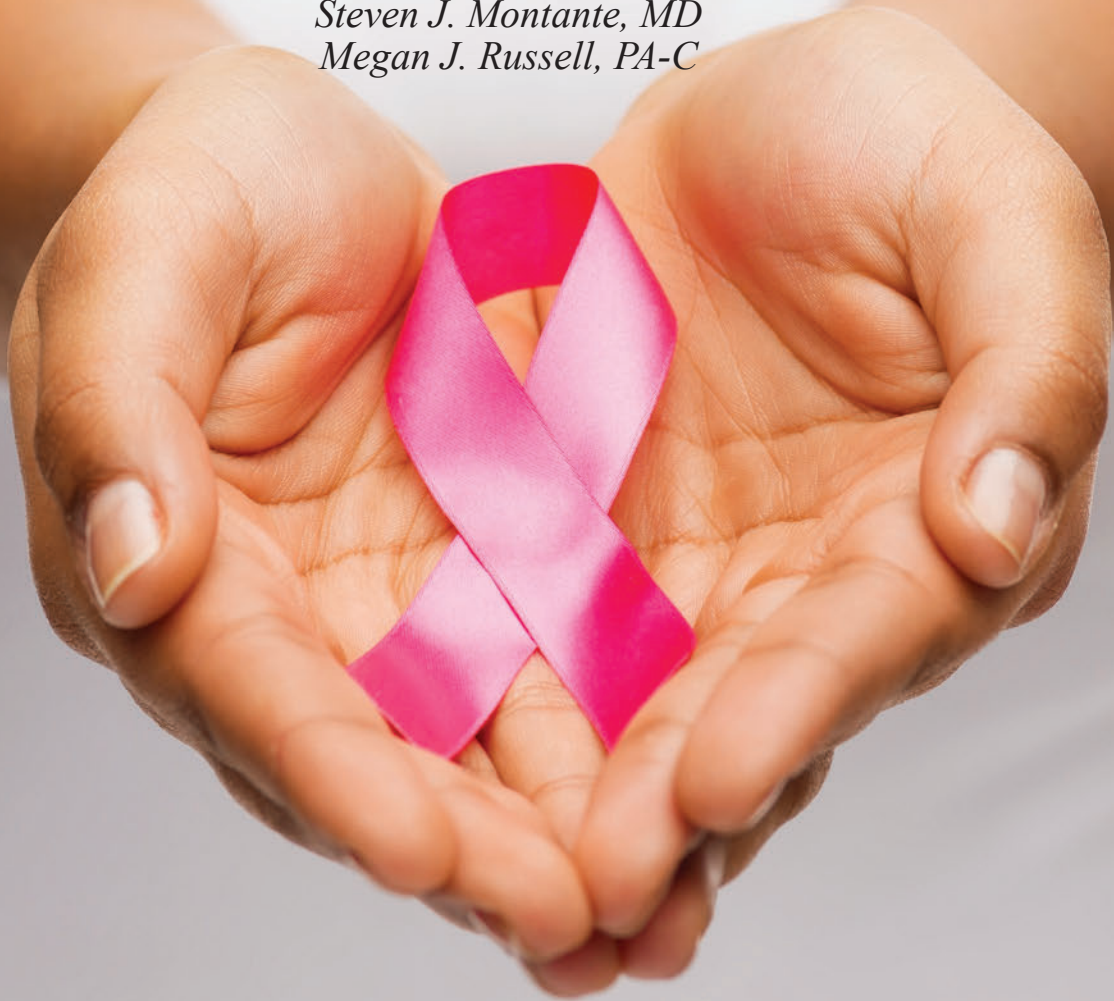


# **RICHMOND** AESTHETIC SURGERY

*Neil J. Zimmel, MD, FACS*  
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*Megan J. Russell, PA-C*



Your Guide To  
**BREAST RECONSTRUCTION**



## Introduction

The diagnosis of breast cancer begins a journey of making many informed decisions which deeply affect your body and mind. Using knowledge as a guide for your journey allows you to become an advocate for your own well-being. As health care providers, Dr. Zimmel and Dr. Montante present patients with the tools and information to build their knowledge as they embark on their journey. This brochure serves as an instrument of knowledge for past, current, and future breast cancer patients of Richmond Aesthetic Surgery as they make informed decisions about breast reconstruction. Remember, Dr. Montante and Dr. Zimmel will be there throughout this journey to guide, lead, or assist you with whatever you may need to succeed.

*Dr. Zimmel and Dr. Montante will be there through this journey to guide, lead or assist you with whatever you may need to succeed.*



Neil J. Zimmel, MD, FACS



Steven J. Montante, MD

*The goal of breast reconstruction is to restore a natural, realistic breast with adequate volume and shape and an aesthetically pleasing contour*

Dr. Zimmel &  
Dr. Montante

Reconstruction of a breast that has been removed due to cancer or other disease is one of the most rewarding surgical procedures that Dr. Zimmel and Dr. Montante perform. Recent advances in surgical techniques have made it possible for Dr. Zimmel and Dr. Montante to create a breast close in form and appearance to a natural breast. Frequently, reconstruction is possible immediately following breast removal (mastectomy), so patients awake from surgery with a reconstructed breast in place, and are spared the experience of living without a breast.

There are many options to consider as you and Dr. Zimmel and Dr. Montante explore what treatment course is best for you.

This information will give you a basic understanding of breast reconstruction—when it is possible, how and when it is performed, and what the journey entails. It will explain the pre surgical plan, the surgical operation, and the post surgical course, as well as results you can expect. However, it cannot answer all of your questions since a lot depends on your individual circumstances. Please be sure to ask Dr. Zimmel or Dr. Montante if there is anything you do not understand about the procedures or what you can expect.

From the entire team at Richmond Aesthetic Surgery, we wish you the best of luck and wish you good health and well-being during your journey.

Sincerely,

Neil J. Zimmel, MD, FACS

Steven J. Montante, MD

Megan J. Russell, PA-C

# FREQUENTLY ASKED QUESTIONS



*“When this happens to you, you do not want to wait weeks for questions. I was very pleased that I could get an appointment with Richmond Aesthetic Surgery within days”*

~ Bethann

## Q. *What is breast reconstruction?*

A. Breast reconstruction is the process of restoring all or part of a breast which has been surgically removed due to cancer or disease. Our surgeons may recreate the new breast using an implant or tissue taken from another part of your body. The goal of reconstruction is to have natural, soft, symmetric breasts in clothing.

## Q. *Can I have breast reconstruction?*

A. Any patient who undergoes removal of a part of the breast (lumpectomy or breast conservation therapy), the whole breast (mastectomy), or preventive removal of the breast (prophylactic mastectomy) is eligible for breast reconstruction. New medical devices and plastic surgery techniques allow Dr. Zimmel and Dr. Montante to recreate a breast at the time of mastectomy or sometime later, and to correct contour abnormalities of the breasts after breast conservation treatment. The best candidates, however, are women who are in good health, do not smoke, and whose cancer, as far as can be determined, will be or has been removed by surgery.

## Q. *When can I have breast reconstruction?*

A. Breast reconstruction can be done at the time of your mastectomy (immediate) or weeks, months, or even years later (delayed). The decision to have immediate or delayed reconstruction depends on many factors that Dr. Zimmel and Dr. Montante take into consideration:

- Breast cancer stage
- Breast cancer tumor type
- Additional therapies (radiation or chemotherapy) to treat the cancer
- Other medical conditions (such as obesity, heart and lung conditions, smoking)
- Your personal preference and lifestyle

Many choose to have delayed reconstruction based on these factors. Some women are not comfortable weighing all of their options during a time of extreme emotional stress when coping with the diagnosis of breast cancer. Some patients may be advised to wait because of other health conditions. Also, those with metastatic or inflammatory breast cancers may be advised to delay breast reconstruction. Dr. Zimmel and Dr. Montante will discuss the advantages and disadvantages with you during your initial visit.

## Q. *What are my reconstructive options if I have a mastectomy?*

- A. There are three general options for breast reconstruction after mastectomy:
- Breast reconstructions using implants
  - Breast reconstructions using your own tissue (autologous tissue reconstruction)
  - Breast reconstruction using both implants and your own tissue

During your appointment, Dr. Montante or Dr. Zimmel will discuss the benefits and risks for each option. This will include the advantages, limitations, disadvantages, and complications of each procedure individualized to your specific scenario. You will also talk about what to expect after reconstruction is performed. It is important to remember that breast reconstruction is a process requiring multiple surgeries to achieve a final result. Together, you and Dr. Zimmel and Dr. Montante will choose the best option for you based on:

- Body shape
- Past surgeries
- Current health
- Breast cancer treatments
- Personal preferences

## Q. *How long will it take to finish my breast reconstruction?*

A. The length of time can vary depending on the number of surgeries you require and the need for other breast cancer treatments, such as radiation or chemotherapy. The reconstructive process generally takes 6 months to one year regardless of the type of reconstruction you choose, assuming no further cancer treatment is necessary. Some patients will require revisional surgeries to balance the reconstructive breast with the natural breast, and recreate a nipple. The timeline to completion will vary for each patient, but a general guide is:

- Step one: mastectomy (with tissue expanders or a reconstruction immediately with a permanent implant or autologous tissue)
- Wait about 3 months for healing or 6-12 months if you need chemotherapy or radiation
- Step two: if you had tissue expanders at the time of your mastectomy this will be when your surgeon will recreate your breast (permanent implant or autologous tissue transfer)
- Wait 3 months for healing
- Step three: surgery to make changes to the size and shape of your reconstructed or natural breasts as needed and perform nipple reconstruction
- Wait 2-3 months for healing
- Step four: nipple and areola tattooing in the office

**Q. What if I may need or will have radiation therapy?**

**A.** Radiation affects every patient differently but can cause hyper-pigmentation (skin color changes like a sunburn) and changes in the texture and quality of the skin, muscle, and tissues inside the breast pocket after mastectomy. This firmness of the tissues is known as radiation fibrosis. To prevent this radiation fibrosis from damaging the breast reconstruction, Dr. Zimmel and Dr. Montante may recommend having a staged surgery, using a tissue expander beneath the breast at the time of mastectomy, especially if you are planning on having an autologous tissue for reconstruction. Dr. Zimmel and Dr. Montante may recommend having a tissue expander because there are increased risks for complications while undergoing radiation therapy. If you are having an autologous (tissue) breast reconstruction, your surgeon alternatively may choose to perform your reconstruction at the time of your mastectomy but make the breast larger in volume to allow for the radiation fibrosis changes to the reconstructed breast. If Dr. Zimmel and Dr. Montante recommend having a tissue expander, you may undergo radiation treatment with the tissue expander in place. Then later, your surgeon will replace the expander and reconstruct your breast with autologous tissue or an implant of your choice.

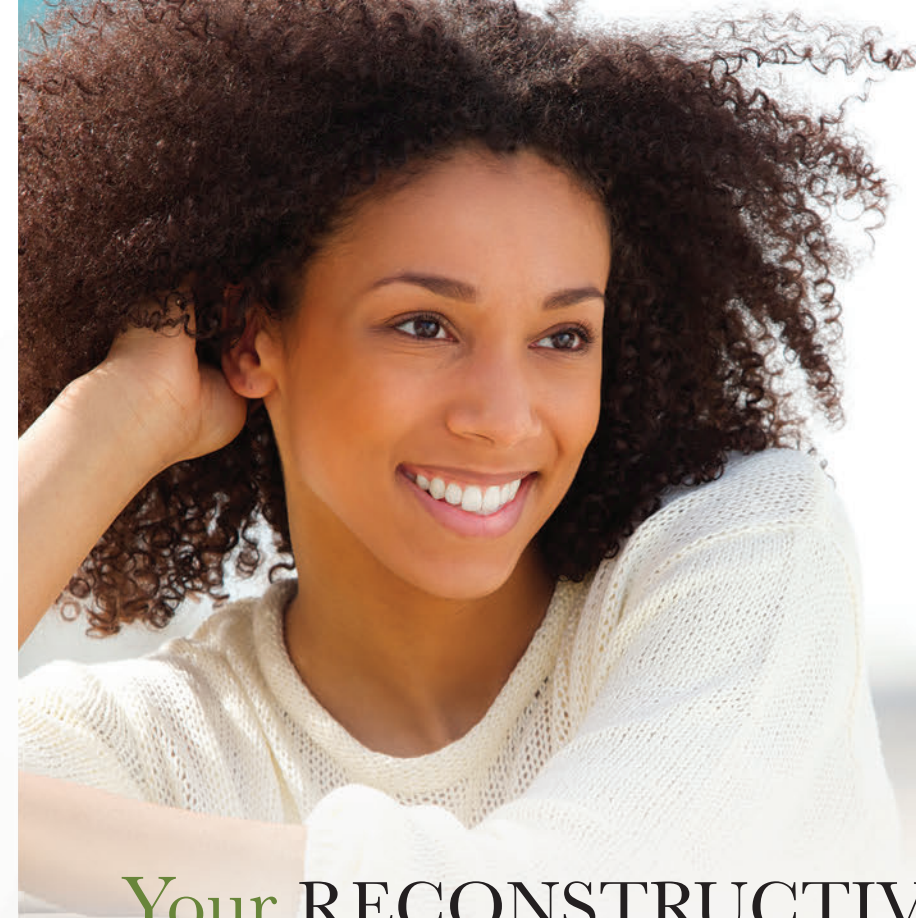
Studies have shown that patients who have radiation therapy are at an increased risk for problems with permanent implants. These problems include capsular contracture (scarring and distortion of the breast), infection, and wound healing problems necessitating the removal of the implant. Dr. Zimmel or Dr. Montante at Richmond Aesthetic Surgery will help you to make an informed decision if you are to undergo radiation therapy.

**Q. What if I may need or will have chemotherapy?**

**A.** Breast reconstruction should not delay chemotherapy. Your medical oncologist will begin chemotherapy once your incisions are fully healed and your drains have been removed. If you have a tissue expander placed at the time of your mastectomy, you may have your chemotherapy while undergoing tissue expansion. Tissue expansion may continue as long as you are comfortable, have no infections, and your blood counts are stable. Dr. Zimmel and Dr. Montante prefer to fill your expanders about 2 days before your chemotherapy dose, as this is when your blood counts are highest.

**Q. Does breast reconstruction increase the risk of my cancer returning or make it harder to detect breast cancer?**

**A. NO.** The risk of breast cancer returning (recurrence) depends on the stage of the breast cancer, the type of breast cancer (hormone receptors), and additional therapies (chemotherapy or radiation) used to treat breast cancer. Reconstruction has no known effect on the recurrence of cancer in the breast, nor does it interfere with detecting cancer if it does in fact return. The surgical, medical, and radiation oncologist will discuss your risk of cancer recurrence with you and decide upon the methods or tests used to detect the cancer. Dr. Zimmel and Dr. Montante may recommend continuation of clinical breast exams on the reconstructed breast. If your breast reconstruction involves a silicone implant, the FDA recommends that you get an MRI to check for rupture 3 years after surgery, and then every 2 years thereafter.



*“When I came to the office, I was nervous because I did not know what to decide. The entire staff was there for me and I am so glad I chose Richmond Aesthetic Surgery for the reconstruction of my breast.”*

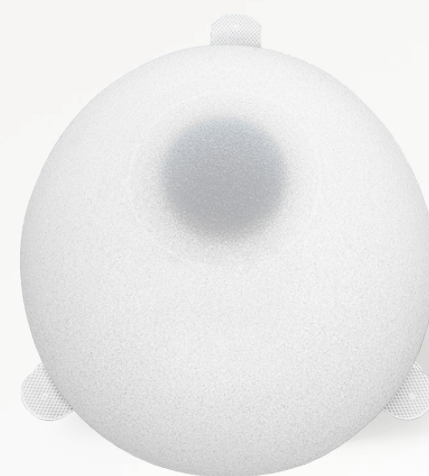
~ Velma

## Your RECONSTRUCTIVE OPTIONS

There are a number of ways to perform breast reconstruction. Dr. Zimmel and Dr. Montante divide them into two broad categories. There are reconstructions that use **prosthetic implants** and reconstructions that use **your own tissue**.

### **Implant-Based Reconstruction**

Within the implant-based reconstruction category, there are two possible methods of reconstructing the breast.



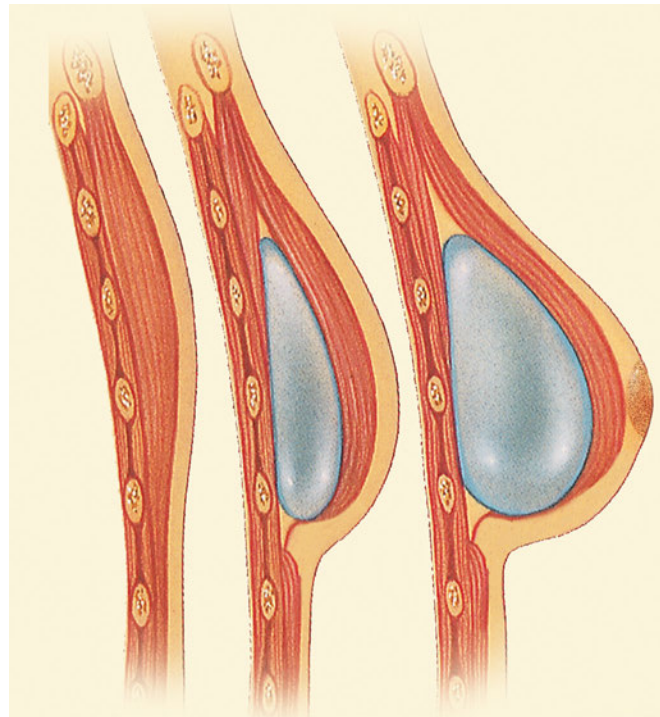
*This tissue expander creates a stable, durable soft-tissue pocket for the permanent implant.*

### **Two-Stage Reconstruction**

The first and most common technique uses a device called a tissue expander followed by insertion of a prosthetic breast implant. **This approach requires a minimum of two operations**, and commonly a third is added to refine or “touch up” your result. Nipple reconstruction and fat grafting is usually performed at this third and final stage.

The first operation consists of mastectomy (removal of the breast, to be performed by the breast cancer surgeon) followed immediately by placement of a tissue expander with acellular dermal matrix (Alloderm) by Dr. Zimmel or Dr. Montante. The purpose of the tissue expander is to stretch and mold the overlying soft tissue, skin, and muscle, and the goal of Alloderm is to create a stable pocket for your implant to permanently reside. This stretching and molding involves injections of a salt-water solution that typically begins immediately after surgery. The expander is inflated to approximately 50% to 75% of its final volume during the first procedure, and the remaining volume will be added during your follow-up visits over the course of 6 to 12 weeks after surgery.

Your surgery takes 1 to 1.5 hours for one side to be completed, longer if you are having surgery on both sides. You will be kept in the hospital overnight and will be able to go home in 1 to 2 days. This surgery will require placement of surgical drains to remove excess fluid from the surgical site immediately following the operation. In most circumstances, the drains will be removed when you come back for your 1 week or 2 week follow-up visit. If there is a lot of drainage, they will stay in longer. You are likely to feel tired and sore for 1 to 2 weeks after reconstruction and take about 4 weeks to feel completely recovered. Most of your discomfort can be controlled by a pain medicine and muscle relaxants prescribed by Dr. Montante or Dr. Zimmel.



The tissue expander process continues until the size is slightly larger than your desired reconstructed breast size. You may feel a sensation of stretching or pressure in the breast area during this procedure, but most women find it is not too uncomfortable. Filling the expander stretches the skin and muscle to make room for a breast implant, much like a woman's abdomen stretches during pregnancy. By filling the expander slowly over time, the tissue covering the implant is molded into a stable, soft tissue pocket in preparation for the permanent implant insertion.

After the skin over the breast area has stretched enough, the expander will be removed in a second outpatient operation, and a permanent implant will be inserted in its place. Oftentimes, "touch up" work is done to make the implant more symmetric.

Pocket work is performed along with autologous tissue fat transfer (fat grafting). The need of potential chemotherapy or radiation will affect the timing of your second stage surgery. The second procedure typically is much less invasive and requires much less downtime compared to the first procedure. The nipple and areola (the dark skin surrounding the nipple) are usually reconstructed in a subsequent third procedure along with any final fat transfer.

The exchange of the tissue expander for a permanent implant takes about 1 hour per side. Dr. Zimmel or Dr. Montante usually do not place surgical drains, and you usually stay overnight in the hospital. You are likely to feel tired and sore for a week or so after the implant exchange. Much of your discomfort will be controlled by medication prescribed by Dr. Montante or Dr. Zimmel.

Dr. Zimmel and Dr. Montante also perform the latest tissue expander reconstructions using acellular dermal matrix (Alloderm) techniques.



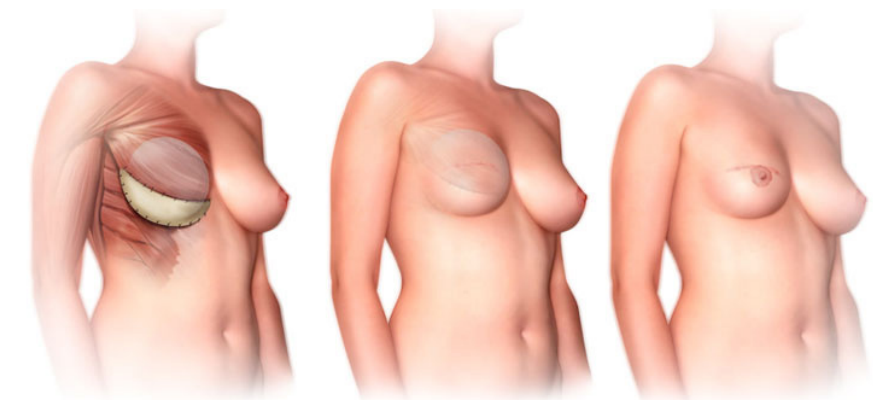
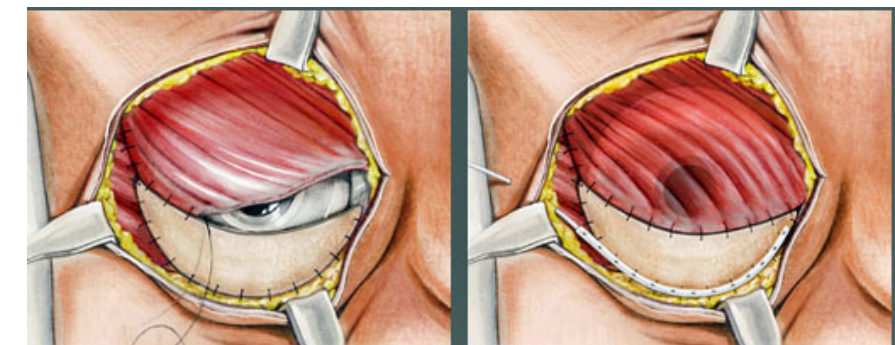
## What is Acellular Dermal Matrix (ACDM)?

ACDM is the dermal component of the skin donated for the purpose of reconstructive surgery. ACDM has been used for over 10 years in breast reconstruction and in other applications such as abdominal wall reconstruction. During breast reconstruction, ACDM is placed inside the breast where it can augment and reinforce your own tissues. In the setting of breast reconstruction, ACDM serves as a way to artificially and **immediately** lengthen the pectoralis muscle to create a breast pocket without the use of a tissue expander. It is an essential component for allowing single-stage breast reconstruction.

Once the tissue has been donated, it is processed to remove all of the cellular materials leaving only the collagen scaffolding of the dermis. This means that the graft material has an extremely low rate of rejection or infection. The graft has been tested for infectious diseases similarly to other donated tissues. Once ACDM is placed, your body will incorporate the graft into your own tissues. Over a period of 3 to 6 weeks, your own cells will repopulate the scaffolding, and your blood vessels will grow into it. The ACDM essentially becomes a part of your body.

The use of these artificial tissues has a number of advantages over traditional tissue expander techniques:

1. Placement of acellular dermal matrix allows the surgeons to achieve a greater inflation during your initial operation.
2. Placement of acellular dermal matrix allows improved contour of the lower pole, or bottom of the breast.
3. Placement of acellular dermal matrix reinforces the soft tissue of the bottom of the breast giving a more durable result.
4. Placement of acellular dermal matrix may prevent scar tissue from forming around the final implant.
5. Finally, placement of acellular dermal matrix stabilizes the crease (inframammary fold) of the breast.



## Single-Stage Reconstruction

*Dr. Neil J. Zimmel and Dr. Steven J. Montante of Richmond Aesthetic Surgery are able to offer a single-stage direct-to-implant reconstruction. This reconstruction option utilizes advanced techniques to accomplish in patients what may take other surgeons two or three procedures to complete. The surgeons are able to forego placement of a tissue expander and insert the silicone breast implant immediately. This confers a number of advantages to their breast reconstruction patients including less post-operative pain, more rapid recovery, and eliminating a second surgery.*

## How does direct-to-implant (DTI) differ from two-stage breast reconstruction?

Direct-to-implant breast reconstruction is completed in one surgical procedure at the same time as mastectomy. A traditional implant-based reconstruction uses a two-stage process. The first stage consists of the mastectomy (to be performed by the breast cancer surgeon) followed by placement of a tissue expander by the plastic surgeon. A tissue expander is an inflatable implant designed to stretch and mold the overlying soft tissue (skin, fatty tissue, and muscle) into a stable, durable soft tissue pocket. The tissue expander is injected with saline solution in the office to progressively inflate the device over a 6 to 12 week period. Once the stretching is complete, a permanent breast implant is placed at a second surgery. This second surgery is typically less invasive and requires less recovery time. Most patients feel immediate relief because the soft silicone implant is much more comfortable than the rigid tissue expander.

**A single-stage reconstruction eliminates the need for a tissue expander. In select patients reconstruction is performed immediately by placing the silicone implant with acellular dermal matrix (ACDM or Alloderm). The ACDM is attached to the lower border of the pectoralis major muscle and the lower crease (inframammary fold) of the breast. This essentially extends or lengthens the pectoralis major muscle and creates a breast pocket immediately shaped to accommodate a permanent implant. By placing the ACDM between the muscle and breast crease internally, no tissue expansion is needed.**

## What are the advantages of single-stage direct-to-implant breast reconstruction?

There are a number of advantages to a direct-to-implant (DTI) reconstruction:

1. DTI reconstruction eliminates the need for two surgeries.
2. DTI reconstruction avoids tissue expanders and the associated discomfort and recovery from the expansion process.
3. DTI reconstruction requires only 1 drain per breast after surgery, and each drain is usually removed in half the time compared to tissue expander based reconstruction.
4. Patients have a fully reconstructed breast after the first operation. This gives a much more satisfying body image and reduces the patient's overall stress. The improved psychological effects of this approach cannot be underestimated.

## What is the surgical technique for single-stage direct-to-implant breast reconstruction?

Single-stage DTI breast reconstruction is performed immediately after mastectomy. Delayed reconstructions are typically not performed as the skin and overlying soft tissue become scarred and lose the elasticity needed to create a breast pocket.

The breast cancer surgeon will normally perform a total nipple-areolar-skin sparing mastectomy. Drs. Zimmel and Montante will then immediately begin the reconstructive procedure. The skin flaps are examined to ensure good thickness and viability. The pectoralis major muscle is identified, and the muscle is raised from the chest wall. The serratus anterior muscle is also identified and raised in most patients to improve contour of the lateral mammary fold (side) of the breast.

The acellular dermal matrix is then attached to the internal aspect of the inframammary fold (the crease of the breast) and the front edge of the serratus anterior muscle in a gentle arc to recreate the lower and side curves of the breast. The upper border of the ACDM graft is then attached to the lower border of the pectoralis muscle to complete the breast pocket. Again, the ACDM graft acts as a pectoralis major muscle extension. Multiple demo silicone implants are then placed in order to choose the optimal size and shape. A drain is then placed into the breast pocket to remove any fluid that may accumulate postop. Local anesthesia is injected into the pectoralis major muscle, serratus anterior muscle, and along the inframammary fold to give long-lasting pain relief after surgery. Finally, the upper and lower skin flaps are then redraped over the muscles and implants, and the incision is closed.

*“The doctors at Richmond Aesthetic Surgery spent time answering my questions and explaining the process to me. They even answered questions I had not thought to ask.”*

~ Leigh

## Who is a candidate for single-stage direct-to-implant breast reconstruction?

Many patients desiring single-stage DTI breast reconstruction seek out the care of Drs. Zimmel and Montante at Richmond Aesthetic Surgery. The patient's desire is to avoid multiple surgeries, shorten recovery time, and avoid the need for the tissue expander process, which lengthens recovery. Optimal single-stage direct-to-implant reconstruction candidates have the following:

1. Small breast cup sizes (typically sizes AA to C)
2. Thick, healthy skin to cover the implants
3. Normal BMI (body mass index)
4. Will undergo total skin and nipple areolar sparing mastectomies
5. Will not need radiation
6. Little ptosis (sagging) of the breasts, preoperatively

## Can women with larger or sagging breasts have single-stage direct-to-implant breast reconstruction?

Women who have larger breasts, or women whose nipples are low set on the breast and face downwards, may not be optimal candidates for single-stage reconstruction. A number of more complex variables come into play. Each patient is unique and will be evaluated individually. Some important points to consider:

1. Women who have larger breasts (D cup and larger) may require a large implant that cannot be placed at the time of initial mastectomy. In these women, a tissue expander may be required to stretch the overlying muscle to accommodate the larger implant size.
2. Larger-breasted women may require removal of breast skin. Adding these extra incisions can further alter the blood flow to the skin flaps making the flaps less reliable. In this case placing a tissue expander is necessary.
3. In women with larger breasts who undergo nipple sparing mastectomy for cancer treatment, the nipple may be in too low of a position for a single-stage reconstruction, and a tissue expander may be required.
4. In women undergoing prophylactic mastectomy (preventative mastectomy for BRCA+ patients) who have larger breasts, a preemptive reduction or mastopexy (lift) can be performed. This reduces the breast volume and places the nipple and areola in the optimal position for a single-stage mastectomy and reconstruction. The mastectomy and reconstruction is performed 6 to 12 months after the preemptive first procedure.

*“The entire experience was explained to me step-by-step, so I felt prepared”*  
~ Teresa

## What is recovery like following single-stage direct-to-implant reconstruction?

Recovery from a total skin-sparing mastectomy with immediate single-stage reconstruction typically takes between 10 and 14 days. Most of the recovery stems from the stretching of the pectoralis major muscle overlying the implant. Despite placement of ACDM to extend the muscle, the muscle still must accommodate the implant. Most women will state that they have severe muscle soreness, which typically begins to resolve around 7 days after surgery. The incisions themselves are usually insensate from the mastectomy. During surgery, Dr. Zimmel and Dr. Montante will inject a new anesthetic medicine into your muscles and along the suture line of the ACDM graft. This new medicine is a long-lasting local anesthetic (liposomal bupivacaine) designed to last 3 days. This will reduce your pain level by approximately 50%.

Dr. Zimmel and Dr. Montante will ask you to refrain from heavy lifting and raising your arms above your head for about 7 days. This will allow your incisions to heal and the muscle to rest while accommodating the implant. After one week you will be encouraged to use your upper extremities for light activities of daily living. After 2 to 3 weeks, you will be prescribed physical therapy to loosen your pectoralis muscles and to increase shoulder strength.

Initially, you will have some mild to moderate swelling and bruising around the breasts. This will take between 2 and 3 weeks to resolve. You may notice the implants in a slightly higher position on the chest wall. Your implants will descend into their final position during the first 4 to 6 weeks. Your breasts will also soften during this time and feel more comfortable.

## What are the potential complications of single-stage breast reconstruction?

Dr. Zimmel and Dr. Montante will do everything possible to minimize the complication rate of your surgery. Despite best efforts, however, certain complications can occur. They can range from mild asymmetry to significant skin and tissue necrosis, or tissue death/loss. The standard surgical complications include bleeding, infection, damage to surrounding tissue structures, pulmonary embolism, deep venous thrombosis, skin flap necrosis, capsular contracture, implant rupture, and major asymmetry. The surgeons will further discuss the rates of these complications during your consultations.

## What is the chance of needing a revision?

At Richmond Aesthetic Surgery, most patients who undergo breast reconstruction with a single-stage, direct-to-implant reconstruction do not require major revision. It is not uncommon, however, to need “touch ups.” Touch ups can be considered minor procedures to improve the appearance of the breasts and may include:

1. Scar and dog ear revisions
2. Autologous tissue fat transfer (fat grafting) for contour improvement
3. Implant exchange for volume asymmetries

## What are the types of permanent implants?

Permanent implants are silicone shells filled with either saltwater solution (saline) or silicone gel. The permanent implants are much softer and more comfortable than a tissue expander. Breast implants were first introduced in 1964. From this time to 1992, saline and silicone implants were available for use. In 1992, due to the high rupture rate of the second generation silicone implants, the FDA removed silicone implants from the market for cosmetic uses. After 1992, large medical studies were conducted to check the safety of silicone implants. These studies showed there was NO connection between silicone implants and other connective tissue disease. From 1992 to 2006, saline implants were used for cosmetic purposes, while silicone was available for reconstruction and revision cosmetic cases. In 2006, the FDA again approved the use of silicone implants for cosmetic uses. They have always remained approved for reconstructive uses. The alternative saline-filled implants, a silicone shell filled with saltwater, is also available if you choose. Drs. Zimmel and Montante will guide you through the risks and benefits of choosing a saline versus a silicone implant for your reconstruction.



*Silicone Implant*



*Saline Implant*

Drs. Zimmel or Montante will discuss the risks and benefits for undergoing breast reconstruction with silicone breast implants, and you will receive a detailed patient brochure to educate you on these. Silicone implants require monitoring with an MRI every other year starting at 3 years after surgery because leaks are not easily detected by exam. On the other hand, saline implants do not require monitoring because leaks are obvious when the whole breast is deflated. Be sure to discuss current options with Drs. Zimmel or Montante. Both types of implants come in a variety of shapes and sizes. The doctors will talk about the various types of implants and help you decide which implant is best for you.

If an implant is used, there is a small possibility that an infection will develop, usually within the first week or two after surgery. This happens in less than 1% of cases. In some of these cases, the implant may need to be removed for several months until the infection clears, at which point a new implant can be inserted.

The most troublesome problem, capsular contracture, occurs if the scar or capsule around the implant begins to tighten. This occurs approximately 2% to 5% of the time. This squeezing of the soft implant can cause the breast to feel hard, sit higher on the chest, and appear smaller. Capsular contracture can be treated in several ways. Sometimes it requires either removal or “scoring” of the scar tissue, or perhaps replacement or removal of the implant in the operating room. Radiation therapy dramatically increases the risk of tightness around the implant due to radiation damage of all of the surrounding tissues. Remember, implants are not lifetime devices and must be replaced like any other manufactured part. You should expect to replace your implants at least once in your lifetime. There is no mandatory scheduled maintenance, but the average patient replaces her implants around 10 to 15 years after surgery. An exchange procedure is usually simple with very little down time. It requires no new incisions and is an outpatient operation.

## Autologous or Flap Breast Reconstruction

Autologous tissue reconstruction, also called flap reconstruction, involves using your own tissue from another part of your body to rebuild your breast. The tissue from your back, abdomen, thighs, or buttocks may be used. Sometimes, the tissue can stay connected to its own blood supply and just be rotated to reconstruct the breast. This is called a pedicled flap. Other times, the tissue is disconnected from your body and its own blood supply and is reconnected to a new blood supply in the chest. This is called a “free” flap. Free flaps typically do not require the sacrifice of a muscle in order to bring blood flow to the flap.

The name of the flap denotes the area from which the tissue is taken. The location on the body where the tissue is taken from is called the donor site. Tissue harvested from the back is called a latissimus dorsi or T-DAP flap. A tissue flap harvested from the abdomen is called a TRAM or DIEP, depending on the blood supply to the respective flap. Tissue harvested from the buttocks is called the SGAP or LGAP, and from the thigh is called a TUG flap. These surgeries require the skills of a microvascular-trained plastic surgeon. This is a complex technique that requires using a microscope to reconnect blood vessels. Drs. Zimmel and Montante offer these exciting new techniques.



## Using Your Abdominal Wall Tissue

Breast reconstruction using your own tissue (autologous tissue reconstruction) gives a very natural and long-lasting result. The primary benefit of autologous tissue transfer over implants is that flap reconstruction does not require any future maintenance, unlike saline or silicone breast implants. Once the tissue of a flap transfer has healed, it is yours forever.

There are a number of anatomic layers of the abdomen wall:

- Skin and dermis
- Fatty tissue/subcutaneous tissue
- Thick connective tissue (fascia) that provides strength and structure to the abdominal wall
- Muscle layer where the rectus abdominus and obliques are located

The rectus muscle receives its blood supply from two blood vessels: the superior epigastric artery and vein, and the deep inferior epigastric artery and vein (DIEP). These vessels enter the body of the rectus muscle and branch within the muscle itself. The muscle then sends small blood vessels to the skin surface. Additional redundant vessels are located closer to the skin surface. These are called the superficial inferior epigastric artery and vein (SIEA).

The tissue harvested from your abdomen may consist of all four layers, or only some layers. Also, the tissue may be moved staying attached to the blood supply (TRAM), or disconnected from its blood supply and connected to a new blood supply in the chest (free flap). The amount of tissue and blood supply used to create your new breast determines the name of the breast flap. Drs. Montante and Zimmel will help decide which type of flap is best for you.

## The Transverse Rectus Abdominis Muscle Flap (TRAM)

This reconstruction flap consists of skin, fatty tissue and the rectus muscle itself. The TRAM flap is usually rotated on its remaining blood supply (pedicled) or disconnected from its own blood supply and reconnected to the blood in the chest (free flap). Since this flap involves removing your muscle, and sometimes your fascia, there is a small risk of hernia or weakness of the abdominal wall.

The pedicled TRAM flap operation is a safe, reliable procedure and has been offered for over 30 years. Drs. Zimmel and Montante will examine you carefully to determine whether you are a candidate for a soft tissue reconstruction. They may offer you the options of either a pedicled TRAM flap or a DIEP or Free TRAM flap.

There are a number of benefits of DIEP flaps over traditional pedicled TRAM flaps. They include:

1. The ability to retain complete muscle function of the abdominal wall
2. Reducing the risk of abdominal wall hernia
3. Elimination of prosthetic mesh placement in the abdomen
4. Ability to shape a more natural, contoured breast
5. Reducing the risk of fat necrosis

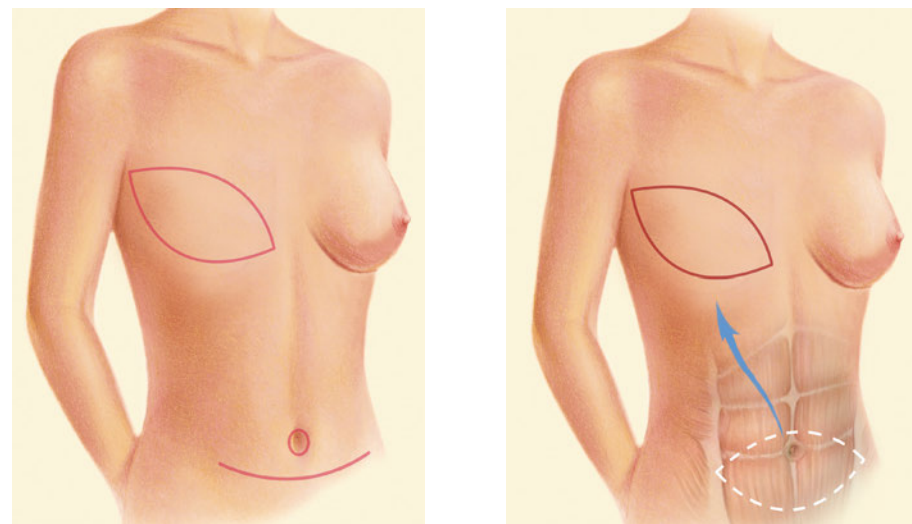


## Abdominal Muscle Sparing and Perforator Flaps

### THE DIEP FLAP

Advances in surgical techniques have allowed surgeons to lessen the amount of muscle and fascia that is used for abdominal wall flaps. Dr. Zimmel and Dr. Montante avoid taking any muscle or fascia by using the small blood vessels emanating from the muscle to the skin called perforators. These perforators may come from the deep inferior epigastric vessels (DIEP) or from the more superficial source called the superficial inferior epigastric artery and vein (SIEA). Both the DIEP and SIEA are muscle sparing and use no muscle with the abdominal wall tissue, lowering the chance of hernia formation or abdominal wall bulge. There are three types of muscle sparing flaps that Drs. Zimmel and Montante at Richmond Aesthetic Surgery perform:

1. Free Muscle Sparing TRAM: A flap made up of abdominal wall skin, fat, and a very small part of the rectus muscle. This flap is disconnected from its own blood supply and then reconnected to the blood supply in the chest. If a large amount of muscle has to be taken because of the anatomy of your abdominal wall, then Drs. Zimmel or Montante may have to reinforce it with a supportive layer of mesh to prevent hernia formation.
2. Deep Inferior Epigastric Perforator Flap (DIEP): A flap made up of abdominal wall skin and fat only. The flap is disconnected from its own blood supply and then reconnected to the blood supply in the chest using the deep inferior epigastric artery and vein and its perforators. Not only does the fat and skin removed at the time of surgery reconstruct a supple, naturally appearing breast, but it gives a “tummy tuck” effect.
3. Free Superficial Epigastric Artery Flap (SIEA): A flap made of abdominal wall skin and fat only. The flap is disconnected from its own blood supply and then reconnected to the blood supply in the chest using the superficial inferior epigastric artery and vein and its perforators. Since the superficial epigastric artery and vein are very small, and only exist in about 30% of patients, few patients are candidates for this procedure.



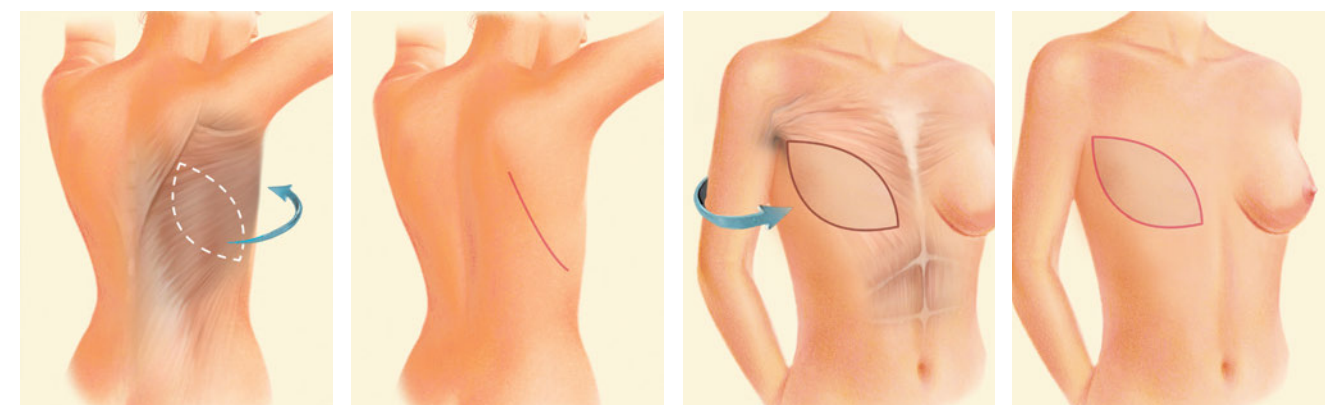
Regardless of which of these three innovative techniques Drs. Zimmel and Montante perform, they are more complex than implant-based reconstruction. Scars will be left at both the tissue donor site (lower abdominal wall) and at the reconstructed breast, and recovery will take longer than with implant-based reconstruction. On the other hand, when the reconstructed breast is made entirely with your own tissue, the results are more permanent, natural, and there is no concern about implant-related maintenance. In some cases, you will have the added benefit of an improved abdominal contour.

You will be required to stay in the hospital for 3 or 4 nights. During this stay, your surgeon and the nurses will monitor your flap to make sure the blood flow to the transplanted tissue is adequate. The color, temperature, and pulse of the skin will be checked. Two devices will be used to monitor your flaps. One listens to your blood flow through the flap (Doppler), while the other measures oxygen levels (ViOptix). If your flap has blood supply issues, Drs. Montante and Zimmel may have to take you back to the operating room to assess and correct the problem. This happens in less than 10% of patients. In approximately 2% of all patients, the flap may fail, and another method for your breast reconstruction will be offered.

You will also have 3 or 4 drain tubes depending on if one or both breasts are reconstructed. In most circumstances, these drains will remain in for about 10 to 14 days. The recovery time for flap reconstruction is approximately 4 weeks. You will be sore and bruised for 10 to 14 days. You will feel better each day, and Drs. Zimmel and Montante will make sure you are as comfortable as possible. You will have follow-up appointments with Drs. Zimmel and Montante at least once per week for the first month. It is very normal to feel fatigued in the few weeks following surgery.

### Other Methods of Free Autologous Tissue Transfer

- Using your buttocks tissue (SGAP, IGAP): This type of reconstruction is reserved for patients who do not have sufficient tissue of the abdominal wall, have had previous abdominal surgery that precludes a DIEP flap, or wish to avoid implants. Patients must have enough buttocks tissue to recreate a breast. These flaps are made of skin and fat from the buttocks. Their blood supply is disconnected from the buttocks and then reconnected to the internal mammary artery and vein in the chest. You will have a scar hidden in the bikini line and slight indent around the donor site area from where the tissue is taken. The SGAP is a great alternative and provides for a natural and moderate volume breast.
- Using your thigh tissue (TUG): The transverse upper gracilis (TUG) flap is made up of skin, fat and muscle from the thigh. The gracilis muscle that is taken is considered “expendable,” and patients do not report any weakness of the leg after surgery. The TUG is usually done for patients who do not have adequate skin in the buttocks or abdomen. The TUG flap is a small-sized flap and, thus, can only be used for those who do not require a large volume breast reconstruction. The incisions from the TUG are hidden in the groin area.
- Using your back tissue (Latissimus Dorsi & T-DAP): The latissimus dorsi flap from your back is made up of skin, fat, and muscle (latissimus dorsi muscle). The T-DAP flap is made up from skin and fat ONLY. Both the latissimus dorsi and the T-DAP flaps remain attached to their blood supply and are rotated through the underarm to recreate the breast on the chest. The scar is typically well-hidden in the bra strap on the back. Often, the flaps are not large enough to recreate a breast, and an implant will be required under the flap. Most patients do not experience significant weakness from the missing latissimus muscle and continue their normal activities of daily living. However, if you are a competitive athlete, you may be affected





## Your New Look

Drs. Zempel and Montante will make every effort to create a natural, proportional breast. Reconstructed breasts, however, will be different from the natural breasts with which you were born. Your reconstructed breast may feel slightly firmer and may have a somewhat different shape than your natural breasts. It may not have the exact same contour as your breast before mastectomy. In the case of a unilateral (one-sided) breast reconstruction, your reconstructed breast may not exactly match your opposite breast. Therefore, a symmetry-matching procedure may be necessary to obtain optimal results. However, these small revision surgeries (“touch ups”) performed by Dr. Zempel and Dr. Montante improve contour and symmetry. These differences will generally be apparent only to you. Therefore, you should decide what differences you would like to change and discuss them with your surgeon. For most mastectomy patients, breast reconstruction dramatically improves their appearance and quality of life following lumpectomy or mastectomy surgery.

## Follow-Up/Revision Procedures

Most breast reconstruction involves a series of procedures that occur over time. Usually, the initial reconstructive operation is the most complex with the longest recovery. Follow-up surgery, or revisions, may be required to enlarge (augmentation), reduce, or lift (mastopexy) the natural breast to match the reconstructed breast. It can also be performed to improve the symmetry, shape, size, and/or contour of the reconstructed breast itself. Often, improvements in the contour and symmetry of the reconstructed breast are accomplished by using fat grafting. In this procedure, fat is taken by liposuction from an area of the body (abdomen, thighs, buttocks) and then injected into the reconstructed breast where symmetry and contour is needed. These secondary procedures are outpatient procedures and rarely require the use of drains. The recovery time is based on the extent and complexity of the procedure but usually ranges from 5 to 10 days.

## Nipple and Areola Reconstruction

Once you and your surgeon are pleased with the shape, size, and symmetry of your breast reconstruction, and you have had time to heal, you may consider having nipple reconstruction. Your reconstructed nipple will be different than a natural nipple. It will not have temperature or other sensation and may have a different texture. Your nipple will be for cosmetic purposes and non-functional. Drs. Zempel and Montante believe that nipple-areola reconstruction completes your reconstruction adding the “finishing touches.” Please note that all insurance companies cover nipple-areola reconstruction as part of breast reconstruction.

If you choose to have your nipple reconstructed, there are different options. First, you can choose to have a 3-D tattoo only without surgery. This gives the appearance of a nipple and areolar but does not actually have a protruding nipple. A second option, and most common, is to use the skin of your reconstructed breast to recreate a nipple. This is a small outpatient procedure with little recovery time. This nipple bump will be the color of your reconstructed breast skin, and will not have an areola (colored portion around the nipple). The areola and nipple can then be colored using a tattoo. The tattooing can be done at Richmond Aesthetic Surgery. The third option is not to have a nipple reconstructed at all. Our board-certified plastic surgeons, Drs. Zempel and Montante will guide you through this decision-making process and help you reach the best decision.

## Making a Decision

Many options are available for breast reconstruction. Your surgeon will recommend the best options for you based on your body size, shape, medical issues, personal values, personal preference, cancer, and need for chemotherapy or radiation. As you consider the options recommended by Dr. Zempel and Dr. Montante at Richmond Aesthetic Surgery, ask yourself the following questions:

- How do I want to look in and out of my clothes?
- How much time am I willing to spend recovering from surgery?
- What physical activities do I participate in that could be affected by surgery to my abdomen, back, or buttocks?

Use the answers to these questions to help you choose your best option

## Surgical Risks and Complications

Most women who undergo breast cancer surgery are candidates for reconstruction. There are, however, risks associated with breast reconstruction. During your consultations, Drs. Zempel and Montante at Richmond Aesthetic Surgery will discuss all the risks and benefits of the procedures.

The procedures recommended by Drs. Montante and Zempel are relatively safe and low risk. They will discuss the risks, benefits, and alternatives to each procedure at length during your preoperative consultations. Their primary goal is to provide you with a safe, reliable procedure. Drs. Zempel and Montante’s primary goal is to minimize your risk. There are certain aspects of your healing that they will have no control over. The predictability of healing will depend on your skin, underlying muscle and bony structure, genetic influences, and lifestyle factors such as diet, exercise, and smoking. Remember: you will be a work in progress for 6 months to one year. Your final result will take time to evolve and mature. Slight irregularities and undercorrection or small scars may result. Minor revisions after surgery are preferable to excessive operation and over-operation at the initial procedure.

*“You are not a number; you are a person at Richmond Aesthetic Surgery”*

*~ Ed, our patient's husband*

Plastic Surgery is a combination of art and science, and it is not an exact science. Some of the factors involved in the outcome (such as your specific healing characteristics) are not within your surgeon's control, and therefore, it is not possible to guarantee a result. Dr. Zempel and Dr. Montante guarantee their credentials, best effort, honest education, training, and compassionate care individualized to your needs. They are invested in your care and your outcomes; they will treat you like family.

## Preparing for Surgery

You can begin talking about reconstruction as soon as you are diagnosed with cancer, or when you find out that you are genetically predisposed to cancer. Our surgeons, Dr. Neil Zempel and Dr. Steven Montante, at Richmond Aesthetic Surgery will work to develop a strategy that will put you in the best possible condition for reconstruction.

After evaluation, your surgeon will explain which reconstructive options are most appropriate for your age, health, anatomy, body type and goals. Be sure to discuss your expectations openly. Post-mastectomy reconstruction can improve your appearance and renew your self-confidence—but keep in mind that the desired result is an improvement and not perfection. Once you have scheduled a surgery date, your doctor will provide you with specific instructions on how to prepare for surgery, including guidelines on eating and drinking, smoking, and taking or avoiding certain medications or vitamins. Your doctor will also give you information regarding blood work and tests needed prior to surgery, and will have you receive a CT scan prior to any microvascular breast reconstruction.

*“Cancer is a frightening word, but I feel that I am stronger now than I have ever been”*

~ Velma

## After Surgery

Your first follow-up visit following your surgery will be within the first 5 to 7 days after you are discharged from the hospital. At this visit, your surgeon at Richmond Aesthetic Surgery will see how your newly reconstructed breasts are healing, as well as your donor sites (if any). You may have one or more of your drains pulled if they are ready; sutures may also be removed; and a thorough examination will assure that you are on the proper post-operative track. Your surgeon will discuss the next step in the process and answer any questions you may have regarding activity or anything else.

## Feeling Yourself Again

Many women want to know when they can get back to doing everyday things like driving, carrying shopping bags, or doing housework and gardening. This will vary depending upon the type of surgery you have had and upon you as an individual. Every woman will heal at her own pace, and getting back to “normal” is a process.

It is usually fine to start driving again when you feel that you could safely do an emergency stop or move the steering wheel around suddenly and are NOT taking any pain medicine. Some women find this possible to do within 10 to 14 days after surgery, and others find it takes longer.

Follow your doctor's advice on when to begin stretching exercises and normal activities. As a general rule, you will want to refrain from any overhead lifting, strenuous sports, and sexual activity for 2 to 4 weeks following reconstruction. You will also be referred to a physical therapist after your surgery for exercises to help with recovery.

Reconstruction cannot restore normal sensation to your breast, but in time, some feeling may return. Never place a heating pad or ice pack on your breast after you have had a mastectomy for the risk of possible burns or frostbite. Ask your surgeon at Richmond Aesthetic Surgery about the possibility of undergoing the highly innovative technique of reconnecting nerves during DIEP flap surgery.

## Insurance Coverage

The 1998 Women's Health Care and Cancer Rights Act (WHCRA) guarantees coverage for breast cancer treatment and breast reconstruction. It protects the rights of women who undergo mastectomy and desire reconstruction. The surgeries that must be covered include:

- Partial or total mastectomy (removal of the breast) due to cancer
- Reconstruction of the breast that was partially or totally removed by mastectomy
- Surgery and reconstruction of the natural, unaffected breast to make the breasts look symmetrical or balanced after mastectomy
- External breast prostheses that fit into your bra that are needed before or during the reconstruction
- Any downstream maintenance required for implant-based reconstruction
- Nipple and areolar reconstruction

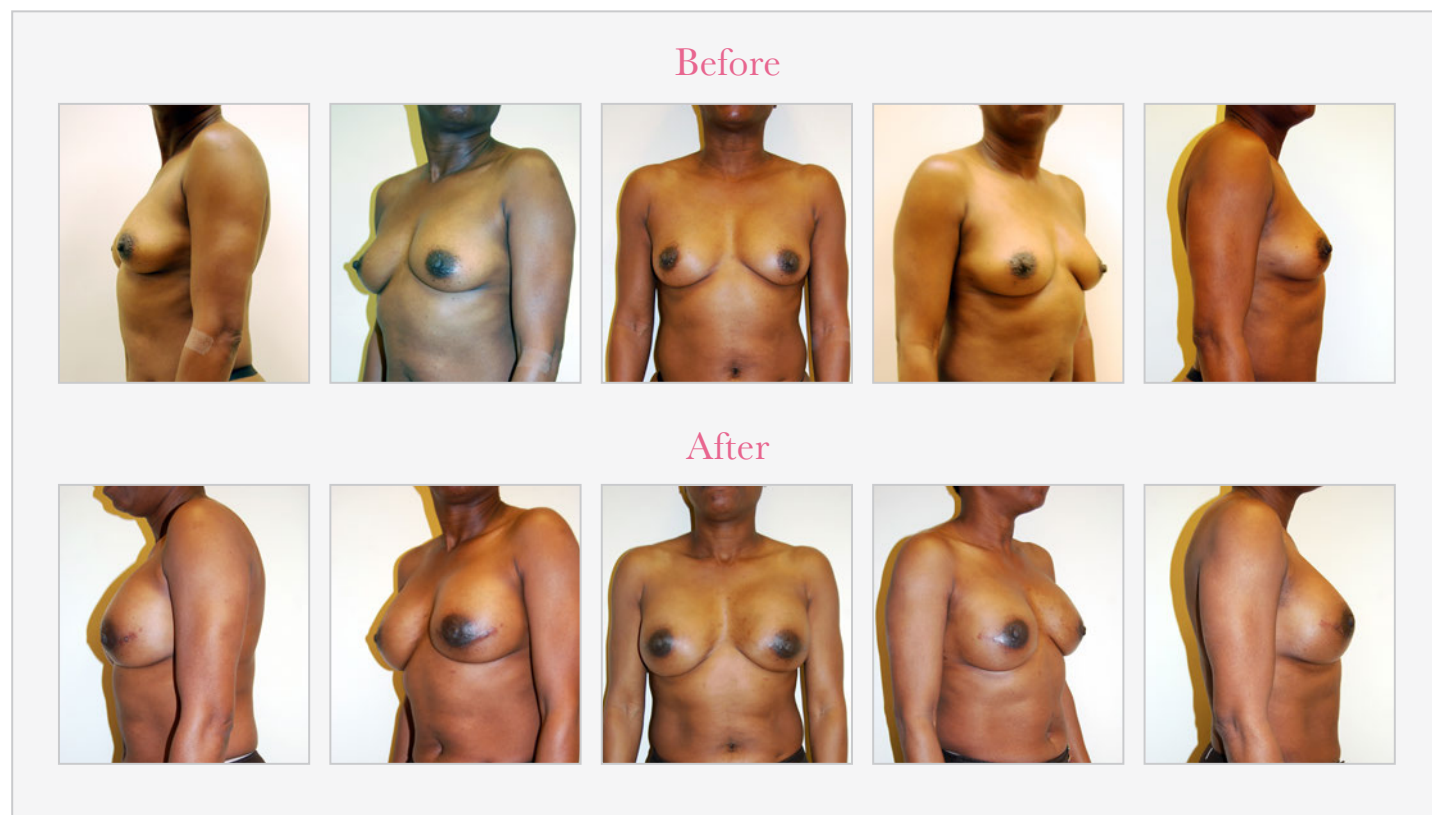
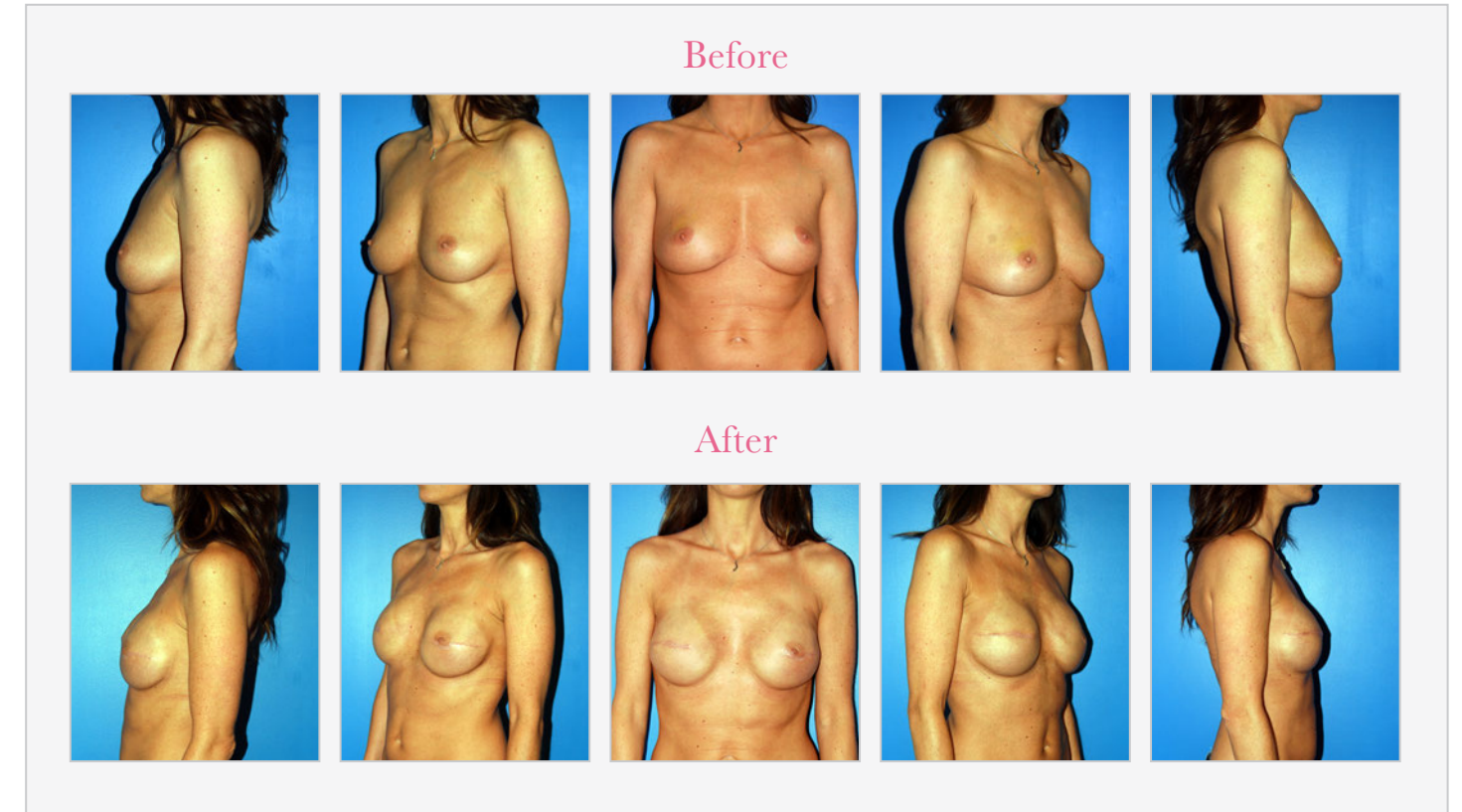
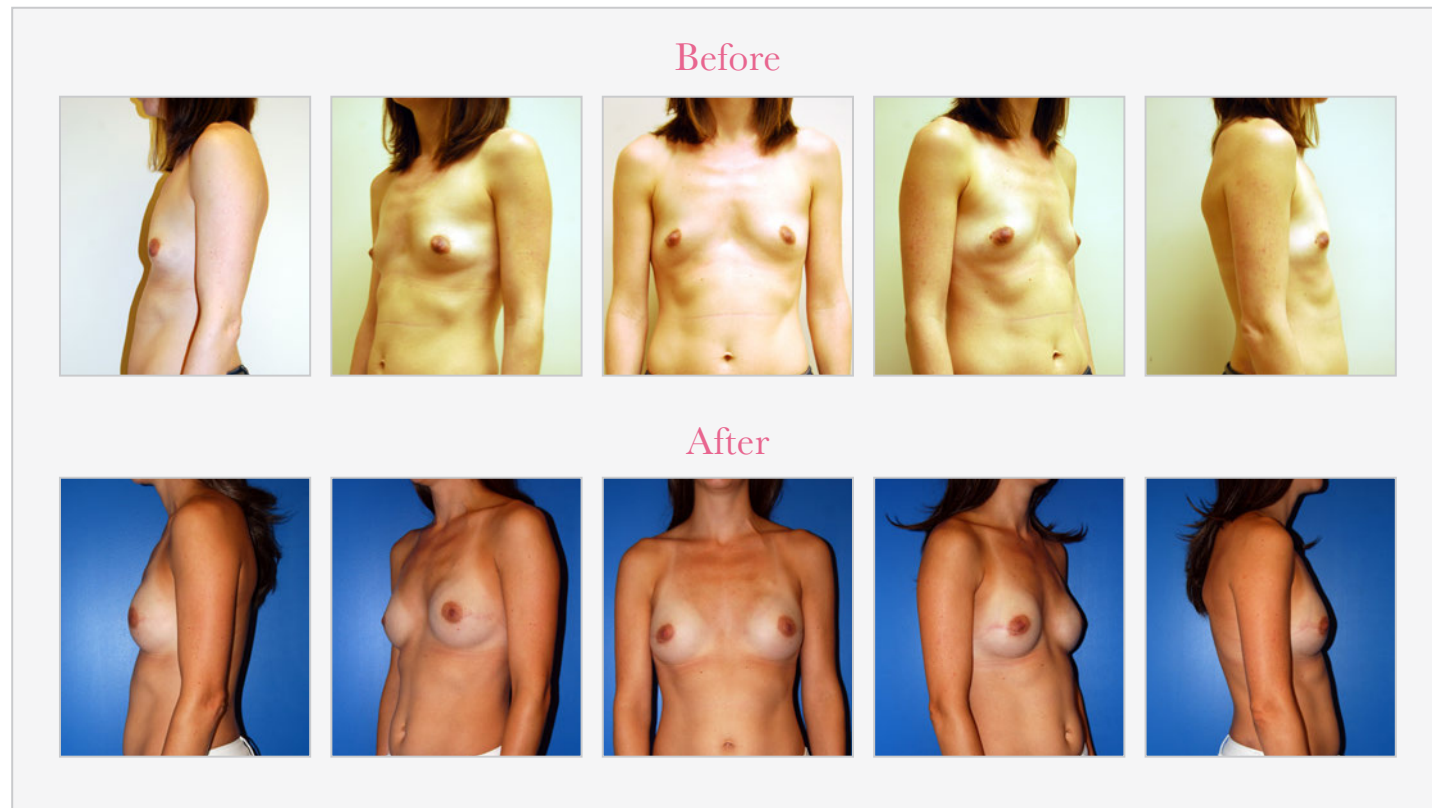
Your insurance carrier is federally mandated to cover these procedures. Your normal co-pays, deductibles, and out-of-pocket maximums will apply. If you have questions regarding insurance coverage, please speak with the billing manager at Richmond Aesthetic Surgery or Drs. Zempel and Montante.

## Thank You

Dr. Zempel and Dr. Montante would like to thank you for choosing Richmond Aesthetic Surgery to provide your care and look forward to helping you on your journey. We wish you all of the best.

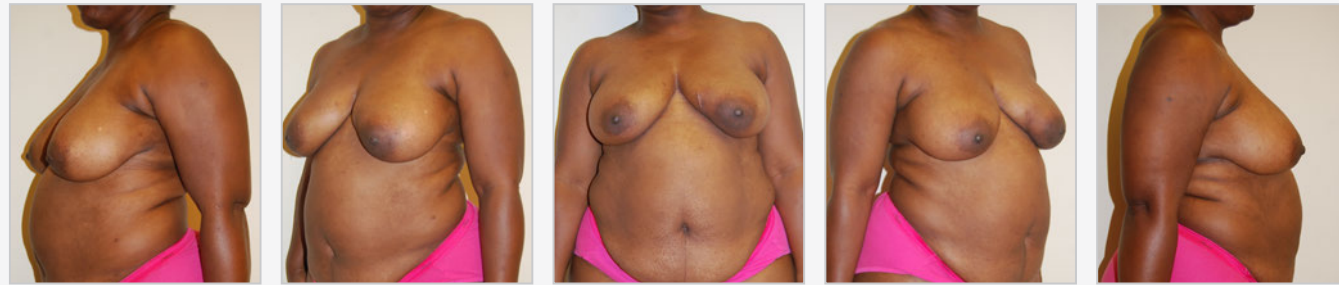
# Gallery

## Direct-to-implant

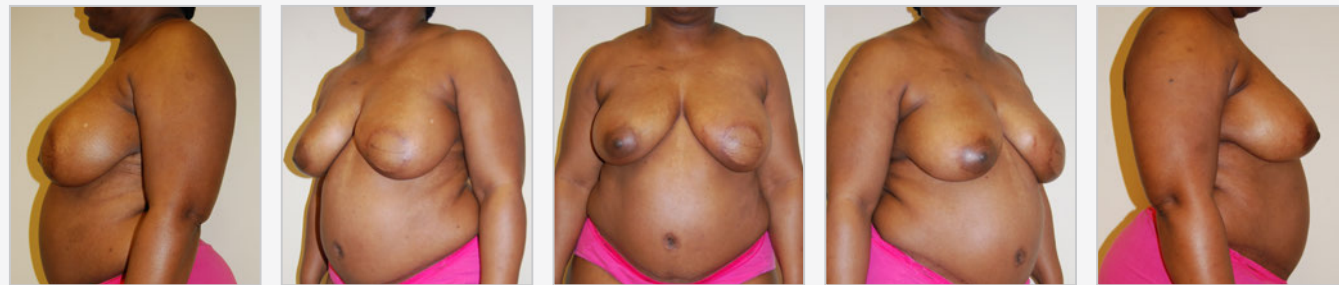


TRAM Flap

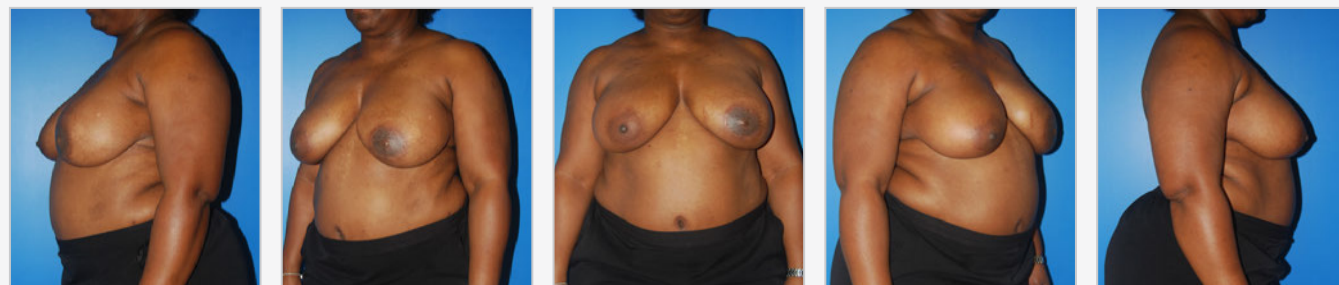
Before



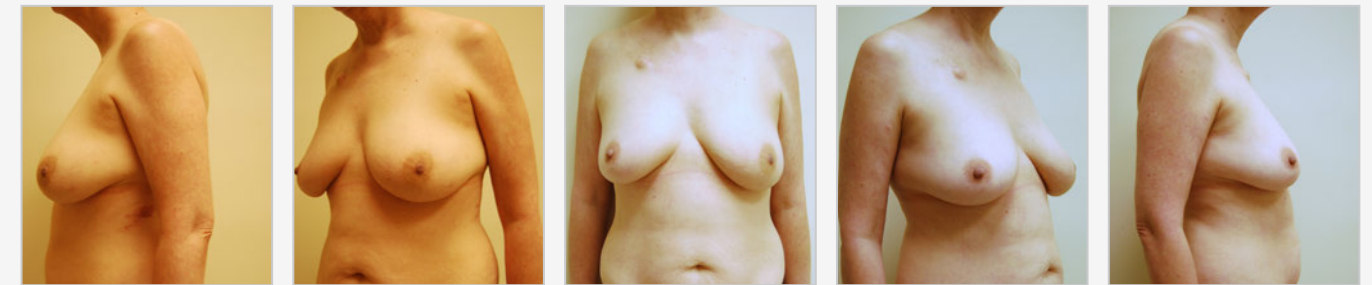
After - Phase 1



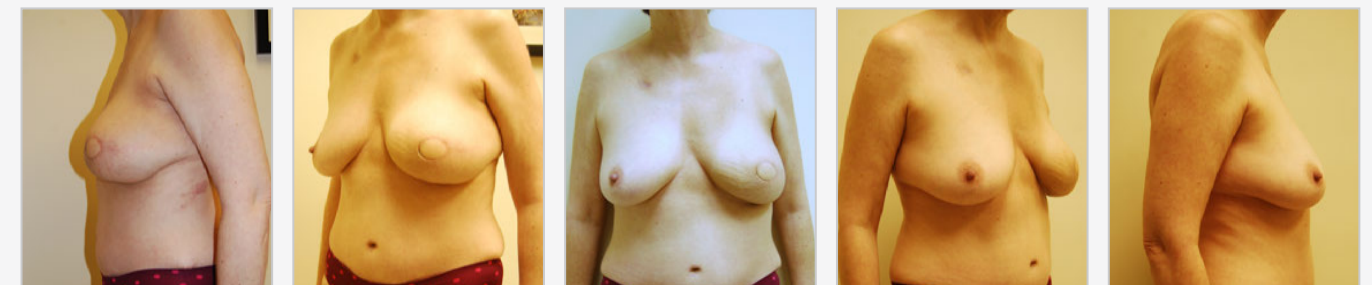
After - Phase 2



Before



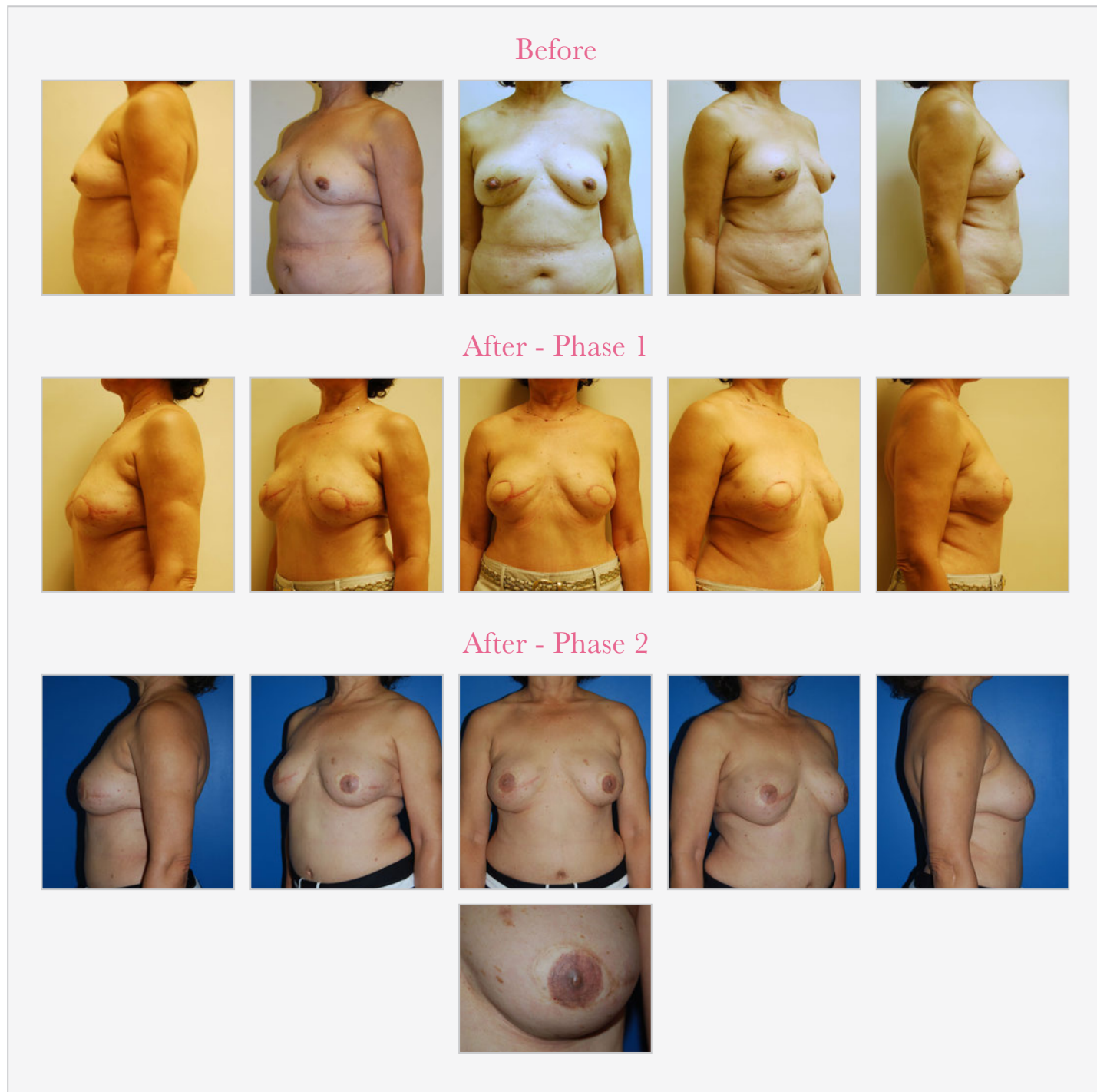
After



*“Both of the doctors deeply care and have a great sense of humor. Women know how important that is”*

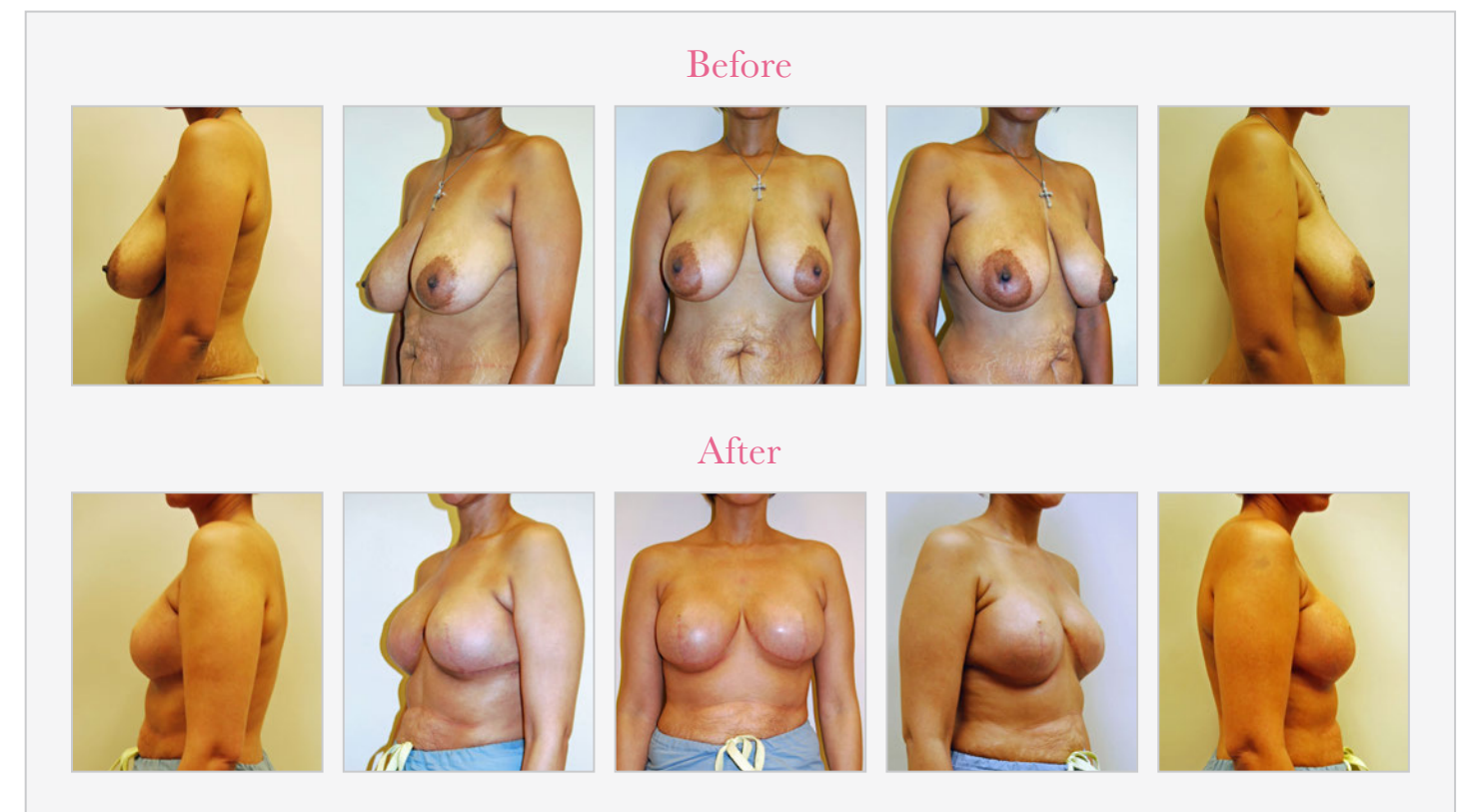
~ Leigh

Prophylactic Mastectomy

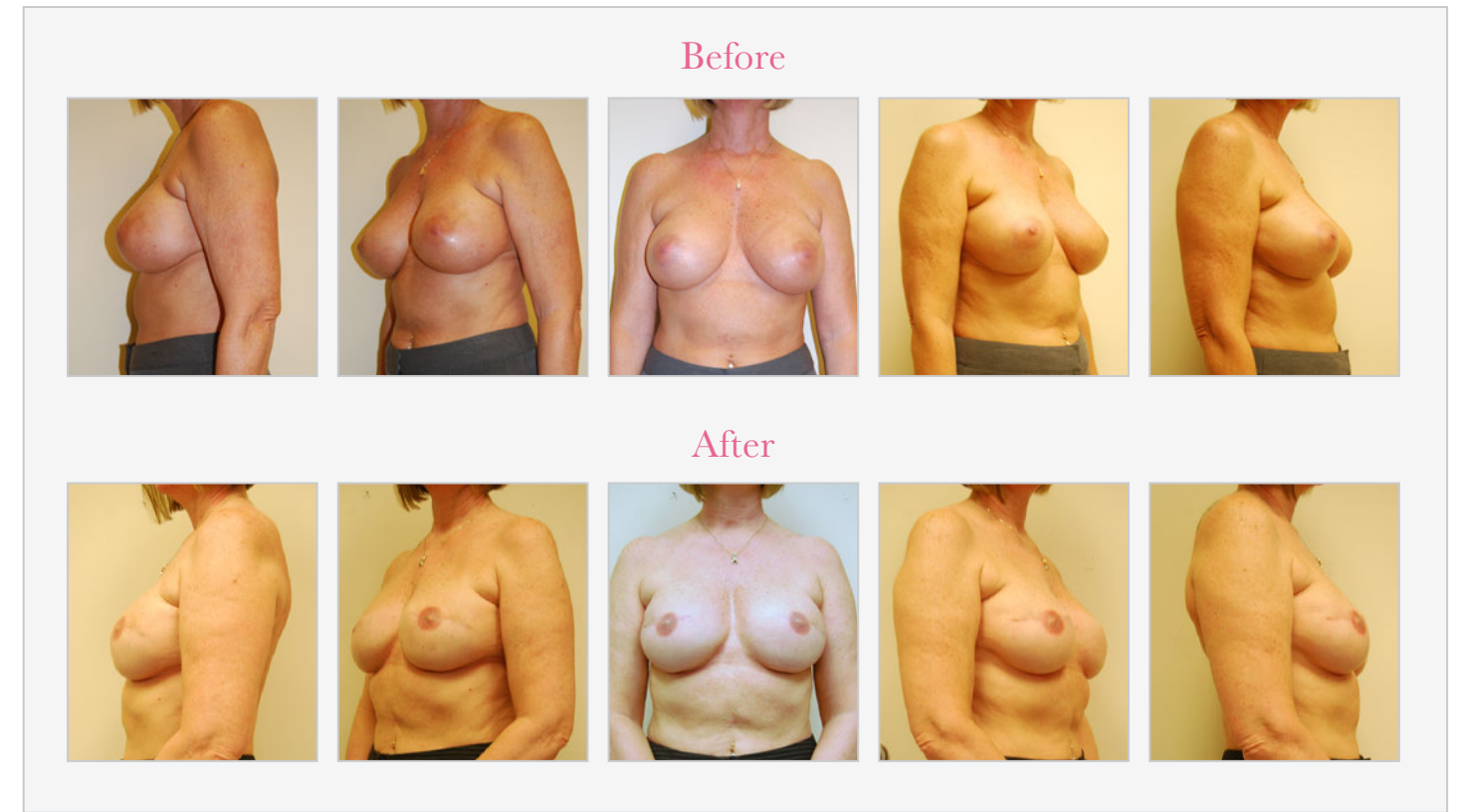


*“The whole staff took something very bad and made it a good experience for us”*

~ Bethann



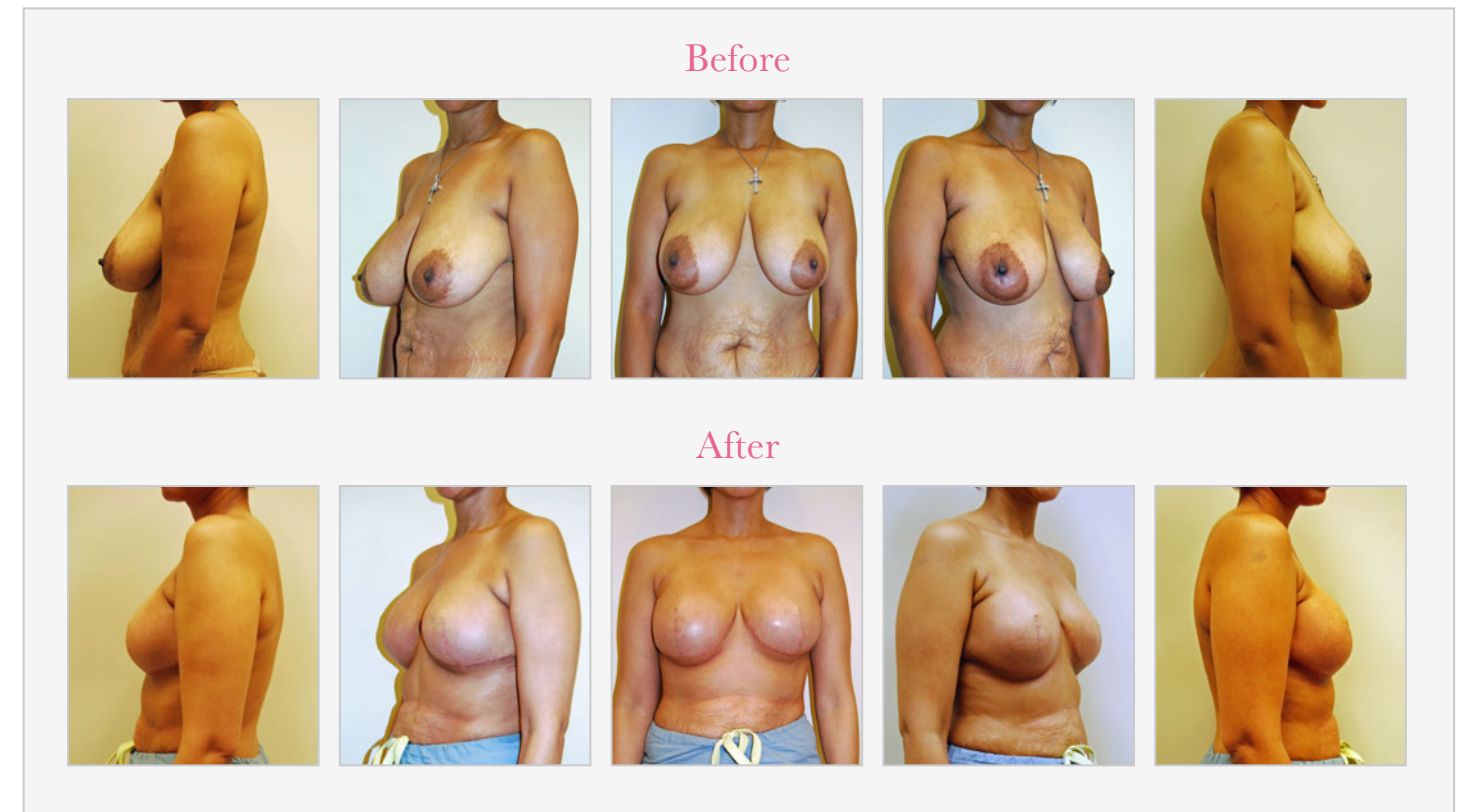
Breast Reconstruction Using Tissue Expanders



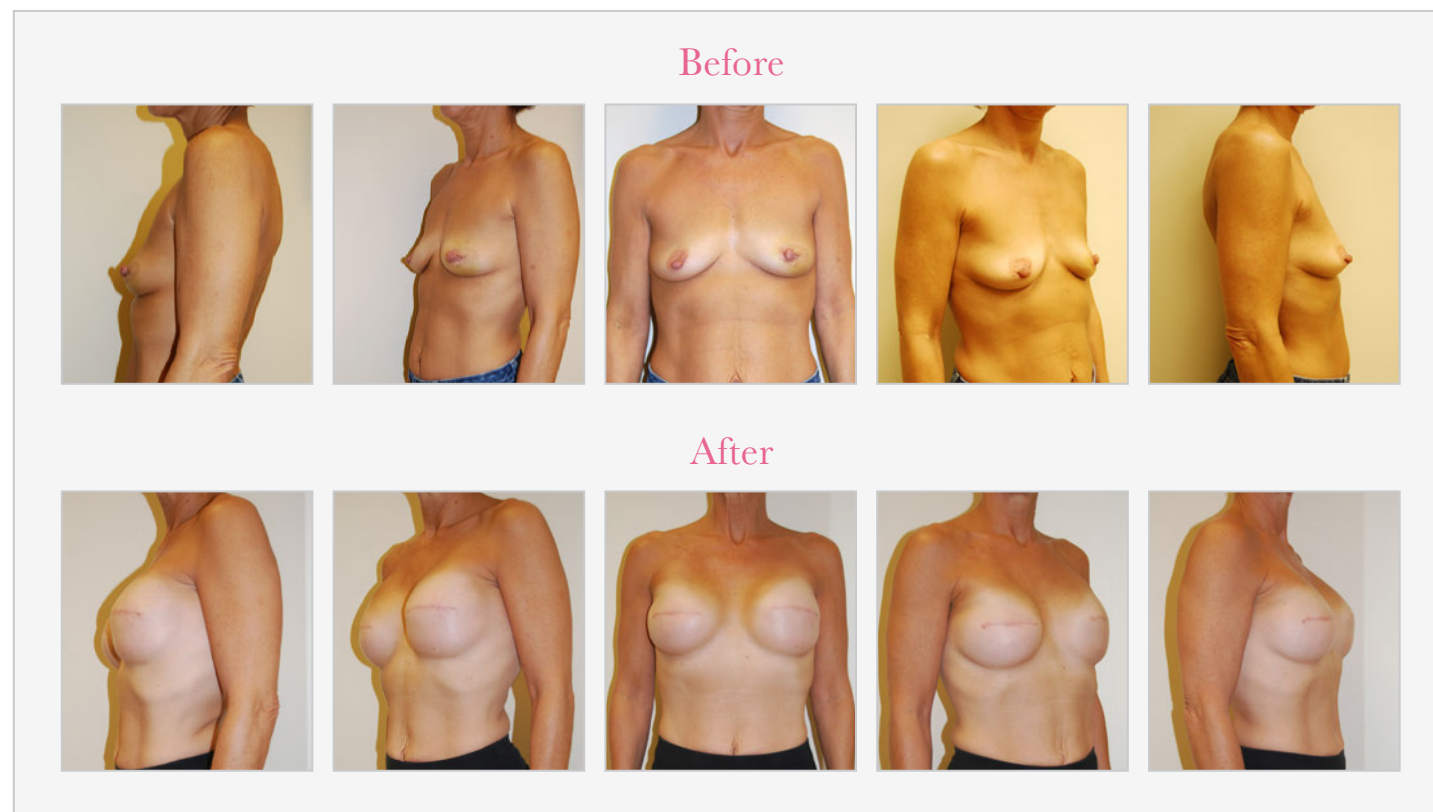
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*“Meeting the doctors at Richmond Aesthetic Surgery just put me at ease. I knew I was in the right place”*  
~ Donita

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Nipple Reconstruction with Areolar Tattooing







# RICHMOND AESTHETIC SURGERY

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Plastic Surgery  
ABMS MOC\*

*Certification Matters*