Cleveland Clinic’s Comprehensive Breast Cancer Program offers the highest-quality care for screening, diagnosis and treatment of breast cancer. Equipped with state-of-the-art technology, the program is staffed by an unmatched team of breast surgeons, medical breast specialists, medical oncologists, radiation oncologists, breast radiologists, physician assistants, nurses, genetic counselors, pathologists, social workers, rehabilitation specialists and administrative staff dedicated solely to the treatment of breast cancer. The team tailors treatment plans to the patient’s needs, taking into account the type of cancer, the age of the individual, the degree to which the cancer has spread, and the patient’s general health and desires.

Our unique approach to breast cancer is born out of the work of George Crile Jr., MD, who pioneered less radical surgery more than 50 years ago. Dr. Crile was a pioneer of patient empowerment, believing that patients should play an active role in their healthcare by asking questions, discussing treatment alternatives and working with their healthcare team to determine their best options. Dr. Crile’s legacy continues today. Cleveland Clinic’s Comprehensive Breast Cancer Program offers all aspects of therapy within our system.
HOW IS BREAST CANCER DIAGNOSED?
During your regular physical examination, your doctor will take a thorough personal and family medical history. He or she also will perform and/or order one or more of the following:

- Breast examination. During the breast exam, the doctor will carefully feel the lump and the tissue around it. Breast cancer usually feels different (in size, texture and movement) than benign lumps.
- Digital mammography. This X-ray of the breast can give important information about a breast lump. Some breast cancers are not felt but can be seen only on a mammogram. Digital mammograms record the breast image on a computer rather than on film, as did traditional mammograms. This newer technology may be better for women with dense breasts.
- Ultrasonography. This test uses sound waves to detect the character of a breast lump — whether it is a fluid-filled cyst (not cancerous) or a solid mass (which may or may not be cancerous). This may be performed along with the mammogram.
- Breast MRI. This test gives a detailed image of the breast by analyzing blood flow within breast lesions. It may be done as part of annual screening for women with a high risk of breast cancer.

Based on the results of these tests, your doctor may or may not request a biopsy to get a sample of the breast mass cells or tissue. Biopsies are performed using surgery (excisional biopsy) or a needle (core biopsy). They are most often done with mammography (stereotactic), ultrasound or MRI guidance. Your surgeon or breast imaging radiologist will advise you on the most appropriate type of biopsy for your individual case. After the sample is removed, it is sent to a lab for testing. A pathologist — a doctor who specializes in diagnosing abnormal tissue changes — views the sample under a microscope and looks for abnormal cell shapes or growth patterns. When cancer is present, the pathologist can tell what kind of cancer it is and whether it has spread.

Choosing Your Breast Cancer Care

While you have many options for treating your breast cancer, your care should be delivered by an experienced team. The multidisciplinary approach used at top cancer centers such as Cleveland Clinic combines the expertise of surgeons, breast radiologists, pathologists, oncologists, radiation therapists, nurses, social workers and others when customizing treatment for each patient. These experts meet regularly to discuss patients’ complete courses of treatment. Their collaboration means you will get the care you need right away rather than waiting, sometimes weeks, between appointments with various specialists.

For many cancers there are significant differences in outcomes between centers. Besides improved survival rates, comprehensive cancer centers often provide shorter hospital stays, reduced rates of complications, better management of side effects and access to the latest clinical trials. Learn about Cleveland Clinic’s outcomes at clevelandclinic.org/quality/outcomes. Cleveland Clinic’s cancer program is rated highest in Ohio by U.S. News & World Report. And Cleveland Clinic Breast Centers have earned a three-year full accreditation by the American College of Surgeons’ National Accreditation Program for Breast Centers. This honor is granted only to centers that provide the highest level of breast care.
Laboratory tests, such as hormone receptor (estrogen and progesterone) and human epidermal growth factor receptor (HER2/neu) tests, can show whether hormones or genetic factors are helping the cancer grow.

WHAT ARE THE TYPES OF BREAST CANCER?
The most common types of breast cancer are:

- **Infiltrating (invasive) ductal carcinoma.** This cancer starts in the milk ducts of the breast. It then breaks through the wall of the duct and invades the surrounding tissue in the breast. This is the most common form of breast cancer, accounting for 80 percent of cases.

- **Ductal carcinoma in situ** is ductal carcinoma in its earliest stage (stage 0), which means the cancer hasn't spread beyond its point of origin. In this case, the disease is confined to the milk ducts and has not invaded nearby breast tissue. If untreated, ductal carcinoma in situ may become invasive cancer. It is almost always curable.

- **Infiltrating (invasive) lobular carcinoma.** This cancer begins in the lobules of the breast where breast milk is produced but has spread to surrounding tissues or the rest of the body. It accounts for 10 to 15 percent of breast cancers. This cancer can be more difficult to diagnose with mammograms.

- **Lobular carcinoma in situ** is a marker for cancer that is only in the lobules of the breast. It isn't a true cancer but serves as a marker for the increased risk of developing breast cancer later. It is important for women with lobular carcinoma in situ to have regular clinical breast exams, mammograms or MRIs and to consult with an expert in managing breast cancer risk.

Cancers can also form in other parts of the breast but are less common.

WHAT ARE THE STAGES OF BREAST CANCER?

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 0</td>
<td>Disease localized to the milk ducts (carcinoma in situ).</td>
</tr>
<tr>
<td>Stage I</td>
<td>A tumor 2 cm or smaller; cancer cells either have not spread to lymph nodes (IA) or groups of cells are smaller than 2 mm across in lymph nodes (IB).</td>
</tr>
<tr>
<td>Stage II</td>
<td>A tumor 2 cm or smaller; cancer cells have spread to no more than three lymph nodes (IIA). Or a tumor between 2 cm and 5 cm, with or without spread to lymph nodes (IIB). Or a tumor larger than 5 cm that has not spread to the chest wall, skin or lymph nodes (IIB).</td>
</tr>
<tr>
<td>Stage III</td>
<td>Cancer cells in four to nine lymph nodes or nodes near breastbone (IIIA). Or a tumor larger than 5 cm; small groups of cells have spread to no more than three nodes or nodes near breastbone (IIIA). Or a tumor has spread to chest wall or skin; cancer cells are in up to nine lymph nodes or nodes around the breastbone (IIB). Or cancer cells are in 10 or more lymph nodes or nodes around the collarbone (IIBC).</td>
</tr>
<tr>
<td>Stage IV</td>
<td>Cancer cells have spread to areas away from the breast or lymph nodes such as bones, lungs or liver.</td>
</tr>
</tbody>
</table>

BREAST CANCER IN MEN

Even though men do not have breasts like women, they do have a small amount of breast tissue and can develop breast cancer. Breast cancer in men accounts for only about 1 percent of all breast cancers. This is possibly due to their smaller amount of breast tissue and the fact that men produce smaller amounts of hormones such as estrogen that are known to affect breast cancers in women. Breast cancer is most commonly diagnosed in men between ages 50 and 70.

Men with an abnormal BRCA gene, a hereditary mutation, have the highest risk of developing breast cancer. Other men with high risk are those who have had radiation exposure and those with abnormally large breasts (called gynecomastia). Obesity can cause gynecomastia. Individuals with a rare genetic disease called Klinefelter’s syndrome, who often have gynecomastia as part of the syndrome, are also prone to developing breast cancer.

Doctors used to think that breast cancer in men was a more severe disease than in women, but it now seems that for comparably advanced breast cancers, men and women have similar outcomes. Unfortunately, breast cancer in men is often diagnosed later than breast cancer in women, possibly because men are less likely to be suspicious of an abnormality in that area.
How is breast cancer treated?

Your team of doctors will work with you to develop a personalized plan to treat your breast cancer, to reduce the chance of cancer returning in the breast and to reduce the chance of the cancer traveling to a location outside of the breast. At Cleveland Clinic, radiologists, pathologists, surgeons, medical oncologists, radiation oncologists, nurses, social workers, genetic counselors, physical therapists and other experts meet regularly to determine the best course of treatment for individual patients. This collaboration helps identify the most effective care for even patients with the most complex cases. Treatment generally begins within a few weeks of diagnosis.

The type of treatment recommended will depend on the size and location of the tumor in the breast, the results of lab tests done on the cancer cells and the stage or extent of the disease. Your medical team usually will consider your age and general health, as well as your feelings about the treatment options.

Breast cancer treatments are local and systemic. Local treatments are used to remove, eliminate or control the cancer cells in a specific area. Surgery and radiation treatment are local treatments. In early-stage breast cancer cases, surgery is the first course of action, with additional treatment based on surgical findings, extent of disease and pathology. Systemic treatments, such as chemotherapy, are used to destroy or control cancer cells all over the body. A patient may have just one form of treatment or a combination.

SURGERY

Breast conservation surgery involves removing the cancerous portion of the breast and an area of normal tissue surrounding the cancer, while striving to preserve the normal appearance of the breast. This procedure has often been called a lumpectomy, which is a partial mastectomy. Some of the lymph nodes under the arm also are removed. Usually, six weeks of radiation therapy is then used to treat the remaining breast tissue. Most women who have a small, early-stage tumor are excellent candidates for this approach. In women with larger breasts, a lumpectomy is sometimes combined with breast reduction surgery for optimal oncologic and cosmetic outcomes.

Mastectomy (removal of the entire breast) is another option. The mastectomy procedures performed today are not the same as the older, radical mastectomies. Radical mastectomies were extensive procedures that involved removing the breast tissue, skin and chest-wall muscles. Today, mastectomy procedures do not ordinarily remove muscles.

To remove fewer lymph nodes during a mastectomy, surgeons may perform a sentinel node biopsy. This procedure uses a radioactive tracer and/or dye to track the path of cancer cells so the surgeon can remove only the nodes most likely to contain them.

For many women, mastectomies are accompanied by either immediate or delayed breast reconstruction. Cleveland Clinic breast surgeons have developed a mastectomy technique that leaves the nipple intact, allowing for a more natural-looking breast reconstruction. The nipple-sparing procedure is an option for select women.
whose tumor does not involve the nipple. The surgeon removes all of the breast tissue under the nipple and areola, leaving only a thin envelope of skin.

During nipple-sparing mastectomy surgery, tissue samples from the nipple area are typically sent to pathology to be tested for cancer. If there is any hint of disease in the area under the nipple, the nipple is removed. If the samples are negative, the nipple and areola are left intact for reconstruction.

To maximize the cosmetic outcome of nipple-sparing mastectomy, breast surgeons work closely with plastic surgeons in planning and performing reconstruction. After reconstruction is complete and the breast is completely healed, tiny surgical scars which are often inconspicuous, are the only indication that the woman has had a mastectomy. (See page 8.)

WHAT HAPPENS AFTER SURGERY

Following some breast cancer surgeries, genomic testing is done on the removed cancer cells. Testing helps the medical team determine if a cancer is likely to return. It also helps the team identify the best additional treatment(s), which may include radiation therapy, chemotherapy, anti-estrogen therapy and/or targeted therapy. Patients may be eligible for certain novel treatments through clinical trials.

RADIATION THERAPY

Radiation therapy is the use of high-energy X-rays or electron beams to kill cancer cells that may remain in the breast following surgical removal of a tumor. Radiation therapy is a local treatment aimed directly at the affected breast and/or lymph nodes.

Cleveland Clinic’s breast cancer radiotherapy program uses customized beam alignment and shielding techniques that deliver the proper dose of radiation to the breast while minimizing the dose to nearby lung and heart tissues. Specialized treatment planning software allows optimized radiation dose delivery to help minimize “hot spots” and “cold spots,” thus decreasing the risk of radiation complications and tumor recurrence.

TYPES OF BREAST RADIATION THERAPY

External beam radiation therapy is the most common form of radiation therapy. Before treatment begins, a computed tomography (CT) simulation is performed. During simulation, the radiation oncologist determines the proper beam arrangement, and radiation therapists mark the patient’s skin so that setup for treatments is the same every day.

During treatment, the patient is positioned on a table so that a beam of X-rays is aimed at the whole breast, similar to having a diagnostic X-ray. Through years of research and experience, radiation oncologists have determined optimum doses for specific types of cancer that maximize effectiveness and minimize harm to healthy tissues.

Each treatment lasts only a few minutes per day, generally five days per week for three to six weeks. Duration of treatment depends on the type of cancer being treated as well as technical considerations for the individual patient.

NEW TECHNOLOGY ADVANCES CARE

Cleveland Clinic has one of the most technologically advanced radiotherapy programs in the country, offering several treatment options not available anywhere else in Ohio. Radiation oncologists continue to explore innovative approaches to delivering radiation therapy, including:

IntraBeam® Intraoperative Radiation Therapy (IORT), which delivers a single high dose of low-energy radiation directly to the tumor site immediately following surgical removal of the tumor. This treatment takes about 30 minutes while the patient is under anesthesia in the operating room. For select patients, it may be the only radiation treatment necessary.

MammoSite® which delivers high-dose-rate (HDR) brachytherapy for breast cancer. The MammoSite balloon is placed in the lumpectomy cavity either at the time of surgery or within a few weeks after surgery. A radioactive source is temporarily placed into the balloon for treatment, which takes about 10 minutes each. For select patients, this outpatient treatment is completed in just five days, compared with up to six weeks for traditional radiation.

Hyperthermia a noninvasive method of increasing tumor temperature to stimulate blood flow and make tumor cells more sensitive to radiation. By adding hyperthermia to radiation therapy, radiation oncologists can increase tumor control while limiting damage to healthy tissue.
Some types of external beam radiation are:

- Partial breast irradiation, used to treat just the area of the breast from which the tumor was removed.
- Intensity modulated radiation therapy (IMRT), which uses sophisticated computer software and allows the radiation oncologist to carefully shape radiation doses away from normal organs.
- Prone breast irradiation, during which the patient lies on her belly, allowing gravity to help pull the breast away from her body. This treatment can limit the radiation dose that reaches the heart, lung and skin.
- Active Breathing Coordinator™ (ABC), a noninvasive device that, under the patient’s control, pauses breathing during radiation treatment to limit internal motion — therefore allowing the doctor to avoid healthy tissue, such as the heart.
- VisionRT™, an image-guided radiation therapy system that locates the treatment area based on a patient’s surface contour.

These types of radiation therapy are highly specialized and used in very specific settings. Your radiation oncologist will select the appropriate therapy and will discuss treatment options with you.

**SYSTEMIC TREATMENT**

In addition to surgery and radiation therapy, systemic treatment is a vital part of getting rid of cancer that has spread throughout the body and keeping it away. Systemic treatments can include chemotherapy, anti-estrogen therapy and targeted therapy.

**CHEMOTHERAPY**

In cancer treatment, chemotherapy refers to the use of drugs whose main effect is either to kill or to slow the growth of rapidly multiplying cancer cells. Chemotherapy often includes using a combination of drugs, since this approach is more effective than using a single drug alone. There are many drug combinations used to treat breast cancer. Ask your doctor for specific information and side effects you can expect from your chemotherapy medications.

Chemotherapy drugs are given intravenously (directly into the vein) or orally (by mouth). Once the drugs enter the bloodstream, they are delivered to all parts of the body to reach cancer cells that may have spread beyond the breast.

Chemotherapy is given in cycles of treatment followed by a recovery period. When given after surgery, the entire chemotherapy treatment generally lasts three to six months, depending on the type of drugs given. When chemotherapy is being used to treat breast cancer that has spread to other organs, chemotherapy may be given for a longer period of time (years).

**WHEN IS CHEMOTHERAPY GIVEN?**

When breast cancer is localized only to the breast or lymph nodes, chemotherapy may be given after a lumpectomy or mastectomy. This is known as adjuvant treatment and may help reduce the chance of breast cancer recurrence. Chemotherapy
is sometimes given before surgery (called neoadjuvant treatment) in order to shrink the tumor so it can be removed more easily or so that a lumpectomy can be performed instead of a mastectomy. Chemotherapy also may be given as the main treatment for women whose cancer has spread to other parts of the body outside of the breast and lymph nodes. This spread is known as metastatic breast cancer and occurs in a small number of women prior to diagnosis or when the cancer recurs some time after initial treatment for localized breast cancer.

**HOW WILL I KNOW IF THE CHEMOTHERAPY TREATMENTS ARE WORKING?**

Some people may think their chemotherapy treatment is not working if they do not experience side effects. However, this is a myth. Side effects differ from one patient to another. If you are receiving adjuvant chemotherapy (after surgery that removed all of the known cancer), it is not possible for your doctor to directly determine whether the treatment is working because there are no tumors left to assess. However, adjuvant chemotherapy treatments have been proven helpful in studies in which some women were given chemotherapy while others were not. After completing adjuvant therapy, your doctor will evaluate your progress through periodic physical examinations, routine mammography and appropriate testing if a new problem develops. If you are receiving chemotherapy for metastatic disease, the effects will be monitored by blood tests, scans and/or X-rays.

**ANTI-ESTROGEN THERAPY**

Anti-estrogen therapy (also called hormone therapy) is another form of systemic therapy, most often used to help reduce the risk of cancer recurrence after surgery. It is also used to treat cancer that has come back after treatment or has spread.

The hormone estrogen promotes the growth of about two-thirds of breast cancers — those containing estrogen receptors (ER-positive cancers) and/or progesterone receptors (PR-positive cancers). Because of this, anti-estrogen medicines can help keep cancer cells at bay either by stopping estrogen from acting on the cells or lowering estrogen levels throughout the body.

**TAMOXIFEN**

The anti-estrogen therapy of choice for premenopausal women is tamoxifen. It is a pill that can be taken daily for up to 10 years.

Tamoxifen blocks estrogen receptors on breast cancer cells, stopping estrogen from making the cancer cells grow. Women who take tamoxifen can significantly reduce their risk of new or recurring ER-positive breast cancers.

**AROMATASE INHIBITORS**

Aromatase inhibitors are the preferred treatment for postmenopausal women. These drugs prevent the body from producing estrogen. The daily pill can be taken for up to five years, even following years of taking tamoxifen.

While anti-estrogen therapy comes with side effects, the benefits outweigh the risks for most women with breast cancer.

**GENETICS AND BREAST CANCER**

Most breast cancers occur by chance or are sporadic. Some are hereditary (5-10%), however, and are caused by inherited gene mutations. Identifying a hereditary predisposition to cancer allows individuals and families to personalize cancer screening guidelines, medical management and treatment options. Hereditary breast and ovarian cancer (HBOC) syndrome is due to mutations in the BRCA1 and BRCA2 genes. Women with BRCA mutations have a 56 percent to 87 percent lifetime risk of developing breast cancer and a 27 percent to 44 percent chance of developing ovarian cancer. BRCA2 mutations are also associated with increased risks for male breast cancer, melanoma, prostate cancer and pancreatic cancer.

Several characteristics in a personal or family history may suggest a hereditary predisposition:

- Diagnosis of breast cancer before the age of 50
- Triple-negative breast cancer (TNBC), particularly if diagnosed before or at age 60
- Diagnosis of cancer in both breasts, or diagnosis of two or more breast primaries
- Several family members – on either mother’s or father’s side – with breast and/or ovarian cancer or pancreatic cancer
- A male individual or family member with breast cancer
- Breast cancer in individuals or family members of Ashkenazi Jewish (Eastern European) ancestry; the estimated prevalence of BRCA mutations is one in 400 in the general population and one in 40 in the Ashkenazi Jewish population.

**Genetic counseling** is the first step for these families. To learn more, please access clevelandclinic.org/cphg, or to make an appointment with a certified genetic counselor, please call 216.636.1768, or 800.223.2273, ext. 61768.

Cleveland Clinic also offers a unique clinic called the **Hereditary High Risk Clinic** for those with identified mutations and untested family members or individuals with a strong family history. You can learn more about individual breast cancer screening recommendations and risk reducing options. Breast cancer survivors with genetic mutations and previvors who have undergone risk reducing surgery can also benefit from personalized surveillance and new information. To schedule an appointment, call 216.444.3024.

Call 216.444.7923 or 1.866.223.8100 for an appointment | clevelandclinic.org/breast.
TARGETED THERAPY

Cancer cells have unique features. Targeted therapy specifically attacks those features to destroy the cancer cells.

For example, in about 20 percent of breast cancer patients, cancer cells have too much of a protein called “HER2” or “HER2/neu.” This protein causes the cells to grow and spread rampantly. Several targeted drugs attack this protein:

**TRASTUZUMAB AND PERTUZUMAB**

These targeted drugs attach to HER2 proteins to help stall the growth of cancer cells. They are injected into a vein once a week or every three weeks with chemotherapy, and then without chemotherapy for up to one year.

**ADO-TRASTUZUMAB EMTANSINE**

Used to treat advanced breast cancer, this targeted drug is an antibody combined with chemotherapy. The antibody tracks down HER2 proteins on cancer cells and the chemotherapy kills the cells. This drug is injected into a vein every three weeks.

**LAPATINIB**

This drug targets the HER2 protein, particularly in women with advanced breast cancer that no longer responds to trastuzumab. It is taken as a pill.

Options for Breast Reconstruction

At Cleveland Clinic, our unique team approach and the collaboration between breast surgeons and plastic surgeons make it possible for you to have mastectomy and reconstruction at the same time. Or you may choose to have reconstruction months or even years after your mastectomy. Deciding if or when to have breast reconstruction is intensely personal. The long-term prospect of living without a breast or part of a breast affects each woman differently.

Although breast reconstruction options might seem confusing at first, our team in Cleveland Clinic’s Comprehensive Breast Cancer Program can answer your questions and help find a plan that is right for you. Most reconstructive efforts require stages of operation and are coordinated with your cancer treatment.

The most common types of breast reconstruction are:

**RECONSTRUCTION AFTER LUMPECTOMY**

There are three major reasons to reshape your breast after a lumpectomy:

1. A lumpectomy sometimes creates a substantial defect in the breast.
2. A smaller breast is easier to treat with radiation than a larger breast.
3. Smaller breasts have a much lower risk of complications than larger breasts, which tend to develop more shrinkage and hardening over time.

Types of breast reconstruction following a lumpectomy can be as simple as closing up the defect or rearranging tissue of the surrounding breast area. If you have larger breasts, you may be able to have breast reduction surgery along with your lumpectomy.
Tissue Expander and Implant
If you have a mastectomy, a breast implant may be possible. Most implant reconstruction is a two-step procedure. First, after the breast is removed, a tissue expander is placed beneath the chest muscle. (An expander is a silicone rubber balloon with a metal port through which fluid can be injected.) Then, a few months later, the tissue expander is exchanged with a breast implant. The other breast can be adjusted to match.

Tissue expander reconstruction has many advantages:
1. It doesn't leave additional scars.
2. You can choose breast volume, symmetry and timing for the secondary procedures.
3. If you require radiation therapy after surgery, the tissue expander can keep your breast skin envelope stretched during treatment. The expander isn't replaced with your own tissue until after radiation is complete. That helps you avoid any potentially harmful effects of radiation on your final reconstruction.

Reconstruction Using Your Own Tissue
Using your own tissue to construct the new breast is a popular option. During these procedures, generally referred to as flap procedures, plastic surgeons take tissue from another part of the body to replace missing breast tissue and create a breast mound.

Cleveland Clinic plastic surgeons most often use tissue from the abdomen. It is the same tissue that is discarded during abdominoplasty (tummy tuck) procedures, and therefore results in tightening of the stomach. It leaves a horizontal scar across the lower abdomen, but this generally is the least objectionable place for such a scar.

TRAM Flap
For a transverse rectus abdominis myocutaneous (TRAM) flap, the surgeon makes an incision from hip to hip. Excess skin and fat from the belly button to the groin is transferred to the chest wall through a “tunnel.” The skin and fat stay connected to the rectus muscle (the “six-pack” muscle), which provides the blood supply.

A TRAM flap can result in natural breast reconstruction without implants. However, because the rectus muscle is moved to the chest, a mesh is needed to prevent abdominal weakness.

DIEP Free Flap
For a deep inferior epigastric perforator (DIEP) flap, excess abdominal skin and fat is used to reconstruct the breast. However, unlike a TRAM flap, the rectus muscle is not used. This helps preserve abdominal strength and integrity.

DIEP is a “free flap” procedure, meaning the tissue is completely disconnected and then reconnected to the body using a surgical microscope. Cleveland Clinic plastic surgeons have significant expertise in these sophisticated microsurgical techniques. In fact, surgeons from around the world travel to Cleveland Clinic to learn this procedure.
OPTIONS FOR BREAST RECONSTRUCTION CONTINUED

Latissimus Dorsi
When the tummy flap is not an option, plastic surgeons can take tissue from the back, thigh or buttocks. The latissimus dorsi flap moves skin, fat and muscle from the patient’s back to the mastectomy site. This flap is tunneled beneath the skin under the armpit to create a new breast mound. If more volume is needed for reconstruction, this flap can be supplemented with a tissue expander and, later, a breast implant.

SGAP/IGAP Flaps
If you don’t have enough excess abdominal tissue to reconstruct a breast, have had previous abdominal surgery or simply do not want to use abdominal tissue for your reconstruction, an SGAP or IGAP (superior or inferior gluteal artery perforator) flap may be a good option. These flaps use skin and fat from the upper or lower buttock.

TUG Flap
One of the newest breast reconstruction options is the TUG (transverse gracilis) flap. This flap uses extra tissue from the inner thigh to reconstruct the breast. The tissue remains connected to its blood supply from the gracilis muscle, an expendable inner thigh muscle.

OTHER TECHNIQUES IN BREAST RECONSTRUCTION

Nipple and Areola Reconstruction and Tattooing
Reconstruction of the nipple and areola (the dark-colored circle of skin around the nipple) is done on an outpatient basis. It can be done in many different ways. A projecting nipple may be created using a small flap of folded breast tissue. The areola may be recreated by placing a skin graft, often taken from the inner thigh or lower abdomen. Later, the nipple and areola skin can be colored by medical tattooing.

The appearance of your reconstructed breast will gradually improve over the months following surgery. You’ll be asked to return for regular checkups at an interval that depends on the type of reconstruction you have.

SURVIVORSHIP CLINIC
Cleveland Clinic medical professionals who specialize in breast cancer help patients make the transition from cancer patient to cancer survivor. They provide patients with a treatment summary and a follow-up care plan that offers guidance and clearer expectations on what to anticipate going forward. Follow-up in the Survivorship Clinic is tailored to each patient’s specific needs. Visits allow patients to address concerns related to their individual journeys with breast cancer.
Contacting Cleveland Clinic

STILL HAVE QUESTIONS ABOUT BREAST CANCER?

If after reviewing this guide you have additional questions, Cleveland Clinic’s Cancer Answer Line can help. Oncology clinical nurse specialists and their staff can provide information and answer questions about cancer. The Cancer Answer Line is operational from 8:30 a.m. to 4:30 p.m., Monday through Friday. Please call 216.444.7923 or toll-free 866.223.8100.

READY TO SCHEDULE AN APPOINTMENT WITH A SPECIALIST?

Anyone interested in making a Cleveland Clinic Breast Center appointment for an initial exam or a second opinion may do so by calling the Breast Center. It is not necessary for patients to be referred to Cleveland Clinic by their outside physicians. If you would like to set up a consultation with a Cleveland Clinic breast specialist, call 866.223.8100.

SEEKING A SECOND OPINION?

Many women, upon learning they may have breast cancer, would like a second opinion. Cleveland Clinic breast specialists welcome and encourage patients to explore every possible option. Patients seeking second opinions are given priority appointments and are asked to bring mammogram films/digital records, pathology reports, pathology slides and operative notes from their biopsy procedure (if available). Our experts will review these records and specimens so that treatment options may be discussed.

BREAST CARE LOCATIONS

Cleveland Clinic provides patients with convenient locations throughout the greater Cleveland area for screening and treatment of breast cancer. In addition to Cleveland Clinic’s main campus, patients can visit Cleveland Clinic community hospitals and family health centers. Every member of our breast cancer treatment team is committed to providing you with outstanding, comprehensive, efficient and compassionate care.

Connect with Cleveland Clinic

Get wellness tips, healthy gourmet recipes, essential health news and free downloadable health guides straight to your inbox. Sign up today at clevelandclinic.org/bewell.

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Find a wealth of family health & wellness tips at clevelandclinic.org/healthub.