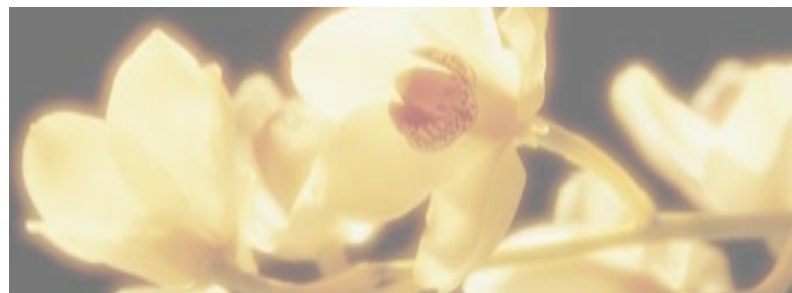


Breast Reconstruction

Your options for restoring form and symmetry



Plastic and Reconstructive Surgery Following Mastectomy

Successful breast reconstruction following mastectomy will restore your appearance and may also have a remarkably positive impact on your sense of recovery and well-being. Dr. Frank Isik and Dr. Drew Welk have each performed hundreds of reconstructions following mastectomy. We present every applicable reconstructive option to each new patient, from the most refined use of implants to state-of-the-art microsurgical procedures. This booklet provides an overview of the most common methods we employ and will help you consider how to proceed.

YOUR OPTIONS FOR BREAST RECONSTRUCTION

Breast reconstruction can be started weeks to months after mastectomy. Recreating the breast mound and subsequent procedures to obtain best final shape and symmetry may require several stages, and several methods are available.

All reconstructions start with creation of a breast mound at the site of the mastectomy. Available methods include use of an implant following tissue expansion, transfer of tissues from another area of the body, or a combination of both an implant and tissue transfer.

Following successful creation of a well shaped breast mound, secondary surgery may follow to finalize the size and/or shape of the new breast. At the same time, the opposite breast may be enlarged, lifted, or reduced to gain best final symmetry.

Reconstruction of the nipple and tattoo for desired coloration completes the process. The following material outlines these stages, and examples of prior surgery that we have performed by each method are presented.

Stage I: Creation of a Breast Mound

The first operation creates a naturally shaped breast mound. One of the following methods is most commonly used:

Tissue Expander Placement

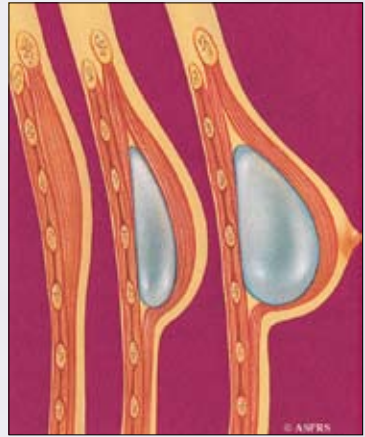
Latissimus Dorsi Muscle Flap plus Tissue Expander

TRAM Flap

DIEP Flap

Tissue Expander Placement

Tissue expanders are volume adjustable devices filled with saline after insertion until desired final size and shape is obtained. Over time, an expander actually induces new skin growth in areas overlying the expander, replacing the skin lost to mastectomy. Expanders vary in size and design and require optimum selection and placement for best results. Once the expanded tissue develops a mature form (usually around four months) the expander is removed and replaced with a permanent implant.



Expander is filled until desired volume and shape is obtained.

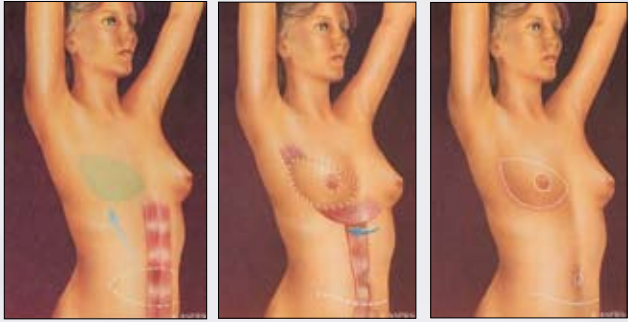
Latissimus Dorsi Muscle Flap plus Tissue Expander

The broad, flat latissimus dorsi muscle and a portion of overlying fat and skin can be moved from the back to the mastectomy site to supplement soft tissue coverage over an expander, and then an implant. Many other muscles functionally overlap with the latissimus muscle so little if any noticeable loss of strength or motion occurs in most cases.



Latissimus muscle adds tissue to the mastectomy site.

TRAM flap moves skin and fat from abdomen to chest based on underlying rectus muscle.

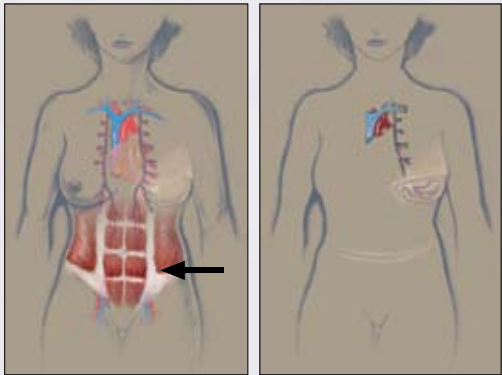


TRAM Flap

Abdominal skin, fat and a rectus muscle is used for the reconstruction. This method usually does not require use of an expander or implant, since the volume of tissue brought to the chest from the abdomen allows for breast mound creation without use of these devices. The resultant reconstruction is entirely from the patient's own tissue. Loss of just one rectus muscle usually causes little if any change in abdominal strength or function.

DIEP Flap

Abdominal skin and fat are used for the reconstruction but no muscle is required. The tissue is transferred microsurgically and reattached to new blood vessels at the mastectomy site. This method usually does not require use of an expander or implant. Like the TRAM flap, the resultant reconstruction is entirely from the patient's own tissue.



DIEP flap moves skin and fat from abdomen to chest based only on underlying blood vessels.

Stage II: Symmetry

Patients may elect surgery on the opposite breast for better final symmetry. Procedures include breast augmentation or reduction, breast lift, combinations of these procedures, or operations directed at specific breast features, such as revision of old scars or modification of just a portion of the breast. These procedures are outpatient based, with brief associated recovery.

Adjustment of the reconstructed breast may be necessary, too. Expander or implant position or size may require modifications (usually minor) to create the most even appearance. TRAM or DIEP flaps often require slight revisions once fully healed to finalize breast shape. These operations are routinely combined with any planned procedures on the opposite breast.

Stage III: Nipple Reconstruction and Tattooing

The nipple is reconstructed when the breast mound has “settled,” usually one to three months after flap transfer or implant placement. A small skin flap raised at the nipple site and then folded together to create a “nipple” completes surgery on the new breast. No additional tissues or grafts from other parts of the body are usually required. This procedure is done under local anesthesia.

The reconstructed nipple has no color so it is tattooed to match the other nipple and areola about a month after nipple reconstruction when related healing is secure.

Completion of all three breast reconstruction stages generally takes six months or longer, with the first stage by any method usually requiring the longest recovery period.

The following cases illustrate results from each of the preceding methods with examples from our past patients.

BREAST RECONSTRUCTION WITH TISSUE EXPANDERS AND IMPLANTS

Tissue expansion with subsequent implant insertion remains the most common breast reconstruction method. The best candidates have good quality skin preservation following mastectomy and no prior chest radiation. This method especially appeals to patients who are not good candidates for flap-based procedures or are likely to get an excellent result without a flap.

It is “simple” in that brief outpatient procedures are typical and postoperative activity restrictions are modest compared to flap-based operations. It is complex, however, in that the tissues left from mastectomy may be limited and must be carefully shaped to create a natural and durable final reconstruction.

Expansion initiates the first step of shaping and “maturing” the breast mound. Expander placement at the time of mastectomy is often recommended by other surgeons, but complication rates of combined procedures are always higher. To ensure the best soft tissue environment, we allow the mastectomy site to heal at least six weeks before placing the tissue expander.

We use “low height” tissue expanders developed and refined by Dr. Welk in consultation with McGhan Corporation more than ten years ago. These provide the most natural breast shape and avoid most of the problems commonly resulting from traditional “full height” or “teardrop” expanders, which often create very round, unnatural breast shapes.

The expander is filled through a small valve with sterile saline to create the final breast size and shape. In most patients expansion is completed within one month of placement. Tissue over the expander develops a mature shape after 4-5 months; the expander is then removed and a permanent soft breast implant is inserted.

Silicone breast implants are again FDA approved. The relative risks and merits of all available implants are considered individually for each patient. We use both silicone and saline implants and consider specific advantages likely to result from either choice before proceeding.

It is important to note that patients who have had irradiation for treatment of breast cancer are not usually candidates for implant-based reconstruction unless supplemented with non-irradiated latissimus flaps. Flap methods that don't require use of implants may be considered as well.

Example 1: tissue expanders and implants



After right mastectomy



Right expander,
left augmentation



Right saline implant,
nipple completed

Example 2: tissue expanders and implants



After left mastectomy



Left expander,
right augmentation



Left saline implant,
nipple completed

Example 3: tissue expanders and implants. This example illustrates how the expander (fig.b) may sit higher on the chest than the actual implant (fig.c).

- a. After right mastectomy
- b. Right expander
- c. Left breast lift and augmentation
- d. Right saline implant, final result



a



b



c



d

Example 4: tissue expanders and implants



Bilateral mastectomy



Bilateral expanders



Bilateral saline implants

BREAST RECONSTRUCTION WITH LATISSIMUS DORSI FLAP

Chest tissues may be supplemented by a latissimus dorsi flap when an expander is placed. This operation is especially appropriate for thin patients with tight tissues at the mastectomy site or for patients who have undergone chest radiation.

The latissimus dorsi back muscle and a smaller area of overlying skin and fat are transferred to the mastectomy site, with a tissue expander beneath the transferred flap. We perform this operation at Swedish Medical Center. A one night hospital stay and next day discharge are routine. The tissue expander is inflated over the course of a month or two. After the tissue expansion is mature (usually four to six months), the expander is removed and a permanent implant inserted.

A back scar results from this flap. Your plastic surgeon will go over the incisions and aftercare at your consultation. The end result is often a very natural appearing breast reconstruction enhanced by the additional tissue coverage over the implant from the flap.



Example 1: latissimus dorsi flap reconstruction. This example shows the patient's healed back following reconstruction (fig. d).

- a. After left mastectomy
- b. Left latissimus flap and expander
- c. Left saline implant and nipple
- d. Healed back

Example 2: latissimus dorsi flap reconstruction



After right mastectomy



Right latissimus flap and expander



Right saline implant, left implant and lift

Example 3: latissimus dorsi flap reconstruction



Prior right chest radiation



Latissimus flap and expander, left augmentation



Right saline implant and nipple

Example 4: latissimus dorsi flap reconstruction. This example shows the patient's healed back following reconstruction (fig. d).

- a. Prior to bilateral mastectomy
- b. Bilateral latissimus flaps and saline implants
- c. Bilateral nipple reconstruction
- d. Healed back



a



b



c



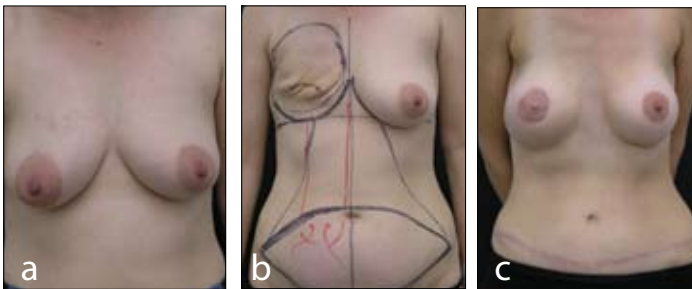
d

BREAST RECONSTRUCTION WITH TRAM FLAP

Since 1980, the Transverse Rectus Abdominis Myocutaneous (TRAM) flap from the abdomen has become the most common source of tissue used in flap-based breast reconstructions. The TRAM flap, which consists of lower abdominal skin, fat and one or both rectus muscle(s), can be transferred from the abdomen to the chest to create a natural breast mound. This tissue is the same as that discarded in an abdominoplasty (tummy-tuck). As a result, patients have the added benefit of improved final abdominal contour, similar to the results of a tummy-tuck.

This operation is performed at Swedish Medical Center and typically requires a two night stay in the hospital. A tummy-tuck scar results in the lower abdomen. Excellent aesthetic outcomes can be achieved provided patient anatomy is appropriate for a TRAM flap. The TRAM flap is one of the preferred methods of breast reconstruction if prior chest radiation has been necessary. Because all breast volume is derived from living tissue, the results in any case are likely to be the most natural and durable that can be achieved.

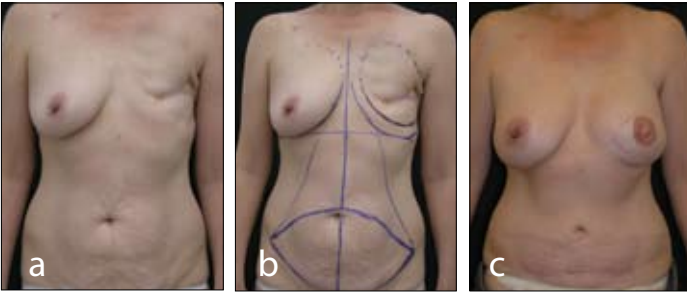
Example 1: TRAM flap reconstruction



- a. Prior to right mastectomy
- b. Markings for TRAM flap
- c. TRAM flap and nipple reconstruction complete, left augmentation/lift
- d. Side view, final result



Example 2: TRAM flap reconstruction



- a. After left mastectomy
- b. Markings for TRAM flap
- c. TRAM flap and nipple reconstruction complete
- d. Side view, final result, showing scar appearance



Example 3: TRAM flap reconstruction



After bilateral mastectomy



Bilateral TRAM flap reconstruction



Front view, final result

BREAST RECONSTRUCTION WITH DIEP FLAP

The Deep Inferior Epigastric Perforator (DIEP) flap is similar to the TRAM flap in that the same abdominal skin and fat is used and the same scars result. However, the DIEP flap transfers only the skin and fat from the abdomen, without use or loss of a rectus muscle.

This tissue transfer requires microsurgery since the small arteries and veins that provide blood supply to the tissue are detached from the abdomen and then connected to similar sized arteries and veins on the chest.

Like the TRAM flap, the DIEP flap creates a natural breast reconstruction using transferred tissue without the need for implants. The DIEP flap is another preferred method of breast reconstruction for previously radiated patients. The tissue used for the breast reconstruction is the same that would have been discarded in a “tummy-tuck” and the results are likely to be very natural and durable.

Dr. Isik is one of only a few surgeons on the West Coast who performs this procedure. Surgery is done at Swedish Medical Center and typically requires a three night hospital stay.

Example 1: DIEP flap reconstruction



Patient with right-sided breast cancer, after prior lumpectomy



After right DIEP flap and nipple reconstruction, left side breast lift



Final result after tattooing, with scars having faded

Example 2: DIEP flap reconstruction



Patient with left sided breast cancer



After DIEP flap reconstruction



Final result after nipple reconstruction and tattooing

Example 3: DIEP flap reconstruction



Patient with bilateral breast cancer



Bilateral DIEP flap breast reconstruction



Final result after nipple reconstruction and tattooing

About Dr. Frank Isik & Dr. Drew Welk

The most important factors in achieving a long-lasting, aesthetically pleasing result are the experience and prior results of the surgeon performing the breast reconstruction. At The Polyclinic, Drs. Isik and Welk perform more breast reconstructions than any other plastic surgery group in the Northwest. They have a combined experience of 30+ years with an annual volume of over 200 breast reconstructions.



Frank Isik, MD

We offer all methods of breast reconstruction described in this booklet. Both Dr. Isik and Dr. Welk are honored annually by their peers in the greater Seattle medical community as “Top Doctors” in *Seattle Magazine* and *Seattle Metropolitan*. They are also routinely appointed to the prestigious “Best Doctors in America” listing, as well as many others.



Drew Welk, MD

Dr. Isik and Dr. Welk are board certified by the American Board of Plastic Surgery. Board certification by the ABPS means that the doctor has met and continues to maintain a high level of professional, educational, and ethical standards. For more about Drs. Isik and Welk, please visit our website: www.polyclinic.com.

Insurance

We currently contract with Premera Blue Cross and Aetna for professional services specific to breast reconstruction. Patients who have other carriers are billed the same contracted rates established with Premera and Aetna, and you may be reimbursed by your insurers, depending on the specific provisions of your plan. Facility and anesthesia expenses are under separate contracts with most insurers and are often fully covered.

Note to our readers: the patients in this booklet have all given consent for us to share their anonymous photos with individuals who might need similar services.

Breast Reconstruction Information Exchange Group

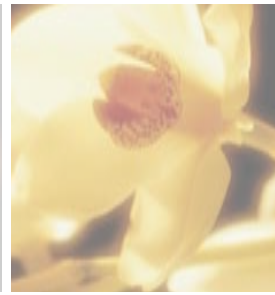
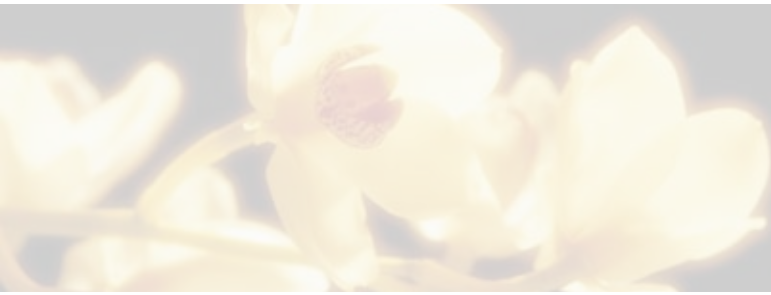
The Breast Reconstruction Group was created to provide an informal setting where women who are considering how to proceed with breast reconstruction can meet women who have already completed the process. All past patients are invited, and many attend. This is a women only group, and you and your friends are welcome to attend the next meeting.

A presentation with descriptions of the various reconstruction techniques will be made by our RN facilitator and often a "show & tell" may take place with patients who are going through or have completed their reconstruction. Expect a positive and informative evening in which to share experiences with sensitivity, attentiveness, and a healthy sense of humor.

Meetings are usually held the 2nd Wednesday of the month at 5:30 pm, but that date may vary so confirm the schedule with our office. We meet in the privacy of The Polyclinic's 3rd Floor Conference Room. Take the elevator to the 3rd floor, turn left and proceed straight ahead. A sign will be posted at the door. Beverages and a light snack will be provided. For more information, please contact our offices at 206.860.2317 or 206.860.4566.

Patient Reference Materials

1. Breast Reconstruction Following Breast Removal. American Society of Plastic Surgeons. Available at: www.plasticsurgery.org/public_education/procedures/breastreconstruction.cfm
2. Breast Implant Consumer Handbook - 2004. Available at: www.fda.gov/cdrh/breastimplants/indexbip.html
3. Rowland JH, et al, "Role of Breast Reconstructive Surgery in Physical and Emotional Outcomes Among Breast Cancer Survivors," J Natl Cancer Inst. 2000 Sep 6;92(17):1422-9.
4. Alderman, Amy K. M.D., M.P.H.; Wilkins, Edwin G. M.D., M.S.; Kim, Hyungjin Myra Sc.D.; Lowery, Julie C. Ph.D. "Complications in Postmastectomy Breast Reconstruction: Two-Year Results of the Michigan Breast Reconstruction Outcome Study," Plastic & Reconstructive Surgery June 2002, 109(7): 2265-74.
5. Pusic A, Thompson TA, Kerrigan CL, et al, "Surgical options for the Early-Stage Cancer: Factors Associated with Patient Choice and Postoperative Quality of Life," Plastic & Reconstructive Surgery Oct 1999, 104(5):1325-33.



Scheduling Appointments

To make an appointment : call our office between 8:00 am and 4:30 pm,
Monday through Friday.

Frank Isik MD: 206.860.4566

Drew Welk MD: 206.860.2317



The Polyclinic 1145 Broadway Seattle, WA 98122

Northbound I-5

- Exit Dearborn St./James St./Madison St. (Exit 164A)
- Continue to follow signs for Madison St./Convention Pl., merging right, eventually merging onto 7th Ave.
- Turn right onto Madison St.
- Turn left onto Broadway
- Turn left into parking garage (just BEFORE signal at Union St.)

Southbound I-5

- Exit James St. (165A)
- Turn left onto James St. (second signal light following exit from freeway)
- Turn left onto Broadway (follow signs for Seattle Central Comm. College)
- Turn left into parking garage (just BEFORE signal at Union St.)