



This information is available online at  
<http://www.med.umich.edu/surg/breast/recon/index.htm>



## Breast Reconstruction

Breast reconstruction is the process of making a new breast after a woman has had her breast(s) removed due to breast cancer. This web site contains information to assist you in making choices related to breast reconstruction following mastectomy.

Our goal is to give you understandable, up-to-date facts about reconstructive options. We hope this site answers many of your questions, lets you know what to expect, and helps you make a decision that you feel good about.

### How to Use This Site

The Michigan Breast Reconstruction Outcome Study (MBROS) Consumer's Guide can be used in a variety of ways. If you are planning to consult your health care provider about breast reconstruction, we recommend that you spend some time reviewing this information before your provider visit. The basic knowledge included in this guide will help you partner with your surgeon to choose treatment options which are right for you. Following your consultation, the web site may assist in clarifying issues raised during your visit.

Remember — you and your surgeon are a team, working together to make treatment decisions which fit your values, priorities and lifestyle.

## Your Decision

When you lose a breast to cancer, it is comforting to think you can replace it and look and feel almost normal again. However, treating the cancer and getting back to a healthy life should always be your first concerns.

If you are able to have breast reconstruction, make your decision about whether to have reconstruction, when to have reconstruction, and what kind of reconstruction to have based on what is best for you. A new breast is unlikely to change your life or make others treat you differently. Your doctor, family, and friends may offer suggestions, but you are the one who is going to have to live with your choice every day. Try to make a decision that you can feel good about for a lifetime.

### How Will Breast Reconstruction Affect My Life?

Breast reconstruction may help you to feel better about your body: you may feel more "normal," "balanced," and feminine. It may also help you to be able to wear more kinds of clothes with convenience and comfort.

Some women are afraid that if the breast cancer returns, it will be harder to detect the tumor through a reconstructed breast than through a mastectomy scar. However, there is no need to fear difficulties with cancer detection. Current evidence indicates that it is no more difficult to find and treat cancer through a reconstructed breast than it is through a mastectomy scar.

If you are thinking about breast reconstruction and are interested in breastfeeding your children, you should know that you cannot breastfeed from a reconstructed breast. The parts of the breast that deliver milk are the most likely parts to develop cancer and are therefore removed during the mastectomy.

Having breast reconstruction may cause you some inconvenience during the period after the surgery. It will take time to recover, and there may be additional treatments or follow-up surgeries. Depending on which kind of breast reconstruction you choose, you may need up to six months or a year to fully return to your normal life.

Only you can decide whether the mental and physical benefits of having a new breast are worth the costs of having the surgery.

### ***Advantages of Breast Reconstruction:***

- You may feel more "balanced," in terms of both breast weight and looks.
- Your body may feel more "normal," in and out of your clothes.
- You may be able to wear more kinds of clothes, possibly even low cut clothes like tank tops and bathing suits.
- You may feel more feminine and attractive.
- You may not be reminded of the cancer by having only one breast.

### ***Disadvantages of Breast Reconstruction:***

- Regardless of the type of reconstruction you have, you will need more surgery, with all of the inconvenience and potential problems that come with it.
  - You may need more time to heal.
  - You may need to take more time off from work or from your family responsibilities.
  - There may be more scars.
  - There may be extra problems after the surgery, such as infection, swelling, or delayed healing.
- If you do not have insurance, it may be costly.
- You won't know how the new breast will look until after it is finished.
- The new breast, no matter how good it is, will never exactly match your natural breast.
- In rare cases, there may be problems that come and go for years afterwards, like infections or breast implant complications.

## **Information About Reconstruction**

Many women choose to have breast reconstruction. Some women feel more natural and balanced with a reconstructed breast.

There are two major kinds of breast reconstruction:

- [Implant Reconstruction](#)
- [Natural Tissue Reconstruction](#)

### **Implant Reconstruction**

Your breast can be surgically reconstructed by putting in an artificial breast mound, known as an implant.

- [Implant surgery](#)
- [Saline vs. silicone implants](#)
- [Advantages of implants](#)
- [Disadvantages of implants](#)
- [Risks of implants](#)

### **How is Breast Reconstruction Using Implants Performed?**

Synthetic implants are usually teardrop-shaped pouches that are placed under a layer of chest muscle to create the shape of a breast. The outside of the implant is made of silicone and it is filled with silicone gel or saline. Saline is another word for salt water. Silicone is an artificial material that feels like natural breast tissue.

The process of breast reconstruction using implants may involve one or two stages, often depending on the individual patient's breast size. For smaller breasted women, a single stage reconstruction may be possible. With this approach, the plastic surgeon places the silicone gel or saline implant in a pocket beneath the skin and muscle layers, at the location of the new breast. This surgery is usually performed through the old mastectomy scar.

Most commonly, implant breast reconstruction is carried out in two stages. The first stage consists of placement of a device called a "tissue expander." An expander is a silicone-walled pouch that resembles an empty balloon with a small valve in its front wall. This valve allows the surgeon to fill the implant with saline in the weeks following this initial operation. During the second stage, the tissue expander is replaced with an implant.

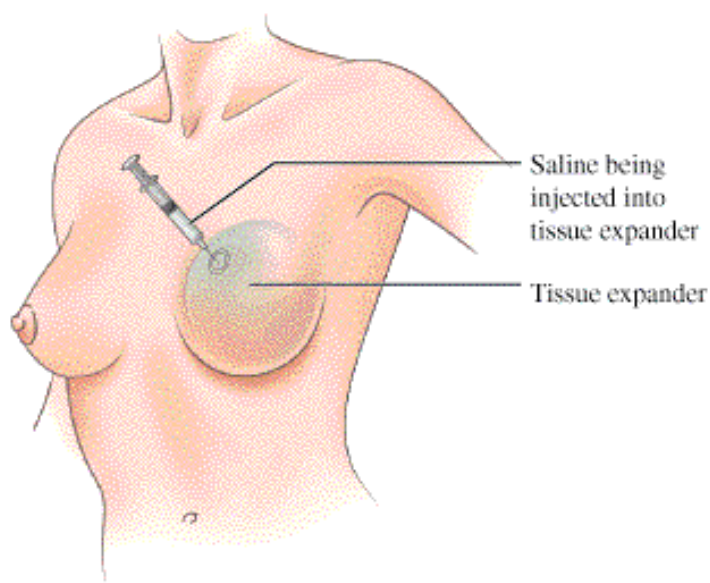
## Tissue Expanders



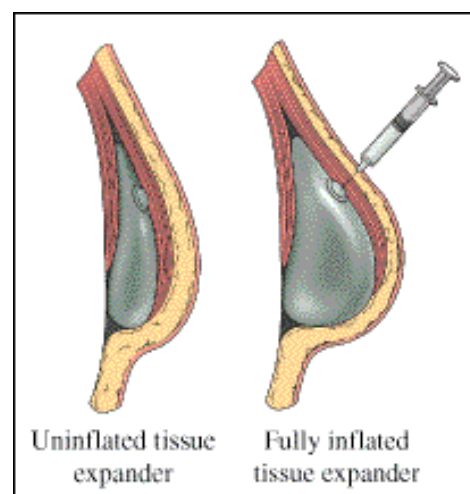
Photo courtesy of McGhan Medical Corporation

During the first surgery, the tissue expander is placed in a pocket beneath a chest muscle (the pectoralis major) and the overlying skin. The tissue expander must be used to enlarge the implant pocket to accommodate the size of the implant needed to match the opposite breast. This initial surgery takes approximately one to two hours. At the end of the surgery, the side of the chest undergoing reconstruction will still be flat. Depending on your doctor's recommendations, this procedure can be performed on an outpatient basis or may require a hospital stay of one to two days.

Approximately 10 to 21 days following placement of the tissue expander, the process of tissue expansion will begin. Every one to two weeks, you will visit your plastic surgeon. During these 20- to 30-minute visits, approximately two to four ounces of saline (salt water) will be injected through the overlying skin into the valve located on the front wall of the tissue expander.



With each visit, the tissue expander is gradually inflated. The growing tissue expander enlarges the pocket, inducing growth of the overlying skin. In essence, this tissue expander grows the skin for the new breast. While the expansion process causes slight soreness or discomfort in some women, others report simply a feeling of "tightness" for several days following each expansion.



Approximately one to three months after the tissue expander has reached the correct size, you will undergo a second operation. During this surgery, the expander is removed and an implant is inserted in its place. The surgery lasts about one to two hours and is followed by a hospital stay of four to 24 hours.

This is done in a single operation that takes about one to two hours. Since a small implant is used, the surgeon may be able to insert it without additional operations to stretch the skin and muscles of the chest wall. The implant is placed under a layer of muscle, rather than directly under the skin, to ensure the most natural shape and feel of the reconstructed breast. This also helps to reduce formation of scar tissue around the implant.

In some smaller-breasted women, an implant may be placed in a space directly under a layer of chest muscle.

### Saline-Filled Implants

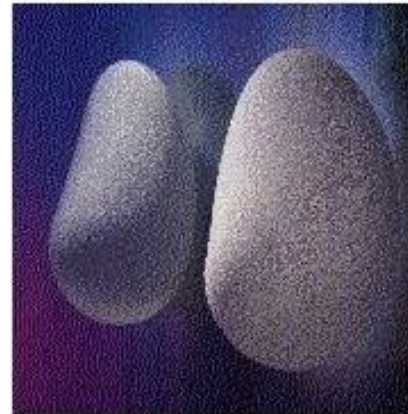
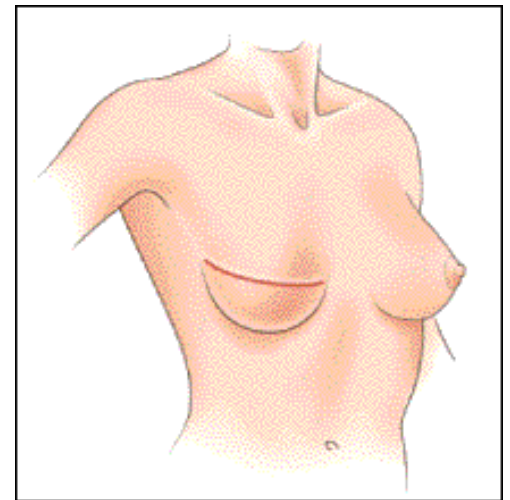
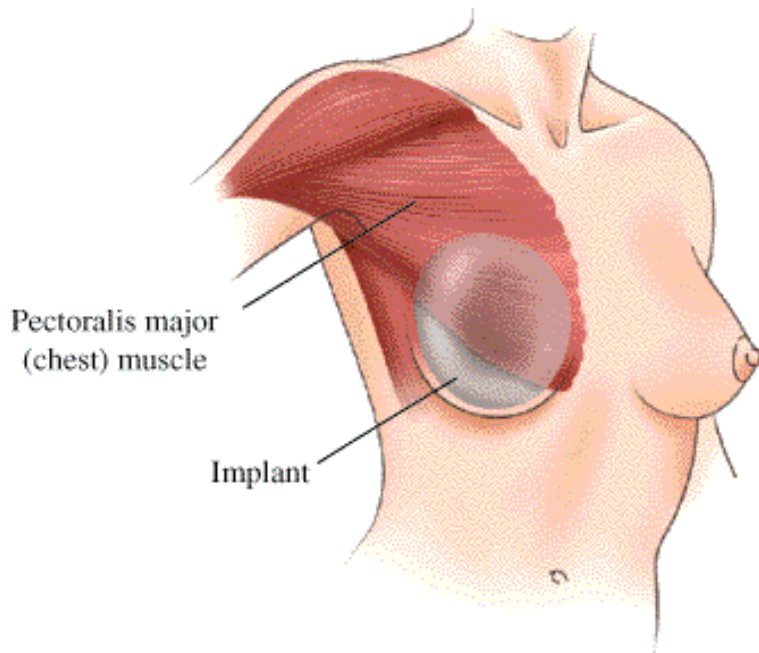


Photo courtesy of McGhan Medical Corporation



Size and location of scar may vary

### Finished Implant Reconstructions



▲  
**Saline-Filled Implant, Front View  
(with nipple reconstruction)**



**Saline-Filled Implant, Side View  
(with nipple reconstruction)**



▲  
**Saline-Filled Implant, Front View**



**Saline-Filled Implant, Side View**

## MY IMPLANT: ONE WOMAN'S STORY

*"I had the implant. Every week I went in and they inserted more saline. Then once it got up to size, then I had the surgery to have the implant put in. But they had to custom make the implant. They did not have one on the shelf that was, it only went up to like a B+, and I'm a D. I had the choice of having that done or having the other breast augmented. And I chose not to do that; there was nothing wrong with the other one, it was clean, and I just didn't want to mess with it. I chose to have an implant because I have adhesive sensitivity. I broke out in blisters from the adhesive [from the temporary prosthesis] when I was first going through the [mastectomy]. So I did not want to attempt it. And because of being large-breasted, I was having problems with my shoulder coming in, because there was nothing there to support. So my husband and I discussed it and I said I wanted to go through the reconstruction. [I decided I did not want to have a TRAM because] I had been through a biopsy, lumpectomy, then two weeks later a mastectomy, and so I had had like two months of nothing but getting over surgery. [A TRAM is] like two major surgeries at once and it was going to be almost a week in the hospital and everything, and I had been through so many surgeries already that I just didn't want to do that. So I went for the implant. And then I also had the nipple reconstruction.*

*It was worth going through the little bit of pain that I had. Going through the tissue expansion was not as bad as what I thought. And once the [implant] was in, I had about a week of discomfort, and I found that I could not lay flat on my back for a couple of nights, because of the weight would push to one side or the other, and I would be in a lot of pain. Having the expander in there was not like having the actual [implant]. You knew exactly where the fill valve was, and in me, it moved around. So it sometimes was at one side or the other. And it could get uncomfortable if it got in the wrong position. But I was able to manipulate it so that I would be comfortable again.*

*It came out very good. For having an [implant] in there, it not being a TRAM flap, and [for] the size that I am, I really got very good results. [If I had it to do over again], I might have them make it just a little smaller. Because the one thing that you have to think about is that if somewhere down the line you lose weight, one place that you lose weight is your breasts. I lose weight in the other one, but I don't lose weight in that one. It doesn't change. Somewhere down the line if I lost more weight, then I would have to pad the other side to match. [What's my advice to other women considering breast reconstruction?] Investigate it, and be sure that you get an experienced surgeon, one that has done a lot of breast reconstructions. Don't just go to any plastic surgeon.*

*I would have reconstruction again. It's more comfortable. I have a cleavage. When I bend over, it looks very normal, you can't tell anything. When I had to wear a prosthesis in there, I never wore anything that had a V-neck or a round neck, that if I did happen to bend over, and somebody happened to look, they would see my prosthesis. I always wore very high-necked type things. I wear looser clothes now. I don't wear anything really tight, because if I did, then yes, it would be noticeable, because it is flatter than what a normal breast is, even with the nipple reconstruction. But otherwise, I would have it done again, no question.*

*People that meet me today would have no idea that I have ever had breast cancer or reconstruction. The only ones that see the scar are me and my husband, and the doctor. It's under your clothes. And the scars do lighten over time. So I have been very satisfied with it. It's just much more natural. And I don't have to worry about fitting the prosthesis in and adjusting it and everything. It's there, it's part of me now."*

## ***Should I Have a Silicone Gel or a Saline Implant?***

Many plastic surgeons believe that silicone gel-filled implants have a more natural look and feel than saline implants. Silicone gel has a texture that is very similar to natural breast tissue. Saline implants, on the other hand, do not feel as soft.

However, silicone gel also has certain disadvantages. For example, silicone gel implant ruptures are harder to detect. When saline implants rupture, they flatten visibly. When silicone gel-filled implants leak, the breast often looks and feels the same. As a result, silicone gel may begin leaking into surrounding areas of the breast unnoticed. Also, replacing a ruptured silicone gel implant is more difficult than repairing a saline implant. This is because the silicone gel that has leaked outside of the implant should be removed (if possible).

There have been some reports in the media of various health problems as a result of silicone gel. In these reports, silicone gel has been associated with lupus, rheumatoid arthritis, scleroderma, neurological disorders, and other conditions. Silicone gel-filled implants were removed from the market to give scientists time to study the effects of silicone. However, researchers have found no evidence thus far supporting the connection between silicone gel breast implants and medical problems. Women who have silicone gel implants appear to have the same risk of disease as women who do not. Because of this information, silicone gel implants are beginning to be offered again by certain doctors. Still, the vast majority of breast reconstruction is done with saline-filled implants. You should be aware that even the saline implants are made of a silicone pouch filled with saline.

### **Advantages of Implants**

***Implant surgery requires a shorter hospital stay and shorter recovery time compared with most other reconstruction options.***

Because this approach requires less extensive surgery than other reconstruction methods, usually less recovery time is necessary. If you choose to have immediate reconstruction, you will likely stay in the hospital for one to two days after the combined mastectomy and tissue expander or implant surgery. When the reconstruction is delayed, your hospital stay will probably be about 24 hours. If you have a tissue expander, the second operation, in which the tissue expander is replaced with an implant, will require a hospital stay of four to 24 hours. Although every woman's recovery time is different, most women will be able to resume many of their regular activities after one week. After implant placement surgery, three to four weeks may be required before patients can perform more strenuous activities or return to work.

***Implant surgery produces relatively predictable breast shapes in most women.***

Since implants are made in pre-set shapes, it may be easier (compared with flap reconstructions) to predict what the reconstructed breast will look like. Therefore, you may have more realistic expectations about the surgery.

***Implant surgery leaves fewer scars.***

Reconstruction with implants usually results in only one or two scars around the breast. Often the mastectomy scar is used as the site of the new incision so you will have no additional scars after the reconstruction.

### **Disadvantages of Implants**

***Implant surgery may give a less natural breast shape.***

It may be more difficult to ensure that both breasts are the same shape when implants are used. Implants do not allow the same degree of sculpting and shaping as natural tissue. As a result, the breast with the implant and the natural breast may not look exactly the same. Implants also do not feel completely natural to the touch.

***Implant surgery may be time consuming and inconvenient.***

If a tissue expander is needed, additional surgery and frequent doctor visits will be necessary. You must consider if you have the time and patience to undergo another surgery, hospitalization, and recovery period. You also need to think about whether you can attend doctor appointments every one to two weeks.

***The results of implant surgery may not be immediate.***

If a tissue expander is needed, you will not wake up from the initial surgery with a new breast. This can be disappointing if you are eager to see your new breast. If a tissue expander is required, it takes four to six months for breast reconstruction to be completed. During this time, one breast is bigger than the other, creating a "lopsided" effect. This may make you feel awkward or uncomfortable with your body. It may also limit the clothing you wear and the activities in which you participate. You may choose to wear a [prosthesis](#) or pad your bra to make your breasts the same size. However, this may not work if you are especially active.

***If you have had radiation therapy, your skin may not respond well to the tissue expander.***

Radiation tends to cause scarring in the radiated skin on your chest. This skin may not stretch well during tissue expansion, making the process more difficult.

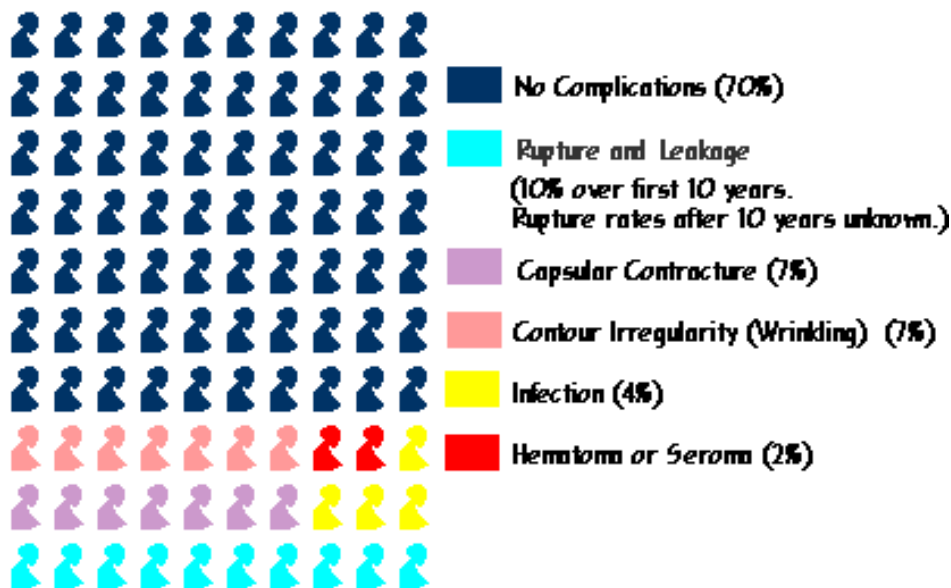
***Complications with the implant may develop.***

About [two to four women in 100](#) develop an infection near their surgical incision soon after the operation. Another [two in 100](#) may experience bleeding ("hematoma") or fluid collection ("seroma") under the breast skin after surgery.

Implants may also develop complications over the long term. The most common complication is leakage or rupture. This happens in approximately [10% of cases](#) over the first 10 years. (No data yet exist to track the life of an implant after the first 10 years.) When this occurs, the implant must be removed or replaced. This surgery lasts from 30 minutes to 1 hour. It may be done on an outpatient basis or require an overnight stay. If the implant was filled with silicone gel, more extensive surgery, lasting at least one hour per implant, may be needed to remove as much silicone as possible from the breast area.

The second most common complication is encapsulation or "capsule formation." Scar tissue forms on the outside of all artificial implants when placed in the body. Usually, this does not pose a problem. However, in approximately [5-10% of cases](#), too much scar tissue forms. This may occur more frequently with silicone implants than with saline implants. The scar tissue may cause pain and discomfort and make the implant feel hard to the touch. When this happens, surgery may be necessary to break up or remove the scar tissue. It may also be necessary to remove or replace the implant. Capsules can form at any time (from a few weeks to many years after the implants are inserted).

In about [7 cases out of 100](#), the implant shifts relative to the breast tissue sometime after the surgery, causing a "wrinkle" or "dent" in the shape of the final breast reconstruction ("contour irregularity").



Complication rates adapted from Handel et al, Plastic and Reconstruction Surgery 1995; 96:1521.

***Silicone gel-filled implants are not available at all hospitals.***

There have been some reports in the media of various health problems as a result of [silicone gel](#). In these reports, silicone gel has been associated with lupus, rheumatoid arthritis, scleroderma, neurological disorders, and other conditions. Silicone gel implants were removed from the market to give scientists time to study the effects of silicone gel. However, researchers have found no evidence thus far supporting the connection between silicone gel breast implants and medical problems. Women who have silicone gel-filled implants appear to have the same risk of disease as women who do not. Because of this information, silicone gel implants are beginning to be offered again by certain doctors. Still, the vast majority of breast reconstruction is done with saline-filled implants. You should be aware that even the saline implants are made of a silicone pouch filled with saline.

***Implants do not change to match changes in body weight.***

Implants do not change size or shape. This means that the size and shape of your reconstructed breast will also remain the same, regardless of changes that may occur elsewhere in your body. Consequently, if you lose or gain weight, your breasts may seem disproportionate to your new body shape.

**Implants: What are the risks?**

### ***Rupture and Leakage***

The silicone shell of the implant may break, causing the saline or silicone gel inside to leak out into the surrounding breast tissue. This happens to about 10% of women during the first 10 years after implant surgery. (No data exist to track the frequency of ruptures after the first 10 years.) Another surgery must then be done to remove or replace the implant.

### ***Capsular Contracture***

Too much scar tissue may form around the outside of the implant, causing discomfort and making the breast feel hard. This can happen at any time, from several weeks to several years after the surgery. Another surgery must then be done to remove or replace the implant.

### ***Contour Irregularity (Wrinkling)***

The implant may shift relative to the breast tissue, causing a "wrinkle" or "dent" to form in the shape of the finished breast reconstruction.

### ***Infection***

The surgical incision may become infected soon after the surgery.

### ***Hematoma or Seroma***

A pocket of blood ("hematoma") or blister fluid ("seroma") may form under the breast skin soon after the surgery.

## **Information About Reconstruction: Natural Tissue**

Your own body tissue can be used to recreate a breast.

The most common kind of natural tissue reconstruction is the [TRAM](#), in which tissue from the abdomen is used to create the breast.

- [TRAM](#) surgery
- [Advantages](#) of TRAMs
- [Disadvantages](#) of TRAMs
- [Risks](#) of TRAM flap reconstruction

Natural tissue reconstruction can also be done using [other sites](#):

- Back flap, or [latissimus dorsi](#), reconstruction
- Other donor sites

## TRAM (Transverse Rectus Abdominis Muscle) Flap Reconstruction

This operation uses tissue from your lower abdomen to make a new breast. It can either be done with the tissue remaining connected and tunneled under your abdominal muscle and skin ("pedicle" TRAM) or with the tissue disconnected from the abdomen and reattached on the chest ("free" or microsurgical TRAM).

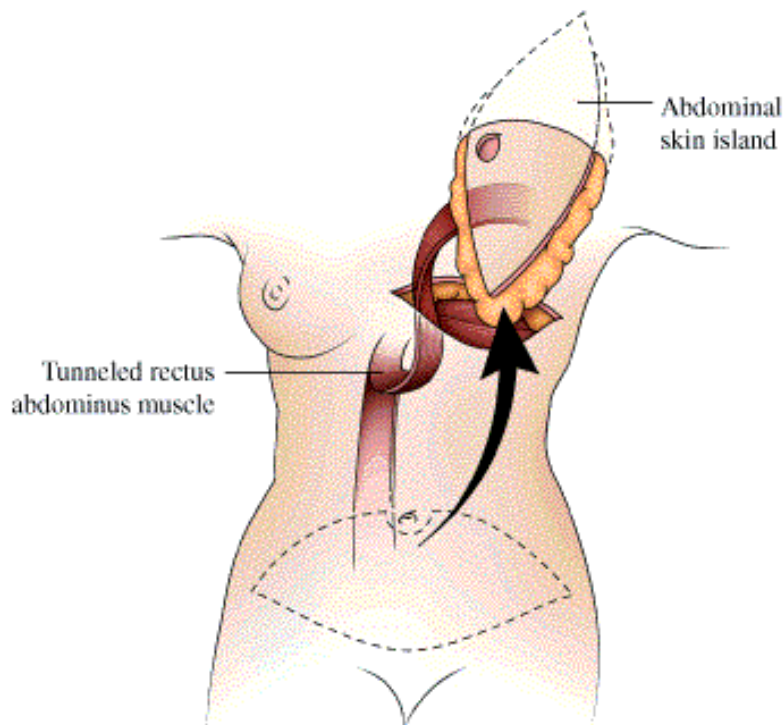
### *How is TRAM Flap Reconstruction Done?*

There are two types of TRAM reconstruction surgery: the ["tunneled" \(pedicle\)](#) method and the ["free" \(microsurgical\)](#) method. For either method, tissue is taken from the lower abdomen. The doctor will determine if you are able to have a TRAM, depending upon availability of donor tissues. For example, the doctor may not be able to use the abdomen tissue to reconstruct a breast if you have had previous surgery in that area. If you are a smoker, the doctor may choose not offer the TRAM reconstruction procedure at all. When discussing these reconstructive options with your doctor, be sure to mention other health problems that you may have. Also be sure to mention your lifestyle and what kinds of activities you want to be able to do after the surgery. These other issues will be very important in determining if this method of reconstruction is right for you, and if it will be successful.

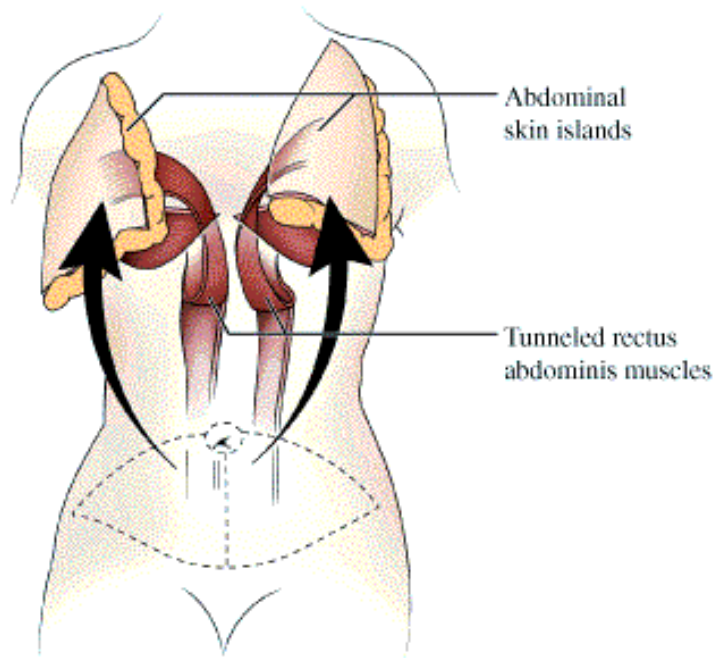
In the TRAM procedure, the skin, fat, and muscle of the lower abdomen are used to recreate the breast. This is some of the same tissue that is taken during a "tummy tuck" procedure.

### **1. Pedicle TRAM**

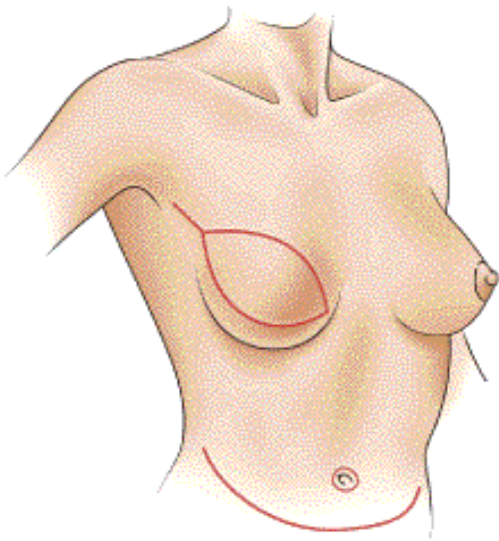
In the pedicle ("tunneling") method of this procedure, this tissue is separated from its original location (without being completely disconnected), turned upwards, and tunneled under the abdomen. It is brought up and out through the mastectomy site (or scar depending on time of reconstruction). The tissue is then sculpted to look as much like the other breast as possible. The lower abdomen site is then sewn back together.



In case of a double mastectomy, the tissue on the lower abdomen may be used to make two breasts:



The scar on the lower abdomen generally runs from hip to hip, but is low enough to be concealed under many types of swim suits. If you tell the doctor which type of two-piece bathing suit you own, then he or she can adjust the placement of the scar to make it less noticeable.



Breast scar may vary in appearance

**Finished Pedicle TRAM Flap Reconstructions:**



**Pedicle TRAM, Front View  
(with nipple reconstruction)**



**Pedicle TRAM, Side View  
(with nipple reconstruction)**



**Pedicle TRAM, Front View  
(with nipple reconstruction)**



**Pedicle TRAM, Side View  
(with nipple reconstruction)**

### MY PEDICLE TRAM: ONE WOMAN'S STORY

*"I had an immediate [pedicle] TRAM at the time of my mastectomy on my right breast. I did not want anything other than me in my body. And I decided to do it at the time of the mastectomy because I just figured it would be better to get it all over with at one time rather than do one surgery and then the other. I really decided to have it done not because I'm a particularly vain person, but because I intend to live for a long time, and I'm optimistic about that, and I wanted my dresses to fit me correctly. Self image and well-being have a lot to do with recovery and survivorship. Another important reason for doing it, for me, [was] to assume as much normalcy in my life as was possible. That's important I think for me and for my husband and for my family. And it is wonderful for me not having to bother with a prosthesis. For me it's just so convenient to you know, jump in the shower, jump in my clothes, and that's it. I have enough to take care of, and it's nice to not have to do anything extra. So far me, the surgery was well worth it.*

*The reconstruction itself far exceeded my expectations. The scars are very minimal. The skin of the breast itself was conserved. The thing that I like most about my TRAM is the way that my TRAM moves with the rest of my body. It moves like a breast, it's a little firmer than my other breast, but it feels very much like a breast, and so it feels very natural to me. Now what I liked least about the TRAM was what I'm experiencing currently are some back problems. I walk a little bit differently since my TRAM, and my balance is probably a little different. That I think is a result of how tight the abdominal muscles are and the fact that there's this constant pull forward, and to this day my abdominal muscles are quite tight. [It is important to have physical therapy immediately after the TRAM], just for stretching and mobility and stretching the abdominal muscles and reducing scar tissue.*

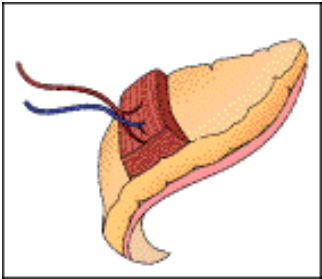
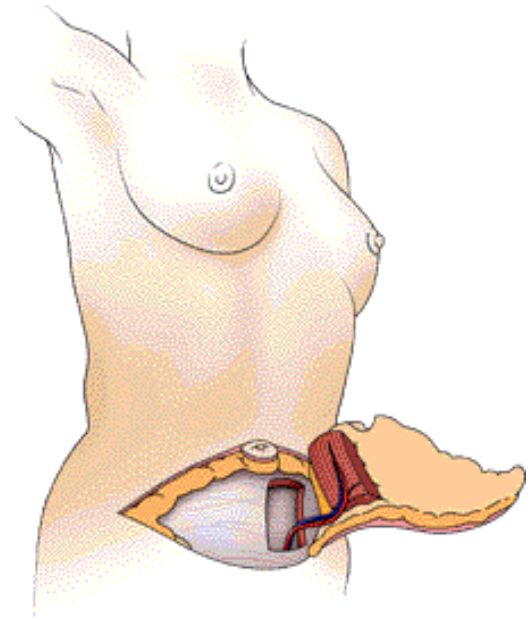
*The other part I think it's real important for women to know is that this is a difficult surgery. It's not a surgery that women should consider lightly. It is a difficult and long surgery, but for me one that was well worth doing. Initially the biggest irritation was the TRAM, and with the abdominal surgery was the drains. You know, having to empty the drains and deal with those being pinned to my clothing for a significant period of time, you know, a couple of weeks or so. What has always surprised me about this surgery is that it's not the TRAM that has really caused me much distraction. I've had really good arm mobility, and of course there's some loss of sensation because of the cutting of some of the nerves. But that I've adjusted to relatively easily. It's more the tightness in the abdomen, and the more limited abdominal strength which has been more noticeable for me. And that was something I really wasn't expecting to the degree that it exists.*

*[Women considering breast reconstruction should not] be overly encouraged that their results would be entirely positive, nor overly discouraged that they would have any negative results, but to really trust themselves in making this decision, because it really is such a personal decision. You really have to judge your own tolerance for pain, your own motivation. I would not urge this surgery for someone who is looking for perfection or a denial of the disease. That's not what this is about. It's really an expression of hope and an optimism about the future."*

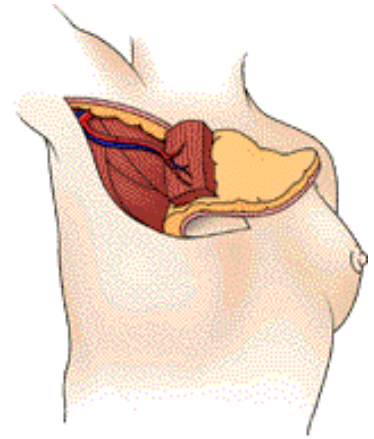
## 2. Free TRAM

The "free flap" (microsurgical) TRAM commonly uses the same tissue as the "tunneling" method described above.

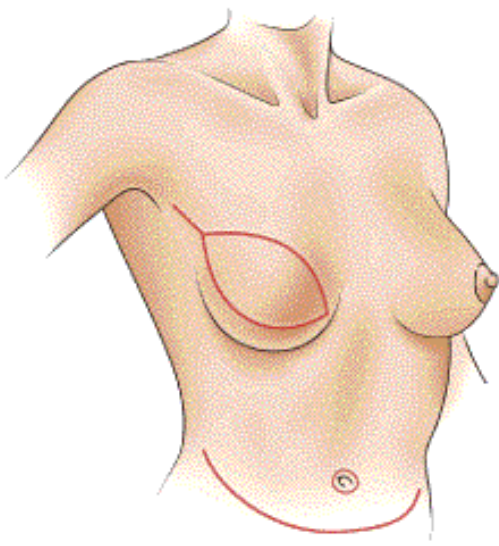
The main difference in the free TRAM reconstruction is that the tissue, rather than remaining attached, is completely removed from the body.



Following its removal from the abdomen, the tissue is transferred to the mastectomy site. This requires that the artery and vein which supply blood to the flap tissue to be identified and cut as well.



When the tissue is brought up to the mastectomy site, the flap's artery and vein are reattached to blood vessels in the underarm using microsurgical procedures.



Some surgeons prefer the "free flap" method to the "tunneling" method because they may be better able to sculpt the tissue to the shape of a normal breast (and thus to match the other breast). The main concern about the free TRAM procedure is that the survival of the entire reconstruction depends upon the newly attached blood vessels to the flap tissue. If these fail, then the reconstructed breast can be lost.

Breast scar may vary in appearance

**Finished Free TRAM Flap Reconstructions:**



**Free TRAM, Front View  
(with nipple reconstruction)**



**Free TRAM, Side View  
(with nipple reconstruction)**



**Free TRAM, Front View  
(with nipple reconstruction)**



**Free TRAM, Side View  
(with nipple reconstruction)**

**Advantages of TRAM Flap Reconstruction**

*The new reconstructed breast is made of natural tissue.*

This procedure requires less foreign material to be put into your body than is put in with an implant: prosthetic mesh may be used in closing the abdominal wall, but no foreign material is incorporated into the breast itself. This eliminates the possibility of having to get an implant replaced in the future. The use of your own tissue also allows the doctors to sculpt the tissue to match your other breast to the best of their ability. Natural tissue reconstruction is important if you gain or lose weight. Since your new breast is your own tissue, it will change as the rest of your body changes. However, it is important to remember that it may not change exactly like your other breast.

***The procedure only takes one step.***

Unlike the implant procedure, which usually requires two operations, the construction of the 'breast mound' with natural tissue usually requires only one step. This step, depending on whether you choose immediate or delayed reconstruction, can be done at the same time as the mastectomy, or later. At first, the breast will be slightly larger than planned, but after the swelling goes down it will shrink a bit. Some patients may have additional shaping done later. The construction of the nipple and areola have to be done at a later date, regardless of which type of procedure you choose.

### **Disadvantages of TRAM Flap Reconstruction**

***This is major surgery.***

Many women have said that this procedure will take a major toll on your body and your lifestyle during your recovery period. The operation itself may take eight hours or more, and the hospital stay afterwards can be up to five days. When you return home from the hospital, your life probably won't be back to normal. Generally, women who go through this procedure may need up to six to eight weeks of absence from work. During this time, you are restricted to how much you can lift (no more than 5 pounds), how active you can be, and even how much you can travel (no driving for one month). Depending on your lifestyle, this may severely impact your day to day activities. Some women who have gone through this procedure have experienced substantial pain, often lasting well after the surgery is completed. Some say that full recovery (a complete return to normal) can be as long as six months to one year after surgery. However, for other women, the lifestyle disruptions may be less severe. Recovery from this surgery will be determined by how well your body recovers from any challenge it faces.

***The procedure may cause changes in body function after recovery.***

With a TRAM flap, some women may find their abdominal muscles to be weaker, even after full recovery from the operation. This could affect your [power to sit up](#). This change may be especially hard for you if you are older or especially athletic. For women of childbearing age, some doctors do not recommend pregnancies after the TRAM surgery. The weakened abdominal muscles may also put some additional strain on your back.

***The surgery leaves an additional scar and may cause changes in body appearance.***

After the surgery and recovery period, some women notice that the contours of their bodies are different. In the case of a "tunneled" TRAM, some women have a slight visible bulge where the abdominal muscle turns upward. TRAM reconstruction also leaves another scar on the body. The scar may run from hip to hip, just above the pubic bone. However, this scar can be hidden by many forms of swim suits.

***It is difficult to predict exactly what the new breast will look like.***

With TRAM reconstruction, the surgeon must mold and sculpt tissue into a breast shape. Therefore, depending on the surgeon's technique and the quantity and quality of the tissue, there is variation in what the reconstructed breast will eventually look like. This makes it somewhat difficult to predict the final result of the surgery.

***The procedure may cause complications.***

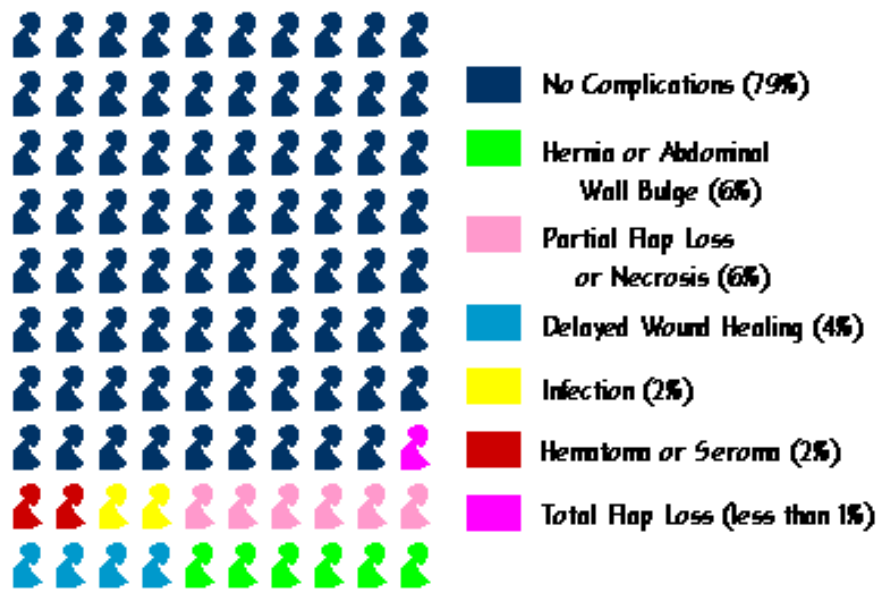
In some rare cases, women who have natural tissue breast reconstruction experience partial or complete loss of the newly constructed breast. About six women in 100 lose part of the new breast; less than one in 100 lose the entire breast. This is usually due to circulation problems that starve the tissue of needed nutrients.

Partial flap loss can occur within the first 10 days after surgery if some of the TRAM tissue dies. In such a case, the dead tissue may be surgically removed and the edges of live skin brought together again, or the area may be treated with dressing changes. Partial flap loss may also happen several months after surgery, when clumps of dead fat inside the breast flap harden to form lumps ("necrosis"). These lumps are usually removed by surgery, so that they will not be mistaken for cancer.

In some cases, loss of flap circulation soon after surgery can be treated with additional surgery to adjust the tissue and restore

circulation. However, the flap must be removed in cases that can't be helped by additional surgeries. If another donor site is available, these women may be able to have another reconstruction using natural tissue. However, the donor site that was used the first time cannot be used again.

A few women who have TRAMs (about six in 100) experience abdominal wall bulges or hernias due to the changes in the abdominal muscle structure. The abdominal wall is weakened during TRAM reconstruction. Therefore, tissue beneath the remaining muscles may press against them, causing an abdominal wall bulge, or protrude through them, causing a hernia. Treatment of a hernia involves additional surgery, which requires additional hospital stays and lifestyle disruptions. About four women in 100 take longer than normal to heal after the operation. In very rare cases (two out of 100) a woman will have some bleeding (called a "hematoma") or fluid collection (called a "seroma") under the breast skin after surgery. Finally, about two women out of 100 develop infections in the area of the incision soon after surgery.



Complication rates adapted from Wilkins EG et al, Journal of the American Cancer Society 1995; 180(2):177.

Natural tissue reconstruction can also be done using other sites:

- Back flap, or [latissimus dorsi](#), reconstruction
- Other donor sites

### Alternative Donor Sites

In some instances, natural tissue reconstruction is performed using tissues from other areas of the body. These additional donor sites include the shoulder blade area (latissimus dorsi muscle flap), the outer thigh, the inner thigh, and the buttocks (superior and inferior gluteal muscle flaps). In the hands of most plastic surgeons, these sites are used less often than TRAM flaps. With the exception of latissimus dorsi reconstruction, these additional flaps are all performed as free (microsurgical) procedures. As with the [free TRAM](#) described earlier, these free flap procedures involve completely detaching the tissue from the donor site and re-establishing the flap's circulation by reconnection of flap blood vessels to a local artery and vein at the breast site. By contrast, reconstruction with the [latissimus dorsi](#) muscle from the shoulder blade area involves tunneling the tissue to the front side of the chest for use in the reconstruction of a new breast.

### Latissimus Dorsi Flap Reconstruction

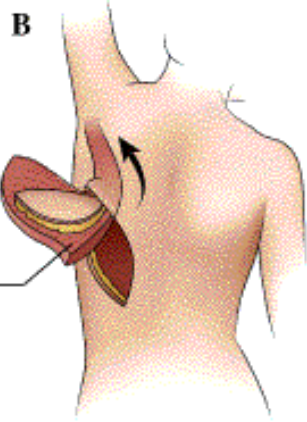
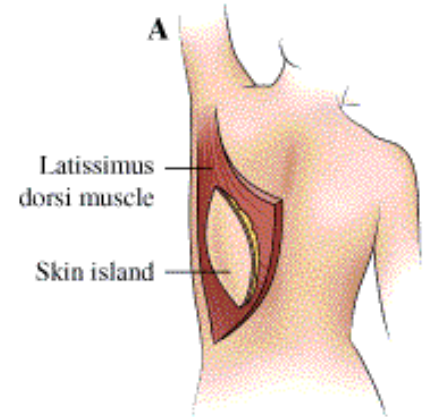
One of the available donor site options for breast reconstruction is the latissimus dorsi muscle, or the muscle next to your shoulder blade. By "tunneling," the flap tissue muscle and skin covering it ("skin island") are brought around from the back of the body to the front and are placed at the mastectomy site. Because there may not be enough "filler" in this area of the back to match the size of the other breast, this procedure may also require the placement of an implant.

Generally, this donor site is used in cases where the abdominal tissue is not suitable for use in reconstruction. This donor site may also be used in cases where the abdominal tissue was previously used for reconstruction, but the newly reconstructed breast was partially or completely lost due to complications. Some plastic surgeons may recommend latissimus dorsi reconstruction even if the TRAM donor site is available.

Many of the same concerns exist for this surgery as for the [TRAM](#) surgery. A hospital stay of three to five days may be required. The same general recovery time applies for this procedure as the TRAM procedure.

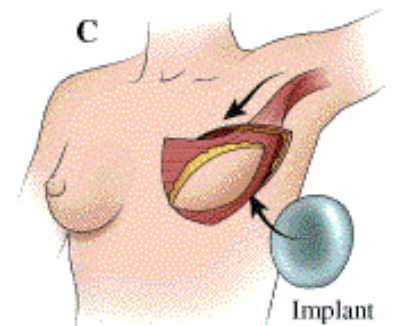
**How is Latissimus Dorsi Flap Reconstruction Done?**

A flap of skin and muscle is separated from the shoulder blade area.



The flap is tunneled from the back of the body to the mastectomy site.

The flap is shaped into a reconstructed breast. An implant is placed under the chest muscle to give the breast fullness.



Size and location of scar varies

The donor site on the back is stitched closed.

**Advantages of Reconstruction Using the Latissimus Dorsi Muscle:**

- The tissue area and the blood vessels involved are large and dependable, making it likely that the operation will be successful.

**Disadvantages of Reconstruction Using the Latissimus Dorsi Muscle:**

- You may need to have an implant placed under the flap to create a large enough breast.
- The surgery may leave a sizeable scar in a potentially prominent area of the back. This scar may be particularly easy to see on women wearing swimsuits and summer clothes.

**Non-Surgical Options**

Many women choose not to have breast reconstruction because:

- they feel comfortable living with only one breast.
- they don't want to have more surgery;
- their partners or families do not think reconstruction is necessary;
- there is no plastic surgeon who does breast reconstruction in their area.

If you choose not to have breast reconstruction, you can:

- Live without a breast replacement, or
- Get a [prosthesis](#) (false breast).

Some women who choose not to have reconstruction may wear a prosthesis or stuff their bras with padding. Others choose to do nothing. The side of the chest with the mastectomy simply remains flat, and the mastectomy side of the bra remains empty.

### ***Advantages of No Replacement:***

Wearing no replacement may be:

- simpler
- more convenient
- more comfortable

### ***Disadvantages of No Replacement:***

- Some women may feel unbalanced with only one breast.
- It may be harder to keep your posture straight because of the imbalance.
- It may be harder to wear some kinds of clothes with only one breast.

### ***Wearing a Prosthesis***

A prosthesis is a breast form you can use under clothing to recreate the breast. Some women choose to use a prosthesis until they have breast reconstruction, while others use prostheses for life.

### ***Where Do I Get a Prosthesis?***

Prostheses can be purchased at surgical supply stores, pharmacies, custom lingerie clothing shops, or a private home service.\* Contact the [Reach to Recovery](#) program of the American Cancer Society for information about which stores in your area sell prostheses (telephone 1-800-ACS-2345). You may want to contact the stores first to ask if they offer a trained fitter. Fitters know how to take your measurements so that the prosthesis fits your chest and matches your other breast. They can also show you how to wear it. When you have the prosthesis fitted, consider trying on samples under a variety of your own clothes.

\*If you live in the Ann Arbor, Michigan area, you may want to try [Personal Touch](#). They have a great selection of prostheses and post-mastectomy wear, a trained nurse fitter, and a [web site](#) with lots of good information on prostheses, local breast cancer support groups, and caring for yourself after breast cancer.

### ***How Does the Prosthesis Stay in Place?***

Special bras, lingerie and bathing suits are designed for breast cancer survivors. They are available from Nordstrom, Sears, Land's End, JC Penney, or American Cancer Society catalogs, as well as department stores and smaller specialty shops. The clothing comes with a pocket to hold the prosthesis, or you can have pockets sewn into the suits or bras you already own. This helps keep the prosthesis from popping out during swimming or other physical activities. One product comes with adhesive Velcro patches to attach the prosthesis to the upper part of your chest. This allows you to go bra-less or wear a regular bra. Many active women and athletes choose this model. (Since some women are allergic, ask the store to let you take home and try a sample of the adhesive before buying the whole product.) The adhesive lasts from three to

five days and the prosthesis can even be worn while swimming or in the shower.

### ***How Do I Choose a Prosthesis?***

There are many shapes, sizes and materials of prostheses. The ideal product has the shape, weight, motion, and balance of your natural opposite breast. You'll probably want to get more than one type of prosthesis. Before you go into surgery, consider contacting your local Reach to Recovery program of the American Cancer Society (1-800-ACS-2345). They provide a free temporary prosthesis to all women who are undergoing mastectomy. You can adjust the temporary prosthesis by filling a cloth cover with as much fiberfill as you need to match the other side.

While this temporary model is helpful for the initial recovery period, you will probably want to buy a longer-lasting prosthesis at some point. There are two main types. A lightweight style (made of polyfill or foam) is also good for the initial post-surgery recovery period. It can be used later for warm weather activities or times when you want less weight. This type is machine washable.

The second type is made of silicone. Most women prefer this style, because it is more lifelike. Two shapes are available: asymmetrical (one for the left side, one for the right) and symmetrical, a pear shape worn sideways to fill out the side, or straight up for fullness and cleavage. Silicone is closer to the consistency and weight of a natural breast. You may find the weight a bit tiring, but it can help balance the other breast and keep your posture straight. Silicone products are hand washable. Many prostheses are shaped to include a nipple on the front.

Prostheses also come with different kinds of covers. Most have some type of cloth cover, like soft cotton. Others come with a latex cover. Some brands now offer a cloth pad on the back to absorb perspiration and keep you cooler. Ready-made products come in many sizes; you choose the one that matches your natural side. It's worth taking the time to find one that matches your other breast and is comfortable. If you really want to splurge, you can buy a custom-made prosthesis that is made specially for you, to fit the contour of your body and match your other breast.

### ***How Much Will It Cost?***

Prices of silicone prostheses range from \$200 to \$500. Foam and fiberfill prostheses usually cost less than \$100. Cost depends mostly on quality and brand. A custom-made prosthesis will cost much more. If you want your health insurance to reimburse you, be sure to get a prescription from your doctor for the prosthesis. Prostheses last from two to five years. (Swimming pool water, salt water, and hot tubs will damage silicone prostheses.) Most insurance coverage pays for two bras with a prosthesis pocket per year and a new prosthesis every two years. If you do not have insurance, check with the American Cancer Society. Many offices give away free prostheses that stores have donated.

### **Advantages of Prostheses:**

- Prostheses may give you a more natural shape under clothes.
- Prostheses may give a more "balanced" look.
- Prostheses do not require surgery.
- If your natural breast size changes, you can buy a new prosthesis.

### **isadvantages of Prostheses:**

- You may be less comfortable in revealing clothes than if you had reconstructive surgery.
- A prosthesis may be heavy, feel hot, and move around inside the bra.
- You may need to wear a special bra so the prosthesis doesn't fall out (or buy a model with adhesive).
- It may be less convenient to do certain things, such as playing active sports, than if you had reconstruction or did not replace the breast.
- It is tough to scratch an itch underneath a prosthesis.
- Prostheses do not change size with weight gain (although you can buy a new prosthesis to match the change in your natural breast).

## **After Reconstruction**

### **Additional Surgical Options Following Breast Reconstruction**

Many women choose to have additional surgeries after breast reconstruction to make their breasts look as natural and symmetrical as possible.

[Nipple reconstruction](#) may be done on the reconstructed breast mound to make the it look more natural and "complete."

Additional surgeries may be done to make the opposite, natural breast look as much like the reconstructed breast as possible:

- [Breast lift](#)
- [Breast reduction](#)
- [Breast augmentation](#)

## Nipple Reconstruction

Nipple and areola (the dark circle around the nipple) reconstruction is completely optional. Some women want only the shape of the breast to fill a bra, and decide they don't need a nipple. Another option is to apply removable nipples that stick on with adhesive. These rubbery tips are shaped like a semi-erect nipple and the color and texture are quite lifelike.

### *How is Nipple Reconstruction Done?*

If you choose to surgically reconstruct the nipple, there are several options. One common option is to use the skin of your reconstructed breast. The surgeon can take a small flap of skin from the breast, and "cone" it into a new nipple. Because the nerves aren't connected in the reconstructed breast, most women do not feel much pain with this surgery.

Options to reconstruct the areola involve taking skin from a different part of the body and sewing it to the new nipple on the reconstructed breast. The surgeon can take an oval of skin from the outer edge of your mastectomy scar or from the edge of the TRAM donor scar on your abdomen (if you have this kind of breast reconstruction). The advantage of using this skin is that you won't have any new scars. The surgeon can also take skin from the inside of your thigh or from just below your hip bone. You may be sore for up to two weeks at the place from which the skin was taken. However, most women have very little discomfort at the site of the reconstructed nipple. Another option is to reconstruct the nipple as described above and have the skin around it tattooed to a darker color to make an areola.

In all procedures, you will not have much or any feeling in the new nipple when it is touched. These surgeries can be done on an outpatient basis in under two hours, with local or general anesthesia. Most doctors will ask you to wait a week after the surgery before driving or working.

After you have healed, you can have the new nipple and areola tattooed to match the color of your other nipple. Often it takes two or three sessions to color the whole area evenly. Tattooing takes about an hour and can be done in the doctor's office. You can usually go back to work the same day. Most women can hardly feel the tattooing being done. However, your doctor may use a local anesthetic just in case.

### *When Can I Have Nipple Reconstruction?*

Most plastic surgeons do not schedule nipple reconstruction until at least three months after breast reconstruction. You want to allow time for the swelling from the surgery to go down and for the breast to "settle." This allows the surgeon to place the nipple so that it matches the position of the nipple on the other breast. In some circumstances, the plastic surgeon can perform nipple reconstruction at the same time as reconstruction of the breast itself. You may want to discuss this option with your provider.

### **Finished Nipple Reconstructions:**



**Implant with Nipple Reconstruction**



**Pedicle TRAM with Nipple Reconstruction**



**Free TRAM with Nipple Reconstruction**



**Free TRAM with Nipple Reconstruction**

### *Advantages of Nipple Reconstruction:*

- Your reconstructed breast will match your natural breast more closely.
- You can go bra-less and have the shape of the nipple on both sides.

### *Disadvantages of Nipple Reconstruction:*

- It is usually an additional surgery and requires another recovery period.
- If the skin is taken from a place where there is no scar, you'll have a new scar at the donor site.

### **Breast Lift (Mastopexy)**

While reconstructive surgery can usually give you the volume to fill a bra evenly, it may be difficult to create the same shape on both sides. The reconstructed breast may not droop like the natural breast. However, the surgeon can do a breast lift, or mastopexy, to make the natural breast look more youthful so that it better matches the reconstructed breast.

### *How is Breast Lift Done?*

In breast lift, the surgeon cuts out a section of skin from the lower part of the breast. This skin is removed, and the nipple is moved upward. Skin that was previously above the nipple is drawn down and sewn together below the nipple. Because there is less skin, the breast is higher and firmer after surgery. The scars are usually around the areola, in a vertical line extending down from the nipple area, and along the lower fold of the breast.

This surgery takes from one to two hours, with either local or general anesthesia. It is usually done in a day-only visit to either a clinic or hospital. Many women return to work after a week, and resume their normal activities after two to three weeks.

After having a breast lift, you may lose some feeling in your nipple or breast for at least six weeks. This loss of feeling usually resolves as the swelling goes down after surgery, but in some women it can last as long as a year or even be permanent. Breast lift also leaves permanent scars. These can be lumpy and red for months following surgery, fading bit by bit until they are less noticeable. The scars can, however, be hidden under most bathing suits.

If you choose this procedure, be aware that gravity, aging, and weight changes will cause the breast to eventually sag again. However, this may happen in the reconstructed breast as well.

### *Advantages of Breast Lift:*

- The lifted breast will more closely match the shape of your reconstructed breast.
- The lifted breast will be higher and firmer after surgery.

### *Disadvantages of Breast Lift:*

- Breast lift is additional surgery.
- You will have permanent scars (although they can be covered by a bathing suit).

- There is a small possibility that you will permanently lose feeling in your nipple or breast.

### **Making the Natural Breast Smaller: Breast Reduction**

If your natural breast is large compared to your reconstructed breast, you may want to consider breast reduction. Breast reduction removes skin and fat from the breast.

#### ***How is Breast Reduction Done?***

In breast reduction, the surgeon removes fat, glandular tissue, and skin from the lower part of the breast. The nipple is then moved upwards and the tissues closed to form a smaller breast. As in breast lift, the scars are usually around the areola, in a vertical line extending down from the nipple area, and along the lower fold of the breast.

The surgery usually takes from one to two hours but can take longer. It is done under general anesthesia, so you will be asleep through the operation. Breast reduction is usually done in the hospital and may require an overnight stay. Most women can return to work in three weeks and to all normal activities in three to four weeks.

After having breast reduction, as with breast lift, you may lose feeling in your nipple or breast for at least six weeks. This loss of feeling usually subsides gradually as the swelling goes down after surgery, but in some women it can last as long as a year or even be permanent. If the breast is especially large and hangs very low, the nipple and areola may have to be completely removed and resealed onto the breast higher up, in which case the nipple and areola will permanently lose all feeling.

Breast reduction, like breast lift, leaves permanent scars. These can be lumpy and red for months following surgery, fading bit by bit until they are less noticeable. In a few cases, if only fat needs to be removed, liposuction can be used, which leaves small scars. The scars can, however, be hidden under a bathing suit.

It may be six months to a year before the reduced breast settles into its final shape. If you are of an age to have children and are interested in breastfeeding, you should know that you may not be able to breastfeed with a reduced breast. The breast may also change size with hormonal changes, pregnancy, or weight changes. These shifts may not be a problem if you have had natural tissue reconstruction on the other breast, as this breast may change in the same ways.

#### ***Advantages of Breast Reduction:***

- The reduced breast will more closely match the shape of your reconstructed breast.
- The reduced breast will be smaller, which may relieve strain on your back and neck and reduce irritation in the breast crease if you have very large natural breasts.

#### ***Disadvantages of Breast Reduction:***

- Breast reduction is additional surgery.
- You will have permanent scars (although they can be covered by a bathing suit).
- Breast reduction may leave your nipples and breast skin numb for six weeks to a year.
- In normal cases, there is a small possibility that you will permanently lose feeling in your nipple or breast. If your breast is particularly large and the nipple must be completely removed before being placed higher up, you are certain to permanently lose feeling in the nipple and areola.

### **Making the Natural Breast Larger: Breast Augmentation**

If your natural breast is small compared to your reconstructed breast, you may want to consider breast augmentation. In breast augmentation, the surgeon inserts an implant into your breast to make it larger. If your natural breast is small and droops, you may also be a good candidate for a breast lift. Your surgeon can tell you which procedure or combination of procedures is most appropriate for you.

#### ***How is Breast Augmentation Done?***

In breast augmentation, the surgeon places an [implant](#) under your breast tissue to make it larger. The surgical incision may be made in the

crease underneath the breast, around the areola, or in the armpit, depending on the surgeon, to make the scar as invisible as possible. The implant may go either under the breast tissue itself, or under the chest muscle behind the breast. The implant consists of a silicone "balloon" filled with [silicone gel or saline](#).

This surgery takes about an hour, usually with general anesthesia. It is usually done either during a day-only visit to a clinic outside of the hospital or in the hospital with a stay of up to 24 hours. Most women can return to work after one to two weeks.

As the years go by, the implant may [leak or rupture](#). This happens in approximately 10% of cases over the first 10 years. When this occurs, the implant must be removed or replaced. A capsule of scar tissue may also form around the implant. Scar tissue forms on the outside of all artificial implants when placed in the body. However, in approximately 5-10% of cases, too much scar tissue forms. The scar tissue may cause pain and discomfort and make the implant feel hard to the touch. Surgery may be necessary to break up or remove the scar tissue. It may also be necessary to remove or replace the implant. [Capsules](#) can form at any time from a few weeks to many years after the implant has been inserted.

If you undergo breast augmentation, you should realize that the placement of a breast implant in your augmented breast will affect, to some degree, your annual mammograms. If the implant is placed beneath the muscle layer, breast augmentation will not likely have much effect on the quality of later mammograms. However, if you have an implant in your reconstructed breast and you would like to get a mammogram, you should look for centers that are experienced in screening women with implants.

### **Finished Breast Augmentations:**



**Breast Augmentation  
(opposite free TRAM)**

### *Advantages of Breast Augmentation:*

- The augmented breast will more closely match the shape of your reconstructed breast.

### *Disadvantages of Breast Augmentation:*

- Breast augmentation is additional surgery.
- The implant may develop complications over the years, such as leaks, ruptures, or excess scar tissue formation that may need to be corrected by extra surgery.
- You will need to get your mammograms done at a facility with expertise in treating implant patients.

## **Michigan Breast Reconstruction Outcome Study**

The Michigan Breast Reconstruction Outcome Study (MBROS) is a six-year study of multiple aspects of breast reconstruction outcomes. The study began in August of 1994 and will continue through June of 2000. During the lifetime of the study, MBROS has assessed a total of 397 actively participating patients from [11 medical centers](#) in the U.S. and Canada. Patients are followed for two years from the date of their breast reconstruction surgeries to determine long-term outcomes of breast reconstruction. MBROS is supported by a grant from the Department of Defense, United States Army Medical Research and Material Command, DAMD 17-94-J-4044.

To date, studies have been completed on the following topics:

- Psychosocial outcomes of [breast reconstruction](#).

- Psychosocial outcomes of breast reconstruction by [timing of reconstruction](#) (immediate vs. delayed).
- Psychosocial outcomes of breast reconstruction by [procedure type](#) (implants vs. pedicle TRAMs vs. free TRAMs).
- [General patient satisfaction](#) by procedure type (implants vs. pedicle TRAMs vs. free TRAMs).
- Patient [satisfaction with aesthetic results](#) by procedure type (implants vs. pedicle TRAMs vs. free TRAMs).
- Objective, [computerized assessments of symmetry](#) of breast reconstruction results by procedure type (implants vs. pedicle TRAMs vs. free TRAMs).
- [Physical functioning](#) one year after surgery by procedure type (implants vs. pedicle TRAMs vs. free TRAMs).
- [Mammography after TRAM](#) flap reconstruction.

**Participating medical centers include:**

*Michigan:*

- [University of Michigan Hospitals](#), Ann Arbor, Michigan
- [St. Joseph Mercy Hospital](#), Ypsilanti, Michigan
- [Henry Ford Hospital](#), Detroit, Michigan
- [St. Mary's Hospital/Butterworth/Blodgett](#), Grand Rapids, Michigan
- [Butterworth Hospital](#), Grand Rapids, Michigan
- [William Beaumont Hospital](#), Royal Oak, Michigan
- Providence/Sinai Hospitals, West Bloomfield, Michigan
- Michigan State University, East Lansing, Michigan

*Louisiana:*

- [Ochsner Clinic](#), Ochsner Therapy Center, New Orleans, Louisiana

*Pennsylvania:*

- [Milton S. Hershey Medical Center](#), Hershey, Pennsylvania

*Canada:*

- Etobichoke Hospital, University of Toronto, Toronto, Ontario

**MBROS Publications:**

1. Cederna P, Wilkins EG, Lowery JC, Perkins AJ. Prospective analysis of psychosocial outcomes in post-mastectomy breast reconstruction. *Surgical Forum* 1997; 47:607-609.
2. Lowery JC, Wilkins EG, Kuzon WM. Analysis of instruments for assessment of aesthetic outcomes in breast reconstruction. *Annals of Plastic Surgery* 1996; 36:601-607.
3. Wilkins EG, Lowery JC, Smith DJ. Outcomes research: a primer for plastic surgeons. *Annals of Plastic Surgery* 1996; 37:1-11.
4. Wilkins EG, Lowery JC, Kuzon WM, Perkins A. Functional outcomes in postmastectomy breast reconstruction: preliminary results of the Michigan Breast Reconstruction Outcome Study. *Surgical Forum* 1997; 48: 609-612.

For more information about the Michigan Breast Reconstruction Outcome Study, contact:

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# Frequently Asked Questions

If you are interested in breast reconstruction, some practical questions you may want to think about include:

## Should my reconstruction be immediate or delayed?

You've talked with your doctor and decided to have your breast reconstructed. Should you have it done at the same time as the mastectomy or wait until later? All types of breast reconstruction can be done either at the same time the cancerous breast is removed or later--even years later. Your doctor may suggest that one option is better for you, depending on your body and your health.

### *Advantages of Immediate Breast Reconstruction:*

- You wake up after cancer surgery with a new breast, or the beginnings of a new breast, already in place.
- Most women feel better about seeing the results of the cancer surgery for the first time if they have had immediate reconstruction.
- It saves time and effort, since you have two surgeries at the same time.

### *Disadvantages of Immediate Breast Reconstruction:*

- You must bear the strain and the possible problems of two surgeries at once.
- There is no chance to adjust to the loss of the old breast before you get the new one.
- You must deal emotionally with cancer and with reconstruction at the same time. Some women prefer to have the cancer treated first and to think about reconstruction afterwards.

## Who will do my reconstruction?

The breast reconstruction is done by a plastic surgeon. While your surgical oncologist is responsible for your mastectomy and treating your cancer, your plastic surgeon focuses on reconstructing your breast. If you decide to have [immediate reconstruction](#), the plastic surgeon will need to coordinate with your oncologist to plan your surgery.

Plastic surgeons are first trained as medical doctors. After medical school, they receive five to eight years of specialized training in plastic surgery. Plastic surgeons perform many complicated surgeries. They re-attach hands after accidents, reconstruct body parts for burn patients, and repair wounds. However, it is always good to ask if your surgeon has experience in [breast reconstruction](#). You should make sure that your doctor is a "board certified" or "board eligible" plastic surgeon. Also, your surgeon should be willing to talk with you about both cosmetic and surgical issues. Remember that the surgeon works for you: you can choose to stop reconstruction at any point, from choosing [no reconstruction](#) to declining [nipple reconstruction](#) and [tattooing](#).

### A PATIENT SAYS. . .

*"The choice of surgeon was probably the second most critical factor for me [after deciding to do the surgery and getting information about it]. And finding someone I felt very optimistic with and encouraged by and felt very much part of a team. So that was the difference in talking with someone who's only done a few of these surgeries and then talking with someone like Dr. \_\_\_\_\_ who has done so many of them, really made me feel far more comfortable."*

## Who will pay for my reconstruction?

Insurance companies and managed care organizations are now required to pay for [breast reconstruction](#) for women who have had a mastectomy. Health care plans are also required to pay for surgery to [make the opposite natural breast match](#) the reconstructed breast. The Women's Health and Cancer Rights Act of 1997, which ensures these rights, states that:

*"A group health plan, and a health insurance issuer providing health insurance coverage in connection with a group health plan, that provides medical and surgical benefits with respect to a mastectomy shall ensure that, in a case in which a mastectomy patient elects breast reconstruction, coverage is provided for--*

1. all stages of reconstruction of the breast on which the mastectomy has been performed; and
2. surgery and reconstruction of the other breast to produce a symmetrical appearance;

in the manner determined by the attending physician and the patient to be appropriate, and consistent with any fee schedule contained in the plan."

This law is also observed by Medicare and Medicaid. However, you should still check with your insurance company ahead of time - most companies require that you obtain authorization in advance about any surgery that is not an emergency. Also, not all insurance companies cover [nipple tattooing](#), so ask about this procedure if you think you would like to have it done. If you do not have insurance, you should talk with your doctor about the cost of the breast reconstruction surgery, office visits, and potential additional costs due to [implant](#) or [TRAM](#) complications.

### Should I have mammograms after my reconstruction?

#### If You Had an Implant:

If you have had an [implant](#), mammograms are usually not recommended for the reconstructed breast. Most physicians prefer to screen for local recurrence of cancer with physical examinations of the breast.

Do self breast exams on both breasts once a month and visit your doctor as recommended for a checkup. Continue to have mammograms done on the natural breast as recommended by the American Cancer Society or your physician. (American Cancer Society guidelines are listed below for your convenience.)

#### If You Had Natural Tissue Reconstruction:

Increasingly, providers are recommending that [TRAM](#) reconstructions be periodically screened with mammograms. Try to find a mammography facility that is experienced in doing mammograms on reconstructed breasts. In addition, most physicians also rely on physical examinations of the breast to detect cancer recurrences. Do self-exams on both breasts once a month and visit your doctor as recommended for a checkup. Continue to have mammograms done on both breasts as recommended by the American Cancer Society or your physician. (American Cancer Society guidelines are listed below for your convenience.)

For more information, see the [MBROS Study Results](#) on Mammography After TRAMs ("Tramograms").

American Cancer Society Mammography Screening Guidelines			
If You Are:	Have a Mammogram:	Have a Doctor Examine Your Breasts:	Do Self Breast Exams:
20-39	(none recommended)	Once every 3 years	Monthly
40-49	Once every 2 years	Once a year	Monthly
50 or over	Once a year	Once a year	Monthly

## Options Summary

### Summary of Breast Replacement Options After Mastectomy

	<b>PROSTHESIS</b>	<b>IMPLANT (NO TISSUE EXPANSION)</b>	<b>TISSUE EXPANDER FOLLOWED BY IMPLANT</b>	<b>NATURAL TISSUE: TRAM (Abdominal Flap)</b>	<b>NATURAL TISSUE: LATISSIMUS DORSI (Back Flap)</b>
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<b>Who is a Candidate?</b>	All women.	Very small-breasted women.	Most women.	Most women.	Most women.
<b>Timing</b>	A lightweight style is best for the initial recovery period. After mastectomy scar heals, you can switch to a more lifelike silicone model.	May be immediate or delayed.	May be immediate or delayed.	May be immediate or delayed.	May be immediate or delayed.
<b>Length of Recovery</b>	None.	3-4 weeks may be required before it is possible to return to work or perform strenuous activities.	3-4 weeks may be required before it is possible to return to work or perform strenuous activities.	Most women can resume normal activities after six to eight weeks. During this period, lifting objects heavier than five pounds is not permitted.	Most women can return to work and resume other normal activities after 4-6 weeks.
<b>Scarring</b>	Scars from mastectomy only.	None or very little additional scarring, since mastectomy incision is usually reopened to insert implant.	None or very little additional scarring, since mastectomy incision is usually reopened to insert implant.	Scarring at the donor site, on the abdomen. For TRAM, this is a scar running from hip to hip. Mastectomy site scar on chest.	Scarring at donor site, on the back. Mastectomy site scar on chest.
<b>Drains</b>	Drains from mastectomy only.	Wear drains for 3 days to 2 weeks. One week is about average.	Wear drains for 3 days to 2 weeks. One week is about average.	Wear drains for three days to as long as three weeks. One week is about average.	Wear drains for three days to as long as three weeks. One week is about average.
<b>Hospital Stay</b>	Hospital stay for mastectomy only (outpatient to 2 days).	1-2 days if immediate; none (outpatient) to 1 day if delayed.	1-2 days if immediate; none (outpatient) to 1 day if delayed.	3-5 days.	2-4 days.
<b>Follow-Up Surgeries</b>	None.	Additional surgeries may be necessary to remove or repair the implant if it leaks, hardens, or becomes infected.	An additional surgery will be necessary to remove the tissue expander and insert an implant. Further additional surgeries may be necessary to remove or repair the implant if it leaks, hardens, or becomes infected. Surgeries on the opposite breast may be required to achieve symmetry.	Additional surgeries may be required for additional contouring or in case of complications, such as hernia. Surgeries on the opposite breast may be required to achieve symmetry.	If an implant is used with the back flap, additional surgeries may be necessary to remove or repair the implant (see "Implant" columns).

<p><b>Possible Complications and Concerns</b></p>	<p>Adapting swimsuits and lingerie to hold the prosthesis. Feeling self-conscious in revealing clothes. Sweating underneath the prosthesis. Not being able to scratch an itch.</p>	<p>Implant can leak, harden, or become infected. This will lead to more surgery to remove or replace the implant. If a silicone implant was used, more lengthy and complicated surgery may be needed to remove any silicone.</p>	<p>Tissue expander can leak or become infected, which may lead to more surgery to remove or replace the tissue expander. Implant can leak, harden, or become infected. This will lead to more surgery to remove or replace the implant. If a silicone implant was used, more lengthy and complicated surgery may be needed to remove any silicone that may have spread throughout the body.</p>	<p>Hernia; potential loss of abdominal wall strength; changes in overall body appearance, Potential loss of reconstructed breast.</p>	<p>Potential loss of reconstructed breast. Implant complications if an implant was used (see "Implant" columns).</p>
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## Resource List

### Recommended Reading

Bostwick, John. *Breast Reconstruction Following Mastectomy*. American Cancer Society. (A guide written for doctors.)

Also try these other [American Cancer Society](#) publications, written for patients:

- Breast Reconstruction After Mastectomy
- Exercises After Breast Surgery
- Mastectomy: A Patient Guide

Weiss, Marisa C. and Ellen T.F. Weiss. (1997) *Living Beyond Breast Cancer*. New York: Random House.

The nonprofit organization, also called Living Beyond Breast Cancer, is at:

- Tel: (610) 654-4567
- Fax: (610) 667-4789
- Internet: [www.lbbc.org](http://www.lbbc.org)

### Web Resources

Information about breast reconstruction:

Plastic Surgery Information Service: <http://www.plasticsurgery.org/>

Center for Plastic Surgery: <http://openseason.com/cps/breastreconstruction/breastreconstruction.html>

The Cleveland Clinic Foundation Guide to Breast Reconstruction: <http://www.ccf.org/bc/reconstn.htm>

Department of Defense Breast Cancer Decision Guide for Military and Civilian Families:

<http://www.bcdg.org/treatment/surgery/reconstruction.html>

Memorial Sloan-Kettering Cancer Center: <http://www.mskcc.org/document/WICBREAS.htm>

University of Iowa Department of Plastic Surgery Breast Reconstruction Page:  
<http://www.surgery.uiowa.edu/surgery/plastic/brecon.html>

### **Personal Testimonies from Patients Who Have Had Breast Reconstruction**

One Woman's Story of Breast Cancer and Reconstruction (Nancy Delaney): <http://www.idsi.net/~delaney/owr.htm>

Patricia Murray: <http://www.acor.org/diseases/breast/recon/pmurray/>

Olivia Newton-John: <http://www.breastcancerinfo.com/survivor/html/newton-john.html>

Other survivors: <http://www.breastcancerinfo.com/survivor/html/stories.html>

### **Useful Phone Numbers**

American Cancer Society, 1-800-ACS-2345

National Cancer Institute, 1-800-4-CANCER

American Society of Plastic and Reconstructive Surgeons, 1-800-635-0635

Food and Drug Administration Breast Implant Information Line, 1-800-532-4440 (Ask for the updated Breast Implant Information Package)

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