Breast Reconstruction After Mastectomy

Table of Contents

AT THE FOREFRONT
UChicago Medicine

About Mastectomy

A mastectomy is surgery to remove breast tissue to treat or prevent breast cancer. A mastectomy may be one treatment option for breast cancer.

Before Surgery

Before surgery, your surgeon or their assistant may draw marks on your breast. This will show where the incision (cut) will be made during surgery.

Incision placement (making cuts for surgery) depends on many things including where the cancer is located.

How Long Surgery Takes

Surgery to remove the breast can take 1 to 3 hours for each breast. If breast reconstruction is done right away, the surgery will take longer.

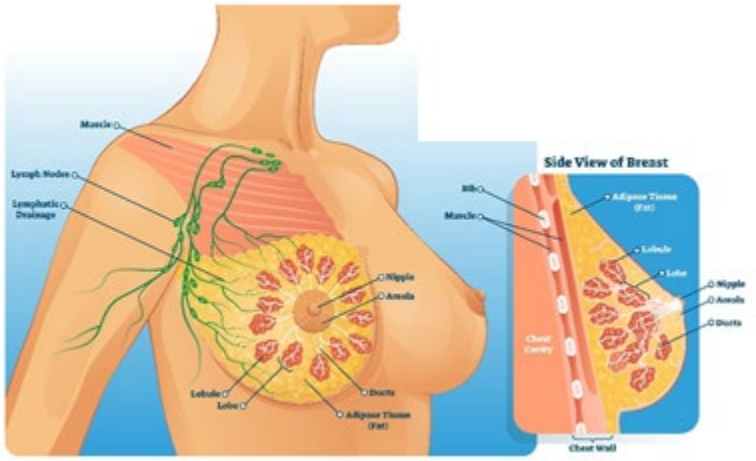
- Reconstruction with breast implants or tissue expanders will take about 60 to 90 minutes for each breast.
- Reconstruction with your own tissue (pedicled flap) and implants will take about 4 hours for each breast.
- Reconstruction with abdominal flap takes about 4 to 8 hours. If both breasts are being done, surgery can take 10 to 14 hours.
- How long surgery takes depends on many things and is different for each patient.

Removing the Breast Tissue

During the mastectomy, the breast surgeon removes breast tissue from between the skin and muscle.

They will remove all the breast tissue they can see between the collarbone and ribs from the side of the body to the breastbone in the center.

Depending on the kind of mastectomy, your surgeon may remove other parts of the breast.



The surgeon may remove lymph nodes and have these checked for cancer during the surgery.

The surgeon may do a lymphatic mapping procedure on the day before, the morning of or during the mastectomy to better be able to see where the lymph nodes are located.

Kinds of Mastectomy

Drains in the Surgery Area

Your surgeon may put in one or more thin flexible tubes called surgical drains in your breast area or armpit.

- The drains collect extra fluid that can build up in those areas after surgery.
- Each tube carries the fluid outside your body. The tube is attached to a soft plastic bulb that collects the fluid and that must be emptied on a regular basis.
- Sometimes, a drain may stay in until the first follow-up visit with your doctor, often 1 to 2 weeks after surgery. It may stay in longer if there is still drainage.

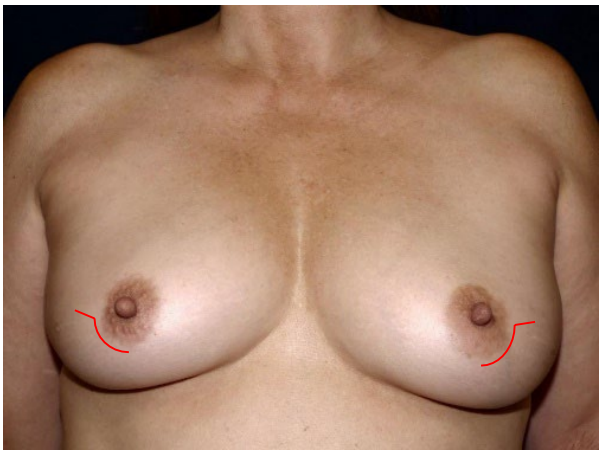
Kinds of Mastectomy

Your surgeons will try to leave (or conserve) as much of the skin or nipples and areola as possible.

Your surgery may be a **Nipple Sparing Mastectomy** or a **Skin Sparing Mastectomy.** The kind of mastectomy depends on many things including the size and location of the cancer and the size and shape of the breast.

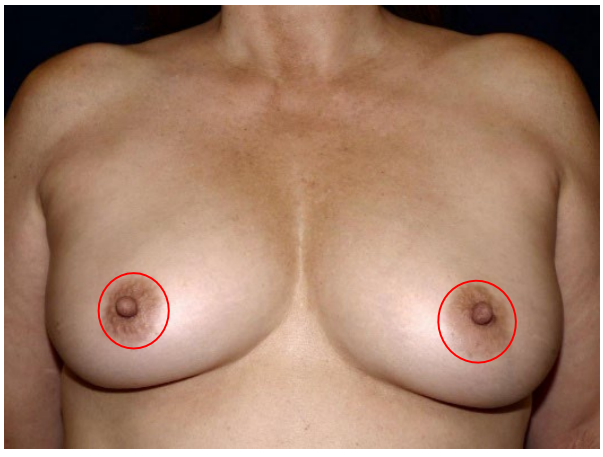
Nipple Sparing Mastectomy

- Nipple Sparing Mastectomy removes the breast tissue and saves the nipple and areola framework of the breast and some of the skin over the breast.
- Incisions are made below the nipples and areola or under the breast. One example is shown here.



Skin Sparing Mastectomy

- Skin Sparing Mastectomy removes the breast tissue, nipple, and areola and saves some skin over the breasts.
- Skin Sparing Mastectomy uses incisions around the nipples as seen here.



Breast Reconstruction After Mastectomy

Timing

Breast reconstruction may be done at the same time as the mastectomy or at a later time. Reconstruction is done by your plastic surgeon.

- Timing for reconstruction depends on the health of the tissues after mastectomy and if blood flow can support reconstruction.
- If there is any concern with the blood flow, reconstruction may be delayed and done at a later time.
- If reconstruction is not done at the time of the mastectomy, your surgeon will do a flat closure, and the chest will look flat.
- Reconstruction may be done at the same time as the mastectomy with tissue expanders, breast implants, or an abdominal flap.

Reconstruction

- A smooth silicone gel or saline implant or a tissue expander may be placed in the breast space right after the mastectomy.
- Acellular Dermal Matrix (ADM) may be used. ADM is a material that comes from human or animal skin. It prevents scar tissue that may develop around the implant. It also keeps the surgeon from having to cut any muscle.
- These surgeries take about 1 hour for each breast.

After Surgery

Depending on the surgery you have, you may stay in the hospital for 1 to 4 days.

If you had reconstruction with your own tissue, you may stay in the hospital for 1 to 4 days. Most patients stay 3 days. During this time your surgical team will keep watch over the blood flow to the flap.

Recovery After Reconstruction

- Overall healing time takes about 4 to 6 months to return to normal energy levels and day to day life.
- Any pain or discomfort often lasts about 2 to 4 weeks.
- Restrictions on activity include no heavy lifting for 4 to 6 weeks.

Side Effects and Risks

Side Effects or Risks with Nipple Sparing or Skin Sparing Mastectomy

For Nipple Sparing Mastectomy

- Nerves to the nipples are cut during surgery so normal nipple feeling is lost. Over time, (1 to 2 years) some sensation of pressure and temperature may return.
- There is risk for loss of part of or all of the nipple and areola.

For Skin Sparing Mastectomy

- The nipple is removed.
- Patients often have numbness (loss of feeling) to the skin or changes in feeling on the skin that does not go away. Some feeling may come back over time.

General Risks and Side Effects with Reconstruction

Some patients who have breast reconstruction may need a second surgery. Follow up surgeries take about 90 minutes to 3 hours. These are done as an outpatient with no overnight hospital stay.

Risks and problems that can happen include:

- **Breast asymmetry** (the breasts do not match or look the same). This is more often when only one breast is reconstructed. Surgery may be done to try to correct the asymmetry or change the opposite (other-side) breast. This can include fat grafting (liposuction to take patients own fat and put it back in as a filler).
- Surgery may be done to reconstruct nipples or change the implant size.
- **Thickened Scars**. Some patients get thick scars at the incision sites. This is often related to a patient's genetic makeup (genes passed on from birth) or other factors.
- **Wound healing issues.** Some patients have problems with healing at the incision or surgery area. This is often higher for people who are obese (very over weight) or smoke.
- Risk of large amounts of blood loss is **low.**
- Risk of serious infection is **low.** Other surgery may be needed if there is an infection.
- Patients who are healthy are at less risk for these issues and anesthesia issues.

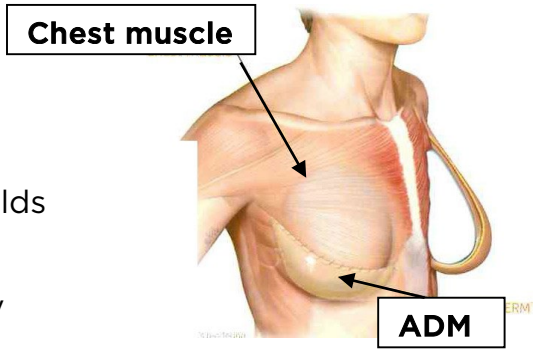
Acellular Dermal Matrix (ADM)

ADM may help reinforce breast tissue weakened by mastectomy.

Sub-Pectoral Breast Reconstruction

During reconstruction expanders or implants are placed **under the muscle** after the breast tissue has been removed. Reconstruction can be done in 1 or 2 stages.

A tissue matrix is used to reinforce thin tissue where breast tissue was removed along the lower part of the breast.



Possible problems without ADM

- Upward pulling of the muscle
- Other muscle manipulation during surgery
- Difficult single-stage reconstruction
- Lack of inframammary and lateral mammary folds

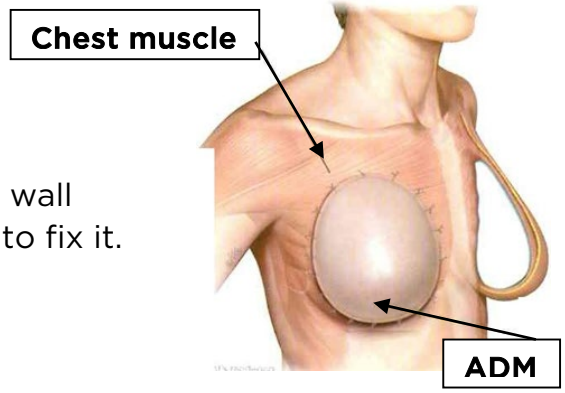
Possible Benefits of ADM

- Connects the muscle to the chest wall and may lessen pulling of the muscle
- Ends the need for more muscle manipulation
- Allows for a single-stage procedure
- Allows the surgeon to hold the matrix in place where needed. This helps support and define the inframammary and lateral mammary folds.

Pre-Pectoral Breast Reconstruction

During reconstruction expanders or implants are placed under the mastectomy skin **on top of the pectoralis muscle** after the breast tissue has been removed.

Reconstruction can be done in 1 or 2 stages. A tissue matrix is almost always used to reinforce thin tissue along the entire breast.



Possible Challenges or Problems

- The implant may be visible and surgery may be needed to fix it.
- A hollow space may be seen in the upper chest wall above the implant and surgery may be needed to fix it.

Possible Benefits:

- Less pain by removing muscle manipulation
- Muscle movements are not seen
- May shorten recovery time
- More natural shape and form

Pre-pectoral breast reconstruction has limits and may not be right for all patients. Talk with your surgeon for more information.

Tissue Expander and Implants

Tissue expansion is a way to slowly stretch skin and soft tissue.

A deflated balloon **(called a tissue expander)** is placed at the time of the mastectomy.

The tissue expander is put under the breast area to expand or stretch the extra skin or soft tissue.

- The expander will be filled with saline (salt and water solution) or air over time, allowing skin to stretch.
- The patient may have several return visits to the clinic every 1 to 2 weeks to have more saline added to the tissue expander.

Surgery

When the tissue has been expanded to the size wanted, surgery will be done to remove the expander and place the **smooth silicone gel or saline implant**.

- This procedure takes 1 to 3 hours.
- It is done as outpatient with no overnight hospital stay.
- Side effects from this are the same as those listed on page 5 in Side Effects of Breast Reconstruction.

Risks for Side Effects for Tissue Expander

See **page 5** for risks and side effects of breast reconstruction.

Risks and Side Effects for Implants

- **Capsular contracture**, this is when scar tissue forms around the implant. This can distort or change the shape of the breast and cause pain. This may be lessened by covering the implant with tissue that has blood supply.
- **Implant rupture (tear or burst).** To check for rupture, a baseline MRI is recommended (for silicone implants only) at 5 years after they have been inserted then every other year.
- **Implant visibility.** Implant or its edges may be seen under the skin. Folds in the breast implants (rippling) may be seen or can be felt to the touch.
- **Breast animation.** A muscle used to hold an implant in place may cause the breast to move (animate) when the muscle is activated. This can happen if pectoralis muscle or the latissimus dorsi muscle is used and the nerves are left intact.

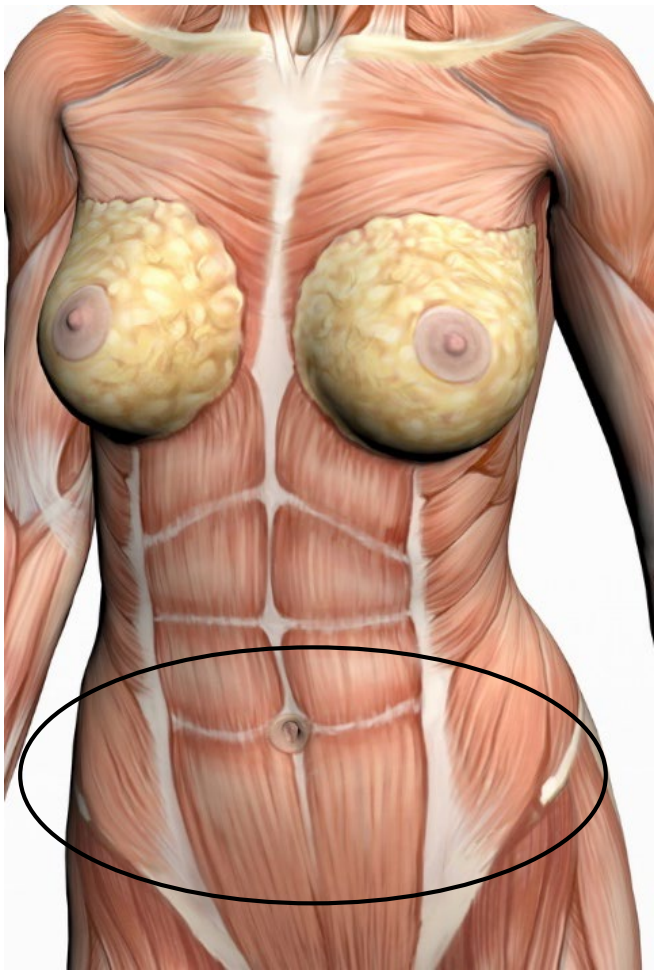
Abdominal Flap Surgery

This surgery takes tissue (skin, fat and possibly some muscle) from the abdominal area and transplants it in order to rebuild a breast.

There are different kinds of surgery depending on the tissue that is used.

- **TRAM** (named for the transverse rectus abdominis myocutaneous muscle) uses a flap of the skin, fat and all or part of the underlying muscle.
- **DIEP** (named for the deep inferior epigastric artery perforator) uses fat, skin, and blood vessels from the wall of the lower belly. No muscle is used for this surgery.
- **SIEA** (named for the superficial inferior epigastric artery blood vessel) uses fat, skin, and blood vessels from the wall of the lower belly.

  No muscle is used for this surgery. Fewer patients have this kind of surgery.



For the transplanted tissue to survive, the surgeon re-attaches blood vessels from the transplanted tissues to blood vessels in the chest.

- Surgery can take from 4 to 8 hours.
- Surgery for 2 breasts can take 10 to 14 hours.
- After surgery, most patients stay in the hospital for 3 days.
- It often takes 4 to 6 weeks for a full recovery to normal energy level and day to day life.

Abdominal Flap Surgery

Risks of Flap Loss

The risk of problems after flap surgery are highest for people who are obese (very over weight), smoke, had liposuction or a have a history of blood clots.

- The biggest surgery risk is total flap loss. This is when the blood flow to the transplanted tissue stops, we are not able to fix it and the tissues dies (necrosis).
- Only 1 to 2 percent of patients who have an abdominal flap have total loss.

Other Risks and Side Effects

Some patients who have abdominal flap surgery may need a second surgery.

See **pages 5 and 7** for risks and side effects of breast reconstruction.

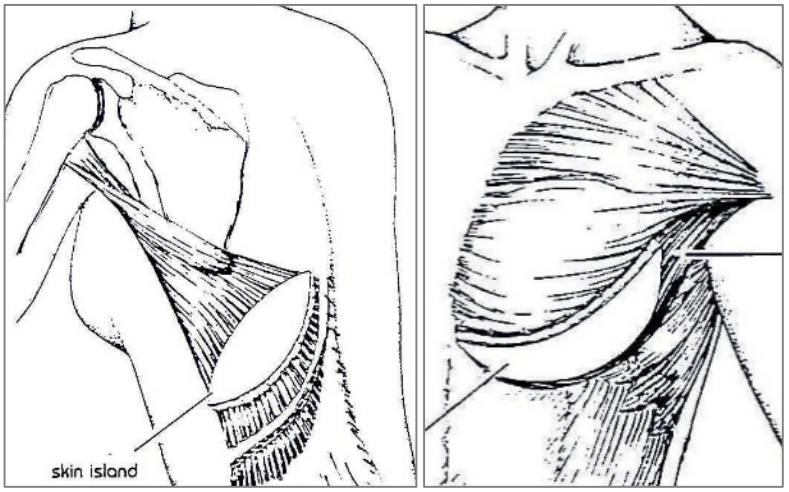
Other risks and problems that can happen include:

- **Abdominal Contour Deformity**. The shape of the abdomen may change after muscle and tissue have been removed. A 2nd surgery may be done to try to correct the problem.
- **Lower Abdominal Wall Laxity**. About 10 percent of patients have looseness or a bulge of the abdominal wall. People who smoke or are obese are at higher risk.
- **Ventral (Abdominal) Hernia** is rare. This is when part of the intestine or other tissue protrude through a weakness or gap in the abdominal wall.
- **Loss of umbilicus** (belly button) is rare. It is more likely in patients who smoke.
- In 1 or 2 percent of patients, **flap loss** can happen if there is a stop in blood flow that we are not able to fix.

Latissimus Dorsi Muscle Flap Surgery with Saline or Silicone Implant

Patients who have had abdominal surgery before may not be able to have an abdominal flap.

Some of the patients own tissue (skin, fat, and muscle) is taken from their back and put in front. The tissue stays connected to the body and blood supply during and after surgery.



Latissimus dorsi flap surgery may be used for breast reconstruction with or without a saline or silicone breast implant.

- If an implant is used, a temporary tissue expander (balloon) is often placed under the transferred tissue.
- The size and shape of the breast depends on the tissue expander or silicone Implant used.

Surgery takes 3 to 6 hours with a hospital stay for about 1 to 2 nights.

It will take about 6 to 8 weeks to recover and feel like you can go back to your normal day to day activities.

Side Effects

- Patients will have an oblique (slanted) scar within the bra line on the back where the tissue is taken.
- Because the muscle is moved from the back, patients may notice a change in the way their shoulders look and feel or their back not being even. Most people do not have any loss of motion.
- If the nerve to the muscle is not cut, some actions cause the muscle to move the breast (breast animation).

Other Risks and Side Effects

See **pages 5 and 7** for risks and side effects of breast reconstruction. Other risks and side effects include:

- **Donor Site (Back) Seroma**. A fluid in the space may form where the muscle was.
- **Total Flap Loss** (less than 2 percent). More likely if blood vessels that feed the area are damaged during lymph node removal or surgery done in the past.

Breast Reconstruction with Goldilocks Procedure

Patients with very large breasts may have a breast reconstruction using a Goldilocks procedure.

This surgery rebuilds a breast with tissue left over after the mastectomy.

This is best for women with very large breasts from a large amount of skin.

Standard breast reduction patterns are used to remove breast tissue and nipple but save as much of the breast skin as possible.

Skin is folded in on itself and an implant can be put in to add volume.

- Recovery time is 3 to 6 weeks with some pain
- No heavy lifting for 6 weeks
- Mastectomy surgery takes 1 to 2 hours for each breast.
- Reconstruction takes about 2 hours for each breast
- Healing time is 4 to 6 months.
- Follow up surgeries take about 1 ½ to 3 hours and are done as outpatient with no overnight hospital stay.

Side Effects

- New scars on the breasts
- Nipples are removed as part of mastectomy
- Breasts have a different shape, likely smaller volume, rounder and perkier

Other Risks and Side Effects

See **pages 5 and 7** for risks and side effects of breast reconstruction.

Follow up surgery for may include:

- Fat grafting (liposuction to take patients own fat and putting it back in as a filler)
- Implant placement
- Tissue rearrangement (rearrange any left-over excess skin)
- Nipple reconstruction
- Modifying (making changes) to the opposite breast

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