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Early-stage Breast Cancer Treatment: A Patient and Doctor Dialogue

Q: What is breast cancer, and what type do I have?

A: Cancer is a disease in which cells become abnormal and form more cells in an uncontrolled way. With breast cancer, the cancer begins in the tissues that make up the breasts. The cancerous cells may form a mass of tissue called a *malignant tumor*. The cells of a malignant tumor may spread to other parts of the body and threaten life. (*Benign* [buh-NYN] tumors are abnormal growths that are not cancer. The cells of a benign tumor do not spread to other parts of the body and do not threaten life.)

The most common types of breast cancer are:

- **Lobular carcinoma** (LAH-byuh-luhr KAR-sih-NOH-muh) — Cancer that begins in the glands of the breast that make milk. These milk-making glands are called lobules. About 1 in 10 breast cancers are this type.
- **Ductal carcinoma** — Cancer that begins in the milk ducts of the breast. Milk ducts are thin tubes that carry milk from the lobules to the nipple. About 8 in 10 breast cancers are this type.

In addition, there are two types of breast tumors that are not cancer but increase the risk of breast cancer:

- **Ductal carcinoma in situ (DCIS)** — DCIS is a condition in which abnormal cells are found in the lining of breast ducts. These cells have not spread outside the duct to the surrounding breast tissue. But some cases of DCIS become breast cancer over time. So DCIS is sometimes called Stage 0 breast cancer. Since it's not possible to know which cases of DCIS will become breast cancer, it's important to get treatment for DCIS. Women with DCIS often are treated with breast-sparing surgery and radiation therapy. Radiation therapy lowers the chance that DCIS will come back or develop into breast cancer. If a large area of DCIS is found or it is found in more than one location, some women will choose to have a mastectomy. Underarm lymph nodes usually are not removed in the treatment of DCIS. The drug tamoxifen, which stops the growth of breast tumors that depend on estrogen, is also sometimes used in the treatment of DCIS. Tamoxifen may decrease the risk of a breast cancer developing in the same breast after treatment or in the opposite breast.
- **Lobular carcinoma in situ (LCIS)** — LCIS is a condition in which abnormal cells are found in breast lobules. In contrast with DCIS, there is no evidence that the abnormal cells will become cancerous. However, having LCIS means that a woman has an increased risk of developing breast cancer in either breast. Despite this increased risk,



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most women with LCIS will never get breast cancer. Most women with LCIS are followed closely with regular checkups and mammograms. Some women choose to take tamoxifen to decrease their risk of developing breast cancer. Rarely, women with LCIS choose to have both breasts removed as a preventive measure, but most doctors think this approach is inappropriate.

Q: How does breast cancer spread?

- A:** If cancer spreads to other parts of the body, it's called *metastasis* (muh-TASS-tuh-siss). Breast cancer can spread to other parts of the body in 3 ways:
1. Invading nearby healthy tissue, such as the chest wall.
 2. Invading the *lymphatic* (lim-FAT-ihk) system. This system, which is part of the immune system, contains a network of lymph nodes (small, bean-shaped glands) and lymph vessels (thin tubes) that are found throughout the body. Lymph vessels carry a fluid called lymph to the lymph nodes, where it is filtered and checked for signs of infection and disease. Cancer cells can enter into lymph vessels in the breast and travel to the lymph nodes and other parts of the body. The first place breast cancer usually spreads is to the lymph nodes under the arms, called *axillary* (ak-suh-LAIR-ee) *lymph nodes*. That is why after breast cancer has been diagnosed, the underarm lymph nodes are often removed and examined to see if breast cancer has spread.
 3. Invading blood vessels in the breast.

Cancer cells can travel through the blood stream to other parts of the body, such as the lungs or bones.

When cancer cells spread, they can cause tumors to grow in other parts of the body. Breast cancer that forms tumors in other parts of the body, such as the lungs, is still breast cancer. The good news is that most breast cancers can be found and treated and do not come back in distant parts of the body.

Q: What does "early-stage" breast cancer mean?

- A:** Breast cancer is categorized as Stage I, II (A or B), III (A, B, or C), or IV. The stage is based on the size of the tumor and whether the cancer has spread. Stages I, IIA, IIB, and IIIA are considered "early-stage" breast cancer and refer to cancers that may have spread to nearby lymph nodes but not to distant parts of the body.

Q: How is early-stage breast cancer treated?

- A:** Treatment of early-stage breast cancer often involves more than one approach. Surgery is usually the first step. Most women with early-stage breast cancer have a choice between 2 surgical treatments:
- **Breast-sparing surgery, followed by radiation therapy** — Breast-sparing surgery, also called breast-conserving surgery, includes *lumpectomy* (luhm-PEK-tuh-mee) and *partial* (or segmented) *mastectomy* (ma-STEK-tuh-mee). With lumpectomy, the tumor and some surrounding normal tissue are removed. With partial mastectomy, a portion



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of the breast containing the tumor is removed. Women who have breast-sparing surgery usually have lymph nodes under the arm removed. This may occur during the breast-sparing surgery or at a later time. Breast-sparing surgery keeps the breast intact — looking a lot like it did before surgery.

or

- **Mastectomy** — With *simple (total) mastectomy*, the surgeon removes the whole breast that has cancer and possibly some of the lymph nodes under the arm. With *modified radical mastectomy*, the whole breast, plus many of the lymph nodes under the arm, the lining over the chest muscles, and, sometimes, part of the chest wall muscles are removed.

The goal of both surgeries is to remove all of the cancer from the breast. The doctor will also want to find out if the cancer has spread to nearby lymph nodes. With *axillary lymph node dissection (ALND)*, some or all of the lymph nodes under your arm are removed. With *sentinel lymph node (SLN) biopsy*, a substance is injected near the tumor that allows the doctor to see which lymph node the substance flows to first. This is the sentinel lymph node. It is the first lymph node the cancer is likely to spread to. The sentinel lymph node is removed and looked at under a microscope. If cancer is not found, the other lymph nodes may be left in place. If cancer is found, more lymph nodes may be removed.

The lymph node status, along with test results, helps the doctor know what other treatments, called *adjuvant* (AY-

juh-vuhnt) *therapy*, might also be prudent. The goal of adjuvant therapy after surgery is to kill any cancer cells that might be elsewhere in the body and to keep cancer from recurring.

Q: What's my chance of surviving this cancer with each type of surgery? Does the type of surgery affect whether the cancer can come back?

A: In deciding which type of surgery to have for early-stage breast cancer, the choice is not between saving your breast and saving your life. Women with early-stage breast cancer who have breast-sparing surgery live just as long as those who have mastectomy. A woman's life expectancy is the same no matter which surgical choice she makes.

When women are told that the survival rates of both approaches are the same, they might be surprised or skeptical. Some women assume that breast cancer won't return if the whole breast is removed. However, some breast tissue is left behind even after mastectomy, and cancer can recur in that tissue or on the nearby chest wall. For women with early-stage breast cancer who choose breast-sparing surgery, research clearly shows that radiation therapy after surgery lowers the risk of recurrence. The risk of cancer returning in the same breast is low. Yet, even if breast cancer does recur in the same breast, that does not reduce a woman's chances for a healthy recovery. As was already noted, the chance of survival is not affected by the choice of surgery. However, a recurrence in the same breast could require more surgery, and a woman may decide to have a mastectomy at



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that time.

The type of surgery does not affect the risk of cancer in the healthy breast or elsewhere in the body.

Q: How do I decide which surgery is right for me?

A: The choice may not be an easy one to make. You should consider the medical opinions of the team of doctors involved in your care. Your doctors will consider many factors, including your overall health, in making recommendations and can explain the risks and benefits of each approach. Speaking with several doctors might also help you in your decision-making. For instance,

a plastic surgeon can explain how different reconstruction methods might affect the look and feel of your breast. A radiation oncologist might help put the risk of recurrence in perspective. And of course, your feelings matter too. Ample discussion with doctors and loved ones will help you to sort through all these factors and come to a decision you can be content with.

The following sections provide a more in-depth look at breast-sparing surgery and mastectomy. This information might help a woman make a choice about surgical treatment.

Questions about breast-sparing surgery with radiation

Q: If I choose breast-sparing surgery, how much of my breast has to be taken out?

A: In a lumpectomy the surgeon removes the cancer and a small amount of surrounding normal tissue but leaves most of the breast intact. With other types of breast-sparing surgery, somewhat larger areas of the healthy breast are removed. This distance between the outer edge of the tumor and outer edge of the normal tissue surrounding it is known as the *margin*. The goal of breast-sparing surgery is to obtain *clear*, or *clean*, *margins* — that is, a band of normal breast tissue around the entire tumor that is completely free of cancer. This dictates how much breast is ultimately removed.

Q: Will breast-sparing surgery affect the look of my breast? What will the scar look like?

A: How the breast looks after surgery will depend on the size of the cancer compared to the size of the breast and the amount of healthy breast tissue that is removed. The appearance of the scar depends on the type of surgery and the location of the cancer. Your doctor can give you an idea of how breast-sparing surgery may affect the look of your breast. If your doctor says that breast-sparing surgery is an option for you, then he or she expects that the cancer plus a margin of normal tissue can be removed with a good cosmetic outcome.



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Q: Will I still have feeling in my breast after breast-sparing surgery?

A: Most women who have breast-sparing surgery followed by radiation therapy will still have sensation in the breast.

Q: What does radiation therapy after breast-sparing surgery involve?

A: Radiation therapy is usually performed as an outpatient procedure over a period of at least 5 weeks. Some women are not able to make that commitment. Some women live far from radiation facilities or can't afford to take the time for daily treatments. Others may have health conditions such as pregnancy, lupus, or heart disease, that prevent them from undergoing radiation. Since radiation therapy lowers the risk of recurrence for women who choose breast-sparing surgery, patients and their doctors must consider the requirements for radiation therapy before deciding which surgical option is best for them.

Q: Why do I need radiation therapy if the tumor is removed with clear margins?

A: Women who have radiation therapy after breast-sparing surgery are less likely to have cancer come back in the same breast than women who have breast-sparing surgery without radiation.

Q: What are the chances of the cancer coming back if I have breast-sparing surgery with radiation? If I decide on a breast-sparing surgery with radiation, how can you be sure there are no other "spots" in the breast?

A: Most women who have breast-sparing surgery followed by radiation will not have cancer recur in the same breast. In studies, recurrence rates within 10 years of breast-sparing surgery followed by radiation range from 4 percent to 20 percent. This might seem like a big range. But keep in mind that cancer that recurs in the same breast can be treated and does not affect chances of a healthy recovery compared to mastectomy. Another thing to keep in mind is that doctors suggest breast-sparing surgery only if they feel it offers a very good chance of removing all of the cancer. Obtaining a clear margin is one way the surgeon can lower the risk of recurrence. Radiation also lowers the risk of the cancer recurring in the same breast.

Q: What are the side effects of breast-sparing surgery? What about the side effects of radiation? I hear it makes the breast hard.

A: When considering what kind of surgery to have, it is important to know that there are potential side effects common to all surgical procedures. Any surgical procedure carries a risk of infection, poor wound healing, bleeding, or a reaction to the anesthesia. Also, pain and tenderness in the affected area is common, usually only in the



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short term. Because nerves may be injured or cut during surgery, most women will experience numbness and tingling in the chest, underarm, shoulder, and/or upper arm. Women who undergo breast-sparing surgery usually find these changes in sensation improve over 1 or 2 years, but they may never go away completely.

Radiation therapy can cause side effects, such as fatigue or skin irritation. These side effects tend to be mild. Radiation therapy can cause a skin condition that looks like sunburn. This usually fades, but in some women it never goes away completely. Some women do find that radiation makes their breast feel hard or firm. Again, this may last just a few months, or longer.

Removal of lymph nodes under the arms may be performed. This can lead to pain and arm swelling, called *lymphedema*, which can last a long time and be debilitating.

Keep in mind that the side effects of treatment vary for each person. Some women may have many side effects or complications, others may have very few. Pain medication, physical therapy, and other strategies can help women manage side effects and recovery.

Q: I heard that radiation can cause cancer. Will it increase my risk for other cancers?

A: Radiation therapy has improved greatly through the years, and the doses are much lower than they used to be. The risk of another cancer due to radiation therapy to the breast is very small. The bottom line is that women who have radiation therapy after breast-sparing surgery are less likely to have cancer recur in the same breast, and they live just as long as women who undergo mastectomy without radiation.

Q: If cancer recurs in the same breast after having breast-sparing surgery followed by radiation, will I need a mastectomy then? Will I be able to have breast reconstruction even though I have had radiation?

A: Cancer that recurs in the same breast usually is removed with surgery. Most often a mastectomy is performed at that time, because radiation is not recommended a second time. Breast reconstruction is possible after previous radiation therapy, but the surgery may be harder to perform. This issue should be discussed with a plastic surgeon.



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Questions about mastectomy

Q: Can I have breast reconstruction at the same time as my mastectomy?

A: Most women can undergo at least part of a breast reconstruction procedure at the same time as their mastectomy. Breast reconstruction can be done later as well. For some kinds of reconstruction, more than one surgery is needed. Women should have a full consultation with a plastic surgeon before deciding between mastectomy and breast-sparing surgery. The plastic surgeon can explain the different breast reconstruction methods, including possible complications. This information can help a woman make a choice about surgical treatment.

Q: Can I have a mastectomy without removing the nipple? What about the breast skin?

A: Most surgeons recommend removal of the nipple because cancer cells can grow there. Nevertheless, with some types of cancer that are not located near the nipple, it is possible to undergo a type of mastectomy in which the nipple is saved. However, this nipple-sparing surgery is rarely done. A nipple-sparing mastectomy is more likely than a total mastectomy to leave breast cells behind that could later become cancer. Moreover, because the nerves are cut, neither the nipple nor the breast will have the same sensations after any type of mastectomy that they had before the surgery.

When breast reconstruction is done at the same time as the mastectomy, the surgeon often is able to save most of the breast skin to use in the reconstruction.

Q: With reconstruction, can I change the size of my breasts? Can the plastic surgeon make the other breast match? Can the plastic surgeon make the breast look natural? Will I have any feeling in the reconstructed breast?

A: In many cases, a plastic surgeon can change the size of the breasts. Sometimes, surgery on the healthy breast also is needed so it will match the reconstructed breast. Reconstruction using a woman's own tissue often looks more natural than with implants, which tend to be higher and rounder than a natural breast. With tissue flap surgery, the breast is reconstructed using muscle, fat, and skin from other parts of the body, such as the abdomen or back. Tissue flap surgery is more complex than reconstruction with implants. Women who have had a mastectomy with reconstruction — either with implants or her own tissue — will not have much (or perhaps any) sensation in their breasts, because the nerves to the breast skin have been cut. And, although nipples can be reconstructed, they will not have any sensation.



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Q: What are the side effects of mastectomy? What about breast reconstruction?

A: When considering what kind of surgery to have, it is important to know that there are potential side effects common to all surgical procedures. Any surgical procedure carries a risk of infection, poor wound healing, bleeding, or a reaction to the anesthesia. Also, pain and tenderness in the affected area is common, usually only in the short term. Because nerves may be injured or cut during surgery, most women will have numbness and tingling in the chest, underarm, shoulder, and/or upper arm.

Removal of lymph nodes under the arms may be performed. This can lead to pain and arm swelling, called *lymphedema*, which can last a long time and be debilitating.

Breast reconstruction after mastectomy often requires multiple additional surgeries and significant recovery time. Companies that make breast implants have informed the FDA that 1 in 4 patients whose breasts were reconstructed with implants have at least one additional surgery within 3 years. With tissue flap surgery, healing can take a long time, and pain can last for months.

Keep in mind that the side effects of treatment vary for each person. Some women have many side effects or complications, others may have very few. Pain medication, physical therapy, and other strategies can help women manage side effects and recovery.

Q: If I have a mastectomy, does that mean I won't need other treatment after surgery?

A: Not necessarily. Some women with early-stage breast cancer who have mastectomy might also need radiation therapy, chemotherapy, or other treatment.

Q: I have breast cancer in my family. Should I choose the more aggressive treatment? Should I have surgery to remove my healthy breast to keep from getting breast cancer in it? Should I have genetic testing?

A: Most women who have breast cancer in their families will never get the disease themselves — even if a mother or sister has died of breast cancer. The risk is higher for women who are known to have a harmful mutation in either the *BRCA1* or *BRCA2* gene than in women with "breast cancer in their families" who don't have a mutation in one of these genes. But many women

with a harmful *BRCA1* or *BRCA2* mutation may never get breast cancer.

Although a family history of breast cancer increases your risk of breast cancer, it is not necessary to choose more aggressive treatment or more radical surgery just because you have a family member with breast cancer. For most women, family history alone should not influence the decision about which type of surgical treatment to have for early-stage breast cancer.

Women who have a family history of breast cancer do have an increased risk of getting breast cancer in their healthy breast. Sometimes these women decide to have the healthy breast removed to



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lower their risk of cancer in the future. Occasionally, women with a known harmful *BRCA1* or *BRCA2* mutation or a strong family history of breast cancer decide to have both their breasts removed as a preventive measure, even if they have never been diagnosed with breast cancer. Preventive mastectomy reduces the risk of future breast cancer, but it does not eliminate the risk completely because cancer can occur in any remaining breast tissue or on the chest wall. The disadvantage is that the surgery will be unnecessary for many women who choose it, because many women who have a breast removed as a preventive measure would never have gotten breast cancer even if the breast (or both breasts) were not removed. Women thinking about preventive mastectomy should get a second professional opinion before taking this step.

Instead of surgery, hormonal therapies can be used to reduce the risk of breast cancer among women at high risk of the disease. These include the drugs tamoxifen for women older than 35 and raloxifene for postmenopausal women. These drugs have side effects, and women should discuss the benefits and risks with their doctors.

Women with a known harmful *BRCA1* or *BRCA2* mutation also have a higher risk of ovarian cancer and sometimes elect to have the ovaries removed to prevent ovarian cancer. Removing the ovaries also decreases the risk of breast cancer in women who have not reached menopause.

Women with early-stage breast cancer should talk to their doctors about the effect of family history on their own personal risk of a second breast cancer, as well as about risk-reducing strategies. Some women with a family history of

breast and/or ovarian cancers might want to speak with a genetic counselor. A genetic counselor can talk about whether genetic testing for a *BRCA1* or *BRCA2* gene mutation might be appropriate. This information might help a woman decide on breast cancer treatment and risk-reducing approaches, including preventive mastectomy and hormone therapy.

Q: I am worried about paying for treatment. Does one surgery cost more than the other?

A: Cost should not heavily influence a woman's decision about which type of surgical treatment to have for early-stage breast cancer. Breast-sparing surgery followed by radiation may have more short-term costs but less long-term costs than mastectomy. Yet, specific costs are unique to each woman and her treatment needs. Contact your insurance company to find out what part of the costs you might have to pay. If you don't have insurance or need financial help, there are government-sponsored and private programs to help.

Q: I know that some women have arm swelling and pain after breast cancer surgery. Why does this happen?

A: Many women treated for breast cancer have arm swelling and pain, called *lymphedema* (LIM-fih-DEE-muh). It can happen after surgery to remove the underarm lymph nodes. Radiation therapy to the lymph nodes also can cause lymphedema. And other factors, such as being overweight and the location of the tumor, also can affect risk. Lymphedema may develop within days or many years after treatment. It can

