Breast Restoration Surgery
After a mastectomy

This handout explains the most common procedures that are used at University of Washington Medical Center (UWMC) to restore a breast after mastectomy.

Doctors at UWMC’s Center for Reconstructive Surgery understand how important your body is to you. Our mission is to help your body regain as much form and function as possible.

Restoration surgery is done in the Surgery Pavilion at UWMC.
About Breast Restoration

Many women report a sense of wholeness and well-being after breast restoration (also called breast reconstruction). They also say that they have more confidence and a better quality of life.

If your cancer was found early, breast restoration may begin during your mastectomy surgery. You can wake up from surgery with a breast mound already in place. This is called immediate reconstruction.

Sometimes reconstruction cannot be done right away. This is called delayed reconstruction.

Immediate reconstruction may not be an option if:

- Your breast cancer treatment includes radiation or chemotherapy.
- Other conditions are affecting your health. Three of these are smoking, high blood pressure, and obesity.

Your surgeons will help develop a breast restoration plan that meets your needs. Talk with your provider about which option is right for you.

Pre-Surgery Timeline

Reconstruction Method

Breast restoration involves 3 or 4 steps:

Step 1: Creating a Breast Mound

The first step in breast reconstruction is an operation to create a breast mound. Your surgeon may use an implant, your own tissues from another location, or a combination of both.

Sometimes, an adjustable kind of implant called a tissue expander is placed during mastectomy. This implant will help preserve and prepare your skin for reconstruction later.

During your surgery, you may have:

- Tissue expander, followed by an implant later (see pages 3 to 6)
- TRAM flap (see page 5, in “Breast Reconstruction with DIEP Flap”)
- DIEP flap (see pages 5 to 8)
- Latissimus dorsi flap (see pages 8 to 9)
Step 2: Symmetry

Surgery may be done to improve breast balance or symmetry. Most times, these are day surgery (outpatient) procedures, and you will not spend the night in the hospital.

For symmetry, you may need *fat grafting* (also called a *fat transfer*), scar revision, or moving an implant to a different position.

For the natural breast, you may benefit from balancing options like breast reduction, augmentation, or lift.

Step 3: Nipple Reconstruction

A nipple can be reconstructed after the breast mound has “settled.” This usually happens about 3 months after the 1st or 2nd surgery.

In nipple reconstruction, skin from the new breast mound is raised and folded to create a nipple. This procedure is usually done in the clinic using local anesthesia.

In some cases, this step can also be done during step 2 when you are under general anesthesia.

Step 4: Nipple Tattooing

The last step adds color around your new nipple(s) to create a new areola. This is done in the clinic about 8 weeks after step 3. Some women will need color touch-ups a few months after the tattoo is done.

Breast Reconstruction with Tissue Expander and Implants

This is the most common method for breast reconstruction. Many times, we cannot place a permanent implant right away because there may not be enough skin to cover it. So, an adjustable implant, called a tissue expander, is placed either at the time of mastectomy or at a later time.

The expander can also be placed at a later time, from several weeks to years after the mastectomy. This is usually done as a day surgery.

The expansion process starts about 3 weeks after the expander is placed. You will come for clinic visits about every 1 to 3 weeks. At these visits, saline will be added through the expander’s valve. Over time, the pocket of skin and muscle will stretch to create your final breast size.

When the expansion process is complete, the expander is taken out and replaced by a permanent implant during a day surgery. The implant is softer and more natural in feel and shape than the expander. Sometimes your cancer treatment may delay this step.

Before your final implant is placed, we will take time during a clinic visit to talk with you about the risks and benefits of each implant type.
A tissue expander stretches the skin and muscle to create a pocket for the permanent breast implant.

**Timeline for Reconstruction with Implants**

<table>
<thead>
<tr>
<th>Step</th>
<th>Frequency and Duration</th>
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<tbody>
<tr>
<td>Day surgery to place tissue expander</td>
<td>(1 to 2 hours)</td>
</tr>
<tr>
<td>Visits 2 to 6 weeks after surgery (No heavy lifting for 6 weeks)</td>
<td></td>
</tr>
<tr>
<td>Tissue expander fills every 1 to 3 weeks (Starting 3 to 4 weeks after surgery)</td>
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<tr>
<td>Surgery to exchange expander for implant (1 to 2 hours)</td>
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**Benefits of Implant Surgery**

**Same-Day Surgeries**

Breast reconstruction using implants usually involves 2 surgeries. In the 1st surgery, your doctor will place the tissue expander. In the 2nd surgery, your doctor will remove the expander and place your permanent implant. Most times, you do not need to stay overnight in the hospital after these surgeries.

The recovery time for these implant procedures is about 3 to 4 weeks. This is shorter than the recovery time after the other options.

**No Donor-Site Scars**

Incisions are made along the mastectomy scars. This means no new scars are created.

**Drawbacks of Implant Surgery**

**Infection**

There is a possibility that you will get an infection. This usually occurs within the first few months after surgery. If you get an infection, you will need antibiotics you take by mouth or by IV.
If an infection comes back after it is treated, your expander or implant may need to be removed for several months before a new one can be placed.

**Leaks**

Implants can leak. If your implants leak, you will need another surgery to replace the damaged implant.

**Capsular Contracture**

One of the most common problems after implant surgery is that the capsule around the implant can get hard and tight. This is called *capsular contracture*. It is more likely to occur if you have had radiation treatment. If this happens, you will likely need another operation to replace the implant.

If you have had radiation treatment, we usually advise having tissue reconstruction instead of reconstruction using an implant.

**Breast Reconstruction with DIEP Flap**

For years, plastic surgeons have used a *transverse rectus abdominis myocutaneous* (TRAM) flap for reconstructing breasts. In TRAM flap surgery, the doctor uses the rectus muscle and fat from the lower abdomen to reconstruct the breast.

TRAM flap surgery can weaken your abdomen and increase your risk of getting a hernia. Because of these risks, UWMC rarely uses a TRAM flap.

Instead, doctors at UWMC use the *deep inferior epigastric perforator* (DIEP) flap method. This surgery transfers only skin, fat, and blood vessels. This saves the rectus muscle and lowers the risk of hernia.

For this surgery, an imaging procedure called a *computed tomography* (CT) scan is done to find DIEP blood vessels. Then microsurgery is done to connect these tiny arteries and veins to tiny blood vessels in the chest. These arteries and veins are only 1 to 2 millimeters wide.

The DIEP surgery is more complex than other types of reconstruction. The operation takes about 6 to 12 hours. If you have this surgery, you will need to stay in the hospital for about 3 to 5 days.

DIEP surgery is a natural breast reconstruction. It uses your own tissues, and you do not need implants.

**Timeline for DIEP Surgery**

- **DIEP surgery** (6 to 12 hours in surgery and 3 to 5 days in the hospital)
- **Visits 2 to 6 weeks after surgery** (No heavy lifting for 6 weeks)
- **Plan surgeries to finish reconstruction**
How DIEP Surgery Is Done

The DIEP flap is carefully removed from the lower abdomen, transferred to the breast area, and reshaped. Doctors use a microscope to help match and connect blood vessels in the flap to blood vessels in the breast area. This creates the new breast mound.

When this surgery is done, your abdomen is also reshaped. This is like the surgery that is done for a “tummy tuck.”

Tiny branches of the deep inferior epigastric artery feed the skin and underlying tissue of the DIEP flap.

The DIEP flap is carefully removed and moved to the mastectomy site.
Benefits of DIEP Surgery

Quicker Recovery than TRAM flap
The DIEP flap preserves the muscles in your abdomen that help you do daily activities like lifting, bending, and getting out of bed. This allows you to recover from the surgery more quickly than having a TRAM flap. DIEP reconstruction is the preferred method for women who have had radiation to the chest.

Long-Lasting Results
Because DIEP breast reconstruction uses your own tissues, you do not need to worry about implant leakage and capsular contracture.

Less Pain
Because the DIEP flap preserves the rectus muscle, there is usually less pain after surgery than with a TRAM flap.

Less Hernia Risk
There is a small risk of abdominal hernia with the DIEP flap (0.5%, or 1 out of 200 people). This is much lower than the risk of hernia from a TRAM flap (4% to 9%, or 4 to 9 people out of 100).

Drawbacks of DIEP Surgery

Major Surgery
DIEP surgery to reconstruct 1 breast (unilateral DIEP) takes about 6 to 8 hours. It can take up to 12 hours to reconstruct both breasts (bilateral DIEP).

Donor Site Scar
If you have DIEP surgery, you will have scars on your lower abdomen and around your navel (belly button) for the rest of your life. These are the “donor sites” where tissue is taken for the DIEP flap.

Risk of Blood Clots
DIEP surgery uses microsurgery (surgery using a microscope) to connect tiny blood vessels. There is a low risk that the blood vessels may develop a clot and become blocked. If this happens, you will need surgery right away. Your doctors will remove the blood clot and restore circulation to the flap.

Most times, blood clots form in the first 48 hours after surgery. If they form, there is a 2% chance that the flap will fail. If this happens, your doctors will need to use another method of reconstruction.
Fat Necrosis

Some of the fat that is moved to your breast may not survive. This can cause small, hard lumps to form. These are usually absorbed into your body, but they can also be removed during Step 2 of reconstruction.

Breast Reconstruction with Latissimus Dorsi Flap

This type of surgery is an option for thin patients with tight mastectomy site tissues or those who have had chest wall radiation. A new breast mound is created by using the latissimus dorsi (upper back) muscle and overlying fat and skin to reconstruct the breast.

The latissimus dorsi flap does not usually provide enough volume for a full breast reconstruction. Because of this, it is most often used with a tissue expander and then an implant later. This helps the new breast look more natural.

After latissimus dorsi flap surgery, you will stay at least 1 night and up to 3 nights in the hospital. You will have a scar on your back, and your arm may be slightly weaker.

If this is the type of surgery you will have, we will talk with you in more detail at your consult visit about incisions, implants, and care issues after surgery.

Latissimus dorsi flap reconstruction

Timeline for Latissimus Flap Reconstruction

<table>
<thead>
<tr>
<th>Surgery (about 3 hours) and stay in the hospital (1 to 3 days)</th>
<th>Visits 2 to 6 weeks after surgery (No heavy lifting for 6 weeks)</th>
<th>Tissue expander fills every 1 to 3 weeks (Starting 4 to 8 weeks after surgery)</th>
<th>Plan surgeries to complete reconstruction</th>
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Benefits of Latissimus Dorsi Flap Surgery

Aesthetics
Latissimus dorsi flap surgery results in a smoother breast than having an implant without the flap. The “rippling effect” of implants will be hidden beneath your own tissues.

Durable
This method can add more skin in areas where skin is tight after a mastectomy. It can also replace radiated chest wall skin that may be too firm for reconstruction with an implant.

Less Capsular Contracture
Since healthy tissue is moved from your back, it is less likely that you will develop hardening of the capsule around the implant.

Drawbacks of Latissimus Dorsi Flap Surgery

Implant Surgery Is Also Needed
If there is not enough tissue from the latissimus dorsi flap to fill in the breast and give you the results you want, you will likely also need a small implant.

This means you may have some of the complications linked with implant surgery, including infection, contracture and leakage. (See “Drawbacks of Implant Surgery” on pages 4 and 5.)

Surgery Time
This surgery takes about 3 hours.

Recovery Time
Your hospital stay will be about 1 to 3 days. If you work, you will be off work for several weeks. You will also need to avoid heavy lifting for 6 weeks after surgery.

Scars and Loss of Back Muscle
Since muscle is moved from your back, you will have a scar and your arm on the side where tissue was taken may be weaker. Also, if you have lymphedema (swelling caused by blockages in your lymph system), it may get worse.

Other Methods of Breast Reconstruction
If you have a unique body type or health concerns, you may need to consider other methods of breast reconstruction. Each method has its own benefits and drawbacks. Your surgeon will talk with you about these benefits and risks.
Some of these other types of surgery are:

- **TUG (Transverse Upper Gracilis) Flap**: Skin, fat, muscle, and blood vessels from the upper inner thigh are moved to the chest wall. They are attached using microsurgery.

- **I-GAP (Inferior Gluteal Artery Perforator) Flap**: This surgery is often called the “in-the-crease” I-GAP flap because the scar is hidden in the crease between your buttock and thigh. Blood vessels, excess skin, and fat are taken from the lower buttock and reconnected to the new breast site using microsurgery.

- **SGAP (Superior Gluteal Artery Perforator) Flap**: This method is similar to the I-GAP method. It also uses skin, fat, and blood vessels, but they are taken from the upper buttock. This leaves a scar at or near the upper panty line.

- **Autologous Fat Grafting for Breast Reconstruction**: This reconstruction method uses fat from other places on your body to create a breast mound.

**Surgery Risks**

Some of the risks related to surgery include:

- Problems from anesthesia
- Bleeding
- Blood clots, which can lead to stroke or heart failure
- Need for transfusion
- Infection
- Complications from wound healing
- Flap loss (due to blood-flow problems)
- Risks from implants (such as leakage or infection)
- Need for another surgery if there is a problem

Your risk for having complications after surgery is much higher if you:

- Smoke
- Are very overweight
- Have diabetes that is not well-controlled

If you have any of these health risk factors, we may ask you to delay having surgery until these issues are resolved.
Overall Timeline for Breast Reconstruction

First consult to step 1 surgery (2 to 6 weeks) ➔ Step 1 surgery to step 2 surgery (3 to 4 months) ➔ Step 2 surgery to step 3 surgery (3 to 4 months) ➔ Step 3 surgery to step 4 (8 to 12 weeks)

Questions You May Have

Q: Can I talk with some other patients who have gone through the kind of reconstruction I am thinking about?
A: Yes. If you want to talk with other patients, please tell your doctor.

Q: When can I have my surgery?
A: A patient care coordinator (PCC) will contact you within 3 days after your consult visit to talk with you about dates for your surgery. Your dates will depend on your schedule, the surgeon’s schedule, and if you have any health risks to consider.

Q: How much time will I need to take off work?
A: Your recovery time at home will vary. It depends on the type of surgery you have, how quickly you heal, and whether you have any complications.

Q: What should I bring to my appointment?
A: We suggest that you bring a list of questions, a notepad and pen, and a support person to all of your visits. It can be hard to remember everything you and your surgeon talk about. Writing down information and having a support person there will help.

Q: Which websites provide reliable information?
A: Try these 4 websites:
   - www.diepflap.com
   - www.PlasticSurgery.org
   - www.LoveYourLook.com
   - www.BreastReconstructionMatters.com

Q: How long until my reconstruction is complete?
A: It can take 8 months to a little over a year to finish all the steps of reconstruction. It all depends on your rate of healing, your cancer treatments, and any complications.
Directions to UWMC

From Interstate 5 (I-5):
- Take exit #168B (Bellevue/Kirkland) onto State Route 520.
- Take the first exit off SR 520 to Montlake Blvd. N.E.
- Turn left onto Montlake Blvd. and go north across the bridge.
- At the traffic light, turn left onto N.E. Pacific Street.

From East via State Route 520 and the Evergreen Point Bridge (toll bridge):
- Take Montlake Blvd. N.E. exit.
- Go north on Montlake Blvd., across the bridge.
- At the traffic light, turn left onto N.E. Pacific Street. The hospital is on your left.

Parking

Patients and visitors may park in the underground Triangle Garage and the Surgery Pavilion Garage. Valet parking (at no extra charge) is available on the drive that goes to the main entrance of the hospital.

For more directions and parking information, visit http://uwmedicine.washington.edu/patient-care/locations.

Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns.

Center for Reconstructive Surgery Clinic:
206-598-4477
Weekdays, 8 a.m. to 5 p.m.

Patients and visitors may park in the Triangle Parking Garage or Surgery Pavilion Parking Garage.

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