

# Breast Reconstruction

## Information for Patients

### Introduction

Breast reconstruction used to be an after-thought for women (and sometimes even men) who undergo surgery for cancer of the breast. Nowadays, in many cases, the option for immediate reconstruction (at the time of breast removal, whether total or partial) is available as a safe alternative to a later, second operation to perform reconstruction. The advantage of immediate reconstruction is both psychological and practical. While a reconstructed breast is never exactly identical to the breast removed, it fulfills the objective of replacing the missing anatomy. Immediate reconstruction saves time and cost by performing both the breast removal and reconstruction during the same operation.

Delayed breast reconstruction (on a date after a mastectomy has been performed and the wound has healed) provides the same options to patients as an immediate reconstruction. Sometimes reconstruction is delayed because of the possible need for radiation, which can affect the ability to heal surgical wounds.

### What options are available to reconstruct a breast?

The options available to you depend on several factors: your health, your anatomy (and history of prior surgery and scars), whether you have had or will have radiation therapy, whether you are having one or both breasts reconstructed, and of course, the preferences of you and your surgeon. The types of breast reconstruction can be divided into three categories: (1) autologous, (2) implant, (3) autologous plus implant. Autologous means that living tissue “flaps” from your body is used. This includes skin, fat and sometimes muscle to recreate the breast. Implants are devices placed under your tissues to provide volume and can be used alone or in conjunction with your own tissues to recreate a breast.

### What “flaps” are available and how do they differ?

Flaps are islands of tissue (skin, fat and usually muscle) that can be moved from area of your body to the chest wall to create a breast. These can come from different areas, and the options available depend on whether the surgeon intends to reconnect the blood supply or leave the flap attached to its existing blood supply. Flaps need to have blood circulation to keep them alive.

Flaps left connected to their blood supply are commonly used and referred to as “pedicled” flaps. Pedicled flaps include the TRAM<sup>1</sup> flap (from the lower abdomen) and the latissimus flap from the back, just below the shoulder blade. When this tissue is moved to create the breast, a scar will remain at the site from which it is moved. This is called the “donor site.”

The other type of flap, where the blood supply needs to be reconnected, is called a “free” flap. Free flaps are more numerous, in terms of options, because they come from many different parts of the body. A high level of technical expertise and training is required to perform these flaps. Some of these flaps include the TRAM (like the one mentioned

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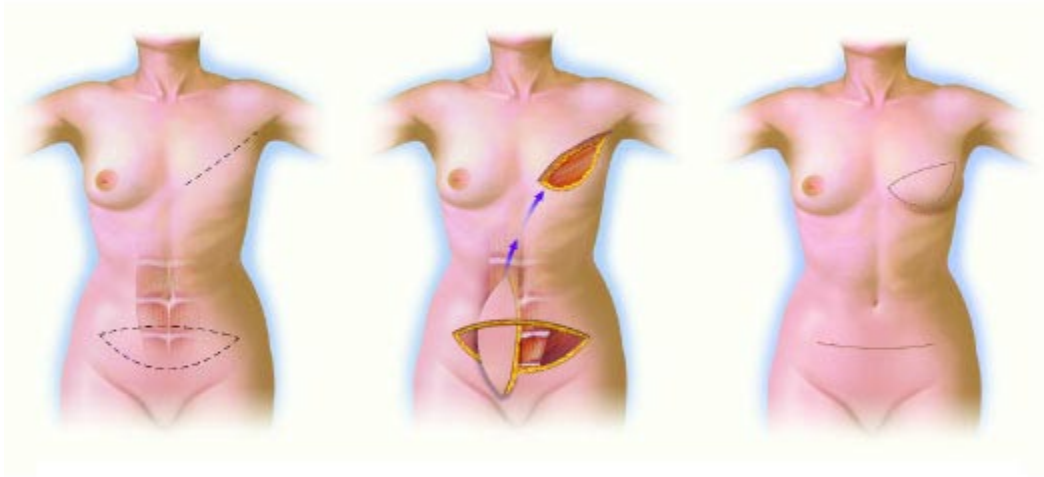
<sup>1</sup> TRAM = transverse rectus abdominus myocutaneous flap

above, including some minor variations) and the superior gluteal artery flap from the buttocks. Free flaps are much less widely available than other types of reconstruction due to the time, technical and personnel requirements needed to perform these.

### **What is the TRAM flap?**

The pedicled TRAM flap lies over the rectus abdominus “six-pack” muscle of the abdomen. The muscle must be partially detached in order to move the overlying tissue to the chest. This requires a patch to be placed over the muscle’s donor site to help prevent hernias. The patch used may be either an artificial material (mesh, such as Polypropylene) or human-derived tissue, such as Alloderm (an acellular dermal matrix obtained from cadaver skin, chemically treated to make it safe for use in surgery). The lower abdominal skin is closed and a scar is left across the lower abdomen. The umbilicus (belly-button) is moved to its appropriate location on the abdominal wall.

## **The TRAM Flap (Pedicule or Free)**



**Step 1: Mastectomy is performed and the donor site is marked.**

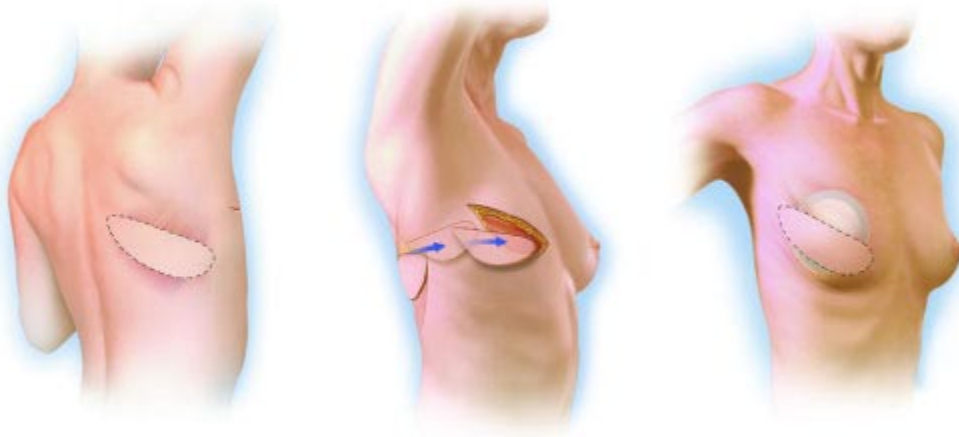
**Step 2: The flap of rectus muscle and tissue is tunneled to the breast.**

**Step 3: Final result.**

### **What is the latissimus flap?**

This flap lies over the latissimus dorsi muscle, the biggest muscle in your back. Its blood supply is actually up in your armpit, so the tissue can be moved to the front of the chest leaving the muscle (and blood vessels) attached to their origin. This tissue is less bulky than the TRAM flap, but helps provide some extra coverage when implants are used, or can fully recreate a small breast, in some cases.

## Latissimus Dorsi Flap With or Without Breast Implants



Step 1: A skin flap and muscle are taken from the donor site in the back.

Step 2: The tissue is tunneled to the mastectomy and used to create a breast mound.

Step 3: An implant can also be used to create the breast mound.

### **What types of implants are available and are they safe?**

Breast Implants come in two types: silicone (gel) filled and saline filled. When used for reconstruction, an “expander” is typically used first. This is a temporary implant that starts out as an empty balloon (shaped roughly like a breast) that can be filled with saline (salt water) over time up to a certain size. As it is expanded, the overlying skin and tissues stretch, in a sense, making “new skin” where it is needed. The expander can be filled in a doctor’s office using a special magnet to locate the “port” and a small needle introduced through the skin to inject the saline. It can take anywhere from one month to several months to get the expander to the right size. At a second operation, the expander is removed and a “permanent” implant is placed (either silicone or saline-filled).

While no implant lasts forever (eventually they can break), they have not been shown to cause health problems, even when they do fail. This conclusion is based upon extensive clinical data collected since silicone implants were first used several decades ago. The newer silicone (gel) implants maintain their shape, even when ruptured, and so special studies (such as MRI) are needed to detect a suspected failure. The manufacturer of the implants (and the FDA) recommend periodic screening tests for women who have silicone implants. They also recommend that the implants be removed (and replaced if the patient desires) if they break.

### **Why use implants if autologous tissue is available?**

There are pros and cons to each option, and much of it depends on preference.

Implants are quicker and simpler to place, but are more likely to require additional surgery in the future. Reasons for reoperation include infection, implant breakage, implant migration or scarring (called “capsular contracture”) around the implant. The amount of skin that can be “created” by expansion is also less than can be brought with a flap, therefore implants generally make smaller breasts. Implant surgery usually requires at least two operations and sometimes a third for revisions and nipple reconstruction (see next section). A history of radiation to the chest wall poses higher risks when implants are used alone, according to several studies. This can lead to wound-healing problems and implant exposure. If the implant is covered with a flap (usually the latissimus flap) rather than just skin, the risks caused by radiation can be significantly reduced (this is the combined autologous-implant type reconstruction mentioned on the first page).

Autologous (flap) surgery is technically more difficult and time-consuming. For people with health problems, a longer operation may be more risky. When both breasts are being reconstructed, flap surgery is even more technically demanding and available “donor” tissue may not be adequate to create two breasts. There is also the possibility of “donor site” complications: hernias, fluid collections and unsightly scars. Prior surgery on the abdomen or other donor site(s) may preclude some options.

For the reasons stated above, no one option is available for everyone.

#### **After breast reconstruction, will I need more operations?**

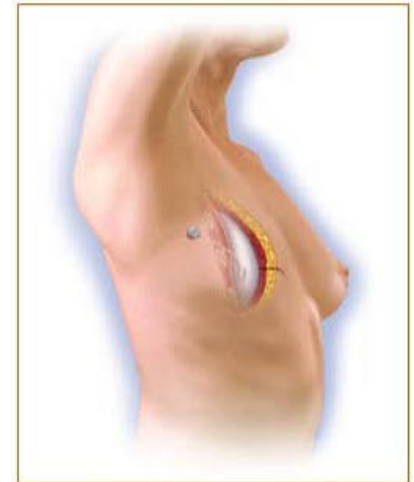
That depends partially on your goals, but most likely, yes.

If you have a tissue expander (implant), the expander will eventually be removed and replaced with a more permanent implant. Even “permanent” breast implants sometimes need to be replaced due to breakage or scarring.

For any sort of breast reconstruction, the goal is usually to make the breasts look similar to each other in shape and size. They will almost never be identical. To help “symmetrize” the breasts, there are other procedures that may be considered. These include surgery to the opposite breast, revision of the recreated breast and nipple reconstruction. Operations to the opposite breast include making it smaller (breast reduction), or giving it a lift (mastopexy) by tightening the skin envelope. Sometimes implants are also placed under the opposite breast to achieve the desired result. Because the breast can change shape for a few months after it is reconstructed, most plastic surgeons wait several months before performing these secondary procedures.

#### **What sort of complications can occur with breast reconstruction?**

As with any surgery, infection, bleeding and wound healing problems are at the top of the list. If an implant gets infected or exposed, it usually needs to be removed



*Tissue expander with injection dome is surgically placed under the chest tissue*



*Tissue expander is surgically replaced with breast implant*



*Final result with implant*

until the infection resolves. A new implant can usually then be placed. Damaged skin will sometimes require debridement (minor surgery to remove areas that are infected or will not heal). Occasionally, despite the use of drains, fluid collections may accumulate under the skin and need to be drained to prevent future problems.

Later complications include capsular contracture (scar tissue causing distortion of implants), implant breakage, fat necrosis (some of the fat in the reconstructed breast turning into scar tissue making it feel more firm) and hernias or bulges in the abdomen (when a TRAM flap is used).

Less common complications include reactions to anesthesia and blood clots forming in the legs during surgery. Preventative measures used during and after surgery help reduce the risk of blood clots significantly.

### **Anything else I should know about?**

Bras, if worn during the first two months after surgery, should not have underwires in them. Comfortable-fitting sports bras are popular for this use, as they provide gentle support without crushing the healing tissues.

Drains are thin plastic tubes that come out through the skin and empty into a sealed bulb or container, commonly used after breast reconstruction to reduce the accumulation of fluid which can lead to wound problems, and possibly infection. They usually remain in place for less than a week and can be managed at home.

Recovery time varies with the complexity and scope of reconstruction. You will be instructed to avoid strenuous exercise and heavy lifting (more than 5 pounds) for up to 6 weeks. You will be able to shower soon after surgery, usually within 2-3 days.

Dr. Ray will discuss with you the options that are best for your situation, anatomy and health. Do not be afraid to ask questions and consider each of the options carefully. The goal of Southpoint Plastic Surgery is to have happy and healthy patients!