

Useful information for Women about Breast Problems and Breast Disease.

BREAST PAIN

The first step in evaluating "breast pain" is to determine whether the pain arises from the breast or from the underlying chest wall. This distinction can be made by physical examination. A surprisingly high percentage of "breast pain" is actually due to the chest wall arthritis, muscle overuse, or muscle strain.

The cause of most breast pain is poorly understood, but appears to be due to an increased sensitivity of the breast tissue to normal levels of hormones. In most instances, it appears without warning, may last for several months, and then spontaneously disappears. In some cases, it can be so severe as to be debilitating. Breast pain almost always disappears at menopause. Only about 10% of breast cancers present as painful masses.

Powerful hormones are available that usually will relieve the breast pain. They are usually prescribed for a year. After that they are stopped, the pain returns in half of the patients. The powerful hormone treatment has some side effects. Particularly, hormones are harmful to the fetus if you should become pregnant so some form of mechanical contraception is required before they are prescribed.

Caffeine abstinence is not as effective as are hormone treatments and works in considerably fewer women. It is difficult to determine just how effective or ineffective caffeine abstinence is because of the variable nature of breast pain. However, given the problems sometimes encountered with the hormonal treatment, caffeine abstinence should be given a conscientious trial for several months as the initial treatment for breast pain.

BREAST LUMP

The normal breast consists of a mixture of soft fatty tissue and firmer glandular tissue. Normal breast glandular tissue in premenopausal women can be irregular so it is sometimes difficult to determine if an area is really a lump or if it is nothing more than breast tissue. Unfortunately, mammograms cannot be trusted because they miss at least 20% of breast cancers. Therefore, judgement is used to determine whether an area in the breast is sufficiently different from normal to warrant further investigation. If an area is not felt to be abnormal, you still should do breast self-examination and return for re-evaluation if there is a change in the size or character of the questionable area. A woman cannot be told with certainty that she does not have breast cancer unless all breast tissue is totally removed and examined; a course which is usually considered impractical.

Breast lumps may be either solid or cystic. If a questionable area is found on physical examination, it can be immediately diagnosed by aspirating the lump with a fine needle. The needle is passed into the lump and almost always fluid or cells can be withdrawn. If non-bloody fluid is obtained, the lump disappears, and there is no lump 6 weeks later when the breast is re-examined, the lump is considered to be a benign cyst. In 96% of lumps from which fluid cannot be withdrawn, cells are obtained with the fine needle and these are examined under a microscope. As with any diagnostic test, diagnosing breast lumps from aspirated cells is not 100% accurate. The ability to diagnose accurately depends upon who obtains and who diagnoses the sample. In my hands, diagnostic breast cancer cells are obtained from 97% of cancerous lumps. Additionally, a biopsy is needed to exclude cancer in 5% of benign cases when the cytology is questionable. These results are as good as anywhere in the world but are still not 100%. Therefore, fine needle aspiration biopsies are done with the understanding that it is not perfect and that you will either have the lump removed or will return for re-examination at 3 and 12 months if you do not have the lump removed.

BIOPSY FOR THE "ABNORMAL" MAMMOGRAM

The first thing to recognize is that mammography is not a perfect test. It raises questions of the presence of breast cancer in 10% of normal women and misses at least 20% of breast cancers. The second problem is that no physician can ever tell you that you do not have breast cancer. Mammographic "abnormalities" can be definitively evaluated only by a biopsy. A biopsy may be done in either of three ways. One, surgical excision of the area after the area in question is localized by mammography and a needle or wire is placed to guide the surgeon. Two, stereotaxic core needle biopsy where the questionable area is localized by mammograms and several cores of tissue are removed with a large-bore needle. Three, ultrasonic localization and fine needle aspiration of those abnormalities that can be identified by ultrasound.

The determination of whether a biopsy is needed or not in your specific instance depends upon the mammographic pattern of the questionable area and the way you tolerate not knowing for sure that an area is not cancerous. Some mammographic patterns are associated with a 75% incidence of breast cancer where as others are associated with a 3% incidence. You must make the decision whether or not to have a biopsy. To help you decide this, you need to know how frequently the particular abnormality in your mammogram is caused by breast cancer. Depending upon the statistical risk of breast cancer, you have the choice of electing either a biopsy or a repeat mammogram to see if any change has occurred in 5 or 6 months. Whether a 5 or 6 month delay is harmful if the abnormality is breast cancer is unknown but is generally thought not to make a difference. Ultimately, the decision of whether or not you elect a biopsy is determined by how dangerous you perceive this abnormality to be.

LYMPH NODE DISSECTION

WHAT IS A LYMPH NODE DISSECTION? This is a surgical procedure which is usually done at the time of lumpectomy or mastectomy. With a lumpectomy, it is performed as a separate incision (cut) under the armpit; with a mastectomy it is an extension of the breast incision toward the armpit. The surgeon removes part or all of the lymph nodes in the armpit. During this procedure a nerve is usually cut which normally carries sensation to the armpit and part of the skin below it. Cut nerves usually do grow back but very slowly and often incompletely.

WHAT IS LYMPH NODE SAMPLING? Some of the lymph nodes under the arm (axillary) drain the breast, but others drain the arm and back. When all the axillary nodes are removed, the drainage to the arm is disturbed. In order to preserve as much arm drainage as possible, only some of the nodes may be removed...sampled. This can be done with guidance from radioactive materials, dyes, or anatomically. Sampling may miss cancer-containing lymph nodes, but this probably does not affect survival. However, additional surgery may be necessary if the nodes become enlarged and can be felt on physical examination.

WHY IS LYMPH NODE REMOVAL DONE? It is done to determine if the cancer has the propensity to spread beyond the breast. If cancer has spread to the lymph nodes, the likelihood of its having spread elsewhere is greater than if it has not spread to the lymph nodes.

WHAT IS THE FUNCTION OF LYMPH NODES? They act as "filters" to collect foreign material like bacteria and prevent them from reaching the blood stream. After the lymph fluid leaves the lymph nodes it travels to the blood stream. Lymph nodes are an important part of the body's defense against infection. Breast cancer cells which break off from the tumor frequently travel through the lymph fluid to the lymph nodes where they get trapped.

HOW DOES LYMPH NODE DISSECTION HELP? It helps your doctors determine the odds that your cancer has spread. This in turn will help them decide what additional treatment is needed based on estimates of your chances of living five years or more.

WHAT ARE THE LIMITATIONS OF THE INFORMATION OBTAINED? 1) Having a lymph node dissection does not change your chances of being cured. Your long term survival is determined by whether cancer has already reached your blood stream. 2) Prognostic information obtained from lymph node removal is inaccurate. In actual numbers, as many cancers recur in patients whose lymph nodes are negative as in patients who have positive nodes. However, the percentages for recurrence are higher for patients having cancer in the lymph nodes.

SHOULD EVERYONE HAVE A LYMPH NODE DISSECTION? No, there are a few cancers that have been noted to have such a low lymph node occurrence that lymph node dissection may not be advised by your doctor. These include carcinoma

in-situ where the tumor is less than 2 1/2 to 3 cms, and cancers that are 0.5 centimeters or smaller. Some other breast cancers have cell characteristics that are less aggressive and less likely to spread. Women who have these types of cancer should carefully weigh the risks and benefits of node removal. If a woman chooses not to have a node dissection, nodes would be removed at a later time if they enlarged to the degree that they could be felt.

WHAT ARE THE ADVANTAGES OF LYMPH NODE SAMPLING? 1) Women who have had node sampling rarely have significant problems with long term arm swelling. About 15% of women with total node removal have problems with arm swelling; this is severe in 1-2%. 2) Persistent upper arm pain is more common in total node removal (16%), particularly in women over 60 and those having a mastectomy. 3) Because some of the lymph nodes remain after sampling, the arm is better at fighting infection.

Node sampling ideally requires immediate analysis of the removed nodes, called frozen sections, which may not be possible at all hospitals. In sampling, frozen sections enable the surgeon to determine the need for more extensive node removal at the time of the surgery, potentially avoiding a second operation. Frozen section analysis extends the duration of the surgery. Additionally, frozen sections may not find cancerous foci in nodes that later are found to contain cancer when they are more thoroughly examined by permanent section.

WHAT DOES IT FEEL LIKE AFTER LYMPH NODE REMOVAL? 1) After surgery the armpit and the skin under it along the chest are usually numb (without feeling when you touch them). This numbness will last a long time, many months to years. Some sensation will come back in about 75% of women, but it may be incomplete. 2) In about 60% of women, the numbness is accompanied by prickling, tingling, burning, or the sensation of an open sore along the arm. 3) You will probably experience sharp, shooting pains that decrease over time. 4) Your shoulder and armpit may ache and/or it may feel like you have a large lump in your armpit. 5) You will only be able to raise your arm part way at first. 6) Your arm may feel weak. 7) You will feel a constricting feeling around your chest which will slowly decrease over months to years.

HOW LONG DOES IT USUALLY TAKE TO GET BACK NORMAL USE OF MY ARM? After surgery someone needs to instruct you on exercises for your arm. This may be your doctor's nurse or you may be referred to a physical therapist. You can also get advice from Back to Recovery. With a vigorous program of daily exercise most women are able to do their normal daily activities (called functional range of motion) by 2-3 months. Total range of motion (ability to move this arm as well as your other arm in all directions) is generally attained by 5-7 months. Women with lumpectomies tend to have the shorter times and those with mastectomies the longer. However, when radiation is given following a lumpectomy, long-term arm mobility is better after a mastectomy. Muscles become weak fairly quickly when they are not used and strengthened gradually with increased use. Muscle weakness does not always occur; if it does, normal strength usually returns by a year.

WHAT CAN I DO TO PREVENT INFECTION IN MY ARM? Avoid even trivial injuries to the hand and arm, e.g., wear gloves when gardening.

WHAT CAN I DO IF I GET ARM SWELLING? 1) Keep your arm elevated as much of the time as possible. 2) Wear an elastic sleeve. These can be ready made or custom fitted. They may include only the arm (wrist to armpit), or extend to the palm (called a gauntlet). Elastic gloves are also available. 3) If numbers 1 and 2 are not sufficient, your doctor may recommend the addition of a compression pump which is a pneumatic sleeve that squeezes out the edema each day. Elastic sleeves and pneumatic sleeves are available at stores that sell breast prothesis.

WHAT CAN I DO IF I HAVE PAIN ALONG MY ARM AFTER LYMPH NODE REMOVAL? Some women have tingling, prickling or the sensation of an open sore or burn along the arm. An over-the-counter cream called Capsaicin can be applied 3-4 times a day for two to three months, or longer if needed. It costs about \$10-25 (1994 price) for a 1.5 ounce tube for normal strength (0.025%), or about \$30 (1994 price) for Capsaicin high potency (0.075%).

Electing "Maximum" versus "Minimum" Treatments for Invasive Breast Cancer

Breast cancer is an unpredictable disease with a vast array of treatment options. The question is whether the patient and her doctor elect to pursue a course that utilizes all possible treatment possibilities (maximum) or elect to utilize only those of proven substantial benefit (minimum). This paper deals with the emotional factors that tend to influence treatment selection.

The ultimate problem with breast cancer is that it may reappear at a later date in a remote site. This is called distant metastases and the cancer cannot be cured at this stage. After a cancer has been discovered in the breast, both the patient and her doctor want to do everything possible to prevent metastases from happening. Unfortunately, with invasive cancer, distant metastases have occurred by the time that the original cancer is diagnosed in the breast. Whether this happens or not is determined by as yet unknown features inherent to the breast cancer. All breast cancers are different but behaviorally they can be classified as good or bad. The good cancers lack the inherent ability to spread to distant sites and are cured by removing the cancer in the breast. The bad cancers have spread to distant sites before they are detected. This spread usually consists of single or small cell clusters that lie as undetectable microscopic deposits. These cells grow at variable rates, but, on the average, they become detectable within two years. However, many years pass in other instances before these cells become apparent.

There is a compelling urge for women to actively fight their breast cancer. Their urge is met by finding a balance between doing that which is proven to affect the disease and that which possibly may affect the disease. Everyone wants to do everything **rational** to fight the cancer, but the definition of "rational" is the issue. What is rational for one may be irrational for another. Ideally, women should be given ALL the facts concerning treatment efficacy and the complications so they can weigh the risks and benefits. Most breast cancer patients have a VERY inflated idea of the benefits of therapy and are willing to take unreasonable risks to attain a false sense of security. Unfortunately, most women do not have the medical background to weigh

all the potential **benefits** versus all of the potential **risks** for the myriad of treatment options available for breast cancer. They need someone to put every possible factor into the mix, come up with the best guess of risks and benefits, and then tailor a recommendation to fit the individual.

Patients think toxic medicine is better medicine and maximum treatment will result in a greater likelihood that they will be cured. In a way this isn't bad because if things go badly they feel that they have done everything possible. The same is true from the doctors perspective. If every possible treatment has been given for the original breast cancer, later, in retrospect, the patient cannot blame the doctor if the cancer returns. In addition to the possible loss of credibility in the patient's eyes, doctors fear being sued. There always are "hired gun" experts that lawyers can retain who will testify that the cancer would not have come back had an additional therapy been given.

The argument for selecting minimal treatment can be summarized by stating that few if any breast cancer treatments convincingly increase the chance of being cured. Removal of the original cancer from the breast prevents it from becoming bulky and ulcerated. Removal of lymph nodes from under the arm is done in an attempt to estimate the probability that the cancer will recur. Such estimates are very inexact. Administration of chemo- or hormonal therapy is done in hopes of eradicating the already present distant metastatic deposits although the data supporting this are rather weak.

Since all therapies have side effects, the reason for selecting any treatment deserves careful consideration and close scrutiny.

- Usually, the cancerous breast is removed or the breast is irradiated after cancer excision in order to reduce the likelihood that either it or another cancer will reappear in the breast.
 - With some relatively small cancers simple excision is all that is needed.
 - Breast irradiation produces long-term side effects.
 - Reconstruction, either immediate or delayed, can be considered.
- Usually, axillary lymph nodes are removed.
 - Their removal for treatment is unnecessary unless they are felt to be enlarged.
 - The prognostic estimates that are based on cancerous involvement of these nodes are very inexact.
 - Cancerous nodes may be missed, but outcome unaffected, if they are sampled rather than completely removed.
 - After the nodes are removed, the arm becomes susceptible to infection and some swelling occurs in 15% of patients.
- Frequently, chemo- or hormonal therapy is given after surgery.
 - On an average, such therapy delays any recurrence that is destined to occur.
 - Administering such therapy may be delayed and given only when and if recurrence appears. There is no convincing evidence that the chance of cure is increased or survival is prolonged by giving such therapy immediately after surgery.

- If a cancer is inherently good and has been surgically cured, then chemotherapy is unnecessary and without benefit.
- Each type of chemo- and hormonal therapy has its own set of short- and long term toxicities.

The patient must live with decisions that are made shortly after the breast cancer is diagnosed. Usually, personal factors are as important as "cancer" factors in arriving at treatment decisions. From a variety of options, the patient must select those treatments that best fit her personality and life style. What is "best" for one patient may not be "best" for another.

Hormonal Replacement therapy, Cardiovascular disease, and Osteoporosis Prevention

Estrogen is commonly given to postmenopausal women for osteoporosis prevention and to reduce the risk of heart disease. Unfortunately, this type of estrogen replacement also causes breast cancer. Estrogen given after menopause continues to stimulate the breast causing fibrocystic lumps and it also increases the risk of breast cancer. The best study (the Nurses Health Study) reported the risk of breast cancer for current takers who took hormones for five or more years was 46% higher and the risk of breast cancer deaths was 45% higher than in non-takers. The risk returned to normal two years after stopping.

Cardiovascular disease

Cardiovascular risk factors are defined as current smoking, high cholesterol levels, high blood pressure, diabetes, a parental history of premature myocardial infarction, or body-mass index of 29 or higher (obese). In such postmenopausal individuals, the Nurse Health Study showed a 49% decrease in deaths from all causes for current hormone users as compared with these who had never used hormones. The decrease in deaths was not significant (13%) in women without such risk factors. Moreover, after 10 or more years of hormonal replacement therapy the decrease in cardiovascular deaths was offset by the increase in breast cancer deaths.

In another study, estrogen replacement therapy did not decrease second heart attacks in women who already had one heart attack.

Although making lifestyle changes is not easy, many cardiovascular risk factors can be eliminated by healthy living habits. Additionally, cholesterol lowering medications are more effective than estrogen in lowering cholesterol. Other risk factors such as high blood pressure can be medically controlled.

Osteoporosis

Approximately 50% of postmenopausal women need some sort of therapy to maintain their bones above the fracture threshold until the age of 70. Moreover, nearly all women need therapy if they wish to keep their bones above the fracture threshold for

an entire life to age 80 or 90. Understanding normal bone changes during normal life is important in order to determine who needs preventive treatment and when it should start.

Peak bone mineral density occurs by age 16 and progressively decreases thereafter. The rate of loss accelerates at menopause but 70% of the total loss to be experienced will have occurred by that time. Bone mineral density (BMD) measures bone strength. Women who have low bone mineral density in their teens will continue to be low. Increased susceptibility to osteoporotic fractures can be identified by bone mineral density determinations that are at least 2 standard deviations below the mean value found in premenopausal white women. Approximately 5% of normal women aged 40-49 years, 20% of women aged 50-59 years, and 45% of women aged 60-69 years have a BMD below this threshold. Therefore, comparing your BMD with that of normal young women will give a good idea of your susceptibility to osteoporosis.

The most physiological way to slow down the loss of bone mineral is with exercise and dietary calcium supplementation. However, taking postmenopausal estrogen replacement is easier, avoids hot flashes, and is more potent and more effectively retards the loss of bone minerals. Moreover, hormones only slow the rate of loss of BMD rather than increasing BMD.

A lot of research has been going on to develop drugs that provide the beneficial effects of estrogen while avoiding the detrimental ones. In 1995 the first of a series of new drugs, bisphosphonates, was approved for treating postmenopausal osteoporosis. The first of these drugs was alendronate, and in 1997 risedronate was approved.

Risedronate is less irritating to the stomach than is alendronate. In 1997 the first of another type of hormone-like drug, raloxifene, was approved for osteoporosis prevention. Drugs such as raloxifene may prove to have beneficial estrogen-like effects in preventing cardiovascular disease. In contrast to estrogen, these drugs have no untoward breast effects and actually increase bone mineral density. Since postmenopausal osteoporosis prevention entails medication for the rest of one's life (one pill a day), it is reasonable to treat only when there is evidence of a potential problem. Increased risk factors include:

- family or personal history of osteoporosis or fractures,
- thin, small build,
- lifestyle factors: inactivity, excessive alcohol or caffeine consumption, and smoking.

A woman has no control over two of these risk factors, namely family history and being born with a certain body type. However she has control over her lifestyle risks. Beginning an exercise routine, smoking cessation, and minimal to moderate alcohol and caffeine consumption are keys to reducing one's chances of developing osteoporosis. A bone mineral density test is valuable to determine the overall risk of osteoporosis. More importantly such a test can be used to determine when a woman should start pharmacologic therapy.

In summary, every woman needs to be informed about the benefits and risks that accompany estrogen replacement along with alternative methods of reducing heart

disease and osteoporosis. There are other means of preventing and treating heart disease and osteoporosis, *but there is no way to prevent breast cancer.*

Surgical Breast Cancer Treatment Options

Most women with a diagnosed breast cancer have two major concerns: 1) will the cancer recur and kill them and 2) do they have to lose their breast (i.e. have a mastectomy). An additional concern is the way in which treatment will affect their body's physical function. Both the physical and emotional effects of breast cancer can be long-lived so it is best to be well informed before you enter into a specific treatment course. You will accept both your physical and emotional disruption better if you are involved in making treatment decisions. However, some women prefer that their doctor make decisions for them. If you prefer it that way make sure that the doctor understands what is important to you and that you understand that any decision may turn out to be wrong in retrospect.

Let's talk about what effect surgical treatment has on whether or not the cancer will recur. The first and most important thing to remember is that not all breast cancers are the same. Bad cancers spread to remote sites in the body by the time the cancer is diagnosed; good cancers can grow in the breast and get to be quite large before spread occurs. Unfortunately, there is no reliable way to tell whether the cancer has spread. Blood tests, Xrays and scans usually cannot detect the small cells that may have broken off from the original cancer and have lodged in remote body locations. Only time will tell whether spread has occurred. How the breast is treated (lumpectomy or mastectomy) has little if any effect on its ultimate cure.. Again, cancer spread is determined by whether the cancer is inherently good or whether it is inherently bad. The microscopic appearance of some cancers makes it unlikely that spread will occur, but the best way to predict the future course of most cancers is by removing lymph nodes from under the arm, called an axillary lymph node dissection, and examining them under a microscope for cancer. Information obtained from examining these nodes is important in determining the type and intensity of chemotherapy that is recommended. Cancers that have spread to these nodes are more likely to have spread to other sites in the body than those that have not. The reasons for examining lymph nodes are the same regardless of whether the cancer in the breast is treated by lumpectomy or mastectomy. Hopefully, in the future, computer analysis of cells from the original breast cancer will give more accurate predictive information than is obtained from examining lymph nodes and therefore will make their routine removal unnecessary.

Now, we'll talk about how to treat the cancer in the breast. The two options are lumpectomy or mastectomy and another option is reconstruction after a mastectomy. The only reason to elect a lumpectomy is to preserve body image. Tumor size and location may make lumpectomy inadvisable. Radiotherapy is usually given to the breast after lumpectomy, but even then cancer recurs in the breast at the rate of 1 to 2% per year. However, cancer recurrence in the breast usually is less serious than is cancer recurrence elsewhere and can usually be treated successfully by a mastectomy. If you elect to have the original breast cancer treated by a mastectomy, the breast is gone and radiotherapy usually is unnecessary. There are pros and cons to both

lumpectomy and mastectomy that you should be aware of before you select one or the other. In either event, we have found that women adjust equally well to their choice.