



FREQUENTLY ASKED QUESTIONS ABOUT BREAST CANCER

1. I just had an abnormal mammogram. What is the next step?

An abnormal mammogram does not necessarily mean that there is cancer in the breast, but it does warrant additional tests. The ultimate test involves obtaining tissue through a biopsy for microscopic evaluation by a skilled pathologist. The following biopsy procedures are commonly used:

X-ray guided breast biopsy: performed with large-core needles, this procedure can accurately diagnose most breast lesions. It involves placing thin wires around the abnormal breast lesion under X-ray guidance, which will then allow the surgeon to remove the tissue. Alternatively, a three-dimensional image of the lesion can be obtained (stereotactic X-ray technique) which will allow precise location and biopsy of the abnormality. This can be done using dedicated tables and equipment. Stereotactic core biopsy has a reported accuracy of at least 90 percent.

Open biopsy: the surgeon makes a small incision over the breast lesion and removes visibly abnormal tissue.

Major complications, such as hemorrhage and infection, are extremely rare, although post-biopsy bruising (ecchymosis) and tenderness are not unusual. Because less tissue is removed with stereotactic biopsy, post-biopsy cosmetic deformity does not occur. Some reports have noted higher satisfaction and less pain with stereotactic biopsy than with open biopsy. This finding was not borne out in a prospective evaluation performed at Texas A&M University Health Science Center. There were no differences between 51 women who underwent an open biopsy and 52 who had stereotactic biopsy, with regard to patient satisfaction, procedural pain, or return to activities following biopsy.

2. The breast biopsy showed "cancer." My physician recommends surgery. What are my options?

Removal of the breast cancer along with a rim of surrounding healthy breast tissue (margin) is called lumpectomy. This procedure is usually combined with a sampling of the lymph nodes in the armpit (axillary lymph node dissection). A more radical procedure more commonly used in the past involves removal of the entire breast, plus axillary lymph node sampling (modified radical mastectomy). Most women are best served with a lumpectomy and axillary lymph node dissection. There are instances, however, where the surgeon may recommend a modified radical mastectomy.

3. The surgeon tells me he "got it all." Does that mean that I am cured?

The surgeon's statement "I got it all" refers to visible disease. While 70 percent of all women diagnosed with breast cancer will be "cured" by surgery (modified radical mastectomy or lumpectomy combined with radiation therapy), in 30 percent of women, some breast cancer cells that were undetectable by the surgeon or by x-rays or blood tests had already spread outside the surgeon's reach at the time of diagnosis.



In some women, breast cancer will recur, most commonly at sites distant from the original tumor, such as the liver, bones, lungs, etc.

4. After undergoing surgery, what are my chances of being cured from the disease?

There is no reliable test that would tell us whether surgery has cured a patient from breast cancer or whether the disease had already spread at the time of diagnosis. Blood tests, X-rays, CT scans and bone scans cannot detect small numbers of cancer cells that might have spread through the blood stream or lymph system. These tumor cells will form daughter cells and eventually give rise to metastases that are detectable on x-rays, bone scans etc.

However, at the time of breast surgery, certain features predict the risk of the cancer coming back. These features are also called prognostic factors:

Size of breast tumors: low risk of recurrence for cancers less than 1 cm; high risk for cancers greater than 4cm; intermediate risk for cancers 2-4 cm

Number of axillary lymph nodes involved: the more lymph nodes affected by the cancer, the more likely the cancer will come back down the road

Estrogen receptor (ER) and progesterone receptor (PR) status: breast cancers have the ability to react to the female hormones estrogen and progesterone through structures called receptors. These receptors are located on the surface of tumor cells. Their presence is routinely determined on the tumor specimen taken out by the surgeon. Patients with positive ER and PR tend to have a better prognosis, compared to ER and PR negative patients.

Other features of breast cancer cells include DNA-ploidy and HER2/neu receptors, which have also been implicated in determining the risk of the breast cancer coming back down the road.

5. What determines whether I need radiation therapy?

Lumpectomy plus radiation remains the standard treatment approach for patients with cancer who wish to preserve their breast. The addition of radiation following lumpectomy reduces the risk of breast cancer coming back in the same breast. There may be a group of patients that may not need radiation therapy after lumpectomy. Additional clinical studies are necessary to determine which patient subgroups, if any, may be routinely "safely" treated without breast irradiation.

6. Why would I consider additional chemotherapy?

As outlined above, some women have a considerable risk of the cancer having spread at the time of surgery, and this risk is determined by the presence of one or more unfavorable prognostic factors (tumor size, number of axillary lymph nodes involved with cancer, etc.). These women are considered for adjuvant chemotherapy. Adjuvant is



a Latin word and means "helping" (chemotherapy that helps the surgeon to cure the patient). Chemotherapy is considered systemic treatment, since the chemotherapy drugs reach all the organ systems of the body (except for the brain). This type of treatment is in contrast to "local" therapies such as surgery and radiation therapy. Local treatment will not eradicate cancer cells that are traveling through the blood stream.

7. How can I tell whether I will benefit from chemotherapy?

In general, chemotherapy reduces the risk of dying from breast cancer within 10 years by one third.

Women who have a high risk for the breast coming back (unfavorable prognostic factors) reap more benefit from chemotherapy than women who are at low risk of the cancer returning (favorable prognostic factors). This is best illustrated by the following two examples:

Let's look at 100 women with favorable prognostic factors (small breast tumor and no axillary lymph nodes involved). Assume their risk of dying from the disease is approximately 12 percent at 10 years. That means 12 women out of the 100 are at risk of dying from metastatic breast cancer. If these women decided to take chemotherapy, that risk would be reduced by one third, in other words: 4 women would be saved by adjuvant chemotherapy and only 8 would be at risk of dying from metastatic breast cancer (one third of 12 equals 4).

Now, let's take 100 women with unfavorable prognostic factors (large tumor, lymph nodes involved, etc): Let's assume their risk of dying within 10 years from breast cancer that has returned is 45 percent. One third of the 45 women expected to be saved by chemotherapy equals 15, so that in the end, 30 would be at risk of dying from metastatic breast cancer.

Conclusion: benefit from chemotherapy in terms of lives saved is greatest in women at higher risk of the cancer coming back (15 lives saved as opposed to 4 lives saved in our example).

8. At the end of adjuvant chemotherapy, how can I tell whether "it worked?"

Prognostic factors allow us to identify women at risk for the breast cancer coming back. Unfortunately, there are no tests available that would tell us which individual patients at risk will actually develop metastatic disease. That means that in our example above, all 100 women with unfavorable prognostic factors would have to undergo systemic chemotherapy for the sake of saving 15 lives. Conversely, since no tests are available to identify which individual patients were destined to die from recurrent disease, there is no way to identify individual patients that have been cured by the treatment.

9. What determines whether I need hormonal therapy (Tamoxifen, Arimidex, Femara, Aromasin)?



There is evidence that the growth of breast cancer cells is to some degree dependent on the presence of the female hormone estrogen. Estrogen affects the cancer cells by attaching itself to so-called estrogen receptors -- a structure on breast cancer cells that can be identified in laboratory tests. Women with estrogen receptor positive (ER positive) breast cancer may benefit from hormonal treatment. Some of these drugs occupy the estrogen receptors and prevent estrogen from attaching itself to the receptors, other drugs decrease the production of estrogen. Any growth-promoting effects of estrogen on cancer cells is thereby blocked. In women diagnosed with breast cancer after menopause, Tamoxifen, for example, reduces the risk of dying from breast cancer at 10 years by approximately 30 percent.

10. What are the side effects from chemotherapy?

Different combinations of drugs are used to treat breast cancer. The most common regimens for adjuvant therapy include CMF, FAC and AC. In general, the most common side effects include fatigue, hair loss, temporary loss of appetite, lowering of blood counts and nausea. The latter is usually prevented or well controlled with modern anti-nausea medication. The most concerning effect of chemotherapy drugs relates to the temporary decline of white blood cells. The lowest blood count usually occurs 7-12 days after each treatment and recovers promptly thereafter. During this critical period, patients are vulnerable to potentially fatal infections. Any sign of infection needs to be brought to the attention of the physician immediately. Chemotherapy-related lowering of the blood count can be alleviated with the use of so-called growth factors (Leukine, Neupogen, Neulasta). These medications are taken as subcutaneous injections and stimulate the recovery of normal blood cells.

11. What are the side effects from radiation therapy?

The most common side effect of radiation treatment to the breast and axilla (armpit) is a mild sunburn-like reaction of the skin. Other symptoms such as fatigue or nausea are extremely rare.

12. What are the side effects from Tamoxifen (Nolvadex)?

In general, Tamoxifen is extremely well tolerated. Rare, but potentially life threatening complications include the development of blood clots that may travel to the lung (pulmonary embolism), and a slightly increased risk of developing uterine cancer.

13. Will I lose my hair with chemotherapy?

Unfortunately, the vast majority of patients experience hair loss with chemotherapy. Hair loss may start as early as 10 days after the first treatment. The hair begins to grow back pretty much to its original state several weeks after completion of all chemotherapy treatments. Different measures to prevent hair loss have proven impracticable and unreliable.



14. Will I be able to work during the treatment?

The majority of patients on chemotherapy are able to work, although patients may miss certain days (chemotherapy treatment days, office visits, lab draws). Many patients, however, feel that it takes an extra effort to go to work on certain days during the treatment. Common complaints are an inability to concentrate, a lack of stamina and "just not feeling well."

15. How is the treatment going to affect my hormones?

Chemotherapy often causes a disruption of the menstrual cycle, and it may precipitate menopause in some women. Hot flashes may occur, in particular with Tamoxifen treatment. Vaginal dryness usually responds well to local measures (vaginal creams or lubricants, etc).

16. Do I have to worry about other family members being at risk for breast cancer?

Based on the history of breast cancers and other malignant tumors in the family, the breast cancer risk of close relatives can be assessed. First degree kinship and young age of family members suffering from breast cancer are important pieces of information. They are the strongest predictors of a possible inherited disposition shared by family members.

17. What is the role of diet?

Diet has a major impact on the risk of developing breast cancer. This information is derived from studies in other countries such as Japan where the risk of breast cancer is dramatically lower compared to the USA. Interestingly, Japanese women that relocate in the USA and adapt to Western diet, experience a steady rise in their breast cancer risk. Unfortunately, once breast cancer has established itself, diet has not been shown to affect the outcome of the disease ("the horse is out of the barn" effect). Nevertheless, a balanced diet (including fibers, fruits and vegetables) during treatment appears to help patients get through the treatments easier.

18. After all the treatment is completed, what follow-up tests do I need to undergo and how frequently should they be done?

After treatment for breast cancer is completed, regular follow-up examinations are recommended. They involve office visits, blood draws, and x-rays. How frequently these tests should be done is controversial. An expert panel of oncologists has developed helpful guidelines; however, these recommendations are not written in stone. They should be considered flexible allowing for adjustments to individual variations.



Interview with physician and physical examination	Every 3-6 months for the first 3 years, then every 6-12 months for the next 2 years, then annually
Breast self examination	Monthly
Mammography	Yearly. Women with breast conserving surgery (lumpectomy, excisional biopsy) should have their first mammogram 6 months after surgery, then yearly for stable mammographic findings
CXR	Routine use not recommended
Computed tomography (CT)	Routine use not recommended
Ultrasound of the liver	Routine use not recommended
Blood counts and chemistry profile	Routine use not recommended
Breast Cancer tumor markers (CA 27.29, CEA)	Routine use not recommended

