter while in the hospital. Thorough teaching to patients and their families is done before discharge.

Another type of permanent catheter to a central vein is known as the **implanted intravenous port**. It is round in shape and is surgically inserted under the skin surface of the chest wall, between the neck and shoulder area. A nurse will insert a needle through the top skin surface to access the vein. The chemotherapy can then be given through the catheter as if it were an IV in the arm. As with the Hickman catheter, blood can be removed and received through this device. Although, there is no home care required, periodic heparin flushes are necessary.

There is also a temporary access device for administering chemotherapy that works in the same way as the Hickman catheter, but is removed before the patient is discharged. This is called the **multi-lumen catheter** because there are three IV lines in one plastic catheter line. Insertion is performed in the patient's room, with local numbing medication injected around the insertion site. Located near the neck, the site is kept covered with a dressing.

Intrathecal chemotherapy can be given into the spinal canal or through an **Omaya reservoir**. This device is surgically inserted under the scalp for direct injection of chemotherapy throughout the spinal fluid. The drugs are then given through the reservoir, rather than through the back during a spinal tap.

Lastly, chemotherapy may be given via an **intraperitoneal (IP) port**. This device is similar to the previously mentioned implanted intravenous port. The IP port sits under the skin and requires no specific home care. The port allows for placing chemotherapy directly into the peritoneal (i.e. abdominal) cavity. This technique is used to increase the concentration of the chemotherapy that contacts tumors in the abdomen.

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Chemotherapy for Patients: Introductory Information

Joel W. Goldwein, MD
Abramson Cancer Center of the University of Pennsylvania
Last Modified: November 1, 2001

Many cancer patients will receive chemotherapy sometime during the course of their disease. The goal of chemotherapy is to destroy cancer cells. The decision to adminsiter chemotherapy is made based on its potential for destroying these cells, which is weighed against the risk of side effects from treatment as well as the risk of not receiving treatment at all. The side effects of treatment can sometimes be unpleasant, but most are temporarary and subside once treatment is completed. Your physician will discuss these issues with you and involve you in the decision process.

General Issues

Administration

Chemotherapy is administered in a variety of ways, including by mouth, intravenously and/or intramuscularly. The route depends on the specific chemotherapy agent, as well as other patient and disease factors. More information about this is available in our advanced chemotherapy section. This includes information concerning implanted catheters and ports that make administration easier and more comfortable for the patient.

Schedule

The schedule for chemotherapy treatments also varies according to the agent (s) used, the disease, and other factors. Frequently, chemotherapy is administered in 1-2 day cycles that are repeated every four weeks. Again, more about this is available in our advanced chemotherapy section.

Chemotherapy, in general, works by interrupting cell growth and division. Different agents interact with the cell and its DNA in different ways. While the particular form of chemotherapy that is administered is selected for its activitiy against a specific cancer, most chemotherapy also interrupts **normal** cell growth and division. In a patient, these injuries show up as "side effects." Most are temporary, or are relieved by medications that can be administered along with the chemotherapy. Some side effects may be permanent, but these are generally less common.

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45
by Kathleen R. Smith

Side Effects

The discussion of side effects that follows is arranged from "head to toe" according to the body system affected. Each category includes helpful hints to assist in managing that particular side effect. Remember, not all patients experience every side effect, and side effects depend on the type and dose of chemotherapy along with other patient and disease factors.

Hair Loss

Hair loss (**alopecia**) can be a devastating side effect of chemotherapy treatment. This side effect raises many anxieties for both men and women. Frequent questions regarding hair loss include: "Will it happen?", "When will it happen?", and "How long will it last?". The answers are not always straightforward.

Not all chemotherapeutic agents cause hair loss. Certain chemotherapies have a greater tendency to destroy hair follicle cells, causing loss of hair. The loss may involve areas of the head, chest, arms, legs and pubic region.

The duration of hair loss may vary from a few days to a few weeks. Often, it begins suddenly and some claim it happens overnight. For others, there is a gradual loss of hair as noticed in the bathtub or on a pillowcase. Then, the loss may increase in amount.

Hair loss is usually temporary. When healthy follicle cells have regrown, the hair also regrows. Do not be alarmed if there are some changes in the new hair. The texture, color, and style may be different. This is a common occurrence to which most people adjust without difficulty.

While hair loss cannot yet be prevented (clinical trials investigating ways to prevent hair loss are ongoing), there are ways to cope with this situation:

- During the loss, many find comfort in wearing a cloth cap, bandana, wig or hairpiece. Some patients purchase their wig or hairpiece before hair loss begins. In that way, the color and texture can be more closely matched to the original hair.
- Use a mild shampoo and conditioner to maintain skin and hair moisture. Try to avoid excessive shampooing since overdrying can occur. You may want to limit washings to two or three times a week.
- Limit the use of hairdryers, curling irons, and chemicals such as dyes, perms and highlights to help decrease damage to existing hair follicles. During sleeping hours, a silk pillowcase will help eliminate tangling.

Mouth and Throat

The gastrointestinal system begins with the mouth. Because this is an area of rapidly dividing cells, when these cells are injured by chemotherapy, side effects may develop. Chemotherapy can cause irritation which can eventually lead to inflammation of the mouth, a condition known as **stomatitis**. A stinging sensation in the throat may develop and lead to **dysphagia** (difficulty in swallowing).

With oral hygiene and early identification of the following signs and symptoms, these conditions can be made much more comfortable. Prevention begins with good oral hygiene. Daily inspection of the mouth is the first step. Begin each day by carefully inspecting the mouth for any changes. Be sure to remove dentures, since hidden mouth sores can fester in this area.

Brush your teeth with a soft bristle toothbrush and use a non-alcoholic mouthwash after meals and at bedtime. Be sure your dentures are properly fitted, since a too tight or too loose fit can increase the risk of problems. Remove dentures when cleaning the mouth and do not wear them if irritation is present.

There are many common-sense interventions for uncomfortable mouth sores, ranging from good oral hygiene to proper diet. Following are some suggestions to assist in mananging uncomfortable side effects:

- To lessen the discomfort and irritation of a dry mouth, keep the mucous membranes of the mouth moist. Many patients suck hard candies or ice chips to obtain relief.
- Avoid high-acid foods and drinks, such as orange and grapefruit juices. Instead, try apple juice and nectars. Carbonated beverages may irritate the gums and should also be avoided.
- Avoid spicy foods: some pasta sauces, tacos, and chili. Soft, bland dishes may be more tolerable.
- Keep food at room temperature or slightly cool. Very hot or cold foods can increase discomfort. Soups, mashed potatoes, noodles and jello, served at room temperature, are just a few good examples of food to try.

If the mouth and throat appear red, be sure to alert your doctor or nurse. If white patches are noticed, notify your physician so the appropriate medication can be ordered. If there is pain, your doctor also can provide medication to ease the pain while the lining of the mouth and throat heal. Maintaining good nutrition is important to the healing process. Try to keep proteins and calories at an optimal level in your daily diet.

The best treatment plan begins with daily inspection of the mouth and early detection of problems by *you*, the patient.

Nausea and Vomiting

Many people connect nausea and vomiting with chemotherapy treatment. Most people are not aware that there are many chemotherapy drugs which *do not* always cause these disturbing side effects.

If nausea and vomiting do occur, doctors and nurses are prepared to handle such discomforts through the use of medications. Whether you have nausea and vomiting will depend on the chemotherapy you are receiving, and varies from patient to patient. If you know someone who has received chemotherapy and had much discomfort, do not automatically think this will happen to you. Some people feel nauseated more readily than others. It also takes time for some people to get used to their medication.

A change in appetite may occur during and after chemotherapy treatment. What was once a favorite food may suddenly seem distasteful. Such changes are known as "food aversions" and are very common to chemotherapy patients. If you find that a certain meal is more appealing, make it the main meal of the day. Smaller portions of food can be eaten more often or at different intervals to maintain calorie intake.

To combat nausea and vomiting, many chemotherapy patients benefit from maintaining a clear liquid diet one to twelve hours before a scheduled treatment. These liquids can include apple juice, tea, jello and chicken broth. Some other helpful hints during and after treatment include:

- Eat bland food, such as crackers or dry toast.
- Avoid overfilling your stomach by eating smaller, more frequent meals.
- Take foods which are at room temperature or slightly cooler.
- Keep the room or house full of fresh air and free of offensive odors. (Cooking odors are a problem for many patients.) Try to get fresh air until an offensive odor subsides.
- Practice relaxation and distraction techniques. Read a book or watch a favorite program on television. Pursue activities which provide a relaxing atmosphere. Listen to a favorite album or CD.

Constipation

Constipation can be another side effect from chemotherapy. If constipation is a problem to begin with, some chemotherapy drugs may intensify it. Older persons and those on low-fiber diets are also at greater risk.

Like other side effects, some patients experience constipation with chemotherapy while others do not. The following hints may help to reduce the risk of constipation.

- Drink more fluids. Water intake should be at least eight glasses a day (discuss this with your physician). This helps your body maintain soft stools.
- Eat a low-fat, high-fiber diet. Eat less fatty cuts of beef, cookies, sweets, and cottage cheese, and more lean beef products, poultry, fish, whole grain cereals, wheat breads, and vegetables.
- Daily exercise such as walking can help ease the risk of constipation. If medication seems necessary, ask the doctor to recommend a daily stool softener or laxative.
- Try to avoid straining so hemorrhoids will not develop.

Diarrhea

Diarrhea can also be a side effect of chemotherapy. Caused by the destruction of normal, dividing cells of the gastrointestinal (GI) tract, diarrhea varies from patient to patient. It is better managed if treated early. Notify your doctor or nurse if cramping, gas, or loose stools begin.

- Try to drink 8-12 glasses of water a day to make up for the loss of water in the stool. Rapid and excessive fluid loss or dehydration can be a serious condition resulting from diarrhea, so drink plenty of fluids and monitor habits daily.
- The best liquids to drink are those which are clear in color. They eliminate overwork by the bowels and guard against its irritation. Apple juice, ginger ale, tea, broth, and jello are examples.
- You may want to eliminate milk products and foods which are difficult to digest, such as cabbage, broccoli, cauliflower, corn, and spicy foods, in order to give the bowels a rest.
- Eat bananas, potatoes, and meats to maintain a normal potassium level. Potassium is needed for muscles to function properly. If you do experience symptoms of low potassium intake such as irregular heart beats and leg cramps, be sure to call your doctor.
- Keep the area around the rectum clean and moist to prevent skin irritation. Ask your physician about the use of a "sitz bath" after bowel movements. Your doctor can prescribe a medicated cream, if necessary.

- Keep track of the number of stools per day. If any are bloody, or there are more than three bowel movements a day, inform your doctor.

Skin Reactions

Skin reactions can range from dry skin and skin redness to acne. Some reactions can occur during and after treatment. Not all chemotherapy agents cause skin reactions, but if you should notice any changes, alert your doctor. Most people notice a greater risk of sunburn -- even in cloudy weather. It is important to wear sunscreen on exposed areas when outdoors. Avoid use of a tanning bed. Keeping skin moist through the use of moisturizing creams can be helpful. If you are also receiving radiation treatments, this should be discussed with your radiation oncologist.

Effects of Chemotherapy on Bone Marrow

Bone marrow is found at the center of bones, especially the the skull, sternum, ribs, backbone and pelvis. This is one of the sites in the body with rapidly growing cells. Red and white blood cells and platelets are produced here. They are held there until they mature and are ready to perform their vital functions in the blood stream.

Chemotherapy acts on the rapidly dividing cells in the bone marrow. Red cell, white cell, and platelet production may be interrupted when chemotherapy is given. As a consequence, the number of circulating cells in the bloodstream can become reduced over time, resulting in **anemia** (decreased red blood cell count), **neutropenia** (decreased white blood cell count), and **thrombocytpenia** (low platelet count).

During the course of treatment, the term **nadir** may be used. This refers to the point when the cells in the body are at their lowest number. This is a predictable time, depending on the chemotherapy agent used. One drug may have a nadir of 7-14 days. This means that 7-14 days after beginning chemotherapy, the red cells, white cells, and platelets will be at their lowest number in the bloodstream. After a period of time, the blood counts will begin to rise back to normal.

Infection

The white blood cells (WBC's) help the body to fight infections. When chemotherapy is introduced into the body, it destroys both the cancer-producing cells and the healthy, infection-fighting cells, decreasing the body's ability to fight off infection.

Your physician may have frequent complete blood counts (CBC's) done to closely monitor your white blood cells. When the white blood cell count begins to drop below normal, this is called **neutropenia**. This is the time when chances for infection are the highest. The following hints will help prevent and detect an infection:

- Good handwashing is one of the first steps for prevention of infection. This begins with soap and warm water. Be sure to lather well and use friction to clean the surfaces. This is best achieved by rubbing the hands together with a a back-and-forth motion. Include the nailbeds and the webbed portions between the fingers.

- Try to keep the skin intact, since small cuts and bruises during the period of low white blood cells can harbor germs and be a good place for infection to start. If cuts and abrasions occur, clean the area well with soap and water. If the cuts are not very deep, clean them with hydrogen peroxide and cover with a sterile bandage. Call your doctor's office for further directions.

- Early signs of infection include:
    - Fever above 100.4F (37.8C)
    - Chills
    - New cough or production of sputum

  - Sore throat
  - More than three loose stools in a day
  - Pain or burning upon urination.

Be alert to these signs and notify your doctor if they occur. If a patient with a low white cell count does develop an infection, it is usually treated in the hospital with antibotics and possibly with medication to stimulate white cell production.

Other Blood Cells Affected by Chemotherapy

Red blood cells serve a vital function in the body by carrying oxygen. Chemotherapy destroys red blood cells, causing **anemia** (low red blood cell count). Symptoms of anemia include:

- Fatigue, dizziness, lightheadedness
- Shortness of breath
- Difficulty staying warm
- Chest pains

Your complete blood count (CBC) will show a drop in the hemoglobin and hematocrit. The anemia usually resolves after blood transfusions are given or when the blood count begins to rise again on its own.

If any of the symptoms occur, call your doctor or visit the emergency room. You may require a blood transfusion. This can sometimes be done on an outpatient basis. Today, many patients are asking about the direct donation of blood products from family members. If you are interested in this, speak with your doctor well ahead of time of a possible transfusion.

When your red blood counts are low, try to get more rest. Pace your activities, limiting the amount of work done in a day.

Red blood cell **stimulating factors** are also available which may help to prevent anemia. These are medications given to enhance red cell production in the bone marrow. Your physician may recommend these to reduce the risk of anemia.

Platelets are the blood cells which facilitate the clotting of blood to stop bleeding from an injury. These clotting cells are also destroyed by chemotherapy.

Some of the first signs of a low platelet count (**thrombocytopenia**) are constant bleeding from a cut and easy bruisability. Some people notice bleeding from the gums after eating a meal or brushing their teeth. A very common sign is the observance of small, pinpoint hemmorrahges, known as **petechiae**, inside the mouth or elsewhere on the body, such as the arms and legs.

If nose bleeds occur, apply pressure to the nostrils while remaining in an upright position. Apply ice to the nose, if necessary. If bleeding continues, contact your physician immediately. Bleeding can also occur from the bladder or rectum and show up as blood in the urine or stool. If this happens, contact your physician at once. In addition:

- Avoid injury to the skin during a period when platelets are low. This means avoiding use of a razor or nail clippers. If injury does occur, apply pressure to any spots which are bleeding for at least 10 minutes. Call your physician immediately if the bleeding does not stop.
- To prevent bleeding from the mouth, use a soft bristle toothbrush. Avoid the use of dental floss until blood counts are within the normal range.

- Be sure dentures fit properly to cut down on irritation to the gums. When dentures are removed, rinse with a mouthwash low in alcohol to prevent drying out the insides of the mouth and increasing the risk of bleeding.

Bleeding can also be found in the stool when platelets are low. It is important to keep the stool soft and to refrain from straining. Straining can rupture tiny blood vessels in the rectal area and cause hemorrhoids. Straining also increases the pressure around the brain, increasing the risk of another hemorrhage. You may take a laxative to keep your bowels soft and regular.

Sexuality

Physical changes affecting sexuality, sexual relations and reproduction may occur as a result of chemotherapy. Women may notice a change in their menstrual cycle, including the absense of menstrual periods. Decreased vaginal lubrication may cause discomfort during intercourse, but may be prevented by using a water soluble lubricant (K-Y Jelly). Sperm counts in men may be decreased due to treatment. These and other side effects vary with different chemotherapy drugs. Therefore, it is important to discuss this with your doctor or nurse. A few questions to ask may be:

- What physical changes will I experience from the chemotherapy that may affect my sexuality?
- Are there any restrictions on sexual activity during or after treatment?
- Can this treatment cause infertility?
- Do you have any suggestions that enhance comfort during intercourse?

It may be difficult at first to discuss this intimate topic with strangers, but sharing your questions and feelings with a health care professional may be beneficial in maintaining a positive attitude toward sexuality and sexual relations during and after cancer treatment.

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A Chemotherapy Primer: Why? What? and How?

Julia Draznin Maltzman, M.D
Abramson Cancer Center of the University of Pennsylvania
Posting Date: November 5, 2003

A special note to the reader: all the chemotherapy drugs discussed herein can be found on OncoLinkRx.

How do chemotherapy drugs work?

The object of all chemotherapy drugs is to kill the cancerous cells and not harm the adjacent healthy cells. To that end, scientists tried to identify characteristics that are unique to cancer cells and are not found on normal tissue. A distinct cancer trait could serve as a potential target for a chemotherapy drugs and thereby fulfill the above goal. One feature that is truly unique for most cancer cells is that they grow at a rate faster than normal cells. Therefore targeting some aspect of the cell growth cycle seems reasonable. Fast growing cells would be affected the most and slow growing cells would be least disturbed. In fact, that is the basis for many chemotherapeutics. This seems obvious when considering the side effect profiles of most chemotherapy drugs. Hair follicles, skin, and the cells that line the gastrointestinal tract are some of the fastest growing cells in the human body, and therefore are most sensitive to the effects of chemotherapy. It is for this reason that patients may experience hair loss, diarrhea, and rashes.

The human body processes and excretes all drugs through either the liver or the kidneys. Therefore, when a patient has kidney or liver damage, giving chemotherapy becomes precarious. Administering the recommended amount of drug may prove to be too toxic in a patient unable to metabolize and excrete it. The pharmacokinetics for cancer patients are very complex and chemotherapy pharmacology is a subspecialty on its own. Unfortunately, kidney and liver damage often result due to cancer invasion, limiting the patient's chemotherapy options.

Pharmacokinetics is further complicated in the cancer patient, as they are often taking multiple medications, some of which have overlapping metabolic pathways and side effect profiles. An example of this difficult situation is in the brain cancer patient. Because brain tumors often present as seizures, many of these patients take anti-seizure medications. Anti-seizure medications are metabolized by the liver and affect the metabolism of many chemotherapy drugs. Dose adjustments are an absolute necessity to avoid toxicities or subtherapeutic dosing.

The cell cycle

The cell cycle is broken up into four phases the G_1, S, G_2, and M phases. The G_1 phase is the phase most active in protein synthesis. The cellular DNA at this phase is tightly coiled and is not actively being transcribed. Few chemotherapy agents are active at this phase of the cell cycle. By contrast, the S phase is the synthetic phase of the cell cycle. DNA replication is most active and many chemotherapeutic agents are most active in this phase. G_2 represent a time when mostly RNA, but some protein, is actively produced. Mitosis, actual cell division, occurs during the M phase. There are two major classes of chemotherapy drugs that are most active during this phase of the cell cycle.

The remainder of this article includes a summary of the major classes of chemotherapy drugs.

Alkylating agents

Alkylating agents are the oldest class of anticancer drugs. Almost all of these drugs are active or latent nitrogen mustards. Nitrogen mustards are various poisonous compounds originally developed for military use. Alkylating agents all share a common mechanism of action but differ in their clinical activity. They attack the negatively charged sites on the DNA -- the oxygen, nitrogen, phosphorous and sulfur atoms. By binding to the DNA, replication, transcription and even base pairing are significantly altered. Alkylation of the DNA also leads to DNA strand breaks and DNA strand cross- linking. By altering DNA in this manner, cellular activity is effectively stopped and the cell will die. Chemotherapy drugs in this class are active in every stage of the cell cycle. As a consequence, this class of anticancer drugs is very powerful and is used in most every type of cancer both solid tumors and leukemia.

In general, prolonged use of these drugs will lead decreased sperm production, cessation of menstruation, and possibly cause permanent infertility. This class of chemotherapeutics should never be used in the first trimester of pregnancy as they are been shown to increase fetal malformations. Use in the second or third trimester does not seem to carry the same risk. All alkylating agents can cause secondary cancers although not all agents are equal in their carcinogenic potential. The most common secondary cancer is a leukemia (Acute Myeloid Leukemia) that can occur years after therapy.

Some of the more common alkylating agents include: Cyclophosphamide, Ifosphamide, Melphalan, Chlorambucil, BCNU, CCNU, Decarbazine, Procarbazine, Busulfan, and Thiotepa.

Antimetabolites

In 1948, Dr. Sidney Farber showed that a folic acid analog could induce remission in childhood leukemia. Approximately 10 out of the 16 patients treated demonstrated evidence of hematologic improvement. This experience provided the foundation for scientists to synthesize a number of other agents that either target naturally occurring compounds or inhibit key enzymatic reactions in their biochemical pathways. In general, all antimetabolites interfere with normal metabolic pathways, including those necessary for making new DNA. The most widely used antifolate in cancer therapy with activity against leukemia, lymphoma, breast cancer, head and neck cancer, sarcomas, colon cancer, bladder cancer and choriocarcinomas is Methotraxate. Methotraxate inhibits a crucial enzyme required for DNA synthesis and therefore exerts its effect on the S phase of the cell cycle.

Another widely used antimetabolite that thwarts DNA synthesis by interfering with the nucleotide (DNA components) production is 5-Fluorouracil. It too has a wide range of activity including colon cancer, breast cancer, head and neck cancer, pancreatic cancer, gastric cancer, anal cancer, esophageal cancer and hepatomas. A unique and interesting aspect of this drug is its toxicity profile. 5-Fluorouracil is metabolized by a naturally occurring enzyme called dihydropyrimidine dehydrogenase, DPD. There is a small population of people who may be deficient of this particular enzyme. Lacking DPD does not interfere with normal body biochemistry and thus the phenotype is silent. However, when these patients are challenged with this chemotherapy drug, they are unable to metabolize it and therefore get acute and sever toxicity. The most often seen toxicities include bone marrow suppression, severe GI toxicities, and neurotoxicities which may include seizures and even coma. It is important for the oncologist to recognize this early and provide the patient with Thymidine as an antidote. A drug called Capecitabine is an oral pro-5-Fluorouracil compound that has similar side effect potentials.

Other antimetabolites that inhibit DNA synthesis and DNA repair include: Cytarabine, Gemcitabine (Gemzar®), 6-mercaptopurine, 6-thioguanine, Fludarabine, and Cladribine.

Anthracyclines

Many of the currently effective anti-cancer drugs are from natural sources. The drug, daunorubicin was isolated from Streptomyces, a soil-dwelling fungus. Doxorubicin, another Anthracycline drug, was isolated from a mutated strain of the same fungus. Both of these drugs have a similar mechanism of action, but the latter is more effective in the treatment of carcinomas. This class of chemotherapeutics works by the formation of free oxygen radicals. These radicals result in DNA strand breaks and subsequent inhibition of DNA synthesis and function. Anthracyclines also inhibit the enzyme topoisomerase by forming a complex with the enzyme and DNA. Topoisomerases are a class of enzymes that serve to unwind the DNA double strand helix to allow for DNA repair, replication and transcription. This class of chemotherapeutics is also not cell cycle specific. The most important side effect of this group of drugs is cardiac toxicity. The same free radicals that serve to damage the DNA of the cancer cell may damage the cells of the heart muscle. Oncologists monitor heart function very carefully when patients are on these medications. Other commonly used anthracyclines include Idarubicin, Epirubicin and Mitoxantrone.

Antibiotic

Another small peptide isolated form the fungus *Streptomyces verticullus* is Bleomycin. Its mechanism of action is similar to that of the anthracyclines, in that free oxygen radicals are formed that result in DNA breaks leading to cancer cell death. This drug is rarely used by itself rather in conjunction to other chemotherapies. Bleomycin is an active agent in the regimen for testicular cancer as well as Hodgkin's lymphoma. The most concerning side effect of this drug is lung toxicities due to oxygen free radical formation.

Camptothecins

The drugs in this class of chemotherapeutics act by forming a complex with Topoisomerase and DNA resulting in the inhibition and function of this enzyme. The presence of Topoisomerase is required for on-going DNA synthesis. These drugs are used in many solid and liquid tumors and the side effect profile of this class of drugs is agent specific. Camptothecins include both irinotecan and topotecan. The parent compound, first identified in the late 1950's, is a naturally occurring alkaloid found in the bark and wood of the Chinese tree *Camptotheca accuminata*.

Etoposide, a chemotherapeutic that works by the same mechanism, is a natural product isolated from the mandrake plant and is not considered a camptothecin but rather an epipodophyllotoxin.

Vinca Alkaloids The leaves of a periwinkle plant, *Vinca rosea*, were used to make tea that reportedly improved diabetes. Early research showed that aqueous extract of this plant administered by injection into rats resulted in their death within a week. Further investigation showed that the rats die of sepsis due to bone marrow suppression caused by this extract. Isolation and chemical characterization lead to the currently used drugs: vincristine, vinblastine, and vinorelbine. These chemotherapeutics bind to the tubulin and lead to the disruption of the mitotic spindle apparatus. The disruption of mitosis implies that these drugs are active specifically during the M phase of the cell cycle. They have a wide application to many different malignancies and cause neurotoxicity as the most prominent and dose limiting side effect.

Taxanes

Another class of chemotherapeutics that are specific for the M phase of the cell cycle is the Taxanes. The taxanes include paclitaxel and docetaxel. They bind with high affinity to the microtubules and inhibit their normal function. This class of drugs has a broad range of clinical activity including breast cancer, lung cancer, head and neck cancer, ovarian cancer, bladder cancer, esophageal cancer, gastric cancer and prostate cancer. The most common side effect of these drugs is the lowering of the blood cells. These compounds were first isolated for the bark of the Pacific yew tree *Taxus brevifolia* in 1963. It was not until 1971 that paclitaxel was identified as the active component.

Platinums

Natural metal derivatives were also shown to have some activity in the fight against cancer. These agents work by cross-linking DNA subunits. (The cross linking can happen either between two strands or within one strand of DNA.) The resultant cross-link acts to inhibit DNA synthesis, transcription and function. The platinum compounds can act in any cell cycle. Cisplatin is used most often in lung cancer and testicular cancer. The most significant toxicity of cisplatin is kidney damage. Second-generation platinum, called carboplatin, has fewer kidney side effects, and at times may be an appropriate substitute for regiments containing cisplatinum. Oxaliplatin is a third-generation platinum that is active in colon cancer and has no renal toxicities, however, its major side effect is neuropathies.

Conclusion

There are other drugs now being used as effective therapies for malignancy. These include hormones for breast, prostate and endometrial cancers, monoclonal antibodies, immunotherapy with IL-2 and TNF alpha, and small molecule inhibitors. The process of drug discovery involves much time, effort and resources. New approaches are constantly being developed and modified. The process of testing a new agent in clinical trials begins with the discovery of new compounds, new ideas, new pathways, and new principles.

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Information about radiation therapy and treatment side effects. Includes an overview of the treatment process.

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Information on Radiation Therapy

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All About Radiation Therapy

Joel W. Goldwein, MD
Abramson Cancer Center of the University of Pennsylvania
Last Modified: November 1, 2001

This is a pictorial view of the pediatric patient's flow through the Department of Radiation Oncology at the University of Pennsylvania. While this document is directed at children undergoing radiotherapy at the Hospital of the University of Pennsylvania, many of the procedures are very similar for adults at other institutions.

Getting to Know Your Doctor

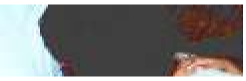
For your first visit to the Radiation Oncology Department, you and your parents will meet with your doctor in order for all of you to get to know each other.

During this first visit, the doctor will examine you and also inform you about the radiation therapy process and all you need to know about the actual treatment.

The Simulator

On your second visit to the hospital, the planning for the treatment will begin. Sometimes, a special scan will be performed, but usually an x-ray will be taken of you while you lie under a big machine known as a "simulator." This process is therefore called **simulation**.

After the x-rays are developed, the doctor will examine them and then he will mark them in the places where you will be receiving treatment. This X-ray like photo is taken so that the doctor(s) can map out exactly where the tumor is located and where you must receive your treatment.

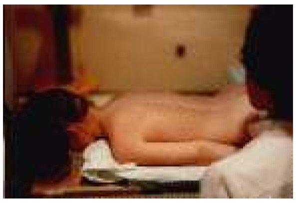


Sometimes, tattoos will be made to mark the edge of the radiation therapy field on your skin. The first step in making a tattoo is to place a drop of ink on the skin.

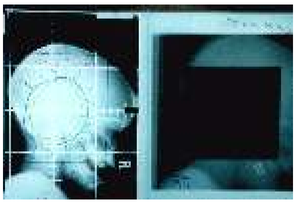
The ink spot will be scratched with a sticky needle to draw the actual tattoo.

This is what a complete tattoo looks like and this tattoo marks the spot where the radiation beam will be pointed. The tattoo stings for a second, but they are much easier than a finger stick or a needle.

A few days later, a *set-up* is done with you on the treatment machine by the doctors and the technicians. This is done to make sure that the treatment will be delivered exactly as designed during simulation. This set-up may also be based on computerized treatment planning to determine the best way to deliver the radiation as prescribed by your doctor.



Objects called "blocks" are sometimes made just for you. They are used to separate the cancerous cells from the normal cells so that they will not affected by the radiation beam. After the blocks are made and are slid into place on the machine, actual treatment can begin. You will be laid on a table of a big machine known as the linear accelerator. This machine will be moving over and around you and this is so that it can aim itself directly at the tattoo. One thing to remember is that you have **to be very still** while the machine is on so that the wrong parts of your body will not be affected by the beam. The laser beam on this patient's back is used to help line up the patient from one day to the next.



This is a picture of a simulation film compared to a portal film usually examined at the time of set-up on the treatment machine.

The doctors and technicians will leave the room while you are receiving your treatment so that they will not be unnecessarily exposed to radiation. They will be right outside of the door and they will be watching you on a television screen outside the room. There is **no pain or sensation** with these treatments. It is just like getting a picture taken!

For a period of time, you may have to come back everyday to receive your treatment. After your treatments are over, you will have to come back to the hospital for something called *followup examinations*. This is where the doctor checks you out to see how the radiation treatment has affect you and how well you are doing. The doctor does stress close follow-ups for **all** patients who have undergone treatment with radiation. Follow-up intervals will range from once every week to once per year, but they are very important and you should be present every time one is scheduled.

One thing that you should really try to remember is that all of the nurses, technicians, and doctors are here to help you in the best way they can. They have your best interests at heart and they are eager to see you get well.

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Today's artwork was donated by Jason, a pediatric cancer patient who received treatment for cancer at The Children's Hospital of Philadelphia

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Hopefully, this pictorial display has given you a much better understanding of the radiation therapy process. If there is still anything you don't understand or are really confused about, ask your doctors and they will answer your questions in the best way that they know. Remember, these are not just people in white coats, they are your friends.

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Information on Radiation Therapy

Gloria Hagopian, RN, EdD
Abramson Cancer Center of the University of Pennsylvania
Last Modified: November 1, 2001

Radiation therapy is the use of high level radiation to destroy cancer cells. Both tumor cells and healthy cells may be affected by this radiation. The radiation injures the cancer cells so they can no longer continue to divide or multiply. With each treatment, more of the cells die and the tumor shrinks. The dead cells are broken down, carried away by the blood and excreted by the body. Most of the healthy cells are able to recover from this injury. However, the damage to the healthy cells is the reason for the side effects of radiation therapy. Radiation has its greatest effect on tissues that divide rapidly.

The dose of radiation is determined by the size, extent, type and grade of tumor along with its response to radiation therapy. Complex calculations are done to determine the dose and timing of radiation in treatment planning. Often, the treatment is given over several different angles in order to deliver the maximum amount of radiation to the tumor and the minimum amount to normal tissues.

Some things to remember about radiation therapy:

- The side effects that occur during radiation therapy are manageable. Your doctors and nurses will help you with these.
- The radiation passes through your body and does not remain in you. You are not radioactive.
- Only the body part in the field of radiation is affected.
- Normal cells exposed to radiation begin to repair themselves hours after exposure.

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Confronting Cancer Through Art is an exhibition by people whose lives have been touched by cancer.

Today's featured work:
Forgiving the Anger of a Cancer Chick
by Kathleen F. Chapman

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Overview of the Treatment Process

Abramson Cancer Center of the University of Pennsylvania
Posting Date: January 14, 2000
Last Modified: November 1, 2001

Introduction

The purpose of this section is to provide you with an overview of the radiation therapy treatment process, from the initial consultation through treatment and follow-up. We encourage you to read through all of this information, or, if you prefer, you can go directly to specific sections by simply clicking on that title below. We hope you find the information helpful, and that it enhances your understanding of your care.

The following information is contained in this section:

- Initial Consultation
- Informed Consent process
- Treatment Planning
- CT/Simulation
- Tattoos
- Technical Planning Process
- Set-Up
- Confirmation
- Daily Treatments
- Treatment Times and Scheduling
- On-Treatment Examinations
- End-of-Treatment Visit
- Follow-Up Care

Initial Consultation

Whenever radiation therapy is being considered as part of your treatment plan, a consultation visit will be arranged for you with a radiation oncologist, a physician specially trained in using radiation therapy for treating your type of cancer. The purpose of this visit is to confirm the use of radiation therapy in your treatment, to determine the kind of radiation therapy plan to be used for your treatment, and to answer any questions you may have. The consultation will take from one to several hours, depending on your particular situation. Please bring with you all X-rays, laboratory studies, pathology slides and other

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tests that have been performed so that they can be reviewed by the radiation oncologist.

During the visit, a detailed history and physical examination will be performed by your physician. Your physician will also discuss their findings with other members of the multidisciplinary treatment team so that all treatments, such as surgery and chemotherapy, will be coordinated to ensure that you can receive the best possible care. At the end of the visit, your physician will review and recommend the role of radiation therapy in your care. If radiation therapy is not recommended, the physician will also discuss the reasons for this.

Informed Consent Process

If radiation therapy is recommended as a part of your treatment, your physician will review in detail the proposed treatment, the reasons for recommending the treatment, and the potential risks and side effects of such treatment. Ample time will be provided so that you have a full understanding of the treatment and related issues and have all of your questions and concerns answered in full. We encourage you to bring family members or significant others with you, as they may be able to help you during the process and have their own questions answered.

Once you feel that you have a full understanding of the proposed treatment, risks, side effects and other possible treatment options, you will be asked to sign a consent form. Before you sign the consent form, you need to make sure that you are comfortable with the explanation that you have received. Even after you have signed the consent, your physician is always available to answer new questions or to provide additional information. You can withdrawal your consent at any time for any reason.

For additional information about the consent process, go to OncoLink: Making Treatment Decisions - Informed Consent.

Treatment Planning

Before radiation treatments begin, you will go through a treatment planning process called "simulation" to confirm that the treatment machine will treat the exact location on your body. A map of the area on your body where the radiation is to be delivered, referred to as the treatment field(s), is created. A machine called a simulator, which is designed to mimic the movements and settings on the actual treatment machine (called a linear accelerator) that will be used to administer the radiation therapy to you, is used.

Throughout the process, X-ray films will be taken. The entire simulation takes approximately an hour, but, the actual time may vary slightly. Since you will be lying on a hard table under the simulator for most of this time, you may experience some pain or discomfort. Should this occur, tell the technician. Keep in mind that the time necessary to deliver the actual radiation therapy treatments is only minutes, not nearly as long as the time required for the simulation.

CT Simulation

In some situations, a special computerized tomographic (CT) scanner will be used along with simulation to help plan some radiation therapy treatments. In these instances, the CT scanning process will be performed in the Radiation Oncology Department several days prior to the simulation. Information from the CT scan is used to precisely locate the treatment fields. The CT scanner is specially designed to work with the other equipment in the Department, and is not a replacement for other diagnostic scans you may have received.

Tattoos

At the end of the simulation visit, it is necessary to put marks on you to outline the treatment field(s). These marks are in the form of very small tattoos, which are dots the size of a pinpoint or freckle, made using India ink. The process of tattooing causes some temporary discomfort. Generally, between 4 and 8 tattoo marks are placed, but sometimes more or less are necessary. In some treatment plans, a second set of tattoos may be necessary. While the tattoos are permanent, because of their very small size, they are not very noticeable. By using the tattoos, it will be possible for you to bathe or shower on a daily basis without worrying about removing these important marks that show where the radiation treatments are to be delivered. Also, if any additional radiation therapy is needed in the future, the tattoos serve as a permanent record of previous treatments. In very rare instances, tattoos will not be used.

Technical Planning Process

After simulation, details from the procedure are forwarded to medical radiation dosimetrists and medical physicists. These professionals perform highly technical calculations that will be used to set the treatment machine (linear accelerator).

Large alloy blocks may be placed inside the treatment machine to limit the amount of radiation delivered to your normal tissue in the treatment field. These blocks help decrease the development and/or severity of side effects caused by the treatments. Blocks are customized for each patient, in order to provide the best protection.

Set-Up

Several days after the simulation and after all calculations have been performed and custom blocks made, your treatment can begin.

Our treatment machines (linear accelerators) resemble the simulator but are larger. You will be placed on the treatment table in the same position as you were on the simulator. Proper positioning usually takes 10 to 15 minutes. Once in place on the treatment table, a set of X-ray films will be taken. These films will be matched with the simulation films to ensure that the treatment is going to be delivered the same way as it was simulated. Occasionally, the match is not optimal. In these cases, adjustments will be made and will be checked by your attending physician. In rare cases, more adjustments are required and treatment may need to be postponed. Once the films and positioning are confirmed, a treatment will be delivered.

The actual administration of the radiation treatment usually takes only about 5 to 10 minutes. Factors that affect the total length of the treatment include the complexity of your treatment, the particular machine on which you are being treated and how quickly you can be positioned properly for treatment. On average, most patients spend a total of 20 to 30 minutes in the Department per day receiving their treatment.

Confirmation

Often, your attending physician will be called to see you at the machine to make sure that your position is correct. This should not cause you any concern as it is a standard part of our practice to ensure the most accurate delivery of the radiation treatments.

Daily Treatments

Once the initial set-up is completed, daily treatments normally follow. Treatments are usually given once a day, Monday through Friday, for a number of weeks. Each treatment generally takes only 5 to 10 minutes; however, you will likely be in our department for approximately 20 to 30 minutes per day. Sometimes, twice daily radiation treatments will be recommended.

Treatment Times and Scheduling

Treatments take place between 8:00 AM and 4:30 PM, Monday through Friday. Scheduling of treatments is fairly flexible and every attempt will be made to accommodate your schedule within a reasonable period of time. In most cases, your treatment will be scheduled for the same time each day for the entire course of treatment.

On-Treatment Examinations

Once a week, repeat X-ray films will be taken to re-confirm proper positioning. These films will also be performed in most cases where there is a change in your treatment field or treatment plan. The X-rays taken during the course of radiation treatment are not used to help measure your progress or response to the radiation. Rather, they are only used to ensure that the position and treatment arrangement is appropriate.

You will also be examined at least once a week by your attending physician and resident. The examination day is generally on Thursday, just before or after your treatment is administered. These examinations are important because they give your physician the opportunity to evaluate your physical condition, answer any questions that you may have, and plan and coordinate future treatments.

If you are having a problem, you should not wait until your next on-treatment examination. Instead, you should ask to be seen or call the Department. Your nurse will review your problem or concern and if he/she cannot help, will contact your physician. If indicated, you will be seen by your attending physician. If there are any problems at night or on weekends, call the hospital page operator and ask for "the radiation oncologist-on-call."

End-Of-Treatment Visit

Once your radiation treatments have been completed, you will have a final visit with your physician. This will occur just after your last treatment has been administered. During this visit, your doctor will perform an examination and discuss follow-up care.

Follow-Up Care

In general, follow-up appointments occur between 2 and 6 weeks after the completion of radiation therapy. After that, we will follow your progress and see you on a regular basis. We understand that you may be seeing many other physicians, but it is important for us to participate in this follow-up process so that any radiation-related problems can be identified early and treated. We will also stay in touch with your other cancer specialists.

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Radiation Therapy: A Basic Introduction

Heather Jones, MD
Abramson Cancer Center of the University of Pennsylvania
Last Modified: November 1, 2001

What is Radiation Therapy?

Radiation therapy is the use of high-energy radiation, primarily electronically generated x-rays, to kill cancer cells. Doctors have traditionally used x-rays as a tool for painlessly visualizing the inside of the human body. The radiation used to treat cancer is given in doses many times higher than those delivered by x-rays. This application of high-energy radiation has had a profound positive effect on cancer survival.

How does radiation therapy work?

Normal cells divide and replace themselves in an orderly process, keeping the body healthy and repairing structures as needed. Cancer occurs when cells lose the ability to control their own growth. These abnormal cells multiply quickly, forming clumps of tissue called tumors and spreading to nearby tissues and organs (and sometimes to other parts of the body).

Radiation therapy works by damaging the cancer cells' DNA, the genetic information that is vital for reproduction. Once the DNA has been damaged, the cancer cells are not able to divide and grow, causing the tumor to shrink. Cells that are growing and multiplying rapidly are especially sensitive to the effects of radiation.

Highly trained doctors called radiation oncologists use advanced equipment to aim high-energy x-rays, electrons, or radioactive isotopes precisely at tumors or parts of the body where cancer cells are present. Radiation therapy treatments are designed to destroy the cancer cells while limiting the amount of normal tissue exposed and injured by the rays. Special shields may be used to protect parts of the body that do not require treatment.

Despite these protective measures, some normal cells are affected by radiation therapy. However, these healthy cells appear to recover more fully from the effects of radiation, since they are generally much better at using the body's natural repair mechanisms to correct the DNA damage.

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What are the goals of radiation therapy?

Radiation therapy is an effective treatment for many types of cancers in almost any part of the body. Its two main goals are to cure cancer and relieve symptoms. For many patients, radiation is the only treatment needed. However, radiation treatment may also be given in combination with chemotherapy and/ or surgery. Radiation can be used before surgery to shrink a tumor, and during or after surgery to kill any cancer cells that may still be present. Doctors sometimes use radiation along with anticancer drugs to destroy the cancer, instead of performing surgery.

Radiation can be used as a palliative therapy, meaning that its primary intent is not to cure the cancer, but to relieve pressure, bleeding, or pain by shrinking tumors.

How is radiation therapy given?

External Radiation

Radiation treatment can be given in one of two forms: external or internal. Most cancer patients receive external radiation therapy, which uses a machine to direct the high-energy rays or particles at the cancer and the normal tissue surrounding it. The radiation is usually produced in a machine called a linear accelerator. Different machines produce different types of energy; some are better for treating cancer near the surface, while others work best on cancer deeper in the body. The radiation oncologist decides which machine is best for each patient.

Simulation and treatment planning

After the initial consultation, the radiation oncologist may need to do some special planning to pinpoint the treatment area, a process known as "simulation." Alignment is critical during this planning process, so the patient will be asked to lie very still on a table while the radiation therapist (a specially trained technologist), under the supervision of the radiation oncologist, uses a special x-ray machine to define the patient's treatment area, sometimes called the treatment portal or field. This is the exact place in the body where the radiation will be aimed. Ink lines are usually drawn on the skin to identify the area to be treated. Tattoos (tiny permanent skin markings the size of a freckle) may be placed at the time of simulation.

Several other treatment planning steps occur after simulation and before treatment, but the patient is not required to be present for these. The simulation x-ray may be used to design customized shielding devices (blocks) to protect healthy tissue from the radiation beam. The information from simulation, other tests, and the patient's medical background will be used by the doctor, radiation physicist (who monitors the equipment), and dosimetrist (who calculates the correct dose) to create a customized treatment plan. The doctor then decides how much radiation is needed, how it will be delivered, and how many treatments the patient will need. After all treatment planning is completed, the patient returns for verification on the treatment machine, and radiation therapy is ready to begin. Treatments are generally administered on an outpatient basis, and take about _ hour each to deliver.

Note that patients are not radioactive at any time during external beam radiation therapy.

Internal Radiation

Internal radiation therapy places the source of the high-energy rays inside the body, as close as possible to the cancer cells. This delivers very intense radiation to a small area of the body and limits the dose to normal tissue. Internal radiation therapy allows the doctor to give a higher total dose of radiation in a shorter time than is possible with external treatments. The radioactive substances used typically include radium, cesium, iodine, and phosphorus, and they may be implanted for only a short time or left in place permanently. Patients with radiation implants sometimes need to be isolated from visitors so as not to expose them to radioactivity.

What are the side effects?

The high doses of radiation that damage or destroy cancer cells also can hurt normal cells, causing side effects. These will vary depending on the area treated and the dose received. The risk of side effects is usually less than the benefits of killing cancer cells. While side effects are unpleasant, most are usually temporary and will disappear gradually when therapy is complete.

Most radiation oncologists will want to see patients at least once a week while they are under treatment. This visit with the health care team serves as an opportunity to ask questions and discuss any side effects that are occurring, and identify any physical changes from treatment.

Side effects are generally limited to the region of the body being treated. The following are some of the most common side effects of radiation therapy. Only a brief discussion is provided here; check with the radiation oncologist and health care team for more details.

- Skin reaction
  There may be some reddening of the skin and the area may become irritated, dry, or sensitive. A skin reaction may progress to look like a sunburn. Treat the skin gently to avoid further irritation; bathe carefully using only warm water and mild soap.
- Hair loss
  Hair loss may occur in the treatment field. Loss of scalp hair occurs only if radiation is directed to the head. In most cases, the hair grows back following radiation; however, this is usually dependent on the dose.
- Nutritional problems
  Radiation can affect the membranes of the mouth and/or gastrointestinal tract, causing discomfort while swallowing, nausea, altered taste of foods, and diarrhea. Medications are available to treat nausea, and oral rinses and pain medicine may offer some relief for ulcers of the mucous membranes. Commercial mouthwashes should be avoided, since some contain ingredients which can irritate.
- Fatigue
  Fatigue or weakness is one of the most common side effects of radiation therapy. Patients are not restricted from normal activity during radiation therapy, and many continue to work while undergoing treatment. However, they should balance normal activity with periods of rest.

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What is radiation therapy?

Abramson Cancer Center of the University of Pennsylvania
Posting Date: January 14, 2000
Last Modified: November 1, 2001

Radiation is a type of high energy that comes from special machines (i.e., X-ray machines) or radioactive sources (i.e., cobalt, radioactive iodine). When used at high doses, radiation can destroy cells or keep them from growing or dividing. The use of high-energy rays or particles to treat disease is called radiation therapy. You may also hear it referred to as x-ray therapy, cobalt therapy, or irradiation.

Radiation therapy is an effective way to treat many kinds of cancer in almost any part of the body. About half of all patients with cancer are treated with radiation. For some, radiation therapy is the only treatment necessary. For others, radiation therapy is combined with other treatments, such as surgery and chemotherapy, to best treat their cancer.

Radiation works best against cells that are growing and dividing. Because cancer cells grow and divide more rapidly than many of the normal cells around them, radiation therapy is a useful tool in treating cancer. Although some of the healthy cells in the area where the radiation is given are also destroyed, most normal cells tend to recover more quickly and more fully from the effects of radiation than do the cancer cells. Careful planning is taken to ensure that the radiation affects as little of the normal tissue as possible.

How is radiation therapy given?

Radiation therapy can be given either externally or internally. Most patients who receive radiation therapy receive it externally. In this type of treatment, doses of radiation are given to a carefully defined area through a machine that directs the high-energy rays or particles at the cancer and the normal tissue surrounding it. Treatments are usually given once a day, Monday through Friday, over a period of 3 to 7 weeks. Patients normally receive each treatment during an outpatient visit to a hospital or radiation therapy treatment center, and very few require an in-patient admission. Since the radiation is given in relatively small doses, patients who receive external radiation therapy are not considered radioactive and do not need to take any special precautions during the time they are being treated.

Radiation therapy can also be given internally to administer higher doses of radiation directly to the tumor. In some cases, the radioactive substance is sealed in small containers such as thin wires or tubes, which are held in place by mechanical devices. In other situations, the radioactive substance is swallowed by mouth or injected into the body. These are referred to as unsealed sources. Most patients who receive internal radiation therapy are admitted to the hospital for 3-7 days. For more information on internal radiation therapy, go to Internal Radiation Therapy.

There are two types of machines that are used to deliver external radiation therapy. One is a linear accelerator, a machine that creates high-energy radiation using electricity to form a stream of fast-moving subatomic particles. The other type of machine contains a radioactive substance, most often cobalt-60, as its source of radiation. The Department of Radiation Oncology at the Abramson Cancer Center of the University of Pennsylvania uses state-of-the-art linear accelerators. These machines deliver the radiation therapy to the tumor with great accuracy, killing the cancer while sparing as much of the surrounding healthy tissue as possible. For more information on external radiation therapy, go to Overview of the Treatment Process.

OncoLink Art Gallery

Today's artwork was donated by Lauren, a pediatric cancer patient who received treatment for cancer at The Children's Hospital of Philadelphia

Visit the Children's Art Gallery

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Breast cancer information centre

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    - Breast lumps
    - What is cancer?
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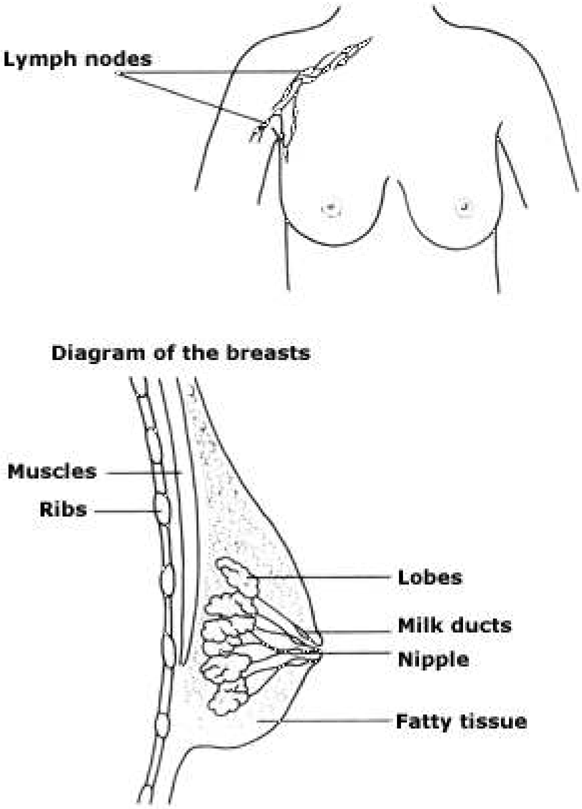
The structure and function of the breasts

The breasts are made up of fat, connective tissue and glandular tissue which contains lobes. The lobes are where breast milk is produced. A network of ducts connects the lobes to the nipple.



(d)

A woman’s breasts are rarely the same size as each other, and may feel different at different times of the menstrual cycle, sometimes becoming lumpy just before a period.

Under the skin, a ‘tail’ of breast tissue extends into the armpit (*axilla*). The armpits also contain a collection of lymph glands (also called *lymph nodes*), which are part of the lymphatic system. There are also lymph nodes just beside the breastbone and behind the collarbones.

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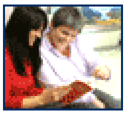

Breast lumps

Seven out of eight breast lumps are benign and are not cancer. Common causes of benign breast lumps are *cysts* (sacs of fluid which build up in the breast tissue) or *fibroadenomas* (solid tumours made up of fibrous and glandular tissue). Benign breast lumps are easily treated.

If you do notice a lump or are aware of any new change in your breast visit your doctor straight away.

Any different or unusual change in the breast should always be examined by a doctor, because even though most breast lumps are benign, they still need to be checked carefully to rule out the possibility of cancer. Also, if it is a cancer, the earlier the treatment is given, the more likely it is to be successful.

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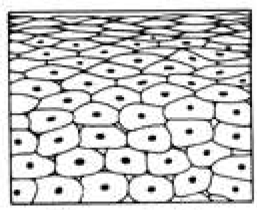
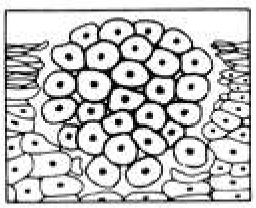
What is cancer?

The organs and tissues of the body are made up of tiny building blocks called cells. Cells in different parts of the body may look and work differently but most reproduce themselves in the same way. Cells are constantly becoming old and dying, and new cells are produced to replace them. Normally, the division and growth of cells is orderly and controlled but if this process gets out of control for some reason, the cells will continue to divide and develop into a lump which is called a tumour. Tumours can either be benign or malignant. Cancer is the name given to a malignant tumour.
In a benign tumour the cells do not spread to other parts of the body and so are not cancerous. However, if they continue to grow at the original site, they may cause a problem by pressing on the surrounding organs.

It is important to realise that cancer is not a single disease with a single type of treatment. There are more than 200 different kinds of cancer, each with its own name and treatment.



Normal cells



Cells forming a tumour

(d)

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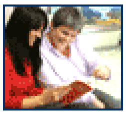

References for the breast cancer section

The information in the breast cancer information centre is based on the CancerBACUP booklet, *Understanding cancer of the breast*.

The booklet was produced in accordance with the following sources and guidelines:

- Improving Outcomes in Breast Cancer – Guidance for Purchasers. The Manual Update. National Institute of Clinical Excellence. August 2002.
- Improving Outcomes in Breast Cancer – Guidance for Purchasers. The research update. National Institute of Clinical Excellence. August 2002.
- Guidelines for surgeons in the management of symptomatic breast disease in the United Kingdom. Breast Surgeons Group of the British Association of Surgical Oncology.1998.
- Breast cancer in women (publication 29). Scottish Intercollegiate Guidelines Network. Edinburgh. SIGN, 1998.
- Guidelines on the non-surgical management of breast cancer. The Royal College of Radiologists 'Clinical Oncology Information Network. Clinical Oncology,1 999, 11 :S90 – S133
- The classification and care of women at risk of familial breast cancer in primary, secondary and tertiary care. National Institute of Clinical Excellence. May 2004.

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The causes of breast cancer

The causes of breast cancer are not yet completely understood. The risk of developing breast cancer is very small in young women and increases as women get older. More than half of breast cancers occur in women over the age of 65.

Some factors may slightly increase a woman's risk of developing the disease and these are described below.

- Having had breast cancer.
- Having had certain types of benign breast disease (*lobular carcinoma in situ* or *atypical lobular hyperplasia*) in the past.
- Women who are taking hormone replacement therapy (HRT), or have recently taken it, have a slightly increased risk of breast cancer. Younger women who take HRT because they have had an early menopause, or have had their ovaries removed, do not have an increased risk of breast cancer until after the age of 50.
- Taking the contraceptive pill very slightly increases a woman's chance of developing breast cancer.
- Women who do not have children are slightly more likely to develop breast cancer then women who do have children.
- Women who start their periods early (early puberty) or have a late menopause have a slightly higher risk of breast cancer.
- Women who have never breastfed are slightly more likely to develop breast cancer than women who have breastfed for more than a year.
- Being overweight, once you have had your menopause, can increase the risk of breast cancer.
- Drinking a lot of alcohol over many years can increase the risk.

Inherited faulty genes

A very small number (about 5–10%) of breast cancers are thought to be caused by inherited faulty genes. Two breast cancer genes have been identified: BRCA1 and BRCA2 – others may be found in the near future.

Breast cancer is a common cancer and about one in nine women in the UK will develop it during their lifetime. So, in a family if just one or even two elderly relatives are diagnosed with breast cancer, it is not likely that the cancers could be caused by an inherited faulty gene. Other family members would not be at high risk of developing breast cancer.

However, if you have any of the following in your family, you might want to speak to your GP and be referred to a family cancer clinic:

- three close blood relatives (from the same side of the family) who developed breast or ovarian cancer at any age, or
- two close relatives (from the same side of the family) who developed breast or ovarian cancer under the age of 60, or
- one close relative who developed breast cancer under the age of 40, or
- a case of breast cancer in a male relative, or
- a case of bilateral breast cancer (cancer in both breasts).

You may find it helpful to read CancerBACUP's section on cancer genetics, if you are worried about your own or your relative's risk of developing cancer.

Content last reviewed: 01 August 2004
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Related information

- Are you worried about ...breast cancer?
- Genetics

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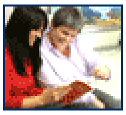

The symptoms of breast cancer

In most women, breast cancer is first noticed as a painless lump in the breast. Other signs may include:

- a change in the size or shape of a breast
- dimpling of the skin of the breast
- a lump or thickening in the breast tissue
- a nipple becoming inverted (turned in)
- a lump or thickening behind the nipple
- a bloodstained discharge from the nipple (this is very rare)
- a swelling or lump in the armpit.

Pain in the breast is rarely a symptom of breast cancer. In fact, many healthy women find that their breasts feel lumpy and tender before a period. Some types of benign breast lumps can be painful.

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The early detection of breast cancer

UK National Breast Screening Programme (screening)

The earlier a breast cancer is diagnosed and treated, the better the chance of successful treatment. In the UK, all women between the ages of 50 and 69 are offered mammograms (breast x-rays) every three years, as part of a national breast screening programme. This aims to detect breast cancers early, so that there is a high chance of successful treatment.

Women between the ages of 40 and 50, who have a close relative with breast cancer, can discuss with their GP whether they should have regular screening before the age of 50.

Mammography can detect changes in the breast tissue before they develop into a lump large enough to be felt with the fingers.

Breast self-awareness

It is important to become familiar with how your breasts normally feel at different times of the month. You will then quickly be aware of any changes in your breasts that are not normal for you. CancerBACUP can give you information about breast awareness or you can contact Breast Cancer Care.

If you are concerned about anything unusual in your breasts, you should make an appointment to discuss this with your GP.

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Related information

Breast screening

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How breast cancer is diagnosed

You will probably begin by seeing your GP (family doctor) who will examine your breasts. If the GP is not sure what the problem is, you will be referred to hospital for specialist advice or treatment.

At the hospital the doctor will take your medical history before carrying out a physical examination. They will examine your breasts and feel for any enlarged lymph glands under your arms and at the base of your neck.

The following tests may be used to diagnose breast cancer. You may have one or two of the tests, or a combination. It can be helpful to have a friend or relative with you when you go for any tests or to get your results.

Mammography

A mammogram is a low-dose x-ray of the breast tissue. You will need to take off the clothes from the top part of your body, including your bra. The radiographer will then position you so that the breast is placed on the x-ray machine and gently but firmly compressed with a flat, clear, plastic plate.

The breast tissue needs to be squashed (compressed) to keep the breast still and to get a clear picture. Most women find this uncomfortable and for some women it is painful for a short time. You will need to stay still for less than a minute while the picture is taken.

Mammograms are usually used for women over the age of 35. In younger women the breast tissue is more dense, which can make it difficult to detect any changes on the mammogram.

Ultrasound

Ultrasound is used to see if a lump is solid or contains fluid (a cyst). It is usually used in women under the age of 35.

A special gel is spread onto the breasts and a small device, which emits sound waves, is passed over the area. The echoes are converted into a picture of the breast tissue by a computer.

This test is painless and takes just a few minutes.

Colour Doppler ultrasound

A colour Doppler ultrasound machine can show the blood supply to the lump. The blood supply shows up as patches of red or blue colour on the scan and the pattern of the blood flow can help to tell the difference between a cancer and a benign lump.

Needle (core) biopsy

A needle (core) biopsy may be done. A doctor uses a needle to take a small piece of tissue from the lump or abnormal area. Local anaesthetic is injected into the area first to numb it. You may feel a little soreness or a sensation of pressure for a short time. Several biopsies are usually taken at the same time.

The sample is then sent to a laboratory to be looked at by a *pathologist* (a doctor who is expert at diagnosing illness by looking at cells). Depending on the number of biopsies taken, the breast tissue may be quite bruised and sore afterwards, and this may take a couple of weeks to completely disappear.

Fine needle aspiration

A fine needle aspiration (FNA) is a quick, simple procedure which is done in the outpatient clinic. Using a fine needle and syringe, the doctor takes a sample of cells from the breast lump and sends it to the laboratory to see if any cancer cells are present. As the breast is sensitive, the needle aspiration may be quite uncomfortable and the breast may be bruised for a week or so afterwards.

Sometimes (especially if the lump is small) a needle aspiration may be carried out in the x-ray department. The doctor uses x-ray or ultrasound guidance to make sure that the needle takes cells from the abnormal area of the breast.

Blood tests

Samples of your blood will be taken to check your general health, the number of cells in your blood (blood *count*) and to see how well your kidneys and liver are working. Your blood may also be tested to see whether it contains particular chemicals (*markers*), which are sometimes produced by cancer cells.

Excision biopsy

An excision biopsy may be done. The whole lump is removed under a general or local anaesthetic and sent to a laboratory for examination under a microscope. This may mean an overnight stay in hospital but is done as day surgery in some hospitals.

If a lump is too small to be felt, but has shown up on mammography or ultrasound, the radiologist may need to mark the area for the surgeon, before the excision biopsy. This is done by inserting a very small wire (a guide wire) under local anaesthetic, using x-ray or ultrasound guidance. The procedure is known as *wire localisation*.

Many hospitals have a special ‘one stop’ breast cancer clinic. This means you will have all the necessary tests and some of the test results on the same day. It may take longer in other hospitals for the results to come through.

This waiting period can be an anxious time for you and it may help to talk about your worries with a partner, close friend, relative, breast care nurse, counsellor or an organisation.

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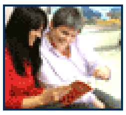

HER2 testing

This information is about HER2 testing and breast cancer. HER2 is a protein that can affect the growth of cancer cells.

HER2

To understand HER2, it first helps to know a little about *receptors* and *growth factors*.

Receptors are particular proteins that are present on the surface of, or within, cells. Other proteins or chemicals that circulate in the body can attach to these receptors to bring about change within a cell (for example, to make it reproduce or repair itself).

Growth factors are chemicals that attach to these receptors and stimulate cells to grow.

HER2 is a protein found on the surface of certain cancer cells. It is made by a specific gene called the *HER2/neu gene*. HER2 is a receptor for a particular growth factor called human epidermal growth factor, which occurs naturally in the body. When *human epidermal growth factor* attaches itself to HER2 receptors on breast cancer cells, it can stimulate the cells to divide and grow.

Some breast cancer cells have a lot more HER2 receptors than others. In this case, the tumour is described as being *HER2-positive*. It is thought that about 1 in 5 women with breast cancer will have HER2-positive tumours.

HER2-positive breast cancer

Tumours that are HER2-positive tend to grow more quickly than other types of breast cancer. Knowing if a cancer is HER2-positive can sometimes affect the choice of treatment. A drug called trastuzumab (Herceptin®) has been developed to be effective against HER2-positive breast cancer. It is a type of *monoclonal antibody*. Monoclonal antibodies are treatments that can target particular proteins within the body.

Trastuzumab attaches to the HER2 protein, and stops human epidermal growth factor from reaching the breast cancer cells and stimulating their growth. Trastuzumab only works in people who have high levels of the HER2 protein.

Trastuzumab and secondary breast cancer

Currently in the UK, trastuzumab is licensed to treat secondary breast cancer (cancer that has spread). It can be used on its own or in combination with chemotherapy.

The National Institute for Health and Clinical Excellence (NICE) gives guidance on the circumstances in which drugs and treatments should be prescribed. In 2002, NICE published guidance on trastuzumab for women with secondary breast cancer and approved its use in particular circumstances. There is more information about this in our trastuzumab section.

Trastuzumab and early breast cancer

Recent research suggests that trastuzumab may be useful for women with early breast cancer, to help reduce the risk of the cancer coming back. It is currently known that chemotherapy can reduce this risk. Three large trials looked at giving trastuzumab alongside chemotherapy (versus chemotherapy alone) to see if this further reduced the risk of cancer coming back. The results of the trials were very promising; the cancer came back in half as many women who had trastuzumab combined with chemotherapy, compared with women who had chemotherapy alone. However, these are very early trial results, and longer follow-up is needed to discover exactly how effective trastuzumab is, and to identify any long-term side effects of the treatment.

Currently, trastuzumab is not licensed in the UK for early breast cancer. It is not yet known how long it might take for a license to come through.

NICE has not yet given guidance on the use of trastuzumab for women with early breast cancer.

HER2 and hormonal therapy

Hormonal therapies can slow or stop the growth of breast cancer cells. They do this by:

- altering the level of particular female hormones that are produced naturally in the body, or
- preventing the hormones from being taken up by the cancer cells.

Hormonal therapies are most effective in women whose cancer cells have receptors for oestrogen and/or progesterone. They are referred to as being oestrogen or progesterone receptor positive. There are many different types of hormonal therapy and they all work in slightly different ways.

It has been suggested that a woman's HER2 status might influence which hormonal therapy may be effective for her. However, more research is needed in order to reach firm conclusions.

HER2 testing

Tests can be done to find out whether a woman has HER2-positive breast cancer. Testing can be done at the same time as initial breast cancer surgery, or samples of cancer tissue from previous biopsies, or surgery, may be used.

The two main methods used for testing are *Immunohistochemistry* (IHC) and *Fluorescence in-situ hybridization* (FISH):

Immunohistochemistry (IHC)

Immunohistochemistry (IHC) can show how much of the HER2 protein is present in the tumour sample. The HER2 level is graded from 0 to 3+

- 0–1+ means that a normal amount of the HER2 protein is present and the result is HER2-negative.
- 2+ means that a moderate amount of the HER2 protein is present.

- 3+ means that there is a higher than normal level of HER2 protein and the result is HER2-positive.

When a tumour is scored at 2+, UK testing guidelines recommend that an extra test is carried out. This is because a result of 2+ does not always mean a cancer cell has a high level of HER2. In this situation, an extra test (known as FISH) is used to give a definite result.

Fluorescence in-situ hybridization (FISH)

Whereas IHC measures the level of HER2 protein in the tumour sample, FISH testing measures the amount of the HER2/neu gene in each cell. This gene is responsible for the overproduction of the HER2 protein.

There is no number scale for FISH testing. The result is either:

- FISH negative - normal levels of the gene are present, or
- FISH positive – excessive amounts of the gene are present. This is sometimes called *gene amplification*.

Availability of HER2 testing

It is possible to test for HER2 when women are first diagnosed with breast cancer. However, at present, it is not standard practice for doctors to routinely test all women for HER2. Testing is usually only done when a specialist thinks that information about the HER2 status might help to select treatment.

Recent studies suggest that women with early breast cancer that is HER2 positive, may benefit from treatment with trastuzumab. It is also possible (though not yet proven) that standard hormonal treatment with tamoxifen may not be effective for women with HER2-positive tumours, and they may need a different hormonal therapy. For these reasons, HER2 testing is becoming more available to all women with breast cancer.

However, as much about the long-term effectiveness and side effects of trastuzumab is still unknown, it is not widely available and is unlikely to be until, at the earliest, the middle of 2006.

If you are wondering about the relevance of HER2 testing for you, it may be helpful to discuss this with your specialist.

References

This section is based upon the CancerBACUP factsheet *Her2 Testing* which was compiled using information from a number of reliable sources, including:

- *Martindale: The Complete Drug Reference* (33rd edition). Sweetman et al. Pharmaceutical Press, 2002.
- *British National Formulary* (49th edition). British Medical Association and Royal Pharmaceutical Society of Great Britain, March 2005.
- *Full Guidance on Trastuzumab for Advanced Breast Cancer.* National Institute for Health and Clinical Excellence (NICE), March 2002.
- *Diseases of the Breast* (3rd edition). Harris JR et al. Lippincott, Williams & Wilkins, USA, 2004.
- *Herceptin Plus Chemotherapy After Surgery Improves Survival of Women with Early Stage, HER2-Positive Breast Cancer*, Perez E et al. American Society of Clinical Oncology Annual Meeting, May 2005.

For futher references, please see general bibliography.

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Related information

Trastuzumab (Herceptin®)

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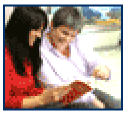
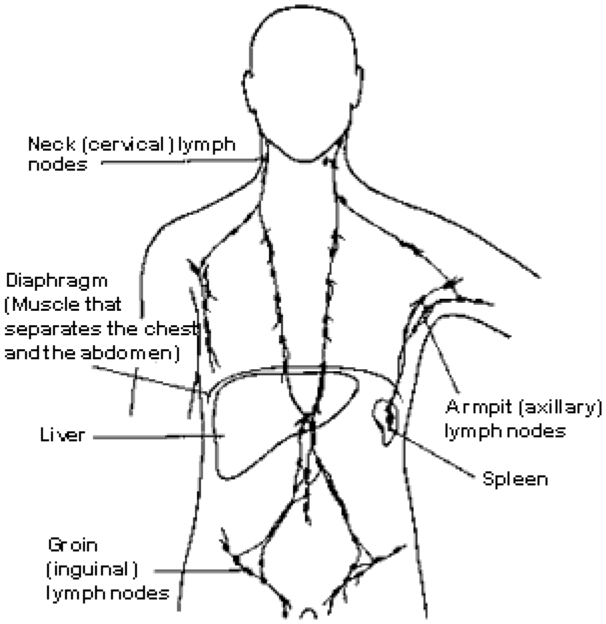


Secondary breast cancer

In some women, cancer cells may break away from the primary breast cancer and spread to other parts of the body in the bloodstream or lymphatic system. The cells may lie dormant for years before they begin to grow again.

The lymphatic system is part of the immune system - the body's natural defence against infection and disease. It is a complex system made up of organs, such as bone marrow, the thymus, the spleen, and lymph nodes (*lymph glands*). The lymph nodes throughout the body are connected by a network of tiny lymphatic ducts.

So, some time after breast cancer treatment, cancer cells may be found in other organs of the body. This is known as *secondary breast cancer*. The most common places for breast cancer cells to spread to are the bone, liver, lung or brain. If it affects the lymph glands, it is most likely to be in the lymph nodes of the armpits or in the lower part of the neck.



Structure of the lymphatic system (d)

Breast cancer cells do not spread to all these places in the body at once. Although it is possible for secondary breast cancer to affect more than one place at a time, it more commonly affects just one or two parts of the body.

Each woman's situation is assessed and the appropriate treatment given depending on where the breast cancer has spread to. A woman with secondary breast cancer affecting the bones will have different symptoms and may need different treatment from a woman with secondary breast cancer affecting her liver.

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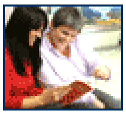

Symptoms of secondary breast cancer

Most women with secondary breast cancer will not have all, or even most, of the symptoms discussed below. Some women have no symptoms and the secondary breast cancer is only discovered after a routine check-up.

General symptoms

The symptoms will depend on which part of the body is affected. However, there are a few general symptoms which some women have. These include:

- being more tired than usual
- generally feeling unwell
- having less of an appetite.

It is important to discuss any new symptoms with your doctor - particularly if they seem to be continuing - but it is important to remember that these general symptoms may also be caused by other conditions, such as colds and flu. They can also occur for weeks or months after treatment for primary breast cancer and may not be due to a secondary breast cancer.

Local recurrence

Sometimes a few breast cancer cells, that were too small to see, are left at the area of the operation after surgery. If this happens, the cancer may come back in the remaining breast tissue after a lumpectomy, in the skin near the breast after a mastectomy, or in the operation scar.

When this happens, the first sign is usually a small lump (sometimes called a *nodule*) on the skin or in the scar, or there may be a lump in the deeper breast tissue. A nodule can usually be treated and controlled, but it is important to report it to your doctor as soon as you notice it, because if it is left untreated the skin in the area may break down and become sore or ulcerated.

Secondary breast cancer in the lymph nodes

If the breast cancer cells have spread to the lymph nodes they will cause a firm, usually painless, swelling. This most often happens in the lymph nodes of the armpit (*axilla*) or in the neck.

Lymphoedema (swollen arm)

Lymphoedema is the term used for swelling. Swelling of the arm can develop if secondary cancer cells block the lymph glands in the armpit. It can also occur if the lymph nodes in the armpit have been treated by radiotherapy or have been removed by surgery. If the lymph glands of the armpit are damaged or blocked, they may be unable to do their job of draining fluid from the tissues in the arm or fighting infection in the arm. Fluid then builds up, causing swelling.

Lymphoedema can be very uncomfortable and can make it difficult to move the arm, as well as making infection more likely to develop there.

The treatment for lymphoedema is discussed on the Controlling syptoms page.

Secondary breast cancer in the bone

The first sign of a secondary cancer in the bones is usually a nagging ache in the bone. This can become painful, making it difficult to get to sleep at night, or to move around without taking painkillers. The pain is generally present both day and night, whereas an arthritic type pain is often worse early in the morning and is not there all the time.

Women who have had treatment for breast cancer should always discuss any new pain which lasts more than two weeks with their doctor. It is very understandable to worry that a new ache or pain means the cancer has spread, but the cause is very often an everyday ache or muscle strain. Your doctor will do tests to find the cause of any continuing pain, which can help to put your mind at rest.

A secondary cancer in the bone may gradually damage the bone. The damage only happens in the part of the bone affected by the cancer cells. The more the bone is damaged, the weaker it becomes. Pain and weakness can make getting around difficult, and a bone that is very weak may break (*fracture*).

When bones are affected by secondary cancer cells, extra calcium (the substance that helps to build bones) may be released into the blood. Too much calcium in the blood is called hypercalcaemia. It can cause symptoms such as tiredness, feeling sick, constipation, thirst and confusion. However, in many cases hypercalcaemia is discovered during a blood test before any symptoms develop.

Secondary breast cancer in a bone can be treated. For most women, treatment can be started long before the bone becomes weak enough to break or cause severe pain.

Secondary breast cancer in the liver

Women whose breast cancer has spread to the liver may feel generally unwell and tired, with a loss of energy. There may be an uncomfortable feeling in the area of the liver (on the right side of the abdomen, just under the lower ribs).

Some women feel sick and lose their appetite. Secondary breast cancer in the liver is only painful if the secondary cancer is pressing on the capsule surrounding the liver, which is unusual.

The liver produces a substance called bile, which helps to digest food in the intestine. If the bile ducts leading out of the liver are blocked by secondary cancer, bile may build up in the blood and cause jaundice. This will make the skin and the whites of the eyes become yellow and may make the skin feel itchy.

The liver is a large organ and is capable of working efficiently when part of it, or even much of it, is affected by cancer. The symptoms of secondary breast cancer cells affecting the liver can usually be effectively controlled.

Secondary breast cancer in the lungs

The first sign of secondary breast cancer in the lung may be a persistent cough, or breathlessness.

Breathing problems can be frightening, but there are very effective ways of relieving breathlessness and these can quickly make your breathing easier.

If cancer cells settle on the outside of the lungs they can irritate the membrane which covers the lungs (the *pleura*). This can make fluid build up, which presses on the lungs. This is known as a pleural effusion .

Secondary breast cancer in the brain

The idea of secondary cancer affecting a part of the brain can be very frightening. The brain controls the body, and it can be worrying to think of losing some control. However, the symptoms of a brain tumour can often be well managed.

If a secondary breast cancer develops in part of the brain, pressure may build up within the brain and cause headaches and nausea (feeling sick). These symptoms may be worse on waking in the morning and get better through the day. The headaches are often at the back of the head. They are often worsened by coughing and sneezing.

Sometimes the first sign of a brain tumour may be a fit (*seizure*). Sometimes, the part of the body controlled by the area of the brain affected by the secondary cancer may not work properly. This can occasionally cause an arm or a leg to become weaker than usual, or a feeling of numbness, tingling, or pins and needles. Sometimes, brain tumours may cause a change in personality.

It is important to remember that no woman with secondary breast cancer is going to have all, or even most, of the symptoms discussed here.Secondary breast cancer is many different conditions; the only common factor is that the cancer cells all started from a primary breast cancer. Each condition has its own particular set of symptoms and treatment.

Content last reviewed: 01 March 2005
Page last modified: 15 August 2005

Related information

- Pleural effusion
- Secondary, bone
- Secondary, brain
- Secondary, liver
- Secondary, lung
- Secondary, lymph nodes

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After a diagnosis of breast cancer

If your tests show that you have breast cancer you will be looked after by a breast care team. This is a team of staff who specialise in treating breast cancer and in giving information and support. It is known as a multidisciplinary team, and will normally include:

- surgeons who are experienced in breast surgery
- breast care nurses who give information and support
- oncologists – doctors who have experience in breast cancer treatment using chemotherapy, radiotherapy and hormonal therapy
- radiologists who help to analyse mammograms
- pathologists who advise on the type and extent of the cancer.
- Other staff will also be available to help you if necessary, such as:
- physiotherapists
- counsellors and psychologists
- social workers

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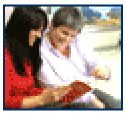

The staging and grading of breast cancer

Staging

The stage of a cancer describes its size and whether it has spread beyond its original site. Knowing the extent of the cancer and the grade (see below) helps the doctors to decide on the most appropriate treatment.

A commonly used staging system for breast cancer is described below:

Ductal carcinoma in situ (DCIS) is sometimes described as stage 0. DCIS is when the breast cancer cells are completely contained within the breast ducts (the channels in the breast that carry milk to the nipple), and have not spread into the surrounding breast tissue. This may also be referred to as *non-invasive* or *intraductal* cancer, as the cancer cells have not yet spread into the surrounding breast tissue and so usually have not spread into any other part of the body. DCIS is almost always completely curable with treatment. CancerBACUP has a separate section on DCIS.

Lobular carcinoma in situ (LCIS) means that cancer cells are found in the lining of the lobules of the breast. It can be present in both breasts. It is also referred to as non-invasive cancer as it has not spread into the surrounding breast tissue. CancerBACUP has a section on LCIS which discusses it in more detail.

The following stages of breast cancer are known as **invasive breast cancer**.

Stage 1 The tumour measures less than 2cm. The lymph glands in the armpit are not affected and there are no signs that the cancer has spread elsewhere in the body.

Stage 2 The tumour measures between 2 and 5cm, or the lymph glands in the armpit are affected, or both. However, there are no signs that the cancer has spread further.

Stage 3 The tumour is larger than 5cm and may be attached to surrounding structures such as the muscle or skin. The lymph glands are usually affected, but there are no signs that the cancer has spread beyond the breast or the lymph glands in the armpit.

Stage 4 The tumour is of any size, but the lymph glands are usually affected and the cancer has spread to other parts of the body. This is *secondary* or *metastatic* breast cancer.

Breast cancer that has come back after initial treatment is known as **recurrent breast cancer**.

This section deals with stages 1 –3 breast cancer. CancerBACUP has a separate section on secondary breast cancer (stage 4)

Grading

Grading refers to the appearance of the cancer cells under the microscope. The grade gives an idea of how quickly the cancer may develop. There are three grades: grade 1 (*low-grade*), grade 2 (*moderate* or *intermediate grade*) and grade 3 (*high-grade*). Low-grade means that the cancer cells look very like the normal cells of the breast. They are usually slow growing and are less likely to spread. In high-grade tumours the cells look very abnormal. They are likely to grow more quickly and are more likely to spread.

DCIS and LCIS

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Content last reviewed: 01 August 2004
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Related information

- DCIS
- LCIS

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Treatment for breast cancer

The treatment of breast cancer depends on many factors, including:

- the stage and grade of the cancer
- your age
- whether or not you have had the menopause
- the size of the tumour
- whether the cancer cells have receptors for certain hormones (such as oestrogen) or particular proteins (such as HER2) on their surface.

Most breast cancers will be treated with surgery to remove the tumour. All, or part, of the breast tissue may be removed. If the whole breast is removed, breast reconstruction may be carried out at the same time as the initial surgery or at a later stage. Sometimes chemotherapy or hormonal therapy may be given to shrink a cancer before surgery. This is known as *neoadjuvant* therapy.

After surgery, radiotherapy may be given to the breast tissue, to make sure any cancer cells that may be left are destroyed. After surgery the doctors can tell the stage and the grade of the cancer, and they can look at several other factors to predict how likely the cancer is to come back or spread.

Factors which affect the chance of the cancer coming back include:

- the size of the tumour
- whether the lymph nodes in the armpit were affected
- the grade of the tumour
- whether the cancer cells have spread into lymph or blood vessels close to the tumour (the pathologist checks for this)
- whether the cells have receptors for oestrogen or particular proteins (such as HER2) on their surface.

If the chance of the cancer spreading or coming back is very low, further treatment is not necessary. However, most women will be advised to have treatment with chemotherapy or hormonal therapy to reduce the chance of the cancer coming back. This is known as *adjuvant* therapy. Some women may have both treatments, but not at the same time.

This booklet discusses the treatments for stage 1 - 3 breast cancer. CancerBACUP has separate information on secondary breast cancer, which disucsses the treatments for secondary breast cancer.

If you have any questions about your own treatment don't be afraid to ask your doctor or hospital nurse. You may like to take a close relative or friend with you to remind you of questions at the time or the answers afterwards. It often helps to make a list of the questions you want to ask and the answers that you are given.

Giving consent

Before you have any treatment your doctor will explain the aims of the treatment to you and you will usually be asked to sign a form saying that you give your permission (*consent*) for the hospital staff to give you the treatment. No medical treatment can be given without your consent, and before you are asked to sign the form you should have been given full information about:

- the type and extent of the treatment you are advised to have

- the advantages and disadvantages of the treatment
- any possible alternative treatments that may be available
- any significant risks or side effects of the treatment.

If you do not understand what you have been told, let the staff know straight away so that they can explain again. Some cancer treatments are complex, so it is not unusual for people to need repeated explanations.

Patients often feel that the hospital staff are too busy to answer their questions, but it is important for you to be aware of how the treatment is likely to affect you. The staff should be willing to make time for you to ask questions.

You can always ask for more time to decide about the treatment, if you feel that you can’t make a decision about what to do when it is first explained to you.

You are also free to choose not to have the treatment. The staff can explain what may happen if you do not have it. It is essential to tell a doctor, or the nurse in charge, immediately so that they can record your decision in your medical notes. You do not have to give a reason for not wanting to have treatment, but it can be helpful to let the staff know your concerns so that they can give you the best advice.

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Treating breast cancer with surgery

Your doctor will discuss with you the most appropriate type of surgery for you, depending on the size and any spread of the cancer. Before any operation, make sure that you have fully discussed what it involves with your surgeon and that you have all the information you need.

Lumpectomy (wide local excision)

This is the removal of the breast lump, together with some surrounding tissue. A lumpectomy is usually followed by radiotherapy treatment to the remaining breast tissue. This is known as breast *conserving therapy*. It removes the least amount of breast tissue, but leaves a small scar and sometimes a small dent in the breast. For most women, the appearance of the breast after lumpectomy is good.

After a lumpectomy the breast tissue that has been removed is sent to the laboratory to be examined under the microscope by a pathologist. The pathologist looks to see whether there is an area of healthy cells all around the cancer – this is known as a **clear margin**.

If cancer cells are present at the edge of the area that has been removed, there is a high chance that the cancer will come back in the breast. More breast tissue will then need to be removed a few weeks later. Sometimes, the results from the laboratory after a lumpectomy show that taking away more tissue from the area is unlikely to remove the cancer cells completely. In this situation a mastectomy will need to be done.

Segmental excision (quadrantectomy)

This is similar to a lumpectomy, but involves removing more of the breast tissue. The effect of this type of surgery is more noticeable than lumpectomy, particularly in women who have small breasts. The treated breast is usually smaller and looks less full in the area where the surgery is done. In women with large breasts it is usually less noticeable.

Mastectomy

Removal of the whole breast (mastectomy) may be necessary if:

- The breast lump is large in proportion to the rest of the breast tissue.
- There are several areas of cancer cells in different parts of the breast.
- The lump is just behind the nipple.
- There is a small invasive breast cancer, but a widespread area of DCIS (ductal carcinoma in situ).

A **simple mastectomy** removes only the breast tissue.

A **simple mastectomy and node sampling** removes the breast tissue and the lower levels of lymph glands, within the armpit.

A **modified radical mastectomy** removes all the breast tissue and all of the lymph nodes in the armpit. It may also be referred to as a **total mastectomy and axillary clearance**.

A **radical mastectomy** removes all the breast tissue and the lymph nodes in the armpit together with the muscles behind the breast tissue. This is very rarely done.

A new breast shape can be created at the time of the mastectomy, or some months or years later. This is known as *breast reconstruction*. There are several different methods of breast reconstruction. If you would like to consider having breast reconstruction, you can discuss it with your surgeon, so that they can tell you about the methods that would be suitable for you.

Choice of treatment

You may be given a choice of treatment. Research has shown that in early breast cancer, lumpectomy followed by radiotherapy is as effective at curing the cancer as mastectomy. So you may be asked to choose the treatment that you feel suits you best. The treatments have different benefits and side effects and these are listed in the table opposite. This can be a difficult decision to make. It is important to discuss both options fully with your doctor, breast care nurse, or one of the support organisations so that you feel confident you have made the choice that is right for you.

Benefits & unwanted effects of masectomy compared to lumpectomy followed by radiotherapy

Mastectomy

Advantages

- It is not usually necessary to have radiotherapy following mastectomy, so it avoids the risk of radiotherapy side effects
- It may be possible to have immediate reconstruction to form a new breast – it may take a few weeks or months to achieve this
- Some women feel that if all the breast tissue is removed, there is less risk of the cancer coming back, although the risk after mastectomy is the same as after lumpectomy and radiotherapy.

Disadvantages

- The whole breast is taken away, which some women find very distressing
- Your body will look different, which may reduce your confidence and affect sexuality and relationships
- Lumpectomy followed by radiotherapy

Lumpectomy followed by radiotherapy

Advantages

- It is as effective at curing the cancer as mastectomy
- It keeps the shape of the breast, but leaves a small scar
- It causes less change to the body than mastectomy

Disadvantages

- It is necessary to attend hospital each weekday for between
  3 and 6 weeks for radiotherapy
- The radiotherapy may cause short-term side effects such as skin soreness for a few weeks and tiredness for a few months
- Some women worry that the cancer has not all been removed because some of the breast tissue is left. However, the risk of the cancer coming back is no higher than after mastectomy
- The scar and changes in the skin of the breast are less likely to affect sexuality and relationships than after a mastectomy
- The radiotherapy may cause long-term side effects – pain in the arm (in less than 2% of women), lung damage (in less than 2% of women) and a change in the size of the breast

Scars

All breast surgery leaves some type of scar, and the appearance of the breast afterwards depends on the technique used. It can be helpful to discuss with the doctor or nurse beforehand what your breast will look like after surgery. The surgeon may have photographs that they can show you, and you can talk to women who have already had the surgery – contact them through Breast Cancer Care.

Checking the lymph glands

As part of any operation for breast cancer, the surgeon will usually remove lymph glands (also known as lymph *nodes*) from under your arm on the side of the cancer. There are approximately 20 lymph glands in the armpit (*axilla*), although the exact number varies from person to person. The lymph glands are examined to check if any cancer cells have spread into them from the breast. This helps the doctors to decide what other treatment is needed.

Sampling

A few lymph glands may be removed, which is known as *axillary gland sampling*. If any of the lymph glands contain cancer cells, the remaining glands may need to be removed at a further operation, or chemotherapy treatment may be recommended or the glands may be treated with radiotherapy.

Clearance

Sometimes, all the lymph glands under the arm are removed. This is known as *axillary clearance*, and allows the doctor to check all of the lymph glands. In this situation, any glands affected by cancer have been removed and so no further treatment to the glands under the arm is needed, although treatment with hormonal therapy or chemotherapy will usually be recommended. If all of the glands are removed there is a risk of swelling (lymphoedema) of the arm (see below).

Sentinel node biopsy

This is a way of checking whether the cancer has spread into the lymph glands and is used in some hospitals. It involves injecting a tiny amount of radioactive liquid into the area of the cancer before the operation. The lymph nodes are then scanned to see which has taken up the radioactive liquid first. A blue dye is also injected into the area of the cancer during the operation. The dye stains the lymph nodes blue. The nodes which are blue or radioactive are known as the sentinel nodes.

The surgeon removes only the sentinel nodes so that they can be tested to see whether they contain cancer cells. Results of research trials suggest that this way of checking the lymph glands is as effective at detecting cancer cells as lymph node sampling or clearance. It causes less arm stiffness and swelling (lymphoedema) of the arm than removing all the lymph glands.

Lymphoedema

Removing lymph glands can sometimes lead to lymphoedema (swelling of the arm on the affected side). Lymphoedema is more likely to occur if all of the glands are removed. Less commonly, it can occur if axillary node sampling is followed by radiotherapy to the lymph glands.

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Related information

- General surgery
- Breast reconstruction

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Treating breast cancer with radiotherapy

About radiotherapy

Radiotherapy treats cancer by using high-energy rays to destroy the cancer cells, while doing as little harm as possible to normal cells. Radiotherapy is often used after surgery for breast cancer. It may occasionally be used before, or instead of, surgery.

If part of the breast has been removed (lumpectomy or segmental excision), radiotherapy is usually given to the remaining breast tissue, to reduce the risk of the cancer coming back in that area.

After a mastectomy, radiotherapy to the chest wall may be given if your doctor thinks there is a risk that any cancer cells have been left behind.

If a few lymph glands have been removed and these contained cancer cells, or if no lymph glands have been removed, radiotherapy may be given to the armpit to treat the remaining lymph glands. If all the lymph glands have been removed from under the arm, radiotherapy to the armpit is not usually needed.

External radiotherapy

The treatment is normally given in the hospital radiotherapy department as a series of short daily sessions. The treatments are usually given from Monday to Friday, with a rest at the weekend. Each treatment takes 10–15 minutes. Your doctor will discuss the treatment and possible side effects with you.

A course of radiotherapy for breast cancer may last from 3–6 weeks. It is usually given as an outpatient.

External radiotherapy does not make you radioactive and it is perfectly safe for you to be with other people, including children, after your treatment.

Planning your treatment

Planning is a very important part of radiotherapy and may take a few visits. It has to be carefully planned to make sure that it is as effective as possible. On your first visit to the radiotherapy department, you will be asked to have a CT scan or lie under a machine called a simulator, which takes x-rays of the area to be treated. The treatment is planned by a cancer specialist (*clinical oncologist*). Marks are usually drawn on your skin to help the *radiographer* (who gives you your treatment) to position you accurately and to show where the rays will be directed. These marks must stay throughout your treatment, and permanent marks (like tattoos) may be used. These are tiny, and will only be done with your permission. It may be a little uncomfortable while being done.

The radiotherapy is normally given to the whole breast area. Some women may have an extra dose given to the area of the breast where the cancer was. This is known as a *booster dose*.

Treatment sessions

At the beginning of each session of radiotherapy, the radiographer will position you carefully on the couch, and make sure you are comfortable. During your treatment you will be left alone in the room but you will be able to talk to the radiographer who will be watching you from the next room. Radiotherapy is not painful but you do have to lie still for a few minutes while the treatment is being given.

Positioning

If you are going to have radiotherapy, you will need to be able to get your arm into position so that the radiotherapy machine can give the treatment effectively. Sometimes radiotherapy can make the muscles and shoulder joint feel stiff. If you can't move your shoulder normally, it may be painful or difficult to give the treatment. A physiotherapist may teach you some exercises to make the position for treatment feel easier.

Side effects of radiotherapy

Radiotherapy to the breast sometimes causes side effects such as reddening and soreness of the skin, feeling sick (nausea) and tiredness. These side effects gradually disappear once your course of treatment has finished. The tiredness may continue for some months.

Perfumed soaps, creams or deodorants may irritate the skin and should not be used during the treatment. At the beginning of your treatment you will be given advice on how to look after the skin in the area being treated.

Radiotherapy may make the breast tissue feel firmer. Over a few months or years the breast may shrink slightly. The radiotherapy may also, rarely, leave small red marks on the skin, which are due to tiny broken blood vessels. For many women, however, the appearance of the breast is very good.

Radiotherapy to the breast can sometimes lead to long-term side effects, such as nerve pain, tingling, and weakness or numbness in the arm and hand. Other rare side effects can include breathlessness (due to the effect of radiotherapy on the lung, and weakening of the ribs in the treatment area). However, these long-term effects are very rare. CancerBACUP can send you information about possible long-term side effects.

If you are worried about the risk of developing particular side effects from radiotherapy, you can speak to your radiotherapist. After your radiotherapy treatment, let your doctor know straight away if you have any arm or rib pain, or breathlessness.

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Related information

- General information on radiotherapy
- Radiotherapy after breast reconstruction

Resources

- Coping with fatigue
- Nausea and vomiting

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Treating breast cancer with chemotherapy

What is chemotherapy?

Chemotherapy is the use of anti-cancer (*cytotoxic*) drugs to destroy cancer cells.

Chemotherapy drugs are given by injection into a vein (*intravenously*) or as tablets. Chemotherapy into the vein is given as a session of treatment, which usually lasts for less than a day. This is followed by a rest period of a few weeks, which allows your body to recover from any side effects of the treatment.

There are many different chemotherapy drugs, and combinations of drugs, used to treat breast cancer. You may be offered a choice of treatments, as the different combinations have different side effects. Research is always being carried out to improve the effectiveness of chemotherapy whilst reducing the side effects, and you may be asked to take part in research trials comparing different types of chemotherapy.

Chemotherapy is usually given to you as an outpatient. A complete course of chemotherapy is likely to take 4–6 months.

Benefits of chemotherapy

In women whose cancer is very unlikely to come back, chemotherapy may only reduce the chance of recurrence by a small amount. In women where the chance of the cancer coming back is higher, chemotherapy may greatly reduce the chance of recurrence. Your doctor can let you know how likely chemotherapy is to make a difference in your case. They can also let you know about the possible side effects.

Side effects of chemotherapy

Chemotherapy drugs can cause side effects, but these can usually be well controlled with medicines.

Lowered resistance to infection Chemotherapy can reduce the production of white blood cells by the bone marrow, making you more prone to infection. Contact your doctor or the hospital straightaway if:

- Your temperature goes above 38ºC (100.5ºF).
- You suddenly feel ill (even with a normal temperature).

You will have a blood test before having more chemotherapy, to make sure that your cells have recovered. Occasionally it may be necessary to delay your treatment if your blood count is still low.

Bruising or bleeding Chemotherapy can reduce the production of platelets, which help the blood to clot. Let your doctor know if you have any unexplained bruising or bleeding.

Anaemia (low number of red blood cells) You may become anaemic. This may make you feel tired and breathless.

Nausea and vomiting Some chemotherapy drugs can make you feel sick or even be sick. This can be helped by taking anti-sickness drugs (anti-emetics) which your doctor can prescribe.

Sore mouth Some chemotherapy drugs can make your mouth sore and may cause small ulcers. Regular mouthwashes are important and the nurses will show you how to do these properly.

Poor appetite If you don't feel like eating during treatment, you could try replacing some meals with nutritious drinks or a soft diet.

Hair loss is a common side effect of some chemotherapy drugs. This can be very distressing for some people. However, there are many ways of covering up hair loss, including wigs, hats or scarves. You may be entitled to a free wig from the National Health Service. Your doctor or the nurse looking after you will be able to arrange for a wig specialist to visit you. If your hair does fall out, it should start to grow back within about 3–6 months of the end of treatment. CancerBACUP has a section on coping with hair loss which discusses all the practical ways of dealing with hair loss and how to cope with the emotional effects.

Chemotherapy affects people in different ways. Some people find they are able to lead a fairly normal life during their treatment, but many people become very tired and have to take things much more slowly. Just do as much as you feel like and try not to overdo it.

Although they may be hard to deal with at the time, these side effects will gradually disappear once your treatment is over.

Early menopause Some women may find that chemotherapy makes them have their menopause early.

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Related information

- Chemotherapy

Individual chemotherapy drugs

- Capecitabine (Xeloda®)
- Chlorambucil (Leukeran)
- Cyclophosphamide (Endoxana®)
- Docetaxel (Taxotere®)
- Doxorubicin Hydrochloride (Adriamycin®)
- Epirubicin (Pharmorubicin®)
- Fluorouracil (5FU)
- Gemcitabine (Gemzar®)
- Idarubicin (Zavedos®)
- Melphalan (Alkeran®)
- Methotrexate (Matrex®)
- Mitomycin (Mitomycin C Kyoma®)
- Mitoxantrone (Novatrone®, Onkotrone®)
- Paclitaxel (Taxol®)
- Thiotepa
- Vinblastine (Velbe®)
- Vincristine (Oncovin®)
- Vindesine (Eldisine®)
- Vinorelbine (Navelbine®)

Combination regimes

- AC Chemotherapy
- CAF regime
- CMF Chemotherapy
- E-CMF (Epi - CMF) chemotherapy
- EC Chemotherapy
- ECF Chemotherapy
- FEC Chemotherapy
- MM chemotherapy
- MMM Chemotherapy

Resources

- Avoiding infection
- Nausea and vomiting
- Diet and the cancer patient
- Mouth care
- Coping with hair loss
- Scalp cooling
- Coping with fatigue

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Chemotherapy

Chemotherapy is a treatment that is used for some types of cancer. This section gives information about chemotherapy. We hope that it answers some of the questions you may have about the treatment and helps you to cope with any side effects it may cause. Where cancer is mentioned, this refers to cancer, leukaemia and lymphoma.

Sometimes chemotherapy is used to treat non-cancerous conditions but often the doses are lower and the side effects may be less severe. This section does not cover the use of chemotherapy for conditions other than cancer.

The information is divided into subsections about how the treatment works, how it is given and how to deal with some of the more common side effects.

You are likely to have questions and concerns about your own treatment which is not covered, as there are over 200 different types of cancer and over 50 chemotherapy drugs which can be given in various ways. It is best to discuss the details of your own treatment with your doctor, who will be familiar with your particular situation and type of cancer.

If you think that this information has helped you, you can pass it on to any of your family and friends who may find it useful. They too may want to be informed so they can help you cope with any problems you may have.

CancerBACUP has another section which gives more detailed information about the side effects of particular chemotherapy drugs. There is also a section about commonly used combinations of chemotherapy drugs.

The nurses in the Support Service can give information about all aspects of cancer.

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Resources

For information on coping with the side effects of cancer treatments, please see the resources & support section

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What is chemotherapy

Chemotherapy is the use of anti-cancer (cytotoxic) drugs to destroy cancer cells (including leukaemias and lymphomas). There are over 50 different chemotherapy drugs and some are given on their own, but often several drugs may be combined (this is known as combination chemotherapy).

The type of chemotherapy treatment you are given for your cancer depends on many things, particularly the type of disease you have, where in the body it started, what the cancer cells look like under the microscope and whether they have spread to other parts of the body.

What is cancer?

Cancer is a disease of the body's cells. Cells in all the tissues and organs of the body constantly grow and divide to replace old and damaged cells and maintain the health of the body. Normally, all cells divide and reproduce themselves in an orderly and controlled manner. In cancer, however, some cells keep dividing without proper control, forming a lump (which is called a tumour). In leukaemia, too many white blood cells are produced.

Sometimes cancer cells break away from a tumour and travel to other parts of the body through the bloodstream or lymphatic system. (The lymphatic system is a network of fine channels - called lymph vessels - which run throughout the body and are part of the body's protection against infection and cancer). When the cancer cells reach other parts of the body they may settle and start to develop into new tumours. These are known as secondary cancers or metastases.

Chemotherapy may be used alone to treat some types of cancer. Sometimes it can be used together with other types of treatment such as surgery, radiotherapy, hormonal therapy, immunotherapy, or a combination of these.

CancerBACUP also has information about other types of cancer treatment.

How do chemotherapy drugs work?

Chemotherapy drugs interfere with the ability of a cancer cell to divide and reproduce itself. As the drugs are carried in the blood, they can reach cancer cells all over the body. The chemotherapy drugs are taken up by dividing cells, including some normal cells such as those in the lining of the mouth, the bone marrow (which makes blood cells), the hair follicles, and the digestive system. Healthy cells can repair the damage caused by chemotherapy but cancer cells cannot and so they eventually die.

Chemotherapy drugs damage cancer cells in different ways. If a combination of drugs is used, each drug is chosen because of its different effects. Unfortunately, as the chemotherapy drugs can also affect some of the normal cells in your body, they can cause unpleasant side effects. However, damage to the normal cells is usually temporary and most side effects will disappear once the treatment is over.

Chemotherapy is carefully planned so that it destroys more and more of the cancer cells during the course of treatment, but does not destroy the normal cells and tissues.

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Why is chemotherapy given?

To cure cancer - with some types of cancer, chemotherapy is likely to destroy all the cancer cells and cure the disease.

To reduce the chance of a cancer coming back - chemotherapy may be given after surgery or radiotherapy so that if any cancer cells remain, but are too small to see, they can be destroyed by the chemotherapy.

To shrink a cancer and prolong life - if a cure is not possible, chemotherapy may be given to shrink and control a cancer, or to reduce the number of cancer cells and try to prolong a good quality of life.

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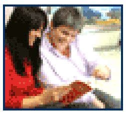

When is chemotherapy used?

Before an operation - chemotherapy can be used before an operation (this is known as *neo-adjuvant therapy*) to shrink a cancer and make it easier to remove. Chemotherapy is usually given to people whose cancer is too large or too strongly attached to surrounding healthy tissue to be removed easily during an operation.

After an operation - chemotherapy is sometimes given after an operation when all the visible cancer has been removed but there is a risk that tiny cancer cells, too small to be seen, may have been left behind. The aim then is to destroy these cancer cells and the treatment is known as *adjuvant therapy*.

Chemotherapy may also be given if a cancer cannot be completely removed during an operation. In this situation chemotherapy may not be able to cure the cancer but may shrink it and thus reduce symptoms.

During radiotherapy - sometimes chemotherapy is given at the same time as radiotherapy. This is known as *chemoradiotherapy*.

In advanced cancer (cancer that has spread into surrounding tissue or other parts of the body) - with some advanced cancers, chemotherapy can be given with the aim of getting rid of all the cancer and curing it. More commonly, chemotherapy is given in this situation to shrink and control the cancer, to extend life and control any symptoms that may occur.

High-dose chemotherapy with bone marrow transplant or stem cell support

For some types of cancer, a course of very high-dose chemotherapy is given. This is usually done after initial chemotherapy has got rid of the cancer cells but there is a high risk of the cancer coming back. As very high doses of chemotherapy normally destroy the bone marrow (which makes blood cells), the bone marrow is replaced after the chemotherapy has been given. This is done using stem cells which have been collected from the bone marrow or blood. These stem cells may be collected (before the high-dose treatment) from the patient or from someone else (a donor) whose cells are a good match. This type of treatment is only useful in a few types of cancer.

CancerBACUP has information about stem cell and bone marrow transplants, which discusses this treatment in more detail.

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Related information

Stem cell and bone marrow transplants

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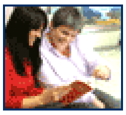

Benefits and disadvantages of treatment

Many people are frightened at the idea of having cancer treatments, because of the side effects that can occur. Although many of the treatments can cause side effects, these can usually be controlled with medicines. Some people ask what would happen if they did not have any treatment.

With secondary breast cancer, the aim of treatment is to control the cancer for as long as possible, leading to an improvement in symptoms and a good quality of life. Most women find that the treatment does shrink the cancer or stop it from growing. However, for some women in this situation the treatment will not have an effect on the cancer and they will get the side effects of the treatment without any of the benefit.

Making decisions about treatment in these circumstances is always difficult, and you may want to discuss in detail with your doctor whether you wish to have treatment. If you choose not to, you can still be given supportive (*palliative*) care, with medicines to control any symptoms.

Discussing your treatment

Your doctor will recommend the best treatment for you after taking into account all the above factors. Feel free to ask how the treatment works and how it may affect you. You can also ask why the doctor has chosen a particular treatment.

You can discuss the effect that your treatment may have with your partner, family, doctor, nurses, or other therapists or counsellors if you wish. Many women find that being involved in the treatment decision helps them to have a sense of control over the cancer and their emotions.

Some women find that their secondary breast cancer may be controlled for a time by one treatment, and they then need to change to a different treatment when the cancer starts to grow again. Sometimes several different treatments may be given, one after the other.

Most doctors also understand that you may want time to think about their recommendations and any other treatment options. It can be hard to take in all the information about a treatment, especially if you have just learned that your cancer has spread.

Not all women want to be involved in decisions about their treatment. You may feel you have enough on your mind in coming to terms with the spread of your cancer and that you don't want to make decisions about your treatment. In this case, you should not feel under any pressure to get fully involved in treatment decisions. Doctors are aware that individual women have different ways of coping with their cancer and will respect your wishes.

Content last reviewed: 01 March 2005
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Related information
- Advanced cancer
- Caring for someone with advanced cancer

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Giving consent for treatment

Before you have any chemotherapy your doctor will explain the aims of the treatment to you and you will usually be asked to sign a form saying that you give your permission (consent) for the hospital staff to give you the chemotherapy.

No medical treatment can be given without your consent, and before you are asked to sign the form you should have been given full information about:

- the type and extent of the treatment you are advised to have
- the advantages and disadvantages of the treatment
- any possible alternative treatments that may be available
- any significant risks or side effects of the treatment.

If you do not understand what you have been told, let the staff know straight away so that they can explain again. Some cancer treatments are complex, so it is not unusual for people to need repeated explanations.

It is often a good idea to have a friend or relative with you when the treatment is explained, to help you remember the discussion more fully. You may also find it useful to write down a list of questions before you go for your appointment.

Patients often feel that the hospital staff are too busy to answer their questions, but it is important for you to be aware of how the treatment is likely to affect you and the staff should be willing to make time for you to ask questions.

You can always ask for more time to decide about the treatment, if you feel that you can't make a decision when it is first explained to you. You are also free to choose not to have the treatment, and the staff can explain what may happen if you do not have it.

If you decide against having treatment, tell a doctor, or the nurse in charge, immediately so that he or she can record your decision in your medical notes.

You do not have to give a reason for not wanting to have treatment, but it can be helpful to let the staff know your concerns so that they can give you the best advice.

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How are chemotherapy drugs given?

Chemotherapy may be given in different ways, depending on the type of cancer you have and the chemotherapy drugs used.

Most often it is given by injection into a vein (intravenously). Some drugs are given as tablets or capsules (orally) and some are injected into a muscle (intramuscular injection) or just under the skin (subcutaneous injection). Drugs given in this way are absorbed into the blood and carried around the body so that they can reach all the cancer cells.

For some types of cancer chemotherapy may be injected into the fluid around the spine (intrathecal injection). Sometimes the chemotherapy may be injected into particular body cavities (such as the pelvic cavity or bladder): this is intracavity chemotherapy. Drugs given in this way tend to stay in the area in which they are given and do not affect cells in other parts of the body.

Chemotherapy creams may be used for some cancers of the skin: they only affect the cells in the area to which the cream is applied.

Sometimes, two or more types of chemotherapy may be used together.

How are chemotherapy drugs given?

- (Most commonly) by injection into a vein
- As tablets or capsules
- By injection into a muscle
- By injection under the skin
- By injection into the fluid around the spine
- By injection into body cavities
- As a cream for cancer of the skin

Intravenous injection

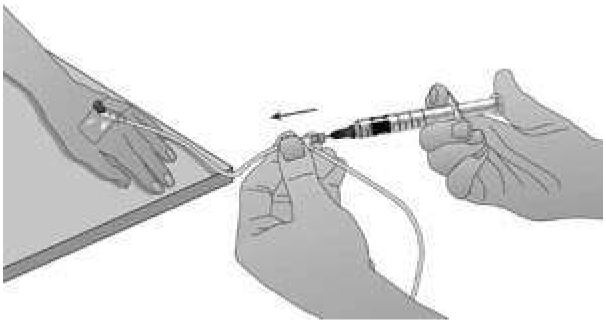
There are 3 main ways of giving chemotherapy drugs directly into the vein. These are through a:

- cannula - a small tube inserted into a vein in your arm or the back of your hand.
- central line - a thin, flexible tube inserted through the skin of the chest into a vein near the heart.
- PICC line (a peripherally inserted central line) -- a thin flexible tube is passed into a vein in the crook of your arm and then threaded through until the end of the tube lies in a vein near the heart.
- portocath - a portocath is also called an implantable port and is a thin, soft plastic tube that is put into a vein. It has an opening (port) just under the skin on your chest or arm.

Cannula

The nurse or doctor will put a short, fine tube (cannula) into a vein in the back of your hand or the crook of your arm. You may find this uncomfortable or a little painful but it should not take long. Once the cannula is in place it will be taped securely to keep it in place.

If you find it painful to have the cannula put in, an anaesthetic cream can be used on the skin to numb the area beforehand. The cream takes 10-20 minutes to work.

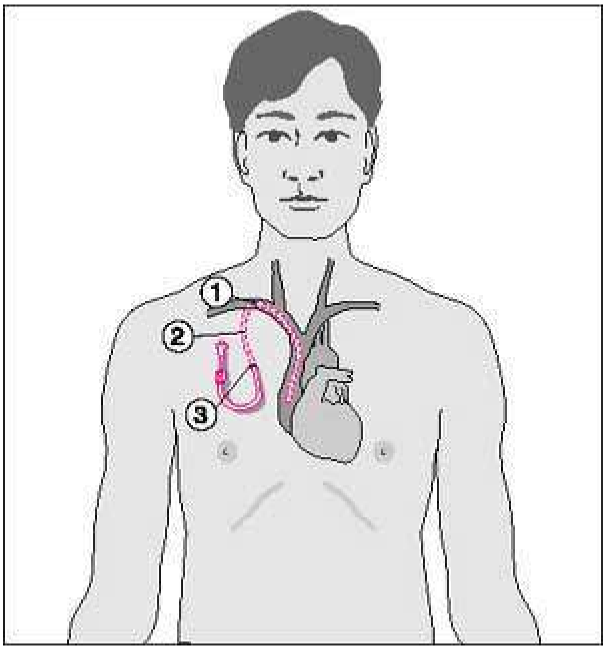


The chemotherapy can then be given through the cannula. Usually a drip is attached to the cannula and some drugs are given by injection into a rubber bung in the drip tubing. This can take from a few minutes to about 20 minutes. Some chemotherapy drugs are diluted in a drip bag and the drip is attached to the cannula.

If you feel any discomfort or a change in sensation around the area of the cannula while the drug is being given, let your nurse or doctor know immediately.

Central lines

Another way of giving intravenous chemotherapy is through a long, fine plastic tube (called a central line) put into a vein in your chest. Examples of some of the makes that are used are Hickman® and Groshong®. The doctor or chemotherapy nurse will explain the procedure to you. You will be given a general or local anaesthetic before the central line is put in.



1. Central line is inserted into your chest here
2. The line is tunnelled under your skin
3. It comes out here

Once it is in place, the central line is either stitched or taped firmly to your chest to prevent it being pulled out of the vein. It can remain in the vein for many months and means that you do not have to have cannulas put in when you have your intravenous chemotherapy. Blood can also be taken through this line for testing.

You will be able to bathe or shower; although you should prevent water from getting to the area where the tube enters the skin - a plastic dressing can be used for this.

There are very few restrictions to everyday life. Before you go home, make sure you are confident about looking after your central line. If you do have any problems, contact the staff on the ward for advice.

Possible problems with central lines

Two potential problems with central lines are blockage and infection. Once or twice a week the line has to be flushed with heparin, a drug which prevents clotting, and the nurses on the ward can teach you how to do this.

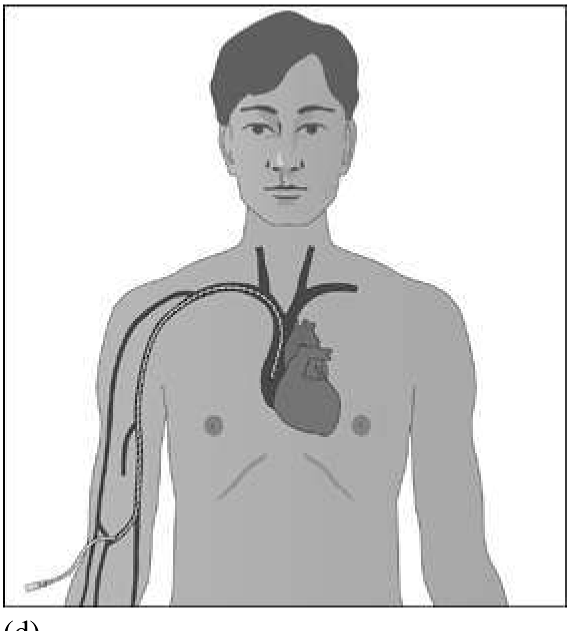
If you notice any reddening, darkening or soreness of the skin around the central line, or if you have a high temperature, let your doctor know as it could be a sign that you have an infection in the line. If this happens you will need to have antibiotics through the line to clear the infection.

Most hospitals consider a temperature above 38°C (100.5°F) to be high, but some hospitals use a lower or higher temperature. The doctors and nurses at your hospital will tell you which temperature they use.

CancerBACUP has a section with more information about central lines.

PICC lines

Your doctor may decide to put a long, fine line into a vein in the crook of your arm. This is called a peripherally inserted central venous catheter (PICC). The doctor or chemotherapy nurse will explain the procedure to you. You will be given a local anaesthetic before the line is put in.



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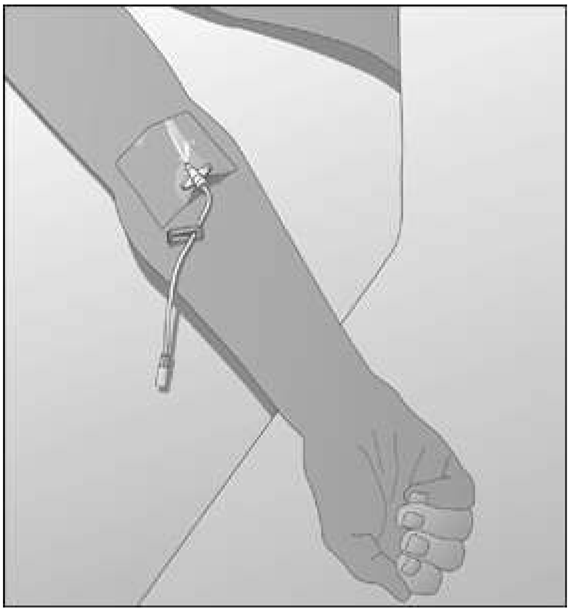
The tub is threaded through the vein until the end is near to your heart



The end of the tube comes out just below the crook of your elbow.

Once it is in place, the PICC line is taped firmly to your arm to prevent it being pulled out of the vein. It can remain in the vein for many months. As with the central line it means that you do not have to have cannulas put in when you have your intravenous chemotherapy. Blood can also be taken through the line for testing.

You will be able to bathe or shower, although you should prevent water from getting to the area around the tube - a plastic dressing can be used for this.

There are very few restrictions to everyday life. Before you go home, make sure that you are confident about looking after your line. If you do have any problems contact the staff on the ward for advice.

The possible problems are the same as for central lines: blockage and infection (see above).

CancerBACUP has another section with more information about PICC lines.

Portocaths (implantable ports)

An implantable port is a thin, soft plastic tube that is put into a vein and has an opening (port) just under the skin on your chest or arm. This allows medicines to be given into the vein or blood to be taken from the vein.

The tube is a long, thin hollow tube known as a catheter and the port is a disc about 2.5 to 4 cm in diameter. The catheter is usually inserted (tunnelled) under the skin of your chest. The tip of the catheter lies in a large vein just above your heart and the other end connects with the port which sits under the skin on your upper chest. The port will show as a small bump underneath your skin which can be felt, but nothing is visible on the outside of your body.

Infusion pumps

Infusion pumps may be used to give some types of chemotherapy. There are various types of portable pump. These can be used to give a controlled amount of drugs into the bloodstream over a period of time (from a few days to a few weeks).

The pump is connected to a central line or a PICC line. This means that you can go home with the pump and so you need fewer visits to hospital. The pumps are small enough to be carried in a bag or belt holster.

The chemotherapy drugs are prepared at the hospital. You, and perhaps a family member or friend, will be taught how to look after the pump. Some pumps are battery-operated and care has to be taken not to get them wet when you are washing (the nurses will give you full instructions).

Some pumps are disposable after use and are operated by a balloon mechanism or spring control.

If you have any problems or questions when you get home, contact the nurses or doctor at the hospital.

Chemotherapy tablets or capsules

You may be given tablets or capsules to take at home as all or part of your treatment. Tablets or capsules are known as oral chemotherapy. You will be told when to take them and will be given other instructions such as whether or not to take them with food.

If you cannot take your medicines for any reason you should contact your doctor immediately for advice. The drugs that you have been given by the hospital make up a complete course of treatment, and it is important to take them exactly as they have been prescribed.

If you need to have further supplies of the drug it is important to get these from your hospital specialist and not from your GP or local pharmacist.

Intramuscular injection

Some chemotherapy drugs are given by injection into a muscle. The doctor or nurse will explain the procedure to you. The drug is injected into the muscle of the leg or buttock. This may be painful or uncomfortable, but only lasts for a short time.

Subcutaneous injection

Some drugs can be given by injection just under the skin. A very fine needle is used and this may be uncomfortable for a short time.

Intrathecal injection (into the fluid around the spinal cord)

In some conditions such as leukaemia or lymphoma (cancer which starts in the lymph system) cancer cells can pass into the fluid which surrounds the brain and spinal cord. The fluid is known as cerebrospinal fluid or CSF.

To prevent this from happening, or to treat it if it occurs, chemotherapy may be given into the CSF. To do this you need to lie on your side with your legs drawn up. The doctor will then use local anaesthetic to numb an area of skin over your spine. A needle is then inserted into the space between two of the spinal bones and into the CSF. The chemotherapy is injected into the CSF through the needle.

This procedure takes from 15 to 30 minutes and you may need to lie flat afterwards for a few hours. You may have a headache, which will last for a few hours. Painkillers can be given for this. Chemotherapy given in this way does not usually cause any other side effects.

Intracavity chemotherapy

To give chemotherapy drugs in this way a tube is inserted into the affected body cavity, for example the bladder, and the chemotherapy is flushed in through the tube. It may then be drained out again after a set period of time.

Drugs given in this way may cause some irritation or inflammation in the area to which they are given but they do not tend to cause side effects in other parts of the body.

Chemotherapy creams

Chemotherapy creams are used for some types of skin cancer. They are put on to the affected area of skin in a thin layer and may need to be used regularly for a few weeks. They may cause some soreness or irritation of the skin in the affected area but do not cause side effects in other parts of the body.

While you are using chemotherapy creams you may need to wear a dressing over the affected area of skin.

Content last reviewed: 01 October 2003
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Related information
- Central lines
- PICC lines
- Implantable ports

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Where is chemotherapy treatment given?

Chemotherapy drugs are usually prepared in a special area of the hospital pharmacy. All the drugs are carefully checked by the pharmacy staff to ensure that they are the right ones for you.

Chemotherapy tablets, capsules or creams can be given to you to take home.

Most intravenous chemotherapy drugs can be given to you as a day patient at the hospital, and may take from half an hour to a few hours. However, some treatments, such as having chemotherapy into the abdominal cavity, will mean a short stay in hospital - perhaps overnight or for a couple of days.

For some chemotherapy treatments - for example, high-dose chemotherapy - you will need to stay in hospital longer, perhaps for a few weeks. Your doctor or nurse will explain exactly what your treatment will involve before it starts.

If you are having chemotherapy by intramuscular injection, subcutaneous injection, intrathecal injection, or intracavity injection into the bladder it will probably be given in the outpatients department or the chemotherapy day unit at the hospital.

Usually chemotherapy is given in a day unit at the hospital but for some chemotherapy treatments you may need to stay in hospital overnight or longer.

Sometimes specialist chemotherapy nurses can visit you at home to give intravenous chemotherapy. This sort of service is only available in some parts of the UK and with some types of chemotherapy treatment. You can ask your doctor whether it is possible to have your treatment at home.

Points to remember when having chemotherapy at home

- Chemotherapy tablets, capsules or injections may need to be stored in a particular way, such as in the fridge. Always follow the instructions given by your pharmacist.
- It is important not to touch some chemotherapy drugs with your fingers. All drugs must be stored out of the reach of children as they could cause serious harm if taken by accident.
- If you are having intravenous chemotherapy by pump and you notice any leakage of the drug from the pump or the tube it is essential to let the nurse or doctor at the hospital know immediately.
- If you feel unwell at any time phone the nurse or doctor at the hospital for advice.

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Treatment planning

Your doctor will consider several factors when planning your treatment. The most important of these are the type of cancer you have, where in the body it is situated, how far it has spread (if at all) and your general health.

How often you have your treatment and how long the whole course of treatment takes will depend on:

- the type of cancer you have
- the particular chemotherapy drugs you are having
- how well the disease responds to the drugs
- any side effects the drugs may cause

Before starting chemotherapy, you will have your height and weight checked. This helps the doctor to work out the right dose of chemotherapy for you.

Intravenous chemotherapy is usually given as several sessions of treatment, unless you are having continuous treatment by infusion pump. Depending on the drug, or drugs, each treatment can last from a few hours to a few days.

Each treatment is generally followed by a rest period of a few weeks to allow your body to recover from any side effects. The treatment and the rest period are known as a cycle of treatment.

The number of cycles you have will depend on how well your cancer is responding to the chemotherapy. Two or more cycles of treatment make up a course of chemotherapy.

It may take several months to have all the chemotherapy needed for the treatment of your cancer. When chemotherapy is given by an infusion pump it can be given continuously over a period varying from several days to several weeks.

Some patients having tablets or capsules (oral chemotherapy) take the chemotherapy daily for several weeks or months, before they have a rest period.

You will normally have blood tests and see the doctor or specialist chemotherapy nurse before you are given your chemotherapy, which will obviously take some time.

Your GP, practice nurse or staff at a hospital close to your home can take your blood a day or two before your treatment, so that you do not have to wait as long on the day of your treatment. If your blood is taken at your GP surgery or at another hospital, the results will be passed on to the hospital in which you are having your treatment.

Sometimes you may need to have x-rays or scans.

All chemotherapy drugs are prepared in a special way and you may have to wait while the hospital pharmacy department gets them ready. To help pass the time, it can be helpful to take a book, newspaper, crosswords or perhaps some letters to write.

Your doctor or chemotherapy nurse will explain your treatment plan. If you have any questions, don't be afraid to ask. It often helps to make a list of questions and to take a close relative or friend with you to remind you of things you want to know but can easily forget.

Changes in the treatment plan

Your doctors will use blood tests and sometimes urine tests to monitor the effect that the chemotherapy is having on your body.

If you have a tumour that can be seen on a scan or felt by the doctor, the hospital staff will be regularly checking the effects of the chemotherapy, and any other treatment you are having, on the cancer.

The results from your blood tests and any scans or x-rays show how much the cancer is responding to the treatment.

Depending on the results of the tests, your treatment plan may sometimes need to be changed. There can be many reasons for this and your doctor can tell you why your treatment plan needs to be changed if this is necessary.

It may be because the drugs you are having are starting to cause damage to particular parts of the body, such as the bone marrow, kidneys, liver or nerves in the hands or feet.

Sometimes it can be because the chemotherapy is not shrinking the cancer enough, and changing to different drugs may be more effective.

Sometimes, your treatment may need to be delayed because the chemotherapy drugs are stopping your bone marrow from working properly. Delaying the chemotherapy gives your bone marrow a chance to recover before the next course of drugs is given.

If there is a special occasion that you would like to attend, or you want to go on holiday, it may be possible to arrange the timing of your treatment to suit. Your doctor can tell you whether this is possible.

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Research - clinical trials

- See current breast cancer trials

Research into new ways of treating cancer of the breast is going on all the time.

When a new treatment is being developed, it goes through various stages of research. To begin with it will be looked at in the laboratory, and sometimes tested on cancer cells in a test tube. If the treatment seems as though it might be useful in treating cancer, it is then given to patients in research studies (clinical trials). These early studies are called phase 1 trials. They aim to:

- find a safe dose
- see what side effects the therapy may cause
- identify which cancers it might be used to treat.

If early studies suggest that a new treatment may be both safe and effective, further trials (phases 2 and 3) are done to answer these questions:

- Is it better than existing treatments?
- Does it have extra benefit when given together with existing treatments?
- How does it compare with the current best standard treatments?

Clinical trials take a long time. It usually takes some years from the time when a new treatment is first discovered (often with a lot of publicity in the papers and on TV) until the time when its true value is established.

You may be asked to take part in a research trial. There can be many benefits in doing this. You will be helping to improve knowledge about cancer and the development of new treatments. You will also be carefully monitored during and after the study.

It is important to bear in mind that some treatments that look promising at first are often later found not to be as good as existing treatments, or to have side effects that outweigh any benefits.

As part of research, you may be asked by your doctors for permission to store some of the samples of your tumour or blood, so that they can be used as part of trials to find the causes of cancer.

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Related information

Cancer research trials
Trials database

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What are the side effects of chemotherapy?

Different chemotherapy drugs cause different side effects, and some people may have very few. Cancer treatments cause different reactions in different people and any reaction can vary from treatment to treatment.

It may be helpful to remember that almost all side effects are only short-term and will gradually disappear once the treatment has stopped.

The main areas of your body that may be affected by chemotherapy are those where normal cells rapidly divide and grow, such as the lining of your mouth, the digestive system, your skin, hair and bone marrow (the spongy material that fills the bones and produces new blood cells).

If you want to know more about the side effects that may be caused by your chemotherapy treatment you should ask your doctor or chemotherapy nurse, as they will know the exact drugs you are taking.

Although the side effects of chemotherapy can be unpleasant, they must be weighed against the benefits of the treatment.

However, if you are finding that the treatment or its side effects are making you unwell, do tell your doctor. You may be able to have medicines to help you, or changes can be made to your treatment to lessen any side effects.

CancerBACUP's information on individual chemotherapy drugs gives specific details on their side effects.

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Resources

For information on coping with the side effects of cancer treatments, please see the resources & support section

search

Possible side effects of some chemotherapy drugs

Tiredness

While having chemotherapy and for some time afterwards you may feel very tired (fatigued) and have a general feeling of weakness. It is important to allow yourself plenty of time to rest.

The tiredness will ease off gradually once the chemotherapy has ended, but some people find that they still feel tired for a year or more afterwards.

CancerBACUP's section on coping with fatigue gives helpful tips on dealing with tiredness during chemotherapy treatment and suggests ways of saving energy.

back to top

Bone marrow

Chemotherapy can reduce the number of blood cells produced by the bone marrow. Bone marrow is a spongy material that fills the bones and contains stem cells, which normally develop into the three different types of blood cell.

The cells produced by bone marrow:

- white blood cells are essential for fighting infections
- red blood cells contain haemoglobin to carry oxygen round the body
- platelets help to clot the blood and prevent bleeding.

White blood cells

If the number of white cells in your blood is low you will be more likely to get an infection as there are fewer white cells to fight off bacteria.

If your temperature goes up, or you suddenly feel unwell, even with a normal temperature, contact your doctor or the hospital straight away. Most hospitals consider a temperature above 38°C (100.5°F) to be high, although some hospitals use a lower or higher temperature.

The doctors and nurses at your hospital will tell you which temperature they use.

Your regular blood tests will also show the number of white cells in the blood. If you get an infection when your white blood cell level is low you may need to have antibiotics.

These may be given intravenously (into the vein) in the chemotherapy day unit or as tablets which can be taken at home. You may need to be admitted to hospital for the antibiotic treatment.

In some circumstances, drugs called growth factors can help your bone marrow to make more white blood cells. Growth factors are special proteins, normally made in the body, which can now be produced in the laboratory.

You may hear them described as G-CSF or GM-CSF. After chemotherapy treatment, growth factors are sometimes given to stimulate the bone marrow to produce new white cells quickly. In this way they reduce the risk of infection.

CancerBACUP has further information on G-CSF and GM-CSF.

Blood cells are usually at their lowest level from 7 to14 days after the chemotherapy treatment, although this will vary depending on the type of chemotherapy.

Helpful hints - infection

- Tell your doctor at once if you develop a temperature as you may need to have antibiotics
- Keep clean. Always wash your hands thoroughly before preparing your food
- Read CancerBACUP's section on avoiding infection when your immunity is low

Red blood cells

If the level of red blood cells (haemoglobin) in your blood is low you may become very tired and lethargic. As the amount of oxygen being carried around your body is lower, you may also become breathless.

These are all symptoms of anaemia - a lack of haemoglobin in the blood. People with anaemia may also feel dizzy and light-headed, and have aching in their muscles and joints.

During chemotherapy you will have regular blood tests to measure your haemoglobin. A blood transfusion can be given if your haemoglobin is low - CancerBACUP has a section about blood transfusions.

The extra red cells in the blood transfusion will very quickly pick up the oxygen from your lungs and take it around the body. You will feel more energetic and any breathlessness will be eased.

Sometimes a drug called erythropoietin can be used to stimulate the bone marrow to produce red blood cells more quickly. Erythropoietin is given as an injection just under the skin of the thigh or abdomen, from one to five times a week.

CancerBACUP has section about erythropoietin.

Platelets

If the number of platelets in your blood is low you may bruise very easily and may suffer from nosebleeds or bleed more heavily than usual from minor cuts or grazes.

If you do develop any unexplained bleeding or bruising you need to contact your doctor or the hospital straight away, and you may need to be admitted to hospital for a platelet transfusion.

A fluid containing platelets is given by drip into your blood. These platelets will start to work immediately, to prevent bruising and bleeding.

CancerBACUP has a section on platelet transfusions.

Your regular blood tests will also be used to count the number of platelets in your blood. If your platelets are low, take care to avoid injury - for example, if you are gardening wear thick gloves.

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Alteration of kidney function

Some chemotherapy drugs such as cisplatin and ifosfamide can cause damage to the kidneys. In order to prevent kidney damage, fluids may be given by drip into your vein for several hours before you have the treatment and your kidney function will be carefully checked by blood tests before each treatment.

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Nausea and vomiting

Some chemotherapy drugs can make you feel sick (nausea), or actually be sick (vomit). Many people have no sickness, but for those who do there are now very effective treatments to prevent and control it, so it is much less of a problem than it was in the past.

If you do feel sick, it will usually start from a few minutes to several hours after the chemotherapy, depending on the drugs you are having. The sickness may last for a few hours or, rarely, for several days.

Your doctor can prescribe anti-sickness drugs (anti-emetics) to stop or reduce this side effect. Anti-emetics may be given by injection with the chemotherapy and as tablets to take at home afterwards.

Steroids can also be helpful in reducing nausea and vomiting. Given in this way, they often give a sense of well-being, as well as helping to reduce feelings of sickness and loss of appetite.

CancerBACUP has sections on controlling nausea and vomiting and steroids.

Helpful hints - eating and digestion

- If you feel sick or are sick, tell your doctor as soon as possible. Anti-sickness drugs can be prescribed which usually work well
- Avoid eating or preparing food when you feel sick
- Avoid fried foods, fatty foods or foods with a strong smell
- Eat cold or warm food if the smell of hot food makes you feel sick
- Eat several small snacks and meals each day and chew the food well
- Have a small meal a few hours before treatment, but don't eat just before treatment
- Drink plenty of liquid slowly, taking lots of small sips
- Avoid filling your stomach with fluid before you eat
- Some complementary therapies (such as homeopathy or acupuncture) may help. CancerBACUP has a section on complementary therapies and cancer

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Loss of appetite

Some chemotherapy drugs can reduce your appetite for a while.

CancerBACUP's section on diet and the cancer patient has some helpful tips on boosting appetite.

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Diarrhoea and constipation

Some chemotherapy drugs can affect the lining of the digestive system and this may cause diarrhoea for a few days. Some chemotherapy drugs (or drugs given to control side effects such as nausea) can cause constipation.

If you have any diarrhoea or constipation, or are worried about the effects of chemotherapy on your digestive system, see your doctor or chemotherapy nurse to discuss any problems you may have.

CancerBACUP's section on diet and the cancer patient has tips on dealing with diarrhoea and constipation.

Helpful hints - diarrhoea and constipation

- If you have diarrhoea, eat less fibre, and avoid cereals, raw fruits and vegetables
- Drink plenty of fluid (up to two litres a day) to replace the fluid lost in the diarrhoea
- If you are constipated, eat more fibre, raw fruits, cereals, and vegetables. Have prune juice and hot drinks. Try to take gentle exercise, if possible

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Your mouth

Some drugs can cause a sore mouth, which may lead to mouth ulcers. If this happens it is usually about 5 to 10 days after the drugs are given and will clear up within three to four weeks. Your doctor can prescribe mouthwashes to help.

The mouth ulcers can become infected, but your doctor can give you treatment to help prevent or clear infection. Cleaning your teeth regularly and gently with a soft toothbrush will help to keep your mouth clean.

If your mouth is very sore, gels, creams or pastes can be used to paint over the ulcers to reduce the soreness. Your cancer specialist can tell you about these.

Helpful hints - your mouth

- To keep your mouth fresh and moist, eat fresh pineapple
- Clean your teeth or dentures gently every morning, evening and after each meal
- Use a soft-bristled or child's toothbrush
- If your toothpaste stings or brushing your teeth makes you feel sick, try using a mouthwash (such as one teaspoon of bicarbonate of soda dissolved in a mug of warm water)
- If your doctor prescribes a mouthwash for you, use it regularly as prescribed to prevent soreness
- Use dental tape or floss each day, gently

- Keep your lips moist by using Vaseline, or a flavoured lip balm if you prefer
- Avoid neat spirits, tobacco, hot spices, garlic, onion, vinegar and salty food. These may irritate your mouth
- Keep your mouth and food moist. Add gravies and sauces to your food to make swallowing easier
- Try to drink at least 11/2 litres (3 pints) of fluid a day (water, tea, weak coffee, and soft drinks such as apple juice)
- Avoid acidic drinks such as orange and grapefruit juice. Warm herbal teas may be more soothing
- Let your doctor know if you have mouth ulcers, as you may need medicines to help heal the ulcers and clear any infection
- Sucking crushed ice while the chemotherapy drugs are being given may help to prevent a sore mouth
- Read CancerBACUP's section on mouth care during chemotherapy

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Taste changes

Chemotherapy can cause your taste to change; food may taste more salty, bitter or metallic. Normal taste will come back after the chemotherapy treatment finishes.

CancerBACUP's section on diet and the cancer patient has some helpful tips.

Helpful hints - taste changes

- Eat only the foods that you like and ignore those that do not appeal
- Use seasonings and herbs to flavour your cooking
- Try marinating food, or using strongly flavoured sauces to go with food
- Sharp-tasting foods such as fresh fruit are refreshing and leave a pleasant taste in the mouth
- Some people find that cold foods taste better than hot foods

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Your hair

Complete or partial hair loss can occur with some chemotherapy drugs and can be very distressing. Some drugs cause no hair loss or the amount of hair lost is so slight it is hardly noticeable.

Some chemotherapy can damage hair and make it brittle. If this happens the hair may break off near the scalp a week or two after the chemotherapy has started.

The amount of hair lost, if any, depends on the type of drug or combination of drugs used, the dose given and the person's individual reaction to the drug.

If hair loss happens it usually starts within a few weeks of beginning treatment, although very occasionally it can start within a few days.

Underarm, body and pubic hair may be lost as well. Some drugs also cause loss of the eyelashes and eyebrows. If you do lose your hair as a result of chemotherapy, it will grow back once you have finished your treatment.

Some people having certain types of chemotherapy may be able to prevent hair loss by using a 'cold cap'. This works by temporarily reducing the blood flow and the amount of the drug reaching the scalp. Unfortunately, the cold cap only blocks the action of certain drugs.

You can ask your doctor or chemotherapy nurse whether one would be useful for you. CancerBACUP has a section on scalp cooling.

Helpful hints - your hair

- If your drugs are likely to cause hair loss, it can help to have your hair cut quite short before treatment. The weight of long hair pulls on the scalp and may make hair fall out faster
- Use gentle hair products
- Do not perm your hair during chemotherapy, or for three months afterwards
- If you colour your hair, use a mild vegetable-based colourant and ask your hairdresser or chemotherapy nurse for advice
- Try not to brush or comb your hair too roughly - use a soft or baby's brush
- Avoid using hair dryers, curling tongs and curlers. Pat your hair dry gently after washing it
- If it is likely that you may lose your hair, ask your doctor or nurse about wigs early on, so that the wig can be as close a match as possible to your normal hair
- You may like to wear a hat or scarf when you go out. There are also turbans which can be worn in the house
- Read CancerBACUP's section on coping with hair loss

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Skin changes

Some drugs can affect your skin. These may make your skin become dry or slightly discoloured and may be made worse by swimming, especially if there is chlorine in the water. Any rashes should be reported to your doctor.

The drugs may also make your skin more sensitive to sunlight, during and after the treatment. Protect your skin from the sun by wearing a hat and sunglasses, covering skin with loose clothing and using sunscreen cream on any exposed areas.

Helpful hints - skin changes

- Avoid wet shaving - an electric razor is less likely to cause cuts
- If your skin becomes dry or itchy, rub in a little moisturising cream to soothe it
- Wear a hat, loose clothing and high-factor sunblock cream if you are going out in the sun, to prevent your skin burning

Your nails

Your nails may grow more slowly and you may notice white lines appearing across them. Sometimes the shape or colour of your nails may change: they may become darker or paler. False nails or nail varnish can disguise white lines. Your nails may also become more brittle and flaky.

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Effects on the nerves

Some chemotherapy drugs can affect the nerves in the hands and feet. This can cause tingling or numbness, or a sensation of pins and needles. This is known as peripheral neuropathy. Let your doctor know if it occurs.

Usually it gradually reduces when the chemotherapy treatment ends but if it becomes severe it can damage the nerves permanently. Your doctor will keep a close check on you and may need to change the chemotherapy drug if the problem is getting worse.

CancerBACUP has a section on peripheral neuropathy.

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Effects on the nervous system

Some drugs can cause feelings of anxiety and restlessness, dizziness, sleeplessness or headaches. Some people also find it hard to concentrate on anything.

If you have any of these side effects let your doctor know as medicines can often be given to help. The CancerBACUP nurses can give you advice on how to cope with these effects.

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Changes in hearing

Some chemotherapy drugs can cause loss of the ability to hear high-pitched sound. They can also cause a continuous noise in the ears known as tinnitus, which can be very distressing. Let your doctor know if you notice any change in your hearing.

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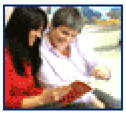

Will chemotherapy affect my everyday life?

Even though chemotherapy treatment can cause unpleasant side effects, some people still manage to lead an almost normal life during their treatment.

Often, the chemotherapy can make you feel better, by relieving the symptoms of the cancer. Even if you feel unwell during your course of treatment, you may find that you recover quickly between courses and can take up your usual activities again as you begin to feel better.

You may be able to go to work and carry on with your social activities as usual, but may need to take rests during the day or shorten your working hours.

Some people feel very tired during chemotherapy. This is quite normal and may be caused by the drugs themselves and your body fighting the disease, or may simply be because you are not sleeping well.

For someone who normally has a lot of energy, feeling tired all the time can be very frustrating and difficult to cope with. The hardest time may be towards the end of the course of chemotherapy.

Try to cut down on any unnecessary activities and ask your family or friends to help you with jobs such as shopping and housework. It is important not to fight your tiredness. Give yourself time to rest and if you are still working see if it is possible to reduce your hours while you are having treatment.

If you are having problems with sleeping, your GP may be able to prescribe some mild sleeping tablets for you.

Social life

While you are having chemotherapy you may find that you cannot do some of the things you used to take for granted. But you needn't stop your social life completely.

Depending on how well you feel, there is no reason to stop going out or visiting friends, especially if you can plan ahead for social occasions. For example, if you are going out for the evening, you could make sure that you get plenty of rest during the day so you have more energy for the evening.

If you are planning to go out for a meal, you may find it helpful to take anti-sickness tablets before you go and to choose your food carefully from the menu.

If you have an important social event (such as a wedding) coming up, discuss with your doctor whether your treatment can be altered so that you can feel as well as possible for the occasion.

Alcohol

For most people, having the occasional alcoholic drink will not affect their chemotherapy treatment, but it is best to check with your doctor beforehand.

Holidays and vaccinations

If you are going abroad on holiday, it is important to remember that you should not have any 'live virus' vaccines while you are having chemotherapy.

These include polio, measles, rubella (German measles), MMR (the triple vaccine for measles, mumps and rubella), BCG (tuberculosis), yellow fever and typhoid medicine. There are, however, vaccines which you can have, if necessary.

If you are travelling abroad ask your doctor whether you should have other vaccines such as diphtheria, tetanus, flu, hepatitis B, hepatitis A, rabies, cholera or typhoid injection.

Sometimes people who have, or have had, cancer can find it difficult to get travel insurance to travel abroad. Contact CancerBACUP for a list of insurance companies that may offer travel insurance for people with cancer.

You may find it difficult to get travel insurance while you are actually having chemotherapy, but once your treatment is complete this is usually less of a problem.

CancerBACUP's section on travel and cancer has helpful tips on many travel issues.

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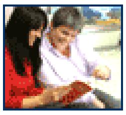

Will chemotherapy affect my sex life?

Some people go through their chemotherapy with their usual sex lives unaffected. On the other hand, some people find that their sex lives are temporarily or permanently changed in some way due to their treatment.

Any changes that occur are usually temporary, and should not have a long-term effect on your sex life. For example, there may be times when you just feel too tired, or perhaps not strong enough for the level of physical activity you are used to during sex.

If your treatment is making you feel sick, you may not want to have sex at all for a while.

Anxiety may also play a large part in putting you off sex. Often this anxiety may not seem directly related to sex; you may be worried about your chances of surviving your cancer, or how your family is coping with the illness, or about your finances. Stresses like these can easily push everything else, including sex, to the back of your mind.

Any such changes are usually short-term and not serious. There is no medical reason to stop having sex at any time during your course of chemotherapy.

It is perfectly safe, and the chemotherapy drugs themselves will have no long-term physical effects on your ability to have and enjoy sexual activity.

Any changes in your sex life are unlikely to last long.

It is thought that chemotherapy drugs cannot pass into semen or vaginal fluids. However, for people having chemotherapy most hospitals advise the use of condoms during sexual activity for up to a few days after the treatment has been given. This is to prevent any possible problems for their partner.

It is important to take good contraceptive precautions whilst having chemotherapy, as chemotherapy drugs can harm the baby if pregnancy occurs.

For this reason, your doctor will advise you to use a reliable method of contraception (usually 'barrier' methods - such as condoms or the cap) throughout your treatment and for a few months afterwards.

The only exception may be women whose chemotherapy has brought on an early menopause. These women will experience symptoms usually associated with the menopause, which may include dryness of the vagina and a decreased interest in sex.

In many cases, depending on the type of cancer, doctors can prescribe hormone replacement therapy (HRT) to prevent these symptoms (unfortunately, the HRT will not prevent the menopause).

If dryness of the vagina is making sex uncomfortable, your doctor may be able to prescribe a cream or ointment to ease the problem, or you can use KY Jelly or other creams such as Replens to moisten the vagina. These are available from your chemist without a prescription.

HRT can be used by women with most types of cancer, although doctors have some concerns about using it in cases of breast cancer and cancer of the womb (uterus). Some doctors feel that HRT may increase the risk of these cancers coming back, but others do not.

If you are worried that the chemotherapy could affect your sex life, try to discuss your worries with your cancer specialist before your treatment starts. Your doctor should be able to tell you about the side effects your treatment may cause and you can then talk about the main effects of these, if any, on your sex life.

You need to know about all aspects of your treatment, and if sex is an important part of your life, it matters that you should be fully aware of any possible changes.

If the idea of talking to your doctor about these things is too embarrassing, you could contact our Cancer Support Service nurses. They will talk through any sexual problems with you in complete confidence.

It may help if you can discuss your feelings and any worries with your partner. Even though it is unlikely that chemotherapy will cause any problems with sex, your partner may still have some anxieties and may have been waiting for a sign from you to show that it is all right to discuss them. Perhaps your partner could join you if you decide you want to talk to your doctor.

Overcoming any problem, sexual or otherwise, may seem like an uphill struggle when you are also trying to come to terms with your cancer and cope with chemotherapy. Remember that most side effects from chemotherapy that may affect your sex life, such as tiredness or sickness, will gradually wear off once your treatment is finished.

CancerBACUP's section on sexuality and cancer has more information.

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Will chemotherapy make me infertile?

Unfortunately some chemotherapy treatments may cause infertility. Infertility is the inability to become pregnant or to father a child and may be temporary or permanent, depending on the drugs that you are having.

It is strongly advised that you discuss the risk of infertility fully with your doctor before you start treatment. If you have a partner he or she will probably wish to join you at this discussion so you can both be aware of all the facts and have a chance to talk over your feelings and options for the future.

Although chemotherapy can reduce fertility it is quite possible for a woman having chemotherapy to become pregnant during the treatment. The side effects of chemotherapy, such as sickness and diarrhoea, can make the pill less effective.

Female partners of a man having chemotherapy may also become pregnant.

Pregnancy should be avoided during chemotherapy in case the drugs harm the baby.

Female fertility

Some drugs will have no effect on your fertility, but some may temporarily or permanently stop your ovaries producing the eggs which can be fertilised by the sperm during sex.

If this happens it means, unfortunately, that you can no longer become pregnant and it will also bring on symptoms normally associated with the change of life (the menopause).

During chemotherapy your monthly periods may become irregular and stop and you may have hot flushes, dry skin and dryness of the vagina.

Some women's ovaries will start producing eggs again once the treatment ends. If this is the case, the infertility will have been short-term. Your periods will return to normal after the treatment finishes.

This happens in about a third of women. Usually, the younger you are, the more likely you are to have normal periods again and still be able to have children once the chemotherapy has ended.

Depending on the type of cancer you have, your doctor may be able to prescribe hormone tablets (HRT) to help relieve the menopausal side effects. The hormones, unfortunately, will not enable you to start producing eggs again and so cannot prevent infertility.

Pregnancy and cancer

If you are pregnant before your cancer is diagnosed and your chemotherapy starts, it is very important to discuss with your doctor the pros and cons of continuing with your pregnancy.

It is sometimes possible to delay starting chemotherapy until after the baby is born, depending on the type of cancer you have, the extent of the disease, how advanced the pregnancy is and the particular chemotherapy you will be having.

You will need to talk to your doctor about your pregnancy and be sure you are fully aware of all the risks and alternatives before making any decisions.

You can also talk to the nurses at CancerBACUP.

Male fertility

Some chemotherapy drugs will have no effect at all on fertility, but some may reduce the number of sperm produced or affect their ability to reach and fertilise a woman's egg during sex.

Unfortunately, this means you may no longer be able to father children. However, you will still be able to get an erection and have an orgasm as you did before you started your treatment.

You should use a reliable barrier method of contraception all through your treatment.

If you have not completed your family before you need to start chemotherapy, you may be able to bank some of your sperm for later use.

If this is possible in your case, you will be asked to produce several sperm samples over a few weeks. These will then be frozen and stored so that they can be used later to try to fertilise an egg and make your partner pregnant.

The pregnancy should then carry on as normal. You may be charged a fee for sperm storage, and also for the infertility treatment.

If the chemotherapy does cause infertility, some men will remain infertile after their treatment has stopped while others will find their sperm returns to normal levels and their fertility comes back.

Sometimes it may take a few years for fertility to return. Your doctor will be able to do a sperm count for you when your treatment is over to check your fertility.

Teenage boys should also be aware of the infertility risk so that, if possible, their sperm can be stored for later years.

CancerBACUP has section on fertility and cancer, which discusses the options for dealing with infertility.

Your feelings about infertility

Some people are devastated when they discover that the treatment they need for their cancer will also mean they can no longer have any children. If you had been planning to have children in the future or to have more children to complete your family, infertility will be very hard to come to terms with.

The sense of loss can be very painful and distressing for people of all ages. Sometimes it can feel as though you have actually lost a part of yourself.

You may feel less of a man or less feminine because you can't have children. Women especially may be distressed, and resentful that the drugs may cause bodily changes, such as the menopause, which can further undermine their self-confidence.

People vary in their reactions to the risk of infertility. Some people may shrug it off and feel that dealing with the cancer is more important. Others may seem to accept the news calmly when they start treatment and find that the impact doesn't hit them until the treatment is over and they are sorting out their lives again.

There is no right or wrong way to react. You may want to discuss the risks and all your options with your doctor before you start treatment. You may also need an opportunity to talk to a trained counsellor about any strong emotions which threaten to become too much for you.

Your partner will also need special consideration in any discussions about fertility and future plans. You may both need to speak to a professional counsellor or therapist specialising in fertility problems. They can help you to come to terms with your situation.

Your doctor may be able to refer you to a specialist or you can be put in touch with one directly by contacting an suitable organisation. The nurses at the CancerBACUP Cancer Support Service can discuss problems you may have and they can also help you to find a counsellor who can offer you help and advice.

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Feelings and emotions about having chemotherapy

Many people find that having cancer, needing chemotherapy treatment, and the effect that both of these may have on their lives can sometimes make them feel anxious, afraid or depressed.

Often these feelings can be aroused by something seemingly trivial, such as having to change your usual daily routine to fit in with the treatments, or something more obvious, such as particular side effects of the treatment, or the risk of infertility.

If you do feel low or worried, for whatever reason, it is important to know that you are not alone. You can be sure that many people with cancer have felt as you do at some time during their treatment and that, like them, you can deal with feeling fearful or discouraged.

One of the first steps to solving problems successfully is to find out exactly what is causing the problem in the first place. You may be feeling anxious, for example, asking yourself such questions as 'Are the drugs working?', 'What effects are they going to have on my body or long-term health?' and 'How am I going to cope with the side effects?'.

Many cancer patients feel afraid of the future and what it might bring. Some do not understand what is happening to their bodies and are frightened of the possible effects of the disease or the treatment.

Once you have identified why you are feeling low, you can start to take action. Information can help to overcome fear. If you don't understand something about your treatment or disease, or you want to know about side effects and possible outcomes of treatment, ask your doctor, nurse or other health professional.

If you don't understand the explanation, then keep asking until you do. Remember it is your right to know what is happening to your body and how your life may be affected.

Most doctors and nurses are very willing to answer any questions and to keep you up-to-date on your progress.

Depression can occur due to side effects such as hair loss and tiredness. Certainly it can be discouraging if the cancer is taking time to respond to the drugs.

CancerBACUP's section on the emotional effects of cancer describes the feelings and emotions that you may have and has advice on how to cope with them.

Your emotional well-being is as important as your physical health. Everyone needs some support during difficult times and having cancer is one of the most stressful situations you are ever likely to face.

If you feel that low moods are getting the better of you, try to talk over your feelings with someone you feel close to who can be a good listener. You may also find it helpful to discuss your feelings with a professional counsellor, a leader or member of your religious faith or a social worker.

If you feel comfortable discussing personal worries with your doctor or nurse, these people can be very good at helping you to bring your feelings out into the open and can find you further help if necessary.

If you are finding it particularly difficult to overcome a period of depression, your doctor may suggest one of a number of treatments, such as a course of anti-depressant drugs. These drugs are useful on a short-term basis to help lift your spirits and they usually have few side effects.

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How you can help yourself?

There are ways in which you can try to smooth the course of your chemotherapy treatment.

Try to keep a positive attitude. This does not mean being cheerful and happy all the time. Everyone feels down and worried now and again and accepting that you will have these feelings is part of being positive.

It can help to know what your treatment involves, what is expected to happen, what side effects, if any, to expect, what can be done about them and what should be reported to your doctor or chemotherapy nurse.

If you gather as much information as possible about your disease and treatment, you can play an active part in tackling it. You may need to ask questions over and over again, or ask new questions every time you see your doctor or nurse. This is fine. It is your illness and you need to work with your health care staff to find ways of overcoming this very difficult time.

Find out how you are getting on by asking your doctor to tell you regularly about your progress. This will give an opportunity for him or her to reassure you if progress is slower than expected, and to discuss changing your treatment if necessary.

Some people find it helpful to keep a diary or journal of their treatment. This can have a practical use as well as letting you express your feelings. For example, you can record each time you felt sick and look back over your treatment to see how this fits in with your drugs. Changes to reduce side effects can often be made by using information of this kind.

As your journal develops, you may find it encouraging to look back at how you coped during early low patches. Many people draw strength from realising that they came through before and can do so again.

A private diary also allows you to put in writing anything that may be difficult for you to talk about to someone else. Sometimes this can be used to prepare you to speak to a person about a problem or it can be used as a safety valve for anger or sadness that you feel you cannot express in any other way.

CancerBACUP's section on talking about cancer will also help you to find ways of discussing it.

Doing things for yourself will help you to feel more in control of your illness and treatment. You might like to look into learning relaxation or meditation techniques - the CancerBACUP nurses can give you further information about these. You ca also read CancerBACUP's section on cancer and complementary therapies.

Planning

Try to plan your time so that you can still do the things that are most important to you. Although it is helpful to try to keep up with your social life, don't be afraid to rest if you need to, even if it means missing out on some social events.

Realistic goals are more likely to be achieved and achieving them will make you feel better. Taking some exercise, as long as it is not too strenuous, will raise your spirits and help get rid of tension. However, it is best to check with your doctor before starting a new exercise programme.

Sometimes the hardest time is when treatment is finished and you, and everyone else, see this as the time to get back to normal. Recovery time varies, and no one can say for sure how long you should take to get over the side effects, the tiredness and the emotional effects.

The end of the visits to hospital for treatment can leave you feeling alone and neglected. Many people find that they feel very low and emotional at this time, when they had expected to be able to put the cancer and the treatment behind them. This may be the time when you need most support.

For people whose treatment is over apart from regular check-ups, CancerBACUP's section on 'What now?' gives useful advice on how to keep healthy and adjust to life after cancer.

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- Talking about your cancer
- Complementary therapies

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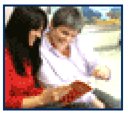

How others can help you

There may be times when you want to be alone with your thoughts. However, at other times being able to share your feelings can be a weight off your mind.

Patient support groups can put you in touch with other people having similar treatment. Talking with these people can be a good way of discussing feelings that relatives or friends may not understand, and you can also pick up some useful coping tips. You can search for support groups in your area.

Family and friends usually want to help you bear the burden of coping. However, they may find it difficult at first to grasp exactly what it is you are going through. The key is to keep communication going.

Just at a time when you think loved ones should be rushing to help, they may stand back and wait for you to make the first move. This is often because they are worried they may say the wrong thing, or they think you may want to cope alone.

They may even be feeling emotionally worn-out themselves. Be open and honest about how your treatment is going and how you feel about it. In that way, misunderstandings can be avoided and others are given the chance to show their love and support.

CancerBACUP has a section written for friends and relatives of people with cancer. It looks at some of the difficulties people may have when talking about cancer.

CancerBACUP's Cancer Support Service can give you and your family information about all aspects of cancer and chemotherapy, including the practical and emotional problems of living with them.

The specialist cancer nurses give information to anyone affected by cancer, lymphoma or leukaemia, about research and treatment centres, cancer support groups, therapists and counsellors, financial assistance and helpful organisations.

People may find that they have difficulty in geting a mortgage or insurance (including travel insurance) after they have been diagnosed with cancer.

CancerBACUP has a section on financial issues which discusses how to obtain these services.

Counselling

Many people find that counselling can help them to deal with the problems of living with cancer. Counsellors use their skills to help people talk through and sort out problems and confusion.

Emotional difficulties linked to cancer are not always easy to talk about and are often hardest to share with those to whom you are closest. Talking with a trained counsellor who is not personally involved in your situation can help to untangle thoughts, feelings and ideas.

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Talking to someone with cancer

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Work, financial help and benefits for chemotherapy patients

Some types of chemotherapy can be given to you as a day patient or as tablets to take at home, but if you do have to spend time in hospital or if you feel unwell, you may need to make changes to your usual routines.

Most employers will be sympathetic if you explain why you need time off work. It is helpful to talk to your employer or personnel officer to explain how much time off you may need and what you will be able to do.

Obviously things may change, but your employer will appreciate being given some idea of what to expect.

If you are employed and unable to work, your employer can pay you Statutory Sick Pay (SSP) for a maximum of 28 weeks.

If you are still unable to work after this period, you may be able to claim Incapacity Benefit. There are three rates of Incapacity Benefit: a short-term lower rate, a short-term higher rate, and a long-term rate.

You can claim the short-term higher rate of benefit from the Benefits Agency if you have paid the correct level of National Insurance contributions. If you are still unable to work after one year, you can claim long-term Incapacity Benefit.

If you are self-employed you are entitled to the same benefits as long as you have been paying the correct National Insurance contributions.

People who are unemployed and unable to work cannot claim Job Seeker's Allowance but can apply to see if they qualify for the short-term lower rate of Incapacity Benefit.

People who are not eligible for Incapacity Benefit because they have not paid the relevant National Insurance contributions can apply to see if they qualify for Income Support.

If you are ill and not able to work, remember to ask your GP for a medical certificate to cover the period of your illness. If you are in hospital, ask your doctor or nurse for a certificate to cover the time that you are an inpatient. This will be necessary if you need to claim a benefit. You may need to take a medical test to assess whether or not you are eligible to claim.

You may qualify for Disability Living Allowance (if you are under 65) or for Attendance Allowance (if you are over 65). Ask your local Social Security office for claim forms.

People who are claiming under 'special rules' (a fast-track claim for people who may not live longer than six months) need to get their doctor to complete a form for either benefit. It is always impossible to tell exactly how long someone may live and many people with advanced cancer may be entitled to this benefit, so it can be helpful to check with your doctor.

The Benefits Agency has two booklets (IB1 and SD1), which outline all these benefits and others to which you may be entitled. You can get a copy from your local Citizens Advice Bureau or Social Security office, where staff will also be able to advise you about the benefits you can claim.

Their addresses and telephone numbers are in the phone book. You can also get information from the Benefit

Enquiry Line on 0800 882200 or the Department for Work and Pensions website at http://www.dwp.gov.uk/.

The social worker at the hospital can give you advice on sources of financial help. You may also be able to claim grants and benefits from other organisations or charities.

Macmillan Cancer Relief gives grants to people with cancer and you can contact its information line for information on how to claim.

A book that gives details of all the trusts and organisations that provide financial support is available from bookshops and libraries. It is called A guide to grants for individuals in need.

CancerBACUP has a section about financial issues and sources of financial support.

Help with NHS costs

If you are on a low income you may be entitled to help with NHS costs including travel expenses for hospital treatment, dental treatment, prescriptions, wigs, glasses and sight tests.

You can get information about these benefits from your local Social Security office, the Benefit Enquiry Line (0800 882200) or the Department of Work and Pensions website (http://www.dwp.gov.uk/).

The booklet HC11, Are you entitled to help with health costs?, is available from post offices and Social Security offices.

You are automatically entitled to free prescriptions, and do not have to pay other NHS costs, if you:

- are over 60
- are under 16
- are aged 16-19 and still in full-time education
- claim Income Support or some other benefits
- are pregnant
- have had a baby in the last 12 months
- have a war or MOD Disablement Pension and need prescriptions for a war injury.
- have particular long-term medical conditions - details of these are given in leaflet HC11 (see above). Unfortunately, cancer itself does not entitle you to free prescriptions once you have left hospital, but you may eligible for other reasons.

Many people who are prescribed chemotherapy as tablets or capsules to take at home will have to pay for their prescriptions unless they are exempt for the reasons given above.

If you are not automatically entitled to free prescriptions, but are on a low income you can apply on the Low-income Scheme claim form HC1 for a certificate for free services or reduced costs.

Form HC1 is available from Social Security offices and NHS hospitals, some GPs, dentists, opticians and the Health Literature line on 0800 555 777.

If you need many prescriptions but can't get them free you can cut costs by buying a pre-payment certificate for four months or a year. You save money if you need more than five prescription items in four months, or more than 14 items in one year.

You can get a claim form (FP95) from your GP, your health authority or main post offices. Ring 0845 850 0030 to buy a PPC over the phone using your credit or debit card.

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Treating breast cancer with hormonal therapies

- About hormonal therapies
- Tamoxifen
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- Buserilin (Prostap)
- Ovarian ablation

About hormonal therapies

Hormonal therapies can slow or stop the growth of breast cancer cells. They do this by:

- altering the levels of particular female hormones which are produced naturally in the body, or
- preventing the hormones from being taken up by the cancer cells.

There are many different types of hormonal therapy and they work in slightly different ways. They are often given after surgery and radiotherapy for breast cancer, to reduce the chance of the cancer coming back. Hormonal therapy may be given before or after chemotherapy.

Hormonal therapies are most effective in women whose cancer cells have receptors for oestrogen and/or progesterone on their surface. This is known as being *oestrogen-receptor positive* or *progesterone-receptor positive*.

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Tamoxifen

Tamoxifen is known as an *anti-oestrogen drug*. It works by preventing oestrogen in the body from attaching to breast cancer cells and encouraging them to grow. It is the most commonly used hormonal therapy for breast cancer.

Tamoxifen has many different brand names including Nolvadex D, Emblon, Fentamox, Soltamox and Tamofen. It is taken as a daily tablet. The side effects may include hot flushes and sweats, a tendency to put on weight, dryness of the vagina or an increased discharge from the vagina. These side effects are usually mild and may reduce over time. Some women continue to find some of the side effects of tamoxifen troublesome. If this happens, it is helpful to discuss this with your doctor as there are sometimes ways of reducing the effects. Other hormonal therapies can also be used instead of tamoxifen. The section on breast cancer and menopausal symptoms has helpful tips.

Tamoxifen can slightly increase the risk of womb cancer in postmenopausal women. Tamoxifen also slightly increases the risk of blood clots in the leg and strokes in postmenopausal women. Although this sounds very frightening, these effects are very rare and almost always curable and treatable. The benefits of tamoxifen in treating breast cancer far outweigh the risks of side effects for most women.

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Aromatase inhibitors

Drugs called *aromatase inhibitors* work by blocking the production of oestrogen in body tissues, so they reduce the levels of oestrogen in the body.

Aromatase inhibitors are a widely-used alternative to tamoxifen. They are used only in postmenopausal women. The most commonly used are anastrozole (Arimidex), letrozole (Femara), and exemestane (Aromasin). They generally do not cause many side effects, although they can cause hot flushes, feeling sick, joint pains and vaginal dryness.

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Goserelin (Zoladex)

Zoladex is a type of drug known as a *pituitary down-regulator*, or *LHRH analogue*. It reduces the production of oestrogen-stimulating hormones by the brain. This lowers the level of oestrogen in the body in premenopausal women, but is reversible once the treatment is stopped.

Other ways of lowering the level of oestrogen include removing the ovaries or giving radiotherapy to the ovaries. Your doctor may give you a choice between Zoladex or these treatments.

As goserelin brings on a temporary menopause, many of its side effects are similar to those of the menopause. They include hot flushes and sweating, a low sex drive, headaches and mood changes. It is given as a monthly injection into the abdominal muscle.

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Buserilin (Prostap)

A drug called buserilin is also available as an alternative to goserilin. It works in a similar way to goserilin and causes similar side effects.

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Ovarian ablation

Ovarian ablation means stopping the ovaries from producing oestrogen by removing the ovaries with surgery, or giving a dose of radiotherapy to the ovaries.

Unfortunately, ovarian ablation brings on an early menopause, which can be distressing, especially for a woman who was hoping to have children or complete her family. It also causes menopausal side effects such as hot flushes, dry skin, vaginal dryness and mood changes. However, these symptoms can be effectively treated.

The CancerBACUP nurses can give you practical advice on coping with these symptoms, as well as emotional support.

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After treatment for breast cancer

After your treatment has ended, you will need to have regular check-ups (which will include a physical examination) and mammograms. These check-ups will usually be once a year. You may also need to see your specialist or GP every few months if you are having ongoing treatment with hormonal therapy or if you have any side effects following surgery, radiotherapy or chemotherapy treatment. If you have had a mastectomy, the breast prosthesis fitter will also be present at your first appointment.

The appointments are a good opportunity to discuss with your doctor any worries or problems you may have. However, if you notice any new symptoms or are anxious about anything else between your appointments, you should contact your doctor or nurse for advice.

Hormone replacement therapy (HRT)

Women who have had breast cancer are usually advised not to take hormone replacement therapy as there is a risk that the oestrogen it contains can increase the chance of the cancer coming back.

However, if you have troublesome menopausal symptoms, medicines can be used to treat them. If the menopausal symptoms continue despite the medicines, your doctor can prescribe a short course of low-dose HRT to deal with these. It is important that your progress is very carefully monitored if you take HRT.

Fertility after treatment

Pregnancy

Research suggests that becoming pregnant after treatment for breast cancer does not make the breast cancer more likely to come back.

If you want to have a child, it is important for you and your partner to discuss this with your breast cancer specialist, who knows your full medical history and can talk over the risks and implications. It is usually advisable to wait a while after your initial treatment has finished before trying to become pregnant. The longer you are free of the cancer, the less likely it is to come back. However it is very important to carefully consider what might happen if, after having a baby, the cancer did come back, and whether you want to take that risk.

Infertility

Unfortunately, women who have had radiotherapy to their ovaries or an operation to remove their ovaries will not be able to have children. Sometimes chemotherapy can also cause infertility by bringing on an early menopause. Generally, the older a woman is when undergoing chemotherapy the more likely she is to be infertile afterwards.

This added blow can be very hard for some women to live with – whether or not they already have children. Fertility is a very important part of many people's lives and not being able to have children can seem especially hard when you already have to cope with cancer. Some people find it helpful to talk through their feelings about this distressing situation. You can speak to a counsellor by contacting the Cancer Counselling Trust.

Egg or embryo storage

If your treatment is likely to make you infertile, and you would like to have children in the future, it is sometimes possible to remove eggs from the ovaries, fertilise them and store the embryos to use later. It is also sometimes possible to store eggs removed from your ovaries before treatment begins, although this is very experimental.

At a later date the fertilised eggs can be thawed and implanted into the uterus to start a pregnancy. These techniques may allow some women with breast cancer to have children in the future. If you want to have children it is very important to discuss this with your doctor before treatment begins. Your doctor can refer you to a fertility specialist for advice on the possible options available to you.

Contraception

As there is a risk that the hormones (oestrogen and progesterone) in the contraceptive pill may stimulate the growth of breast cancer cells, women who have had breast cancer are usually advised not to take the pill. Barrier methods of contraception such as condoms or the cap are more suitable. Lubricating jelly (available without prescription from the chemist) is completely safe to use with barrier contraceptives if extra moisture is needed during sex.

Your cancer specialist or GP can give you advice on contraception. Your GP can also fit you for a cap if this is the method of contraception you choose. Coils (IUDs) can be an effective method of contraception and your GP can fit you with a coil if you wish. Some women choose to be sterilised to prevent the risk of pregnancy.

The choice of an effective contraceptive is a very personal one. Your likes and dislikes, and those of your partner, are obviously important. Some women also have religious and moral considerations. Unfortunately, the withdrawal and rhythm methods of contraception are not safe enough to be effective as protection against pregnancy in this case. Some women find that, if necessary, talking through their situation with their religious leader, the FPA or a trained counsellor, helps them find acceptable alternatives.

Lymphoedema

If the lymph glands in your armpit have been removed by surgery, or you have had radiotherapy to the armpit, there is a risk of lymphoedema (swelling of the arm or hand). This is usually mild, and develops gradually a few months or several years after the treatment. Sometimes swelling of the arm may occur after the initial surgery, but this usually goes back to normal within a few weeks and is not lymphoedema.

If lymphoedema occurs, the arm and hand are more prone to infection. These simple tips can help you care for your skin and reduce the risk of infection:

- Treat even small grazes and cuts with antiseptic and keep them clean until they heal.
- See your GP at the first sign of any infection – if the cut is inflamed or feels warm and tender.
- Wear gloves for washing up, DIY and other household tasks.
- Try to avoid being scratched. Wear gloves and long-sleeved clothing when handling animals or gardening.
- Use a thimble if you sew.
- Avoid getting sunburnt.
- Use an electric razor if you shave under your arms, to avoid cuts.
- Keep your skin clean and dry and use moisturising cream daily to keep it supple.

- Use nailclippers instead of scissors to cut your nails.
- Never push back or cut the cuticles – use cuticle cream instead.

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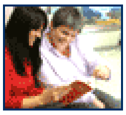

After surgery for breast cancer

You will be encouraged to get out of bed and start moving about as soon as possible after your operation. You may have a drainage tube to drain fluid from the wound. This will usually be removed within a few days of the operation by the nurses on the ward. You may be allowed to go home with the drainage tube still in place. In this case, it will be removed a few days later by a community or district nurse.

Time in hospital

After a lumpectomy or segmental excision, your stay in hospital will probably only be 1–2 days. Women who have had a mastectomy, or have had all their lymph glands removed, usually stay in hospital for 3–5 days after their operation. The length of time you are in hospital will depend on the type of surgery you have had.

Pain or soreness

After your operation you may have some pain or discomfort around your wound and under your arm. This may continue for some weeks. You will be given painkillers. If you still have pain it is important to tell your doctor or nurse as soon as possible, so that more effective painkillers or physiotherapy can be prescribed.

Some women find that their breast and arm are sore for up to a year after the treatment. For a small number of women it may continue after this time. If you have continuing pain or soreness, you can ask your doctor to refer you to a pain control specialist. They can assess your pain and advise you on treatments that may help.

Some women have a pain which feels like a tight cord running from their armpit to the back of the hand. This is called *cording*. It is thought to be due to hardened lymph vessels. Sometimes it can make it difficult to move the arm. Physiotherapy can help and sometimes antibiotics may be prescribed. The pain usually gets better gradually over a few months, but can sometimes come back.

Stiff shoulder

Some women find that they have stiffness in the shoulder. This is more likely after mastectomy than lumpectomy. It is important to do exercises to help maintain the movement in the shoulder. CancerBACUP or Breast Cancer Care can send you a leaflet about the exercises. You will normally be taught how to do them by a physiotherapist.

Swelling around the wound

The area around the wound will be bruised and there may also be a build up of fluid which can make it swollen and puffy for a while. This should gradually disappear over a few weeks. Occasionally, quite a lot of fluid can build up in the area around the wound; this is known as a *seroma*. It may need to be drained off by your nurse or doctor. If you have a seroma it can be very upsetting, but the amount of fluid gradually lessens. It will usually stop within a few weeks.

Numbness and tingling in the upper arm

You may have numbness and tingling in your upper arm. This is because nerves in the area have been affected by the surgery. These effects may last for some months and for some women can be permanent. It is more likely to occur after axillary clearance than after axillary sampling or sentinel node biopsy.

Breast prosthesis

After a mastectomy, you will be given a lightweight foam **prosthesis** (false breast). This is sometimes called a cumfie or softie, which you can put inside your bra. It is designed to be worn immediately after the operation when the area feels tender. When your wound has fully healed, you will be fitted with a permanent prosthesis. Several types of prosthesis are available from the NHS. Breast Cancer Care can give you a list of stockists throughout the UK.

Outpatients appointment

Before you leave hospital, you will be given an appointment to attend the outpatient clinic so that the surgeon can check that the wound is healing properly. At the appointment, you will also be told the stage of the cancer (how large it was and whether it had spread to the lymph glands). Your doctors will discuss with you any further treatment that you may need. This is a good time for you to talk to them about any problems or questions you may have.

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- Breast reconstruction

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Living with breast surgery

Emotional effects

Any breast cancer surgery can be a deeply traumatic experience. You may feel that your breasts are very important to your idea of yourself as a woman. The first months are likely to be very upsetting. Many women have conflicting emotions, such as grief, fear, shock, anger and resentment. These emotions may be mixed with relief that the cancer has been found and treated.

Coping with a changed appearance

The change to your appearance may lower your self-confidence. Many women need time to come to terms with this. Women find different ways of trying to come to terms with the change to their bodies. Some prefer to see the results of the surgery for the first time alone. Others may want the support of a partner or close friend, or doctor or nurse, when they take their first look at the scar.

Effect on sex life

Although breast surgery will not affect your physical ability to have sex, the emotions you feel may reduce your desire for sex for a while. Women often need to feel relatively happy with their bodies to have a fulfilling sex life. Fear that a partner – even a long-standing one – may be put off by the result of the surgery can make women fearful of the moment they allow someone to see or touch their body. There is no right or wrong time to take this step. You can wait until you and your partner feel ready.

While you are still in hospital, the nurses can prepare your partner for how the scar may look. A nurse, or your doctor, can be with you both when you let your partner see it. Alternatively, you may prefer a close relative or friend to be there and talk it over with you both afterwards.

CancerBACUP has a section on sexuality and cancer which discusses these issues in detail.

Getting on with life

You will find that the difficulties and emotions reduce with time. After the operation, the swelling will go down, the bruising fades and the scar will gradually become less obvious. As you become more used to the soft breast prosthesis, this should also help to restore your confidence.

Getting used to having had breast cancer can take months or years. The emotions and anxieties may come back each time you have to go for a follow-up appointment or if you see cancer mentioned in papers, magazines or on the television.

Many women cope well with the surgery and treatment for breast cancer. This is partly due to support from hospital staff and friends and family. However, women are often surprised that they find it difficult to cope once the treatment has finished. Instead of feeling able to forget about the cancer and get on with normal life it is common to feel anxious and tearful for a while once the treatment has ended.

Some women are very anxious that the cancer may return. They worry that any ache or pain is a sign that the cancer has come back. Anxieties and worries can make it hard to sleep. It is not unusual to feel depressed and isolated. These feelings can often feel worse at night.

CancerBACUP's section on adjusting to life after cancer discusses how to cope once treatment is finished.

After breast cancer surgery you may feel emotionally and physically drained. It is important for you to allow yourself plenty of time to recover.

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- Sexuality & cancer
- Life after cancer

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Treatment for secondary breast cancer

Although it cannot usually be cured, secondary breast cancer can usually be effectively controlled for a long time.

The treatments available include hormonal therapy, chemotherapy, radiotherapy and monoclonal antibody therapy. The best treatment for you will depend on:

- which parts of the body are affected by the secondary breast cancer
- whether you have had your menopause
- the treatment you have had in the past
- your age and general health
- whether the cancer cells have oestrogen receptors
- whether the cells have growth factor receptors

Doctors usually try to treat secondary breast cancer with the treatment that is most likely to control the breast cancer and cause the fewest side effects.

Chemotherapy drugs, hormonal therapies and monoclonal antibody drugs are carried round the body in the bloodstream, so can treat cancer cells wherever they are in the body. This is known as *systemic therapy*.

Radiotherapy or surgery treats one area at a time and can be very helpful in treating individual areas of cancer, particularly in the bones or parts of the brain or the skin.

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Benefits and disadvantages of treatment

Many people are frightened at the idea of having cancer treatments, because of the side effects that can occur. Although many of the treatments can cause side effects, these can usually be controlled with medicines. Some people ask what would happen if they did not have any treatment.

With secondary breast cancer, the aim of treatment is to control the cancer for as long as possible, leading to an improvement in symptoms and a good quality of life. Most women find that the treatment does shrink the cancer or stop it from growing. However, for some women in this situation the treatment will not have an effect on the cancer and they will get the side effects of the treatment without any of the benefit.

Making decisions about treatment in these circumstances is always difficult, and you may want to discuss in detail with your doctor whether you wish to have treatment. If you choose not to, you can still be given supportive (*palliative*) care, with medicines to control any symptoms.

Discussing your treatment

Your doctor will recommend the best treatment for you after taking into account all the above factors. Feel free to ask how the treatment works and how it may affect you. You can also ask why the doctor has chosen a particular treatment.

You can discuss the effect that your treatment may have with your partner, family, doctor, nurses, or other therapists or counsellors if you wish. Many women find that being involved in the treatment decision helps them to have a sense of control over the cancer and their emotions.

Some women find that their secondary breast cancer may be controlled for a time by one treatment, and they then need to change to a different treatment when the cancer starts to grow again. Sometimes several different treatments may be given, one after the other.

Most doctors also understand that you may want time to think about their recommendations and any other treatment options. It can be hard to take in all the information about a treatment, especially if you have just learned that your cancer has spread.

Not all women want to be involved in decisions about their treatment. You may feel you have enough on your mind in coming to terms with the spread of your cancer and that you don’t want to make decisions about your treatment. In this case, you should not feel under any pressure to get fully involved in treatment decisions. Doctors are aware that individual women have different ways of coping with their cancer and will respect your wishes.

Content last reviewed: 01 March 2005
Page last modified: 15 August 2005

Related information
- Advanced cancer
- Caring for someone with advanced cancer

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Breast cancer and menopausal symptoms

This information is about menopausal symptoms as a result of breast cancer treatment and gives suggestions about coping with these symptoms. Breast cancer treatment can often cause women to have symptoms of the menopause (the change of life) or may cause an early menopause. Symptoms may not always be severe but can cause a lot of discomfort. The discomfort can reduce quality of life for some women, and may lead to anxiety.

Menopausal symptoms

Women naturally stop having regular periods usually at some time between their mid-40s and mid-50s. This menopause, or change of life, happens because the ovaries stop producing the sex hormones oestrogen and progesterone. The change in hormone levels can cause a number of symptoms.

Symptoms can include:

- hot flushes and sweats
- vaginal dryness
- passing urine more often (frequency)
- lower sex drive
- tiredness
- sleeplessness
- dry skin
- aches and pains
- mood swings
- poor concentration and
- loss of confidence and memory.

Women may have one or more of these symptoms, and symptoms can range from very mild to more severe.

Menopause, particularly if it occurs early in life, can cause other effects on the body such as heart disease and thinning of the bones (*osteoporosis*). This is because oestrogen helps to prevent fat clogging up the arteries and helps to keep bone strong. These effects develop at different rates in different people; the tendency to develop them is at least partly decided by genetic make-up.

Breast cancer treatments and menopause

The sex hormones oestrogen and progesterone can affect the growth of breast cancer cells. Treatments for breast cancer often involve hormonal therapy to block oestrogen from getting to breast cancer cells or to reduce the level of oestrogen in the body. These treatments may cause an early menopause or menopausal symptoms.

Surgery, radiotherapy, chemotherapy and hormonal therapy may be used alone or in combination to treat breast cancer. Some of these treatments can affect the function of the ovaries and so you may either begin your menopause earlier than expected or have menopausal symptoms due to the treatment itself.

Stopping the ovaries from working

Women who develop breast cancer at a young age may be advised to have treatment to stop their ovaries producing oestrogen, as oestrogen could stimulate the growth of breast cancer cells. The ovaries can be permanently stopped from working, using surgery or radiotherapy. Chemotherapy or hormonal therapy may stop the ovaries working, either permanently or temporarily.

Surgery The ovaries can be removed in a minor operation, during a short stay in hospital. This will bring on a sudden and permanent menopause. Menopausal symptoms may start within a few days of the operation.

Radiotherapy A low dose of radiotherapy to the ovaries will stop them working. As a low dose is used, there are rarely any side effects from the radiotherapy. It will bring on the menopause, although it may take a few months before menopausal symptoms occur and your periods stop.

Chemotherapy Some chemotherapy drugs will stop the ovaries working. This can be temporary, but the nearer you are to your natural menopausal age, the more likely it is to be permanent. If it is permanent, the treatment will bring on the menopause and you may develop some of the symptoms described on page 1. Even if the treatment does not cause an immediate menopause, it may make the menopause start earlier than it would otherwise have done.

It is not possible to predict before your treatment whether the chemotherapy will affect you temporarily or permanently. Your periods could return to normal in time, so you should still use contraception for some months after the chemotherapy has ended.

Hormonal therapy Two main types of hormonal therapy can be used to treat breast cancer. These are:

- drugs that block oestrogen from attaching to the cancer cells
- drugs that stop oestrogen from being produced.

Hormonal therapy drugs that block the effects of oestrogen may cause side effects similar to the symptoms of the menopause. Periods may become irregular or stop, but if the treatment is stopped the menopausal symptoms stop, although this can sometimes take a few months.

As with chemotherapy, the nearer you are to your natural menopausal age, the more likely it is that hormonal therapy will bring on an early menopause and your periods will not start again when the treatment is stopped. Women who have already had their menopause may have menopausal symptoms again when they start taking hormonal therapy.

Hormonal therapies known as *LHRH analogues* stop the ovaries from producing oestrogen altogether but, unlike surgery or radiotherapy, this is reversible. These drugs cause menopausal symptoms while you are taking them. However, usually your periods start again when the treatment is stopped. Women who are close to their menopausal age when they start treatment may find that their periods do not begin again after treatment.

Managing menopausal symptoms

Some methods of reducing symptoms do not involve taking medicines. However, sometimes medicines are the best way of managing these symptoms.

Hot flushes and sweats

These are the most common menopausal symptoms, although the exact cause is not yet known. Body temperature control seems to be affected by falling oestrogen levels. It is difficult to stop hot flushes and sweats but their frequency or intensity can often be reduced.

Your doctor can prescribe medicines to try to reduce the severity and number of flushes and sweats:

- Research trials have shown that **low-dose progestogens** (megestrol acetate, norethisterone and medroxyprogesterone acetate) can help some women. However, they can take at least three to four weeks to reduce the number of hot flushes and sweats. Some women have an initial increase or flare in the number of the flushes that they have. Other side effects such as breast tenderness and a bloated feeling can occur.
- **Antidepressants** such as venlafaxine (Efexor®) or fluoxetine (Prozac®) may also be helpful when given in low doses. Some women have found that they can reduce the number and severity of hot flushes, although research trials have had differing results. These drugs can take several weeks to work and may cause side effects, such as sickness (nausea), a dry mouth and an increased appetite. Your doctor or breast care nurse can discuss the possible side effects with you.
- **Clonidine** (Dixarit®), a drug that is usually used to treat high blood pressure or migraines, is sometimes prescribed for hot flushes and sweats. However, it can take four weeks to work and may not work at all or only work for a short while. Side effects include constipation, a dry mouth and drowsiness.
- **Tibolone** (Livial®) is a type of *hormone replacement therapy* (HRT) that does not contain oestrogen and does not cause a monthly bleed. It can be helpful for reducing flushes and sweats and may also protect against bone thinning (osteoporosis). It may also help to reduce depression and improve sex drive. The use of tibolone in women who have had breast cancer is still being researched in trials, but if other medication has not been helpful, your cancer specialist may recommend this drug. Possible side effects include putting on weight, fluid retention, dizziness, irregular vaginal bleeding, headaches, increased growth of facial hair, joint pains and skin rashes.
- Other types of **HRT** can be prescribed if the symptoms are severe and nothing else helps. However taking HRT that contains oestrogen after you have had breast cancer may increase the risk of the cancer coming back if your cancer is oestrogen dependent. Your cancer specialist can discuss with you the possible benefits and risks of HRT in your situation. You may be offered HRT as part of a clinical trial.
- **Progesterone** cream applied to the skin may help to reduce hot flushes. However research trials have not shown that there is any benefit.

Vaginal dryness

A low level of oestrogen in the body causes vaginal dryness and sometimes itching. Some creams and gels can be helpful when applied directly to the vagina.

- **Replens®** is a non-hormonal cream applied 2–3 times a week. The cream binds to the vaginal wall and holds water to rehydrate cells. It boosts blood flow in the vagina.
- **Vagifem®** is a pessary (a tablet inserted into the vagina) that contains a small amount of oestrogen. It is normally used daily for two weeks and then reduced to twice a week. It contains such a small amount of oestrogen that it is unlikely to affect the rest of the body.
- **Ovestin®** and **Ortho-Gynest®** are creams or pessaries that also contain such a small amount of oestrogen that no hormonal effects occur elsewhere in the body. These products can reduce dryness and itching for a short time.
- **Estring®** is a vaginal ring that is worn for three months. It slowly releases a small amount of oestrogen and may help reduce dryness.
- **Water-based lubricants** such as Senselle®, KY-Jelly®, Astroglide® and Sylk® can help to reduce discomfort from vaginal dryness during sex.

Dry skin

A little baby oil or a few drops of bath oil in your bath help to moisturise the skin.

Some women have said that they find taking zinc, vitamin B and linseed oil supplements helpful.

Difficulty sleeping

Sleeplessness, due to hot flushes and sweats or anxiety, may add to your problems. The following may help you to relax and sleep well, which can help you to feel more in control during the day.

- Have a lukewarm bath to relax before bedtime.
- A warm herbal or milk drink before bed can help you to relax.
- Ensure that nightwear is made of absorbent lightweight cotton.
- If you can’t sleep, don’t just lie in bed: get up and read; listen to the radio or audio-books on tape or watch TV until you feel sleepy.
- Your GP can prescribe sleeping tablets for a short period of time, which may help to re-establish a pattern of sleep.
- Techniques such as listening to relaxation tapes, relaxation exercises, visualisation, massage or meditation can help to reduce anxiety and sleeplessness.

Psychological effects

The psychological effects of menopausal symptoms can be hard to cope with when you already have to deal with cancer.

Some menopausal symptoms are very difficult to deal with. These include a lower sex drive, mood swings, poor confidence and loss of concentration and memory. You may feel very emotional or anxious without really knowing why. These symptoms may be quite distressing for you – and for your partner, if you have one.

A number of organisations provide support to women going through the menopause. These, and helpful books, are listed on pages 7 and 8.

HRT is probably the only effective way of treating severe psychological menopausal symptoms. You will need to discuss with your cancer specialist whether HRT is appropriate for you.

Reducing other complications

An early menopause can increase your risk of osteoporosis (bone thinning) and heart disease. There are ways of reducing these risks.

Osteoporosis

Oestrogen helps to maintain bone calcium levels and bone density. So the risk of osteoporosis increases after menopause. Regular weight-bearing exercise helps to maintain bone density. Walking is probably the best type of exercise. Swimming is not so helpful, as your bones are not supporting your weight while you exercise.

It is important to make sure that you get enough calcium and vitamin D in your diet by eating dairy products, eggs, green leafy vegetables, nuts, and whole fish such as whitebait, sardines and pilchards. Vitamin D helps the body to use calcium effectively. Calcium and vitamin D supplements may also be helpful. Be aware that smoking and alcohol can reduce your calcium levels.

If other people in your family have had osteoporosis, you may wish to talk to your cancer specialist about using medicines such as bisphosphonates to try to prevent it. Bisphosphonates can help to reduce bone weakening.

The drug tamoxifen, which is commonly used to treat breast cancer, helps to protect the bones in post-menopausal women. Another drug, raloxifene (Evista®), can also help to prevent osteoporosis.

If you already have osteoporosis, you can talk to your doctor about taking calcium and vitamin D supplements. Warm baths can help to relax stiff joints and regular exercise will keep you supple. Be aware of dangers or trip hazards that could lead to falls. The National Osteoporosis Society can give you more information about prevention of osteoporosis and can let you know about helpful treatments.

Heart disease

The risk of heart disease increases in women after menopause, so you need to follow the well-established advice on reducing your risks:

- Stop smoking if possible, or at least cut down the number of cigarettes smoked each day.
- Eat less animal fat and dairy produce and eat more fresh fruit and vegetables.
- Take regular gentle exercise.
- If there is heart disease in your family, you may also wish to talk to your cancer specialist or GP about using medicines to try to prevent it.

Complementary therapies

There are a variety of complementary therapies that may help you to control your menopausal symptoms. Some of these have been researched, but for others the evidence is only anecdotal.

Some of the therapies may be available on the NHS and your GP can give you further details. If you would like to find a complementary therapist, make sure that they are properly qualified and registered. The British Complementary Medical Association has lists of registered therapists throughout the UK.

It is a good idea to discuss the use of any complementary therapy with your doctor, as some therapies may interfere with your treatment.

Acupuncture involves putting sterile needles through the skin into energy points, to help restore health and balance in the body. There is some evidence that acupuncture may help to reduce the number and severity of hot flushes.

Homeopathy aims to cure 'like with like' – giving tiny amounts of substances that would normally produce the symptoms being treated. There is no scientific proof that it works but some women find that it helps to improve their menopausal symptoms.

Different **relaxation techniques**, such as progressive muscle relaxation (slowly tensing then releasing each muscle group), audio tapes or paced respiration (a technique using slow controlled breathing), may help to reduce hot flushes.

Some women find **evening primrose oil** helpful, although it is expensive and there is no scientific evidence that it works.

There is some evidence to suggest that **hypnosis** can help to reduce the length and severity of hot flushes. It is unlikely to be available on the NHS.

Plant oestrogens (phytoestrogens) can have a very weak oestrogen-like effect and may help to improve menopausal symptoms. However, there is concern that they may also increase the risk of a recurrence of an oestrogen-dependent breast cancer, so it is wise to discuss their use with your doctor. The two most commonly used are black cohosh and red clover. Black cohosh contains phytoestrogens and may help to improve flushes although the evidence is inconclusive. Side effects include nausea, vomiting, headaches and possible liver disease. It should not be taken for more than six months at a time. Red clover contains chemicals called isoflavones, which are a type of phytoestrogen. There is conflicting evidence that it can help to reduce menopausal symptoms. It may increase the risk of bleeding and should not be used by women taking medication to thin their blood (*anticoagulants*).

Vitamin E may help to reduce the frequency of hot flushes and has very few side effects. Women with heart disease, diabetes or high blood pressure should consult their doctor before taking vitamin E supplements.

Your feelings

Coping with menopausal symptoms after cancer treatment can often be very difficult. You may feel anxious, angry or frustrated that you are now having to cope with more symptoms. These are all normal reactions.

An early menopause and infertility are often difficult to come to terms with, particularly for women who hoped to have children or who would have liked to have more children. Many people find it helpful to talk through their feelings with their doctor or nurse, or with friends and family members.

Helpful books

The menopause and HRT
Kathy Abernethy
Bailliere Tindall, 2002
ISBN 0-702026-35-2

Gives information to women going through menopause and has helpful information on ways of coping with the symptoms.

The premature menopause book
Kathryn Petras
Avon Books, 1999
ISBN 0-380805-41-3

Discusses ways of coping with the emotional and physical effects of an early menopause.

Understanding HRT and the menopause: managing 'the change' with or without hormone replacement therapy
Robert C. D. Wilson
Which? Books, 1999
ISBN 0-852027-81-8

Well-balanced perspective on all issues related to HRT. Has clear diagrams. It describes the process of the menopause and explains the advantages and risks of HRT. There are also sections on osteoporosis, contraception and the menopause, medical examinations and screening. There is a glossary of medical terms, a list of useful addresses and a bibliography.

References

This section has been compiled using information from a number of reliable sources.

- Oxford Textbook of Oncology (2nd edition). Eds. Souhami et al. Oxford University Press, 2002.
- Cancer of the Breast (5th edition). Eds. Donegan and Spratt. Saunders, 2002.
- Martindale: the Complete Drug Reference (33rd edition). Eds. Sweetman et al. Pharmaceutical Press, 2002.
- Improving outcomes in breast cancer – the research evidence. National Institute of Clinical Excellence, 2002.

For further references, please see the general bibliography.

Content last reviewed: 01 March 2005
Page last modified: 27 August 2005

Related information
- Breast cancer
- Chemotherapy
- Radiotherapy
- Research trials
- Secondary breast cancer

Resources
- Bisphosphonates
- Complementary therapies
- Fatigue
- Fertility
- Hormonal therapies
- Sexuality & cancer

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Research - clinical trials

- See current breast cancer trials

Research into new ways of treating cancer of the breast is going on all the time.

When a new treatment is being developed, it goes through various stages of research. To begin with it will be looked at in the laboratory, and sometimes tested on cancer cells in a test tube. If the treatment seems as though it might be useful in treating cancer, it is then given to patients in research studies (clinical trials). These early studies are called phase 1 trials. They aim to:

- find a safe dose
- see what side effects the therapy may cause
- identify which cancers it might be used to treat.

If early studies suggest that a new treatment may be both safe and effective, further trials (phases 2 and 3) are done to answer these questions:

- Is it better than existing treatments?
- Does it have extra benefit when given together with existing treatments?
- How does it compare with the current best standard treatments?

Clinical trials take a long time. It usually takes some years from the time when a new treatment is first discovered (often with a lot of publicity in the papers and on TV) until the time when its true value is established.

You may be asked to take part in a research trial. There can be many benefits in doing this. You will be helping to improve knowledge about cancer and the development of new treatments. You will also be carefully monitored during and after the study.

It is important to bear in mind that some treatments that look promising at first are often later found not to be as good as existing treatments, or to have side effects that outweigh any benefits.

As part of research, you may be asked by your doctors for permission to store some of the samples of your tumour or blood, so that they can be used as part of trials to find the causes of cancer.

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Related information

Cancer research trials
Trials database

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Inflammatory breast cancer

This information is about a rare type of breast cancer called inflammatory breast cancer. Ideally it should be read with CancerBACUP's general information about cancer of the breast.

Inflammatory breast cancer

In inflammatory breast cancer, the cancer cells may not grow as a lump that can be felt in the breast, but they grow along and block the tiny channels (*lymph vessels*) in the skin of the breast. In some people the body will react to the cancer cells in the lymph vessels and as a result the breast looks inflamed (which is how the condition gets its name) and swollen. The lymph vessels are part of the lymphatic system, which is responsible for removing fluid from tissues and collecting and filtering out bacteria and any waste materials that the body's cells do not want.

Signs and symptoms

The symptoms often develop quite suddenly. The breast looks red and inflamed and feels warm and swollen. Ridges or raised marks may appear on the skin of the breast, or the skin may have a pitted appearance, like the peel of an orange (known as *peau d'orange*).

Other symptoms may include a lump or thickening in the breast, pain in the breast or nipple, or a fluid (*discharge*) coming from the nipple.

How it is diagnosed

The appearance of the breast during examination may suggest the diagnosis to your doctor. Certain tests will be needed to help make the diagnosis and to find out whether the cancer has spread.

Mammogram (breast x-ray)

Mammograms may be used to look for changes in the affected breast and to check the other breast.

Ultrasound scan

In this test, sound waves are used to make up a picture of the breast tissue. It is done in the hospital's scanning department. A small device like a microphone is then rubbed over the breast area. The sound waves are converted into a picture using a computer. The test is completely painless and takes 5–10 minutes.

Biopsy

This is the most important test to find out if cancer is present. A small piece of tissue is taken from the breast and sent for examination under a microscope to check for signs of cancer. This is usually done using a local anaesthetic, which numbs the area. A biopsy may also be taken from the lymph nodes under the arm to see whether any cancer cells are present there.

Treatment

Often a combination of different treatments will be needed. These include chemotherapy, radiotherapy, hormonal therapy and surgery. For most types of breast cancer, surgery is usually the first treatment. However, with inflammatory breast cancer it is more usual to give chemotherapy or hormonal therapy first.

Chemotherapy

Chemotherapy is the use of anti-cancer (*cytotoxic*) drugs to destroy cancer cells. The chemotherapy helps to treat and control the disease in the breast itself and any cancer that may have spread beyond the breast to other parts of the body.

Hormonal therapy

Hormonal therapies can slow or stop the growth of breast cancer cells either by altering the levels of particular female hormones that are naturally produced in the body, or by preventing the hormones from being taken up by the cancer cells.

There are many different types of hormonal therapy and they work in slightly different ways. Letrozole, anastrozole and exemestane are the most commonly used for inflammatory breast cancer. They are only used to treat postmenopausal women.

Radiotherapy

Radiotherapy, which treats cancer by using high-energy rays to destroy the cancer cells, may be given to the breast area after chemotherapy or hormonal therapy.

Surgery

Following chemotherapy or hormonal therapy some women may have surgery to remove all or part of the breast. Most women who have surgery will have radiotherapy afterwards.

Research trials

Research into treatments for inflammatory breast cancer is ongoing and advances are constantly being made. Cancer doctors use clinical trials to assess new treatments. Before any trial is allowed to take place, an ethics committee must have approved it, and agreed that the trial is in the interest of patients.

You may be asked to take part in a clinical trial. Your doctor must discuss the treatment with you so that you have a full understanding of the trial and what it means to take part. You may decide not to take part or withdraw from a trial at any stage. You will then receive the best standard treatment available.

Your feelings

You may experience many different emotions including anxiety and fear. These are all normal reactions and are part of the process many people go through in trying to come to terms with their condition. Many people find it helpful to talk things over with their doctor or nurse. Close friends and family members can also offer support.

CancerBACUP has a section on the emotional effects of cancer and how to deal with them.

References

This section has been compiled using information from a number of reliable sources.

- Oxford Textbook of Oncology (2nd edition). Eds. Souhami et al, Oxford University Press, 2002.
- Cancer of the Breast (5th edition). Eds. Donegan and Spratt, Saunders, 2002.
- Improving outcomes in breast cancer - the research evidence. National Institute of Clinical Excellence, 2002.

For further references, please see the general bibliography.

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Related information

- General surgery
- AC Chemotherapy
- Anastrozole (Arimidex®)
- Bisphosphonates
- CAF regime
- CMF Chemotherapy
- Cancer vaccines
- E-CMF (Epi - CMF) chemotherapy
- EC Chemotherapy
- ECF Chemotherapy
- FEC Chemotherapy
- General information on radiotherapy
- Idarubicin (Zavedos®)
- Letrozole (Femara®)
- MM chemotherapy
- MMM Chemotherapy
- Medroxyprogesterone acetate (Depo-Provera®, Farlutal®, Provera®)
- Megestrol acetate (Megace®)
- Trastuzumab (Herceptin®)

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Paget's disease of the breast

This information is about a condition called Paget's disease of the breast. It should ideally be read with CancerBACUP's general information about cancer of the breast or DCIS.

Paget's disease of the breast

Paget's disease of the breast is an eczema-like change in the skin of the nipple, and 90% of women who have it have an underlying breast cancer. The underlying breast cancer may be an invasive breast cancer or ductal carcinoma in situ (DCIS). In DCIS the cancer cells are completely contained within the milk ducts.

Around half of the women who have Paget's disease will have a breast lump that can be felt at the time it is diagnosed.

Paget's disease occurs in about 1–2% of all women with breast cancer. Usually, it first appears as a scaly, red rash affecting the nipple and sometimes the dark area of skin surrounding the nipple (the *areola*). The rash always affects the nipple first and may then affect the areola. It does not go away and may become sore. The area may bleed slightly.

Paget's disease usually occurs in women in their fifties, but it can occur at an earlier or later age. It can affect men but this is extremely rare.

Causes of Paget's disease

The cause of Paget's disease is unknown, but certain women seem to be at a higher risk of developing breast cancer. This includes women who have never had children, or had them late in life, women who started their periods at a young age or who had a late menopause, and women who have a strong family history of breast cancer.

Signs and symptoms

The first symptom is usually an eczema-like rash, as described above. The skin of the nipple and areola may be red and inflamed. There may also be crusting, bleeding and ulceration. Some women have an itching or burning sensation. Fluid may leak from the abnormal area of cells. The nipple may turn inwards (be *inverted*) and there may be a discharge. There may or may not be a lump in the breast.

Diagnosis

Paget's disease can be confused with other skin conditions such as *eczema*, *dermatitis* or *psoriasis*, as they can look very similar. This can make Paget's disease difficult to diagnose.

Paget's disease usually first affects the nipple, and then the surrounding tissue. Other skin conditions usually affect the areola (the dark area of skin around the nipple) first, and then spread into the nipple.

Several tests may be carried out to diagnose Paget's disease of the breast. They may include the following:

Mammogram (breast x-ray) Mammograms may be used to look for changes in the affected breast and to check the other breast.

Ultrasound scan A gel is spread on the breast and a small device, which emits sound waves is rubbed over the area. The echoes are converted into a picture of the breast tissue by a computer. This test is painless and takes just a few minutes.

Biopsy This is the main test for cancer cells below the skin surface. A small piece of skin and underlying breast tissue is taken and sent to the laboratory to be examined under a microscope. The biopsy is usually done using a local anaesthetic, which numbs the area. The biopsy may be taken at the same time as an ultrasound so that it is certain the biopsy is taken from the abnormal area.

Imprint or scrape cytology Cells from the affected area can be scraped or pressed on to a slide and examined under a microscope.

Treatment

The treatment of Paget's disease of the breast will depend on:

- whether or not there is an underlying breast cancer
- whether it is DCIS or an invasive tumour
- how much of the breast is affected.

Surgery

Surgery is the main treatment for Paget's disease. Removal of the breast (*mastectomy*) may be recommended, especially if the cancer is affecting a wide area (is *extensive*), is at a distance from the nipple or if there is DCIS in a number of areas in the breast (*multi-focal*). Some of the lymph nodes in the under arm may also be removed.

Surgery aimed at keeping as much of the breast tissue as possible (known as *breast-conserving therapy*) may be possible if the cancer, or DCIS, is found to be close to the nipple and only affecting a small area of underlying tissue. This involves the removal of the nipple, areola and an area of underlying normal tissue around it.

For some people, no further treatment will be needed after surgery. Others may need to have radiotherapy, hormonal therapy or chemotherapy. These may be used separately or together.

Radiotherapy

Radiotherapy treats cancer by using high-energy rays that destroy the cancer cells. Radiotherapy to the remaining breast tissue is usually recommended after breast-conserving surgery.

Hormonal therapy

Hormonal therapies are commonly used for treating breast cancer. They reduce the production of hormones within the body, or prevent the hormones from stimulating the cancer cells to grow. Hormonal therapy is mainly used if the cancer is invasive but may also be given to women who have DCIS. Tamoxifen and anastrozole (Arimidex®) are commonly used hormonal treatments.

Chemotherapy

Chemotherapy is the use of anti-cancer (*cytotoxic*) drugs to destroy cancer cells. It is not used to treat an underlying DCIS, but may be given if the cancer is invasive.

Research trials

Research into treatments for Paget's disease of the breast is ongoing. Cancer doctors use clinical trials to assess new treatments. Before any trial is allowed to take place, an ethics committee must have approved it and agreed that the trial is in the interest of patients.

You may be asked to take part in a clinical trial. Your doctor must discuss the treatment with you so that you have a full understanding of the trial and what it means to take part. You may decide not to take part or withdraw from a trial at any stage. You will then receive the best standard treatment available.

Your feelings

You may have many different emotions including anger, resentment, guilt, anxiety and fear. These are all normal reactions and are part of the process many people go through in trying to come to terms with their illness.

References

This section has been compiled using information from a number of reliable sources including;

- Oxford Textbook of Oncology (2nd edition). Eds. Souhami et al. Oxford University Press, 2002.
- Cancer of the Breast (5th edition). Eds. Donegan and Spratt. Saunders, 2002.
- Cancer and Its Management (4th edition). Souhami and Tobias. Oxford Blackwell Scientific Publications, 2003.

For further references, please see the general bibliography.

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Related information

- Chemotherapy
- General surgery
- Anastrozole (Arimidex®)
- Bisphosphonates
- Cancer vaccines
- General information on radiotherapy
- Medroxyprogesterone acetate (Depo-Provera®, Farlutal®, Provera®)

Megestrol acetate (Megace®)
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Breast cancer in men

This information is about breast cancer in men. It should ideally be read with CancerBACUP's general information about cancer of the breast.

Breast cancer in men

Cancerous cells can develop in the small amount of breast tissue that men have behind their nipples. Breast cancer occurs much more commonly in women and fewer than 1% of breast cancers occur in men (about 250 each year).

Causes of breast cancer in men

The cause of breast cancer in men is not completely understood, but some men seem to be at higher than average risk of developing the disease.

This rare cancer most commonly occurs in men over the age of 60. It is more common in men who have:

- several close members of their family (male or female) who have had breast cancer, or
- a close relative diagnosed with breast cancer in both breasts, or
- a relative diagnosed with breast cancer under the age of 40. Having several members of the family with cancer of the ovary or colon may also increase a man's risk of developing breast cancer.

There are special clinics for people who are concerned that they may have an increased risk of developing cancer because of a history of cancer in their family. These are known as family cancer genetic clinics. Your GP (family doctor) can refer you to one of these clinics if they think you may be at an increased risk of developing male breast cancer.

In rare circumstances men with high oestrogen levels or men who have been exposed to repeated doses of radiation (particularly at a young age) may be at an increased risk of developing breast cancer. Men who have a rare genetic condition called *Klinefelter's syndrome*, where an extra female chromosome is present, have a higher than normal risk of developing breast cancer.

Types of breast cancer

Different types of breast cancer can affect men. The most common type is called invasive ductal carcinoma, which is also the most common type of breast cancer to affect women. Other, rarer types are inflammatory breast cancer, Paget's disease of the breast and a pre-cancerous condition known as ductal carcinoma in situ (DCIS).

Signs and symptoms

The most common symptom is a lump in the breast area. However, other signs may occur such as a change in the size or shape of the breast, an ulcer on the skin, fluid coming out of the nipple (*discharge*) or turning-in of the nipple (*inversion*). Another possible symptom is a rash on the nipple or surrounding area.

How it is diagnosed

Your doctor will do a physical examination of the affected breast. Tests will be needed to confirm the diagnosis and to find out whether the cancer has spread. You may have some, or all, of the tests described below.

Mammogram (breast x-ray) Mammograms may be used to look for changes in the breast, but ultrasound is generally more helpful for diagnosing breast cancer in men.

Ultrasound scan A scan using sound waves is used to see whether a lump is solid or contains fluid. A small amount of clear gel is applied to the breast area. Then a small microphone-like device is rubbed over the area to show a picture of the breast on a monitor screen.

Needle aspiration A thin needle is inserted into the breast in the area of the lump and some cells are drawn out. This may be done at the same time as the ultrasound so that the doctor can be sure that the cells are from the affected area of the breast. The cells are examined in the laboratory to see if any are cancerous (*malignant*).

Needle biopsy A small piece of tissue is taken from the breast with a needle and sent for examination under a microscope to check for cancer cells. An injection of local anaesthetic is given to numb the area before the biopsy is taken.

Blood tests These are done to check your general health before any operation.

Staging and grading

Staging of breast cancer

The 'stage' of a cancer is a term used to describe its size and whether it has spread beyond its original site. Knowing the particular type and the stage of the cancer helps the doctors to decide on the most appropriate treatment.

In some people cancer can spread to other parts of the body, either in the blood stream or through the lymphatic system. The lymphatic system is part of the body’s defences against infection and disease. The system is made up of a network of lymph glands or nodes that are linked by fine ducts containing lymph fluid. Your doctors will usually look at the nearby lymph nodes when staging your cancer.

Generally breast cancer is divided into four stages, from stage 1, which is small and localised to stage 4, where the disease has spread to other parts of the body. If the cancer has spread to distant parts of the body this is known as *secondary* or *metastatic cancer*.

A commonly used staging system is described below:

- **Stage 1** The tumour measures less than 2 centimetres across. The lymph glands in the armpit (*axilla*) are not affected and there are no signs that the cancer has spread to elsewhere in the body.
- **Stage 2** The tumour measures 2–5 centimetres across, or the lymph glands in the armpit are affected, or

both. However, there are no signs that the cancer has spread further.
- **Stage 3** The tumour is larger than 5cm across and may be attached to surrounding structures such as the muscle or skin. The lymph glands are usually affected, but there are no signs that the cancer has spread beyond the breast or the lymph glands in the armpit.
- **Stage 4** The tumour can be of any size, but the lymph glands are usually affected and the cancer has spread to other parts of the body. This is secondary breast cancer.

Grading of breast cancer

Grading refers to the appearance of the cancer cells under the microscope. The grade gives an idea of how quickly the cancer may develop. There are three grades: grade 1 (low grade), grade 2 (moderate grade) and grade 3 (high grade). Low-grade means that the cancer cells look very like the normal cells of the breast. These cancer cells are usually slow-growing and less likely to spread. In high-grade tumours the cells look very abnormal. They are likely to grow more quickly and are more likely to spread.

Treatment

As breast cancer in men is so rare, there have been very few research studies looking at the treatments for this condition. It behaves in a similar way to breast cancer in women, and so is usually treated in much the same way. A combination of treatments is often used.

Surgery

For most men surgery is the first choice of treatment. However, men cannot usually have just the lump removed (lumpectomy). This is because the amount of breast tissue is small, and because the tumour is often near or under the nipple. Most men having surgery need to have a mastectomy (removal of all of the breast tissue and the nipple). Some or all of the lymph nodes under the arm are likely to be removed as well.

Hormonal therapy

Most breast cancers need the hormone oestrogen in order to grow. Oestrogen is the female sex hormone, but men have a small amount circulating in their bloodstream. Hormonal therapy is very effective in reducing the amount of oestrogen in the body and is used to try to prevent the cancer returning following surgery. Hormonal therapy may also be used to shrink the cancer if it returns after initial surgery.

Tamoxifen Tamoxifen is the hormonal therapy that is commonly used to treat breast cancer. It works by attaching itself to the oestrogen receptors on the surface of the cancer cells. This prevents oestrogen from entering the cells and can stop them from growing or dividing. Men usually have similar side effects to women who take tamoxifen (such as hot flushes or loss of sex drive). However, they may also experience difficulty in achieving erections.

Aromatase inhibitors such as letrozole, anastrozole, and exemestane. In men, oestrogen is made by the conversion of the male sex hormones (*androgens*). This conversion is carried out by the enzyme *aromatase*. *Aromatase inhibitors* are drugs that work by blocking aromatase and so blocking the formation of oestrogen. If aromatase inhibitors are used, they usually need to be given with drugs such as goserelin (Zoladex®) that decrease the production of androgens.

Chemotherapy

Chemotherapy is the use of anti-cancer (*cytotoxic*) drugs to destroy cancer cells. Chemotherapy may be used after surgery if your doctors feel that there is a high risk of cancer cells having escaped from the breast to other parts of the body before the cancer was removed. Chemotherapy is usually given if there are cancer cells found in the lymph nodes under the arm, or if the cancer has spread beyond the breast. The chemotherapy drugs used to treat breast cancer in men are the same as those used to treat women with breast cancer. Your doctor will discuss with you whether chemotherapy is necessary in your situation.

Radiotherapy

Radiotherapy treats cancer by using high-energy rays to destroy the cancer cells. It may be used to reduce the chance of the cancer returning at the site of the scar after surgery. Radiotherapy may also be used to relieve pain or discomfort caused by a cancer that has spread to other parts of the body – for example, the bone.

Research trials

Research into treatments for breast cancer in men is ongoing. Cancer doctors use clinical trials to assess new treatments. Before any trial is allowed to take place, an ethics committee must have approved it, to ensure that the trial is in the interest of patients.

You may be asked to take part in a clinical trial. Your doctor must discuss the treatment with you so that you have a full understanding of the trial and what it means to take part. You may decide not to take part or withdraw from a trial at any stage. You will then receive the best standard treatment available.

Your feelings

It is often very difficult to find information and support when you are diagnosed with a rare cancer. Men find that they experience many different emotions including anger, resentment, guilt, anxiety and fear. Some men find it difficult or embarrassing to talk about their breast cancer, especially as it more commonly affects women. These are all normal reactions and are part of the process many people go through in trying to come to terms with their illness.

Some men find it helpful to talk things over with their doctor or nurse. Close friends and family members can also offer support.

References

This section has been compiled using information from a number of reliable sources including;

- Oxford Textbook of Oncology (2nd edition). Eds. Souhami et al. Oxford University Press, 2002.
- Cancer of the Breast (5th edition). Eds. Donegan and Spratt. Saunders, 2002.
- Cancer and Its Management (4th edition). Souhami and Tobias. Oxford Blackwell Scientific Publications, 2003.
- Improving outcomes in breast cancer – the research evidence. National Institute of Clinical Excellence, 2002.

For further references, please see the general bibliography.

Content last reviewed: 01 March 2005
Page last modified: 27 August 2005

Related information

- General surgery
- AC Chemotherapy
- Anastrozole (Arimidex®)
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- Doxorubicin Hydrochloride (Adriamycin®)
- EC Chemotherapy
- ECF Chemotherapy
- Epirubicin (Pharmorubicin®)
- FEC Chemotherapy
- Fluorouracil (5FU)
- General information on radiotherapy
- Idarubicin (Zavedos®)
- MM chemotherapy
- MMM Chemotherapy
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- Megestrol acetate (Megace®)
- Melphalan (Alkeran®)
- Methotrexate (Matrex®)
- Mitomycin (Mitomycin C Kyoma®)
- Mitoxantrone (Novatrone®, Onkotrone®)
- Paclitaxel (Taxol®)
- Thiotepa
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- Vinblastine (Velbe®)
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- Vindesine (Eldisine®)
- Vinorelbine (Navelbine®)

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Ductal carcinoma in Situ (DCIS)

This information is about ductal carcinoma in situ (DCIS). It should ideally be read with CancerBACUP's general information about breast cancer.

DCIS

DCIS stands for ductal carcinoma in situ. This means that in a part of your breast the cells lining the milk ducts (the channels in the breast that carry milk to the nipple) are cancerous, but stay contained within the ducts without growing through into the surrounding breast tissue. DCIS may affect just one area of the breast but can be more widespread and affect different areas at the same time. Sometimes DCIS may be described as *pre-cancerous*, *pre-invasive*, *non-invasive* or *intraductal cancer*.

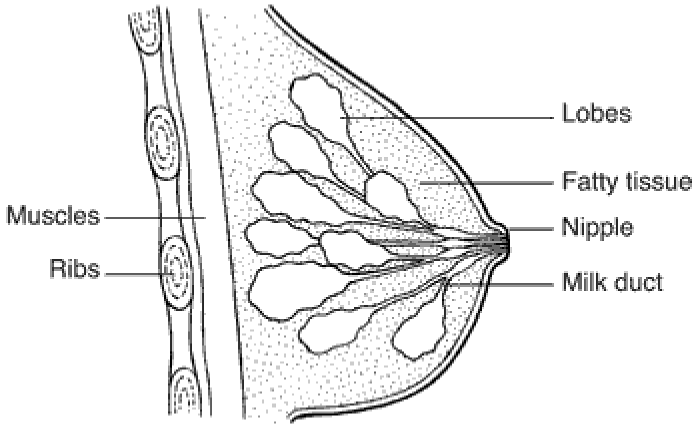

Diagram showing the structure of the breast (d)

If DCIS is left untreated, it may, over a period of years, begin to spread into (*invade*) the breast tissue surrounding the ducts. It is then known as invasive breast cancer. It is important to remember that although DCIS should be treated to prevent it developing into an invasive breast cancer, it is not harmful at this stage. Not every woman with DCIS will go on to develop breast cancer if it is left untreated, but it is not possible to predict which women with DCIS will develop breast cancer.

There are three grades of DCIS – low, intermediate and high. The grade refers to how abnormal the cells look under the microscope and gives an idea of how quickly the cells may develop into an invasive cancer (or how likely it is that the DCIS will come back after surgery). Low-grade DCIS has the lowest risk of developing into an invasive cancer and high-grade the greatest risk.

Causes of DCIS

The exact causes of DCIS are not known but certain women appear to be at a higher risk of developing it. This includes women who have never had any children, or who had them late in life, women who started their periods at a young age or who had a late menopause, and women who have a strong family history of breast cancer. The risk factors of developing DCIS are similar to those of developing invasive breast cancer.

Signs and symptoms

Most women with DCIS have no signs or symptoms and only know they have it because it can be seen on a mammogram. Because more women are having mammograms, as part of the national breast screening programme, DCIS is diagnosed much more often than it was in the past.

The DCIS usually shows up on a mammogram as an area where tiny specks of calcium have collected in the breast ducts (known as microcalcification). It is important to know that most microcalcification is not DCIS or cancer.

A small number of women with DCIS may have symptoms such as a breast lump or fluid (*discharge*) coming out of the nipple.

After the mammogram

Once an abnormal area has been found on the mammogram, the doctor has to obtain a sample of cells from the area so that they can be examined under a microscope. This is done by removing a sample of tissue (a *biopsy*) using a special needle called a *core biopsy needle*. A local anaesthetic will be given to numb the area before the biopsy is taken. Alternatively a *fine needle aspiration cytology* or *FNAC* may be used to remove some of the cells. This test uses a fine needle and a syringe to draw out some of the cells.

If there is no obvious lump, mammograms may be used at the same time to ensure that the sample of cells is taken from the correct area. Alternatively, the radiologist may place a wire into the area of abnormal cells to guide the surgeon to the correct piece of tissue when the biopsy is done. This is called wire *localisation biopsy*.

Treatment

Surgery

The treatment for DCIS depends on its extent (how much of the breast it is affecting) and its grading. The most important part of treatment is the surgical removal of the affected breast tissue, together with an area (margin) of normal breast tissue around it for safety. This operation is called a wide local excision (WLE).

Wide local excision is an example of *breast-conserving therapy* (only the area of DCIS is removed, rather than the whole breast).

If the area of DCIS is large, and especially if it is large and high-grade, removal of the breast (*mastectomy*) is considered to be the best treatment for some women. Mastectomy is also the recommended treatment if the DCIS is affecting more than one area of the breast. This cures the condition in virtually all women and no further treatment is necessary, although it is important for the other breast to be checked at least yearly by mammogram.

DCIS does not generally spread to the lymph nodes in the armpit (*axilla*), but sometimes if the area of DCIS is large or widespread the lymph nodes may be removed during the surgery and checked for cancer cells. This is because for some women there may be an area of invasive cancer cells within the DCIS which could spread into the lymph nodes. Before your operation, your doctor will discuss with you whether it is necessary to remove any of your lymph nodes.

Radiotherapy

After breast-conserving surgery, radiotherapy is sometimes used to treat the remaining breast tissue. It is most commonly used if the area of DCIS was high-grade. Radiotherapy is normally given every weekday for 3–6 weeks. The exact role of radiotherapy is still being tested in research trials.

Hormonal therapy

Sometimes the cancer cells within the area of DCIS have oestrogen receptors on their surface. This is known as *oestrogen-receptor-positive* DCIS. This means that the cells rely on the hormone oestrogen to grow. Oestrogen is a female hormone that is naturally produced in the body and it can stimulate some breast cancer cells to divide and grow. If you have oestrogen-receptor positive DCIS you may be prescribed a drug called tamoxifen that is designed to counteract the effects of oestrogen. Tamoxifen works by attaching itself to the oestrogen receptors on the surface of the cancer cells. This prevents oestrogen from entering the cells and can stop the cells from growing or dividing.

Tamoxifen may reduce the risk of developing invasive breast cancer for women with oestrogen-receptor-positive DCIS who have had their DCIS treated by wide local excision, with or without post-operative radiotherapy.

Follow-up

After breast-conserving surgery there is a small risk of DCIS coming back. If you have breast conservation therapy, you will be offered yearly follow-up appointments, so that if the DCIS comes back it is detected as early as possible. If you notice any change in the breast between these appointments you can arrange to see the breast cancer specialist earlier. If the DCIS does come back, mastectomy is likely to be the chosen treatment. Breast reconstruction can be done at the same time.

If you have had DCIS it is important to have your unaffected breast checked regularly by mammogram (at least every three years).

Research trials

Research into treatments for DCIS is ongoing, and advances are constantly being made. Cancer doctors use clinical trials to assess new treatments. Before any trial is allowed to take place, an ethics committee must have approved it and agreed that the trial is in the interest of patients.

You may be asked to take part in a clinical trial. Your doctor must discuss the treatment with you so that you have a full understanding of the trial and what it means to take part. You may decide not to take part or withdraw from a trial at any stage. You will then receive the best standard treatment available.

Your feelings

You may experience many different emotions including anger, resentment, guilt, anxiety and fear. These are all normal reactions and are part of the process many people go through in trying to come to terms with their illness.

Some women find it helpful to talk things over with their doctor or nurse. Close friends and family members can also offer support.

References

This section has been compiled using information from a number of reliable sources including;

- Oxford Textbook of Oncology (2nd edition). Eds. Souhami et al. Oxford University Press, 2002.
- Ductal Carcinoma in Situ of the Breast (2nd edition). Silverstein. Lippincott Williams and Wilkins, 2002.
- Cancer and Its Management (4th edition). Souhami and Tobias. Oxford Blackwell Scientific Publications, 2003.
- Improving outcomes in breast cancer – the research evidence. National Institute of Clinical Excellence, 2002.

For further references, please see the general bibliography.

Content last reviewed: 01 March 2005
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Related information

- General surgery
- AC Chemotherapy
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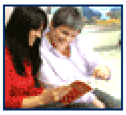


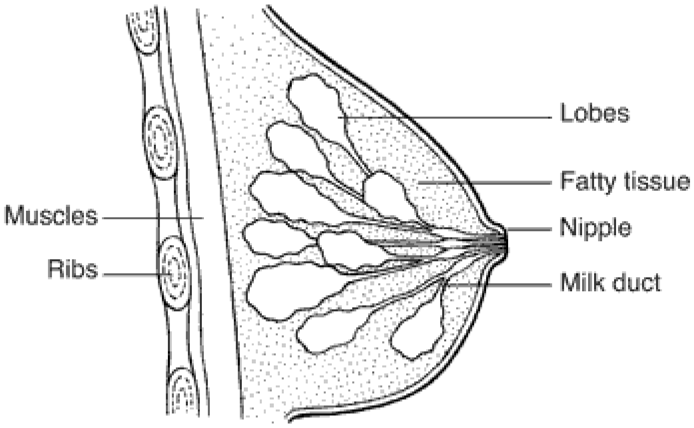
Lobular carcinoma in situ (LCIS)

This information is about lobular carcinoma in situ (LCIS). It should ideally be read with CancerBACUP's general information about cancer of the breast.

What is LCIS?

Lobular carcinoma in situ (LCIS) is not a cancer, but its presence means that there is a small increase in the risk of developing breast cancer later in life. Even so, most women with LCIS do not develop breast cancer.

Each breast contains hundreds of tiny lobules where milk is produced before and after childbirth. With LCIS, changes are found in the cells in the lining of the lobules or lobes of the breast. It is often present in both breasts. LCIS is more common in women who have not reached their menopause (change of life).



(d)

How it is diagnosed

LCIS is usually discovered as a chance finding after a woman has had a breast **biopsy** (removal of a small piece of tissue) or a breast lump removed.

Although LCIS itself does not show up on a mammogram (breast x-ray), it may be found incidentally after removing a suspicious area that has shown up on a mammogram.

Treatment

In the past, LCIS was sometimes treated with surgery to remove the breast (mastectomy). This is now thought to be unnecessary, and women do not usually need any treatment when LCIS is diagnosed. Because most women with LCIS will not develop breast cancer they will never need treatment.

Doctors now usually recommend that women with LCIS have regular 6–12-monthly breast examinations and mammograms every 1–2 years. Any changes in the breast can then be picked up at the earliest stage and treated if appropriate.

Rarely, a woman with LCIS may make a personal decision to have both breasts removed (*bilateral mastectomy*). This tends to happen where there is a strong family history of breast cancer, or the a woman has extreme feelings of anxiety about her risk of developing breast cancer.

A study called the International Breast Cancer Intervention Study (IBIS), which included women with LCIS, has shown that a hormonal therapy drug called tamoxifen may reduce the risk of LCIS developing into breast cancer in women who have had their menopause.

Other research trials are being held to see whether other types of hormonal therapy such as anastrozole can also reduce the risk of LCIS developing into a breast cancer.

Research trials

Research into treatments for LCIS is ongoing, and advances are being made. Cancer doctors use clinical trials to assess new treatments. Before any trial is allowed to take place, an ethics committee must have approved it and agreed that the trial is in the interest of patients.

You may be asked to take part in a clinical trial. Your doctor must discuss the treatment with you so that you have a full understanding of the trial and what it means to take part. You may decide not to take part or withdraw from a trial at any stage.

Your feelings

You may experience many different emotions including anger, resentment, guilt, anxiety and fear. These are all normal reactions and are part of the process many people go through in trying to come to terms with their illness.

CancerBACUP has a section that discusses the emotional effects of cancer and how to deal with them.

References

This section has been compiled using information from a number of reliable sources including;

- Cancer and Its Management (4th edition). Souhami and Tobias. Oxford Blackwell Scientific Publications, 2003.
- Diseases of the Breast (2nd edition). Eds. Harris et al. Lippincott Raven, 2000.
- Improving outcomes in breast cancer – the research evidence. National Institute of Clinical Excellence, 2002.

For further references, please see the general bibliography.

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Resources for living with cancer: Breast cancer

13 items found in this section.
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1. Sujenbi Nightwear Limited

Sujenbi offers range of nightwear designed for women after a mastectomy.

last reviewed: 10.08.2005

2. Menopause Amarant Trust

Aim of the trust is to help women with menopause problems.

last reviewed: 10.08.2005

3. Amoena UK Ltd

Suppliers of breast prostheses, mastectomy textiles and swimwear.

last reviewed: 10.08.2005

4. Confidantes

Family run company set up to offer ladies who have experienced breast surgery a personal service ...

last reviewed: 10.08.2005

5. Eloise Lingerie

A specialist supplier of bras, swimwear, nightwear, prostheses and accessories.

last reviewed: 10.08.2005

6. John Bell & Croyden Chemist

Sells prostheses, mastecomy bras and mastectomy swimwear at retail prices.

last reviewed: 10.08.2005

7. Mainstay Surgical Supplies Ltd

Suppliers of the "Contana" range of self-supporting breast forms and the appropriate ...

last reviewed: 10.08.2005

8. Mentor Medical Systems Ltd

Supplier of surgical implants for breast surgery.

last reviewed: 10.08.2005

9. Pamela Care UK

An internet retailer and mail order supplier of lingerie and prostheses for women who have had a ...

last reviewed: 10.08.2005

10. Nicola Jane

Mastectomy wear available by mail order or from their shop.

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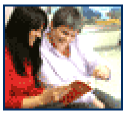

Patient Information Guide: Breast cancer

This section lists information resources available in the UK for cancer patients and their families. For resources giving general information on cancer, its treatments and effects, please use the links in the right hand menu.

- Books
- Booklets/factsheets
- Multimedia

Books

A more difficult exercise

Author	Moran, Diana
Publisher	Bloomsbury
Description	Diary of the `green goddess', who has had a double mastectomy and reconstructive surgery.
ISBN	0747503494
Date	1989

All women: life after breast cancer

Author	Yelland, Tania Farrell
Publisher	Metro/Breakthrough Breast Cancer
Description	Women of all ages and backgrounds who have been diagnosed and treated for breast cancer relate their experiences to encourage women to believe that there is life after breast cancer. It is followed by a brief guide to the management of breast cancer written by Professor Ian Smith of the Royal Marsden Hospital.
ISBN	1842410040
Date	2000

Be a survivor: your guide to breast cancer treatment

Author	Lange, Vladimir
Publisher	Lange Productions
Description	A comprehensive guide to breast cancer with good explanations supported by clear illustrations and photographs. It includes information on diagnosis, treatments, breast reconstruction, complementary therapies and trials, and deals with emotional issues. It does reflect the American healthcare system, so some information may not apply to UK readers.
ISBN	0966361091
Date	2002

Breast cancer: a family survival guide

Author	Pederson, Lucille M and Trigg, Janet M
Publisher	Bergin and Garvey
Description	A good overview of the impact that breast cancer has on women and their family and friends, although it refers a great deal to the American healthcare system.
ISBN	0897894383
Date	1995

Breast cancer: sharing the decision

Author	Maslin, Anna
Publisher	Oxford University Press
	Increasingly patients with breast cancer are participating in the surgical and/or medical decision

Description	about their treatment. This text addresses issues related to shared decision making and in particular those areas where a choice of treatment option involves some degree of risk/benefit analysis.
ISBN	0192629670
Date	1999

Cancer in two voices

Author	Butler, Sandra & Rosenblum, Barbara
Publisher	Spinsters Ink
Description	An American autobiography, about the experiences of a woman who had breast cancer, in the form of a diary over three years from diagnosis and treatment to her eventual death. It portrays the support received from her partner and their friends.
ISBN	1883523168
Date	1996

Dr Susan Love's breast book

Author	Love, Susan M and Lindsey, Karen
Publisher	Perseus
Description	with clear information. However, it is written in a style which may not appeal to everyone. Also it contains some information, for example on insurance, which is only appropriate for American readers.
ISBN	0738202355
Date	2000

Recovering from breast surgery: exercises to strengthen your body and relieve pain

Author	Stumm, Diana
Publisher	Hunter House
Description	Written by an American physiotherapist, this is an easy to read guide to simple exercises to improve movement after breast surgery.
ISBN	0897931807
Date	1995

Seeing the crab: a memoir of dying before I do

Author	Middlebrook, Christina
Publisher	Doubleday
Description	An honest and frank account of the author's experience of metastatic breast cancer and treatments including a bone marrow transplant. She explores the impact of cancer on her relationships with family and friends.
ISBN	0385488653
Date	1996

Tamoxifen and breast cancer

Author	DeGregorio, Michael and Wiebe, Valerie J
Publisher	Yale University Press
Description	This book covers the history and evolution of breast cancer, how tamoxifen works, what the side effects are and why tamoxifen treatment is unsuccessful in some women.
ISBN	0300079516
Date	2000

The breast cancer book

Author	Sampson, Val; Fenlon, D
Publisher	Vermillion
Description	A very practical book that shows women that it is possible to lead a happy and fulfilling life after a diagnosis of breast cancer. Written jointly by a journalist who developed breast cancer and a breast

	care nurse it provides comprehensive information about treatments, managing side effects, complementary treatments, how to communicate with families and where to get support.
ISBN	0091856132
Date	2000

The breast sourcebook: everything you need to know about cancer detection, treatment and prevention

Author	Rosenthal, M Sarah
Publisher	Lowell House
Description	A very comprehensive book covering many aspects of breast cancer, which would be useful for any woman diagnosed with breast cancer. Includes sections on diagnosis, cancer treatments including complementary medicine, reconstruction, prevention and palliative care. Again, do bear in mind that some sections refer to the American healthcare system.
ISBN	0737302496
Date	2000

UK The best treatment guidelines for women with breast cancer

Author	UK Breast Cancer Coalition
Description	Sets out the best diagnostic procedures and treatment practices for primary breast cancer (cancer in the breast that has not spread beyond the breast and axillary (armpit) lymph nodes) based on the latest available evidence. The guidelines explain why certain tests and treatments might be offered and give information about what to expect from these tests and treatments.
Date	2002
Obtain from	UK Breast Cancer Coalition, tel: 020 8543 4455

Booklets and factsheets

50 or over? Breast screening is for you

Author	Department of Health
Description	Booklet suitable for women with learning difficulties
Obtain from	Department of Health, PO Box 777, London SE1 6XH Tel: 08701 555 455 Also available online:
URL	http://www.cancerscreening.nhs.uk/breastscreen/index.html

Arimidex (anastrozole)

Author	Breast Cancer Care
Description	Factsheet no 19
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

Aromasin (exemestane)

Author	Breast Cancer Care
Description	Factsheet no 30
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

Be aware of change

Author Wessex Cancer Trust
Description Leaflet
Obtain from Wessex Cancer Trust, Bellis House, 11 Westwood Road, Southampton, Hampshire, SO17 1DL
Tel: 023 80672200 Fax: 023 80672266

Be breast aware
Author Department of Health
Description Booklet
Obtain from Department of Health, PO Box 777, London SE1 6XH
Tel: 08701 555 455 Email:dhmail@dh.gsi.gov.uk
URL http://www.dh.gov.uk/
Languages English,Chinese,Greek,Gujarati,Hindi,Polish,Punjabi,Turkish,Urdu, Vietnamse

Bone health and breast cancer
Author Breast Cancer Care & National Osteoporosis Society
Description Leaflet
Obtain from Breast Cancer Care , Kiln House, 210 New Kings Road London SW6 4NZ
Tel: 020 7384 3387 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Breast awareness
Author Breast Cancer Care
Description Leaflet
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Breast awareness: your questions answered
Author Breast Care Campaign
Description Leaflet
Obtain from Breast Care Campaign, Blythe Hall, 100 Blythe Road, London, W14 0HB
Tel: 020 7371 1510 Fax: 020 7371 4598

Breast Calcifications
Author Breast Cancer Care
Description Leaflets
Obtain from Kiln House, 210 New Kings Road, London SW6 4NZ

Tel: 020 7384 3387 Email: info@breastcancercare.org.uk

URL http://www.breastcancercare.org.uk/home

Breast cancer - NHS referral guidelines
Author CancerBACUP
Description Factsheet
Obtain from Online version available
Order from CancerBACUP

Breast cancer and benefits
Author Breast Cancer Care

Description Factsheet no 1
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Breast cancer and childcare
Author Breast Cancer Care
Description Factsheet no 24
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Breast cancer and fertility
Author Breast Cancer Care
Description Factsheet no 16
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Breast cancer and hair loss
Author Breast Cancer Care
Description Booklet
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Breast cancer and menopausal symptoms
Author CancerBACUP
Description Factsheet
Obtain from Online version available
Order from CancerBACUP

Breast cancer and older women
Author Breast Cancer Care
Description Factsheet no 17
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Breast cancer and pregnancy
Author Breast Cancer Care
Description Factsheet no 13
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Breast cancer and travel insurance
Author Breast Cancer Care

Description Factsheet no 7
Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Obtain from
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Breast cancer and you: coping with a diagnosis
Author Breast Cancer Care
Description Booklet
Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Obtain from
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Breast cancer in men
Author CancerBACUP
Description Factsheet
Obtain from Online version available
Order from CancerBACUP

Breast care - A guide for women
Author Royal Marsden NHS Trust
Description Booklet
Hochland and Hochland Publications Ltd, 174A Ashley Road, Hale, Cheshire WA15 9SF
Obtain from
Tel: 0161 2734156 Fax: 0161 929 1818

Breast Cysts
Author Breast Cancer Care
Description Leaflets
Kiln House, 210 New Kings Road, London SW6 4NZ

Obtain from Tel: 020 7384 2984 Email: info@breastcancercare.org.uk

URL http://www.breastcancercare.org.uk/home

Breast lumps: your questions answered
Author Breast Care Campaign
Description Leaflet
Breast Care Campaign, Blythe Hall, 100 Blythe Road, London, W14 0HB
Obtain from
Tel: 020 7371 1510 Fax: 020 7371 4598

Breast pain: your questions answered
Author Breast Care Campaign
Description Leaflet
Breast Care Campaign, Blythe Hall, 100 Blythe Road, London, W14 0HB
Obtain from
Tel: 020 7371 1510 Fax: 020 7371 4598

Breast problems: when am I at risk
Author Breast Care Campaign
Description Leaflet
Breast Care Campaign, Blythe Hall, 100 Blythe Road, London, W14 0HB

Obtain from Tel: 020 7371 1510 Fax: 020 7371 4598

Breast prostheses
Author Breast Cancer Care
Description Factsheet no 5
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Breast reconstruction
Author Breast Cancer Care
Description Booklet
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Breast reconstruction
Author Royal Marsden NHS Trust
Description Booklet
Obtain from Hochland and Hochland Publications Ltd, 174A Ashley Road, Hale, Cheshire WA15 9SF
Tel: 0161 2734156 Fax: 0161 929 1818

Breast reconstruction: arm care
Author Wessex Cancer Trust
Description Leaflet
Obtain from Wessex Cancer Trust, Bellis House, 11 Westwood Road, Southampton, Hampshire, SO17 1DL
Tel: 023 80672200 Fax: 023 80672266

Breast screening: a pocket guide
Author Department of Health
Description Booklet
Obtain from Department of Health, PO Box 777, London SE1 6XH
Tel: 08701 555 455
URL http://www.dh.gov.uk/

Breast screening: the facts
Author Department of Health
Description Booklet
Obtain from Department of Health, PO Box 777, London SE1 6XH
Tel: 08701 555 455
Also available online:
URL http://www.cancerscreening.nhs.uk/breastscreen/index.html
Languages Available in many languages

Cancer of the breast
Author Royal Marsden NHS Trust
Description Booklet
Obtain from Hochland and Hochland Publications Ltd, 174A Ashley Road, Hale, Cheshire WA15 9SF

	Tel: 0161 2734156 Fax: 0161 929 1818

Chemotherapy

Author	Breast Cancer Care
Description	Factsheet no 4
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

Clinical trials and breast cancer

Author	Breast Cancer Care
Description	Factsheet no 12
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

Common breast problems

Author	Macmillan Cancer Relief
Description	Leaflet
Obtain from	Macmillan Cancer Relief, 89 Albert Embankment, London SE1 7UQ Tel: 0808 808 0000 Fax: 020 7840 7841 Email: cancerline@macmillan.org.uk
URL	http://www.macmillan.org.uk/

Complementary therapies

Author	Breast Cancer Care
Description	Factsheet no 31
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

Coping with menopausal symptoms

Author	Breast Cancer Care
Description	Factsheet no 6
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

Ductal carcinoma in situ

Author	Breast Cancer Care
Description	Factsheet no 26
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

Ductal carcinoma in situ (DCIS)

Author	CancerBACUP
Description	Factsheet

Obtain from Online version available
Order from CancerBACUP

Early breast cancer: a guide to treatment options
Author Wessex Cancer Trust
Description Leaflet
Obtain from Wessex Cancer Trust, Bellis House, 11 Westwood Road, Southampton, Hampshire, SO17 1DL
Tel: 023 80672200 Fax: 023 80672266

Exercises after breast surgery
Author Breast Cancer Care
Description Booklet
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Fat necrosis
Author Breast Cancer Care
Description
Kiln House, 210 Kings Road, London SW6 4NZ

Obtain from Tel: 020 7384 2984 Tel: info@breastcancercare.org.uk

URL http://www.breastcancercare.org.uk/home

Going into hospital
Author Breast Cancer Care
Description Factsheet no 9
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Helpful information for the partner of a woman with breast cancer
Author Wessex Cancer Trust
Description Leaflet
Obtain from Wessex Cancer Trust, Bellis House, 11 Westwood Road, Southampton, Hampshire, SO17 1DL
Tel: 023 80672200 Fax: 023 80672266

Herceptin (trastuzumab)
Author Breast Cancer Care
Description Factsheet no 28
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Here for you
Author Breast Cancer Care
Description Leaflet
Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ

Obtain from Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Hereditary breast cancer
Author Breast Cancer Care
Description Factsheet no 20
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Holidays and travel
Author Lymphoedema Support Network
Description Leaflet
Obtain from LSN, St Luke's Crypt, Sydney St, London SW3 6NH

Hormone replacement therapy - A guide for women with cancer
Author Royal Marsden NHS Trust
Description Booklet
Obtain from Hochland and Hochland Publications Ltd, 174A Ashley Road, Hale, Cheshire WA15 9SF
Tel: 0161 2734156 Fax: 0161 929 1818

How to help yourself
Author Macmillan Cancer Relief
Description Leaflet
Obtain from Macmillan Cancer Relief, 89 Albert Embankment, London SE1 7UQ
Tel: 0808 808 0000 Fax: 020 7840 7841

Email:cancerline@macmillan.org.uk
URL http://www.macmillan.org.uk/

Inflammatory breast cancer
Author Breast Cancer Care
Description Factsheet no 11
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Inflammatory breast cancer
Author CancerBACUP
Description Factsheet
Obtain from Online version available
Order from CancerBACUP

Information for women with ductal carcinoma in situ
Author Wessex Cancer Trust
Description Leaflet
Obtain from Wessex Cancer Trust, Bellis House, 11 Westwood Road, Southampton, Hampshire, SO17 1DL
Tel: 023 80672200 Fax: 023 80672266

Invasive lobular breast cancer

Author	Breast Cancer Care
Description	Factsheet no 29
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

Lobular carcinoma in situ (LCIS)

Author	CancerBACUP
Description	Factsheet
Obtain from	Online version available Order from CancerBACUP

Making a diagnosis: breast problems and breast cancer

Author	Breast Cancer Care
Description	Booklet
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

Male breast cancer

Author	Breast Cancer Care
Description	Factsheet no 2
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

Men and cancer

Author	Cancerlink
Description	Booklet
Obtain from	Cancerlink, Macmillan Cancer Relief, 89 Albert Embankment, London SE1 7UQ Tel: 0808 8080000 Email: cancerline@macmillan.org.uk
URL	http://www.macmillan.org.uk/

Nipple discharge

Author	Wessex Cancer Trust
Description	Leaflet
Obtain from	Wessex Cancer Trust, Bellis House, 11 Westwood Road, Southampton, Hampshire, SO17 1DL Tel: 023 80672200 Fax: 023 80672266

Ovarian ablation

Author	Breast Cancer Care
Description	Factsheet no 15
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

Paget's disease of the breast

Author	Breast Cancer Care
Description	Factsheet no 25

Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Post-operative problems after breast cancer surgery
Author Breast Cancer Care
Description Factsheet no 10
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Radiotherapy
Author Breast Cancer Care
Description Factsheet no 14
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Secondary bone cancer
Author Breast Cancer Care
Description Factsheet no 18
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Secondary brain cancer
Author Breast Cancer Care
Description Factsheet no 32
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Secondary lung cancer
Author Breast Cancer Care
Description Factsheet no 27
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Swollen feet
Author Lymphoedema Support Network
Description Leaflet
Obtain from LSN, St Luke's Crypt, Sydney St, London SW3 6NH

Talking with your children about breast cancer
Author Breast Cancer Care
Description Booklet
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ

Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Tamoxifen
Author Breast Cancer Care
Description Factsheet no 8
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Taxol (paclitaxel)
Author Breast Cancer Care
Description Factsheet no 22
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Taxotere (docetaxel)
Author Breast Cancer Care
Description Factsheet no 23
Obtain from Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ
Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL http://www.breastcancercare.org.uk/home

Treatment options: Chemotherapy
Author Wessex Cancer Trust
Description Leaflet
Obtain from Wessex Cancer Trust, Bellis House, 11 Westwood Road, Southampton, Hampshire, SO17 1DL
Tel: 023 80672200 Fax: 023 80672266

Treatment options: oophorectomy
Author Wessex Cancer Trust
Description Leaflet
Obtain from Wessex Cancer Trust, Bellis House, 11 Westwood Road, Southampton, Hampshire, SO17 1DL
Tel: 023 80672200 Fax: 023 80672266

Understanding breast cancer
Author CancerBACUP
Description Booklet
Obtain from Online version available
Order from CancerBACUP

Understanding breast reconstruction
Author CancerBACUP
Description Booklet
Obtain from Online version available
Order from CancerBACUP

Understanding secondary breast cancer

Author	CancerBACUP
Description	Booklet
Obtain from	Online version available Order from CancerBACUP

Zoladex (goserelin)

Author	Breast Cancer Care
Description	Factsheet no 21
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

Multimedia

Diagnosing and treating breast cancer

Author	Breast Cancer Care
Description	Booklet & tape
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home
Languages	Urdu English

Keep yourself healthy: a guide to checking your breasts

Author	FAIR (Family Advice and Information Resource)
Description	Booklet & CD for people with learning disabilities
Obtain from	FAIR, 25-27 West Nicholson Street, Edinburgh EH8 9DB Tel: 0131 662 1962 Fax: 0131 662 9486 E-mail: fair@btconnect.com

Treating breast cancer

Author	Breast Cancer Care
Description	Booklet & audiotape
Obtain from	Breast Cancer Care, Kiln House, 210 New King's Road, London SW6 4NZ Tel: 0808 800 6000 Email: info@breastcancercare.org.uk
URL	http://www.breastcancercare.org.uk/home

All resources in UK patient information guide have been reviewed by CancerBACUP specialist nurses and all details were correct at time of review.

Feedback about these resources or suggestions for inclusion are welcome - please contact us.

Further information resources...

- General cancer
- Treatments
- Living with cancer

cancerBACUP
Helping people live with cancer

FREEPHONE
HELPLINE
0808 800 1234

Useful links

Selected websites that may be of interest. The organisations section may have further links. Click here for general information websites, that also cover specific cancer information.

Breast Cancer Care

Description	Online information about breast cancer & discussion forums
URL	http://www.breastcancercare.org.uk/home

DIPEX - Database of Individual Patient Experiences

Description	Contains specific cancer information and has audio and video clips of patients talking about their experiences of cancer and its treatments, including discussion of the physical, social and psychological effects.
URL	http://www.dipex.org/

All resources in UK patient information guide have been reviewed by CancerBACUP specialist nurses and all details were correct at time of review.

Feedback about these resources or suggestions for inclusion are welcome - please contact us.

Also see links to...

General cancer websites

“ROCHENET”

www.roche.pt/her2

| Rochenet |

- Conhecimentos básicos sobre o cancro
  - Célula: a unidade fundamental da vida
  - As células cancerosas
  - Os genes e o cancro
- Acerca do cancro da mama
- HER2 e o cancro
- Sou HER2 positiva - O que significa
- Livro: Conhecer lidar e viver com o cancro da mama avançado
- Outros sites com informação
- Glossário
- Profissionais de Saúde

Conhecimentos Básicos Sobre o Cancro

Célula: a unidade fundamental da vida

As células são a unidade básica de estrutura e funcionamento do organismo humano. As células têm a capacidade de se dividir para formarem novas células, mantendo o crescimento do organismo e a substituição das células lesadas, para além de perpetuarem a transmissão da vida.

Desenvolvido e criado por Rochenet

www.roche.pt/her2

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Conhecimentos básicos sobre o cancro

- Célula: a unidade fundamental da vida
- As células cancerosas
- Os genes e o cancro

Acerca do cancro da mama

HER2 e o cancro

Sou HER2 positiva - O que significa

Livro: Conhecer lidar e viver com o cancro da mama avançado

Outros sites com informação

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Conhecimentos Básicos Sobre o Cancro

As células cancerosas

A divisão celular é um processo sujeito a um estreito controlo, por parte dos mecanismos reguladores do organismo. No entanto, algumas células não respondem aos sinais enviados pelo organismo para pararem de se dividir, prosseguindo a sua multiplicação. Estas células "anómalas" designam-se por células cancerosas. Os mecanismos de autodefesa do organismo – o sistema imunitário – habitualmente destroem as células cancerosas. No entanto, é possível que algumas escapem e se desenvolvam formando um tumor, ou seja, uma massa de células cancerosas.

Existem dois tipos de tumor: os benignos e os malignos. Os tumores benignos são menos preocupantes porque se restringem a uma área do organismo. Por seu turno, os tumores malignos podem espalhar-se atingindo outros tecidos e órgãos, o que dificulta o seu tratamento.

Desenvolvido e criado por Rochenet

Rochenet
www.roche.pt

Roche

www.roche.pt/her2

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Conhecimentos básicos sobre o cancro

- Célula: a unidade fundamental da vida
- As células cancerosas
- Os genes e o cancro

Acerca do cancro da mama

HER2 e o cancro

Sou HER2 positiva - O que significa

Livro: Conhecer lidar e viver com o cancro da mama avançado

Outros sites com informação

Glossário

Profissionais de Saúde

Conhecimentos Básicos Sobre o Cancro

Os genes e o cancro

Uma sequência de acontecimentos que resultam em alterações nos genes, ou seja as unidades que armazenam a informação hereditária, podem originar cancro. Estas alterações ocorrem nos genes responsáveis pela divisão celular, levando a um crescimento descontrolado das células.

Desenvolvido e criado por Rochenet

Rochenet
www.roche.pt

www.roche.pt/her2

| Rochenet |

Conhecimentos básicos sobre o cancro

Acerca do cancro da mama

- O cancro da mama
- Factores de risco
- Sinais e sintomas
- Diagnóstico
- Tratamento

HER2 e o cancro

Sou HER2 positiva - O que significa

Livro: Conhecer lidar e viver com o cancro da mama avançado

Outros sites com informação

Glossário

Profissionais de Saúde

Roche

Acerca do Cancro da Mama

O cancro da mama

O cancro da mama é a forma de cancro mais comum na mulher. As taxas de incidência têm vindo a subir na segunda metade deste século.

- Calcula-se que uma em cada 10 mulheres irão desenvolver cancro da mama ao longo da sua vida.
- Se a doença é detectada cedo, antes de ter tido hipóteses de progredir (metastizar) atingindo outros tecidos para além da mama, a taxa de sobrevivência pode chegar a 95%, durante pelo menos 5 anos
- Apesar dos avanços no diagnóstico e tratamento, o cancro da mama continua a ser a primeira causa de morte das mulheres entre os 35 e os 55 anos e a segunda entre as mulheres de todas as idades. Na Europa, quase 20% de todas as mortes por causa oncológica são devidas ao cancro da mama.

Rochenet
www.roche.pt

www.roche.pt/her2

| Rochenet |

Conhecimentos básicos sobre o cancro

Acerca do cancro da mama

O cancro da mama

Factores de risco

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Outros sites com informação

Glossário

Profissionais de Saúde

Acerca do Cancro da Mama

Factores de risco

Os factores de risco que podem aumentar a probabilidade de desenvolver cancro da mama incluem:

- história familiar da doença
- envelhecimento
- exposição aos agentes cancerígenos
- não ter filhos (nuliparidade) ou ter o primeiro filho depois dos 30 anos).

Além disso, uma vida menstrual longa, resultado de uma menarca precoce ou de uma menopausa tardia, aumenta o risco de cancro. Finalmente, alguns investigadores acreditam que a obesidade, uma alimentação rica em gorduras, a ingestão excessiva de álcool e o uso de medicamentos contendo estrogénios (terapêutica de substituição hormonal ou pílulas anticoncepcionais) podem aumentar o risco de cancro. No entanto, 80% das mulheres com o diagnóstico de cancro da mama não têm factores de risco conhecidos.

Desenvolvido e criado por Rochenet

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Sinais e sintomas do cancro da mama

- A realização do auto-exame é fundamental para detectar o cancro da mam Nos EUA, 90% de todos os cancros da mama são descobertos pela própri muitas vezes apenas como um caroço, pequeno e firme. Na maior parte d casos (66%) o caroço não é doloroso embora algumas mulheres (11%) refiram dor.
- Outros sinais de alarme incluem
  - Perda de sangue ou de líquido pelo mamilo
  - Acumulação local de fluidos tecidulares (edema)
  - Alteração no tamanho, no bordo ou na posição do mamilo

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Diagnóstico

Uma vez detectado, a presença do tumor pode ser confirmada pelo médico de diversas formas, como palpação, aspiração através de agulha muito fina, mamografia e biópsia.

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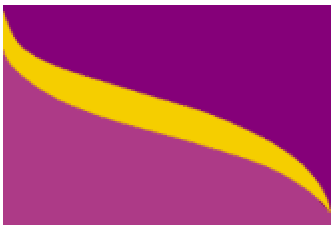

Acerca do Cancro da Mama

Tratamento

- O cancro da mama é tratado por meio de uma diversidade de modalidades incluindo a quimioterapia, a radioterapia e a cirurgia (mastectomia, quadrantectomia ou lumpectomia) e a terapêutica hormonal. Estes tratamentos são administrados com o objectivo de curar o cancro e/ou limit a disseminação da doença, proporcionando o alívio dos sintomas.
- Considera-se que a mulher está a responder ao tratamento se se verificar uma diminuição de pelo menos 50% nas dimensões do tumor. Há diversos factores que afectam o sucesso da terapêutica:
  - tipo, tamanho e velocidade de crescimento do tumor primário
  - número de nódulos linfáticos envolvidos
  - extensão da expressão do oncogene
  - estado dos receptores do estrogéneo e dos receptores do factor de crescimento epidérmico.

Potenciais novas opções de tratamento

- Tratamentos sistémicos contra o cancro, como a quimioterapia e a radioterapia, têm sido as principais armas usadas para a luta contra o cancro.
- Começam a estar disponíveis novas terapêuticas contra o cancro com mecanismos de acção inovadores. Estes fármacos que actuam directamente nas células cancerosas, poupam o organismo aos efeitos secundários, por vezes devastadores, associados aos tratamentos convencionais contra o cancro.

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Introdução

Nos últimos anos, os cientistas têm feito enormes avanços no conhecimento acerca da forma como as células normais se modificam ou se transformam em células cancerosas. Alguns desses avanços incluem a compreensão da forma como substâncias que podem causar o cancro, designadas carcinogéneas, interagem como funcionamento normal dos nossos genes.

O gene HER2, responsável pela produção da proteína HER2, é um proto-oncogene, o que significa que embora a proteína HER2 tenha um papel regulador nas células com funcionamento normal, um erro aleatório no gene HER2 pode eventualmente conduzir ao desenvolvimento de cancro.

Em **O que é o HER2?**, descreve-se a função do gene HER2 e da proteína HER2 nas células normais.

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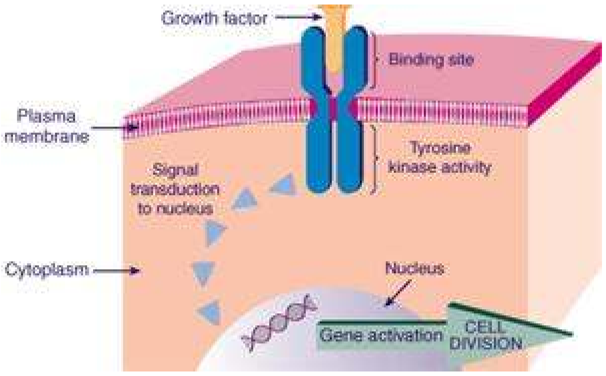
O que é o HER2?

HER2 é a abreviatura de "Human Epidermal growth factor Receptor-type 2", ou seja, receptor tipo 2 do factor de crescimento epidérmico humano. A proteína HER2 é um produto de um proto-oncogene específico, um gene com potencial para causar o aparecimento de cancro. Em quantidades normais, a proteína tem um papel importante no crescimento e desenvolvimento de uma ampla categoria de células designadas por células epiteliais. Estas células constituem o revestimento exterior e interior do organismo e o tecido glandular. As células do tecido mamário responsável pela produção de leite são um bom exemplo de células epidérmicas.

A proteína HER2 pode ser encontrada dispersa pela membrana celular. A proteína transmite sinais que orientam o crescimento celular, desde o exterior da célula até ao núcleo localizado dentro da célula. Pequenas moléculas designadas por factores de crescimento aderem à proteína HER2 e sinalizam a célula para que esta cresça normalmente.



Habitualmente encontram-se duas cópias do gene HER2 em cada célula, que devem produzir uma quantidade adequada de proteína HER2 na superfície celular. Os cientistas verificaram que por vezes o gene HER" se encontra amplificado, o que resulta em diversas cópias do gene e conduz à produção de proteína Her2 em excesso. O excesso de proteína HER2 envia sinais à célula para que esta se divida, multiplique e cresça a uma velocidade superior à verificada em células normais, o que contribui para a ocorrência e progressão do cancro.

Porque razão se deve ter em consideração o HER2?
O HER2 surgiu como um importante factor predictivo e de prognóstico, no cancro da mama. Além disso, a nossa crescente compreensão acerca do papel do HER2 no desenvolvimento do cancro da mama, levou-nos a conceber terapêuticas inovadoras dirigidas ao HER2

O que faz o HER2?

O proto-oncogene HER2 codifica um receptor transmembranário do factor de crescimento da tirosina, cuja expressão se encontra, frequentemente, aumentada no cancro da mama e noutros tipos de tumores sólidos. Em ambiente laboratorial, o aumento da expressão do HER2 origina uma transformação oncogénica e um comportamento tumoral mais agressivo. Na clínica, muitos estudos demonstraram que o aumento da expressão do HER2 está associado a um pior prognóstico (HER2 e prognóstico). Os ensaios foram mais exaustivos no cancro da mama, situação em que está actualmente estabelecido que o HER2 constitui um indicador de um comportamento clínico mais agressivo.

Em ensaios realizados mais recentemente, existem ainda mais indícios em apoio da tese de o HER2 ser um importante factor predictivo da resposta à terapêutica (HER2 como factor predictivo). No entanto, os dados relativos ao HER2 como marcador da resistência à terapêutica hormonal não são ainda conclusivos. Muito embora uma série de estudos tenham sugerido a existência de uma relação entre o HER2 e a resistência hormonal, alguns estudos recentes não apoiam estas observações. Por conseguinte, as recomendações actuais apontam para a não suspensão da terapêutica hormonal em doentes com tumores HER2-positivos. Há indícios cada vez mais fortes que apoiam o aumento da expressão do HER2 como possível marcador do aumento da sensibilidade às antraciclinas. Em estudos alargados da terapêutica adjuvante do cancro da mama, os tumores HER2-positivos mostraram tirar uma maior vantagem da adição de antraciclinas à terapêutica e da administração de regimes posológicos mais intensos de antraciclinas. Os dados obtidos com outros fármacos quimioterápicos convencionais, tais como o CMF (ciclofosfamida, metotrexato e 5-fluorouracilo [5-FU]) ou os taxanos, ainda não podem ser considerados conclusivos

Revisão sobre os ensaios realizados com o HER2

Uma das limitações destes estudos reside na inexistência de padronização na determinação do HER2, por estarem a ser utilizados uma diversidade de métodos, de anticorpos e de sistemas de classificação. Antes de se poder avançar mais, é muito importante estabelecer um consenso ou um método preferencial para o ensaio do HER2, à semelhança do conseguido para a determinação da positividade aos receptores do estrogéneo. Idealmente, deve-se utilizar um método simples, reprodutível e predictivo. Por conseguinte, um ponto importante (HER2) foi dedicado à revisão dos métodos de ensaio actualmente disponíveis.

O HER2 como alvo da terapêutica

Sabe-se agora que para além do seu valor prognóstico e predictivo, o HER2 é um alvo antineoplásico, específico e muito promissor. O fundamento para atingir o HER2 numa estratégia antineoplásica é interessante, uma vez que o aumento da expressão do HER2 resulta numa transformação oncogénica e num comportamento clínico mais agressivo. Foram investigadas uma grande diversidade de abordagens terapêuticas, incluindo os anticorpos monoclonais dirigidos ao domínio extracelular do receptor do HER2, os inibidores da tirosina quinase, abordagens pouco convencionais e vacinas. Os estudos realizados com anticorpos monoclonais, quer isolados quer em associação com agentes quimioterápicos convencioanis, demonstraram a existência de marcada actividade pré-clínica e clínica nos tumores acompanhados do aumento da expressão do HER2.

Em resumo, depois de quase duas décadas de intensa investigação, desde a identificação do gene do HER2, a determinação do HER2 tornou-se uma ferramenta importante no tratamento dos doentes com cancro da mama. É previsível que, nos próximos anos, aumentem os nossos conhecimentos sobre o papel do HER2 noutros tipos de tumor e venham a estar disponíveis uma série de promissoras terapêuticas anti-HER2, para os doentes com tumores HER2-positivos.

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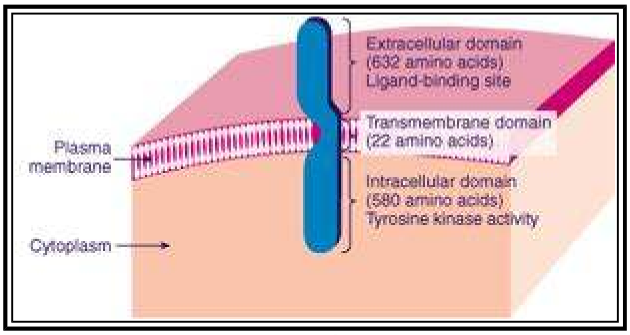
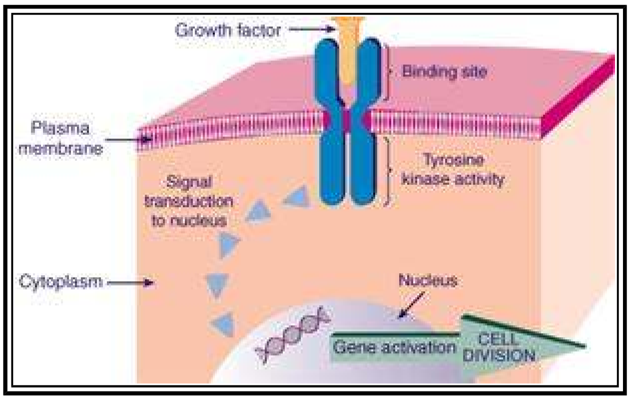


Modelo da proteína do HER2.

O gene do receptor-2 do factor de crescimento epidérmico humano (HER2) é um proto-oncogene que codifica o receptor do HER2. O receptor é uma glicoproteína transmembranária de 185 kD, designada por $p185^{HER2}$, um de uma família de quatro receptores do factor de crescimento, intimamente relacionados, designados por HER1 a HER4. Estes receptores são receptores transmembranários da tirosina quinase, dotados de actividade estimulante do crescimento.

A família de receptores HER está envolvida na regulação do normal desenvolvimento e crescimento da mama. As duas classes conhecidas de ligandos desta família de receptores, os ligandos do tipo EGF e as neuregulinas, demonstraram estimular o desenvolvimento lobulo-alveolar da glândula mamária de ratinho em culturas e *in vivo*. Pelo contrário, a expressão de HER1 anómalo está associada a um desenvolvimento glandular alterado/insuficiente.



Modelo representativo de algumas das etapas envolvidas na tradução do sinal do factor de crescimento

Os receptores do HER parecem existir sob a forma de monómeros sobre a superfície celular. Estes monómeros formam receptores activos dímeros, que são estabilizados por ligação ao ligando. Pode ocorrer dimerização entre moléculas idênticas de receptores (um homodímero) ou entre diferentes membros da família de receptores HER (heterodímero). O HER2 parece ser o parceiro preferido para a heterodimerização, dentro da família, sendo frequentemente transactivado por ligandos do tipo EGF, o que resulta na formação de heterodímeros HER1/HER2, e por neuregulinas, induzindo a formação de heterodímeros HER2/HER3 e HER2/HER4.

A ligação do ligando a um complexo receptor heterodímero, incluíndo a proteína HER2, conduz à activação da actividade intrínseca da proteína tirosina quinase. A ligação do ligando aos heterodímeros com HER2 e a sua identificação a partir destes heterodímeros, parece ser particularmente forte. Ocorre auto-fosforilação da tirosina em resultado da ligação ao ligando, desencadeando uma série de eventos em cascata que resultam na transmissão de sinais através da membrana celular e através do espaço intracelular até ao núcleo. A posterior activação do gene conduz à estimulação mitogénica.

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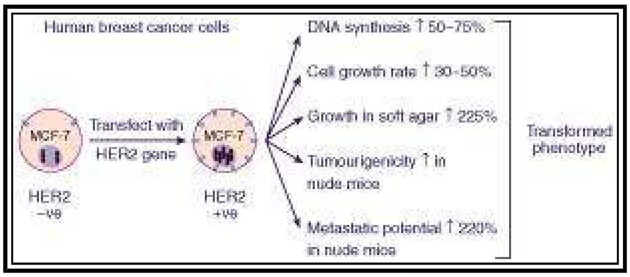
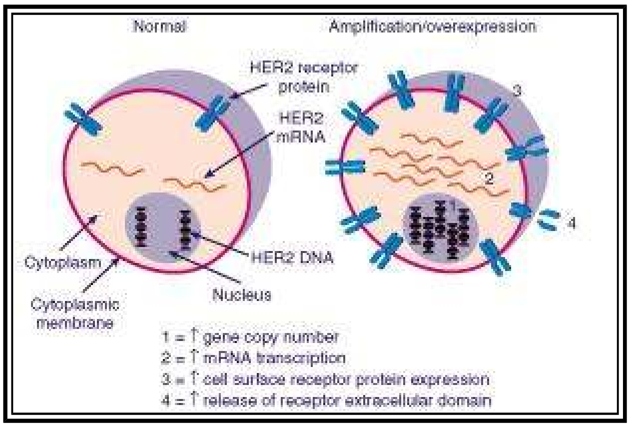


Aumento da expressão do HER2 após transfecção das células MCF-7 humanas do cancro da mama, com ADN HER2 e transformação fenotípica

Os estudos realizados *in vitro* e no animal indiciam claramente que o aumento da expressão da proteína HER2 tem um papel fundamental na transformação oncogénica e na tumorigénese. Tal como foi demonstrado, a transfecção do gene HER2 nas linhagens celulares dos tumores do ovário e da mama, humanas, originam características mais agressivas de crescimento. Além disso, o crescimento de linhagens celulares de tumores resultantes de xeno-enxertos e de cancro da mama humano, que aumentam a expressão dos receptores do HER2, é inibida por anticorpos monoclonais dirigidos ao receptor.



Indicadores do HER2: amplificação do gene ou do ADN e aumento da expressão do ARN_m ou da proteína.

A sequência habitual da transformação oncogénica parece iniciar-se com a amplificação do gene HER2. Isto origina duas vezes mais cópias dos genes do que é habitual nas células epidérmicas: ³ 5 cópias de genes por célula é um valor adequado para começar a definir a amplificação do gene, sendo comum existir um valor > 10 cópias de genes por célula no estado "amplificado". A amplificação do gene do HER2 aumenta a transcrição do gene do HER2, originando níveis aumentados de ARN_m HER2 e o aumento da síntese proteica do HER2. Em consequência, aumenta a expressão da proteína HER2 sobre a superfície celular, causando, provavelmente, a activação constitutiva dos receptores homodímeros do HER2, sem ligação aos ligandos. Isto resulta no crescimento celular desordenado e em transformação oncogénica, em determinadas situações, dando origem ao cancro.

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Introdução

Se lhe foi diagnosticado um cancro da mama, o seu médico pode pedir-lhe para fazer uma análise ao HER2. Os testes ao HER2 podem ajudar o médico a diagnosticar de forma mais exacta as doentes com cancro da mama e a identificar as doentes com um tipo mais agressivo de cancro da mama. Os testes actualmente utilizados são discutidos em De que forma será identificado a minha situação face ao HER2? Um teste que identifique as doentes HER2 positivas tem várias implicações importantes, uma vez que a situação face ao HER2 pode:

- indicar o risco para a doente de vir a apresentar progressão do cancro da mama
- predizer de que forma a doente irá responder a determinadas terapêuticas contra o cancro
- qualificar uma doente para receber terapêuticas novas contra o cancro, dirigidas aos receptores do Her2.

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Determinar a situação face ao HER2

O papel importante do HER2 no cancro da mama exige a sua determinação nestas doentes. Um teste de HER2 positivo indica que as células do cancro da mama estão a fabricar demasiada proteína HER". Um mau funcionamento dos genes responsáveis pela produção da proteína HER2 um aumento exagerado desta.

Embora estejam actualmente em desenvolvimento vários testes do HER2, todos eles podem ser classificados numa de duas categorias. Um dos tipo determina a existência de demasiadas cópias do gene HER2 no ADN, que se designa por amplificação. O outro tipo determina a presença de demasiada proteína HER2 no tecido da doente, que se designa sobre-expressão.

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Porquê testar a sobre-expressão do HER2?

Aproximadamente 30% das doentes com cancro da mama apresentam quantidades excessivas de proteína HER2 ou esta encontra-se sobre-expressa. Quando comparadas com mulheres cujos tumores não sobre-exprimem o HER2, as mulheres HER2-positivas tendem a apresentar formas mais agressivas da doença e esta progride mais rapidamente após administração dos tratamentos convencionais, como a quimioterapia. Actualmente existem testes específicos para identificar as doentes HER2-positivas. Se lhe foi diagnosticado um cancro da mama, deverá conhecer o seu estado relativamente ao HER2 pelas seguintes razões:

- O cancro que é HER2-positivo tem maior probabilidade de voltar a surgir logo após o tratamento
- Os tumores HER2-positivos parecem responder menos bem a alguns fármacos antineoplásicos que constituem a terapêutica convencional contra o cancro da mama
- Estão agora disponíveis agentes novos, que se dirigem especificamente aos receptores do HER2, para tratar as doentes HER2-positivas.

Interpretado correctamente, o teste ao HER2 pode ajudar, a si e ao seu médico, a tomar decisões acerca do tratamento com base nos riscos conhecidos, associados ao HER2 e aos seus efeitos no resultado do tratamento. Nos EUA, tem-se vindo a tornar prática corrente fazer o rastreio do HER2 em mulheres com cancro da mama, especialmente por estarem disponíveis no mercado terapêuticas anti-HER2 específicas.

Um teste positivo à sobre-expressão do HER2 não significa que o seu cancro seja indiscutivelmente mais agressivo. A agressividade depende do tipo de cancro e das características individuais da doente. No entanto, está reconhecido o papel do HER2 como um importante factor de risco no cancro da mama e estão a acumular-se rapidamente informações referentes ao HER2 noutros tipos de cancro.

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O HER2 e o prognóstico do cancro da mama

A amplificação/sobre-expressão do HER2 afecta quase 30% das mulheres com cancro da mama. Todos anos, só na Europa, mais de 500.000 mulheres são diagnosticadas com cancro da mama. Até 170.000 destas terão amplificação/sobre-expressão do HER2. Aproximadamente 92% das doentes com sobre-expressão da proteína HER2 apresentarão amplificação dos gene HER2.

A positividade face ao HER2 está associada a um pior prognóstico e a uma possível diminuição na resposta à quimioterapia e à terapêutica hormonal. Por conseguinte, a avaliação do HER2 é importante na determinação do prognóstico e do tratamento das mulheres com cancro da mama.

As mulheres com cancro da mama HER2 positivo têm maior probabilidade de:

- ter um cancro que se espalhe para outras partes do corpo numa face precoce da doença
- se sentirem pior, no caso de o cancro se ter espalhado até aos nódulos linfáticos
- de morrer desta doença (as taxas de mortalidade são mais elevadas)
- sofrer uma recidiva, ou seja, de voltarem a ter cancro após a terapêutica inicial.

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- Dirigir a terapêutica especificamente para as mulheres HER2-positivas
- Questões para colocar ao seu médico

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Dirigir a terapêutica especificamente para as mulheres HER2-positivas

Dirigir a terapêutica para a proteína HER2 constitui uma nova abordagem ao tratamento do cancro, designada por "abordagem teracional". A quimioterapia convencional afecta todas as células de divisão rápida, incluindo as células saudáveis (não cancerosas). A abordagem racional identifica a proteína ou gene específico que causa ou sustenta o cancro e dirige a terapêutica contra essa proteína ou gene. A informação disponível sugere que:

- O HER2 tem um papel directo na formação e disseminação do cancro
- Atingir a proteína HER2 pode constituir um tratamento eficaz para os cancros que apresentam sobre-expressão do HER2.

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Teste ao HER2

Agora que sei que tenho um cancro da mama devo fazer o teste ao HER2? Todas as mulheres que sabem que têm cancro da mama o devem fazer?

Prognóstico

Uma vez que o teste ao HER2 deu positivo e que me disse que isso está associado a formas mais agressivas do cancro da mama, isto significa que o meu tempo de vida é menor do que se tivesse tido um resultado negativo nesse teste?

Tratamento

Quais são as opções de tratamento que se aplicam ao meu caso, ou seja nos casos em que o teste ao HER2 é positivo?

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Activa em todas as frentes

Actualmente o cancro da mama é uma crua realidade em todo o mundo. Tendo a sua incidência aumentado de forma regular, durante a segunda metade do século passado, agora ataca cerca de uma mulher em cada dez e reclama vários milhares de vidas. É verdade que, se detectado e tratado logo de início, a taxa de cura é muito alta - até 95% dos casos - mas muitas mulheres continuam a desenvolver cancro da mama avançado, com toda a dor e angústia que isso envolve. A notícia mais encorajadora na entrada deste novo milénio talvez seja que, nalguns países, a taxa de morte por cancro da mama esteja a diminuir.

Este livro destina-se a dar as linhas gerais do cancro da mama avançado e ajud
compreender esta complexa e por vezes angustiante doença. Tem també
intenção de servir como fonte de informação para saber onde encontrar m
informações e quais os serviços de apoio que pode contactar. Tal como com ou
doenças mortais, conhecer é poder, e esperamos que este livro possa, de alg
modo, contribuir para aceitar e compreender o cancro da mama avançado. As d
mais importantes mensagens a ter em conta são a de que existe um conjunto
opções de tratamento à sua disposição, que a pode ajudar a tratar a doença, e a
que não é necessário aguentar isto sozinha – existem muitas organizações que p
contactar e que podem prestar-lhe apoio.

O cancro mais comum nas mulheres

Cancro é um termo genérico aplicado a várias doenças distintas, mas relaciona
todas caracterizadas pela malignidade, ou, por outras palavras, pelo crescimen
desenvolvimento incontrolado de células anómalas. O cancro da mama, que
malignidade mais comum na mulher, representa cerca de 24% dos casos de can
No mundo ocidental, atinge uma mulher em cada dez, com meio milhão de no
casos ocorridos por ano, só na Europa.

Apesar dos avanços no diagnóstico e tratamento, o cancro da mama continua a
a primeira causa de morte das mulheres entre os 35 e os 55 anos e a segunda e
as mulheres de todas as idades. Calcula-se que, só na Europa, o cancro da mam
responsável por mais de 100.000 mortes por ano.

Sendo raro antes dos 30 anos, o cancro da mama tem mais probabilidades de
desenvolver à medida que a idade avança, embora a taxa de crescimento abra
nas mulheres que atingiram a menopausa. Há numerosos factores de ri
conhecidos, nos quais se incluem: história familiar da doença; envelhecime
exposição aos agentes cancerígenos e não ter filhos (nuliparidade) ou maternid
tardia (primeiro filho depois dos 30 anos). Além disso, uma vida menstrual lo
resultado de uma menarca precoce ou de uma menopausa tardia, aumenta o ri

de cancro. Finalmente, alguns investigadores acreditam que a obesidade, u alimentação rica em gorduras, a ingestão excessiva de álcool e o uso medicamentos contendo estrogénios (terapêutica de substituição hormonal ou pílu anti-concepcionais) podem aumentar o risco de cancro. No entanto, em cada ci mulheres com o diagnóstico de cancro da mama, quatro não têm factores de ri conhecidos.

Se a doença é detectada e tratada cedo, antes de ter tido hipóteses de progr (metastizar) e desenvolver-se até ser um cancro da mama avançado, a taxa sobrevivência pode chegar a 95% - um argumento poderoso a favor do aument conhecimento acerca do cancro da mama e do aperfeiçoamento dos programas rastreio.

De forma encorajadora, os resultados do tratamento para o cancro da ma avançado estão a melhorar fortemente, por estarem disponíveis novos tratamer sofisticados. Neles estão incluídas várias combinações de cirurgia, radiotera terapêutica hormonal, quimioterapia com um único agente ou em associaçã recentemente, o tratamento com anti-corpos monoclonais.

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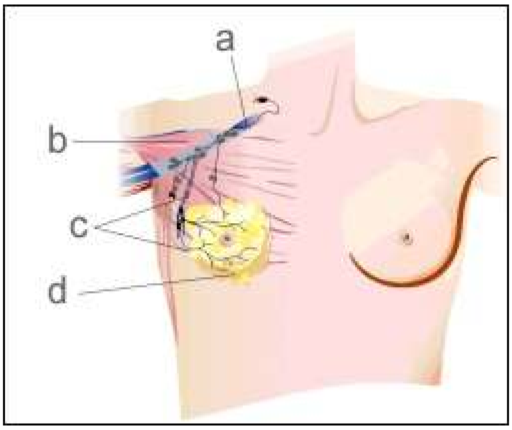
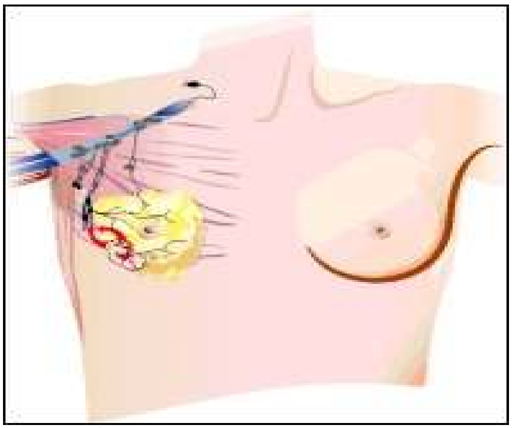
O que é o cancro da mama avançado?

Fala-se de cancro da mama avançado ou cancro da mama metastizado quando células cancerosas do tumor original (primário) se separaram, deslocando-se p outra parte do corpo. São transportadas na corrente sanguínea ou na linfa, que fluido incolor existente no sistema linfático.



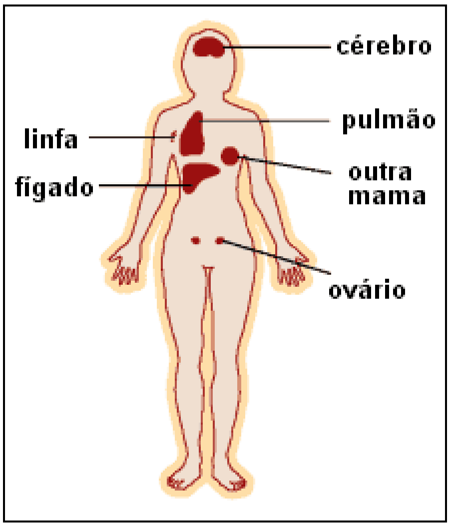
Legenda:
a) - principal vaso sanguíneo e via de metastização
b) - Músculo peitoral
c) - gânglios e vasos linfáticos
d) - Tecido mamário

Estas células migratórias podem morrer ou permanecer adormecidas durante mu anos antes de serem reactivadas. Ou podem formar tumores secundá (metástases) em vários locais do corpo, como por exemplo os pulmões.



Legenda: Células cancerosas escapam-se do tumor principalalcançando os vasos sanguíneos
ou linfáticos, permitindo que o cancro atinja outros órgãos

Onde são encontrados mais frequentemente os tumores secundários?
Pode-se desenvolver um tumor secundário próximo do local inicial, no tecido mama ainda não atingido ou na cicatriz da mastectomia, onde a mama foi retira Isto é conhecido como recidiva local. As células cancerosas transportadas corrente sanguínea alojam-se com mais frequência nos ossos, no fígado ou pulmões e, ocasionalmente, atingem o cérebro. As células transportadas na l instalam-se nos gânglios linfáticos nas axilas. No entanto, em geral, o cancro ataca todos estes locais simultaneamente.



Legenda: Localizações secundárias comuns

Quais são os sintomas do cancro da mama avançado?
Por norma o cancro da mama, na fase inicial ou não dá nenhum, ou dá um pequ sinal que é habitualmente detectado num check-up de rotina.

Contudo poderá sentir outros sintomas, tais como fadiga, mal-estar e falta de ape embora estes sintomas sejam comuns a muitas outras situações, não só ao cancr

Poderá também sentir um conjunto de sintomas possíveis, dependendo da zona corpo afectada. Por exemplo:

- Área da mama: um pequeno caroço ou nódulo e por vezes saída de fluido.
- Ossos: dor persistente.

Outros sintomas, provocados por níveis anómalos de cálcio no sangue, inclu sede, vontade frequente de urinar, náuseas, fadiga, prisão de ventre, irritabilidad confusão.

- Fígado: Mal-estar, letargia, náuseas, perda de apetite, icterícia (coloração amarela da pele e do globo ocular), prurido.
- Pulmões: Falta de ar, tosse seca.
- Cérebro: Dores de cabeça, náuseas, fraqueza em um ou mais membros.
- Gânglios linfáticos: Inchaço da axila e ao longo do braço.

Como é diagnosticado o cancro da mama avançado?
O cancro da mama avançado pode ser detectado pelo aparecimento des

sintomas ou pela sua recorrência. Nalgumas doentes o cancro da mama diagnosticado já como cancro da mama avançado, enquanto que a outras, que tinham recebido tratamento para cancro da mama, exames subsequentes pod indicar que a doença evoluiu para cancro da mama avançado. Para além análises ao sangue, podem revelar-se necessários outros exames, para confirma diagnóstico. Estes exames podem incluir: Raios-X ao tórax e ao esquel tomografia computorizada, ressonância magnética e ecografia. Os especialis dedicam especial atenção aos locais mais prováveis para o aparecimento metástases: pulmões, fígado, ossos e cérebro.

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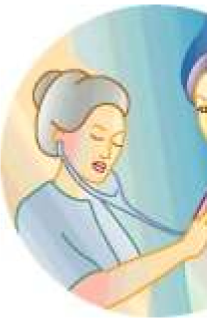
Quais os tratamentos disponíveis?



Durante muitos anos, os principais tratamentos para o cancro da mama avançado, têm sido a quimioterapia e a radioterapia: fazendo parar a evolução do cancro por meio de poderosos fármacos citotóxicos (que destroem as células) ou de radiação. Para além destes, hoje em dia começam a estar disponíveis novas terapêuticas muito importantes, incluindo fármacos que se dirigem directamente às células cancerosas, sem os, por vezes graves, efeitos secundários associados aos antigos tratamentos.

Quimioterapia
O termo quimioterapia engloba o tratamento com muitos fármacos diferentes, usa
sozinhos (quimioterapia com um único agente), ou em associações de dois ou
fármacos (terapêutica combinada). Normalmente administram-se vários ciclos
quimioterapia com intervalos de algumas semanas e portanto o período total
tratamento pode prolongar-se por vários meses. Alguns fármacos são ingeri
oralmente e outros são administrados por injecção intravenosa.

Os efeitos secundários mais frequentemente referenciados, que variam de gravid
conforme os fármacos usados, incluem: fadiga, náuseas, vómitos e perda de cab
Podem-se prescrever fármacos designados por antieméticos, para prevenir ou ali
o enjoo durante o tratamento. O cabelo, que cai por causa da quimioterapi
embora nem todos os fármacos tenham esse efeito – normalmente volta a cres
dentro de poucos meses depois da conclusão do tratamento.

Os fármacos usados na quimioterapia podem originar toxicidade hematológica
sangue), que por sua vez, pode causar uma diminuição na produção das célu
sanguíneas e também nas plaquetas, envolvidas no processo de coagulação. E
toxicidade pode ter como resultado a fadiga (devido à falta de eritrócitos), diminui
da resistência às infecções (falta de leucócitos) e aumento da susceptibilidad
formação de hematomas/hemorragia (falta de plaquetas). Durante o período
tratamento fazem-se regularmente análises ao sangue para verificar se o núm
das células sanguíneas se reduziu. Se for necessário pode-se recorrer a transfus
ou tratamentos médicos para repor o número de eritrócitos. Também
medicamentos disponíveis para melhorar o número de leucócitos e, portan
aumentar a resistência do doente às infecções. Por fim, podem-se administrar out
tratamentos para prevenir a infecção.

Radioterapia
A radioterapia consiste no tratamento do cancro por meio de raios-X ou de out fontes de radioactividade. As fontes deste tipo produzem radiações ionizantes c ao passar através do tecido doente, destroem ou abrandam o desenvolvimento células anómalas. Contudo, a radioterapia pode ter efeitos secundários, tais co danos graves no tecido normal.

A radioterapia é frequentemente utilizada em conjugação com outras formas tratamento do cancro. No cancro da mama, a radioterapia é muitas vezes us depois da remoção cirúrgica dum cancro da mama maligno, para destruir algur células remanescentes do tumor. A radioterapia também pode ser usada p reduzir o tamanho dum tumor, ou para destruir células do cancro da mama que tenham deslocado para outras partes do corpo. A radioterapia, no entanto, s usada quando os benefícios compensam largamente os riscos de causar danos tecido são.

Terapêutica hormonal
As hormonas, substâncias que controlam as funções normais do corpo, tamb afectam algumas células do cancro da mama. Isto é especialmente verdade relação às hormonas da mulher, tal como o estrogénio, relativamente ao qual investigadores acreditam poder exacerbar o desenvolvimento das célu cancerosas. Consequentemente, algumas doentes com cancro podem ser trata com fármacos que têm hormonas ou que inibem a acção destas. O uso preparações hormonais é seguro e os seus efeitos secundários raramente graves.

A terapêutica hormonal permite regressões que perduram muitos anos.

Terapêutica com anticorpos monoclonais
O aumento do conhecimento acerca dos genes humanos responsáveis p crescimento das células cancerosas, conduziu a uma nova fase no tratamento cancro da mama. Uma nova abordagem dirigida ao tratamento do cancro da mai envolve o uso de anticorpos monoclonais. Um anticorpo monoclonal é uma prote sintética que foi preparada expressamente para atingir células cancero específicas no organismo.

O anticorpo monoclonal actua bloqueando a função dum gene de cancro específ associado ao crescimento de cancro da mama agressivo. Além disso, só atinge células cancerosas não actuando nas células sãs. Portanto, os efeitos secundá experimentados pelas doentes com esta terapêutica são habitualmente de natur ligeira – a maior parte das vezes febre e arrepios. Também se acredita que este de terapêutica pode estimular o sistema imunitário para destruir as célu cancerosas.
A única terapêutica actualmente existente com anticorpos monoclonais ating bloqueia a função do gene HER2 do cancro. Os investigadores concluíram qu produção excessiva de HER2 contribui para o crescimento descontrolado células, o que constitui a marca característica do cancro. As doentes nesta situaç designam-se por HER2-positivas.

Calcula-se que, aproximadamente, uma em cada cinco doentes com cancro mama metastizado, é HER2-positiva e investigações recentes sugerem que doentes HER2-positivas são mais susceptíveis às formas mais agressivas de car da mama. Por esta razão, determinar o *status* do HER2 da doente é um d importante na decisão a tomar sobre as melhores opções de tratamento par cancro da mama metastizado.

O uso de um anticorpo monoclonal, representa uma nova e promissora opção p tratar doentes HER2-positivas. Contudo, este tipo de tratamento está condicionad existência de um diagnóstico fiável do *status* de HER2. O diagnóstico do *status* HER2, é feito utilisando testes altamente sensíveis. Estes testes não só determin se uma doente é ou não HER2-positiva, mas também constituem um prognós acerca das doentes que poderão responder a este tratamento.

Como mostram os resultados clínicos, esta nova abordagem do cancro da mam um grande avanço para as doentes HER2-positivas, proporcionando uma melh significativa na qualidade de vida e prolongando a vida das doentes com form agressivas de cancro da mama. Se você for HER2-positiva, pode candidatar-s este novo tipo de tratamento. Determinar o seu *status* de HER2 é, naturalmente, primeiro passo essencial antes de, juntamente com o seu médico, decidir qual melhor tratamento para si.

Tratamento: como é que o médico decide?

O especialista do cancro (oncologista), ao escolher o seu programa de tratamen tem em conta numerosos factores, entre os quais a idade, o estado geral localização das metástases, e o tipo de células cancerosas envolvidas. A princ prioridade na escolha do tratamento, é a melhoria da qualidade de vida da doente decisão acerca do tratamento só pode ser tomada depois de uma cuidad consideração do perfil individual de cada doente, que pode incluir as preferências própria, a juntar à informação clínica.

Testar o *status* do receptor hormonal da doente é importante porque certos tipos tumor podem responder à terapêutica hormonal. É igualmente importante testa *status* do HER2 da doente, dado que disso depende a selecção das doentes HE positivas, que podem ser candidatas ao tratamento com anticorpos monoclonais a HER2.

A terapêutica dirigida, como seja o uso de anticorpos monoclonais, representa u nova área do tratamento do cancro, sendo uma abordagem individualizada p responder a condições genéticas específicas, que podiam conduzir a crescimento incontrolado do cancro. A terapêutica dirigida assenta em testes diagnóstico sofisticados, para se fazer uma escolha eficaz das doentes que m provavelmente responderão a este tipo de tratamento. Além disso, esta n abordagem ao tratamento tem como alvo específico as células cancerosas e tem os efeitos secundários debilitantes associados ao tratamento convencio oferecendo uma opção de tratamento individualizado, com vantagens comprova na sobrevivência, para certas doentes.

Independentemente da abordagem, o perfil único da doente é avaliado tendo idêntica consideração os riscos e os benefícios do tratamento específico escolh O objectivo é sempre alcançar a remissão ou prolongar a vida, melhorando a qualidade.

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O que devo perguntar ao meu médico antes de começar um novo tratamento?

Obviamente, não se deve tomar nenhuma decisão sobre o tratamento sem o seu consentimento. Apresentadas as diferentes opções clínicas, deverá ser informada, sob todos os aspectos, de todos os tratamento indicados no seu caso. Seguidamente apresentamos uma pequena lista de perguntas a ter em consideração quando falar com o seu médico, para a ajudar na escolha do seu plano de tratamento.

- De que maneira este tratamento melhora o meu prognóstico?
- Como será administrado este tratamento?
- Como irá este tratamento afectar a minha vida diária?
- Quais os efeitos secundários associados a este tratamento?
- Os ensaios clínicos deste tratamento envolveram quantas doentes?
- O que sentiram as doentes que fizeram este tratamento?
- Posso falar com alguma das doentes que estão actualmente a fazer este tratamento?
- Pode-me fornecer outras fontes de informação acerca deste tratamento?

Há outras medidas de apoio disponíveis?
Há muitas medidas de apoio disponíveis para as mulheres que lutam contra o car da mama avançado, desde ajuda doméstica para simplificar a vida, até prograr de formação para quem está interessada em conhecer esta doença por dentrc contribuição da medicina clínica, para além de providenciar tratamentos contr cancro, oferece-lhe um programa de tratamento flexível para uma doença que pode alterar rapidamente. A primeira prioridade, claro, é o alívio dos sintor resultantes tanto da própria doença como do seu tratamento. Isto inclui:

Dor
Há numerosos analgésicos diferentes disponíveis, possibilitando aos médicos va a sua prescrição até que seja estabelecido o plano de tratamento mais eficaz. A da morfina, os AINE (fármacos anti-inflamatórios não esteróides) são muitas ve eficazes nas dores ósseas. Outro grupo de fármacos, os bisfosfonatos, aliviam dores ósseas e reduzem o risco de fracturas. Também se recomenda um seda

ligeiro para garantir um sono repousante. Adesivos relaxantes, banhos quente uma ligeira massagem, são factores positivos para aliviar as dores e assegurar repouso adequado.

Náuseas e vómitos
O enjoo pode ser uma consequência do tratamento contra o cancro (e nesse c pára quando o tratamento acabar) ou do próprio cancro. Há vários fármacos cont enjoo (anti-eméticos), algumas agora disponíveis em supositórios. A maior p começa a actuar no espaço de meia hora. Pode-se usar um fármaco ester (dexametasona) para aliviar o enjoo e as dores de cabeça causadas por tum secundários do cancro da mama, localizados no cérebro.

Edema linfático
O edema linfático é uma acumulação de linfa nos tecidos, o que os faz inchar. cancro da mama, é normal um braço inchar devido a danos nos gânglios da axila da sua remoção ou, ocasionalmente, pelo bloqueio dos gânglios linfáticos por cél de cancros secundários. O edema linfático trata-se usando uma manga ou ligad elástica, massagens e fisioterapia, conjuntamente com exercícios espec adequados para ajudar a drenagem do fluido do braço.

Fadiga
A fadiga do cancro é um problema quase universal entre as doentes com cancro. doentes que sofrem de fadiga – resultante da própria doença ou do seu tratamen sofrem muitas vezes duma exaustão debilitante que pode durar dias, semanas meses. Os sintomas de fadiga do cancro incluem não só sentir-se cansada – fr esgotada, esvaída, exausta - mas também dores nas pernas, dificuldade em s escadas ou percorrer pequenas distâncias, respiração ofegante depois de qual actividade ligeira e dificuldade em cumprir as tarefas habituais, tais como cozin limpar, tomar um duche ou fazer a cama. As doentes com a fadiga do cancro po também ter dificuldades de concentração enquanto lêem ou vêem televisão, terem problemas para pensar com lucidez e para tomar decisões. Uma alimenta adequada, suplementos vitamínicos e de sais minerais, medicamentos a depressivos e ansiolíticos, modificação do estilo de vida e até apoio psicológ podem ajudar a aliviar a fadiga.

A fadiga é muitas vezes atribuída a um abaixamento no número dos eritróc (anemia), em resultado tanto da doença e do tratamento, como da exposiçã quimioterapia. Habitualmente os oncologistas recorrem a transfusões de san para aumentar os níveis de eritrócitos e ajudar a recuperar energias. Contudo mu oncologistas tentam evitar transfusões por causa de potenciais riscos. Actualme a medicação para a anemia relacionada com a quimioterapia pode aumenta número dos eritrócitos, diminuir a necessidade da transfusão e, portanto, melhor capacidade da doente para executar as tarefas quotidianas e conviver co doença.

O que se pode fazer mais para ajudar?
Enfrentar um cancro da mama avançado pode acabar com a energia de uma pes e deixá-la exausta e deprimida. Porém, tanto os amigos como os familiares po ajudar a contrariar esta situação adoptando medidas de senso comum p promover o seu descanso e aumentar a sua resistência. O mais importante é descanso e um relaxamento adequados para atenuar todo o stress e tensão possa sentir. Também se deve dar atenção à dieta alimentar: embora haja po apetência pela comida, uma boa alimentação, tanto durante como depois tratamento, é vital.

Para fazer frente às dificuldades emocionais e à terrível incerteza de uma doe
secundária, muita gente é ajudada por grupos de aconselhamento e apoios (
página seguinte) que têm um capital de experiência para partilhar.

Procurar ajuda quando dela se precisa, é uma das coisas mais positivas que p
fazer para recuperar a qualidade de vida e ajudá-la a vencer o cancro da ma
avançado.

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Conhecimentos básicos sobre o cancro

Acerca do cancro da mama

HER2 e o cancro

Sou HER2 positiva - O que significa

Livro: Conhecer lidar e viver com o cancro da mama avançado

- Activa em todas as frentes
- O que é o cancro da mama avançado?
- Quais são os tratamentos disponíveis?
- O que devo perguntar ao meu médico?
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Glossário

Profissionais de Saúde

Conhecer, Lidar e Viver
com o cancro da mama avançado

Progressos no tratamento

Os tratamentos do cancro, tais como a quimioterapia e as radiações, que poc afectar todo o organismo, são, de há muito, os principais tratamentos contra o car da mama. Contudo, à medida que os investigadores começam a desvendar o cóc genético humano, tornam-se aptos a desenvolver novas e mais eficazes terapêuticas contra o cancro, com mecanismos de acção inovadores, como por exemplo os anticorpos monoclonais que podem atingir os genes do cancro da mama. Estes fármacos podem combater o cancro actuando directamente contra as células malignas, sem provocar os graves efeitos secundários associados aos tratamentos anticancerígenos convencionais, permitindo que as doentes melhorem a qualidade e a esperança de vida.

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ADN: abreviatura para ácido desoxirribonucleico, o material que existe nas célula
que transporta a informação genética

Alopécia: queda do cabelo

Anticorpo: proteína produzida por determinado tipo de leucócitos para ajuda
combater as infecções

Anticorpo monoclonal: uma proteína de síntese produzida a partir da reprodu
de várias cópias de uma única célula, em laboratório. A terapêutica com anticor
monoclonais é utilizada para atingir células cancerosas específicas no organis
(por exemplo, o Herceptin)

Biópsia: remoção de células do organismo para realização de análises laborator
para caracterização da doença

Crescimento benigno: crescimento de células não tumorais e que não se espalh
para outras partes do organismo

Fármaco citotóxico: fármaco que afecta ou mata as células cancerosas

Gânglios linfáticos: estruturas pequenas em forma de feijão que se encontram
todo o organismo e que produzem anticorpos que combatem as infecções e
podem aumentar devido a metástases do cancro

Gene: um segmento de ácido desoxirribonucleico (ADN) que codifica a produçã
um polipéptido específico (proteína) com uma função específica ou que determ
uma característica específica num organismo

Imunoterapia: tratamento com substâncias que estimulam o sistema imunitário
organismo para atacar as células cancerosas

Medula óssea: tecido mole que se encontra no centro de alguns ossos que pro
células sanguíneas

Modalidade terapêutica combinada: tratamento com dois ou mais modos
tratamento contra o cancro: cirurgia, radioterapia, quimioterapia e imunoterapia

Mal-estar: sensação vaga, não localizada, de desconforto

Malignidade: outro termo para designar o cancro

Mastectomia: remoção cirúrgica da mama

Metástase: a disseminação do cancro a partir da sua localização original. O te
também é utilizado para designar um tumor secundário

Mielossupressão: diminuição da produção de células sanguíneas e de plaquetas
medula óssea. É um efeito secundário de alguns fármacos citotóxicos

Oncologista: um médico especializado no tratamento do cancro

Proteína: uma substância composta por aminoácidos e que pode ter diferen
funções no organismo, incluindo hormonal, estrutural ou de desencadeamento
uma reacção química (uma enzima)

Quimioterapia: tratamento com fármacos que podem afectar ou matar as célu
cancerosas (fármacos citotóxicos)

Quimioterapia adjuvante: tratamento com um ou mais fármacos anticanceríge
após a remoção cirúrgica do tumor.

Quimioterapia combinada: utilização de dois ou mais fármacos anticanceríge
para reforçar os resultados

Remissão: uma diminuição da gravidade dos sintomas ou o seu desaparecime
temporário, no decurso de uma doença

Toxicidade: o potencial para os fármacos e outras substâncias causarem danos
organismo

Tratamento local: tratamento aplicado a um zona específica, como a cirurgia o
radioterapia (ver ainda "tratamento sistémico")

Tratamento paliativo: o que se destina a aliviar os sintomas mas não cura a doe

Tratamento sistémico: o tratamento com efeitos em todo o organismo e
apenas numa pequena área. A quimioterapia é um tratamento sistémico, enquant
radioterapia é um tratamento local

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Referências

Europa Donna – The European Breast Cancer Coalition Key Facts Sheet 2000.

Cancer BACUP. *Understanding Secondary Breast Cancer.* September 1999.

American Cancer Society's Breast Cancer Resource Center On-line. 2000

Breakthrough Breast Cancer. Breast Cancer Research Brochure. Annual Revi 1998-99

The British Medical Association. *The Complete Family Health Encyclopedia. 1990*

Genentech Inc. *FindingYour Way* information supplements (3). 2000

F. Hoffmann – La Roche Ldt., *HER2 Patient Information.* www.her2status.com

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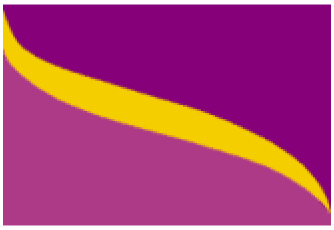

Outros Sites com Informação

Organização Mundial de Saúde

Europa Donna- The European Breast Cancer Coalition

European Organisation for the Research and Treatment of Brest Cancer

European Institute of Women's Health/Women's Cancer Information Project

Rochenet

Para mais informações sobre o *Her2*:**http://www.her2status.com/**

“GRUPO DE PATOLOGIA MAMÁRIA DO HOSPITAL DE S. JOÃO”

GUIA PARA A DOENTE COM CANCRO DA MAMA

INTRODUÇÃO

O cancro da mama é a forma mais comum de cancro entre as mulheres. Por essa razão, o Gabinete de Enfermagem – Grupo de Patologia Mamária, realizou este guia com o objectivo de esclarecê-la, de uma forma simples, sobre os tratamentos, reabilitação e apoios que poderá necessitar.

Sabemos que publicações como esta não respondem a todas as questões que a vão preocupar e não podem, de forma alguma, substituir o diálogo com os profissionais de saúde. É nosso desejo facilitar esse diálogo.

ÍNDICE

AJUDA NA QUALIDADE DE VIDA

COMUNICAÇÃO

Inicialmente pode não conseguir falar da sua doença. É importante conseguir ultrapassar essa inibição.

Na comunicação existem duas vertentes: a sua capacidade para comunicar com a família, amigos e outras pessoas e a dessas pessoas comunicarem consigo.

Falar sobre o modo como se sente pode ajudá-la na sua recuperação. Quando se sentir preparada, partilhe os seus sentimentos com alguém e verá que esse primeiro passo a deixará mais aliviada.

Comunicação com a sua equipa de tratamento

O diagnóstico e o tratamento do cancro da mama podem ser a mais importante e dramática experiência no campo da sua saúde. Compreendemos que se sinta assustada. Estamos aqui para ajudá-la!

Necessitará de se acostumar ao ambiente hospitalar. A comunicação que estabelecer com a equipa que a trata é muito importante. Queremos ser acolhedores e amigos e estamos atentos a todos os problemas.

É muito importante perguntar!

Faça saber à equipa de saúde que a trata, o nível de informação que necessita. Assim, ficaremos a saber mais de si e das suas necessidades.

Não existem perguntas inoportunas. Poderá começar por perguntar sobre o seu tratamento e efeitos secundários do mesmo.

Nas primeiras consultas médicas e entrevistas, serão tomadas decisões sobre o seu tratamento e ser-lhe-á fornecida muita informação. Talvez seja melhor fazer-se acompanhar por um membro da família ou amigo para a ajudar a entender toda a informação que lhe derem.

COMUNICAÇÃO COM A FAMÍLIA

Para a maioria das pessoas, a família é o principal suporte emocional que, tal como você, necessita de tempo para se ajustar a esta nova realidade.

O seu companheiro também tem temores e medos. Devem ajudar-se mutuamente falando sobre eles e usando apenas a verdade na exteriorização das emoções.

A comunicação é a chave para encontrar uma nova perspectiva sobre cada um de vós.

Por muito que deseje, o seu companheiro não pode curá-la. As reacções normais ao medo são o silêncio, a impaciência e a revolta. Deve dar-se conta que essa pessoa querida está também a tentar lidar com emoções fortes. Esta situação pode ser uma oportunidade para falarem dos vossos sentimentos.

Você ainda é a mesma pessoa com quem o seu companheiro escolheu viver.

Por mais forte que seja uma relação, o cancro da mama pode ser uma carga excessiva para o casal. Grupos de apoio, amigos e padres, podem ajudá-los a ajustarem-se a esta nova situação, como pessoas e como casal.

Quando se sentirem preparados, poderão falar de todos os medos ou qualquer outra questão. A cirurgia não diminui a sua capacidade de amar. No inicio, poderão passar por momentos difíceis. Desenvolver a capacidade de ter paciência um com o outro, ajudará a que tenham uma melhor qualidade de vida. Como casal, é importante que se aconselhem com o seu médico em relação ao melhor método anticoncepcional.

As crianças reagem à doença dos pais de maneiras diferentes: ou recriminam as mães por estas se encontrarem doentes ou preocupam-se por acharem que terão sido a causa da doença da mãe. Mas todas têm medo.

As crianças mais pequenas reagem mais às suas atitudes do que à situação actual da sua doença. Noutras palavras, adoptarão o comportamento que você tiver. Se for positiva em relação ao seu diagnóstico e o aceitar, elas provavelmente também o farão. Elas sabem mais do que se lhes diz. A falta de uma explicação tranquila de um adulto sobre o que se passa, poderá levá-las a imaginar que se passa algo pior.

Embora tenha a tentação de não falar aos seus filhos da sua situação, é melhor que seja sincera. Aquando da hospitalização da mãe, as crianças mais pequenas sentem-se frequentemente abandonadas; sabem que "algo" de mal se passa e ficam com medo quando a mãe volta triste e débil.

Os adolescentes podem alterar o seu comportamento de repente porque temem que a doença da mãe não lhes permita conservar a independência que tinham começado a desfrutar. Compartilhe com eles alguns dos seus sentimentos. É uma boa ideia dar aos filhos uma explicação verdadeira e facilmente compreensível, mas não necessariamente completa. Tudo dependerá da idade das crianças. Se fizerem perguntas, responda com sinceridade.

Os pais devem observar as reacções dos filhos: alterações de humor ou noites mal dormidas. Estas alterações podem indicar que o seu filho está em stress. Deve falar com os professores dele. As crianças sob stress podem tornar-se manipulativas ou introvertidas. Arranje tempo para cuidar de si e dos seus filhos. Permita-lhes que a ajudem no seu caminho para a recuperação.

A MULHER SOLTEIRA

As mulheres que necessitaram de cirurgia da mama enfrentam sós, não só o aspecto físico da sua recuperação, como os temores de sobrevivência e a perda da feminilidade ou atracção sexual.

Para a mulher que se encontra só, estas dúvidas e medos podem agudizar-se, particularmente se não tem em quem se apoiar.

A mastectomia não é barreira para o romance, o amor ou o casamento.

Se tem ou não compromisso com alguém, o melhor é tratar o cancro da mama como qualquer outro acontecimento critico da sua vida. Os seus amigos serão um grande apoio, como o são em qualquer outra ocasião.

Use o seu próprio senso comum para decidir com quem e quando poderá compartilhar a sua experiência.

COMUNICAÇÃO COM OS ADULTOS

Embora sinta que algo de grave aconteceu ao seu corpo, lembre-se que tem de recuperar a sua saúde. Trate de decidir o que quer e o que necessita. Veja com quem pode contar.

Um aspecto da comunicação com os adultos é o seu desejo de aceitar ajuda. É importante que você saiba que não pode fazer tudo sozinha.

No início pode decidir que não quer falar com a sua família mas, quando se sentir pronta para isso, peça-lhes que a escutem e conte-lhes como se sente. Eles sentem tanto ou mais carinho por si agora do que antes do diagnóstico.

Fale com as mulheres da sua família para que possam aprender as medidas preventivas contra o cancro da mama, tais como o auto-exame e a realização de mamografias.

TRATAMENTOS / RECONSTRUÇÃO DA MAMA

CIRURGIA DA MAMA

Com a descoberta de uma alteração da mama que a levou a consultar um médico, verificou-se ser necessário fazer uma cirurgia.

Esta cirurgia, poderá ser:

- **Tumorectomia** - Remoção do tumor e uma pequena porção de tecido saudável circundante e, se necessário, dos gânglios linfáticos da axila do lado afectado.
- **Mastectomia** - Remoção da glândula mamária, do mamilo e da aréola, assim como da pele necessária, de acordo com a localização do tumor, e ainda dos gânglios linfáticos da axila do lado afectado.

A Radioterapia, a Quimioterapia e a Hormonoterapia, são tratamentos usados frequentemente em associação com a cirurgia.

Se a mastectomia com esvaziamento axilar for necessária, a Medicina Física e de Reabilitação intervirá na prevenção e tratamento da rigidez da articulação do ombro no lado operado. Com fisioterapia e, se necessário, massagens e electroterapia, este problema poderá ser atenuado ou até eliminado. Após uma operação à mama, o tratamento das cicatrizes e da dor, assim como do braço inchado (edema) estarão a cargo da Medicina Física.

Além das visitas operatórias, quando deverá consultar o cirurgião depois da operação à mama?

Se surgirem: - Dor - Alterações na pele - Outros sintomas que a incomodem

Estes factos não indicam uma progressão do cancro da mama. Na maioria dos casos, os sintomas são de tipo inflamatório e são eficazmente aliviados pelo tratamento com medicamentos ou fisioterapia.

Se retirou parcial ou totalmente a mama, ficará contente por saber que a maioria das mulheres que passaram por esta situação se adaptaram bem e retomaram a sua vida habitual sem problemas.

TRATAMENTO MÉDICO: QUIMIOTERAPIA / HORMONOTERAPIA

Muitas vezes, a cirurgia da mama tem que ser complementada com outros tratamentos para melhor assegurar o sucesso da cura.

Assim, na Quimioterapia faz-se a administração de medicamentos (citostáticos), por via endovenosa ou oral e na Hormonoterapia (Tamoxifeno), durante um período de tempo limitado (uma vez por semana, de três em três semanas ou uma vez por mês) tendo em conta: o tipo de doença, a respectiva medicação, o tempo que o organismo leva a reagir favoravelmente e a tolerância aos efeitos secundários.

O tratamento é feito habitualmente em regime ambulatório.

Algumas doentes sentem muito receio pelos incómodos que estes tratamentos possam causar: náuseas, vómitos, queda de cabelo, secura da boca, alterações do paladar, falta de apetite, diarreia, obstipação, alterações menstruais (ciclos irregulares ou a sua ausência total), alterações na cor e cheiro da urina, diminuição de glóbulos brancos (leucopenia), diminuição dos glóbulos vermelhos (anemia), pele mais escura e seca que provoca comichão, falta de forças, cansaço fácil, formigueiros nas mãos e pés, adormecimento dos braços ou pernas.

Todos estes sintomas são temporários, desaparecendo no final do tratamento, e há meios eficazes que atenuam, de forma muito significativa, o seu impacto negativo.

Deverá por isso tentar ter uma postura positiva e: - Combater o desânimo - Distrair-se - Passear - Conviver com a sua família e amigos - Evitar o isolamento

É importante que informe o seu médico acerca de outros medicamentos que estiver a tomar em paralelo com os tratamentos de Quimioterapia. Isto também inclui os suplementos vitamínicos e sais minerais.

RADIOTERAPIA:

Este tratamento utiliza uma forma especial de radiação, chamada "radiação ionizante".

A radiação provoca alterações nas células tumorais. Esta radiação é doseada de acordo com cada situação concreta, de modo que as células saudáveis não sofram alterações graves de uma forma permanente. No entanto, é possível eliminar as células anormais que compõem o tumor e curar a doente.

Deve pois saber que:

- A radioterapia não é dolorosa. Para além de ter que se manter imóvel (por apenas alguns minutos), não há qualquer desconforto durante o tratamento .
- A radioterapia é dirigida apenas à área onde se encontra a sua doença. As outras áreas do seu corpo não são afectadas pelo tratamento.
- Não há qualquer perigo de contágio com as outras pessoas por estar a fazer o tratamento.

- Normalmente, as doentes são encorajadas a manter a sua vida o mais normal possível.

Efeitos laterais:

A grande maioria das doentes não apresentam qualquer efeito lateral durante a Radioterapia. Habitualmente, quando aparecem queixas, estas estão relacionadas com a área de tratamento, pois a pele na área tratada adquiriu uma tonalidade avermelhada ou acastanhada.

Cuidados com a pele:

- Tente manter a sua pele seca na área tratada
- Lave a pele com um sabão neutro ou de glicerina
- Não esfregue a pele
- Não use desodorizante se a axila estiver a ser tratada
- Use roupas de algodão em contacto com a pele tratada
- Evite temperaturas altas ou baixas sobre a pele. Evite também a exposição ao Sol.
- Se necessário, ser-lhe-á aconselhado algum creme, pomada ou ainda outra medicação.

As alterações na pele manter-se-ão por mais uma ou duas semanas após o fim dos tratamentos, e, por isso, os cuidados referidos anteriormente devem manter-se por todo este tempo.

RECONSTRUÇÃO DA MAMA

A reconstrução da mama é um procedimento cirúrgico ou uma série de procedimentos que tentam criar uma forma de mama tão normal quanto possível depois da mastectomia total (Ver Figura).

As razões que levam a mulher a querer uma reconstrução mamária são várias:

- Sentir-se fisicamente renovada obtendo uma sensação de maior liberdade
- Comodidade e conveniência de não ter que usar uma prótese externa
- Aumentar o sentido de atracção sexual
- Maior variedade no tipo e estilo de roupa que podem usar

Embora cada caso seja diferente, a maioria das mulheres pode fazer uma reconstrução. Se está interessada fale com o seu cirurgião, que certamente lhe explicará os procedimentos, riscos e benefícios da mesma. Esta pode fazer-se ao mesmo tempo que a mastectomia ou anos mais tarde.

VOLTAR À VIDA NORMAL

TOMAR BANHO OU DUCHE

Pode-se tomar duche logo que a ferida esteja seca e bem curada (mesmo que ainda restem zonas de crosta na zona dos pontos). Depois de várias sessões de radioterapia os sinais de inflamação da pele (pele avermelhada e sensação de calor) deverão ter diminuído. Esta diminuição surge 2 a 3 semanas após a operação e a temperatura da água do duche não deve superar os 37 ou 38ºC.

Os sabões e produtos similares podem irritar a pele; use-os com moderação, uma vez que a pele à volta da cicatriz e na axila estão particularmente sensíveis.

Os óleos de banho são especialmente adequados como complemento. Estes produtos mantêm a pele flexível e só terá que aplicar um creme hidratante nas zonas onde a pele está mais seca.

Se tem tendência para quedas de tensão arterial ou vertigens, sempre que possível tome banho quando estiver presente alguém que possa ajudá-la. A queda da pressão arterial ocorre principalmente ao sair da banheira e pode ser particularmente incomodativo não poder movimentar-se livremente ou apoiar-se no braço do lado operado.

ACTIVIDADE FÍSICA

Devido à cirurgia, os músculos que não se movimentam de forma regular ou não se utilizam completamente, por ex: ao levantar o braço, começam a ficar em tensão durante os primeiros dias de repouso. Por este facto, deverá prestar atenção à manutenção e recuperação do movimento completo do ombro. A tensão muscular causa com frequência dor nas zonas do ombro, braço e tórax e inclusivamente dores de cabeça.

Além desta alteração muscular, algumas mulheres que foram submetidas a cirurgia e retiraram gânglios linfáticos da axila devem ter em conta determinadas precauções para evitar que o braço inche (edema). Esta situação é conhecida como linfedema. Os Gãnglios linfáticos actuam como um sistema filtrante de excesso de líquidos, células anormais e de outros produtos da infecção; quando estes gânglios são retirados corre-se um maior risco de aparecimento desta situação.

O linfedema pode surgir logo após a cirurgia ou meses depois (normalmente é transitório).

É vantajoso tomar as seguintes precauções para diminuir o risco de linfedema:

- Sempre que seja possível, evite tirar sangue, aplicar injecções e vacinas, bem como medir as tensões, no braço do lado operado.
- Se se cortar, for mordida por insectos ou se queimar nesse braço, lave com todo o cuidado a área afectada com água e sabão e mantenha-a limpa. Trate a zona com alguma pomada antibacteriana e cubra-a com uma compressa estéril. Para evitar a infecção, troque a compressa frequentemente.
- Utilize luvas quando fizer jardinagem, quando trabalhar com produtos caseiros irritantes e quando mantiver as mãos dentro de água durante um longo período de tempo (por ex: lavar a loiça).
- Proteja os dedos contra picadelas de objectos afiados, tais como agulhas e alfinetes. Use dedal quando coser.
- Quando tratar das unhas não corte as cutículas, empurre-as para trás.
- Devido à insensibilidade causada pela cirurgia, não utilize uma gilette para cortar os pelos das axilas, mas sim uma máquina de barbear, pois evita que se corte sem querer.
- Evite levantar coisas pesadas com o braço afectado.

- Evite utilizar anéis, pulseiras ou relógios que apertem.
- Evite as queimaduras do Sol, especialmente no braço e peito, e utilize cremes protectores.
- Se tem o braço inchado utilize um desodorizante em vez de um anti-transpirante, isto pode ajudar a manter os poros abertos.

EXERCÍCIO FÍSICO:

O exercício físico é fundamental para manter uma boa forma física e psicológica melhorando a saúde em geral. Um passeio de 30 minutos diário é uma maneira fácil e económica de fazer exercício. Mas há muitas maneiras de o fazer, por isso, encontre uma que goste e mantenha-a, mas não se esqueça, que qualquer que seja a escolha, deverá primeiro consultar o seu médico.

Banho em piscinas, no mar e em balneários:

Há muitas mulheres que não sabem nadar mas disfrutam da água como uma forma de relaxamento. Especialmente após uma mastectomia, terá mais tendência para uma tensão muscular. Na água, sentir-se-á mais livre e leve.

O que deverá fazer?

- Entre calmamente na água até à altura dos ombros e deixe flutuar ligeiramente os braços sobre a superfície da água. - Sinta a sensação de "se deixar levar" - Ande lentamente para trás e para a frente e gire, os braços seguirão estes movimentos automaticamente. Estique os braços o máximo que puder para os lados e relaxe de novo. Esta alternância entre relaxamento e extensão só lhe fará bem.

Pode utilizar a água como uma força de resistência. Mova os braços lentamente para trás e para a frente ou para os lados ao longo do corpo. Faça exercícios que ache divertidos, mas que nunca exijam movimentos rápidos ou súbitos.

Muitas piscinas têm jactos de água que servem como uma massagem. É benéfico apanhar um jacto de água ligeiro nos ombros, pescoço e no braço.

Depois de tomar banho no mar, tome duche com água doce, prestando especial atenção aos cuidados a ter com a pele.

Um banho no mar é extremamente agradável para mulheres com um edema no braço.

EXERCÍCIOS DE ADAPTAÇÃO:

Dos muitos exercícios que se podem aconselhar para uma recuperação rápida de mobilidade do seu braço que ficou afectado pela cirurgia, escolhemos estes três:

1º Exercício: Junto de uma parede:

Com os pés bem assentes e em perfeito equilíbrio, encoste-se a uma parede e comece a levantar os braços lateralmente para atingir na parede um ponto acima da sua cabeça. Poderá marcar esse ponto para verificar os seus progressos. Com a continuação conseguirá levantá-los ao máximo. Faça este exercício lentamente várias vezes ao dia.

2º Exercício: Esticar o braço:

Pegue numa corda com 1,5 a 2 metros e faça um nó em cada extremidade. Faça passar a corda por um varão, ou eventualmente na parte de cima de uma porta. Sentada ou de pé, segurando em cada mão uma das extremidades da corda, puxe alternadamente, ora com a direita, ora com a esquerda. Cada um dos braços deve erguer-se totalmente estendido.

Deve começar por fazer este exercício 5 vezes de manhã e outras tantas à tarde, aumentando gradualmente até 25 vezes.

3º Exercício: Com vara:

Procure equilibrar-se bem sobre os pés, mantendo as pernas afastadas, os braços estendidos para a frente, segurando uma vara. Com os cotovelos estendidos, levante os braços de modo a que a vara fique por cima da cabeça. Repita várias vezes este exercício de manhã e à tarde.

Atenção: deverá consultar o seu médico para ter a certeza que não existe nenhuma contra-indicação para efectuar estes exercícios.

Para além dos exercícios mencionados, existem muitos gestos no dia a dia que a podem ajudar na sua recuperação, desde que os faça de uma forma correcta. Por Exemplo:

- Escovar os cabelos - Deverá sentar-se junto de uma cómoda ou mesa alta. O tampo deverá ficar ao nível da sua axila. Apoie o cotovelo na mesa e comece a pentear e escovar os cabelos com o braço do lado operado, mantendo a cabeça direita. Deverá começar só por um lado da cabeça e avançar progressivamente até conseguir escovar todo o cabelo.
- O chuveiro - Lave as costas, o pescoço e os cabelos tentando segurar o chuveiro com o braço do lado operado. Ao enxaguar as costas pode usar a toalha, para exercitar o braço.
- Outros pequenos gestos - Vestir ou despir uma camisola, apertar o soutien ou apertar um fecho éclair, estender a roupa, etc... são pequenos exercícios que a podem ajudar.

RELAXAMENTO

O relaxamento é uma técnica que provoca uma diminuição da actividade fisiológica do indivíduo, acompanhada por uma sensação de calma, paz e bem-estar. Pode também ser utilizado para indução do sono em pessoas que, devido à sua ansiedade, tenham dificuldade em adormecer.

Aproveite uma ocasião em que disponha de tempo livre (30 minutos são suficientes). Caso contrário, é melhor não o fazer.

Escolha um local tranquilo, isento de ruídos ou de possíveis interrupções, de preferência semi-obscurecido, adoptando uma posição que lhe agrade, deitada ou sentada numa cama, num divã ou numa cadeira confortável.

Deve recostar-se para trás, apoiando-se nas partes superior, média e inferior das costas. Mantenha a cabeça erguida e descontraída e, se lhe agradar, feche os olhos.

Comece por contrair individualmente os músculos superiores do corpo (punhos, músculos do antebraço e braço, ombros, maxilares, músculos da testa, músculos do pescoço, músculos do tórax e, por fim, os músculos da barriga) durante cerca de 15 segundos, descontraindo-se de seguida. Faça o mesmo para os músculos inferiores do corpo durante 7 a 8 segundos (músculos das pernas e dos pés).

Mantenha uma respiração lenta e abdominal, dizendo para si própria: " Sinto-me completamente descontraída... relaxada. O meu corpo está leve e tranquilo...".

Agora que sente o seu corpo bem descontraído, coloque dentro de si a sua imagem de paz - uma imagem que lhe dê tranquilidade, calma, serenidade, boa disposição. Reviva por completo, durante cerca de um minuto, a sua imagem de paz, observando todos os pormenores... o que vê... o que ouve... o que sente...

Quando terminar, não abra de imediato os olhos. Deve primeiro espreguiçar-se, abrir a boca e bocejar, se quiser. Conte lentamente até 3 e só depois abra os olhos. Tente sentir a diferença entre o início e agora.

DESCANSO

O descanso é importante para o seu bem-estar geral. Depois da cirurgia, talvez consiga dormir mais comodamente com o braço levantado. Assim, pode colocar uma almofada pequena debaixo do braço afectado para aliviar a pressão.

Camisas de noite e pijamas soltos também podem ajudar a passar uma boa noite.

O VESTUÁRIO

Comprar ou fazer a roupa vai certamente continuar a ser interessante para si, pois vai verificar que a maioria dos estilos que preferia antes da sua cirurgia continuarão a assentar-lhe bem. Vestidos sem mangas, roupas justas e fatos de banho.

Portanto, não se apresse a desfazer-se da maioria das suas roupas, pois verá que um segundo olhar sobre elas pode despertar a sua imaginação e criatividade para os adaptar a si.

O uso de fato de banho após a mastectomia:

O fato de banho deve vestir-se de modo a que não se notem diferenças entre os 2 lados e deve, acima de tudo, permitir movimentos normais. Por este motivo, o fato de banho deve ter um decote pequeno. Deverá ter copa, onde possa colocar a prótese, impedindo que ela se desloque enquanto nada. Os biquinis são mais adequados para mulheres magras e de peito pequeno. Talvez possa também usar um biquini que já tenha as próteses incorporadas. Experimente! Quase todas as mulheres com peitos de tamanho normal ou grande se sentem mais confiantes e melhor com um fato de banho que esteja na moda. Se já não puder utilizar o fato de banho que tinha até à operação, então aconselhe-se junto de uma loja especializada na venda de próteses ou até mesmo numa loja de fatos de banho.

Alguns fatos de banho e biquinis podem ser adequados ao corpo da pessoa e é possível coser uma "bolsa" para colocar a prótese, tal como já se falou anteriormente. Se tomar banho ou nadar são duas coisas que lhe dão prazer, é muito importante que se sinta cómoda com o seu fato de banho. A sua felicidade e bem estar compensarão qualquer gasto extra que possa surgir.

PROFISSÃO

Poderei continuar com o meu trabalho actual?

Muitas mulheres interrogam-se sobre este facto. Informe-se junto do seu médico que certamente lhe dará a informação mais correcta.

PRÓTESES MAMARIAS E SOUTIENS

A prótese mamaria externa de silicone é, para a maioria das mulheres, a solução para manter um aspecto normal. Elas só podem ajustar-se bem utilizando um soutien de medida correcta. Uma prótese mamaria bem escolhida aumenta a sua auto-confiança de forma considerável, o que contribui para o seu processo de cura.

Quando se coloca a prótese mamaria?

Após a cirurgia, pode utilizar-se uma prótese tipo "almofadinha" feita com algodão acrílico no interior e tecido de algodão no exterior. A prótese mamaria final, normalmente de silicone, só pode ser colocada quando o penso já não seja necessário ou seja um penso fino e que já não se verifique inchaço.

Onde se pode obter a prótese mamaria e os soutiens?

Se desejar, pode recorrer às ortopedias, farmácias e casas especializadas neste tipo de material, que apresentam uma variedade maior de próteses e soutiens. O seu médico saberá o que necessita fazendo um pedido de ajudas técnicas.

Que cuidados deve ter com as próteses mamarias?

A prótese inicial de algodão deve ser lavada à mão em água tépida e sabão neutro e posta a secar sem torcer.

A prótese de silicone pode ser lavada, seca e utilizada de novo imediatamente. Quando não a utilizar, guarde-a na caixa própria de modo a conservar a sua forma, já que objectos pontiagudos a danificam, não sendo possível repará-la.

CUIDADOS A TER COM O SOL

Se gosta de se expor ao sol, deverá reduzir o tempo de exposição e ter atenção ao braço inchado, utilizando um creme com uma elevada protecção solar.

ALIMENTAÇÃO

(em desenvolvimento)

CONDUZIR

Três semanas após a cirurgia, já se encontra outra vez bem e a ferida deverá estar completamente curada. Então já poderá conduzir. Se tiver problemas de circulação ou vertigens, deverá aguardar mais um pouco.

FUMAR

Fumar é um risco grave para a sua saúde, deixe de fumar!

NOTAS ADICIONAIS

AUTO-EXAME DA MAMA

É muito importante que faça o auto-exame das mamas com regularidade. Se foi operada, deverá incluir também essa área. Toque-se com suavidade, cuidado e meticulosamente. Se encontrar algo que não lhe pareça normal, comunique-o ao seu médico. Assegure-se que examina toda a mama, as axilas e, particularmente, a área da cicatriz.

Como há alterações nos tecidos depois da cirurgia, deverá fazer o auto-exame com frequência e este irá dar-lhe uma perspectiva do que é normal no seu corpo.

Idealmente, o auto-exame da mama deve fazer-se ao 8º dia do período menstrual. Se já não é menstruada, este exame deve efectuar-se todos os meses escolhendo, de preferência, o mesmo dia.

Como fazer o auto-exame da mama?

1 – Comece por se colocar em frente a um espelho com os braços ao lado do corpo e verifique se há alterações.

2 – Coloque as mãos sobre a cintura e faça pressão para dentro. Depois, vire-se para ambos os lados e procure qualquer alteração.

3 – Ponha as mãos atrás da cabeça para assim distender a pele das mamas e volte-se novamente para um lado e para o outro, em busca de alterações. Inspeccione cuidadosamente a parte inferior das mesmas.

4 – Verifique se há escorrência do mamilo, pressionando-o suavemente entre os dedos polegar e indicador.

5 – Fazendo compressão com a mão, começando abaixo da clavícula até ao mamilo, procure alterações em relação aos exames anteriores.

6 – Para completar o auto-exame, deite-se. Coloque uma almofada por baixo do seu ombro esquerdo, coloque a sua mão esquerda atrás da cabeça e examine a sua mama esquerda com a mão direita. (Um pouco de loção de bebé tornará os seus dedos mais sensíveis).

Coloque a mão direita abaixo da clavícula e da sua mama esquerda, mantendo os seus dedos juntos e direitos. Com pressão firme e homogénea, mova a sua mão em circulo em redor da mama.

LEGISLAÇÃO PROTECTORA AOS DOENTES DO FORO ONCOLÓGICO

O Decreto-Lei nº 92/2000 de 19 de Maio tem como objecto regular a protecção especial a atribuir às pessoas que sofram de doença do foro oncológico que, pela sua gravidade e evolução, origina, uma situação de incapacidade.

Como proceder, então para obter a determinação do grau de incapacidade? (Dec. Lei nº 202/96 de 23 de Outubro)

- Obtenha do seu médico especializado no foro oncológico uma declaração médica e um relatório, referente ao seu problema, assim como uma declaração para isenção do pagamento de taxas moderadoras em consultas e meios complementares de diagnóstico (Dec. Lei nº 54/92 de 11 de Abril, Dec. Lei nº 287/95 de 30 de outubro, Dec. Lei nº 249/96 de 8 de Agosto, Dec. Lei nº 341/93 de 30 de Setembro).
- Dirija-se ao Centro de Saúde da sua área de residência e apresente os documentos ao seu médico de família (relatório médicos e meios auxiliares de diagnóstico complementares de que disponha), que analisará a sua situação clinica e a poderá propor ou não para uma prestação especifica.
- Deverá fazer também o pedido oficial da sua situação clinica ao Hospital, para posteriormente se dirigir à Delegação de Saúde da área da sua residência, onde será organizado o seu processo para determinação do seu grau de incapacidade.
- O Delegado Regional de Saúde deverá então convocar a Junta Médica e notificá-la-á da data do exame, a realizar no prazo de 60 dias a contar da data da entrega do requerimento.

A avaliação da incapacidade é calculada de acordo com a Tabela Nacional de Incapacidades, por uma Junta Médica, cujo presidente passará o respectivo atestado médico de incapacidade, obedecendo aos princípios gerais de utilização daquela tabela.

Caso não concorde com a avaliação efectuada, pode recorrer, no prazo de 30 dias, para o Director Geral de Saúde.

Este atestado de incapacidade tem uma “função multiuso” e pode ser utilizado sempre que precise de usufruir de um benefício, salvo algumas situações específicas em que a lei estabeleça condicionantes.

Alguns benefícios:

- Usufrui de benefício fiscal a nível de I.R.S., podendo diminuir o escalão deste de acordo com o seu grau de incapacidade

- Pode recorrer ao crédito para aquisição de habitação própria, desde que possua rendimentos que lhe possibilitem o seu pagamento, beneficiando de empréstimos nas mesmas condições dos trabalhadores das instituições de crédito nacionalizadas, desde que possua um grau de deficiência igual ou superior a 60%. Não necessita de se dirigir a nenhuma instituição de crédito em especial. (Dec. Lei 230/80 de 16 de Julho, Dec. Lei nº 541/80 de 10 de Novembro).

Em condições muito especiais, e desde que o seu grau de incapacidade o justifique, poderá ainda beneficiar:

- De isenção de imposto sobre veículos (Art. 5º do Dec. Lei nº 103-A/90 de 22 de Março, com as alterações introduzidas pelo Dec. Lei nº 259/93 de 22 de Julho e Lei nº 10-B/96 de 23 de Março)
- De subsídio de renda de casa (Art. 3º do Dec. Lei 68/86 de 27 de Março)
- De subsídio mensal vitalício (Art. 6º do Dec. Lei 170/80 de 29 de Maio)

BIBLIOGRAFIA

Biblioteca Médica da Família – Combater o Cancro – Editora Civilização.

Mastectomia – Guia del Paciente – Camino de Recuperación – American Cancer Society.

Radiation Therapy and You – A Guide to Self-Help during treatment – National Cancer Institute.

For Single Women with Breast Cancer – Y-ME – National Breast Cancer Organization.

What You Need to Know About Breast Cancer – Asta Medica.

Breast Cancer Treatment Guidelines for Patients – American Cancer Society; National Comprehensive Cancer Network

I Still Buy Green Bananas – Living With Hope, Living With Breast Cancer - Y-ME – National Breast Cancer Organization.

Benefícios para pessoas com deficiência – Secretariado nacional para a reabilitação e integração das pessoas com deficiência – Folhetos Nr. 7, 8, 10 e 17.

Consejos Prácticos de la A a la Z – Después de cirurgia por Cáncer de mama – Dra. Maria Hussain; E. Mayer Spitzweck – Asta Médica – Oncologia.

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ANEXO II

Matriz de codificação global dos dados

MATRIZ DE CODIFICAÇÃO GLOBAL DE DADOS

INFORMAÇÃO SOBRE DIAGNÓSTICO DE CANCRO DA MAMA VEICULADA NOS “WEB SITES”
VARIÁVEIS TEMÁTICAS

Código	Conteúdos Informativos	Código	Conteúdos Informativos	Código	Conteúdos Informativos	Código	Conteúdos Informativos
EFRE	Etiologia/Factores de risco /Epidemiologia	SINT	Sintomatologia	TC	Terapêuticas/Cuidados	VCAM	Viver com cancro da mama
PREV	Prevenção	DX	Diagnóstico	EC	Ensaios clínicos	-----	-----------------

CATEGORIAS E SUB-CATEGORIAS

Código	Princípio Bioético	Código	Princípio Bioético	Código	Princípio Bioético	Código	Princípio Bioético
AUT	Potencialidades da informação para o exercício da autonomia	BEN	Potencialidades da informação para aportar benefícios	NMAL	Informação susceptível de causar dano	JUS	-----------------
REV	Revelação	PPREV	Promoção de condutas preventivas	RD	Possibilidade de dano ou colocar em risco de dano	-----	-----------------
COP	Compreensão	CONT	Promoção do controlo da doença	EPD	Estratégias para prevenir o dano	-----	-----------------
DEC	Decisão	------	-------------------------	-----	--------------------	----	-----------------
CON	Consentimento	------	-------------------------	-----	--------------------	----	-----------------

ANEXO III

Matrizes de redução de dados

MATRIZ DE REDUÇÃO DE DADOS

INFORMAÇÃO SOBRE DIAGNÓSTICO DE CANCRO DA MAMA VEICULADA NOS “WEB SITES”

CATEGORIA: Potencialidades da informação para o exercício da autonomia (AUT)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTO DE TEXTO	“WEB SITE”	VARIÁVEL TEMÁTICA
	Revelação (REV)	• Conteúdos informativos: - Etiologia/factores de risco/Epidemiologia - Prevenção - Sintomatologia - Diagnóstico -Terapêuticas/Cuidados - Ensaios clínicos - Viver com cancro da mama • Informação exposta em secções independentes com índice remissivo em hiperligação na “home page” • Enunciado da finalidade da informação na “home page” • Critério: “pessoa razoável”	«O Gabinete de Enfermagem – Grupo de Patologia Mamária, realizou este guia com o objectivo de esclarecê-la, de uma forma simples, sobre os tratamentos, reabilitação e apoios que poderá necessitar.»	S1, S2, S3 S1, S2, S3 S1, S2, S3 S1, S2, S3 S1, S2, S3, S4 S1, S2 S1, S2, S4 S1, S2, S3, S4 S4 S1, S2, S3, S4	EFRE PREV SINT DX TC EC VCAM
	Compreensão (COMP)	• Frases curtas • Imagens • Sem terminologia científica • Glossário de termos • Descodificação de termos no interior da narrativa	«…phytoestrogens (naturally occurring estrogens that are in high numbers in soy)…» «…if a woman has a particularly strong family history of breast cancer (meaning multiple relatives affected, especially if they are under 50 years old when they get the disease)…» «…preventive (prophylactic) mastectomies…»	S1, S2, S3, S4 S1, S2 S1, S2, S3, S4 S1, S3 S1 S1 S1	TC EFRE EFRE

CATEGORIA: Potencialidades da informação para o exercício da autonomia (AUT)	**SUB-CATEGORIA**	**OBSERVAÇÕES**	**EXTRACTO DE TEXTO**	**“WEB SITE”**	**VARIÁVEL TEMÁTICA**
	Compreensão (COMP)		«…how abnormal it looks (known as the grade)…»	S1	DX
			«…the borders (also known as the margins)…»	S1	DX
			«…radiation therapy uses high energy rays (similar to x-rays)…»	S1	DX
			«…umbilicus (belly button)…»	S1	TC
			«…radiation therapist (a specially trained technologist)…»	S1	TC
			«…tattoos (tiny permanent skin markings the size of a freckle)…»	S1	TC
			«…hair loss (alopecia)…»	S1	TC
			«…dysphagia (difficulty in swallowing)…»	S1	TC
			«…anemia (decreased red blood cell count)…»	S1	TC
			«…neutropenia (decreased red white cell count)…»	S1	TC
			«…thrombocytopenia (low platelet count)…»	S1	TC
			«…nucleotide (DNA components)…»	S1	TC
			«…oral (taking pills or capsules by mouth)…»	S1	TC
			«…intravenous (IV) (injecting medication into a vein)…»	S1	TC
			«…intramuscular (IM) (injecting medication into the muscle)…»	S1	TC
			«…subcutaneously (injecting medication into the skin)…»	S1	TC
			«…nervous system (brain /spinal cord)…»	S1	DX
			«…axilla (underarm area)…»	S1	
			«…radioisotope dye (a low-level radioactive substance)…»	S1	DX
			«…benign (non-cancerous) or malignant (cancerous)…»	S1	DX
			«…ultrasound (a study done in Radiology that uses waves to take pictures of the inside of your body)…»	S1	DX
			«…incision (cut)…»		DX; TC
			«…if you get uncomfortable in small places (claustrophobia)…»	S1	DX

	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTO DE TEXTO	“WEB SITE”	VARIÁVEL TEMÁTICA
CATEGORIA: Potencialidades da informação para o exercício da autonomia (AUT)	Compreensão (COMP)		«…"augmented" (made bigger) or "reduced" (made	S1	TC
			smaller)…»		
			«…lumpectomy (also known as a partial mastectomy	S1	TC
			or breast conserving surgery)…»		
			«…"clear margins" (no cancer cells in the tissue	S1	DX
			immediately surrounding the tumor)…»	S1	TC
			«…microscopic (too small to be seen)…»	S1	TC
			«…lymphedema (swelling of the arm)…»		
			«…drains (thin, flat rubber tubes a few inches	S1	TC
			long)…»	S3	EFRE
			«…não ter filhos (nuliparidade)…»	S3	DX
			«…tumores secundários (metástases)…»	S3	DX
			«…tumor original (primário)…»		
			«…icterícia (coloração amarela da pele e do globo	S3	SINT
			ocular)…»	S3	TC
			«…citotóxicos (que destroem as células)…»	S3	TC
			«…hematológica (do sangue)…»	S3	TC
			«…especialista do cancro (oncologista)…»		
			«…fármacos contra o enjoo (anti-eméticos)…»	S3	TC
			«…hipóteses de progredir (metastizar)…»	S3	DX
			«… acumulação de líquidos tecidulares (edema)…»		
			«…armpit (axilla)…»	S3	DX
			«…lymph glands (lymph nodes)…»		
			«…cysts (sacs of fluid which build up in the breast	S2	DX
			tissue)…»		
			«…fibroadenomas (solid tumours made up of fibrous	S2	DX
			and glandular tissue)…»		
			«…periods early (early puberty)…»	S2	DX
			«…bilateral breast cancer (cancer in both breasts)…»	S2	EFRE
			«…a nipple becoming inverted (turned in)…»		
			«…mammograms (breast x-rays)…»	S2	EFRE
			«…GP (family doctor)…»		
			«…pathologist (a doctor who is expert at diagnosing	S2	SINT
			illness by looking at cells)…»	S2	DX
			«…secondary breast cancer (cancer that has spread)»	S2	DX

CATEGORIA: Potencialidades da informação para o exercício da autonomia (AUT)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTOS DE TEXTO	“WEB SITE”	VARIÁVEL TEMÁTICA
	Compreensão (COMP)		«…lymphoedema (arm stiffness and swelling)…»	S2	DX
			«…cancer specialist (clinical oncologist)…»	S2	DX
			«…radiographer (who gives you your treatment)…»	S2	TC
			«…feeling sick (nausea)…»	S2	TC
			«…breathlessness (due to the effect of radiotherapy on the lung, and weakening of the ribs in the treatment area)…»	S2	TC
			«…injection into a vein (*intravenously*)…»	S2	TC
			«…Anemia (low number of red cells)…»	S2	TC
			«…anti-sickness drugs (anti-emetics)…»	S2	TC
			«…chemotherapy can be used before an operation (this is known as *neo-adjuvant therapy*)…»	S2	TC
			«In advanced cancer (cancer that has spread into surrounding tissue or other parts of the body)…»	S2	DX
			«…anti-cancer (cytotoxic) drugs…»	S2	TC
			«…supportive (palliative) care…»		
			«…injected into a muscle (intramuscular injection)…»	S2	TC
			«…just under the skin (subcutaneous injection)…»	S2	TC
			«…injected into the fluid around the spine (intrathecal injection)…»	S2	TC
			«…PICC line (a peripherally insert central line)…»	S2	TC
			«…fine tube (cannula)…»	S2	TC
			«…fine plastic tube (called a central line)…»	S2	TC
			«…lymphoma (cancer which starts in the lymph system)…»	S2	TC
			«…research studies (clinical trials)…»	S2	EC
			«…bone marrow (the spongy material that fills the bones and produces new blood cells)…»	S2	TC
			«…level of red blood cells (haemoglobin)…»	S2	TC
			«…feel sick (nausea), or actually be sick (vomit)…»	S2	TC
			«…prosthesis (false breast)…»	S2	TC
			«…tinning of the bones (osteoporosis)…»	S2	VCAM
			«…plant oestrogens (phytoestrogenes)…»	S2	VCAM

CATEGORIA: Potencialidades da informação para o exercício da autonomia (AUT)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTOS DE TEXTO	“WEB SITE”	VARIÁVEL TEMÁTICA
	Compreensão (COMP)	• Estratégias para assegurar a compreensão da informação	«…medication to thin their blood (anticoagulants)…»	S2	TC
			«…tiny channels (lymph vessels)…»	S2	TC
			«…nipple (aureola)…»	S2	DX
			«…removal the breast (mastectomy)…»	S2	DX
			«…the areola (the dark area of skin around the nipple…»	S2	TC
			«…in a number of areas in the breast (*multi-focal*)…».	S2	DX
			«…surgery aimed at keeping as much of the breast tissue as possible (known as *breast-conserving therapy*)…»	S2	DX
			«…lump removed (lumpectomy)…»	S2	TC
			«…milk ducts (the channels in the breast that carry milk to the nipple)…»	S2	TC
			«…spread into (*invade*)…»	S2	DX
			«…tiny specks of calcium have collected in the breast ducts (known as microcalcification)...»	S2	DX
			«…removing a sample of tissue (a *biopsy*)…»	S2	DX
			«…inchado (edema)…»	S4	TC
			«…alterações menstruais (ciclos irregulares ou a ausência total)…»	S4	TC
			«…diminuição de glóbulos brancos (leucopenia)…»	S4	TC
			«…diminuição de glóbulos vermelhos (anemia)…»	S4	TC
			«…inflamação da pele (pele vermelha e sensação de calor)…»	S4	TC
			«…if you have any questions about your own treatment don’t be afraid to ask your doctor or hospital nurse. You may like to take a close relative or friend with you to remind you of questions at the time or the answers afterwards. It often helps to make a list of the questions you want to ask and the answers that you are given…»	S2	TC

CATEGORIA: Potencialidades da informação para o exercício da autonomia (AUT)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTOS DE TEXTO	“WEB SITE”	VARIÁVEL TEMÁTICA
	Compreensão (COMP)		«…if you do not understand what you have been told, let the staff know straight away so that they can explain again. Some cancer treatments are complex, so it is not unusual for people to need repeated explanations…»	S2	TC
			«…is important for you to be aware of how the treatment is likely to affect you…»	S2	TC
			«..before any operation, make sure that you have fully discussed what it involves with your surgeon and that you have all the information you need...»	S2	TC
			«…it is often a good idea to have a friend or relative with you when the treatment is explained, to help you remember the discussion more fully. You may also find it useful to write down a list of questions before you go for your appointment…»	S2	TC
			«…your doctor or chemotherapy nurse will explain your treatment plan. If you have any questions, don't be afraid to ask. It often helps to make a list of questions and to take a close relative or friend with you to remind you of things you want to know but can easily forget…»	S2	TC
			«…if you don't understand the explanation, then keep asking until you do. Remember it is your right to know what is happening to your body and how your life may be affected…»	S2	TC
			«…your doctor must discuss the treatment with you so that you have a full understanding of the trial and what it means to take part…»	S2	EC
			«…ample time will be provided so that you have a full understanding of the treatment and related issues and have all of your questions and concerns answered in full. We encourage you to bring family members or significant others with you, as they may be able to help you during the process and have their own questions answered…»	S1	TC

CATEGORIA: Potencialidades da informação para o exercício da autonomia (AUT)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTOS DE TEXTO	“WEB SITE”	VARIÁVEL TEMÁTICA
	Compreensão (COMP)		«…you may request that a friend or family member go with you to your first few appointments to help take notes, clarify information, or simply be there as a source of support. Your care partner does not have to be the same person all of the time, but it should be someone who can help you gather and understand the large amount of information you will receive…»	S1	TC
			«…before your appointment, discuss these questions with your care partner and give them a copy so he or she can help to ensure that you get the answers you need…»	S1	TC
			«…it is important to have all of your questions answered…»	S1	EC
			«…by signing the document, patients are acknowledging that they understand the potential risks and benefits of the treatment they are to receive or of any tests that may be required. Non-English-speaking patients may ask for consent documents in their own language…»	S1	EC
			«…before you sign the consent form, you need to make sure that you are comfortable with the explanation that you have received…»	S1	TC
			«…talvez seja melhor fazer-se acompanhar por um membro da sua família ou amigo para a ajudar a entender toda a informação que lhe derem…»	S4	TC
	Decisão (DEC)	• Delegam a autoridade da decisão em saúde ao cibernauta	«…the decision to get tested is a highly personal one that should be discussed with a doctor who is trained in counselling patients about genetic testing…»	S1	EFRE
			«…the option to receive chemotherapy should be offered to most patients with breast cancer and they can decide if the potential benefits of chemotherapy outweigh its side effects in their own particular case…»	S1	TC

CATEGORIA: Potencialidades da informação para o exercício da autonomia (AUT)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTOS DE TEXTO	“WEB SITE”	VARIÁVEL TEMÁTICA
	Decisão (DEC)	- Recursos para o desenvolvimento de actos autónomos	«…but the decision to undergo hormonal therapy is a personal one that you should make with your doctor…»	S1	TC
			«…the decision to do a delayed versus immediate reconstruction is a highly personal one, that can only be made on an individual basis…»	S1	TC
			«…women need to be informed about their options so that they can make these highly personal decisions with all of the facts…»	S1	TC
			«…So you may be asked to choose the treatment that you feel suits you best…»	S2	TC
			«…the choice of an effective contraceptive is a very personal one…»	S2	TC
			«…you can always ask for more time to decide about the treatment, if you feel that you can’t make a decision about what to do when it is first explained to you…»	S2	TC
			«…this can be a difficult decision to make. It is important to discuss both options fully with your doctor, breast care nurse, or one of the support organizations so that you feel confident you have made the choice that is right for you…»	S2	TC
			«…the decision about whether to accept chemotherapy treatment can be a difficult one and you may need to discuss it in detail with your doctor. The nurses at CancerBACUP can also discuss the benefits and disadvantages with you…»	S2	TC
			«…juntamente com o seu médico, decidir qual é o melhor tratamento para si…»	S3	TC
			«…based on your own health, your personal values and wishes, and side effects you may wish to avoid, you can work with your doctors to come up with the best regimen for your lifestyle…»	S1	TC

CATEGORIA: Potencialidades da informação para o exercício da autonomia (AUT)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTOS DE TEXTO	"WEB SITE"	VARIÁVEL TEMÁTICA
	Decisão (DEC)	• Direito à recusa e revogação da decisão	«…the most important thing that must be decided on decided on with their team of oncologists is how to best treat the cancer and reduce their risk of a recurrence or spread. Patients should discuss their options with their team of oncologists to pick a strategy that is best suited to them and their disease…»	S1	TC
			«…women need to have access to all of the facts, and then they can decide what they desire with their oncologists and families…»	S1	TC
			«…it is also important for women to have their families involved in these decisions, or at least to be present to hear everything their oncologists have to say…»	S1	TC
			«…medical considerations along with personal feelings lead ultimately to a decision that is best for you. Your doctors, nurses, counselors and family can help you make the choice with which you will be most comfortable…»	S1	TC
			«…it's important to get the guidance of your whole medical team including your medical oncologist, surgical oncologist, and radiation oncologist, as well as your plastic surgeon…»	S1	TC
			«…it is important to work with your health care team to make decisions that are best for your particular situation …»	S1	TC
			«…even after you have signed the consent, your physician is always available to answer new questions or to provide additional information. You can withdrawal your consent at any time for any reason…»	S1	TC

	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTOS DE TEXTO	"WEB SITE"	VARIÁVEL TEMÁTICA
CATEGORIA: Potencialidades da informação para o exercício da autonomia (AUT)	Decisão (DEC)		«…you can always ask for more time to decide about the treatment, if you feel that you can't make a decision when it is first explained to you. You are also free to choose not to have the treatment, and the staff can explain what may happen if you do not have it…»	S2	TC
			«…if you decide against having treatment, tell a doctor, or the nurse in charge, immediately so that he or she can record your decision in your medical notes…»	S2	TC
			«…you are also free to choose not to have the treatment. The staff can explain what may happen if you do not have it. It is essential to tell a doctor, or the nurse in charge, immediately so that they can record your decision in your medical notes. You do not have to give a reason for not wanting to have treatment, but it can be helpful to let the staff know your concerns so that they can give you the best advice…»	S2	TC
	Consentimento (CON)	• Acto de autorização	«…you may decide not to take part or withdraw from a trial at any stage. You will then receive the best standard treatment available…»	S2	EC
			«…before you have any treatment your doctor will explain the aims of the treatment to you and you will usually be asked to sign a form saying that you give your permission (*consent*) for the hospital staff to give you the treatment. No medical treatment can be given without your consent, and before you are asked to sign the form you should have been given full information about: • the type and extent of the treatment you are advised to have • the advantages and disadvantages of the treatment	S2	TC

CATEGORIA: Potencialidades da informação para o exercício da autonomia (AUT)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTOS DE TEXTO	"WEB SITE"	VARIÁVEL TEMÁTICA
	Consentimento (CON)		• any possible alternative treatments that may be available • any significant risks or side effects of the treatment…»	S2	TC
			«…these marks must stay throughout your treatment, and permanent marks (like tattoos) may be used. These are tiny, and will only be done with your permission…»	S1	TC
			«…before you have any chemotherapy your doctor will explain the aims of the treatment to you and you will usually be asked to sign a form saying that you give your permission (consent) for the hospital staff to give you the chemotherapy…»	S1	TC
			«…all patients are required to read and sign a manufacturer's consent for implant use. The form reviews the potential risks of silicone implants…» «…before patients enter a clinical trial, all of the procedures that are to be done in the trial will be explained, and patients will be asked to sign an *informed consent*. Non-English-speaking patients may ask for consent documents in their own language…»	S1	EC
			«…obviamente, não se deve tomar nenhuma decisão sobre o tratamento sem o seu consentimento…»	S3	TC

MATRIZ DE REDUÇÃO DE DADOS

INFORMAÇÃO SOBRE DIAGNÓSTICO DE CANCRO DA MAMA VEICULADA NOS “WEB SITES”

	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTO DE TEXTO	“WEB SITE”	VARIÁVEL TEMÁTICA
CATEGORIA: Potencialidades da informação para o aporte de benefícios (BEN)	Promoção de condutas preventivas (PPREV)	• Apresenta e descreve a sintomatologia	«…unfortunately, the early stages of breast cancer may not have any symptoms. This is why it is important to follow screening recommendations. As a tumor grows in size, it can produce a variety of symptoms including: • lump or thickening in the breast or underarm • change in size or shape of the breast • nipple discharge or nipple turning inward • redness or scaling of the skin or nipple • ridges or pitting of the breast skin …»	S1	SINT
			«…if you experience these symptoms, it doesn't necessarily mean you have breast cancer, but you need to be examined by a doctor…»	S1	SINT
			«…warning signs include a lump or thickening of the breast or armpit; a change in the size or shape of the breast; a discharge from the nipple; or a change in the color or feel of the skin of the breast or nipple….»	S1	SINT
			«…Invasive (infiltrating) ductal carcinoma…it is characterized by its solid core, which is usually hard and firm on palpation…»	S1	SINT
			«…Inflammatory Breast Carcinoma is characterized by diffuse skin edema, skin and breast redness, and firmness of the underlying tissue without a palpable mass…»	S1	SINT
			«…Paget's disease of the nipple is a rare form of breast cancer that is characterized clinically by eczematoid changes of the nipple...»	S1	SINT

CATEGORIA: Potencialidades da informação para o aporte de benefícios (BEN)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTO DE TEXTO	"WEB SITE"	VARIÁVEL TEMÁTICA
	Promoção de condutas preventivas (PPREV)		«…In most women, breast cancer is first noticed as a painless lump in the breast. Other signs may include: • a change in the size or shape of a breast • dimpling of the skin of the breast • a lump or thickening in the breast tissue • a nipple becoming inverted (turned in) • a lump or thickening behind the nipple • a bloodstained discharge from the nipple (this is very rare) • a swelling or lump in the armpit…»	S2	SINT
			«…Sinais e sintomas do cancro da mama …muitas vezes apenas como um caroço, pequeno e firme. Na maior parte dos casos…o caroço não é doloroso embora algumas mulheres…refiram dor. Outros sinais de alarme incluem • Perda de sangue ou de líquido pelo mamilo • Acumulação local de fluidos tecidulares • Alteração no tamanho, no bordo ou na posição do mamilo…»	S3	SINT
			«…Por norma o cancro da mama, na fase inicial ou não dá nenhum, ou dá um pequeno sinal que é habitualmente detectado num check-up de rotina. Contudo poderá sentir outros sintomas, tais como fadiga, mal-estar e falta de apetite, embora estes sintomas sejam comuns a muitas outras situações, não só ao cancro. Poderá também sentir um conjunto de sintomas possíveis, dependendo da zona do corpo afectada. Por exemplo: Área da mama: um pequeno caroço ou nódulo e por vezes saída de fluido; ossos: dor persistente. Outros sintomas, provocados por níveis anómalos de cálcio no sangue, incluem sede, vontade frequente de urinar, náuseas, fadiga, prisão de ventre, irritabilidade e confusão.		

CATEGORIA: Potencialidades da informação para o aporte de benefícios (BEN)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTO DE TEXTO	“WEB SITE”	VARIÁVEL TEMÁTICA
	Promoção de condutas preventivas (PPREV)	• Benefícios da detecção precoce	• Fígado: Mal-estar, letargia, náuseas, perda de apetite, icterícia (coloração amarela da pele e do globo ocular), prurido. • Pulmões: Falta de ar, tosse seca. • Cérebro: Dores de cabeça, náuseas, fraqueza em um ou mais membros. • Gânglios linfáticos: Inchaço da axila e ao longo do braço…»	S3	SINT
			«…proper screening and early detection are our best weapons in reducing the mortality associated with this disease…»	S1	PREV
			«…the earlier that a breast cancer is found, the more likely it is that treatment can be curable. For this reason, we screen for breast cancer using mammograms, clinical breast exams, and breast self-exams…»	S1	PREV
			«…mammograms often detect tumors before they can be felt and they can also identify tiny specks of calcium that could be an early sign of cancer. Regular screening mammograms can decrease the mortality of breast cancer by 30%. The majority of breast cancers are associated with abnormal mammographic findings. Woman should get a yearly mammogram starting at age 40 (although some groups recommend starting at 50), and women with a genetic mutation that increases their risk or a strong family history may want to begin even earlier…»	S1	PREV
			«…between the ages of 20 and 39, every woman should have a clinical breast exam every 3 years; and after age 40 every woman should have a clinical breast exam done each year…»	S1	PREV
			«…studies have shown that adherence with mammogram screening can reduce the chance of a woman dying of breast cancer…»	S1	PREV

CATEGORIA: Potencialidades da informação para o aporte de benefícios (BEN)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTO DE TEXTO	"WEB SITE"	VARIÁVEL TEMÁTICA
	Promoção de condutas preventivas (PPREV)		«…every woman should do a self breast exam once a month, about a week after her period ends. If you find any changes in your breasts, you need to contact your doctor. About 15% of tumors are felt but cannot be seen by regular mammographic screening…»	S1	PREV
			«…Patient education, with instructions in breast self-examination, regular physical examinations every four to six months, and mammography in accordance with standard guidelines are appropriate surveillance techniques…»	S1	PREV
			«..The earlier a breast cancer is diagnosed and treated, the better the chance of successful treatment. In the UK, all women between the ages of 50 and 69 are offered mammograms (breast x-rays) every three years, as part of a national breast screening programme. This aims to detect breast cancers early, so that there is a high chance of successful treatment…»	S2	PREV
			«…any different or unusual change in the breast should always be examined by a doctor, because even though most breast lumps are benign, they still need to be checked carefully to rule out the possibility of cancer. Also, if it is a cancer, the earlier the treatment is given, the more likely it is to be successful…»	S2	PREV
			«If you notice any change in the breast between these appointments you can arrange to see the breast cancer specialist earlier.»	S2	PREV
			«If you have had DCIS it is important to have your unaffected breast checked regularly by mammogram (at least every three years).»	S2	PREV

	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTO DE TEXTO	“WEB SITE”	VARIÁVEL TEMÁTICA
CATEGORIA: Potencialidades da informação para o aporte de benefícios (BEN)	Promoção de condutas preventivas (PPREV)	• Orientação para adopção de comportamentos salutogénicos	«…If you do notice a lump or are aware of any new change in your breast visit your doctor straight away…»	S2	PREV
			«…It is important to become familiar with how your breasts normally feel at different times of the month. You will then quickly be aware of any changes in your breasts that are not normal for you…If you are concerned about anything unusual in your breasts, you should make an appointment to discuss this with your GP…»	S2	PREV
			«…Se a doença é detectada cedo, antes de ter tido hipóteses de progredir (metastizar) atingindo outros tecidos para além da mama, a taxa de sobrevivência pode chegar a 95%, durante pelo menos 5 anos…»	S3	PREV
			«…Se a doença é detectada e tratada cedo, antes de ter tido hipóteses de progredir (metastizar) e desenvolver-se até ser um cancro da mama avançado, a taxa de sobrevivência pode chegar a 95% - um argumento poderoso a favor do aumento do conhecimento acerca do cancro da mama e do aperfeiçoamento dos programas de rastreio…»	S3	PREV
			«…there are a few risk factors that may be modified by a woman that potentially could influence the development of breast cancer. If possible, a woman should avoid long-term hormone replacement therapy, have children before age 30, breastfeed, avoid weight gain through exercise and proper diet, and limit alcohol consumption to 1 drink a day or less. For women already at a high risk, their risk of developing breast cancer can be reduced by about50% by taking a drug called Tamoxifen for five years. Tamoxifen has some common side effects (like hot flashes and vaginal discharge), which are not serious and some uncommon side effects (like		

CATEGORIA: Potencialidades da informação para o aporte de benefícios (BEN)	**SUB-CATEGORIA**	**OBSERVAÇÕES**	**EXTRACTO DE TEXTO**	**“WEB SITE”**	**VARIÁVEL TEMÁTICA**
	Promoção de condutas preventivas (PPREV)		blood clots, pulmonary embolus, stroke, and uterine cancer) which are life threatening. Tamoxifen isn't widely used for prevention, but may be useful in some cases. There are limited data suggesting that vitamin A may protect against breast cancer but further research is needed before it can be recommended for prevention. Other things being investigated include phytoestrogens (naturally occurring estrogens that are in high numbers in soy), vitamin E, vitamin C, and other drugs. Further testing of these substances is also needed before they can be recommended for breast cancer prevention…» «The causes of breast cancer are not yet completely understood. The risk of developing breast cancer is very small in young women and increases as women get older. More than half of breast cancers occur in women over the age of 65. Some factors may slightly increase a woman’s risk of developing the disease and these are described below. • Having had breast cancer. • Having had certain types of benign breast disease (*lobular carcinoma in situ* or *atypical lobular hyperplasia*) in the past. • Women who are taking hormone replacement therapy (HRT), or have recently taken it, have a slightly increased risk of breast cancer. Younger women who take HRT because they have had an early menopause, or have had their ovaries removed, do not have an increased risk of breast cancer until after the age of 50. • Taking the contraceptive pill very slightly increases a woman’s chance of developing breast cancer.	S1	EFRE

CATEGORIA: Potencialidades da informação para o aporte de benefícios (BEN)	**SUB-CATEGORIA**	**OBSERVAÇÕES**	**EXTRACTO DE TEXTO**	**“WEB SITE”**	**VARIÁVEL TEMÁTICA**
	Promoção de condutas preventivas (PPREV)	• Limites da intervenção primária na prevenção do cancro da mama	• Women who do not have children are slightly more likely to develop breast cancer then women who do have children. • Women who start their periods early (early puberty) or have a late menopause have a slightly higher risk of breast cancer. Women who have never breastfed are slightly more likely to develop breast cancer than women who have breastfed for more than a year. • Being overweight, once you have had your menopause, can increase the risk of breast cancer. • Drinking a lot of alcohol over many years can increase the risk…» «Os factores de risco que podem aumentar a probabilidade de desenvolver cancro da mama incluem: • história familiar da doença • envelhecimento • exposição aos agentes cancerígenos • não ter filhos (nuliparidade) ou ter o primeiro filho depois dos 30 anos). Além disso, uma vida menstrual longa, resultado de uma menarca precoce ou de uma menopausa tardia, aumenta o risco de cancro. Finalmente, alguns investigadores acreditam que a obesidade, uma alimentação rica em gorduras, a ingestão excessiva de álcool e o uso de medicamentos contendo estrogénios (terapêutica de substituição hormonal ou pílulas anticoncepcionais) podem aumentar o risco de cancro....» «…the most important risk factors for the development of breast cancer cannot be controlled by the individual. There are some risk factors that are associated with an increased risk, but there is not a	S2 S3	EFRE EFRE

CATEGORIA: Potencialidades da informação para o aporte de benefícios (BEN)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTO DE TEXTO	“WEB SITE”	VARIÁVEL TEMÁTICA
	Promoção de condutas preventivas (PPREV)	• Limites da intervenção primária na prevenção do cancro da mama	clear cause and effect relationship…right now, the most important thing any woman can to decrease her cancer is to have regular mammogram screening, learn how to perform breast self exams, and have a regular physical examination by their physician…» «…there are no interventions proven to decrease risk. The data on the use of exogenous hormones are controversial enough that a firm recommendation to avoid their use cannot be made. Similarly, the link between dietary fat and breast cancer is weak, and there is little evidence to suggest that altering the diet or alcohol consumption in the adult life changes breast cancer risk. …»	S1 S1	EFRE EFRE
	Promoção do controlo da doença (CONT)	• Percurso de diagnóstico e exames complementares	«You will probably begin by seeing your GP (family doctor) who will examine your breasts. If the GP is not sure what the problem is, you will be referred to hospital for specialist advice or treatment.At the hospital the doctor will take your medical history before carrying out a physical examination. They will examine your breasts and feel for any enlarged lymph glands under your arms and at the base of your neck. The following tests may be used to diagnose breast cancer. You may have one or two of the tests, or a combination…» «…Mammography - A mammogram is a low-dose x-ray of the breast tissue. You will need to take off the clothes from the top part of your body, including your bra. The radiographer will then position you so that the breast is placed on the x-ray machine and gently but firmly compressed with a flat, clear, plastic plate. The breast tissue needs to be squashed (compressed) to keep the breast still and to get a clear picture. Most women find this uncomfortable and for some women it is painful for a short time.	S2	DX

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	Promoção do controlo da doença (CONT)		You will need to stay still for less than a minute while the picture is taken…»	S2	DX
			«…Ultrasound - Ultrasound is used to see if a lump is solid or contains fluid (a cyst). It is usually used in women under the age of 35.A special gel is spread onto the breasts and a small device, which emits sound waves, is passed over the area. The echoes are converted into a picture of the breast tissue by a computer.This test is painless and takes just a few minutes…»	S2	DX
			«…Colour Doppler ultrasound - A colour Doppler ultrasound machine can show the blood supply to the lump. The blood supply shows up as patches of red or blue colour on the scan and the pattern of the blood flow can help to tell the difference between a cancer and a benign lump…»	S2	DX
			«…Needle (core) biopsy - A needle (core) biopsy may be done. A doctor uses a needle to take a small piece of tissue from the lump or abnormal area. Local anaesthetic is injected into the area first to numb it. You may feel a little soreness or a sensation of pressure for a short time. The sample is then sent to a laboratory to be looked at by a *pathologist* (a doctor who is expert at diagnosing illness by looking at cells). Depending on the number of biopsies taken, the breast tissue may be quite bruised and sore afterwards, and this may take a couple of weeks to completely disappear. ..»	S2	DX
			«…Fine needle aspiration - A fine needle aspiration (FNA) is a quick, simple procedure which is done in the outpatient clinic. Using a fine needle and syringe, the doctor takes a sample of cells from the breast lump and sends it to the laboratory to see if any cancer cells are present. As the breast is sensitive, the needle aspiration may be quite uncomfortable and		

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	Promoção do controlo da doença (CONT)		the breast may be bruised for a week or so afterwards. Sometimes (especially if the lump is small) a needle aspiration may be carried out in the x-ray department. The doctor uses x-ray or ultrasound guidance to make sure that the needle takes cells from the abnormal area of the breast…»	S2	DX
			«…Blood tests - Samples of your blood will be taken to check your general health, the number of cells in your blood (blood *count*) and to see how well your kidneys and liver are working. Your blood may also be tested to see whether it contains particular chemicals (*markers*), which are sometimes produced by cancer cells…»	S2	DX
			«…Excision biopsy - An excision biopsy may be done. The whole lump is removed under a general or local anaesthetic and sent to a laboratory for examination under a microscope. This may mean an overnight stay in hospital but is done as day surgery in some hospitals. If a lump is too small to be felt, but has shown up on mammography or ultrasound, the radiologist may need to mark the area for the surgeon, before the excision biopsy. This is done by inserting a very small wire (a guide wire) under local anaesthetic, using x-ray or ultrasound guidance. The procedure is known as *wire localisation*.Many hospitals have a special ‘one stop’ breast cancer clinic. This means you will have all the necessary tests and some of the test results on the same day. It may take longer in other hospitals for the results to come through…»	S2	DX
			«…Once a patient has symptoms suggestive of a breast cancer or an abnormal screening mammogram, they will usually be referred for a diagnostic mammogram. A diagnostic mammogram is another set of x-rays; however, it is more complete		

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	Promoção do controlo da doença (CONT)		with close ups on the suspicious areas. Sometimes, particularly if your doctors think that you may have a cyst or you are young and have dense breasts, you may be referred for an ultrasound. An ultrasound uses high-frequency sound waves to outline the suspicious areas of the breast. It is painless and can often distinguish between benign and malignant lesions…»	S2	DX
			«…Depending on the results of the mammograms and/or ultrasounds, your doctors may recommend that you get a biopsy. A biopsy is the only way to know for sure if you have cancer, because it allows your doctors to get cells that can be examined under a microscope. There are different types of biopsies; they differ on how much tissue is removed. Some biopsies use a very fine needle, while others use thicker needles or even require a small surgical procedure to remove more tissue. Your team of doctors will decide which type of biopsy you need depending on your particular breast mass…»	S1	DX
			«…Once the tissue is removed, a doctor known as a pathologist will review the specimen. The pathologist can tell if it is cancer or not; and if it is cancerous, then the pathologist will characterize it by what type of tissue it arose from, how abnormal it looks (known as the grade), whether or not it is invading surrounding tissues, and if the entire lump was excised, the pathologist can tell if there are any cancer cells left at the borders... The pathologist will also test the cancer cells for the presence of estrogen and progesterone receptors as well as a receptor known as HER-2/neu. The presence of estrogen and progesterone receptors is important because cancers that have those receptors can be treated with		

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	Promoção do controlo da doença (CONT)		hormonal therapies. HER-2/neu expression may also help predict outcome. There are also some therapies.HER-2/neu expression may also help predict outcome. There are also some therapies directed specifically at tumors dependent on the presence of HER-2/nue…»	S1	DX
			«…In order to guide treatment and offer some insight into prognosis, breast cancer is staged into five different groups. This staging is done in a limited fashion before surgery taking into account the size of the tumor on mammogram and any evidence of spread to other organs that is picked up with other imaging modalities; and it is done definitively after a surgical procedure that removes lymph nodes and allows a pathologist to examine them for signs of cancer…»	S1	DX
			«…Depending on the stage of your cancer, your doctor may want additional tests to see if you have metastatic disease. If you have a stage III cancer, you will probably get a chest x-ray, CT scan and bone scan to look for metastases. Each patient is an individual and your doctors will decide what is necessary to adequately stage your cancer…»	S1	DX
			«…A biopsy is a surgical procedure that removes a sample of tissue from the body. The tissue is then examined under the microscope by a pathologist to determine if there is cancer present. Pathologists are physicians who are specially trained to diagnose diseases using tissue or other samples from the body…»	S1	DX
			«…A needle localization biopsy is done when an abnormality is seen on mammogram but no lump can be felt on physical exam…is used to make a precise and develop a treatment plan that is best for you…		

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	Promoção do controlo da doença (CONT)		involves the removal of the entire lump, or area of concern, in your breast. This is usually done as an outpatient procedure (Ambulatory Procedure Unit). You will start the day in Radiology where the radiologist uses mammography or ultrasound to guide the needle into the area of concern. The needle is then removed and a flexible wire is left in place in your breast. This is called "needle localization". The wire is then covered with a dressing to hold it in place. The average time for this part of the procedure is 30-60 minutes. You are then taken to the operating room where you will receive a local anesthetic to numb your breast, as well as, sedation through a needle in your arm to make you sleep through the procedure. The surgeon uses the wire as a guide to precisely locate the lump. An incision (cut) is made and the abnormal tissue, along with the wire, is removed. The tissue is then sent to pathology for review. When the surgery is complete, a dressing is placed over the incision and you are taken to the post anesthesia care unit (PACU) to recover. In general, you can expect to be in the operating room for 60 to 90 minutes and in the PACU for about 1-2 hours…» «…A mammogram is a safe, low-dose X-ray procedure that produces pictures of the inside of the breasts…can detect some suspicious breast changes that are too small or too deep to be felt on breast examination… is considered the best method available today to detect breast cancer in its earliest, most curable stage. Early detection is the best weapon since breast cancer is most treatable when discovered early… uses low-dose X-rays, so there should not be a risk from radiation exposure…During the mammogram, each breast is placed between two hard surfaces that are attached to	S1	DX

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	Promoção do controlo da doença (CONT)		an X-ray machine. The breasts are pressed firmly while the X-rays are being taken. This compression This compression is necessary to view all of the breast tissue. Typically, two or three pictures are taken of each breast…Although you may find the pressure on your breast to be somewhat uncomfortable, it takes only a few seconds for each picture. If you are feeling anxious or experience discomfort, talk to the technologist. She will make you as comfortable as possible and can answer any questions you may have…The entire mammography procedure takes about 15 minutes…» «…A breast MRI (Magnetic Resonance Imaging) uses magnets and radio waves to create clear detailed pictures of the inside of your breasts. The breast is in mild compression during the procedure and you are lying on your stomach. Frequently, an intravenous injection is necessary for the best imaging… In some patients, MRI may helpful to diagnose breast cancers that may be difficult to detect by mammography or breast ultrasound. A breast MRI may also be used to further evaluate questionable areas seen on a mammogram or breast ultrasound…People with cardiac pacemakers cannot have a MRI nor should they be in the MRI area. This is also true for people with some forms of metal in their bodies, like artificial joints, cochlear ear implants and artificial heart valves…Do not bring anything metallic into the room. This includes jewelry, watches, credit cards, hearing aids, removable dental work, pins or zippers…If you get uncomfortable in small places (claustrophobia) you may want to ask your referring doctor to prescribe a sedative to take shortly before the test. If you experience pain when lying flat you may want to ask your doctor to prescribe pain	S1	DX

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	Promoção do controlo da doença (CONT)	• Trajecto terapêutico e efeitos colaterais	medication to take shortly before the test…»	S1	
			«…A breast ultrasound is a test that uses sound waves to take pictures of the inside of your breasts. A breast ultrasound can determine if a breast lump is a hollow, fluid filled cyst or a solid mass…may be done to evaluate abnormal areas seen on a mammogram. It may also be done to evaluate a breast lump or other breast changes that are not seen on a mammogram…»	S1	DX
			«…Uma vez detectado, a presença do tumor pode ser confirmada pelo médico de diversas formas, como palpação, aspiração através de agulha muito fina, mamografia e biópsia…»	S3	DX
			«…Os testes ao HER2 podem ajudar o médico a diagnosticar de forma mais exacta as doentes com cancro da mama e a identificar as doentes com um tipo mais agressivo de cancro da mama…»	S3	DX
			«…Para além das análises ao sangue, podem revelar-se necessários outros exames, para confirmar o diagnóstico. Estes exames podem incluir: Raios-X ao tórax e ao esqueleto, tomografia computorizada, ressonância magnética e ecografia. Os especialistas dedicam especial atenção aos locais mais prováveis para o aparecimento de metástases: pulmões, fígado, ossos e cérebro…»	S3	DX
			«…Almost all women with breast cancer will have some type of surgery in the course of their treatment. The purpose of surgery is to remove as much of the cancer as possible, and there are many different ways that the surgery can be carried out. Some women will be candidates for what is called breast conservation therapy (BCT). In BCT, surgeons perform a lumpectomy which means they remove the tumor with a little bit of breast tissue around it but do not		

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	Promoção do controlo da doença (CONT)		remove the entire breast. BCT always needs to be combined with radiation therapy to make it an option for treating breast cancer. At the time of the surgery, the surgeon may also dissect the lymph nodes under the arm so the pathologist can review them for signs of cancer. Some patients will have a sentinel lymph node biopsy procedure first to determine if a formal lymph node dissection is required. Sometimes, the surgeon will remove a larger part (but not the whole breast), and this is called a segmental or partial mastectomy. This needs to be combined with radiation therapy as well. In early stage cancers (like stage I and II), BCT is as effective as removal of the entire breast via mastectomy. Most patients with DCIS that have a lumpectomy are treated with radiation therapy to prevent the local recurrence of DCIS (although some of these DCIS patients may be candidates for close observation after surgery). The advantage of BCT is that the patient will not need a reconstruction or prosthesis to appear like she did before the procedure…» «…More advanced breast cancers are usually treated with a modified radical mastectomy.Modified radical mastectomy means removing the entire breast and dissecting the lymph nodes under the arm. Patients with DCIS that have a mastectomy do not need to have the lymph nodes removed from under the arm. Some patients are candidates for BCT but choose modified radical mastectomy for personal reasons…Most women who have modified radical mastectomies choose to undergo a reconstruction. There are many different procedures for creating a new breast mound, and you should talk to your plastic surgeon before your surgery to discuss your options and decide on how you would like to	S1	TC

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			«…Despite the fact that the tumors are removed by surgery, there is always a risk of recurrence because there may be microscopic cancer cells that have spread to distant sites in the body. In order to decrease a patient's risk of recurrence, many breast cancer patients are offered chemotherapy…is the use of anti-cancer drugs that go throughout the entire body. The higher the stage of cancer you have, the more important it is that you receive chemotherapy; however, even stage I patients may benefit from chemotherapy in certain cases. In early stage patients, the risk of recurrence may be small, and thus the benefits of the chemotherapy are even smaller…»	S1	TC
			«…There are many different chemotherapy drugs, and they are usually given in combinations for 3 to 6 months after you receive your surgery. Depending on the type of chemotherapy regimen you receive, you may get medication every 3 or 4 weeks; and you may have to go to a clinic to get the chemotherapy because many of the drugs have to be given through a vein. Two of the most common regimens are AC (doxorubicin and cycolphosphamide) for 3 months or CMF (cyclophosphamide, methotrexate, and fluorouracil) for 6 months. There are advantages and disadvantages to each of the different regimens that your medical oncologist will discuss with you…»	S1	TC
			«…Sometimes patients have a recurrence of their cancer, or present in stage IV with disease outside of their breast. These patients will all need chemotherapy, and a variety of different agents may be tried until a response is achieved. Sometimes we give chemotherapy before surgery, and this is called neoadjuvant chemotherapy. This is usually reserved		

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	Promoção do controlo da doença (CONT)		for very advanced cancers that need to be shrunken before they can be operated on…»	S1	TC
			«…Breast cancer commonly receives radiation therapy…uses high energy rays…to kill cancer cells. It comes from an external source, and it requires patients to come in 5 days a week a week 6 weeks to a radiation therapy treatment center. The treatment takes just a few minutes, and it is painless. Radiation therapy is used in all patients who receive breast conservation therapy (BCT). It is also recommended for patients after a mastectomy who had large tumors, lymph node involvement, or close/positive margins after the surgery. Radiation is important in reducing the risk of local recurrence and is often offered in more advanced cases to kill tumor cells that may be living in lymph nodes…»	S1	TC
			«…When the pathologist examines your tumor specimen, he or she finds out if the tumor is expressing estrogen and progesterone receptors. Patients whose tumors express estrogen receptors are candidates for therapy with an estrogen blocking drug called Tamoxifen. Tamoxifen is taken by pill form for 5 years after your surgery. This drug has been shown to drastically reduce your risk of recurrence if your tumor expresses estrogen receptors. However, there are side effects commonly associated with Tamoxifen including weight gain, hot flashes and vaginal discharge that patients may be bothered by. There are also very uncommon side effects like blood clots, strokes, or uterine cancer that may scare patients from choosing to take it…There are also newer drugs, called aromatase inhibitors that act by decreasing your body's supply of estrogen; these drugs are reserved for patients who have already gone through menopause…»	S1	TC

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	Promoção do controlo da doença (CONT)		«…The pathologist also examines your tumor for the presence of HER-2/neu overexpression. HER-2/neu is a receptor that some breast cancers express. If your cancer expresses it, you usually have a higher chance of having your tumor recur after surgery. A compound called Herceptin (or Trastuzumab) is a substance that blocks this receptor and helps stop the breast cancer from growing. Some patients are candidates for this medicine…»	S1	TC
			«…Reconstruction of the breast following mastectomy has become an integral part of the holistic treatment of breast cancer. Many patients are candidates for reconstruction simultaneous with mastectomy, though it can be done at a later date as a separate operation depending on various factors. These factors would include the type of tumor, need for radiation or chemotherapy, or the patient's wishes…»	S1	TC
			«…The methods fall into two general categories: implant type restorations and those using the patient's own tissues…»	S1	TC
			«…Breast conservation therapy involves removing just the tumor from the breast, followed by a course of radiation therapy. With modern techniques, an acceptable cosmetic outcome can be achieved in almost all patients without compromise of the local tumor control. However, not every woman is a candidate for breast conservation. Women who have two or more tumors in separate quadrants of their breast, a history or prior radiation therapy to the region, are pregnant, or have positive margins after an attempt at excision are usually not candidates for breast conservation. Some other reasons that breast conservation may not be recommended include patients with a history of scleroderma or other		

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CATEGORIA: Potencialidades da informação para o aporte de benefícios (BEN)	Promoção do controlo da doença (CONT)		collagen vascular diseases, and patients with large tumors in small breasts…»	S1	TC
			«…If a patient is not a candidate for breast conservation, or chooses to undergo a mastectomy, there are a number of options that they can chosen for breast reconstruction. Patients can get saline breast implants, with or without tissue expanders, or what are called autogenous tissue reconstructions. Autogenous tissue reconstructions are reconstructions that use the patient's own tissues to create a new breast. TRAM flaps, latissimus dorsi flaps, and gluteal free flaps are all different types of autogenous reconstructions. The most commonly employed type of autogenous tissue reconstruction is a TRAM flap, because or their consistent reliability and excellent cosmetic result…»	S1	TC
			«…An important question arises concerning the use of radiation therapy when a patient has undergone or will undergo a breast reconstruction procedure. Not all women will need post mastectomy radiation therapy, but a large percentage of patients who undergo mastectomy may be offered radiation therapy…»	S1	TC
			«…Patents can have their reconstructions done immediately after their mastectomy, while they are still anaesthetized, and this is called an immediate reconstruction. Patients can also have their radiation after the mastectomy, with the reconstruction following the radiation and this is called a delayed reconstruction. Radiation can ultimately influence the quality of the cosmetic outcome, so it is important to understand the optimal way to time radiation therapy and breast reconstructions…»	S1	TC
			«…Determining which particular treatment is right for you depends on several factors, including your		

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	Promoção do controlo da doença (CONT)		depends on several factors, including your general physical health, the type of cancer you have and at what *stage* it was diagnosed, and the goal of therapy that you and your doctor have agreed upon…»	S1	TC
			«…Treatment options could include *surgery*, *chemotherapy*, *biotherapy*, *radiation therapy*, and *hormonal therapy*, or a combination of any of these, depending on the type and stage of cancer that you have. With some tumors, surgical removal of all or as much tumor as possible is considered the best treatment depending on the size and location of the tumor and whether the cancer cells have spread to other parts of your body, referred to as *metastasis*. If there is evidence that tumor cells have spread or if some of the tumor could not be removed during surgery, then one or more of the other available therapies may be used…»	S1	TC
			«…Alternative and complementary therapies have many different definitions. A general definition of an alternative or complementary therapy is a treatment used for the control of cancer in place of or in addition to conventional medical therapy. One type of complementary therapy is supplementation of your diet with herbs or vitamins. Other alternative and/or complementary therapies involve using mental or physical techniques that may reduce stress, enhance your health, or stimulate the release of hormones that may be helpful in boosting your immune system. Some techniques include meditation, listening to motivational tapes, imagery, massage, acupuncture, yoga, and Tai Chi, among many others…»	S1	TC
			«…Treatments used either alone or in combination include: surgery, radiation therapy, chemotherapy and hormonal therapy. Clinical trials that test new		

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	Promoção do controlo da doença (CONT)		treatments also may be offered…»	S1	TC
			«…Chemotherapy is the use of drugs to kill cancer cells. Depending upon the kind of cancer and its stage of development, chemotherapy can be used to: Cure cancer; Prevent the spread of cancer to other parts of the body; Kill cancer cells that have spread to other parts of the body; Decrease the size of a cancerous tumor; Relieve symptoms caused by the cancer…»	S1	TC
			«…Chemotherapy drugs travel throughout the body in the blood stream. The most common ways to give chemotherapy are: Oral… Intravenous (IV)...Intramuscular (IM)…Subcutaneously… Chemotherapy drugs can be delivered to specific body areas by using special techniques…»	S1	TC
			«…Chemotherapy is given in "cycles". Each cycle consists of the days of your treatment followed by a set time for normal cells to recover. Then the cycle is repeated… Your doctor will select the best chemotherapy schedule for you based on factors including: The type of cancer and its stage;The chemotherapy drugs received;Other treatments received;The goals of treatment;The response to treatment…»	S1	TC
			«...What are the side effects of chemotherapy? • Your reaction to chemotherapy will depend on : The specific chemotherapy drug(s) received The chemotherapy dose received Other treatments received • Normal cells of your GI tract, skin, hair and bone marrow grow rapidly, like cancer cells, and are also affected by chemotherapy. Consequently, the most common side effects of chemotherapy are: low blood counts, nausea, vomiting, diarrhea, hair loss, mouth sores and skin changes.		

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	Promoção do controlo da doença (CONT)		• Other side effects include: fatigue, allergic reactions, infertility/changes in sexual function, nerve damage, secondary cancers and damage to heart, lung, kidney, bladder or liver. • Most side effects from chemotherapy are temporary. • Many patients have few or no side effects. • Your doctor and nurse will discuss ways to prevent or control many of these side effects…»	S1	TC
			«…Radiation therapy is the use of high level radiation to destroy cancer cells. Both tumor cells and healthy cells may be affected by this radiation. The radiation injures the cancer cells so they can no longer continue to divide or multiply. With each treatment, more of the cells die and the tumor shrinks. The dead cells are broken down, carried away by the blood and excreted by the body. Most of the healthy cells are able to recover from this injury. However, the damage to the healthy cells is the reason for the side effects of radiation therapy. The radiation injures the cancer cells so they can no longer continue to divide or multiply. With each treatment, more of the cells die and the tumor shrinks. The dead cells are broken down, carried away by the blood and excreted by the body. Most of the healthy cells are able to recover from this injury. However, the damage to the healthy cells is the reason for the side effects of radiation therapy. Radiation has its greatest effect on tissues that divide rapidly…»	S1	TC
			«…Some things to remember about radiation therapy: • The side effects that occur during radiation therapy are manageable. Your doctors and nurses will help you with these.		

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	Promoção do controlo da doença (CONT)		• The radiation passes through your body and does not remain in you. You are not radioactive. • Only the body part in the field of radiation is affected. • Normal cells exposed to radiation begin to repair themselves hours after exposure…»	S1	TC
			«…Before radiation treatments begin, you will go through a treatment planning process called "simulation" to confirm that the treatment machine will treat the exact location on your body. A map of the area on your body where the radiation is to be delivered, referred to as the treatment field(s), is created. A machine called a simulator, which is designed to mimic the movements and settings on the actual treatment machine (called a linear accelerator) that will be used to administer the radiation therapy to you, is used…»	S1	TC
			«…The treatment of breast cancer depends on many factors, including: the stage and grade of the cancer, your age, whether or not you have had the menopause, the size of the tumour, whether the cancer cells have receptors for certain hormones (such as oestrogen) or particular proteins (such as HER2) on their surface. Most breast cancers will be treated with surgery to remove the tumour. All, or part, of the breast tissue may be removed. If the whole breast is removed, breast reconstruction may be carried out at the same time as the initial surgery or at a later stage. Sometimes chemotherapy or hormonal therapy may be given to shrink a cancer before surgery. This is known as *neoadjuvant* therapy. After surgery, radiotherapy may be given to the breast tissue, to make sure any cancer cells that may be left are destroyed. After surgery the doctors can tell the stage and the grade of the cancer, and		

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	Promoção do controlo da doença (CONT)		they can look at several other factors to predict how likely the cancer is to come back or spread…»	S2	TC
			«…If the chance of the cancer spreading or coming back is very low, further treatment is not necessary. However, most women will be advised to have treatment with chemotherapy or hormonal therapy to reduce the chance of the cancer coming back. This is known as *adjuvant* therapy. Some women may have both treatments, but not at the same time…»	S2	TC
			«Treating breast cancer with surgery - Your doctor will discuss with you the most appropriate type of surgery for you, depending on the size and any spread of the cancer… • Lumpectomy (wide local excision) • Segmental excision (quadrantectomy) • Mastectomy • Benefits & unwanted effects of masectomy compared to lumpectomy followed by radiotherapy • Scars • Checking the lymph glands…»	S2	TC
			«…Chemotherapy drugs are given by injection into a vein (*intravenously*) or as tablets. Chemotherapy into the vein is given as a session of treatment, which usually lasts for less than a day. This is followed by a rest period of a few weeks, which allows your body to recover from any side effects of the treatment. There are many different chemotherapy drugs, and combinations of drugs, used to treat breast cancer. You may be offered a choice of treatments, as the different combinations have different side effects…Chemotherapy is usually given to you as an outpatient. A complete course of chemotherapy is likely to take 4–6 months…»	S2	TC

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CATEGORIA: Potencialidades da informação para o aporte de benefícios (BEN)	Promoção do controlo da doença (CONT)		«..Your doctor will consider several factors when planning your treatment. The most important of these are the type of cancer you have, where in the body it is situated, how far it has spread (if at all) and your general health.How often you have your treatment and how long the whole course of treatment takes will depend on:the type of cancer you have, the particular chemotherapy drugs you are having, how well the disease responds to the drugs, any side effects the drugs may cause.Before starting chemotherapy, you will have your height and weight checked. This helps the doctor to work out the right dose of chemotherapy for you.Intravenous chemotherapy is usually given as several sessions of treatment, unless you are having continuous treatment by infusion pump. Depending on the drug, or drugs, each treatment can last from a few hours to a few days.Each treatment is generally followed by a rest period of a few weeks to allow your body to recover from any side effects. The treatment and the rest period are known as a cycle of treatment. The number of cycles you have will depend on how well your cancer is responding to the chemotherapy. Two or more cycles of treatment make up a course of chemotherapy.It may take several months to have all the chemotherapy needed for the treatment of your cancer. When chemotherapy is given by an infusion pump it can be given continuously over a period varying from several days to several weeks.Some patients having tablets or capsules (oral chemotherapy) take the chemotherapy daily for several weeks or months, before they have a rest period.You will normally have blood tests and see the doctor or specialist chemotherapy nurse before you are given your chemotherapy, which will		

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	Promoção do controlo da doença (CONT)		obviously take some time…Sometimes you may need to have x-rays or scans…» «…Chemotherapy drugs can cause side effects, but these can usually be well controlled with medicines.Lowered resistance to infection Chemotherapy can reduce the production of white blood cells by the bone marrow, making you more prone to infection…You will have a blood test before having more chemotherapy, to make sure that your cells have recovered. Occasionally it may be necessary to delay your treatment if your blood count is still low. Bruising or bleeding Chemotherapy can reduce the production of platelets, which help the blood to clot…Anaemia (low number of red blood cells) You may become anaemic. This may make you feel tired and breathless. Nausea and vomiting Some chemotherapy drugs can make you feel sick or even be sick…Sore mouth Some chemotherapy drugs can make your mouth sore and may cause small ulcers…Poor appetite **..**Hair loss is a common side effect of some chemotherapy drugs. This can be very distressing for some people. However, there are many ways of covering up hair loss, including wigs, hats or scarves…If your hair does fall out, it should start to grow back within about 3–6 months of the end of treatment. Chemotherapy affects people in different ways. Some people find they are able to lead a fairly normal life during their treatment, but many people become very tired and have to take things much more slowly. Just do as much as you feel like and try not to overdo it.Although they may be hard to deal with at the time, these side effects will gradually disappear once your treatment is over.Early menopause Some women may find that	S2	TC

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	Promoção do controlo da doença (CONT)		chemotherapy makes them have their menopause early…»	S2	TC
			«…Radiotherapy treats cancer by using high-energy rays to destroy the cancer cells, while doing as little harm as possible to normal cells. Radiotherapy is often used after surgery for breast cancer. It may occasionally be used before, or instead of, surgery.If part of the breast has been removed …, radiotherapy is usually given to the remaining breast tissue, to reduce the risk of the cancer coming back in that area.After a mastectomy, radiotherapy to the chest wall may be given if your doctor thinks there is a risk that any cancer cells have been left behind.If a few lymph glands have been removed and these contained cancer cells, or if no lymph glands have been removed, radiotherapy may be given to the armpit to treat the remaining lymph glands. If all the lymph glands have been removed from under the arm, radiotherapy to the armpit is not usually needed…»	S2	TC
			«…External radiotherapy - The treatment is normally given in the hospital radiotherapy department as a series of short daily sessions. Each treatment takes 10–15 minutes. A course of radiotherapy for breast cancer may last from 3–6 weeks. It is usually given as an outpatient. External radiotherapy does not make you radioactive and it is perfectly safe for you to be with other people, including children, after your treatment…»	S2	TC
			«…Planning is a very important part of radiotherapy and may take a few visits. It has to be carefully planned to make sure that it is as effective as possible. On your first visit to the radiotherapy department, you will be asked to have a CT scan or lie under a machine called a simulator, which takes		

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	Promoção do controlo da doença (CONT)		x-rays of the area to be treated. The treatment is planned by a cancer specialist (*clinical oncologist*). Marks are usually drawn on your skin to help the *radiographer* (who gives you your treatment) to position you accurately and to show where the rays will be directed. These marks must stay throughout your treatment, and permanent marks (like tattoos) may be used. These are tiny, and will only be done with your permission. It may be a little uncomfortable while being done.The radiotherapy is normally given to the whole breast area. Some women may have an extra dose given to the area of the breast where the cancer was. This is known as a *booster dose*…»	S2	TC
			«…At the beginning of each session of radiotherapy, the radiographer will position you carefully on the couch, and make sure you are comfortable. During your treatment you will be left alone in the room but you will be able to talk to the radiographer who will be watching you from the next room. Radiotherapy is not painful but you do have to lie still for a few minutes while the treatment is being given…»	S2	TC
			«…If you are going to have radiotherapy, you will need to be able to get your arm into position so that the radiotherapy machine can give the treatment effectively. Sometimes radiotherapy can make the muscles and shoulder joint feel stiff. If you can’t move your shoulder normally, it may be painful or difficult to give the treatment. A physiotherapist may teach you some exercises to make the position for treatment feel easier…»	S2	TC
			«…Radiotherapy to the breast sometimes causes side effects such as reddening and soreness of the skin, feeling sick (nausea) and tiredness. These side effects gradually disappear once your course of		

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	Promoção do controlo da doença (CONT)		treatment has finished. The tiredness may continue for some months… Radiotherapy may make the breast tissue feel firmer. Over a few months or years the breast may shrink slightly. The radiotherapy may also, rarely, leave small red marks on the skin, which are due to tiny broken blood vessels. For many women, however, the appearance of the breast is very good. Radiotherapy to the breast can sometimes lead to long-term side effects, such as nerve pain, tingling, and weakness or numbness in the arm and hand. Other rare side effects can include breathlessness (due to the effect of radiotherapy on the lung, and weakening of the ribs in the treatment area). However, these long-term effects are very rare…»	S2	TC
			«…Hormonal therapies can slow or stop the growth of breast cancer cells. They do this by: • altering the levels of particular female hormones which are produced naturally in the body, or • preventing the hormones from being taken up by the cancer cells. There are many different types of hormonal therapy and they work in slightly different ways. They are often given after surgery and radiotherapy for breast cancer, to reduce the chance of the cancer coming back. Hormonal therapy may be given before or after chemotherapy. Hormonal therapies are most effective in women whose cancer cells have receptors for oestrogen and/or progesterone on their surface. This is known as being *oestrogen-receptor positive* or *progesterone-receptor positive*…»	S2	TC
			«…Durante muitos anos, os principais tratamentos para o cancro da mama avançado, têm sido a quimioterapia e a radioterapia: fazendo parar a evolução do cancro por meio de poderosos fármacos		

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Promoção do controlo da doença (CONT)		citotóxicos (que destroem as células) ou de radiação. Para além destes, hoje em dia começam a estar disponíveis novas terapêuticas muito importantes, incluindo fármacos que se dirigem directamente às células cancerosas, sem os, por vezes graves, efeitos secundários associados aos antigos tratamentos…»	S3	TC
		«…O termo quimioterapia engloba o tratamento com muitos fármacos diferentes, usados sozinhos (quimioterapia com um único agente), ou em associações de dois ou mais fármacos (terapêutica combinada). Normalmente administram-se vários ciclos de quimioterapia com intervalos de algumas semanas e portanto o período total de tratamento pode prolongar-se por vários meses. Alguns fármacos são ingeridas oralmente e outros são administrados por injecção intravenosa…»	S3	TC
		«…Os efeitos secundários mais frequentemente referenciados, que variam de gravidade conforme os fármacos usados, incluem: fadiga, náuseas, vómitos e perda de cabelo…O cabelo, que cai por causa da quimioterapia – embora nem todos os fármacos tenham esse efeito – normalmente volta a crescer dentro de poucos meses depois da conclusão do tratamento. Os fármacos usados na quimioterapia podem originar toxicidade hematológica (do sangue), que por sua vez, pode causar uma diminuição na produção das células sanguíneas e também nas plaquetas, envolvidas no processo de coagulação. Esta toxicidade pode ter como resultado a fadiga (devido à falta de eritrócitos), diminuição da resistência às infecções (falta de leucócitos) e aumento da susceptibilidade à formação de hematomas/hemorragia (falta de plaquetas). Durante o período de tratamento fazem-se regularmente análises ao sangue para verificar se o número das		

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	Promoção do controlo da doença (CONT)		células sanguíneas se reduziu. Se for necessário pode-se recorrer a transfusões ou tratamentos médicos para repor o número de eritrócitos…»	S3	TC
			«…A radioterapia consiste no tratamento do cancro por meio de raios-X ou de outras fontes de radioactividade. As fontes deste tipo produzem radiações ionizantes que, ao passar através do tecido doente, destroem ou abrandam o desenvolvimento das células anómalas. Contudo, a radioterapia pode ter efeitos secundários, tais como danos graves no tecido normal. A radioterapia é frequentemente utilizada em conjugação com outras formas de tratamento do cancro. No cancro da mama, a radioterapia é muitas vezes usada depois da remoção cirúrgica dum cancro da mama maligno, para destruir algumas células remanescentes do tumor. A radioterapia também pode ser usada para reduzir o tamanho dum tumor, ou para destruir células do cancro da mama que se tenham deslocado para outras partes do corpo. A radioterapia, no entanto, só é usada quando os benefícios compensam largamente os riscos de causar danos no tecido são…»	S3	TC
			«…As hormonas, substâncias que controlam as funções normais do corpo, também afectam algumas células do cancro da mama. Isto é especialmente verdade em relação às hormonas da mulher, tal como o estrogénio, relativamente ao qual os investigadores acreditam poder exacerbar o desenvolvimento das células cancerosas. Consequentemente, algumas doentes com cancro podem ser tratadas com fármacos que têm hormonas ou que inibem a acção destas. O uso das preparações hormonais é seguro e os seus efeitos secundários raramente são graves.A terapêutica hormonal permite regressões que perduram muitos anos…»	S3	TC

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	Promoção do controlo da doença (CONT)		«…O aumento do conhecimento acerca dos genes humanos responsáveis pelo crescimento das células cancerosas, conduziu a uma nova fase no tratamento do cancro da mama. Uma nova abordagem dirigida ao tratamento do cancro da mama, envolve o uso de anticorpos monoclonais. Um anticorpo monoclonal é uma proteína sintética que foi preparada expressamente para atingir células cancerosas específicas no organismo.O anticorpo monoclonal actua bloqueando a função dum gene de cancro específico, associado ao crescimento de cancro da mama agressivo. Além disso, só atinge as células cancerosas não actuando nas células sãs. Portanto, os efeitos secundários experimentados pelas doentes com esta terapêutica são habitualmente de natureza ligeira – a maior parte das vezes febre e arrepios. Também se acredita que este tipo de terapêutica pode estimular o sistema imunitário para destruir as células cancerosas. A única terapêutica actualmente existente com anticorpos monoclonais atinge e bloqueia a função do gene HER2 do cancro… O uso de um anticorpo monoclonal, representa uma nova e promissora opção para tratar doentes HER2-positivas. Contudo, este tipo de tratamento está condicionado à existência de um diagnóstico fiável do *status* de HER2…»	S3	TC
			«…Esta cirurgia, poderá ser: • Tumorectomia - Remoção do tumor e uma pequena porção de tecido saudável circundante e, se necessário, dos gânglios linfáticos da axila do lado afectado. • Mastectomia - Remoção da glândula mamária, do mamilo e da aréola, assim como da pele necessária, de acordo com a localização do tumor, e ainda dos gânglios linfáticos da axila do lado afectado…»	S4	TC

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	Promoção do controlo da doença (CONT)		«…A Radioterapia, a Quimioterapia e a Hormonoterapia, são tratamentos usados frequentemente em associação com a cirurgia…»	S4	TC
			«…Muitas vezes, a cirurgia da mama tem que ser complementada com outros tratamentos para melhor assegurar o sucesso da cura. Assim, na Quimioterapia faz-se a administração de medicamentos (citostáticos), por via endovenosa ou oral e na Hormonoterapia (Tamoxifeno), durante um período de tempo limitado (uma vez por semana, de três em três semanas ou uma vez por mês) tendo em conta: o tipo de doença, a respectiva medicação, o tempo que o organismo leva a reagir favoravelmente e a tolerância aos efeitos secundários. O tratamento é feito habitualmente em regime ambulatório…»	S4	TC
			vómitos, queda de cabelo, secura da boca, alterações do paladar, falta de apetite, diarreia, obstipação, alterações menstruais (ciclos irregulares ou a sua ausência total), alterações na cor e cheiro da urina, diminuição de glóbulos brancos (leucopenia), diminuição dos glóbulos vermelhos (anemia), pele mais escura e seca que provoca comichão, falta de forças, cansaço fácil, formigueiros nas mãos e pés, adormecimento dos braços ou pernas.Todos estes sintomas são temporários, desaparecendo no final do tratamento, e há meios eficazes que atenuam, de forma muito significativa, o seu impacto negativo…»	S4	TC
			«…RADIOTERAPIA: Este tratamento utiliza uma forma especial de radiação, chamada "radiação ionizante". A radiação provoca alterações nas células tumorais. Esta radiação é doseada de acordo com cada situação concreta, de modo que as células saudáveis não sofram alterações graves de uma forma permanente. No entanto, é possível eliminar as		

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	Promoção do controlo da doença (CONT)	• Proposta de adopção de medidas de auto-cuidado	células anormais que compõem o tumor e curar a doente. Deve pois saber que: • A radioterapia não é dolorosa. Para além de ter que se manter imóvel (por apenas alguns minutos), não há qualquer desconforto durante o tratamento . • A radioterapia é dirigida apenas à área onde se encontra a sua doença. As outras áreas do seu corpo não são afectadas pelo tratamento. • Não há qualquer perigo de contágio com as outras pessoas por estar a fazer o tratamento. • Normalmente, as doentes são encorajadas a manter a sua vida o mais normal possível…»	S4	TC
			«…A grande maioria das doentes não apresentam qualquer efeito lateral durante a Radioterapia. Habitualmente, quando aparecem queixas, estas estão relacionadas com a área de tratamento, pois a pele na área tratada adquiriu uma tonalidade avermelhada ou acastanhada…»	S4	TC
			«…A reconstrução da mama é um procedimento cirúrgico ou uma série de procedimentos que tentam criar uma forma de mama tão normal quanto possível depois da mastectomia total…Embora cada caso seja diferente, a maioria das mulheres pode fazer uma reconstrução. Se está interessada fale com o seu cirurgião, que certamente lhe explicará os procedimentos, riscos e benefícios da mesma. Esta pode fazer-se ao mesmo tempo que a mastectomia ou anos mais tarde…»	S4	TC
			«…Perfumed soaps, creams or deodorants may irritate the skin and should not be used during the treatment…»	S2	TC
			«…This can be helped by taking anti-sickness drugs (anti-emetics) which your doctor can prescribe…»	S2	TC

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	Promoção do controlo da doença (CONT)		«…If you don't feel like eating during treatment, you could try replacing some meals with nutritious drinks or a soft diet…»	S2	TC
			«…It is important to allow yourself plenty of time to rest…»	S2	TC
			«…If your temperature goes up, or you suddenly feel unwell, even with a normal temperature, contact your doctor or the hospital straight away…»	S2	TC
			«…Helpful hints - infection • Tell your doctor at once if you develop a temperature as you may need to have antibiotics • Keep clean. Always wash your hands thoroughly before preparing your food…»	S2	TC
			«…If you do develop any unexplained bleeding or bruising you need to contact your doctor or the hospital straight away, and you may need to be admitted to hospital for a platelet transfusion…»	S2	TC
			«…Helpful hints - eating and digestion • If you feel sick or are sick, tell your doctor as soon as possible. Anti-sickness drugs can be prescribed which usually work well • Avoid eating or preparing food when you feel sick • Avoid fried foods, fatty foods or foods with a strong smell • Eat cold or warm food if the smell of hot food makes you feel sick • Eat several small snacks and meals each day and chew the food well • Have a small meal a few hours before treatment, but don't eat just before treatment • Drink plenty of liquid slowly, taking lots of small sips • Avoid filling your stomach with fluid before you eat …»	S2	TC

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	Promoção do controlo da doença (CONT)		«…If you have any diarrhoea or constipation, or are worried about the effects of chemotherapy on your digestive system, see your doctor or chemotherapy nurse to discuss any problems you may have…»	S2	TC
			«…Helpful hints - your mouth • To keep your mouth fresh and moist, eat fresh pineapple • Clean your teeth or dentures gently every morning, evening and after each meal • Use a soft-bristled or child's toothbrush • If your toothpaste stings or brushing your teeth makes you feel sick, try using a mouthwash (such as one teaspoon of bicarbonate of soda dissolved in a mug of warm water) • If your doctor prescribes a mouthwash for you, use it regularly as prescribed to prevent soreness • Use dental tape or floss each day, gently • Keep your lips moist by using Vaseline, or a flavoured lip balm if you prefer • Avoid neat spirits, tobacco, hot spices, garlic, onion, vinegar and salty food. These may irritate your mouth • Keep your mouth and food moist. Add gravies and sauces to your food to make swallowing easier • Try to drink at least 11/2 litres (3 pints) of fluid a day (water, tea, weak coffee, and soft drinks such as apple juice) • Avoid acidic drinks such as orange and grapefruit juice. Warm herbal teas may be more soothing • Let your doctor know if you have mouth ulcers, as you may need medicines to help heal the ulcers and clear any infection • Sucking crushed ice while the chemotherapy drugs are being given may help to prevent a sore mouth…»	S2	TC

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	Promoção do controlo da doença (CONT)		«…Helpful hints - taste changes • Eat only the foods that you like and ignore those that do not appeal • Use seasonings and herbs to flavour your cooking • Try marinating food, or using strongly flavoured sauces to go with food • Sharp-tasting foods such as fresh fruit are refreshing and leave a pleasant taste in the mouth • Some people find that cold foods taste better than hot foods…»	S2	TC
			«…Helpful hints - your hair • If your drugs are likely to cause hair loss, it can help to have your hair cut quite short before treatment. The weight of long hair pulls on the scalp and may make hair fall out faster • Use gentle hair products • Do not perm your hair during chemotherapy, or for three months afterwards • If you colour your hair, use a mild vegetable-based colourant and ask your hairdresser or chemotherapy nurse for advice • Try not to brush or comb your hair too roughly - use a soft or baby's brush • Avoid using hair dryers, curling tongs and curlers. Pat your hair dry gently after washing it • If it is likely that you may lose your hair, ask your doctor or nurse about wigs early on, so that the wig can be as close a match as possible to your normal hair • You may like to wear a hat or scarf when you go out. There are also turbans which can be worn in the house…»	S2	TC
			«…Helpful hints - skin changes • Avoid wet shaving - an electric razor is less likely to		

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	Promoção do controlo da doença (CONT)		cause cuts • If your skin becomes dry or itchy, rub in a little moisturising cream to soothe it • Wear a hat, loose clothing and high-factor sunblock cream if you are going out in the sun, to prevent your skin burning…»	S2	TC
			«…These simple tips can help you care for your skin and reduce the risk of infection: • Treat even small grazes and cuts with antiseptic and keep them clean until they heal. • See your GP at the first sign of any infection – if the cut is inflamed or feels warm and tender. • Wear gloves for washing up, DIY and other household tasks. • Try to avoid being scratched. Wear gloves and long-sleeved clothing when handling animals or gardening. • Use a thimble if you sew. • Avoid getting sunburnt. • Use an electric razor if you shave under your arms, to avoid cuts. • Keep your skin clean and dry and use moisturising cream daily to keep it supple. • Use nailclippers instead of scissors to cut your nails. • Never push back or cut the cuticles – use cuticle cream instead…»	S2	TC
			«…Podem-se prescrever fármacos designados por antieméticos, para prevenir ou aliviar o enjoo durante o tratamento…»	S3	TC
			«…Há numerosos analgésicos diferentes disponíveis…aliviam as dores ósseas e reduzem o risco de fracturas. Também se recomenda um sedativo ligeiro para garantir um sono repousante. Adesivos relaxantes, banhos quentes e uma ligeira massagem,		

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	Promoção do controlo da doença (CONT)		são factores positivos para aliviar as dores e assegurar um repouso adequado…»	S3	TC
			«…O enjoo pode ser uma consequência do tratamento contra o cancro (e nesse caso pára quando o tratamento acabar) ou do próprio cancro. Há vários fármacos contra o enjoo (anti-eméticos), algumas agora disponíveis em supositórios. A maior parte começa a actuar no espaço de meia hora. Pode-se usar um fármaco esteróide (dexametasona) para aliviar o enjoo e as dores de cabeça causadas por tumores secundários do cancro da mama, localizados no cérebro…»	S3	TC
			«…O edema linfático trata-se usando uma manga ou ligadura elástica, massagens e fisioterapia, conjuntamente com exercícios especiais adequados para ajudar a drenagem do fluido do braço…»	S3	TC
			«…A fadiga do cancro é um problema quase universal entre as doentes com cancro…Uma alimentação adequada, suplementos vitamínicos e de sais minerais, medicamentos anti-depressivos e ansiolíticos, modificação do estilo de vida e até apoio psicológico, podem ajudar a aliviar a fadiga…»	S3	TC
			«…Cuidados com a pele: • Tente manter a sua pele seca na área tratada • Lave a pele com um sabão neutro ou de glicerina • Não esfregue a pele • Não use desodorizante se a axila estiver a ser tratada • Use roupas de algodão em contacto com a pele tratada • Evite temperaturas altas ou baixas sobre a pele. Evite também a exposição ao Sol. • Se necessário, ser-lhe-á aconselhado algum creme, pomada ou ainda outra medicação…»	S4	TC
			«…As alterações na pele manter-se-ão por mais uma ou duas semanas após o fim dos tratamentos, e, por isso, os cuidados referidos anteriormente devem		

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	Promoção do controlo da doença (CONT)		manter-se por todo este tempo…»	S4	TC
			«…Pode-se tomar duche logo que a ferida esteja seca e bem curada (mesmo que ainda restem zonas de crosta na zona dos pontos). Depois de várias sessões de radioterapia os sinais de inflamação da pele (pele avermelhada e sensação de calor) deverão ter diminuído. Esta diminuição surge 2 a 3 semanas após a operação e a temperatura da água do duche não deve superar os 37 ou 38ºC…»	S4	TC
			«…Os sabões e produtos similares podem irritar a pele; use-os com moderação, uma vez que a pele à volta da cicatriz e na axila estão particularmente sensíveis…»	S4	TC
			«…Os óleos de banho são especialmente adequados como complemento. Estes produtos mantêm a pele flexível e só terá que aplicar um creme hidratante nas zonas onde a pele está mais seca…»	S4	TC
			«…Se tem tendência para quedas de tensão arterial ou vertigens, sempre que possível tome banho quando estiver presente alguém que possa ajudá-la…»	S4	TC
			«…Devido à cirurgia, os músculos que não se movimentam de forma regular ou não se utilizam completamente, por ex: ao levantar o braço, começam a ficar em tensão durante os primeiros dias de repouso. Por este facto, deverá prestar atenção à manutenção e recuperação do movimento completo do ombro…»	S4	TC
			«…Além desta alteração muscular, algumas mulheres que foram submetidas a cirurgia e retiraram gânglios linfáticos da axila devem ter em conta determinadas precauções para evitar que o braço inche (edema)…O linfedema pode surgir logo após a cirurgia ou meses depois (normalmente é transitório)…»	S4	TC
			«…É vantajoso tomar as seguintes precauções para diminuir o risco de linfedema: • Sempre que seja possível, evite tirar sangue, aplicar injecções e vacinas, bem como medir as tensões,		

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	Promoção do controlo da doença (CONT)		no braço do lado operado. • Se se cortar, for mordida por insectos ou se queimar nesse braço, lave com todo o cuidado a área afectada com água e sabão e mantenha-a limpa. Trate a zona com alguma pomada antibacteriana e cubra-a com uma compressa estéril. Para evitar a infecção, troque a compressa frequentemente. • Utilize luvas quando fizer jardinagem, quando trabalhar com produtos caseiros irritantes e quando mantiver as mãos dentro de água durante um longo período de tempo (por ex: lavar a loiça). • Proteja os dedos contra picadelas de objectos afiados, tais como agulhas e alfinetes. Use dedal quando coser. • Quando tratar das unhas não corte as cutículas, empurre-as para trás. • Devido à insensibilidade causada pela cirurgia, não utilize uma gilette para cortar os pelos das axilas, mas sim uma máquina de barbear, pois evita que se corte sem querer. • Evite levantar coisas pesadas com o braço afectado. • Evite utilizar anéis, pulseiras ou relógios que apertem. • Evite as queimaduras do Sol, especialmente no braço e peito, e utilize cremes protectores. • Se tem o braço inchado utilize um desodorizante em vez de um anti-transpirante, isto pode ajudar a manter os poros abertos…»		
			«…O exercício físico é fundamental para manter uma boa forma física e psicológica melhorando a saúde em geral. Um passeio de 30 minutos diário é uma maneira fácil e económica de fazer exercício. Mas há muitas maneiras de o fazer, por isso, encontre uma que goste e mantenha-a…Há muitas mulheres que não sabem nadar mas desfrutam da água como uma forma de	S4	TC

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	Promoção do controlo da doença (CONT)		relaxamento. Especialmente após uma mastectomia, terá mais tendência para uma tensão muscular. Na água, sentir-se-á mais livre e leve…»	S4	TC
			«…O que deverá fazer? - Entre calmamente na água até à altura dos ombros e deixe flutuar ligeiramente os braços sobre a superfície da água. - Sinta a sensação de "se deixar levar" - Ande lentamente para trás e para a frente e gire, os braços seguirão estes movimentos automaticamente. Estique os braços o máximo que puder para os lados e relaxe de novo. Esta alternância entre relaxamento e extensão só lhe fará bem. Pode utilizar a água como uma força de resistência. Mova os braços lentamente para trás e para a frente ou para os lados ao longo do corpo. Faça exercícios que ache divertidos, mas que nunca exijam movimentos rápidos ou súbitos. -Muitas piscinas têm jactos de água que servem como uma massagem. É benéfico apanhar um jacto de água ligeiro nos ombros, pescoço e no braço. -Depois de tomar banho no mar, tome duche com água doce, prestando especial atenção aos cuidados a ter com a pele. Um banho no mar é extremamente agradável para mulheres com um edema no braço…»	S4	TC
			«…Dos muitos exercícios que se podem aconselhar para uma recuperação rápida de mobilidade do seu braço que ficou afectado pela cirurgia, escolhemos estes três: 1º Exercício: Junto de uma parede…2º Exercício: Esticar o braço…3º Exercício: Com vara…»		
			«…Se gosta de se expor ao sol, deverá reduzir o tempo de exposição e ter atenção ao braço inchado, utilizando um creme com uma elevada protecção solar…»	S4	TC
			«…Para além dos exercícios mencionados, existem muitos gestos no dia a dia que a podem ajudar na sua		

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	Promoção do controlo da doença (CONT)		recuperação, desde que os faça de uma forma correcta. Por Exemplo: • Escovar os cabelos - Deverá sentar-se junto de uma cómoda ou mesa alta. O tampo deverá ficar ao nível da sua axila. Apoie o cotovelo na mesa e comece a pentear e escovar os cabelos com o braço do lado operado, mantendo a cabeça direita. Deverá começar só por um lado da cabeça e avançar progressivamente até conseguir escovar todo o cabelo. • O chuveiro - Lave as costas, o pescoço e os cabelos tentando segurar o chuveiro com o braço do lado operado. Ao enxaguar as costas pode usar a toalha, para exercitar o braço. • Outros pequenos gestos - Vestir ou despir uma camisola, apertar o soutien ou apertar um fecho éclair, estender a roupa, etc... são pequenos exercícios que a podem ajudar…»	S4	TC
			«…O descanso é importante para o seu bem-estar geral. Depois da cirurgia, talvez consiga dormir mais comodamente com o braço levantado. Assim, pode colocar uma almofada pequena debaixo do braço afectado para aliviar a pressão. Camisas de noite e pijamas soltos também podem ajudar a passar uma boa noite…»	S4	TC
			«…With oral hygiene and early identification of the following signs and symptoms, these conditions can be made much more comfortable. Prevention begins with good oral hygiene. Daily inspection of the mouth is the first step. Begin each day by carefully inspecting the mouth for any changes. Be sure to remove dentures, since hidden mouth sores can fester in this area. Brush your teeth with a soft bristle toothbrush and use a non-alcoholic mouthwash after meals and at bedtime. Be sure your dentures are properly fitted, since a too tight		

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	Promoção do controlo da doença (CONT)		or too loose fit can increase the risk of problems. Remove dentures when cleaning the mouth and do not wear them if irritation is present…»	S1	TC
			«…hair loss…use a mild shampoo and conditioner to maintain skin and hair moisture. Try to avoid excessive shampooing since overdrying can occur. You may want to limit washings to two or three times a week. Limit the use of hair dryers, curling irons, and chemicals such as dyes, perms and highlights to help decrease damage to existing hair follicles. During sleeping hours, a silk pillowcase will help eliminate tangling…»	S1	TC
			«…There are many common-sense interventions for uncomfortable mouth sores, ranging from good oral hygiene to proper diet. Following are some suggestions to assist in mananging uncomfortable side effects: • To lessen the discomfort and irritation of a dry mouth, keep the mucous membranes of the mouth moist. Many patients suck hard candies or ice chips to obtain relief. • Avoid high-acid foods and drinks, such as orange and grapefruit juices. Instead, try apple juice and nectars. Carbonated beverages may irritate the gums and should also be avoided. • Avoid spicy foods: some pasta sauces, tacos, and chili. Soft, bland dishes may be more tolerable. • Keep food at room temperature or slightly cool. Very hot or cold foods can increase discomfort. Soups, mashed potatoes, noodles and jello, served at room temperature, are just a few good examples of food to try…»	S1	TC
			«…Maintaining good nutrition is important to the healing process. Try to keep proteins and calories at an optimal level in your daily diet. The best treatment plan		

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	Promoção do controlo da doença (CONT)		begins with daily inspection of the mouth and early detection of problems by *you*, the patient…»	S1	TC
			«…A change in appetite may occur during and after chemotherapy treatment. What was once a favorite food may suddenly seem distasteful. Such changes are known as "food aversions" and are very common to chemotherapy patients. If you find that a certain meal is more appealing, make it the main meal of the day. Smaller portions of food can be eaten more often or at different intervals to maintain calorie intake….»	S1	TC
			«…To combat nausea and vomiting, many chemotherapy patients benefit from maintaining a clear liquid diet one to twelve hours before a scheduled treatment. These liquids can include apple juice, tea, jello and chicken broth. Some other helpful hints during and after treatment include: • Eat bland food, such as crackers or dry toast. • Avoid overfilling your stomach by eating smaller, more frequent meals. • Take foods which are at room temperature or slightly cooler. • Keep the room or house full of fresh air and free of offensive odors. (Cooking odors are a problem for many patients.) Try to get fresh air until an offensive odor subsides. • Practice relaxation and distraction techniques. Read a book or watch a favorite program on television. Pursue activities which provide a relaxing atmosphere. Listen to a favorite album or CD…»	S1	TC
			«…Constipation…Older persons and those on low-fiber diets are also at greater risk. Like other side effects, some patients experience constipation with chemotherapy while others do not. The following hints may help to reduce the risk of constipation.		

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	Promoção do controlo da doença (CONT)		• Drink more fluids. Water intake should be at least eight glasses a day (discuss this with your physician). This helps your body maintain soft stools. • Eat a low-fat, high-fiber diet. Eat less fatty cuts of beef, cookies, sweets, and cottage cheese, and more lean beef products, poultry, fish, whole grain cereals, wheat breads, and vegetables. • Daily exercise such as walking can help ease the risk of constipation. If medication seems necessary, ask the doctor to recommend a daily stool softener or laxative. • Try to avoid straining so hemorrhoids will not develop…» «…Diarrhea …It is better managed if treated early. Notify your doctor or nurse if cramping, gas, or loose stools begin. • Try to drink 8-12 glasses of water a day to make up for the loss of water in the stool. Rapid and excessive fluid loss or dehydration can be a serious condition resulting from diarrhea, so drink plenty of fluids and monitor habits daily. • The best liquids to drink are those which are clear in color. They eliminate overwork by the bowels and guard against its irritation. Apple juice, ginger ale, tea, broth, and jello are examples. • You may want to eliminate milk products and foods which are difficult to digest, such as cabbage, broccoli, cauliflower, corn, and spicy foods, in order to give the bowels a rest. • Eat bananas, potatoes, and meats to maintain a normal potassium level. Potassium is needed for muscles to function properly. If you do experience symptoms of low potassium intake such as irregular heart beats and leg cramps, be sure to call your doctor.	S1	TC

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	Promoção do controlo da doença (CONT)		• Keep the area around the rectum clean and moist to prevent skin irritation. Ask your physician about the use of a "sitz bath" after bowel movements. Your doctor can prescribe a medicated cream, if necessary. • Keep track of the number of stools per day. If any are bloody, or there are more than three bowel movements a day, inform your doctor…»	S1	TC
			«…Skin reactions can range from dry skin and skin redness to acne. Some reactions can occur during and after treatment. Not all chemotherapy agents cause skin reactions, but if you should notice any changes, alert your doctor. Most people notice a greater risk of sunburn -- even in cloudy weather. It is important to wear sunscreen on exposed areas when outdoors. Avoid use of a tanning bed. Keeping skin moist through the use of moisturizing creams can be helpful…»	S1	TC
			«…The following hints will help prevent and detect an infection: • Good handwashing is one of the first steps for prevention of infection. This begins with soap and warm water. Be sure to lather well and use friction to clean the surfaces. This is best achieved by rubbing the hands together with a a back-and-forth motion. Include the nailbeds and the webbed portions between the fingers. • Try to keep the skin intact, since small cuts and bruises during the period of low white blood cells can harbor germs and be a good place for infection to start. If cuts and abrasions occur, clean the area well with soap and water. If the cuts are not very deep, clean them with hydrogen peroxide and cover with a sterile bandage. Call your doctor's office for further directions. Early signs of infection include: Fever above 100.4F		

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	Promoção do controlo da doença (CONT)		(37.8C), Chills, New cough or production of sputum, Sore throat, More than three loose stools in a day, Pain or burning upon urination…»	S1	TC
			«…Avoid injury to the skin during a period when platelets are low. This means avoiding use of a razor or nail clippers. If injury does occur, apply pressure to any spots which are bleeding for at least 10 minutes. Call your physician immediately if the bleeding does not stop. To prevent bleeding from the mouth, use a soft bristle toothbrush. Avoid the use of dental floss until blood counts are within the normal range. Be sure dentures fit properly to cut down on irritation to the gums. When dentures are removed, rinse with a mouthwash low in alcohol to prevent drying out the insides of the mouth and increasing the risk of bleeding…»	S1	TC
			«…Treat the skin gently to avoid further irritation; bathe carefully using only warm water and mild soap…»	S1	TC
			«…Medications are available to treat nausea, and oral rinses and pain medicine may offer some relief for ulcers of the mucous membranes. Commercial mouthwashes should be avoided, since some contain ingredients which can irritate…»	S1	TC
			«…Patients are not restricted from normal activity during radiation therapy, and many continue to work while undergoing treatment. However, they should balance normal activity with periods of rest…»	S1	TC
			«…The following exercises are to help you regain your normal shoulder and arm movement (range ofmotion) after your breast surgery…»	S1	TC
			«…Helpful Guidelines: • If you are experiencing pain, discontinue exercises and notify your doctor or nurse. • If your arm becomes swollen or very tender after		

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CATEGORIA: Potencialidades da informação para o aporte de benefícios (BEN)	Promoção do controlo da doença (CONT)		these exercises, contact your doctor, nurse or physical therapist. • After your surgery it may take about 2-3 months to recover full motion and strength in your arm. • The best way to regain motion is to work gradually, increasing your movement in small steps. • It may be helpful to do exercises when your muscles are warm, such as after bath or shower. Do not use a heating pad on your affected arm. • After surgery or radiation you may have tightness in your chest tissue or armpit. This is normal. Continue the exercises until the feeling of tightness is gone. • You may notice a burning, tingling or soreness to the back of your arm and along your chest wall. Do not be alarmed. This is caused by irritated nerve endings. These sensations may become stronger 2 to 3 weeks after your surgery and usually subside. Movement may temporarily increase these sensations. It is important that you continue your exercises to maintain your normal arm movement. • If possible, do exercises in front of a mirror to keep your correct posture and motion • Be sure to breathe during your exercises you may not realize your are holding your breath…»	S1	TC
			«…Remember: • Do not lift heavy objects after your surgery. Your doctor will let you know when you may resume activities such as housework, etc. • You are encouraged to use your elbow and hand in performing your daily activities, as long as these activities involve light to normal use of your arm…»	S1	TC

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	Promoção do controlo da doença (CONT)		«…Managing Symptoms: Bowel Laxative Regimen…To Prevent or treat constipation your doctor or nurse may recommend the following schedule of laxatives and stool softeners…»	S1	TC
			«…Managing Symptoms: Constipation… What can I do? • Increase the amount of high fiber foods in your daily diet, such as: • Fresh raw vegetables and fruits, especially those with skins (apples, pears, plums) and seeds - unless your white blood cell count is low. • Bran, whole grains and cereals, granola, wheat germ flakes • Dried fruits, especially dates, prunes and apricots • Prune juice • Dried beans • Drink 6-8 glasses of fluid per day, such as: • Fresh fruit juices, except apple juice • Warm or hot fluids, especially in the morning • Increase your physical activity as much as possible. Even short walks will help decrease constipation • Attempt a bowel movement at a regular time each day, preferably after breakfast. • Talk with your medical oncologist or nurse before using over-the-counters laxatives, stool softeners or enemas. • Avoid chocolate, cheese, eggs or fatty fried foods…»	S1	TC
			«…Managing Symptoms: Pain… When Should I Call the Doctor or Nurse? If you have: • Any new pain, especially if it is persistent or severe. • An increase in the amount or frequency of pain that you experience. • Pain that does not improve after taking pain		

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	Promoção do controlo da doença (CONT)		medication or returns before the next scheduled dose. • Side effects from pain medications (e.g. sleepiness, nausea, constipation). • Pain that is accompanied by numbness, tingling or weakness of arm or leg; difficulty walking, urinating or having a bowel movement…»	S1	TC
			«…How often should I take my pain medications? • Take the medication as prescribed by your doctor. Most pain medications start to work in 3060 minutes and last 46 hours. Other medications, such as the anticonvulsants and antidepressants take a few days to start working. • It is also important to take the medication as soon as you start to feel the pain. If you wait until the pain is severe, it will take more medication and a longer period of time to control the pain. • If you require multiple doses a day of narcotic pain medication, your doctor may prescribe a "long acting" pain preparation. • You should keep a record of how often you take your pain medication and how much relief you feel. Share this record with your doctor and nurse…»	S1	TC
			«…Other ways to decrease pain include: • Heat and cold applications • Massage • Acupuncture and acupressure • Relaxation techniques • Guided imagery • Biofeedback • Hypnosis • Counselling • Diversionary activities (watching TV, listening to music)…»	S1	TC
			«…Managing Symptoms: Weight Gain… What can I		

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	Promoção do controlo da doença (CONT)		do to avoid weight gain? Talk to your doctor about the chances of possible weight gain. A low-fat, calorie controlled diet is generally recommended for many breast cancer patients. Some general tips include: • " Emphasize fruits, vegetables, as well as whole-grain breads and cereals. • " Eat lean meats, such as lean beef, no pork, and chicken without the skin. Fish is naturally low in fat. • " Use low-fat dairy products (skim milk, fat free yogurt). • " Chose low-fat, cooking methods, such as broiling, braising and steaming. • " Avoid snacking on high-calorie foods. Choose fruits and vegetables which are high in fiber and have no fat. • " Do not add fat, salt, or sugar to your food. • " If you feel well enough, include some exercise to help maintain muscle…»	S1	TC
			«…What should I do if I notice a significant weight gain? Let your doctor know so that you can find out what is causing the change. Sometimes, the drugs you are taking cause your body to hold excess fluid, which may cause weight gain. In such cases, you may be advised to reduce your salt intake and to take a diuretic which can help your body get rid of the water. Together you can decide on a weight control strategy that is right for you…»	S1	TC
			«…Should I take vitamins? A well-balanced diet should provide your daily vitamin and mineral needs. However, your treatments and the stress from treatments could increase those needs. A multi-vitamin that provides the Recommended Daily Allowances is a good idea. Not all vitamins are alike,		

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	Promoção do controlo da doença (CONT)	• Medidas de “Coping”	however, so it's a good idea to talk to your doctor, nurse or nutritionist about which vitamins you are taking to ensure that they won't have a negative health impact…»	S1	TC
			«….Be sure that you inform your health care team of any symptoms that you may be experiencing. Your health care team are experts in providing information and individualized ways to manage your symptoms so that you can resume your usual daily activities…»	S1	VCAM
			«…Because of the physical changes in the body, breast cancer can make a woman feel differently about herself. It may also affect feelings about relationships, particularly physical intimacy. These are very real-and, also, very natural feelings. Be attuned to how you are feeling and find ways to discuss these concerns with your partner, doctor, nurse, friend, another patient with breast cancer, or a counselor. It is important to understand and address these concerns so that they do not have a long-term effect on you and people close to you…»	S1	VCAM
			«…Breast cancer brings on many stresses for both you and your partner. By sharing the experience and your feelings, you can develop an even closer, more open relationship than ever before. This takes communication and work, but it has been done over and over by many couples…»	S1	VCAM
			«…Depression may be a result of your cancer experience. Your feelings about yourself and your life can change significantly during your cancer experience. Depression can be treated with counseling and/or medication to help you regain a sense of control and enjoyment in your life. It is important to tell your doctor or nurse about how you feel so that the needed steps can be taken…»	S1	VCAM

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	Promoção do controlo da doença (CONT)		«…It is very important to talk with your partner so that you are both comfortable discussing the physical and emotional aspects throughout your cancer experience. Reading books, booklets, and information on the Internet, combined with attending seminars on the subject, can provide important information and a context for understanding your emotions. This material can also provide useful ways of addressing issues as they arise…»	S1	VCAM
			«…The University of Pennsylvania Cancer Center offers programs that cover this subject. We also offer a Counseling Service where you and/or your partner can comfortably discuss these issues with an experienced, caring professional. The American Cancer Society has an excellent booklet, Sexuality and Cancer, which is available for free by calling your local ACS…»	S1	VCAM
			«…One way to regain a sense of control in your life is by learning as much as you can about your disease so that you can discuss it openly with your health care team…»	S1	VCAM
			«…Please consult your health care team to discuss any questions that may come up after reading the information provided on this website. This information is not intended to replace the advice of your health care team…»	S1	VCAM
			«…You may want to consider sharing your diagnosis with others. Many people feel comfortable telling family and close friends about their diagnosis of cancer, but choosing to share this information and the people you want to share it with is a personal decision. You may want to consider talking with your employer or anyone else who may be directly affected by your disease or your treatment. You may find that an even stronger support system will be available to you once you begin to communicate with others...»	S1	VCAM

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	Promoção do controlo da doença (CONT)		«… Support groups meet regularly and can provide valuable information for cancer patients, their families, and significant others…Please remember that it is important to choose your sources of information and support wisely and to discuss the information you collect with your health care team. Gathering information about your cancer and its treatment will reduce uncertainty and assist you in understanding your situation…»	S1	VCAM
			«…There is a wealth of information available to you. Please look at the list of resources at the end of this discussion for information ranging from general information about your disease to clinical trials to survivor issues. In addition to the resources listed at the end of this discussion, you will find that information is readily available from such places as libraries, bookstores, your doctor's office, the Internet, community centers, and pharmaceutical companies. These materials can be found in various forms, such as pamphlets, booklets, Internet web sites, books, audiotapes, and videotapes…»	S1	VCAM
			«…Seek information in quantities that you can manage. We all feel overwhelmed when presented with too much information at one time…»	S1	VCAM
			«…Be sure that you inform your health care team of any symptoms that you may be experiencing. Your health care team are experts in providing information and individualized ways to manage your symptoms so that you can resume your usual daily activities…»	S1	TC
			«…Share your fears with your health care team, your family, and your friends. Knowledge is powerful. Once you have identified your fears, accurate information can help to reduce them…»	S1	VCAM
			«…If you have any questions about the bowel laxative regimen or need additional information or instruction,		

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	Promoção do controlo da doença (CONT)		ask your doctor or nurse. Please let your doctor or nurse know if you would like information on other topics…»	S1	VCAM
			«…This "Helpful Facts" sheet is designed to give you basic information on…More detailed information can be provided by your doctor or nurse. If, you have other questions or would like additional information, please talk to your doctor or nurse…»	S1	TC
			«…Breast cancer brings on many stresses for both you and your partner. By sharing the experience and your feelings, you can develop an even closer, more open relationship than ever before. This takes communication and work, but it has been done over and over by many couples…»	S1	VCAM
			«…Studies have shown that partners care most about their loved one being with them and a part of their lives. Some partners, however, will feel a loss about the change in your body. You may as well. It is important to acknowledge these feelings, which may include guilt or anger. As you want your partner to understand and accept the changes you are experiencing, you need to assure your partner that you accept their range of fears, concerns and feelings…»	S1	VCAM
			«…It is possible that both of you may need to accept less sexual activity for a while and to find different ways of expressing intimacy. There are many physical reasons for a decrease in sexual desire. The most common physical reason is that treatment can reduce hormone levels. Others include nausea and discomfort related to chemotherapy…»	S1	VCAM
			«…Emotional issues can be a major factor as well. Because of the physical change in your body, your feelings about yourself may change and this can lead to a loss of desire. Becoming more comfortable and accepting of physical changes, and recognizing that		

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	Promoção do controlo da doença (CONT)		you as a person have not changed, is key. Understanding how you and your partner are feeling, and accepting them, is part of the process toward finding different ways to feel close and loved. Many of the factors that contribute to a personal change in sexual desire resolve over time so that you can return to your prior level of desire and activity…»	S1	VCAM
			«…Becoming a *self-advocate* is one way to approach your diagnosis and treatment. Being self-supportive requires that you understand what is best for you. You may want to consider spending some time evaluating your needs to determine how you would like to approach your treatment…»	S1	VCAM
			«…By building a network of support, your ability to take control of your life will actually be enhanced. Sometimes, learning to ask for help is just as important as receiving it. Accept that people really do want to help you and that by accepting their help, you may both benefit. Keep a list of things that you need help with so that when someone asks you how he or she can help, you can let him or her know. This list can include such things as shopping, cooking, laundry, childcare, or transportation. You may wish to keep a calendar and have your family, friends, or members of your community (church members, members of your support group, neighbors) sign up to provide dinner, transportation for you to your appointments or for your children and their activities, or childcare for an hour in the afternoon so that you can take a nap. Save your energy for yourself, your family, and friends. Acknowledging that you need assistance and identifying the specific tasks that need to be accomplished make it easier for others to help you…»	S1	VCAM
			«…Your physical appearance may have changed as a result of your cancer or its treatment. Although these		

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	Promoção do controlo da doença (CONT)		physical changes may be hard to accept at times, it is important for you to try to accept these changes as part of your "new normal". You may want to consider seeking the assistance of a therapist, another cancer survivor, or a loved one to help you adapt to these changes. In some cases, your health care team may be able to tell you about things that can be done to help your particular situation…»	S1	VCAM
			«…If you experience sexual difficulties as a result of your cancer treatment, discuss this with your health care team. You do not have to give up intimacy and affection during cancer therapy. Communication with your significant other is extremely important during this time. Providing each other with love, support, and comfort is important at this time in your life…»	S1	VCAM
			«…Of course you would like your daily routine to return to the way it was before your illness, but you may find that you are more likely to have a new set of expectations and priorities as a result of your cancer, its treatment, and redefining your life after diagnosis. Consider the following tips from the American Cancer Society. • Be kind to yourself. Focus on what you can do. • Reach out to others. Reaching out to someone else can reduce stress. • Don't be afraid to say no. Polite but firm refusals help you stay in control of your life. • Talk about your concerns. • Learn to pace yourself. Stop before you get tired. • Give in sometimes. Not every argument is worth winning. • Get enough exercise. It's a great way to get rid of tension in a positive way. • Take time for activities you enjoy. • Set priorities. You can't do everything at once.	S1	VCAM

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	Promoção do controlo da doença (CONT)		• Take one thing at a time. If you're feeling overwhelmed, divide your list into manageable pieces. • Having a plan can reduce the stress of the problem. • Eat properly. • Get enough sleep…»	S1	VCAM
			«…A major concern for cancer survivors is that their cancer will return. As your cancer treatment comes to an end and the time for your checkup approaches, or as the anniversary date of your cancer diagnosis nears, you may feel anxious. Be sure to ask your doctor what symptoms you should watch for and immediately report anything unusual. Whether you are still being monitored by your oncologist or have been referred back to your family doctor, follow their advice and continue to get regular checkups…»	S1	VCAM
			«…Sabemos que publicações como esta não respondem a todas as questões que a vão preocupar e não podem, de forma alguma, substituir o diálogo com os profissionais de saúde…»	S4	VCAM
			«…Falar sobre o modo como se sente pode ajudá-la na sua recuperação. Quando se sentir preparada, partilhe os seus sentimentos com alguém e verá que esse primeiro passo a deixará mais aliviada…»	S4	VCAM
			«…É muito importante perguntar! Faça saber à equipa de saúde que a trata, o nível de informação que necessita. Assim, ficaremos a saber mais de si e das suas necessidades. Não existem perguntas inoportunas. ..»	S4	VCAM
			«…Para a maioria das pessoas, a família é o principal suporte emocional que, tal como você, necessita de tempo para se ajustar a esta nova realidade. O seu companheiro também tem temores e medos. Devem ajudar-se mutuamente falando sobre eles e usando apenas a verdade na exteriorização das emoções.		

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	Promoção do controlo da doença (CONT)		A comunicação é a chave para encontrar uma nova perspectiva sobre cada um de vós…»	S4	VCAM
			«…Por muito que deseje, o seu companheiro não pode curá-la. As reacções normais ao medo são o silêncio, a impaciência e a revolta. Deve dar-se conta que essa pessoa querida está também a tentar lidar com emoções fortes. Esta situação pode ser uma oportunidade para falarem dos vossos sentimentos…»	S4	VCAM
			«…Por mais forte que seja uma relação, o cancro da mama pode ser uma carga excessiva para o casal. Grupos de apoio, amigos e padres, podem ajudá-los a ajustarem-se a esta nova situação, como pessoas e como casal. Quando se sentirem preparados, poderão falar de todos os medos ou qualquer outra questão…»	S4	VCAM
			«…Se tem ou não compromisso com alguém, o melhor é tratar o cancro da mama como qualquer outro acontecimento critico da sua vida. Os seus amigos serão um grande apoio, como o são em qualquer outra ocasião. Use o seu próprio senso comum para decidir com quem e quando poderá compartilhar a sua experiência…»	S4	VCAM
			«…Um aspecto da comunicação com os adultos é o seu desejo de aceitar ajuda. É importante que você saiba que não pode fazer tudo sozinha. No início pode decidir que não quer falar com a sua família mas, quando se sentir pronta para isso, peça-lhes que a escutem e conte-lhes como se sente. Eles sentem tanto ou mais carinho por si agora do que antes do diagnóstico…»	S4	VCAM
			«…Any breast cancer surgery can be a deeply traumatic experience. You may feel that your breasts are very important to your idea of yourself as a woman. The first months are likely to be very upsetting. Many women have conflicting emotions, such as grief, fear, shock, anger and resentment. These emotions may be		

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	Promoção do controlo da doença (CONT)		«…The change to your appearance may lower your self-confidence. Many women need time to come to terms with this. Women find different ways of trying to come to terms with the change to their bodies. Some prefer to see the results of the surgery for the first time alone. Others may want the support of a partner or close friend, or doctor or nurse, when they take their first look at the scar…»	S2	VCAM
			«…Although breast surgery will not affect your physical ability to have sex, the emotions you feel may reduce your desire for sex for a while. Women often need to feel relatively happy with their bodies to have a fulfilling sex life. Fear that a partner – even a long-standing one – may be put off by the result of the surgery can make women fearful of the moment they allow someone to see or touch their body. There is no right or wrong time to take this step. You can wait until you and your partner feel ready. While you are still in hospital, the nurses can prepare your partner for how the scar may look. A nurse, or your doctor, can be with you both when you let your partner see it. Alternatively, you may prefer a close relative or friend to be there and talk it over with you both afterwards…»		
			«…You will find that the difficulties and emotions reduce with time. After the operation, the swelling will go down, the bruising fades and the scar will gradually become less obvious. As you become more used to the soft breast prosthesis, this should also help to restore your confidence…»	S2	VCAM
			«…Getting used to having had breast cancer can take months or years. The emotions and anxieties may come back each time you have to go for a follow-up appointment or if you see cancer mentioned in papers, magazines or on the television…»	S2	VCAM

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	Promoção do controlo da doença (CONT)		«…Many women cope well with the surgery and treatment for breast cancer. This is partly due to support from hospital staff and friends and family. However, women are often surprised that they find it difficult to cope once the treatment has finished. Instead of feeling able to forget about the cancer and get on with normal life it is common to feel anxious and tearful for a while once the treatment has ended…»	S2	VCAM
			«…Some women are very anxious that the cancer may return. They worry that any ache or pain is a sign that the cancer has come back. Anxieties and worries can make it hard to sleep. It is not unusual to feel depressed and isolated. These feelings can often feel worse at night…»	S2	VCAM
			«…After breast cancer surgery you may feel emotionally and physically drained. It is important for you to allow yourself plenty of time to recover…»	S2	VCAM
			«…Some menopausal symptoms are very difficult to deal with. These include a lower sex drive, mood swings, poor confidence and loss of concentration and memory. You may feel very emotional or anxious without really knowing why. These symptoms may be quite distressing for you – and for your partner, if you have one. A number of organisations provide support to women going through the menopause…»	S2	VCAM
			«…Coping with menopausal symptoms after cancer treatment can often be very difficult. You may feel anxious, angry or frustrated that you are now having to cope with more symptoms. These are all normal reactions…»	S2	VCAM
			«…An early menopause and infertility are often difficult to come to terms with, particularly for women who hoped to have children or who would have liked to have more children. Many people find it helpful to talk through their feelings with their doctor or nurse, or		

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	Promoção do controlo da doença (CONT)		or with friends and family members…»	S2	VCAM
			«…You may experience many different emotions including anxiety and fear. These are all normal reactions and are part of the process many people go through in trying to come to terms with their condition. Many people find it helpful to talk things over with their doctor or nurse. Close friends and family members can also offer support…»	S2	VCAM
			«…Everyone affected by a diagnosis of cancer should have access to a range of information and emotional and social support tailored to their own particular needs. Relevant, up-to-date information and appropriate support will improve understanding and help people manage their cancer and its treatment. This should include all aspects of treatment and recognise the particular physical, psychological, spiritual, social and emotional needs that a diagnosis of cancer brings…»	S2	VCAM
			«…Information and support to people with cancer will improve the quality of their lives and reduce uncertainty, anxiety and depression. It will also increase their satisfaction with the services they receive, their sense of involvement in their treatment, and communication between people with cancer, their families and friends and the staff involved in their care. It will thereby improve the effectiveness of the care they receive…»	S2	VCAM
			«…If you do feel low or worried, for whatever reason, it is important to know that you are not alone. You can be sure that many people with cancer have felt as you do at some time during their treatment and that, like them, you can deal with feeling fearful or discouraged. Once you have identified why you are feeling low, you can start to take action. Information can help to overcome fear. If you don't understand something, ask		

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	Promoção do controlo da doença (CONT)		your doctor, nurse or other health professional…If you don't understand the explanation, then keep asking until you do…»	S2	VCAM
			«…Your emotional well-being is as important as your physical health. Everyone needs some support during difficult times and having cancer is one of the most stressful situations you are ever likely to face…»	S2	VCAM
			«…If you feel that low moods are getting the better of you, try to talk over your feelings with someone you feel close to who can be a good listener. You may also find it helpful to discuss your feelings with a professional counsellor, a leader or member of your religious faith or a social worker…»	S2	VCAM
			«…If you feel comfortable discussing personal worries with your doctor or nurse, these people can be very good at helping you to bring your feelings out into the open and can find you further help if necessary…»	S2	VCAM
			«…Try to keep a positive attitude. This does not mean being cheerful and happy all the time. Everyone feels down and worried now and again and accepting that you will have these feelings is part of being positive…»	S2	VCAM
			«…It can help to know what your treatment involves, what is expected to happen, what side effects, if any, to expect, what can be done about them and what should be reported to your doctor or chemotherapy nurse…»	S2	VCAM
			«…If you gather as much information as possible about your disease and treatment, you can play an active part in tackling it. You may need to ask questions over and over again, or ask new questions every time you see your doctor or nurse. This is fine. It is your illness and you need to work with your health care staff to find ways of overcoming this very difficult time…»	S2	VCAM
			«…Find out how you are getting on by asking your doctor to tell you regularly about your progress. This		

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CATEGORIA: Potencialidades da informação para o aporte de benefícios (BEN)	Promoção do controlo da doença (CONT)		will give an opportunity for him or her to reassure you if progress is slower than expected, and to discuss changing your treatment if necessary…»	S2	VCAM
			«…Some people find it helpful to keep a diary or journal of their treatment. This can have a practical use as well as letting you express your feelings. For example, you can record each time you felt sick and look back over your treatment to see how this fits in with your drugs. Changes to reduce side effects can often be made by using information of this kind…»	S2	VCAM
			«…Sometimes this can be used to prepare you to speak to a person about a problem or it can be used as a safety valve for anger or sadness that you feel you cannot express in any other way…»	S2	VCAM
			«…Try to plan your time so that you can still do the things that are most important to you. Although it is helpful to try to keep up with your social life, don't be afraid to rest if you need to, even if it means missing out on some social events…»	S2	VCAM
			«…Realistic goals are more likely to be achieved and achieving them will make you feel better. Taking some exercise, as long as it is not too strenuous, will raise your spirits and help get rid of tension. However, it is best to check with your doctor before starting a new exercise programme…»	S2	VCAM
			«…The end of the visits to hospital for treatment can leave you feeling alone and neglected. Many people find that they feel very low and emotional at this time, when they had expected to be able to put the cancer and the treatment behind them. This may be the time when you need most support…»	S2	VCAM
			«…There may be times when you want to be alone with your thoughts. However, at other times being able to share your feelings can be a weight off your mind…»	S2	VCAM

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	Promoção do controlo da doença (CONT)		«…Patient support groups can put you in touch with other people having similar treatment. Talking with these people can be a good way of discussing feelings that relatives or friends may not understand, and you can also pick up some useful coping tips…»	S2	VCAM
			«…Family and friends usually want to help you bear the burden of coping. However, they may find it difficult at first to grasp exactly what it is you are going through. The key is to keep communication going. Just at a time when you think loved ones should be rushing to help, they may stand back and wait for you to make the first move. This is often because they are worried they may say the wrong thing, or they think you may want to cope alone...»	S2	VCAM
			«…They may even be feeling emotionally worn-out themselves. Be open and honest about how your treatment is going and how you feel about it. In that way, misunderstandings can be avoided and others are given the chance to show their love and support…»	S2	VCAM
			«…Many people find that counselling can help them to deal with the problems of living with cancer. Counsellors use their skills to help people talk through and sort out problems and confusion. Emotional difficulties linked to cancer are not always easy to talk about and are often hardest to share with those to whom you are closest. Talking with a trained counsellor who is not personally involved in your situation can help to untangle thoughts, feelings and ideas…»	S2	VCAM
			«…Try to cut down on any unnecessary activities and ask your family or friends to help you with jobs such as shopping and housework. It is important not to fight your tiredness. Give yourself time to rest and if you are still working see if it is possible to reduce your hours while you are having treatment…»	S2	VCAM

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	Promoção do controlo da doença (CONT)		«…Depending on how well you feel, there is no reason to stop going out or visiting friends, especially if you can plan ahead for social occasions. For example, if you are going out for the evening, you could make sure that you get plenty of rest during the day so you have more energy for the evening. If you are planning to go out for a meal, you may find it helpful to take anti-sickness tablets before you go and to choose your food carefully from the menu. If you have an important social event (such as a wedding) coming up, discuss with your doctor whether your treatment can be altered so that you can feel as well as possible for the occasion…»	S2	VCAM
			«…If you are worried that the chemotherapy could affect your sex life, try to discuss your worries with your cancer specialist before your treatment starts. Your doctor should be able to tell you about the side effects your treatment may cause and you can then talk about the main effects of these, if any, on your sex life. It may help if you can discuss your feelings and any worries with your partner. Even though it is unlikely that chemotherapy will cause any problems with sex, your partner may still have some anxieties and may have been waiting for a sign from you to show that it is all right to discuss them. Perhaps your partner could join you if you decide you want to talk to your doctor…You may also need an opportunity to talk to a trained counsellor about any strong emotions which threaten to become too much for you…»	S2	VCAM
			«…Your partner will also need special consideration in any discussions about fertility and future plans. You may both need to speak to a professional counsellor or therapist specialising in fertility problems. They can help you to come to terms with your situation…»	S2	VCAM

MATRIZ DE REDUÇÃO DE DADOS

INFORMAÇÃO SOBRE DIAGNÓSTICO DE CANCRO DA MAMA VEICULADA NOS "WEB SITES"

	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTO DE TEXTO	"WEB SITE"	VARIÁVEL TEMÁTICA
CATEGORIA: Informação susceptível de provocar dano (NMAL)	Possibilidade de dano ou colocar em risco de dano (RD)	• Susceptibilidade genética	«…having a genetic mutation that increases your risk. Genetic mutations for breast cancer have become a hot topic of research lately. Between 3% to 10% of breast cancers may be related to changes in either the gene BRCA1 or the gene BRCA2. Women can inherit these mutations from their parents and it may be worth testing for either mutation if a woman has a particularly strong family history of breast cancer (meaning multiple relatives affected, especially if they are under 50 years old when they get the disease). If a woman is found to carry either mutation, she has a 50% chance of getting breast cancer before she is 70. Family members may elect to get tested to see if they carry the mutation as well. If a woman does have the mutation, she can get more rigorous screening or even undergo preventive (prophylactic) mastectomies to decrease her chances of contracting cancer…»	S1	EFRE
			«…Personal risk information has the potential to motivate a high-risk woman to adopt screening that may promote early detection of cancer. The information may also devastate the mother with breast cancer who learns that all three of her adult daughters have also inherited this cancer susceptibility…»	S1	EFRE
			«… is that of the 38-year-old woman who is recently married. Her new husband understands that the cancer that afflicted her mother and two sisters at early ages may one day affect his bride. Since the family mutation had been discovered through first		

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	Possibilidade de dano ou colocar em risco de dano (RD)		testing an affected sister, she decides to proceed and learn whether or not she too inherited the high-risk mutation. She learns she didn't. What a relief for her and her family. While still facing the same cancer risks as the average woman, an 11 percent risk for breast cancer is considerably lower than a 60 to 85 percent risk in mutation carriers. In addition, this woman felt that she would have prophylactic oophorectomies soon, if she were found to have a mutation, since ovarian cancer took her beloved sister at the age of 42. Now she plans to have several oophorectomies soon, if she were found to have a mutation, since ovarian cancer took her beloved sister at the age of 42. Now she plans to have several children, and puts away all thoughts of prophylactic surgery. Even this woman, who receives good news, may feel guilty for escaping the problems affecting her loved ones, but she and her new husband also have an opportunity to take a different approach and have a new outlook to planning their lives together…»	S1	EFRE
			«…One of the greatest potential benefits of genetic tests for breast cancer susceptibility is the identification of young women who may benefit from mammogram surveillance initiated at an earlier age and/or on a more frequent basis than usual…»	S1	EFRE
			«…A very small number (about 5–10%) of breast cancers are thought to be caused by inherited faulty genes. Two breast cancer genes have been identified: BRCA1 and BRCA2 – others may be found in the near future. Breast cancer is a common cancer and about one in nine women in the UK will develop it during their lifetime. So, in a family if one or even		

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CATEGORIA: Informação susceptível de provocar dano (NMAL)	Possibilidade de dano ou colocar em risco de dano (RD)	• Cuidados de saúde dirigidos à prevenção, tratamento e reabilitação	two elderly relatives are diagnosed with breast cancer, it is not likely that the cancers could be caused by an inherited faulty gene…However, if you have any of the following in your family, you might want to speak to your GP and be referred to a family cancer clinic: • three close blood relatives (from the same side of the family) who developed breast or ovarian cancer at any age, or • two close relatives (from the same side of the family) who developed breast or ovarian cancer under the age of 60, or • one close relative who developed breast cancer under the age of 40, or • a case of breast cancer in a male relative, or a case of bilateral breast cancer (cancer in both breasts)…»	S2 S1, S2, S3,S4 S1	EFRE TC TC
	Estratégias para prevenir o dano (EPD)		«…the process of genetic counseling should be considered a mandatory step in the process of genetic testing. The potential for harm from genetic testing is real, and the benefits can be interpreted subjectively…» «…They recommend that genetic counselors provide patients with pretest counseling, ensure the patient's informed consent before testing, be aware of and minimize adverse psychological consequences, provide or arrange for followup care, and promote breast cancer prevention and surveillance techniques…»	S1 S1	EFRE EFRE

CATEGORIA: Informação susceptível de provocar dano (NMAL)	SUB-CATEGORIA	OBSERVAÇÕES	EXTRACTO DE TEXTO	"WEB SITE"	VARIÁVEL TEMÁTICA
	Estratégias para prevenir o dano (EPD)		«…Genetic testing can sometimes raise more uncertainty about the future than provide answers. Genetic counselors can help people wrestling with these difficult questions to try to reach the best possible decision, given each person's unique perspective and life experiences…»	S1	EFRE
			«…Depending on individual coping styles, women in similar circumstances who have similar risks and understanding of the issues may reach different decisions. This aspect of the genetic counseling is critical, and cannot be achieved by handing a patient a pamphlet, or briefly presenting the cancer risks associated with finding a gene mutation…»	S1	EFRE
			«…Skilled genetic counseling is not just for individuals and families where a gene mutation has been found. It should be offered before as well as after testing so that thoughtful and personal decisions can be made about whether receiving this powerful insight to future health risks will be of benefit or not…»	S1	EFRE
		• Fotografias sobre a reconstrução mamária	«…OncoLink Advisory: Photographs on this page graphically illustrate the results of breast reconstruction therapy. Since they depict actual patients, some OncoLink readers may choose not to view them…»	S1	TC
			«…Do not take any medications unless instructed by your doctor or nurse…»	S1	TC
			«…These exercises are not designed for patients who have had breast reconstruction. If you have had reconstruction you will be given a different set of exercises…»	S1	TC