

BREAST EXPANDERS,IMPLANTS AND FLAPS

Breast Reconstruction Therapy

- Through this article we will try to learn more about :
- What is Breast Reconstruction therapy?
- When is the ideal time to get Breast Reconstruction therapy?
- What are the different Types of Breast Reconstruction?
- What are the Advantages of Breast Reconstruction Therapy?

What is Breast Reconstruction Therapy?

- Breast Cancer affects 1 in 8 women throughout their lifetimes, and is second most common cause of cancer death for women in the US. However, due to modern advances in detection and treatment options, the number of breast cancer survivors, as of 2008, is approximately 2.5 million. With better survival rates, the focus of breast cancer treatment has grown to include not only surgery, chemotherapy, and radiation, but also the option for post-mastectomy breast reconstruction. Aesthetic outcomes after breast surgery and patient quality of life have become a priority in line with treating the cancer itself. Studies demonstrate that breast reconstruction has a positive psychological benefit on women, restoring the sense of femininity. Breast reconstruction can help alleviate feelings of deformity that often follow mastectomy and eliminate the constant reminder of disease. However, only 10% of post-mastectomy women will undergo breast reconstruction, often not because of preference, but due to lack of education and awareness regarding reconstructive procedures.

When is the ideal time to get Breast Reconstruction?

- Breast Reconstruction can be performed immediately after the breast removal surgery or can be performed 3-6 months after the breast removal surgery.
- Immediate flap breast reconstruction is preferred by some surgeons as it improves mental and physical health. It reduces the psychological impact of the loss of a breast
- The operative time is reduced and the aesthetic outcome is satisfactory.
- The majority of reconstructions use a delayed approach.
- It gives the patients and the surgeon a better idea of the stage and prognosis of the cancer.
- In addition breast reconstruction is advised after patient has recovered and completed adjuvant chemoradiation usually 3 to 9 months later.
- As postoperative radiation after immediate breast reconstruction increases wound complications and fibrosis around the breast implant.
- However the best option is selected for each patient for favourable outcomes.

What are the different types of Breast Reconstruction Therapy

- **Breast implants**
- **Tissue expander technique**
- **TRAM Flap-Transverse rectus abdominis myocutaneous flap**

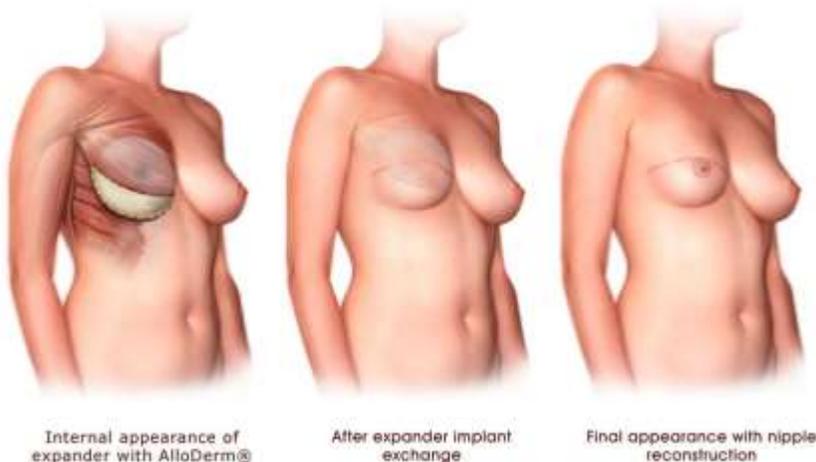
- **Latissimus dorsi flap**

Breast implants:

- **What are breast implants?**
 - **Using Breast implants is the simplest form of breast reconstruction following removal of the breast.**
 - **It involves replacing the breast with a silicon gel or saline filled implant.**
- **How is it done?**
 - **Placement of the implant below the chest muscle (pectoralis major) after creating a pocket can be done immediately after the breast removal surgery or as a delayed procedure.**
 - **A pocket larger than the implant extending 3-4 cm below the opposite breast is created. The implant is inserted in this pocket and the muscle is stitched closed.**
- **Who can have Breast Implants?**
 - **This type of reconstruction is only indicated in presence of adequate skin and soft tissue.**
 - **A patient with a modified radical mastectomy with a soft well healed skin flaps and an opposite breast dimension of 300 cc or less is an ideal candidate.**
- **What could possibly go wrong?**
 - **Complications from the Breast Implant Procedure includes:**
 - **Bleeding from the pocket creation, infection, extrusion of the implant, and capsular contracture.**
- **What is Capsular contracture?**
 - **Development of a thick scar around the implant is known as capsular contracture. This results in a firm painful mound and poor aesthetic outcome**

Looking For C. U. R. E.

Expander AlloDerm® and Implant Reconstruction



Internal appearance of expander with AlloDerm®

After expander implant exchange

Final appearance with nipple reconstruction

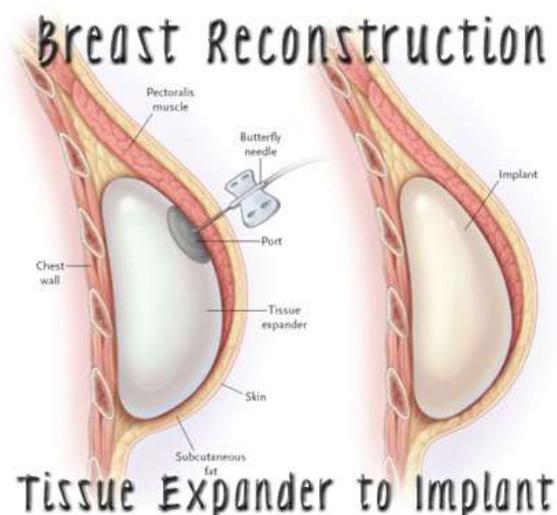
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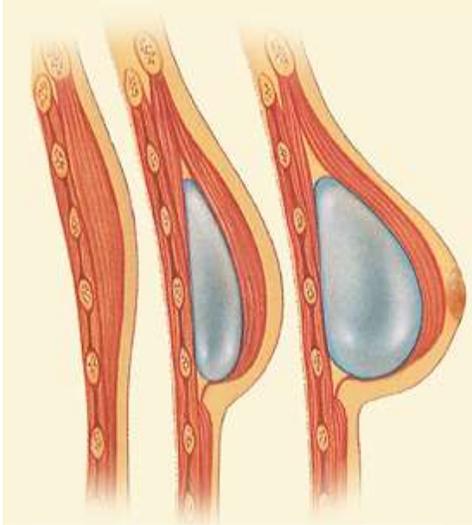
Tissue Expander Technique

- **What is the Tissue Expander Technique?**
 - **Tissue expanders have added a new dimension to breast reconstruction. Tissue expansion enlarges the skin and pocket without requiring local or distant muscle flaps.**
- **How does Tissue Expander Technique work?**
 - **It provides gradual stretching of the skin in the same way as the abdominal skin and wall musculature stretch during pregnancy.**
 - **Similar to that of implant reconstruction, a pocket is surgically created below the chest wall muscle (pectoralis major) and the expander is placed within**

this space. These breast expanders have reservoirs which can be self contained or remote.

- These reservoirs connect to the expander with a silastic tubing which is placed laterally adjacent to the chest wall. At the time of insertion, the expander is inflated with 150 to 300 ml of saline solution depending on the size and tightness of the pocket. After 2 to 3 weeks 50 to 100ml of saline solution is added weekly to achieve appropriate skin expansion.
 - The tissue expander is filled over a period of 6-8 weeks. The overfilled expander is left in place for several weeks to months, depending on the pliability of the skin and the desires of the patient. The expander is then removed and replaced with the appropriate silicon gel or saline filled implant.
- What are the advantages of Tissue Expander Technique?
- The simple technique of tissue expansion provides additional skin coverage without using flaps. Matching of the opposite breast is made easier and the incidences of fibrous contracture after implant insertion may be less compared with implant insertion primarily.





TRAM FLAP

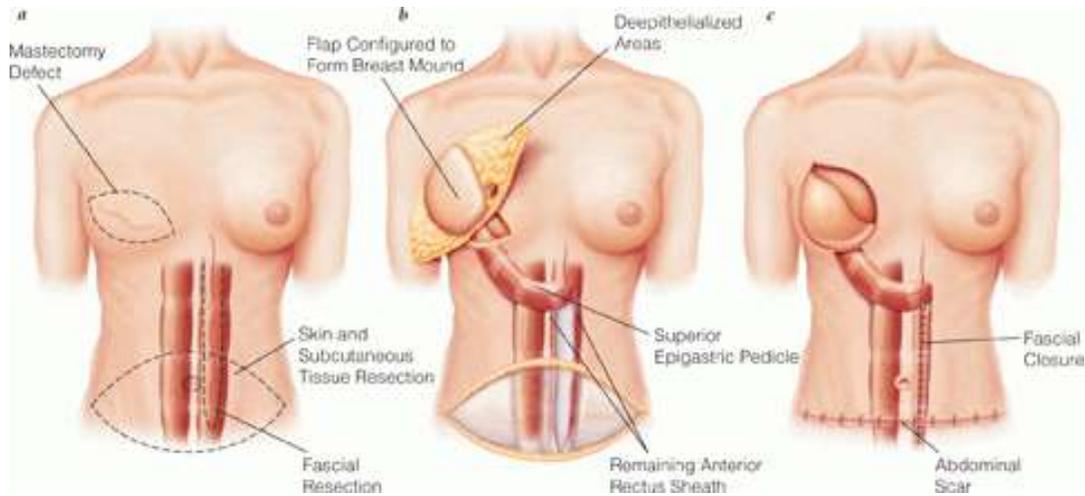
- **What is the TRAM flap?**
- **TRAM Flap stands for Transverse rectus abdominis myocutaneous flap.**
- **It is the latest major addition to the flap breast reconstruction.**
- **TRAM flap procedure primarily means using the abdominal muscle (rectus abdominus) to reconstruct the breast.**
- **Due to the large amount of fatty tissue transferred with the TRAM flap an implant is not necessary, which avoids the possibility of capsular contracture in the reconstructed breast.**
- **The abundance of tissue makes it possible to reconstruct large defects.**
- **In addition to providing ample tissue for breast reconstruction another significant added benefit would be the abdominal wall reconstruction that results in an improved body contour.**
- **Finally the contour and consistency of the transferred abdominal fat in the TRAM flap are similar to those of the normal breast.**

Types of TRAM

- **There are four methods of performing a TRAM breast reconstruction.**
- **1 single pedicle tram- one rectus abdominus muscle.**
- **2.double pedicle tram – both rectus abdominus muscle.**
- **3.supercharged single pedicle tram – augmenting the blood flow to the flap by anastomosing the abdominal vessels (inferior epigastric vessels) to the recipient vessels in the axilla.**

Procedure

- In case of a single breast reconstruction, the rectus muscle on the opposite side is used because this provides for a better arc of rotation of the vascular bundle.
- A tunnel is then made that communicates with the dissection used to raise the mastectomy skin flaps. The TRAM flap is placed gently through this tunnel. Appropriate trimming and contouring of the new breast is then accomplished.
- Abdominal wall closure is done after a tram flap is used. Abdominal wall closure using the existing rectus sheath can be accomplished, but can lead to abdominal wall hernia rate being 5%-15%. Adding prolene mesh to strength the abdominal wall decreases the hernia rate. This also leads to tighter closure and a more aesthetic abdominal contour.



Disadvantages and Contraindications of TRAM flap:

- **A pedicle TRAM flap on patients with a history of heavy smoking or on a patient who has compromised circulation of the skin (eg- lupus erythromatosis) should not be performed.**
- **A frequent complain after TRAM is lower back pain for several weeks.**
- **In a patient with paucity of lower abdominal fat a TRAM flap cannot provide adequate fatty tissue for breast replacement without an implant.**
- **The complications of TRAM flap are generally related to the skill and experience of the surgeon.**
- **Postoperative hematomas and seromas are common complications.**
- **A typical hospital stay with a TRAM reconstruction is 3 to 5 days. Most people require atleast 6 to 8 weeks before they can return to light duty.**

Lattisimus dorsi flap

➤ What is the latissimus dorsi Flap?

- **The latissimus dorsi is a large fan shaped muscle situated in the lower part of the back. Parts of this muscle are used to artificially reconstruct the breast after breast removal surgeries.**

➤ Who gets the latissimus dorsi Flap?

- **The latissimus dorsi flap is ideally suited for breast reconstruction when there is a skin deficiency or when there is a large defect after complete breast removal surgery (radical mastectomy).**

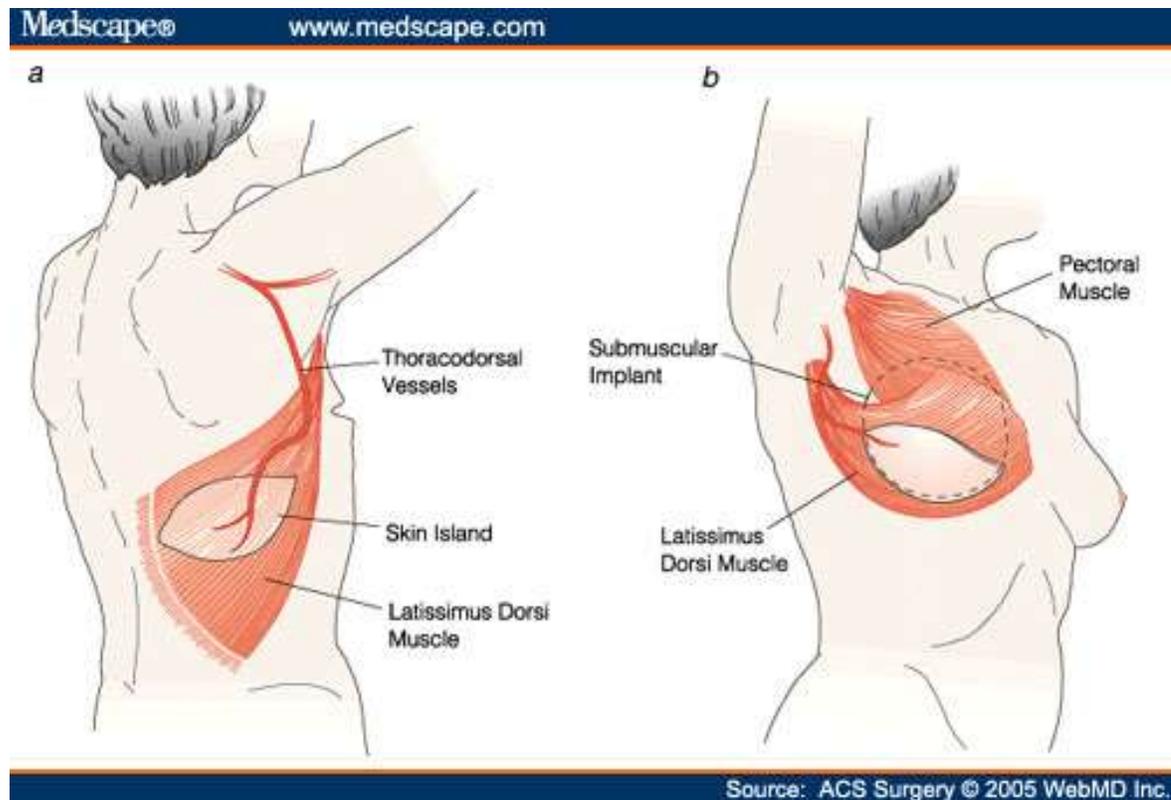
➤ How is it done?

- **The surgeon first decides the amount of muscle to be used. Then a part of the muscle is dissected and a flap is created on the back.**
- **This flap comprising of muscle fibers and/or skin is rotated from the back and is placed on the chest using the thoracodorsal artery and vein.**
- **These muscle fibers and skin are stitched into position and aesthetically tailored to mimic the breast.**
- **After the muscle is placed onto the chest wall two skin flaps are raised from above and below the muscle to create a pocket for the implant.**
- **A 120–300 ml sized breast implant is placed into this pocket.**
- **This procedure requires muscle and implant to reconstruct the breast**
- **Typical hospital stay is about 1-2 days for the procedure. Most patients can return to light duty in 2-4 weeks.**

➤ What are its advantages?

- **The latissimus dorsi flap procedure is traditionally done as a delayed reconstruction procedure.**
- **As opposed to the tram flap the latissimus dorsi myocutaneous flap has a very robust reliable blood supply. Therefore in most cases a history of smoking is not a contraindication.**

- **What are the complications?**
- **It can lead to capsular contracture of the implant causing firmness of the breast.**
- **Blood transfusions can be needed during the procedure.**
- **Seromas can develop in patients with Latissimus dorsi flap reconstruction procedure**



Nipple – Areolar Reconstruction

- The nipple areolar reconstruction is the final stage of breast reconstruction.
- This is done usually between 6 and 12 weeks after the initial breast reconstruction procedure.
- A full thickness skin graft is harvested from the upper inner area of the thigh, which provides a deeply pigmented skin to create an areola.
- Creating an areola by tattooing has also proven an effective method of areolar reconstruction.
- There have been many different techniques of nipple reconstruction. The key is to provide adequate projection of the newly created nipple similar to that on the opposite breast.
- Several types of small local flaps including the skin and underlying fatty tissue have been successful.

Conclusion:

- The current state of breast reconstruction techniques involves application of new and developing plastic surgeries.
- Breast reconstruction is constantly evolving and has developed to provide substantial psychological support, permitting patients to deal better with breast cancer and with the change in body image.

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