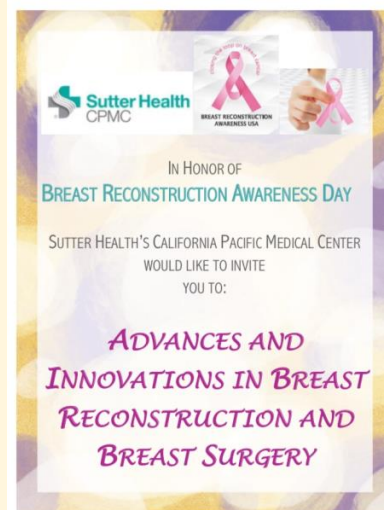


“Advances and Innovations in Breast Reconstruction and Breast Surgery”

Presented by PCMC plastic surgeons

Options for reconstruction after mastectomy

- Implants
- Autologous tissue = from your own body: skin and fat, also known as a flap
- ♥ the goal of breast reconstruction is to restore one or both breasts to near normal shape, appearance, symmetry, and size following mastectomy, lumpectomy or other trauma
- ♥ 106,295 Breast reconstruction procedure in U.S. in 2017(ASPS)
 - →35% increase since 2000
- ♥ 50% of women undergo reconstruction after mastectomy



Breast Reconstruction with Implants

Implant based breast reconstruction

Modern breast reconstruction began in 1994 with the introduction of silicone breast implant

- Techniques and products have evolved and improved
- Most common form of reconstruction after mastectomy
- 2016: >80% of breast reconstructions were implant reconstructions
- Advantages: no new surgery sites/incisions, easier recovery than flap surgery
 - *good reliable results
- Disadvantage: implants are lifetime devices and may require revision in the future

Implant safety established

FDA approved silicone implants in 2006 but required post approval studies 2011, studies showed no evidence that silicone gel filled breast implant cause connective tissue disease or reproductive problem

- several reports: no evidence that implant cause systemic disease

Local problems common such as

- ripping, capsular contracture, rupture
- longer implanted the more common these issues
- implant leakage range from 2% to 30% over 10 years

10 years after initial breast augmentation, 20% of patients need another operation

- 80% of the patients are fine at 10 years
- You don't need to automatically replace your implant every 10 years
- Since 2011 → improved, studier implants

Advances in implant reconstruction

Better implants and more diverse size

Acellular demand matrices (ADMs)

- decellularized soft tissue grafts from cadaveric tissue that behave as a collagen scaffold, allowing revascularization and integration into implanted tissue
- allows partial sub-muscular coverage with the ADM to cover lower part of implant
- allow single stage reconstruction

Implant Types

Women have options for their individual body shape and goals

Silicone vs. Saline

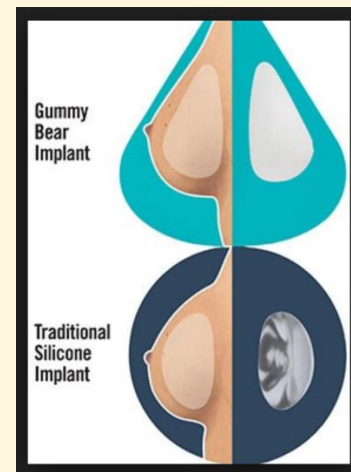
Various cohesivities(gumminess), sizes, projections, shape and fill

Textured shaped implants vs. smooth round implants

- Gummy bear: anatomic implants shaped like a teardrop, textured
- Round implants create a fuller, more projected look

High-strength cohesive (HSC) silicone gel is a breakthrough technology

-Strongest type of silicone on the market – implants remain soft and natural feeling to the touch



Single stage vs. Two Stage

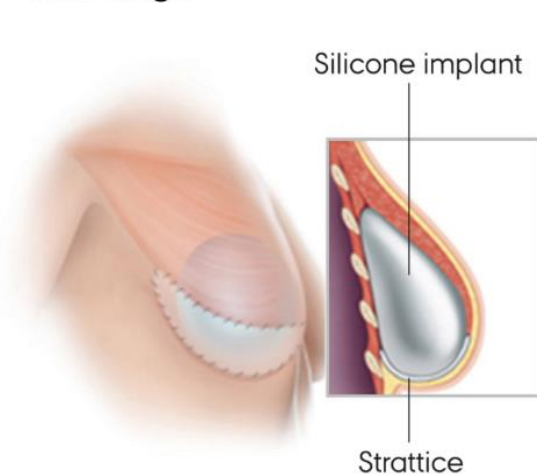
Single stage (direct to implant)

- immediate implant placed
- ideal patient: nipple sparing mastectomy with minimal ptosis, good skin quality; no comorbidities
- limits in size choice

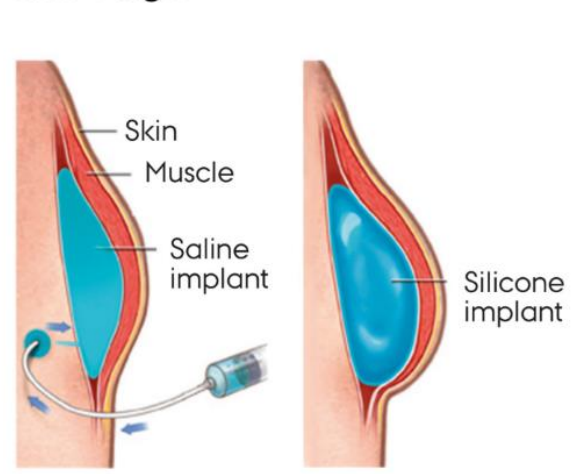
Two Stage

- tissue expander placed

One-stage



Two-stage



Mastectomy can result in very thin skin that provides inadequate coverage for an implant

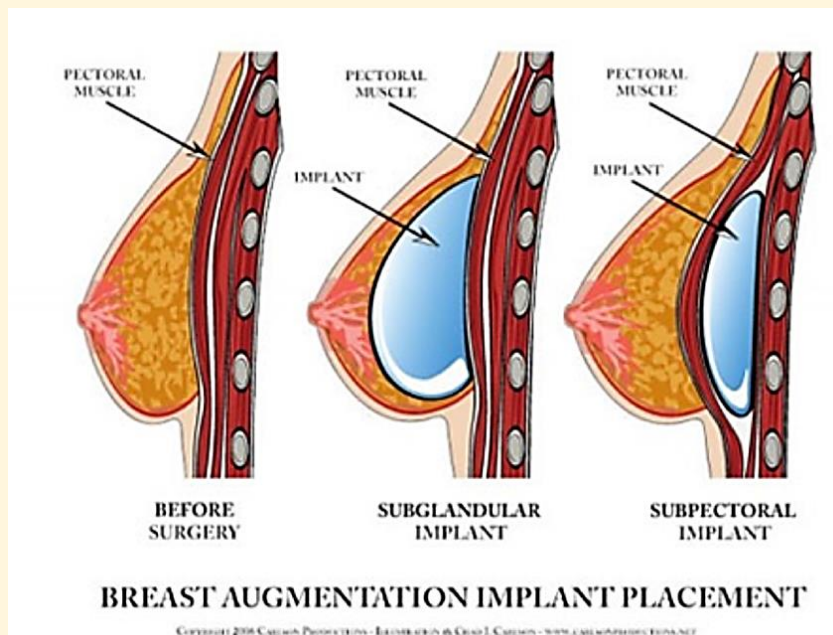
Submuscular implant placement become the standard of care

Advantages

- Behind the pectoralis muscle reduces implant visibility, palpability, ripping and the risk of capsular contracture
- Better transition upper pole

Disadvantages

- Early techniques involving complete submuscular placement resulted in unnatural appearing breast
 - ADMs and partial muscle coverage
- Potentially longer recovery time and more initial pain
- Flexing muscle may make a breast implants move in unnatural way animation deformity



Pre-pectoral technique

Chest muscle isn't cut and implant placed over the muscle

Advantages

- potentially shorter recovery time
- less initial pain
- greater control of shape and form
- no animation deformity

Disadvantage

- not all patients are candidates because it requires enough tissue in good condition after a mastectomy
- risk of visible rippling of the implant
- less long term data especially regarding capsular contracture
- requires ADM wrapping –expansive

Recovery and revision

Full recovery 4~6 weeks

- Drains for 7~14 days

Reconstruction revisions

- Common in mastectomy reconstruction
- Address asymmetry, ripping, transition points
- 3 months to years after reconstruction

Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL)

Types of T cell lymphoma that can develop following breast implants

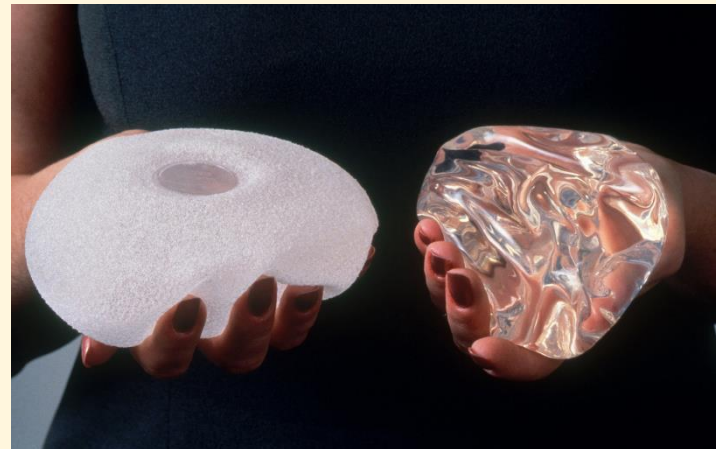
- within the fibrous capsular around the implant

BIA-ALCL identified most frequently in patients undergoing implant revision operations for late onset seroma (fluid collection around the implant)

- textured implants
- mean 7~8 years after implantation

Risk is very low;

Lifetime risk estimated to be 1:3819 women **with textured implant**



Implant recovery

1-2 night in the hospital

Out of work 2~3 weeks 90~95%

Back to full time work 4~5 weeks 95%~98%

6 weeks 99%

Flaps for Breast Reconstruction

Flap surgery

Technique in plastic surgery where any type of tissue is lifted from a donor site and moved to a recipient site with an intact blood supply

Advantage of Flap

- More life like
- Implant free
- Better symmetry after single mastectomy
- Higher patient satisfaction
- Long term benefit – less need for later surgery

Disadvantage of Flap

- Bigger, longer operation
- Longer hospital stay
- More difficult recovery
- More post op pain

Advantage of DIEP

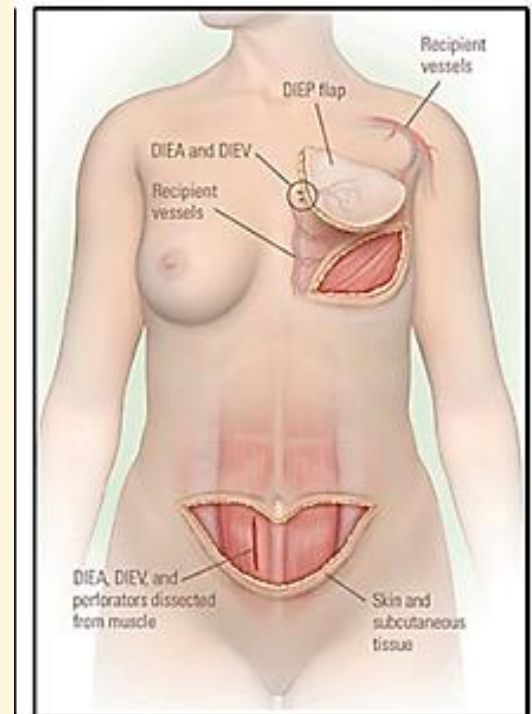
- Faster recovery
- Less abdominal wall morbidity
- Decreased narcotic use post op
- Shorter hospital stay
- Fat Necrosis: 5~12%

Disadvantage

- Operation is technically difficult
- Variable anatomy of perforator; each patient is different
- Occasional venous congestion requiring additional venous repair
- Requires microsurgery expertise
- Flap loss (<1%)

Post op course

- First 24 hours: bed rest, nothing to eat
- Day 1: start eating, up in a chair, transition to oral pain meds
- Day 2: walking
- Day 3 or 4: discharge home



DIEP Flap

The DIEP flap also uses the skin and fat from the lower portion of the abdomen, but spares the rectus muscle.

DIEP recovery

3-4 nights in the hospital

Out of works 3-4 weeks 90~95%

Back to fulltime 5~6 weeks 95~98%

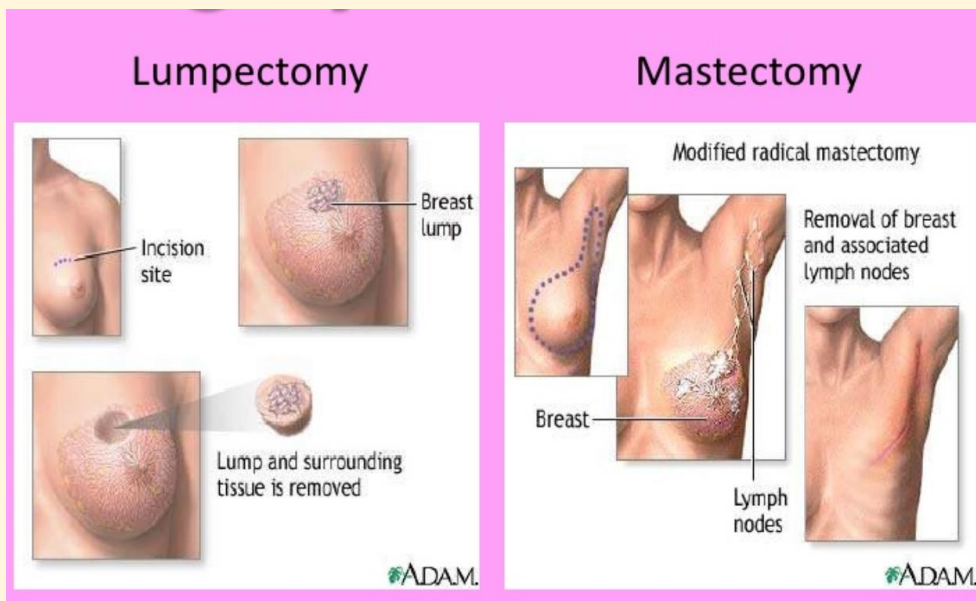
8 weeks 99%(a bit slower recovery than implant)

Oncoplastic reconstruction

Immediate reconstruction at the time of lumpectomy

-Tumor is first removed

-other breast tissue is moved to fill in space left after tumor removal



Oncoplastic reconstruction: local tissue rearrangement

-often combined with hidden scar lumpectomy

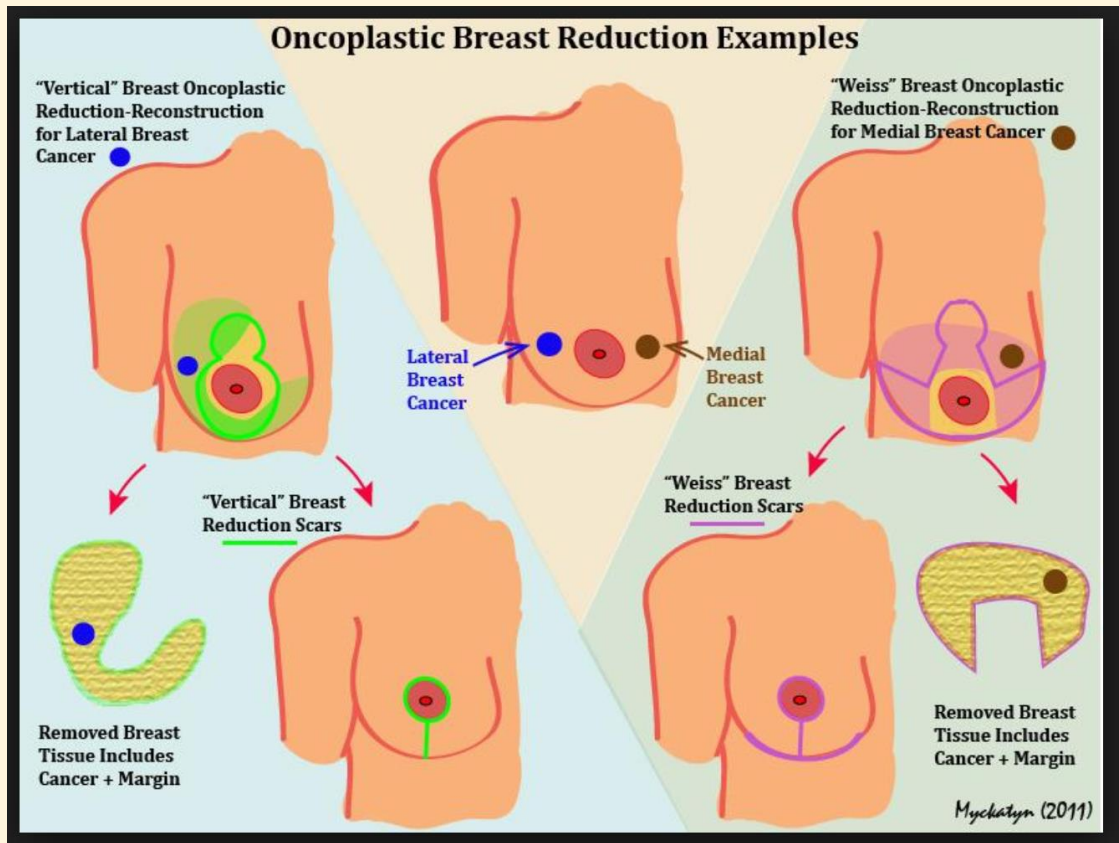
-reconstruction done through lumpectomy scar

-no added recovery

-trade off more scarring for reshaping or resizing breast

-may extend option of lumpectomy with larger tumor

-recovery only slight longer than lumpectomy alone



(<https://westcountyplasticsurgeons.wustl.edu/surgery/breast-surgery/breast-reconstruction/reconstruction-for-lumpectomy.html>)

Benefit

- patient satisfaction
- Improved long term cosmesis
- Opportunity to improve breast appearance
- Better margin control around tumor

Summary

- ♥ There is no single "best" type of breast reconstruction
- ♥ The decision is extremely personal and individual
- ♥ The choice of reconstruction should be made once all considerations are explained and understood
- ♥ Implant based breast reconstruction is most popular form of breast reconstruction and safety of implants has been established
- ♥ Best plan for reconstruction is based on patient's desire quality of skin and patient's characteristic (tumor location, BMI, ptosis, aesthetic goals, need for radiation)
- ♥ Newer lumpectomy approaches address quality of life impact with oncoplastic reconstruction