



Depending on the type and extent of your breast cancer, you will very likely need surgery. The following information covers different surgical options your doctors and health care team may discuss with you. It also includes tips on how to care for yourself after surgery. *If the information included here differs from what your individual surgeon recommends, follow your surgeon's directions.* If you have questions, we encourage you to ask your doctor or health care team regarding all your options. In certain instances, your doctor may recommend that you have neoadjuvant chemotherapy. Neoadjuvant chemotherapy or targeted therapy is given before surgery to shrink, weaken or destroy the cancer. This may allow you to have a lumpectomy rather than a mastectomy.

Prior to any surgery, you may be asked to see your primary care physician for a general physical exam. If you have special medical concerns, such as heart or breathing problems, you may be asked to see a doctor who is a specialist in those areas. You may also need to have blood work, x-rays or heart tests before surgery.

Preparing Yourself for Surgery

➔ Several weeks before surgery:

- Complete the testing your doctor requests before surgery: usually lab work, additional imaging, a chest x-ray and in some cases, an EKG.
- Recovery after breast surgery often includes restrictions on lifting, pushing and pulling. Now is a good time to make arrangements for the care of your children, other family members who need your help, and the care of your pets. If you feel the need to clean your house try to do it during this time.
- Consider preparing larger portions when you cook and freezing the extra food for meals after surgery. *Ask for help!*
- If you are having a mastectomy, you might like to move items from higher shelves so that you can reach things easier in the first days after surgery. Gather some extra pillows for your bed.
- Consider getting a hand-held shower to make it easier to care for yourself after surgery.
- Driving may be restricted for some time after surgery. Discuss this with your surgeon. This is another chance for you to ask for help from other people.
- Consider what clothes you will wear to the hospital. Usually the clothes you wear to the hospital will be the clothes you wear home. Clothes that button or zip are easier to slip your arms into rather than clothes you pull over your head. If you are having a lumpectomy some surgeons will suggest you wear good supportive bras as you are recovering.

➔ The day before surgery

- Try to eat well, sleep, go on a walk and do diversional activities. Please drink plenty of fluids the day before surgery.
- If possible, remove your jewelry, especially rings, the day before surgery.
- If you are staying overnight in the hospital, gather the items you will need to bring for your surgery stay. Pack lightly, as there are usually only a few items you will need. Bring your photo ID and your insurance card. If you are spending the night at the hospital pack a toothbrush, toothpaste or items needed to care for your dentures. Most women like to bring their own brush or comb. If you wear glasses pack your glasses case.
- Take a shower the night before surgery and apply the surgical wipes or soap as instructed. These are used to reduce the chance of getting an infection from surgery. You will repeat the process in the morning, before surgery. Do not take a shower or bath in between applications.
- It is a good idea to wash your hair the night before surgery, *before the surgical wipe or wash*.
- You may be given further instructions from your health care team.
- Typically, the night before surgery you will be asked not to eat anything after midnight. If you take regular medication for high blood pressure, diabetes or another condition, ask your doctor whether you should take the medicine the morning of surgery. If you do need to take your regular medicine, it should be with a small sip of water.



Remember, the information in this section will help you plan and prepare for your treatment. However, it is not meant to replace the individual attention, advice, and treatment plan of your surgeon and medical team.

Lumpectomy

During a lumpectomy (partial mastectomy), a surgeon will remove the cancer (or lump) and a small amount of normal breast tissue surrounding it in order to obtain clear margins or edges. The amount of tissue removed depends upon the size of the cancer. The surgery is usually done on an outpatient basis.

If your surgeon cannot feel the cancer, he or she will need some help locating this area of tissue. Because of this, a procedure called a dye or wire localization may be performed just prior to your surgery. This procedure will be completed in the radiology department. Using mammography or ultrasound, the radiologist will place a small needle in the breast where the cancer is located. Once the needle is in place, the radiologist places a fine wire and/or blue dye through the needle and then removes the needle. You will be awake for this procedure. Local anesthetic is often given prior to the needle being inserted. This procedure usually takes 30 to 60 minutes. Alternatively, in some cases, a small marker may be placed in the breast at the cancer by the breast radiologist several days before surgery, similar to a marker placed during a biopsy. During your surgery your surgeon will make an incision guided by the dye, wire, or marker to the area where the cancer is to be removed. The wire or marker and the tissue are removed at the same time.

The pathologist will make a detailed description of what the cancerous cells look like and perform tests on these cells. The pathologist will also determine if there are cancer cells at or very near the edge (margin) of the tissue removed. If cancer cells are found at or near the edge, the surgeon may recommend a second, larger lumpectomy or a mastectomy if that is the best option.

If no cancer cells are found at or near the edge (“clear margins”), you will start your next course of treatment, which could be chemotherapy or radiation.

Your doctor may recommend a **lumpectomy** if you:



- Have a small cancer compared to the size of your breast,
- Have cancer in only one area of your breast,
- Are comfortable having radiation therapy after the lumpectomy and,
- Wish to preserve your breast.

If chemotherapy is recommended after your surgery, it is administered prior to whole breast radiation. In this case, radiation is started after completion of chemotherapy/immunotherapy (See the Medical Oncology chapter for more information).

There are several different ways to administer radiation therapy after lumpectomy. Talk to your surgeon and radiation oncologist to determine what will be the best option for you. (see the Radiation Oncology section for more information). External beam radiation therapy begins after you have healed from the lumpectomy. If brachytherapy radiation is recommended, it is administered soon after surgery. Radiation therapy is recommended following a lumpectomy to reduce the chance that the cancer will return in the breast. It also offers a small survival advantage for women with invasive cancer.

After a lumpectomy, your breast may look a little smaller or have less fullness than your other breast. If a large amount of tissue is removed, you may wish to wear a partial breast prosthesis (an artificial breast form) in your bra to fill in the area and balance your breasts. Certified prosthesis fitters are available to assist you if you choose to wear a prosthesis. You may also want to have a consultation with a reconstructive (plastic) surgeon to determine if there are any surgical procedures that can help restore your breast to a more natural appearance.

Mastectomy Without Reconstruction

During a mastectomy, a surgeon removes all or almost all of the tissue of the breast and may include the nipple. The muscle behind the breast tissue is not removed.

Your doctor may recommend a **mastectomy** if:

- The cancer is large,
- There is cancer in multiple areas of the breast,
- You cannot or do not wish to have radiation therapy after a lumpectomy, or
- You feel that a mastectomy is the best option for you.

Your surgeon will try to minimize scarring as much as possible during surgery. However, once you heal from the mastectomy, you will be left with a scar across your chest and the area will be relatively flat. If possible, your surgeon may leave some extra skin if you are planning to have reconstruction at a later time. In rare cases, your ribs may look like small bumps underneath your skin. Occasionally, radiation therapy may be recommended after a mastectomy when certain features are found on the pathology report.

Following a mastectomy, you may wish to wear an artificial breast form (prosthesis) in a bra or attached to your skin.

Another option is to have the breast reconstructed or rebuilt, using artificial breast implants or your own body tissue such as skin and fat from the lower abdomen. Reconstructive surgery can be done at the time of the mastectomy or you can wait and have it done at a later time. Reconstructive surgery is discussed in more detail later in this chapter.

Prophylactic Mastectomy

A prophylactic (or preventive) mastectomy is removal of a breast even though no cancer has been found in that breast. Prophylactic mastectomies are most commonly done for women who are at very high risk for developing breast cancer and want to reduce that risk, such as women with hereditary cancer syndromes (i.e., BRCA 1 and 2). Although a prophylactic mastectomy removes all or almost all of the breast tissue, there is still a small chance that breast cancer may develop in the remaining breast tissue. During a prophylactic mastectomy, a surgeon removes almost all of the breast tissue, and may include the nipple. The muscle behind the breast tissue is not removed.

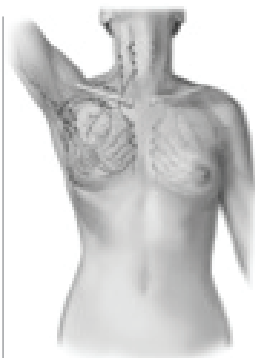
You may want to consider a **prophylactic mastectomy** if you:

- Have breast cancer in one breast and a high risk of developing breast cancer in the unaffected breast over the course of your lifetime,
- Have breast cancer in one breast and a great deal of anxiety about developing breast cancer in your unaffected breast,
- Carry a BRCA 1 or BRCA 2 genetic mutation, regardless of whether you have had breast cancer,
- Have radiation therapy after a lumpectomy,
- Have a substantial family history of breast cancer occurring at an early age.

Lymph Nodes

Lymph nodes are small bean-shaped structures that run close to your vascular system (arteries and veins) and are part of the lymphatic system running throughout your body. This elaborate network of vessels and nodes helps fight infection and clean up waste products made by the body. However, if cancer cells enter these lymph nodes, they can spread to other parts of the body.

The lymph vessels in the breast drain into the lymph nodes under the arm (the axilla). If cancer cells are found in these lymph nodes during a node biopsy, additional treatments may be recommended.



Chest and arm lymph node area

The information in this section will help you plan and prepare for your treatment. However, it is not meant to replace the individual attention, advice, and treatment plan of your oncologist and medical team.

Sentinel Lymph Node Biopsy

If you have an invasive ductal or lobular cancer (refer to the “Understanding Your Diagnosis” section of this notebook) or a large amount of ductal carcinoma in situ (DCIS) that requires a mastectomy, your surgeon will need to remove a few of the lymph nodes under your arm to see if the cancer has spread from the breast to the nearby lymph nodes in the axillary (armpit) region.

Since a surgeon cannot see normal lymph nodes, there are two methods that can be used to help the surgeon locate the lymph nodes during surgery. A radioactive tracer can be injected into the breast before surgery and/or a blue dye can be injected at the time of surgery. The surgeon will make a small cut (incision) in your armpit and find and remove the first lymph nodes into which the breast tissue drains. These are called the sentinel lymph nodes.

Usually between one and four lymph nodes are removed during surgery. A pathologist will examine the lymph nodes, in some cases during the lumpectomy. If cancer cells are found in a sentinel lymph node, more lymph nodes may need to be removed depending upon the type of surgery you had and additional treatments that are planned (see next section).

Axillary Lymph Node Dissection

If you have an invasive breast cancer, and it has spread to the sentinel lymph nodes (refer to the “Understanding Your Diagnosis” section of this notebook), your surgeon may need to remove more lymph nodes under your arm to see if the cancer has spread from the breast to the nearby lymph nodes. This is called an axillary lymph node dissection.

An axillary lymph node dissection is recommended, if the surgeon’s exam or a preoperative lymph node biopsy shows a suspicious or a cancerous lymph node in the axilla (armpit). An axillary lymph node dissection is usually done at the same time as the breast surgery. In some cases, if a sentinel lymph node contains cancer, an axillary lymph node dissection may be recommended. Sometimes this can be done at the same time as your breast surgery.

Your surgeon will make a cut (incision) under your arm on the side the cancer was found. He or she will remove fatty tissue called the axillary fat pad, which contains lymph nodes. The number of lymph nodes found in the fat pad varies from person to person. After your surgery, a pathologist will remove the lymph nodes from the fat pad and examine them under a microscope to see if they contain cancer cells.

You may notice numbness or tingling in the area under and at the back of your upper arm following an axillary lymph node dissection. In addition, scarring in the armpit may cause a feeling of tightness and limit range of motion immediately after surgery. This should get better over time. There are specific exercises (included later in this section) to help with this stiffness.

Throughout your lifetime, you will be at greater risk of developing a condition called lymphedema (refer to the lymphedema section later in this chapter) on the side where the lymph nodes were removed. Lymphedema is a chronic swelling of the hand and/or arm. It can affect as many as 15-20% of women who undergo axillary lymph node dissections. The chance of developing lymphedema increases with additional treatment like radiation therapy (see “Radiation Therapy” section). It is not life threatening, but it can limit movement, increase the chance of infection and change your body’s appearance. Treatment to minimize and/or manage lymphedema is available. Ask your medical team about resources available in your community to reduce your risk of developing lymphedema.

Breast Reconstruction

Following a mastectomy, your chest wall will be relatively flat where the breast was removed. The shape of the breast can be restored through reconstructive surgery. A breast reconstructive plastic surgeon can reconstruct the breast using your own tissue or a breast implant.

Yes or no?

- The decision to have reconstructive surgery is a personal decision influenced by many factors. Be sure to utilize your health care team for information and support.

What to Consider

- How comfortable will I be with my body if I do not have a breast?
- What activities do I participate in and how will I manage with a prosthesis or reconstruction?
- How do I feel about additional surgery?
- How comfortable am I with my prosthesis (if you already wear one)?
- Am I ready to make a decision about reconstruction now?



- Breast cancer reconstruction surgery is not the same as breast enhancement surgery. The goal is to get the best cosmetic effect, but your breasts may look different than imagined.
- You may not have sensation in your reconstructed breasts and/or nipples.

When?

- Reconstructive surgery can be done at the time of the mastectomy or delayed until months or years after the mastectomy. Your doctor may recommend delaying reconstruction if you will need further treatments, such as radiation or chemotherapy, or if you have health or other problems.

What to consider about the timing of reconstruction

- How comfortable will I be with my body if I do not have immediate reconstruction?
- Am I ready to make a decision about reconstruction now? Do I need more time to think about it?
- Will immediate reconstruction have any negative impact on future treatments I need for the breast cancer, such as radiation or chemotherapy?
- If I have immediate reconstruction, how will other treatments, such as radiation or chemotherapy, affect the reconstructed breast?
- Will I have the same options for reconstruction if I do it immediately or delay it?
- Will the reconstructed breast have a different appearance if I have the surgery immediately versus delaying it?

How?

The breast shape can be surgically recreated in one of two ways:

- ➔ **Using an artificial implant:** The implant, much like those used in breast enlargement operations, can be placed behind or above the pectoralis muscle of the chest. Talk to your breast reconstructive (plastic) surgeon to see what option is best for you.
- ➔ **Using your own tissue:** A tissue flap, often taken from the lower abdomen or back, is moved to the chest to create the breast shape.

Each method varies in the amount of surgical and recovery time required, number of surgeries, short and long term complications, and the final appearance of the breast. Almost all reconstructive procedures require more than one operation to complete.

What to consider about type of reconstruction

- How is my general health?
- How will my smoking affect my healing?
- What type of anesthesia is used?
- How long does the surgery take?
- What is the size of my other breast, and what size do I want my reconstructed breast?
- How well will the reconstructed breast match my remaining breast?
- Do I have enough tissue available from my abdomen or back for a tissue flap reconstruction?
- Do I want to change the size of the remaining breast to attain symmetry or make it larger or smaller?
- What is the expected recovery time?
- How many follow-up procedures and how much time is required to complete all of the reconstruction procedures?
- How will the reconstructive process fit into my overall treatment plan for breast cancer?
- What are the benefits and risks of the recommended procedure?
- How many times has the surgeon done this particular procedure?
- Does the surgeon have photographs of women as they go through various stages of the procedure? Does the surgeon have pictures of women when their reconstruction is completed who he/she has done this procedure on?
- What is the cost? How much will my insurance cover?

Specific information on a particular type of reconstructive surgery can be found on the following pages.

➔ Reconstruction with Breast Implants

Breast implants are made of an outer shell of silicone-based plastic. Permanent implants are filled with saline (sterile water similar to our own body fluids) or with silicone gel. The saline filled implants feel firmer, while silicone feels more like natural breast tissue. Implants come in two basic shapes, round or teardrop. The size of the implant depends upon the amount of saline or silicone in the implant and is typically described by bra cup size.

Overview

Artificial breast implants are placed underneath or on top of the pectoralis muscle in the chest.

Number of operations needed

Usually two to three operations are needed for reconstruction. Implants may need to be replaced over time.

Surgery description

- If the implant will be placed underneath the muscle, a temporary tissue expander is placed at the time of the mastectomy or any time afterwards. The tissue expander is a collapsed implant that can be filled with fluid (saline) over time through a “port” under the skin. Its purpose is to slowly stretch the muscle and skin to hold the permanent implant. Fluid is added to the expander every one to two weeks until the desired size is achieved. Once the chest wall is stretched sufficiently, a second operation is performed.
- During the second operation, the expander is removed and the permanent implant is inserted. The nipple and areola can be added through further outpatient procedures, if desired. Both the initial operation to place the expander and the operation to replace the expander with the permanent implant take about one to two hours.
- For implants that are placed over the pectoralis muscle, only one operation is needed. The implant will be placed immediately after your breast surgeon completes the mastectomy. The nipple and areola can be added through further outpatient procedures, if desired.

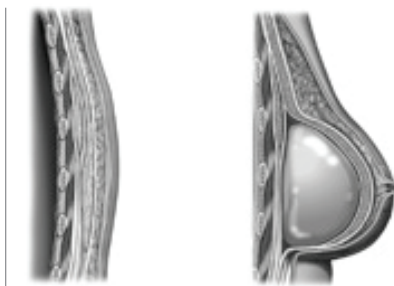
Possible complications

- *Infection or fluid collection:* as with any invasive surgery or procedure, you can develop an infection or collection of fluid (clear fluid or blood) around the implant shortly after surgery. These complications may require treatment with antibiotics or removal of the fluid, but occasionally require the implant to be removed (if removed, the implant can usually be replaced at a later time).
- *Necrosis:* death of the tissue around the implant usually due to poor blood flow to the tissue after the operation. It rarely happens with breast implants and usually does not harm the woman. However, it may leave the breast feeling hard and may distort the look of the breast.
- *Capsular contracture:* the development of scar tissue around the implant that distorts or changes the shape of the breast. If severe, capsular contracture may be uncomfortable or painful. Capsular contractures can be corrected surgically by removing the scar tissue and replacing the implant, but it may reoccur.
- *Ruptures or leaks:* although it doesn't happen often, breast implants may leak or rupture, spilling the saline or silicone into the surrounding tissues. Leaking usually occurs due to injury, age of the implant or for unknown reasons. The implant must be replaced if leaking occurs. Breast implants will need to be replaced over time to prevent leakage.
- *Pain:* any of the above situations can cause pain. Occasionally, women develop chronic pain following reconstruction that cannot be explained, but it can be treated. Discuss issues of pain with your physician.

Advantages vs. disadvantages of **breast implants**:

Advantages

- Surgery time with implants is much shorter than reconstruction surgery using tissue flaps. (See next section on tissue flaps.)
- Breast implants only require incisions in the chest and not other parts of the body required during tissue flap reconstruction.
- Muscle and fat tissue are not moved from another area of your body as they are during tissue flap reconstruction.
- The shorter surgery time and less extensive initial surgery can make recovery easier with breast implants than with tissue flap reconstruction.



Breast implant

Disadvantages

- Some women find that implants do not feel like normal breast tissue.
- The reconstructed breast may feel firmer and less resilient than the natural breast tissue.
- The reconstructed breast will not droop like your natural breast.
- The breast implant will not change size with weight fluctuations like your natural breast.
- If you have one breast reconstructed, you may need additional surgery to your natural breast so that it looks more like the reconstructed breast.
- The total amount of time required and number of surgeries needed to complete the reconstructive process may be longer with breast implants than with tissue flap reconstruction.
- With either type of surgery, the sensation or feeling in the nipple, if preserved, will be lost. Although it may look like a breast, the feeling in the breast will not be the same as the natural breast.

➤ Autologous Reconstruction with Tissue Flaps

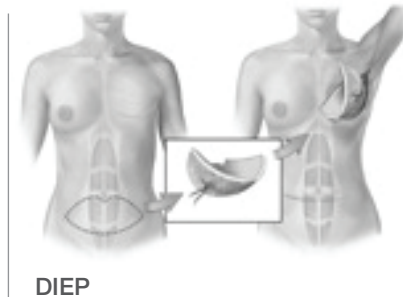
Autologous reconstruction uses your own body tissue to rebuild the breast. Flaps of tissue can be taken from various sites in the body (such as the abdomen, back or buttocks) to create the breast. There are three ways tissue flaps can be created: attached flaps, free flaps and perforator flaps.

Perforator or DIEP Flap

In DIEP (Deep Inferior Epigastric Perforator) flap reconstruction, no muscle is removed. Instead, the plastic surgeon locates the blood vessels in the abdomen that supply blood to the fat and skin of the lower abdomen.

Only these blood vessels, and the skin and fat these blood vessels feed, are removed and moved to the chest to form the new breast.

The abdominal muscles are left in place. The blood supply must be carefully reconnected to blood vessels in the armpit and/or along the breastbone to keep the fat and skin of the new breast healthy.



Surgery with **tissue flaps** compared with surgery with implant:

Advantages

- Creates a very natural appearing breast.
- The reconstructed breast will change size as you gain and lose weight.
- Maintains more sensation in the reconstructed breast than reconstruction with implants.
- Total time required to complete the reconstruction includes one surgery to create the nipple, if you desire. You may need additional surgery to make your breast sizes and shapes match.
- If abdominal tissue is used to create the breast, you may have a flatter stomach (“tummy tuck”).
- Does not require replacement, as implants do, over time.

Disadvantages

- The initial surgery is more complicated than surgery with implants and takes more time, usually six to eight hours.
- Requires incisions in the chest and the area where the tissue flap is taken – i.e., the abdomen, back or buttock – resulting in more scars than surgery with implants.
- Recovery time is longer than surgery with implants and requires a longer hospital stay.
- The TRAM and latissimus dorsi flap surgeries requires transferring all or part of a muscle. In such cases, you may not have the same strength in your abdomen, back or shoulder following surgery.
- Not all surgeons are skilled in performing all of these procedures. You may need to consult with several surgeons, which may result in additional costs.

Attached (Pedicled) TRAM Flap

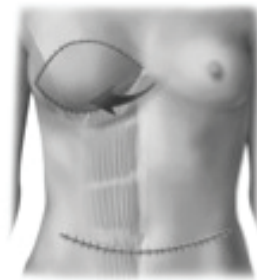
The attached abdominal tissue flap is also known as the TRAM (Transverse Rectus Abdominis Myocutaneous) flap. TRAM flap surgery can be done to recreate one or both breasts.

Overview

Tissue and muscle taken from the abdomen are used to recreate the breast.

Surgery description

During the initial surgery, an incision is made from hip to hip at the bikini line, right above the pubic area. The surgeon then cuts the lower end of the rectus abdominis muscle on the side opposite the new breast. The surgeon rotates the muscle and tunnels it up under the skin to the chest area to create the new breast. The upper part of the muscle remains attached in its original position to provide blood to the tissue flap. Skin and fat are also transferred from the abdomen to the new breast to provide fullness and skin coverage. If both breasts are to be reconstructed, both rectus abdominis muscles are used, along with additional fat and skin from the abdomen.



Abdominal muscle flap graft:
breast reconstruction

Recovery

Recovery from TRAM flap surgery takes time. Your activities will be limited to allow the abdominal incision time to heal. You will also have several drains inserted in the reconstructed breast and under the abdomen skin to remove fluid that accumulates.

You will be given medication to help manage any pain or discomfort. You can slowly return to normal activities and should be back to most of your regular activities after about two months.

Possible complications

Although uncommon, several complications can occur following TRAM flap reconstruction.

- If the blood supply to the new breast becomes restricted, the tissue can become hard or thickened. This is called fat necrosis and will not harm you.
- Fluid can collect in the new breast or abdominal wall forming a seroma (clear fluid) or a hematoma (bloody fluid). The body may reabsorb the fluid on its own, or it may need to be drained with a needle.
- Infections in the breast or abdominal incision can occur. They can be treated with antibiotics.
- As you heal and return to normal activities, you may find that some of your activities are limited due to weakened abdominal muscles. Most women do not have difficulty adjusting.
- Occasionally the loss of abdominal muscles will result in a hernia. Hernias occur when intestines slip through muscles and create a bulge, which is sometimes uncomfortable. A hernia may need to be surgically corrected.
- Occasionally other lumps will form in the abdominal wall or the new breast due to the trauma of the abdominal tunneling. Such lumps may soften with time.

Other Tissue Flaps

Other areas of the body can also be used for autologous tissue reconstruction. These alternate flaps may be used in women who:

- Do not have enough abdominal tissue for reconstruction,
- Have back injuries and need to keep their abdominal muscles,
- Had prior abdominal surgery, or
- Wish to maintain their abdominal strength for a variety of reasons.

Latissimus Dorsi Flap

The latissimus dorsi is the muscle that runs below the shoulder in the back. Similar to TRAM flap surgery, the latissimus dorsi muscle is cut and tunneled under the skin to the chest, along with skin and fat from the back. The skin and tissue of the back are not quite the same as the breast, so the reconstructed breast may look and feel a little different. A breast implant is often necessary to create a fuller breast. Muscle strength in the shoulder and back may be weakened, but most women adjust without much difficulty. Recovery from the surgery may be easier than when an abdominal flap is used.



Latissimus dorsi muscle flap

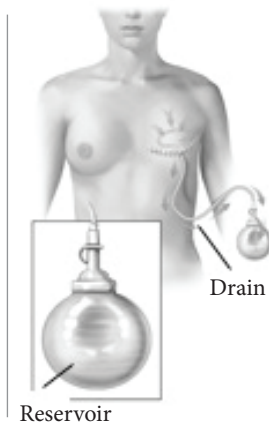
Gluteal Flaps

Gluteal flaps come from the buttock and are done as free flaps similar to the free TRAM flap. They can also be done without muscle, similar to the DIEP flap, in which case it is called an S-GAP flap, (Superior Gluteal Artery Perforator) flap. Gluteal flaps produce very realistic reconstructed breasts. Minimal muscle is used so strength is not impaired. Due to their complexity, however, a gluteal flap usually cannot be done at the time of the mastectomy. Two procedures are necessary to reconstruct both breasts. The gluteal or sciatic nerves that supply sensation to the buttock or thigh can also be temporarily or permanently damaged during the reconstruction.

Wound Dressing and Drain Care After Your Surgery

When you go home, you will have a dressing over your incision or wound where the surgery was done. If you had a mastectomy, axillary lymph node dissection, or reconstructive surgery, you may also have suction drains for a few days or several weeks after your surgery. Below are some general care guidelines. Your surgeon will give you more specific instructions on how to care for your dressing and drains. *(If these instructions differ from what your individual surgeon recommends, follow the directions from your surgeon's office.)*

- Make sure that the dressing stays clean and dry. The dressing should not become saturated with blood or clear fluid. If it does, apply an extra dressing and contact your surgeon.
- Your surgeon will let you know when you can take a shower.
- Your surgeon will tell you when to remove or change the dressing. When you remove the dressing you will see what method your surgeon has used to hold the edges of the wound together. After a lumpectomy many surgeons use either steri-strips or DermaBond. Steri-strips are small strips of special tape. They usually remain in place 1-2 weeks. Do not remove them but allow them to gradually fall off on their own. After a shower the steri-strip may look loose. Just pat the strips dry and they will continue to adhere to your skin.



- Your surgeon may use Dermabond, a sterile, liquid skin adhesive or glue that is used to hold your wound edges together. Dermabond is transparent, so you won't see any strips of tape or sutures. This film usually remains in place for 7-10 days, and then will naturally fall off your skin. It is safe to shower, just gently wash over the incision area and gently towel dry.
- Check the incision or wound to make sure it is healing well. The wound should be dry without a lot of redness or pink surrounding it. It is normal to have some swelling, tenderness and numbness in the area.

Symptoms to watch for include:

- Redness around the wound
- Leakage of clear, bloody or white fluid
- Large amount of swelling
- Excessive warmth around the wound
- Fever or chills

If any of these symptoms develop, contact your surgeon. You may have an infection at the wound that requires treatment.

- The suction drain(s) need to be emptied regularly. Your nurse will show you how to empty them before you leave the hospital. It may be easier to have someone help you empty the drains. To empty the reservoir, pull the stopper out of the top of the drain and pour the liquid into the container your nurse sent home with you. After the drain is empty, squeeze the reservoir flat with one hand and push the stopper back into the top of the drain. The collapsed drain will create suction and help pull the excess fluid out of the wound. Record the date, time and amount of fluid collected for each drain. The amount of fluid coming out of each drain will decrease over time. The fluid may be thin or watery and range in color from light red to pinkish clear. You may also see small pieces of tissue or clotted blood in the drain.

- An infection can develop around a drain, so it is important to watch the area around the tube for redness, warmth, drainage (clear, bloody or white) and fever or chills. Call your surgeon if you have any of these symptoms. Sometimes fluid may drain around the tube instead of into the drain, this may be due to a blockage in the tubing or bulb on the drain. If this occurs, you can apply a small dressing around the tube. Change it frequently if it becomes wet. Call your surgeon for an appointment if there is a lot of drainage around the tube.
- Occasionally, the drain may come partially out or fall out on its own. If this happens, do not try to push the drain back in. Call your surgeon and do not panic. Let your surgeon know how much you drained in the 24 hours before the drain came out.

Seroma

Sometimes after surgery fluid may collect at the surgery site under the skin and/or in the tissues under your arm. This may feel like a fluid filled ball and look visibly swollen. This collection of fluid is called a seroma. Seromas can develop after a lumpectomy, mastectomy and/or lymph node removal. Seromas can develop about 7 to 10 days after surgery, or after the drainage tubes have been removed.

In most cases the seroma fluid is reabsorbed back into your body in about a month, though it can take longer. If it is uncomfortable, you can contact your surgeon, and the fluid can easily be drained. If a seroma does develop, watch for signs of infection, such as redness, warmth, increasing tenderness or a fever. Report any signs of infection to your surgeon.

Activities after Surgery

The time it takes to return to normal activities after surgery depends on the type of surgery performed. In general, lumpectomies require the least amount of recovery time, while a mastectomy with a tissue flap reconstruction takes the longest. Always check with your breast and reconstructive surgeons to determine when it is safe for you to resume specific activities.

General guidelines

- When you first return home, you will be able to do much of your own personal care, such as bathing, dressing, preparing simple foods, etc.
- You may find that you need to take rest breaks between activities, but you should not stay in bed for prolonged periods during the day. It is important to get up and move frequently to help your recovery.
- A short walk each day will help your recovery.



- You can resume light household and work activities such as simple meal preparation, folding laundry, using your computer and completing paperwork as you feel ready.
- Avoid activities that require moderate to heavy lifting (grocery shopping, carrying a load of laundry) or pushing/pulling (vacuuming) and repetitive motions (such as washing windows or long hours at the computer).
- A good rule during this time is to listen to your body, do what is comfortable, and stop and rest when you feel tired.

Driving

If you had a lumpectomy or a simple mastectomy without lymph nodes removed, you may be able to resume driving within a few days. If you had lymph nodes removed and/or reconstructive surgery, you may need to wait several days or weeks before you feel comfortable driving. You should not be driving as long as you are on pain medications. A pillow or seat belt positioning device may help cushion or adjust the seat belt to a more comfortable position when you drive.

Returning to work

Most women are ready to return to work within several days to weeks after their surgery. Again, this time frame depends upon the extent of the surgery and the type of work a woman does. Some women may choose not to return to work while they undergo adjuvant (additional) treatments, such as radiation therapy and chemotherapy. Another option may be to return to work part-time, gradually adding additional hours as you feel ready. Your doctor will help you determine what is best for you.

Exercising

You will gradually be able to resume all of your pre-surgery activities over the course of the first several weeks and months after your surgery. Again, the best rule is to listen to your body, do what is comfortable, and stop and rest when you feel tired or sore. If you participated in vigorous sports before your surgery, check with your doctor to determine when it is safe to return to these activities.

When trying the exercises included in this chapter, be sure to check with your surgeon before you begin. You can do these exercises once or twice a day. Start with 1 to 5 repetitions of each exercise and gradually increase the number as you feel able.

Stretches

During your early recovery period, you need to maintain the range of motion in your arm and shoulder. At your first post-operative check-up, ask your surgeon if you can start some of these simple stretches and exercises. Try to hold the stretch for 15 seconds and do not bounce.

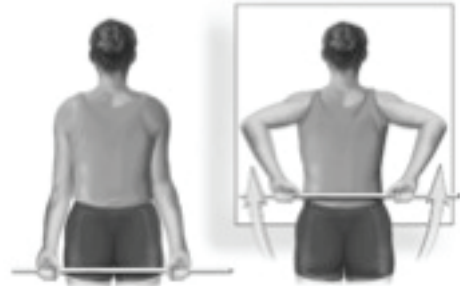
- Shoulder shrugs: with your arms at your sides, pull your shoulders up towards your ears and hold for a few seconds. Repeat several times.
- Raise your arms in front and to the side
- Wall walks
- Broomstick/yardstick behind the back or climbing
- Hands behind head stretch
- Arm away from body stretch (broomstick/yardstick to the side)
- Overhead stretch



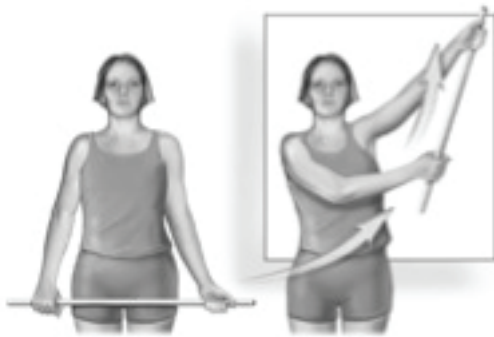
Post Surgery Stretches



Hands head stretch



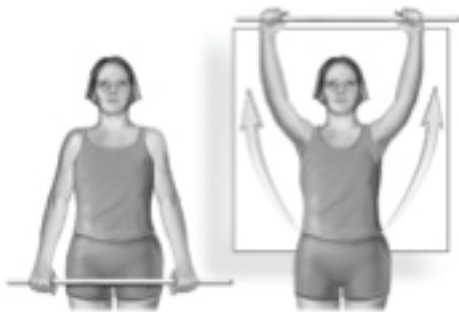
Behind back stretch



Arm body stretch



Arms stretch



Overhead stretch



Climbing

Post Surgery Stretches



Clasp lift stretch



Biceps curl



Arm stretch



Arm extension



Upper torso stretch

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First Aid for Your Arm Following Surgery

Despite all the planning and care you take with your arm following surgery, sometimes you may find yourself with an injury that requires treatment. Be prepared to handle any of these minor emergencies by keeping the following supplies on hand: bandages, antibiotic ointment, antihistamine cream and lotion without dyes or fragrance.

Cut or scratch to the hand or arm

- 1 Apply pressure gently to stop any bleeding.
- 2 Wash the cut with tepid water and soap.
- 3 Dry the area.
- 4 Apply antibiotic ointment to cut.
- 5 Cover with a bandage.
- 6 Clean, reapply ointment and bandage once a day or more often if wet or soiled. Do not leave a wet bandage on a cut or scratch.
- 7 Watch for signs of infection at the site and arm: redness, warmth, drainage, fever or chills. Contact your doctor if you experience any of these symptoms.

Small burn to the hand or arm

- 1 Rinse area with tepid water and pat dry.
- 2 If burned skin is open, contact your doctor. Otherwise follow the steps below.
- 3 Apply an antibiotic ointment to burn.
- 4 Apply a non-adherent bandage.
- 5 Watch for signs of infection at the burned area and arm: redness, warmth, drainage, fever or chills. Contact your doctor if you experience any of these symptoms.

For large burns, consult your doctor or go to an emergency room.

Insect bite to the hand or arm

- 1 Wash area and dry.
- 2 Do not scratch site. Apply an antihistamine cream, such as Benadryl, to site to decrease itching. A cool compress may also help decrease itching.
- 3 Watch for signs of infection at the site and arm: redness, warmth, drainage, fever or chills. Contact your doctor if you experience any of these symptoms or if you experience swelling that does not improve in 48 to 72 hours.

Sunburn to the hand or arm

- 1 Bathe in tepid water.
- 2 Liberally apply lotion containing aloe vera, without fragrance or dyes, to arm at least four times a day.
- 3 Expect some swelling in the arm, but the swelling should begin to decrease after 48 to 72 hours. When sitting or lying down, try to keep your arm elevated. If it is still swollen as the sunburn improves, contact your doctor.
- 4 Wear loose fitting clothing.
- 5 Watch for signs of infection: redness, warmth, drainage, fever or chills. Contact your doctor if you experience any of these symptoms.

Overuse of the arm

- 1 It is okay to use the arm for everyday tasks, but try not to do any heavy lifting or repetitive motions with the arm without your doctor's approval.
- 2 Rest the arm if it is sore or tired.
- 3 Try to keep the arm elevated when sitting or lying down.
- 4 Contact your doctor if swelling does not improve within 48 hours.

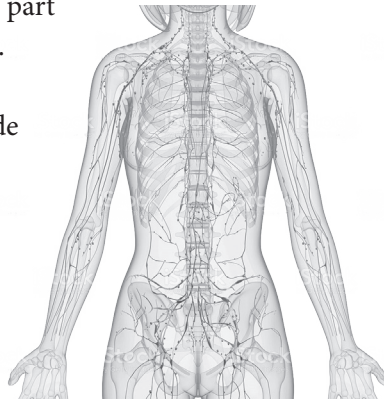
Lymphedema

Lymphedema can occur for various reasons. For breast surgery, it is the collection of protein-rich lymph fluid in the tissues of the hand, arm and/or chest wall on the side of the breast surgery, which causes swelling. Swelling can cause feelings of heaviness, tightness and some discomfort. The condition occurs when the normal lymphatic drainage in the chest and arm are injured during surgery and/or radiation therapy.

Lymphatic system

The lymphatic system is part of your immune system.

It consists of a series of vessels that run alongside your circulatory system (veins) and lymph nodes that are located around major organs and in certain tissue (under your arm for instance). The lymph system helps to filter out dead cells, protein and waste products in your veins. It also plays a role in mobilizing your immune system to fight off an infection.



During your breast surgery, if you have a sentinel node biopsy or axillary node dissection, some lymph nodes are removed and the lymph vessels are cut.

This damages and disrupts the flow of lymphatic fluid in that region. Radiation therapy may cause further scarring. Most of the time, your body can adapt to these changes without excess fluid accumulating in the arm on the side of the breast surgery. However, lymphedema can occur from overusing that arm, or from an infection, bug bite, cut or some other type of injury. Exercising the arm is beneficial, however, it is important to slowly return to exercise after any breaks, such as after surgery.

Development and risk reduction

Most women who undergo breast cancer and lymph node surgery and radiation therapy do not develop lymphedema. However, it is important to learn and follow a few strategies to reduce your risk of developing lymphedema.

Risk factors and occurrence


- Women who have had breast cancer surgery (either mastectomy or lumpectomy) with a lymph node dissection have the highest risk of developing lymphedema over their lifetimes.
- Women who have only a sentinel lymph node procedure have a small risk of developing lymphedema.
- Women who have not had lymph nodes removed very rarely develop lymphedema.
- Lymphedema may not occur at all.

Some women will have very mild lymphedema that may fluctuate over time. However, most women with lymphedema will have chronic, constant swelling that requires regular management to prevent further problems. Physical therapists specially trained in lymphedema management techniques can help.

They will teach you how to reduce swelling using a special type of self-massage, how to apply compression bandages, and how to wear a compression sleeve to maintain the arm's size. Treatment to manage lymphedema is also available in some locations through a lymphedema clinic.

Risk Reduction

You can also take precautions to reduce the chance of developing lymphedema following breast surgery that includes a sentinel lymph node biopsy or an axillary lymph node dissection (with or without radiation therapy). The following are some suggestions to minimize your risk:

- Do not carry heavy objects with your affected arm, including heavy handbags.
 - Avoid vigorous, repetitive motions with your affected arm that you are not used to doing. For example, clean only one or two windows at a time instead of all the windows in your house at the same time.
 - If possible, avoid needle sticks of any type in the affected arm.
 - If possible, avoid blood pressure readings, blood draws, regular injections and intravenous injections in your affected arm to reduce the chance of trauma.
 - Maintain a healthy weight. Being overweight or obese can increase your chance of developing lymphedema.
 - Gradually build up exercise according to your surgeon or physical therapists' recommendations. Research has shown proper aerobic and strength training exercise can reduce your risk of developing lymphedema. Take frequent rests to allow for limb recovery.
 - Monitor your arm for change in size, shape, tissue, texture, soreness, heaviness and firmness.
 - When taking a long plane flight (greater than two to three hours), you may choose to wear a compression sleeve on your affected arm. You may also want to wear a sleeve when at high altitudes (greater than 5,000 feet) or while exercising.
- 
- Keep the skin on the affected arm and chest clean and well moisturized. Healthy intact skin is the best defense against infection. Use sunscreen with an SPF 30 or higher when outside.
 - Avoid tight clothing or jewelry on the affected arm. Make sure bra straps fit comfortably. If you choose to wear a breast prosthesis, make sure it is a lightweight one.
 - Avoid dramatic changes in temperature, such as long soaks in a hot tub or using a sauna. Avoid prolonged exposure to heat (anything more than 15 minutes).
 - Wear gloves when doing housework or gardening to protect your hands and forearms.
 - Avoid cutting cuticles on the hand of the affected arm. Push cuticles back gently instead.
 - If you must shave, use an electric razor.
 - Use thimbles when sewing.
 - Treat cuts, burns and insect bites promptly. Be alert for signs of infection: redness (including a red streak up the arm), swelling, drainage, warmth and fever or chills. For more information, see the "Surgery Options and Post Operative Care" in this notebook.
 - Seek treatment immediately if an infection occurs. Alert your physician if swelling persists for longer than four days.
 - Use insect repellent

Treatment

Lymphedema is usually treated by physical methods and complications from lymphedema are treated with medication.

- **Physical methods**
 - Support the arm in a raised position.
 - Undergo manual lymphatic drainage (a specialized form of very light massage that helps to move fluid from the end of the arm toward the trunk of the body).
 - Wear a custom-fitted compression sleeve that applies controlled pressure around the arm. (see next section)
 - Clean the skin carefully to prevent infection.
 - Surgery, in some cases.
- **Compression garments**
 - These should cover the entire area of swelling.
 - Compression pumps may be used with garments, but only under the supervision of a trained health care professional.
- **Medication**
 - Antibiotics may be used to treat and prevent infections.
- **Pain Management**
 - Pain is caused by the swelling and pressure on nerves, loss of muscle tissue and function, or scar tissue causing shortening of muscles and less movement in joints.
 - Pain may be treated with medications, and relaxation techniques; however, the most successful treatment is to decrease the lymphedema.
- **Weight Management**
 - Weight should be monitored regularly, and you are encouraged to eat a healthy diet.

Support

Coping with lymphedema after breast cancer can be a challenge. Group and individual counseling can help by providing emotional support and information about ways to minimize lymphedema. Additional information and resources can be found in the “Breast Cancer Resources” section of this notebook.

The information in this section is not meant to replace the individual attention, advice, and treatment plan of your oncologist and medical team.