What Is Breast Reconstruction?

Breast reconstruction is a series of surgical procedures aimed at restoring your breast after surgery for cancer or cancer prevention. It is performed by a plastic surgeon and comes in a variety of surgical forms.

The information below outlines the types of reconstruction, risks and benefits of each, and the pros and cons for each type of procedure to help you understand what might be best for you and what you should discuss with your surgeon.

Can I Have Surgery to Create a New Breast After My Mastectomy?

Most women are candidates for some form of breast reconstruction. Our goal as plastic surgeons is to recreate a breast mound that is similar to your native breast. There are multiple ways to do so, but the overall goal is for you to have as natural a breast as possible and be balanced and symmetric in your clothing.

Breast reconstruction is for three different categories of women:

1. Those having removal of their breast due to cancer (mastectomy)
2. Those having removal of a portion of their breast for cancer (lumpectomy or partial mastectomy)
3. Those having removal of their breasts for preventive purposes (prophylactic mastectomy) usually due to a genetic mutation making them at higher risk for breast cancer (BRCA-1 and BRCA-2)

Reconstruction of your breast can often be done at the time of mastectomy, but other times reconstruction may have to be performed at a later time because of the need for other therapies such as chemotherapy or radiation therapy or due to patient preference.

Do I Have to Have Breast Reconstruction?

No. The reasons to have or not have reconstruction are different for every patient. Some women choose not to have additional surgery. For these women, there are options for prostheses to wear in a bra to provide the appearance of a breast. Other women need additional therapy that may prevent them from having reconstruction, while some women are unable to decide what type of reconstruction to have.
Remember: You have the choice to have reconstruction at any time in the future and should not feel pressured to make a decision.

Can I Have Breast Reconstruction During the Same Surgery as My Mastectomy? If Not, How Long Do I Need to Wait?

It’s often possible to have reconstruction at the time your breast tissue is removed, in a procedure called immediate reconstruction. In this case, the breast tissue is removed along with the circle around your nipple (the areola). This option often provides the benefit of saving some of your natural breast skin.

Otherwise, reconstruction can be done at a later date, in a procedure called delayed reconstruction. Often this option is selected in order to allow time for chemotherapy or radiation therapy or in the event that you choose not to have immediate reconstruction. Here, often the majority of your breast skin is removed at the time of mastectomy.

<table>
<thead>
<tr>
<th>Advantages of Immediate Reconstruction</th>
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<tr>
<td>Never having to live without a breast</td>
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<tr>
<td>Possibly a better cosmetic result</td>
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<td>Fewer surgeries and possibly lower cost</td>
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<tr>
<th>Disadvantages of Immediate Reconstruction</th>
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<tr>
<td>Longer surgical time</td>
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<td>Often longer recovery</td>
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<td>Difficulty determining skin viability after mastectomy and possibly more skin loss</td>
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<tr>
<th>Advantages of Delayed Reconstruction</th>
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<tr>
<td>Allows time for adjuvant therapy—chemotherapy and/or radiation therapy to treat cancer. This is often very important.</td>
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<td>More time to think about options for reconstruction</td>
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<td>Time to mentally deal with cancer diagnosis</td>
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<tr>
<th>Disadvantages of Delayed Reconstruction</th>
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<tr>
<td>May compromise cosmetic outcome</td>
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<tr>
<td>Period of time without a breast mound</td>
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<td>Sometimes more difficult for the surgeon</td>
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<td>Requires additional surgery, time in the hospital and recovery</td>
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What Are the Different Choices for Breast Reconstruction and Which Choice Will Look Most Like a Natural Breast?

First, our goal for your breast reconstruction is to be symmetric in clothing (with your bra on). You will always have some form of scar on your breast (possibly more than one) and scars elsewhere on your body, depending on the choice for reconstruction.

The process of reconstruction usually takes six months to a year to complete. The first surgery is usually the longest and most difficult. The second surgery, usually about three months after the first, is to improve breast symmetry.

The last steps in breast reconstruction are creation of a nipple and the areola, if you choose. Both of these procedures are done later and usually in the clinic about six months and nine months, respectively, after your first surgery. In most cases, your reconstructed breasts will have some pressure sensation eventually, but there may be areas of permanent numbness; erogenous sensation of the nipples cannot be restored.

There are factors that determine which type of reconstruction is best for you.

- type and stage of cancer
- body size and shape
- goals for reconstruction
- need for additional therapy
- current health status
- prior surgeries

There are three options for breast reconstruction:

1. Implants
2. Your own tissue
3. Combination of implants and your own tissue
RECONSTRUCTION USING IMPLANTS ONLY

Breast reconstruction with implants is usually done in two stages, which can occur at the time of your mastectomy or at a later date.

IMPLANTS: THE FIRST STAGE

Your surgeon will place a small inflatable device (tissue expander) under your chest muscle and skin. The expander is a balloon made of silicone and is filled with sterile salt water.

Your chest will still look flat after this surgery, and you will have drain tubes in the pocket where your breast was removed. These will collect fluid from the inside so that it doesn’t build up. The drain tubes will be attached at your skin. Nurses in the hospital will instruct you on their care and management. You will usually spend one night in the hospital after the procedure.

Starting about two to three weeks after surgery, you will be seen every one or two weeks. During these visits, you will receive injections of a small amount of saline (salt water) through your skin into the pouch through a valve. It’s usually not too painful—most women describe it as an uncomfortable, tight feeling.

The tissue expander slowly enlarges the pouch in your chest to the right size for the surgeon to place an implant. Expansion usually is performed to a size slightly larger than you desire to make the final reconstruction softer.

When it reaches the right size, you will wait one to three months before the permanent breast implant is placed (the second stage). During this process, the tissue expanders feel rather firm and don’t look natural.

IMPLANTS: THE SECOND STAGE

In the second operation, your surgeon will remove the tissue expander from your chest and replace it with a breast implant. This surgery takes one to two hours and is done as an outpatient. You won’t need to stay in the hospital.

Before this surgery, you will have talked with your surgeon about the different kinds of breast implants. Implants may be filled with either saline or a silicone gel.

Reconstruction with implants alone provides a youthful look, similar to breast augmentation. They’re a reasonable reconstruction for women having bilateral mastectomies; however, they’re usually not a good option for women needing radiation therapy. Implants have risks associated with them; your surgeon will discuss these risks with you.
RECONSTRUCTION USING YOUR OWN TISSUE (AUTOLOGOUS)

Breast reconstruction using your own tissue often comes from the abdomen, similar to the tissue removed during a tummy tuck. (However, some women either don’t have enough abdominal tissue or it can’t be used. We then look to other sites for reconstruction, either from the buttoc or the inner thigh.) The surgery to use tissue from the abdomen is called a TRAM or DIEP flap. The other flaps are called SGAP or IGAP (buttock) and TUG (inner thigh).

Tissue from the abdomen can either be pedicled (left attached to its blood supply) or free (detached from its blood supply and reattached in a new position). Free flaps require a microsurgeon with special training using a microscope to reconnect the blood supply. With the TRAM procedure there are two surgical sites with two or more wounds to heal. Complications can occur at either location.

Using your own tissue often provides the most natural reconstruction in both shape and feel. You’re using tissue that is all skin and fat, much like a breast. It’s also easier to match your normal breast with this method. This reconstruction tends to gain weight, lose weight and age with you as well.

TRANSVERSE RECTUS ABDOMINIS MYOCUTANEOUS FLAP (TRAM)

This flap, or tissue used for your reconstruction, comes from the lower abdomen and is fed by blood vessels that come from your six-pack muscles (rectus abdominis). Your surgeon will make an incision (cut) across your lower belly, from one hip to the other. Your scar will be hidden later by most clothing and bathing suits.

Your surgeon will raise the skin, fat and muscle in this lower belly area. The surgeon will then tunnel this tissue under the skin of your abdomen up to the breast area (pedicled flap) and use this tissue to create your new breast. Blood vessels remain connected to the area where the tissue is taken from and one whole rectus muscle is moved from your abdomen.

In another method, the skin, fat and muscle tissue are removed from your lower belly. Then the surgeon places it in your breast area to create your new breast. In this method, the arteries and veins are cut and reattached to blood vessels between your ribs. The terms for tissue taken from your
abdomen in free flaps can be rather confusing and knowing some anatomy can make it easier.

Your abdomen has skin, fat and muscle. There is a layer of tissue over the muscle called fascia. The blood vessels that supply the muscle used in free flaps are the deep inferior epigastric vessels. They come out through the rectus muscle at 90-degree angles called perforators. In order to remove the skin and fat needed to make your breast, the surgeon also has to detach and reattach the blood vessels in order to provide the blood flow. Whether he or she chooses to remove all, some or none of the muscle and fascia surrounding the perforating blood vessels depends on your anatomy and what your surgeon feels is safe.

Free TRAM—This flap consists of skin, fat, a full section of the rectus muscle and some fascia. You may require a piece of mesh to replace the muscle that was removed to make your abdomen strong again.

Free Muscle-Sparing TRAM (msTRAM)—This flap consists of skin, fat and a window of muscle around the perforating blood vessels. Most of your rectus muscle is spared.

Free Deep Inferior Epigastric Artery Perforator Flap (DIEP)—This flap consists of skin, fat and the blood vessels. No muscle is taken.

Free Superficial Inferior Epigastric Artery Flap (SIEA)—This flap is skin and fat only and is provided by blood vessels that never enter your rectus muscle. This is the least invasive flap but is present in only fewer than 30% of women.

This tissue is removed and then shaped into a new breast. Your surgeon will match the size and shape of your remaining natural breast, if necessary, as closely as possible.

Regardless of the type of flap used to reconstruct your breast, there can be problems with the blood supply to the flap. The hospital physicians and nursing staff will monitor you closely. On occasion, you may require emergency surgery to fix a problem with the blood flow in the flap (about 5% of the time). Most of the time this can be fixed, but occasionally it’s not possible and the flap will fail. In this case, another method of reconstruction will be necessary (1–2% of the time).

Any of these abdominal-based reconstructions will leave a scar around your belly button, on your breast and along your abdomen from hip to hip. You will have drain tubes in your breast and abdomen. You can lift nothing heavy (heavier than a gallon of milk/5 pounds) for six weeks to allow your abdomen time to heal. There is a risk of having a bulge or even a hernia after these operations.
You often will require another surgery in about three months to improve the symmetry of your breasts. (You will be in the hospital for three to five days, and surgery lasts four to six hours for one breast and eight to twelve hours for both breasts to be reconstructed.)

**Buttock Tissue—Gluteal Artery Perforator Flap (SGAP/IGAP)**

Similar to abdominal reconstruction, tissue from the buttock can be harvested along with blood vessels that feed it to create a breast. This procedure is good for women who:

- do not have enough abdominal tissue
- do not want a scar on their abdomen and have enough buttock tissue
- have already had a tummy tuck, liposuction or some major abdominal surgeries

This flap of tissue consists of skin, fat and perforating blood vessels that penetrate the gluteal muscles, which can either be off the superior (SGAP) or inferior (IGAP) gluteal systems, depending upon where you have the most tissue.

As in the free-flap abdominal procedure, the tissue is disconnected and reconnected to blood vessels in the chest between the ribs (free flap.) The buttock will have a depression from where the tissue was taken that will require revision in the future; this flap is more difficult for surgeons to perform. For bilateral reconstruction, using buttock tissue often requires two surgeries. The most common complication in these cases is fluid build up or wound breakdown of the buttock donor site.

**Upper/Medial Thigh Tissue—Transverse Upper Gracilis Flap (TUG)**

Some women don’t have enough tissue on their abdomen or buttock or would rather have a scar on the inner thigh. In these cases, skin and fat from the upper inner thigh can be removed with blood vessels and gracilis muscle from the thigh and transferred to blood vessels in the chest. This procedure leaves a large scar in the groin and a possible contour deformity (depression).

As with the buttock flaps, the most common problems are related to fluid collection, wound breakdown and scar widening in the groin. Most women tolerate losing the gracilis muscle very well.
COMBINATION RECONSTRUCTION—LATISSIMUS DORSI (LD) WITH IMPLANT

A muscle from your back (latissimus dorsi, or LD) and a patch of skin over the top of it can be used to help reconstruct your breast. In this case, the muscle remains attached to its blood supply. In most women, there isn’t enough tissue on the back to reconstruct a breast, and an implant or tissue expander is necessary as well. This procedure leaves you with a scar on your back as well as on your breast. Often the back scar can be hidden by the bra strap. You will have drains in both the back and the breast.

Most women have some fullness under their arms, due to muscle transfer, that improves with time but may never completely resolve. Loss of this muscle is usually not noticed by women except those who are competitive athletes, rock climbers, tennis players or swimmers. The most common complication in this surgery is fluid collection in the back where the muscle was removed.

Nipple Areolar Reconstruction

One of the final stages of breast reconstruction is to create a nipple for the breast mound. This procedure is usually performed in the clinic under local anesthetic about three months after your last operating room procedure. There are many techniques used, but most of them involve using skin from your breast reconstruction. In some women, we can borrow tissue from the other nipple.

The areola can be created either with tattooing or skin grafting.

What If My Reconstructed Breast Does Not Match My Natural Breast?

The goal of breast reconstruction is to create a breast that matches the natural breast as closely as possible, or in the case of bilateral reconstruction, to make the two breasts symmetric. Often, when trying to match a natural breast with a reconstructed breast, surgery must be performed on the natural breast as well. This is a covered benefit of all insurance companies.

This procedure can involve augmentation to increase your natural breast size, reduction to reduce your natural breast size, or breast lift (mastopexy) to move your nipple up. Your surgeon will discuss the procedure with you. This operation usually occurs at the second surgery (about three months after the first procedure). The delay in operating on the natural breast is to allow the reconstructed breast time for swelling to decrease and ensure that the shape is appropriate.

What If I Am Considering Breast Conservation Therapy (Lumpectomy or Partial Mastectomy)?

Many women are candidates for and choose to undergo breast conservation therapy. In this case, only the area of cancer and a margin of normal breast tissue are removed surgically. All women who undergo lumpectomy/partial mastectomy go on to have radiation therapy.
After partial mastectomy, there may be an area of indentation on the breast that often becomes worse after radiation therapy. Repairing these deformities after radiation therapy is difficult. There are often reconstructive options to improve the appearance of the breast by techniques where the breast tissue is “rearranged,” which may leave you both with a breast that is smaller than its original size and additional scars on your breast. This procedure is referred to as oncoplastic surgery, and a symmetry procedure of the natural breast is often necessary. Reconstruction of the breast after lumpectomy and radiation therapy often involves flaps from the back or the chest to fill in the defect.

What Are the Major Risks with Breast Reconstruction?

- bleeding
- infection
- scarring
- changes in sensation
- asymmetry
- partial or complete flap loss (either the mastectomy skin or the transferred tissue)
- poor cosmetic result
- pain
- blood clots in the legs or lungs
- dissatisfaction with results

**Implants**

- capsular contracture
- implant rupture
  - rippling
  - need for replacement
  - implant exposure

**Autologous**

- abdominal weakness, bulge, hernia
- wound healing problems

How Long Will It Take to Complete My Breast Reconstruction?

The answer is different for every patient. Your type of cancer and the need for other therapies take priority and may interfere with your reconstructive plan. The answer also depends on what type of reconstruction you choose to have. In general, if no other treatment (chemotherapy/radiation therapy) is needed, breast reconstruction takes six months to a year and occurs in three major steps.
**Step 1**—First surgery (often the largest and most difficult) to create a breast mound. Wait three months for healing. (This period can be longer if you need chemotherapy or radiation therapy.)

**Step 2**—Second surgery to achieve symmetry. Revisions to the reconstructed breast as well as augmentation/lifting/reduction of the natural breast. Allow three months for healing as well. Occasionally this step must be repeated in attempts to improve shape and symmetry.

**Step 3**—Surgery to create a nipple and areola. Occasionally women choose not to undergo this phase of the reconstruction. Both of these are performed in the minor treatment room under local anesthetic. The nipple is created first, and eight weeks or so later, the areola can be tattooed in place.

**What If I Need Chemotherapy or Radiation Therapy?**

Breast reconstruction does not usually delay chemotherapy. A brief period is allowed after surgery to heal, and then chemotherapy can be started. If there are problems with wound healing after surgery, then chemotherapy may need to be delayed. If you are undergoing tissue expansion, it may be necessary to check your blood counts prior to injection in order to prevent implant infection. Any further surgery is usually delayed until after chemotherapy is complete and your system has had some time to recover.

In most cases of radiation therapy, we recommend waiting to have reconstruction. Radiation often damages reconstruction and is much more difficult to repair. It is often preferred not to use implants if radiation is necessary because complications (implant exposure, infection, and capsular contracture) are much higher. Most women undergoing radiation therapy require some form of their own tissue for breast reconstruction.

**Questions You Should Have Answered at Your Consultation**

- Am I a candidate for breast reconstruction?
- What are my options for breast reconstruction?
- When can my reconstruction be done?
- Which options do you think are best for me? Why?
- How many of these procedures have you done?
- Will my reconstruction match my other breast?
- What complications should I know about?
- Are there medicines I should avoid before surgery?
- How long will I be in the hospital?
- Will I need a blood transfusion? If so, can I donate my own blood?
- When can I go back to work, drive, exercise?
- How can I prepare at home? Will I need assistance at home?
- Will I have feeling in my new breast?
- How can I get my home ready before I even go to the hospital?
- How much help will I need when I come home? Will I be able to get out of bed without help?
- What type of supplies will I need when I get home?
- Do I need to rearrange my home?
- How can I prepare myself emotionally for the surgery? What types of feelings can I expect to have? Can I talk with people who have had a mastectomy?
- How long will the surgery last?
- Will I be in a lot of pain after surgery? If so, what will be done to relieve the pain?
- What will my wound be like? How do I take care of it? When may I shower or bathe?
- When can I start using my arm? Are there exercises I should do?