PART THREE: TREATMENTS

DECIDING ON TREATMENT

It is important that you be given the knowledge you need to enable you to actively participate in decisions about your care and treatment. It is a patient's right and should be a key factor in deciding whom you want to treat your breast cancer.

Most women who are treated for early breast cancer go on to live healthy, active lives. You may have more choices of treatment if your breast cancer is found early. Treatments have changed over time. Today, many women who are diagnosed with breast cancer do not have to lose a breast. Because there are improved ways to treat breast cancer, it is more important than ever for you to learn all you can. And your doctors and breast cancer organization can help play a key role in helping you choose the treatment that is best for you.

DECISION-MAKING CHECK LIST

Answering yes to the following questions will help to ensure that you have taken the necessary steps to understand your treatment options and gather the information you need to arrive at an informed treatment decision. **http://www.winabc.org/checklist.html**

1. Do you know how much time you can take to make your decision?

2. Did your doctor present you with your treatment options?

3. Do you understand the various treatment options?

    a) The advantages and disadvantages of each treatment option

    b) The side effects (short-term and long-term) of each treatment option

    c) Why certain options may not be medically appropriate for you

4. Do you need additional information to make your decision?

    a) What additional information you need

    b) How and where to get the information you need

5. Have you discussed your decision with your partner, family or a close friend?

6. Have you considered how you would react to having each type of treatment?

7. Are you having difficulty making your decision?

    a) What else you need to do to make your decision?

8. Are you ready to make your decision?

9. Are you comfortable with your decision and can you live with your decision?

PRIMARY AND ADJUVANT TREATMENT OPTIONS FOR BREAST CANCER

Primary Treatment Options:
Stage I and II Breast Cancers: Choice of (1) Breast-sparing surgery (typically lumpectomy, usually with lymph node sampling) followed by external beam radiation therapy **or** (2) modified or radical mastectomy with or without breast reconstruction. (3) Removal or radiation of lymph nodes or sentinel node procedure. Choice between (1) and (2) depends mostly on the size and location of the tumor, the size of the breast, certain features of the cancer, and how the woman feels about preserving her breast.

Stage III Breast Cancers: (1) Standard therapy is mastectomy usually with radiation therapy and systemic treatment (combination chemotherapy, hormonal therapy, or both). (In very advanced Stage III, systemic drug therapy, radiation, or both sometimes achieve a response that allows a woman to avoid mastectomy, although this approach does not increase survival rates.) (2) Radiation after surgery is now recommended for women with four or more involved lymph nodes or an extensive primary tumor. It is not yet clear if radiation would benefit women with one to three involved lymph nodes.

Stage IV Breast Cancers: (1) Surgery or radiation for any localized tumors in the breast. (2) Chemotherapy, hormonal agents, or both are appropriate for most patients (durable and complete remission possible in 10% to 20% of cases but cure is very rare). Chemotherapy in patients with hormone receptor-negative disease or who have extensive metastasis which requires rapid tumor shrinkage. Ovarian ablation (in premenopausal women) or other hormonal therapies in patients with hormone receptor-positive cancer and no or minimal organ involvement. (Aromatase inhibitors, taxanes, and other agents used in combination or in innovative schedules are improving results.) (3) Radiation and high-dose steroids for brain metastasis. (4) Radiation and bisphosphonates for bone metastasis (which occurs in 75% of cases). Such treatments relieve and pain and help prevent bone fractures. (5) Clinical trials: standard hormonal or chemotherapy agents used as initial treatment, newly developed chemotherapeutic or hormonal agents, monoclonal antibodies, total hormone blockade using surgery, high-dose chemotherapy with stem-cell support.

Adjuvant therapy is treatment given in addition to the primary therapy, such as surgery, to kill any cancer cells that may have spread, even if the spread cannot be detected by radiologic or laboratory tests. Studies have shown that adjuvant therapy for breast cancer may increase the chance of long-term survival by preventing a recurrence. Because the principal purpose of adjuvant therapy is to kill any cancer cells that may have spread, treatment is usually systemic (uses substances that travel through the bloodstream, reaching and affecting cancer cells all over the body). Sometimes, however, local adjuvant therapy, in the form of Radiation, is used to shrink tumors prior to surgery, so that they will be easier to remove.

There are three basic forms of therapy that are utilized in the management of breast cancer:

1. Surgical procedures to establish the diagnosis (biopsy), to remove the local disease in the breast (lumpectomy, mastectomy) and to estimate the extent of the disease.

2. Radiation therapy to control local disease in the breast or to treat specific sites of spread.

3. Chemotherapy and hormone therapy to treat cancer in the breast, to reduce likelihood of recurrence and to treat known spread of breast cancer to other body sites.

In most situations, effective therapy involves use of more than one form of treatment.

SURGERY

Types of Surgery- http://www.nci.nih.gov/cancerinfo/understanding-breast-cancer-treatment

Surgery has an important role in the treatment of patients with breast cancer. Most women can choose between breast-conserving surgery (lumpectomy with radiation therapy) or removal of the breast (mastectomy). Clinical trials have proven that both options provide the same long-term survival rates for most types of early breast cancer. However, neither option guarantees that cancer will not recur. Whichever choice you make, you will need close medical follow-up for the rest of your life.

Lumpectomy

The surgeon removes the breast cancer and some normal tissue around it (in order to get clear margins). This procedure usually results in removing all the cancer, while leaving you with a breast that looks much the same as it did before surgery. Usually, the surgeon also takes out some of the lymph nodes under the arm to find out if the cancer has spread. Women who have lumpectomies almost always have radiation therapy as well. Radiation is used to destroy any cancer cells that may not have been removed by surgery.

Partial or Segmental Mastectomy

Depending on the size and location of the cancer, this surgery can conserve much of the breast. The surgeon removes the cancer, some of the breast tissue, the lining over the chest muscles below the tumor, and usually some of the lymph nodes under the arm. In most cases, radiation therapy follows.

Total (or simple) Mastectomy

The surgeon removes the entire breast. Lymph nodes under the arm may be removed, also.

Modified Radical Mastectomy

The surgeon removes the breast, some of the lymph nodes under the arm, and the lining over the chest muscles, and sometimes part of the chest wall muscles.

Radical Mastectomy

The surgeon removes the breast, chest muscles, and all the lymph nodes under the arm. This was the standard operation for many years, but it is used now only when a tumor has spread to the chest muscles.

A mastectomy may be recommended when:

- cancer is found in more than one part of the breast;
- the breast is small or shaped so that a lumpectomy would leave little breast tissue or a very deformed breast;
- a woman chooses not to have radiation therapy; or
- a woman prefers a mastectomy.

After a mastectomy, a woman may choose to:

- wear a breast form, called a prosthesis, that fits in her bra;
- have her breast reconstructed by a plastic surgeon; or
- do neither.

Some health insurance plans pay for all or part of the costs of a prosthesis or for breast reconstruction. However, there may be health insurance rules about where a woman can have breast reconstruction surgery or where to buy prosthesis. For details about your health plan coverage, contact your insurance company and ask for a patient representative.

AXILLARY NODE DISSECTION AND SENTINEL LYMPH NODE BIOPSY

http://www.nci.nih.gov/cancerinfo/understanding-breast-cancer-treatment/page7
http://www.breastcancer.org/research_surgery_080703.html

Part of the evaluation of patients with invasive breast cancer is the testing of lymph nodes in the areas surrounding the breast to see if cancer has spread there. Knowing whether tumor cells have lodged in lymph nodes helps to determine the need for systemic treatments (hormonal or chemotherapy) and most importantly, it guides the selection of the treatments as well as the need for regional radiation. Determination of axillary nodal status is essential for the staging of breast cancer since nodal status is one of the most important predictors of survival.

To find out if breast cancer cells have spread to the lymph nodes, many women with early-stage breast cancer are offered two options for lymph node removal (also called dissection).

Axillary node dissection: In standard lymph node removal, a surgeon takes out a pad of fat from the armpit (axilla). The fat contains about a dozen lymph nodes from the first two levels of nodes (there are three levels). A pathologist looks carefully at these lymph nodes to see if they contain any cancer cells.

Side effects of the procedure include increased risk for infection and pain at the site, swelling in the arm from fluid build-up, and impaired sensation and restricted movement in the affected arm. Patients might ask their physician about the need for physical therapy or upper-body exercises after treatment. In two studies, such programs resulted in quicker recovery and no fluid build-up in the arm.

Because the standard lymph node procedure removes more nodes than the sentinel lymph node surgery, the standard procedure is more likely to cause side effects. These can include numbness, sensitivity, and swelling in the area where the lymph nodes were removed.

Sentinel Lymph Node Biopsy: The sentinel node procedure is a technique used by breast surgical specialists to find out whether there are breast cancer cells in the lymph nodes under your arm. In this procedure, either a blue dye or a small amount of radioactive material is injected around the tumor site. The surgeon performs a small incision in the underarm area looking for a lymph node containing the blue dye or uses a scanner to locate the radioactive material. The lymph node(s) where the dye first accumulates after leaving the tumor region is called the "**sentinel node(s)**." This node(s) is then surgically removed and examined by a pathologist. If it is positive for cancer cells, then the rest of the nodes are usually sampled. If it is negative, the remaining lymph nodes may not have to be removed.

If the sentinel node is determined to be cancerous while the patient is still in surgery, the surgeon will remove additional lymph nodes in the axilla. Sometimes, the final report indicates a positive (cancerous) sentinel node that was not seen on preliminary review. If this occurs, then additional surgery may be necessary to remove more nodes for examination.

Because sentinel lymph node biopsy involves removal of fewer lymph nodes than a standard axillary lymph node dissection, the potential for side effects such as lymphedema is much lower. This is used particularly with patients who have DCIS (non-invasive breast cancer or ductal carcinoma in situ) and many patients with small breast cancers (less than 1/4 to 1/2 inch in diameter).

Sentinel node biopsy (SNB) has proved to be a useful and accurate procedure for lymph node staging in breast cancer and melanoma and should be standard of care in the treatment of these tumors.

The latest studies on *Long-term follow-up of sentinel node negative breast cancer patients: a quality control* from the European Journal of Cancer Supplement provides reassurance that Sentinel Node Biopsy is safe. In case of recurrence, the axilla can be treated successful without losing locally control. It also emphasizes that conventional axillary dissection should be performed in case of doubt of the Sentinel Node Biopsy procedure.

Sentinel node biopsy is only appropriate for women who do not have evidence of (or suspicion for) involved lymph nodes on physical examination. In such cases, a full axillary dissection is needed. The sentinel lymph node can be identified in over 97% of patients if certain techniques and inclusion criteria are used. Sentinel lymph node biopsy reflects the status of the axilla in 97% of cases and has a 5% false negative rate.

HOW TO CHOOSE A BREAST SURGEON

Sheldon Feldman, MD- Chief of Louis Venet Comprehensive Breast Service, Beth Israel Medical Center, NYC

Surgery has an important role in the treatment of patients with breast cancer. Most women can choose between breast-conserving surgery (lumpectomy with radiation therapy) or removal of the breast (mastectomy). Clinical trials have proven that both options provide the same long-term survival rates for most types of early breast cancer. However, neither option guarantees that cancer will not recur. Whichever choice you make, you will need close medical follow-up for the rest of your life.

The amount of experience a surgeon has in dealing with breast disease is critical. It is generally best if the surgeon devotes all or the majority of his or her time to this area. It is important to know how many newly diagnosed breast cancer patients the doctor treats per year. A safe minimum standard for this would be 50 per year. It is important also to ask about the surgeon's training and experience in breast conserving surgery, sentinel node biopsy and breast reconstruction. These techniques are very volume sensitive and will not be performed well if done infrequently. It can be helpful to speak with one of the doctor's patients about their experience.

It is extremely important that the surgeon have excellent credentials. Breast surgeons are trained as general surgeons during a five-year residency program after medical school. Some more recently trained surgeons will complete a fellowship program in Breast Surgery or Surgical Oncology after Residency training. It is extremely important that the surgeon be certified by the American Board of Surgery. Membership in national organizations such as the Society of Surgical Oncology and the American Society of Clinical Oncology often denote a higher level of dedication, skill and achievement.

It should be kept in mind that the surgeon is usually the captain of a breast cancer team. The hospital or medical center where the surgeon works must provide essential support. This should include a breast conference or tumor board where newly diagnosed patients have their treatment plans reviewed by a multidisciplinary team including the surgeon, medical oncologist, radiation oncologist, plastic reconstructive surgeon, breast radiologist and breast pathologist. Cancer supportive services including psychological, emotional, spiritual and complementary expertise should also be part of the plan.

The best technical surgeon cannot do a good job without the support of excellent radiology (mammogram, ultrasound, MRI, image guided biopsy, accurate placement of needle wires to target the surgical site), pathology (ensure accurate diagnosis and help with intraoperative decisions with cytology and frozen sections), anesthesiology and operating room team with completely up to date equipment. Medical institutions that provide this full spectrum of support for the breast surgeon and their patients ensure the delivery of the highest level of care possible.

The patient should discuss with the breast surgeon his/her philosophy of patient care. Ideally there should be a collaborative relationship with clear communication of expectation and goals of treatment. Guidelines on accessibility (telephone, beeper, e-mail) for communication of questions and concerns should also be established. The relationship must be based upon mutual respect and concern.

Locating and using a primary physician (or medical group) who provides care that is scientific, considerate, and compassionate is essential. While it may seem like a lot to do in the beginning, when everything is so overwhelming, those who take an active role in choosing health professionals usually have a more satisfying experience. An informed patient needs to understand the nature of their particular diagnosis, what the treatment options are, the potential benefits and hazards of each of these treatments and how these would compare to no treatment at all. Do not hesitate to ask questions about fees or request consultations if you need them.

A study from 2003 Annals of Surgical Oncology *showed that treatment by a specialist resulted in a 33% reduction in the risk of death at 5 years. A 2006 study from England adds to concerns about surgeons who only perform occasional breast cancer operations and found a strong link between the volume of procedures a hospital carried out and the readmission rate for further surgery.*

TIMING OF SURGERY

http://www.center4policy.org/health3.html

According to a study published in the medical journal *Cancer* (November 15, 1999) it may be possible for women to improve their chances of surviving breast cancer by timing their surgery carefully.

This study found that women who underwent surgery on days 3-12 of their menstrual cycle had a 10 year survival rate of only 45% while those women whose tumors were removed on other days had a 10 year survival rate of 75%. The authors believe that the reason lies in the varying levels of estrogen and progesterone released during the menstrual cycle. The high levels of estrogen released during the first half of the cycle (days 3-12) have been shown to stimulate the growth of the tumor. By contrast, progesterone, released during the second half of the cycle, may help to contain the tumor. The researchers found that timing plays an independent role in its relation to survival rates. Women who underwent surgery during the first phase of their cycles had equally low survival rates, regardless of whether estrogen receptors were present.

Since there is usually some flexibility in the timing of breast cancer surgery, women and their doctors may want to consider scheduling surgery during the second half of the patient's menstrual cycle. Keep in mind that research on this topic is far from conclusive. The studies that have been done, including this one, include a relatively small number of participants (112 in this study) and assume that the women are experiencing regular 28-day cycles. If the women's cycles are not regular, the women may not have been at the stage of their cycle that was assumed by researchers. Nevertheless, based on this and similar research, scheduling surgery during the second phase of a patient's menstrual cycle is a good strategy, since it may increase the chances for survival. Even before this article was published, previous research had impressed Susan M. Love, M.D., the author of "Dr. Susan Love's Breast Book," who wrote "I am starting to change my practice. After all, there are no side effects to changing the date of surgery, and only potential benefits"

(Love, 1995). *The study was conducted by Lucienne Cooper, M.Sc., Cheryl E. Gillett, Ph.D., Neera K. Patel, M.B., Diana M. Barnes, D.Sc., and Ian S. Fentiman, M.D., researchers at London's Guy's Hospital.*

QUESTIONS TO ASK YOUR SURGEON BEFORE SURGERY

http://www.nci.nih.gov/cancerinfo/understanding-breast-cancer-treatment

1. What kind of surgery do you recommend for me?
2. How much of my breast will be removed?
3. If I have a mastectomy, will I be able to have breast reconstruction?
4. Do you recommend it at the time of surgery or later?
5. Will I meet with the plastic surgeon before surgery?
6. Will you remove any of my lymph nodes?
7. Will you do a sentinel node biopsy?
8. Where will the operation be done?
9. Will I have local or general anesthesia?
10. How should I feel after the operation?
11. If I have pain, how can I get relief?
12. What side effects should I report to you?
13. Where will the scars be? What will they look like?
14. How long will I stay in the hospital? Will I need follow-up care?
15. When can I get back to my normal activities?
16. What activities should I avoid?
17. What do I need to do to prepare for surgery?
18. Will a nurse or physical therapist teach me how to exercise and care for my arm?
19. What do I need to do to prepare for surgery?

QUESTIONS TO ASK YOUR SURGEON AFTER SURGERY

1. What did you learn from the pathology report?
2. Please explain what is in the pathology report.
3. How many lymph nodes were removed? Were they free of cancer? If not, how many showed signs of cancer?
4. Did the tumor have clear margins (normal tissue around the tumor)?
5. Were hormone receptor tests done? What are the results?
6. What other tests will be done on the tissue? When will I know the results?
7. Do I need further treatment?
8. Should I consider joining a clinical trial?

RADIATION

Radiation Therapy Updates: The Best Options for YOU/breastcancer.org Info

The purpose of radiation is to reduce the chance of a **local recurrance.**

External radiation therapy is usually given on an outpatient basis in a hospital or outpatient center. The treatments can be given up to five days per week for several weeks. Patients are not radioactive during or after the treatment. You will receive a total of 33 treatments; 25-28 treatments of radiation to your entire breast area; During the final week or two, you will receive a supplemental dose of 5-8 treatments to the tumor site and targeted directly to the area around your surgery. This dose is called the "boost" and can be delivered either through external radiation or internal radiation. Treatments last 10-15 minutes.

What is radiation?

Radiation therapy (or radiotherapy) uses high-energy rays to stop cancer cells from growing and dividing. Radiation therapy is often used to destroy any remaining breast cancer cells in the breast, chest wall, or axilla (underarm) area after surgery. Occasionally, radiation therapy is used before surgery to shrink the size of a tumor.

What does radiation therapy do?

- It is directed to the area where the cancer is or was to reduce the risk of recurrence.
- It damages the cancer cells' genes and ability to repair themselves so that they can't fix the damage and can't make new cancer cells.
- It is most effective in rapidly dividing cells.
- The total dose is usually delivered in small amounts (called "fractions") over 5-7 weeks.
- It may cause direct side effects, such as skin irritation and swelling of the breast or chest wall, in the area that received treatment.
- It can be inconvenient, because of daily treatments, and add to your fatigue.

Who receives radiation therapy?

It is recommended in most cases if you have breast-conserving surgery (lumpectomy or partial mastectomy). In these cases the cancer is usually:

- Early stage
- Smaller than 4 centimeters
- Located in one site and able to be completely removed with clear margins

Women with moderate risk may also choose radiation treatment based on medical indications and personal reasons.

When is radiation appropriate?

Because it is so effective and relatively safe, radiation therapy has a defined role in treating breast cancer in all of its stages, from stage 0 through stage IV. It may be appropriate for women who have had lumpectomy or mastectomy.

After mastectomy

About 20–30% of women need to receive radiation therapy after mastectomy, to the area where the breast used to be. Women who receive radiation after mastectomy are typically those who have a greater chance of the cancer recurring. Women who are at moderate risk for recurrence (in the "gray zone,") may opt for radiation for both medical and emotional reasons. Most women want to know they have done everything reasonable to attack their cancer, so that (they hope) they'll never have to deal with it again.

Many studies have demonstrated the value of radiation therapy after mastectomy for several sub-groups of women (the characteristics of cancer in these groups are listed below). More studies are under way to refine the treatment recommendations further.

Typically, a doctor will recommend radiation therapy after mastectomy if:

- The cancer is larger than 5 centimeters
- The removed tissue has a very close or positive margin of resection
- Four or more lymph nodes were involved

- The cancer occurred in several locations within the breast
- There were widespread cancer cells in the lymphatic channels and blood vessels in the breast
- Other factors are present that your doctor says are associated with a higher risk of recurrence

Many radiation therapy planning and treatment sessions are similar and follow this general procedure:

1. Patients prepare by removing any articles of clothing or jewelry that may interfere with the therapy session. In some cases, the patient may be asked to wear a patient gown.
2. In order to maximize reproducibility and accuracy of the treatment, the patient will lie on the simulator or treatment table for the all the planning and treatment phases. Patients must do their best to lie still and not move. Patients should not be afraid to ask questions during planning and treatment.
3. Radiation therapy is preceded by a treatment simulation where the tumor is imaged using a device that simulates the path of the radiation beam.
4. Radiation treatments are divided over many sessions encompassing several weeks. Because of this, very tiny marks, or tattoos, are made on the patient's skin to ensure the accuracy of treatment.
5. For daily treatments, the patient is positioned by the therapist on the treatment table. Patient positioning is very important for treatment delivery accuracy. The patient is asked to relax and breathe normally during the treatment. The patient may communicate at any time with the therapist during the radiation therapy session.
6. The actual treatment delivery session can last anywhere from 5 to 15 minutes. The radiation is invisible and creates no sensation when it passes through the patient's body.
7. At the conclusion of treatment, the patient is helped off the table by the therapist. The patient can resume his normal daily activities. Many patients continue to work during radiation treatments.

Radiation is NOT an option if you are facing one of these situations:

- You have already had radiation to that area of the body.
- You have a connective tissue disease, such as lupus or vasculitis that makes you sensitive to the side effects of radiation.
- You are pregnant and so should not have radiation therapy.
- You are not willing to commit to the daily schedule of radiation therapy, or distance makes it impossible.

Can radiation therapy be repeated?

Doctors try to do all they can to get rid of any possible cancer cells that may be remaining in your body. In radiation therapy, your radiation oncologist will typically give you close to the maximum therapeutic dose—the dose that destroys cancer cells and that the normal tissue of your breast can also safely withstand. Because you have received about as much radiation as your healthy cells can safely handle, it is not possible to treat this area again with another full dose of radiation. If cancer returns to the same breast area, depending on the radiation dose you already received, you may or may not be able to receive a limited amount of additional radiation treatment in that same area.

Boost Dose

Through the first five to six weeks of your treatment you will receive radiation to your entire breast area. During the final week or two, you will also receive a supplemental dose targeted directly to the area around your surgery. This dose is called the “boost” and can be delivered either through external or internal radiation.

TYPES OF RADIATION

External radiation: Most likely, you will receive radiation externally. With this technique, a large machine called a linear accelerator delivers high-energy radiation to the affected breast. You will receive this treatment as an outpatient in daily sessions over five to seven weeks, depending on your particular situation. When you hear the term "radiation therapy," you can usually assume it means external radiation unless otherwise specified.

Internal radiation/ brachytherapy: In some cases, your doctor may recommend that you have "internal radiation" (also called "brachytherapy" or "high-dose intracavitary radiation") instead. With this technique, radioactive material is temporarily placed inside the breast, where the tumor used to be. This is typically reserved for the end of treatment and is given as an additional "boost," to supplement the regular radiation given to the whole breast.

In some cases, after breast-conserving surgery for early-stage breast cancer, internal radiation limited to the area where the cancer was might be as effective as whole-breast radiation. The studies on this type of radiation treatment are still going on. After five years of follow-up, one study showed no difference in recurrence or survival rates between women with early-stage disease who had breast-conserving surgery plus whole-breast radiation, and women who had the same type of disease and surgery but received limited-field radiation. Talk to your doctor about which option would be best for YOU.

IMRT (Intensity Modulated Radiation Therapy): IMRT is the most technologically advanced treatment method available in external beam radiation therapy. Instead of using a single radiation beam IMRT precisely breaks up the beam into thousands of tiny thin radiation beams. This allows the beam to enter the body from many angles to intersect on the cancer. This results in extreme accuracy allowing a high dosage of radiation at the tumor and a lower dosage to the surrounding healthy tissue. This treatment can result in higher cancer control rate and a lower rate of side effects. IMRT is a relatively new technology and is not recommended for all types of cancers. Patients are encouraged to ask if IMRT is appropriate for their type of cancer.

BREAST CHANGES FROM RADIATION THERAPY

- Most women notice increased breast fullness, swelling, and stiffness during radiation treatment.
- When treatment ends, swelling goes away slowly. Breasts may be firmer and rounder due to scar tissue and fluid retention.
- Surgery and radiation treatment combined may produce a numb and tender breast. These sensations should improve over months, but might not disappear completely.
- Women who want to breast-feed after radiation therapy won't have any significant milk-production in the breast that was treated.

Skin care tips:

- Use warm rather than hot water while showering.
- Moisturize the skin after your daily radiation treatment.
- For mild itching and burning, apply a 100% aloe vera preparation or aquaphor.
- If skin areas become especially red, itchy, sore, and start to burn, and low-strength cream no longer relieves your symptoms, ask your doctor for a prescription cream.
- If your skin forms a blister or peels, don't touch it. The blister keeps the area clean while new skin grows back. If the blister opens, blot the area dry and clean only with warm water. Apply a NON-ADHERENT dressing.
- Some women get some relief by blowing air on the area with a hair dryer set to "air" (no heat).
- Don't even think of wearing a bra during this time!

Help for your aching armpit:

After lymph node surgery, you may feel discomfort in your armpit. About halfway through your radiation therapy, your armpit may start feeling even worse. Try these tactics for relief:

- Use cornstarch powder instead of deodorant. This reduces skin rubbing.
- Avoid strong soaps, antiperspirants, or deodorants.
- Don't shave under your arm over the course of your radiation treatment.

What are some of the possible risks or complications of radiation?

Minor complications include:

- Fatigue
- Neutropenia (reduction in white blood cells)
- Breast swelling or tenderness
- Feeling of heaviness in the breast
- Sunburn-like appearance of the breast skin
- Loss of appetite

More serious complications include:
Very rarely, patients develop a breakdown of the skin, fractures of the sternum (breastbone) or such severe pain in the breast that surgery is needed for treatment.

Radiation therapy given to the axillary lymph nodes can increase the risk of patients developing arm swelling ("lymphedema") following axillary (armpit) dissection. Radiation to this area can cause numbness, tingling or even pain and loss of strength in the hand and arm years after treatment. Fortunately, both these treatment effects are very rare.

Some patients develop "radiation pneumonitis," a lung reaction that causes a cough, shortness of breath and fevers three to nine months after completing treatment. Fortunately, it is usually mild

enough that no specific treatment is needed and it goes away within two to four weeks with no long-term complications.

Radiotherapy may damage the heart. Fortunately, radiation techniques used now treat much less of the heart than those used in the past. Current studies have found no increased risk of serious heart disease in patients treated with modern techniques even 10 to 20 years after radiotherapy treatment was given. However, there is still some uncertainty about the risks of radiation causing heart disease for individuals who smoke or have pre-existing heart disease, or for those who receive certain chemotherapy drugs. It is likely that such risks will also be found to be very small.

Women age 45 or younger at the time of treatment may have a slightly increased risk (by a few percent at most) of developing cancer of the other breast with time, compared with the risk they would have if they did not undergo radiation. There is a very small risk (perhaps one in 1,000 individuals) that cancers may develop five, 10, 20 or more years later in the skin, muscle, bone or lung directly in the area of treatment.

Radiotherapy for early breast cancer
http://www.cochrane.org/reviews/en/ab003647.html
http://www.cancer.gov/clinicaltrials/results/postsurgical-radiation0106

Early breast cancer can be removed by surgery, and for most women, the chance of the cancer returning (recurrence) is small. Radiotherapy (radiation) is often used to try and reduce this risk. The review of trials done over the last forty years found that radiotherapy reduces the chance of recurrence by two-thirds, which could be valuable for women whose original risk was high. However, the radiotherapy tested in the trials resulted in only a small reduction in long term deaths from breast cancer, and increased the rate of deaths from other causes (possibly because of adverse effects of radiation). The review did not examine other adverse effects, quality of life or costs.

Radiotherapy regimens able to produce the two-thirds reduction in local recurrence seen in these trials, but without long-term hazard, would be expected to produce an absolute increase in 20-year survival of about 2-4% (except for women at particularly low risk of local recurrence). The average hazard seen in these trials would, however, reduce this 20-year survival benefit in young women and reverse it in older women.

When subgroups were analyzed, the investigators found that the higher the risk of recurrence, the greater the potential benefit of post-surgery radiation therapy. The investigators concluded that for any group of early breast cancer patients, a local treatment difference that reduces the five-year local recurrence risk by 20 percent would reduce the 15-year breast cancer mortality by 5.2 percent.

This means that for every four local recurrences that are avoided by the addition of radiation therapy, about one breast cancer death could be avoided over the next 15 years.

The one drawback of radiation therapy noted by the EBCTCG (Early Breast Cancer Trialists' Collaborative Group), meta-analysis was an increase in the incidence of secondary cancers (new cancers unrelated to the original breast cancer) and in mortality from heart disease and lung cancer. However, the investigators emphasize that modern radiation therapy technology now minimizes the radiation doses to the heart, lungs, and other breast, compared to the doses given at the time these trials were conducted.

QUESTIONS TO ASK YOUR RADIATION ONCOLOGIST ABOUT RADIATION THERAPY

Understanding the Reasons for Radiation Therapy

1. Why is radiation therapy being recommended?
2. Do you think that the size, location and type of breast cancer I have will respond to radiation therapy?
3. What is the difference between external radiation therapy, internal radiation therapy (brachytherapy), and systemic radiation therapy? When are these types used?
4. What is the goal of radiation therapy?
5. Does radiation affect fertility?
6. What are the risks and side effects?
7. Where do I go for radiation therapy?
8. How long does each session last?
9. How many weeks does treatment last?
10. Does radiation therapy make me radioactive?
11. Why Are There Marks On My Skin?
12. What should I avoid during treatment?
13. Should I change my diet or lifestyle?
14. Does radiation therapy affect having breast reconstruction?
15. Who Can I Contact If I Have Personal Concerns About My Treatment?
16. If I get a recurrence can I have radiation therapy again?

Preparing for treatment

1. How long will each treatment take? How long will the whole series last?
2. How soon should treatment begin?
3. Who will be responsible for my radiation treatments? Who will administer them?
4. Where will these treatments be done?
5. Can I come alone or should a friend or relative accompany me?

Preparing for the effects of treatment on your lifestyle

1. What side effects should I expect and how long might they last?
2. What are the risks of this treatment?
3. What are the precautions or prohibitions (skin creams, lotion, underarm shaving, etc.) during treatment? After treatment?
4. Can I continue normal activities (work, sex, sports, etc.) during treatment? After treatment?
5. Will the costs of the treatment be covered by my insurance?
6. How often are checkups and tests required after treatment is completed?
7. Will other therapies be needed?
8. Can I have reconstructive surgery AFTER radiation therapy?

ADJUVANT AND NEOADJUVANT THERAPY

http://cis.nci.nih.gov/fact/7_20.htm

Adjuvant therapy for breast cancer usually includes chemotherapy, hormone therapy, radiation, or the newest type of treatment — targeted or biologic therapy either alone or in combination and is added to the primary treatment to keep cancer from returning. Therapy usually begins within 6 weeks after surgery, based on the results of clinical trials in which the therapy was started within that time period. Doctors do not know how effective adjuvant therapy is in reducing the chance of recurrence when treatment is started at a later time.

Adjuvant therapy is treatment added to the primary therapy, such as surgery, to kill any cancer cells that may have spread, even if the spread cannot be detected by radiologic or laboratory tests. Studies have shown that adjuvant therapy for breast cancer may increase the chance of long-term survival by preventing a recurrence. Because the principal purpose of adjuvant therapy is to kill any cancer cells that may have spread, treatment is usually systemic (uses substances that travel through the bloodstream, reaching and affecting cancer cells all over the body). Sometimes, however, local adjuvant therapy, in the form of Radiation, is used to shrink tumors prior to surgery, so that they will be easier to remove.

The goal of adjuvant therapy in breast cancer treatment is the reduction of risk of recurrence in the patient who has no discernible disease post surgical resection of tumor. Current treatments include:

- **chemotherapy (combination of agents) -** Adjuvant chemotherapy uses drugs to kill cancer cells. Research has shown that using chemotherapy as adjuvant therapy for early stage breast cancer helps to prevent the original cancer from returning. Usually a combination of anticancer drugs, which has been shown to be more effective than a single anticancer drug. In pre-menopausal women chemotherapy is the most commonly used adjuvant therapy, but it may be used in combination with hormonal therapy. In post-menopausal women hormonal therapy is most commonly used, but may be given in combination with chemotherapy.

- **hormonal therapy (tamoxifen)-** Adjuvant hormone therapy deprives cancer cells of the female hormone estrogen, which some breast cancer cells need to grow. Most often, adjuvant hormone therapy is treatment with the drug Tamoxifen. Research has shown using tamoxifen as adjuvant therapy for early stage breast cancer helps to prevent the original cancer from returning and also helps to prevent the development of new cancers in the other breast.

- **ovarian ablation (only in estrogen receptor positive disease)-** Research has shown that in pre-menopausal women with early breast cancer, ovarian ablation may be as effective as some forms of chemotherapy in improving overall survival and reducing the chances of the cancer coming back. Specialists have been reluctant to offer ovarian ablation to younger women because of its effects on fertility and the fact that it brings on an early menopause.

Neoadjuvant therapy is given before surgery and other treatments. Both chemotherapy and hormone therapy can be used as neoadjuvant treatment. Neoadjuvant therapy is increasingly being utilized as a treatment strategy for breast cancer. It is proving useful for women with locally advanced breast cancer (Stage III) and is being evaluated in smaller cancers as well.

Neoadjuvant hormonal therapy is only an option for women whose tumors are estrogen-receptor (ER)-positive or progesterone receptor (PR)-positive. Typically, a woman will take hormonal therapy for three or four months prior to surgery. Clinical studies comparing neoadjuvant chemotherapy to mastectomy followed by adjuvant chemotherapy have demonstrated that the number of patients eligible for treatment with breast-conserving strategies can be increased following neoadjuvant therapy. Before starting neoadjuvant hormonal therapy you need to consider whether you would prefer to have a lumpectomy followed by radiation, or a mastectomy.

The IMPACT trial (The Immediate Preoperative Anastrozole Tamoxifen or Combined with Tamoxifen) proved anastrozole superior to tamoxifen among those women headed for mastectomy. IMPACT provides some further supportive data that the third-generation aromatase inhibitors are significantly more effective than tamoxifen in downstaging large breast cancers.

Adjuvant and Neoadjuvant Regimens

Decisions about the use of adjuvant or neoadjuvant therapy for breast cancer must be made on an individual basis, taking into account the characteristics of a woman’s tumor (the size and grade, whether or not it is HER2 positive or hormonally dependent) the woman's menopausal status (whether she has gone through menopause), her general health, and her personal preferences. This complicated decision-making process is best carried out by consulting an oncologist, a doctor who specializes in cancer treatment.

An analysis of data from several clinical trials shows that the survival rates of women receiving neoadjuvant therapy versus adjuvant therapy are comparable.

Chemotherapy

Chemotherapy drugs are drugs which destroy cancer cells. Research has shown that using chemotherapy as adjuvant therapy for early stage breast cancer helps to prevent the original cancer from returning. Adjuvant chemotherapy is usually a combination of anticancer drugs. This has been shown to be more effective than a single anticancer drug. Chemotherapy is given by mouth or by injection into a blood vessel. Either way, the drugs enter the bloodstream and travel throughout the body. Chemotherapy is given in cycles: a treatment period followed by a recovery period, then another treatment period, and so on. Most patients receive treatment in an outpatient part of the hospital or at the doctor's office. Adjuvant chemotherapy usually lasts for 3 to 6 months. There is some evidence to show that timing the administration of some of these drugs with the body's natural biorythms can enhance their effectiveness and cut down on side effects. For information on the effect of biorhythms on specific drugs, contact Breast Cancer Options or visit our website at www.breastcanceroptions.org.

The pros and cons of chemotherapy
Many people are frightened about the prospect of chemotherapy, particularly because of all the publicity that has been given to possible side effects. Modern chemotherapy and modern ways to avoid or reduce side effects have made chemotherapy much better tolerated than ever before and most people find it is not nearly as bad as they expected.

What are the chemotherapy treatments for breast cancer? http://www.healthandage.com
Chemotherapy regimens are designed to kill cancer cells throughout the body. It has advantages for nearly every breast cancer patient regardless of whether the cancer is hormone receptor-positive or negative.

Candidates for Adjuvant Chemotherapy. Adjuvant chemotherapy is an appropriate consideration for most women with invasive breast cancer, regardless of menopausal status. Studies are also reporting the adjuvant therapy may be beneficial for women with early stage cancers. Chemotherapy can reduce risk of relapse and prolong survival whether the tumor is node-negative or positive, or whether it is hormone-receptor positive or negative.

Chemotherapy Regimens and Drug Combinations. Adjuvant chemotherapy is usually administered after initial surgery in combination regimens in four to six courses of treatment over three to six months and usually before follow-up radiation therapy to the breast.

The following are some important agents used in combination treatments:

- Anthracyclines. Anthracyclines include doxorubicin (Adriamycin) or epirubicin (Ellence). To date, combinations using these agents have the best survival benefits. Patients who overexpress the HER-2/neu gene and have hormone receptor-negative tumors may particularly benefit from anthracyclines. The drug may have toxic effects on the heart, however.
- Cyclophosphamide, 5-fluorouracil (5-FU), and methotrexate (CMF). This was the standard regimen for years, but its use has declined with the introduction of anthracyclines. A variation in which mitoxantrone (Novantrone) replaced methotrexate may offer better survival rates than CMF.
- Taxanes include paclitaxel (Taxol) and docetaxel (Taxotere). Combinations using these agents are promising, but their value is still inconclusive. A new form of paclitaxel (ABI-007) is in late-phase trials that may allow higher doses and easier administration

Chemotherapy Side Effects

The side effects of chemotherapy depend on the type of drugs that are used, the amount taken, and the length of treatment. Temporary side effects might include fatigue, nausea and vomiting, loss of appetite, loss of hair, and mouth sores. Changes in the menstrual cycle may also occur and can be temporary or permanent. Because chemotherapy can damage the blood-producing cells of the bone marrow, patients may have low blood cell counts. This can result in an increased chance of infection, bleeding or bruising after minor cuts or injuries, and fatigue.

There are very effective remedies for many of the temporary side effects of chemotherapy. For example, there are several drugs and homeopathic medicines that can prevent or reduce *nausea* and *vomiting*. Also, a group of drugs called growth factors can help the patient's bone marrow recover after chemotherapy and can treat problems due to low blood counts.

Premature menopause (not having any more menstrual periods) and *infertility* (not being able to become pregnant) are potential permanent complications of chemotherapy.

Adriamycin (a chemotherapy drug) may cause *permanent heart damage* if used for a long period of time or in high doses, but doctors carefully control the dose of this drug and use echocardiograms and other heart tests in order to monitor the heart and stop the medication at the first sign of damage.

Doctors will monitor patients for any signs of other problems and may adjust the dose or schedule of treatment if problems arise. In addition, doctors advise patients who have a lowered resistance to infection because of low blood cell counts to avoid crowds and people who are sick or have colds. The side effects of chemotherapy are generally short-term problems. They gradually go away during the recovery part of the chemotherapy cycle or after the treatment is over.

Less serious side-effects, but more common are:

- Lowered resistance to infections
- Anemia
- Feelings of sickness
- Sore mouth
- Hair loss

Although these side effects may be hard to bear at the time, they will disappear once your treatment is over.

It is important to remember that chemotherapy affects different people in different ways. Some find they are able to lead a fairly normal life during their treatment, but many find they become very tired (fatigued) and have to take things much more slowly. Just do as much as you feel like and try not to overdo it. The tiredness can last for a few months after the treatment has ended.

The pros and cons of chemotherapy

Many people are frightened about the prospect of chemotherapy, particularly because of all the publicity that has been given to possible side effects. Modern chemotherapy and modern ways to avoid or reduce side effects have made chemotherapy much better tolerated than ever before and most people find it is not nearly as bad as they expected.

Nevertheless chemotherapy is still a strong treatment that people would prefer to avoid if they could and when their doctor suggests chemotherapy some people ask what would happen if they didn't have it. There are three main situations in which chemotherapy is given; neoadjuvant chemotherapy which is given before surgery, adjuvant treatment, for some earlier stages of cancer or in more advanced disease when the cancer has come back or has spread, and each has different pros and cons.

If you had a tumor with a very good outlook then the risk of the cancer coming back would be very small. Adjuvant chemotherapy might reduce this risk further, but still not guarantee a cure. The benefit would be small and the chance of doing well without any further treatment would still be very good. On the other hand, if the risk of the cancer coming back was very high then the chance that adjuvant treatment could reduce the risk and improve the chance of cure would be much greater.

Because it is impossible to know for sure whether or not microscopic traces of cancer may have been left behind, when adjuvant therapy is used there is always a possibility that the person will already have been cured by the surgery alone and the adjuvant therapy is unnecessary.

The problem is that doctors may not always be able to tell for sure with an individual person whether or not they need the treatment. For each individual it is important that they work out with their doctor what their own particular risk is likely to be, what their chances are of a cure without any adjuvant chemotherapy, and how much the adjuvant treatment it likely to improve things.

Widely used anti-nausea drug may interfere with cancer chemotherapy
http://www.uchospitals.edu/news/2004/20040315-chemo.php

A drug widely used to prevent nausea and other side effects in patients receiving chemotherapy for breast cancer may also, unfortunately, prevent the therapy from working efficiently on tumor cells, researchers from the University of Chicago report in the March 1 issue of the journal, Cancer Research.

Dexamethasone--a synthetic steroid--is routinely given to women just before they receive chemotherapy with either paclitaxel or doxorubicin, two drugs commonly used to treat breast cancer. In this laboratory study, the researchers show that pretreatment with dexamethasone reduces the ability of paclitaxel and doxorubicin to kill cancer cells

Trastuzumab (Herceptin®)- Biological Therapy

What is biological therapy?

Biological therapy uses the body's own materials, or those made in a laboratory, to assist the body in fighting the cancer. It may also be called biological response modifier therapy, or immunotherapy. Biological therapy (also called immunotherapy) involves using trastuzumab (Herceptin®) to inhibit tumor growth and enhance the immune system’s ability to fight cancer. It also may be combined with chemotherapy as a first line treatment for metastatic breast cancer and may be used after chemotherapy or anti-estrogen therapy to improve the effectiveness of the treatment. When used alone or in combination, **side effects** can include the following:

- Cardiac dysfunction (causes severe cough, shortness of breath, difficulty performing physical activities)
- Chills
- Congestive heart failure
- Cough
- Diarrhea
- Fever
- Headache
- Low blood cell count (e.g., anemia, neutropenia)
- Nausea
- Weakness
- Vomiting

QUESTIONS TO ASK YOUR ONCOLOGIST ABOUT CHEMOTHERAPY

Answers to these questions will help you understand the reason for chemotherapy.

1. Why is chemotherapy indicated in my case?
2. What is the significance of lymph node involvement?
3. How many of my lymph nodes are involved?
4. If my lymph nodes are not involved, should chemotherapy or hormone therapy still be considered?
5. What drugs do you recommend?
6. How successful is this treatment for my type and stage of breast cancer?
7. What are the benefits and risks of taking these drugs?
8. Are there any research studies that I should consider?
9. How will you and I be sure that the drugs are working?
10. Where and how will I receive these drugs?
11. Will someone stay with me during treatments?
12. How many treatments will I need, and how long will I be on chemotherapy?
13. What are the common side effects of these drugs and how can I manage them?
14. What side effects should report to you? Are there any restrictions?
15. Will I be able to maintain my normal activities?
16. How should I prepare for treatment?
17. Will I be able to drive home alone afterwards?
18. Will there be long-term side effects?
19. Will I need follow up care?
20. What is my risk of recurrence if I do not do chemotherapy?

Answers to these questions will help you understand the drugs involved and their effects.

1. What drugs will I be taking? How often? For how long?
2. Why have you chosen these particular drugs for me?
3. What are the drugs supposed to do?
4. What are the short-term and long-term risks involved?
5. What are the possible side effects of this type of chemotherapy? Are they permanent?
6. Which side effects should I report to the doctor immediately?

Answers to these questions will help you prepare for your treatment and follow-up.

1. How soon should the chemotherapy be started?
2. How and where will the chemotherapy be given?
3. How long will each treatment take?
4. What can I do about side effects?
5. Can I continue to work, exercise, etc., during these treatments?
6. Will I need to be admitted to the hospital during the course of my chemotherapy?
7. Can I come alone for treatments or should I have a friend or relative accompany me?
8. Are there special precautions I should take while on chemotherapy or afterwards?
9. Will treatments be covered by my health insurance?
10. If I lose my hair, will the cost of a wig be covered by my health insurance?
11. When the treatments are completed, how often will I need to be seen by the oncologist?

Hormone Therapy

Medscape.com

What Is Hormone Therapy?

Hormones are chemicals produced by glands in the body and are circulated in the blood. Hormone therapy -- also called hormonal therapy, hormone treatment, or endocrine therapy -- is any treatment that adds, blocks, or removes hormones. For certain conditions (such as diabetes or menopause), hormones are given to boost low hormone levels. Sometimes, hormone therapy is used to slow or stop the growth of certain cancers (such as prostate and breast cancer). The female hormones estrogen and progesterone, for example, promote the growth of some breast cancer cells. So hormone therapy may be given to block the body's naturally occurring estrogen and fight the cancer's growth.

Sometimes surgery is needed to remove the source of the hormone in question -- in the case of breast cancer, the ovaries may be removed.

When Is It Used?

Hormone therapy is used in women with breast cancer whose tumors are sensitive to the hormones estrogen or progesterone (meaning that hormones cause the cancer to grow). Not all breast cancers are hormone sensitive, so not all breast cancers will respond to a hormone-blocking treatment. About three in five of these women have tumors that are fueled by the hormone estrogen, making hormone therapy to stop this growth a cornerstone of regimens to prevent recurrences and improve survival.

The drugs slow or stop the growth of cancer cells that are present in the body. As an adjuvant (add-on) therapy, hormone therapy helps prevent the original breast cancer from returning and also helps prevent the development of new cancers in the other breast.

Women at an increased risk of developing breast cancer (those with a genetic predisposition or family history) have the option of taking hormone therapy to reduce their chance of ever developing the disease.

Preoperative hormone therapy — The preoperative (neoadjuvant) use of hormone therapy can successfully shrink breast cancers that are hormone-responsive. However, the likelihood of achieving a complete clinical response seems to be lower than that found with chemotherapy. Because hormone therapy is generally better tolerated than chemotherapy (and can be given by mouth rather than intravenously), it may be recommended for elderly women whose organ function is impaired, patients who want to avoid chemotherapy-related toxicity, or those who are physically debilitated.

While tamoxifen prevents estrogen from acting on tumors, aromatase inhibitors actually block an enzyme the body uses to make estrogen, thereby slashing the body's production of estrogen altogether.

New studies suggest that the different mechanism of action of **aromatase inhibitors** to decrease estrogen levels may mean that they may shrink tumors better and longer with fewer side effects.

What Are the Most Commonly Used Drugs?

Tamoxifen.

The gold standard of hormone therapy in breast cancer is Nolvadex (tamoxifen), a medication in pill form that interferes with the activity of estrogen. Known as the "antiestrogen," tamoxifen is a pill that has been used for more than 20 years to treat patients with advanced (metastatic or stage IV) breast cancer.

Tamoxifen is also used as an adjuvant (add-on) therapy following surgical treatment for early (stages I and II) and locally advanced (stage III) breast cancer and as a means of reducing the risk of ever developing breast cancer among women at particularly high risk (those with a genetic predisposition to and a family history of the disease). **Tamoxifen is useful in both premenopausal and postmenopausal women.**

The use of tamoxifen for the treatment of breast cancer in the adjuvant setting has been the standard of care for the past decade. However, its use beyond 5 years has been associated with worsening outcome, leaving women without an effective therapy after they have completed tamoxifen therapy. The National Cancer Institute of Canada's Clinical Trials Group, in conjunction with other clinical trial

cooperative groups, evaluated the use of the aromatase inhibitor (AI) letrozole in the extended adjuvant setting, ie, after 5 years of tamoxifen therapy.

Breast cancer is a hormone-sensitive disease from its inception, and gradually differentiates into tumors that remain hormone dependent and those that do not, based on receptor status. The majority of tumors remain hormone dependent, and therefore the majority of tumors can be controlled by depriving the tumor of estrogen. Tamoxifen works very well, and is probably the most important anticancer drug ever discovered in terms of the number of lives saved. When given for 5 years, it has a very considerable reduction in relapse risk, which persists out to 15 years, and possibly longer -- we just don't have the data yet.

But it leaves an unmet medical need, because tamoxifen prevents relapse in only one third of the women in each risk category. Unfortunately, tamoxifen is a self-defeating drug. The cancer cell learns to read tamoxifen's attempts to obstruct it, circumvents the mechanism of the drug, and becomes resistant to it. Which begs the question: Have we fully exploited the removal of estrogen from hormone-dependent breast cancer growth? And the answer is no. **Tamoxifen allows the estrogen to enter the system but blocks its activity.** The Aromatase Inhibitors block the estrogen from entering, so there's no room for further estrogen-dependent growth, regardless of what tricks the cell tries to play.

What Are the Side Effects?
The side effects of tamoxifen are similar to symptoms of menopause. The most common side effects are hot flashes and vaginal discharge. Some women experience irregular menstrual periods, headaches, fatigue, nausea and/or vomiting, vaginal dryness or itching, irritation of the skin around the vagina, and skin rash. As is the case with menopause, not all women who take tamoxifen have these symptoms. Men who take tamoxifen may experience headaches, nausea and/or vomiting, skin rash, impotence, or a decrease in sexual interest.

There is evidence that tamoxifen therapy can increase the risk of cancer of the uterus in some women. Women taking tamoxifen should have a pelvic examination every year to look for any signs of cancer. Any vaginal bleeding, other than menstrual bleeding, should be reported to a doctor as soon as possible.

Tamoxifen therapy has been linked to an increased risk of blood clots, especially in women who are also taking chemotherapy.

Aromatase Inhibitors
Arimidex and Femara -Over the past few years, the FDA has approved several new hormone therapy drugs. The most well known of these drugs, Arimidex and Femara, belong to a class of drugs known as aromatase inhibitors. After menopause, a woman's main source of estrogen comes through a process called aromatization, in which male hormones called androgens (produced by the adrenal glands located at the top of the kidneys) are converted into estrogen. This process takes place throughout the body, in the fatty tissue. **These drugs fight tumor growth by stopping the conversion of androgens into estrogen**.

Arimidex (anastrozole)
Arimidex (anastrozole**)** is approved for the treatment of advanced (stage IV) breast cancer in women who've gone through menopause whose cancer has grown despite taking tamoxifen. It is the first-line therapy for postmenopausal women with hormone-positive or hormone-unknown locally advanced (stage III) or stage IV breast cancer. It is also approved as an add-on treatment of early hormone-positive breast cancer (stages I and II) in women who are postmenopausal. It is also taken in pill form.

What Are the Side Effects?
For Arimidex, common side effects include hot flashes, nausea, decreased energy and weakness, pain, back pain, bone pain, and increased cough, as well as joint pain and stiffness.

Femara (letrozole) Femara (letrozole) is approved for initial or follow-up treatment of hormone-sensitive locally advanced or metastatic breast cancer in women who have gone through menopause. It is taken in pill form, once each day.

The current data shows a 6% survival advantage for Letrozole over Tamoxifen.

What Are the Side Effects?
For Femara, the most common side effects are mild nausea and vomiting, tiredness, headaches, muscular aches, joint pain, and hot flashes that tend to eventually diminish or disappear. Some women may notice some hair thinning, but this is usually mild and goes back to normal at the end of treatment.

There are other hormone therapy drugs used to treat breast cancer. Most, such as Aromasin, Faslodex, and Fareston are used to treat metastatic breast cancer.

Aromasin (exemestane)
AROMASIN is indicated for adjuvant treatment of postmenopausal women with estrogen-receptor positive early breast cancer who have received 2 to 3 years of tamoxifen and are switched to AROMASIN for completion of a total of 5 consecutive years of adjuvant hormonal therapy.

AROMASIN is indicated for the treatment of advanced breast cancer in postmenopausal women whose disease has progressed following tamoxifen therapy.

Once AROMASIN binds to the aromatase enzyme, that enzyme cannot make estrogen again. AROMASIN interferes with the supply of estrogen to cancerous cells and prevents the cells from continuing to grow. It differs from other aromatase inhibitors because of this irreversible binding and its steroidal structure.

QUESTIONS TO ASK YOUR DOCTOR ABOUT HORMONE THERAPY

Answers to these questions will help you understand the hormone treatment.

1. How soon should the hormone therapy be started?
2. Which hormones are you recommending for me and why?
3. In what form and how often will the treatment be given?
4. Will I be given the hormone therapy along with other forms of treatment?
5. What are the hormones supposed to do?
6. What are the short and long-term side effects of this hormone treatment and how can I manage them?
7. What side effects should I report to you?
8. What drug will I be taking?
9. How will I know it is working?
10. How long will I be on hormonal therapy?
11. Will I need follow-up care?
12. Are the costs of hormone treatment covered by my health insurance?
13. What if I don't have hormonal therapy?
14. Which would be better for me, hormone medication or surgery to remove my ovaries?

HOW TO EVALUATE HEALTH/MEDICAL INFORMATION-'RELATIVE RISK' VS 'ABSOLUTE RISK'

http://nutrition.about.com/od/researchstudies/a/rrrvsarr.htm

One of the most difficult things anyone diagnosed with breast cancer faces is how to make an informed health decision. There is so much information out there and deciding which information is credible and which is not, is often overwhelming. It is important to be able to compare the benefits of a treatment or procedure to its risks. We have compiled this material from several sources and hope that it proves useful to you.

With the announcements about the harm from therapies that had claimed to be safe - HRT, antidepressants, Vioxx, etc., and the past topsy-turvy news reports about eggs, butter/margarine, vitamins, effects of violence of TV on children, diet and cancer, etc., the public is growing increasingly skeptical of health information via the news media. Media hype, politics and money often influence what is reported, and facts can be omitted, or altered so as to influence outcomes. Relative Risk vs. Absolute Risk is just one of the many examples.

When reporting medical studies, Relative risk reduction (RRR) refers to the percentage of the decrease achieved by the group receiving intervention vs. the group that did not receive the intervention (the control group). Absolute risk reduction (ARR) refers to the actual difference in risk between the treated and the control group. Almost all reports in the popular media, many in the medical literature, and pharmaceutical advertisements almost without exception, present risk results as relative risk reductions rather than absolute risk reductions, which often make the data seem more impressive than they actually are. *{Understanding the Risks of Medical Interventions, Improving Patient Care - Family Practice Management - May 2000, Eric Henley, MD MPH, assistant professor in the department of Family and Community Medicine at the University of Illinois College of Medicine at Rockford}*

An absolute difference is a subtraction; a relative difference is a ratio. Because this choice may influence how big a difference "feels," patients need to be alert to the distinction.

For example, a decrease in risk from 3% to 2% is a 33% relative risk reduction, but only a 1% absolute risk reduction. *{How to Read Pharmaceutical Advertisements, Users Guide to Promotional Literature, No Free Lunch- July 2004-}*

When understanding the real potential benefits and risks of a drug or a procedure (the relative risks interpreted as absolute risks), patients and doctors may better be able to decide whether it is appropriate to forego a treatment - a treatment that may not only be expensive but have unwanted or dangerous side effects. *{Understanding the Risks of Medical Interventions, Improving Patient Care - Family Practice Management - May 2000, Eric Henley, MD MPH, assistant professor in the department of Family and Community Medicine at the University of Illinois College of Medicine at Rockford}*

Studies in the Lancet (1994) demonstrated that physicians are more likely to prescribe medications when results are presented as Relative risk reductions rather than Absolute risk reductions. If drug X reduces mortality from 0.2 to 0.1 percent, this is a 50 percent relative reduction, yet a small decrease. *{American Family Physician, James McCormick, Pharm.D, faculty of Pharmaceutical Services, Vancouver, B.C. Canada, aafp.org -May 2001}*

The headlines read, Tamoxifen Cuts Breast Cancer Risk by 50% in Healthy Women! - yet it turns out, among all the women in a study who took tamoxifen, less than 2% got breast cancer, and among those that took the placebo, less than 3% got breast cancer. The real difference was 1%. *{How To Lie With Statistics, Real Health Breakthroughs, Dr. William Campbell Douglass, 2004}*

However, tamoxifen was found to increase the relative risk of stroke 29% in these women. But in terms of absolute risk it was a small percentage - an increase of 1.06 percent compared with 0.76 percent for the control group*. {Slightly increased risk of ischemic stroke found with tamoxifen, Medical News Today - October 2004}*

Another example: The Swedish mammography trials reported in The Lancet, show a current relative death benefit of 20 percent among women who have mammograms. That's based on the determination that out of 129,750 women who were invited to begin having mammograms in the late

1970s and early 1980s, 511 died of breast cancer over the next 15 years--a death rate of 0.4 percent.

In the comparison group of 117,260 women who were not invited, there were 584 breast cancer deaths over the same period--a death rate of 0.5 percent. That is, indeed, a 20 percent relative benefit in favor of mammography. But the absolute difference between the two groups after eight years of mammography is seven deaths a year in a female population of 250,000.

Rather than tossing around percentages and odds ratios, by Dr. Russell Harris, an internist and clinical epidemiologist at the University of North Carolina School of Medicine, asks his female patients to imagine "a thousand people just like you. It's easier to understand that way."

According to his calculations if none of 1,000 50-year-old women ever has a mammogram, 13 will die of breast cancer before they reach the age of 75--not a large number to begin with because breast cancer, despite the attention it currently is receiving, accounts for only about 2 percent of all deaths.

Next, imagine that each of the 1,000 women has a mammogram every year for the next 10 years. Assuming the Swedish studies are valid, how will that affect the breast cancer death toll?

Not by nearly as much as most women believe. Of the 13 women who would have died of breast cancer without mammograms, 10 still will die of breast cancer.

The absolute benefit of mammography for women in their 50s, according to Harris, is three lives saved--or, to be more precise, three breast cancer deaths avoided--for every thousand women who have annual mammograms for 10 years, a total of 3,333 individual mammograms to prevent one death.

NOTES

Specific Questions that you would like answered. (Write down your questions before your doctor's appointment and then write down the answers for future reference.)

Q._____

A._____

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A._____

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