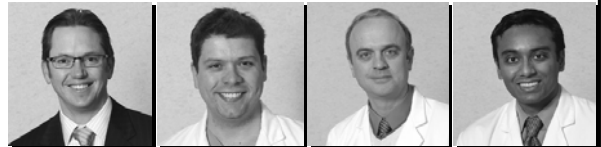


# Breast Reconstruction

**Pankaj Tiwari, MD and James Boehmler, MD**  
Ohio State University  
Division of Plastic Surgery

## Reconstructive Team



James Boehmler, MD    Ergun Kocak, MD    Michael Miller, MD    Pankaj Tiwari, MD

**Comprehensive Reconstructive Breast Surgeons**



The Ohio State University  
**Plastic Surgery**



*... to restore and make whole*

## Risk of Developing Cancer

<b>All Sites</b>	<b>1 in 3</b>
<b>Breast</b>	<b>1 in 7</b>
<b>Lung</b>	<b>1 in 7</b>
<b>Colon</b>	<b>1 in 18</b>
<b>Uterine</b>	<b>1 in 38</b>
<b>Ovarian</b>	<b>1 in 59</b>

## Five Points to Remember About Breast Reconstruction

- 1) Elective
  - Can always be performed later
- 2) Timing
  - Immediate vs. delayed
- 3) Symmetry
  - Journey, not a destination
- 4) Revisions
  - Frequently needed
  - Smaller surgery
- 5) Complications
  - No surgery is risk-free
  - "Plan B"

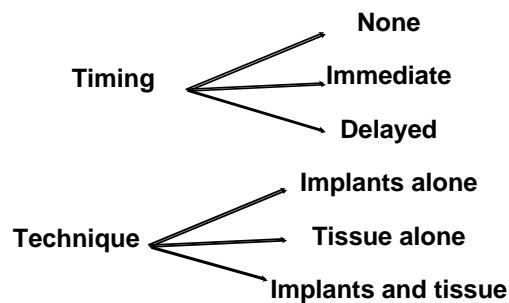
## Mastectomy without Reconstruction

- Advantages
  - ✓ No further surgery
  - ✓ Shorter hospital stay
  - ✓ No additional risks
- Disadvantages
  - ✓ Scar on chest wall
  - ✓ Asymmetry in clothing
  - ✓ External prosthesis
    - Uncomfortable



[www.breastform.com](http://www.breastform.com)

## Reconstruction Options



## 1998 Federal Breast Reconstruction Law

- (1) Reconstruction of the breast on which the mastectomy has been performed
- (2) Surgery and reconstruction of the other breast to produce a symmetrical appearance
- (3) Prostheses and physical complications all stages of mastectomy, including lymphedemas



## Psychosocial Well-Being

- Improved QOL
- Depression
- Fear of recurrence,
- Stigmatization
- Perceived change in health status.



## Aesthetic Outcome

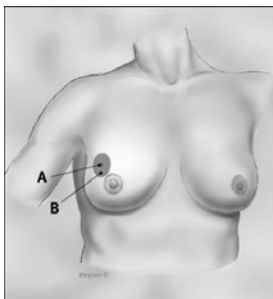
- Pronounced asymmetry after BCS
- ✓ Poor psychosocial fxn
- ✓ Increased depressive symptoms
- ✓ Stigmatization by treatment



Waljee et al. J Clin Oncol

## Breast Conservation Therapy

- Segmental mastectomy + XRT
- Survival data
- Increased local recurrence
- Cosmetic Deformity



## Referral Patterns

- 24% gen surgeons refer >75% patients
- ✓ Female surgeons
- ✓ High clinical breast volume,
- ✓ Work in cancer centers



Alderman et al. Cancer. 2007

## Racial/Ethnic Disparity

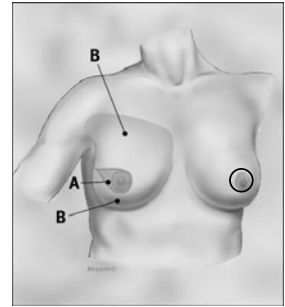
- Reconstruction rate varies by race/ethnicity
- 40.9% of whites,
- 33.5% of AAs,
- 41.2% of Latina-high  
✓ 13.5% of Latina-low



Alderman et al. Cancer. 2009

## Skin Sparing Mastectomy

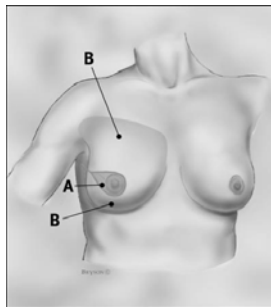
- Preserves Chest Skin
- Smaller Scar
- Preferentially done with Immediate Reconstruction
- Not always possible
  - ✓ Previous Scars
  - ✓ Tumor Location



www.breastcancer.org

## Skin Sparing Mastectomy

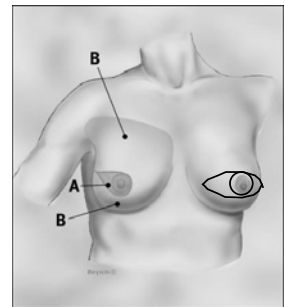
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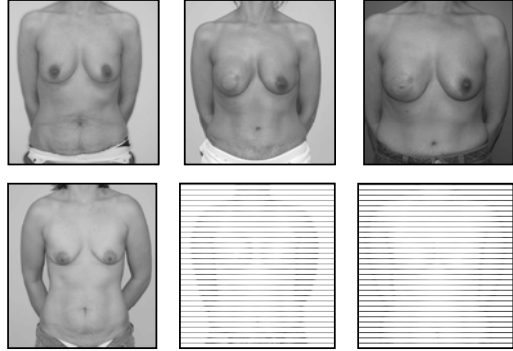


www.breastcancer.org

## Immediate Breast Reconstruction

- **Advantages**
  - ✓ Lowers psychosocial morbidity
  - ✓ Lowers surgical morbidity
  - ✓ Better cosmetic results
  - ✓ Immediate breast mound present
  - ✓ No need for external prosthesis
  - ✓ No difference in detection of recurrence

## Immediate Reconstruction



Immediate Tissue Expander with Silicone Implants

## Immediate Breast Reconstruction

- **Disadvantages**
  - ✓ Mastectomy skin flap necrosis
  - ✓ More surgery, more pain
  - ✓ Longer hospitalization/recovery
  - ✓ Coordination required between surgeons

## Delayed Breast Reconstruction

- ✓ **Advantages**
  - Shorter hospital stay/ shorter recovery
  - Chemotherapy and radiation therapy causes no complications to reconstruction
  - Allows patient time to consider options

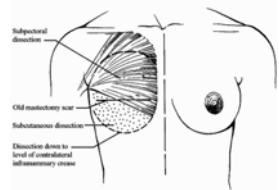
## Delayed Breast Reconstruction

### ✓ Disadvantages

- Soft tissue scar on chest wall
- Requires additional surgery and recovery time
- Need for external prosthesis for symmetry

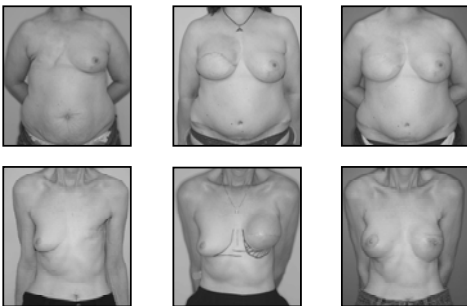
## Expander/Implant

- Most common reconstruction
- Usually multiple stages
  - ✓ Expander placement
  - ✓ Outpatient expansion
  - ✓ Expander/implant exchange
- Single stage for smaller breast
- Silicone vs. saline
  - ✓ Silicone - better feel
  - ✓ Saline - easier rupture detection



Selected Readings Plastic Surgery

## Delayed Reconstruction

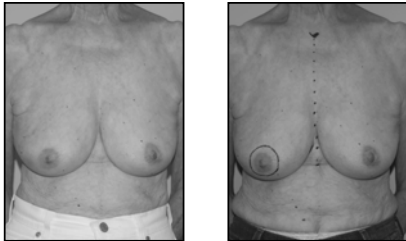


## Expanders and Implants



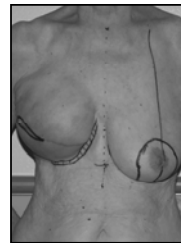
[www.mentorcorp.com](http://www.mentorcorp.com)

## Tissue Expander Patient Example



**Skin Sparing Mastectomy**

## Tissue Expander Patient Example

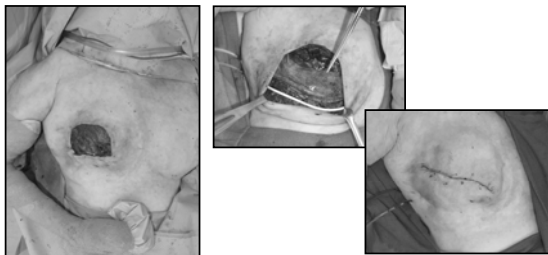


**Implant Exchange  
Mastopexy**



**Post-Operative  
Appearance**

## Tissue Expander Patient Example



**Placement of ADM along inframmary fold**

## Expander/Implant Reconstruction

- **Advantages**
  - ✓ Shorter surgery
  - ✓ Shorter hospital stay
  - ✓ Less technical surgery
  - ✓ Less pain?
  - ✓ Quicker recovery, return to work
  - ✓ Bilateral cases
  - ✓ Thin women



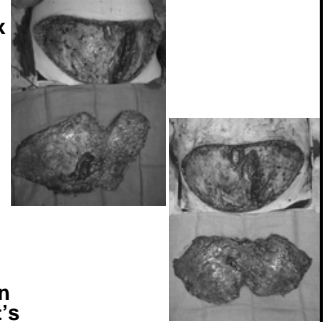
## Expander/Implant Reconstruction

- Disadvantages
  - ✓ Not permanent
  - ✓ Implant material risks
    - Capsular Contracture
    - Infection
    - Rupture
  - ✓ Frequently need expansion
  - ✓ Unilateral cases
  - ✓ Radiation



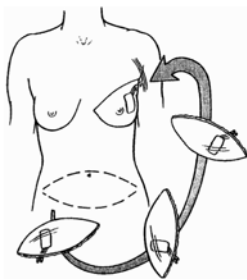
## Free Flap Breast Reconstruction

- ✓ Different amount of “six pack” muscle taken
- ✓ Full width of muscle taken
  - Free TRAM
- ✓ Some muscle taken, some left behind
  - Muscle sparing TRAM
- ✓ No muscle taken
  - DIEP
- ✓ Amount of muscle taken is dependant on patient's blood vessel anatomy



## Free Flap Breast Reconstruction

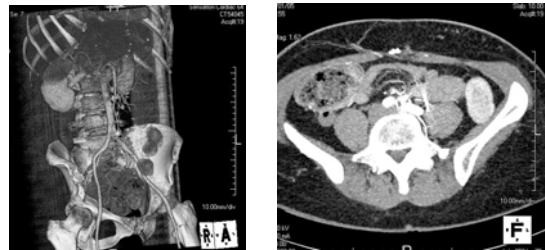
- Microsurgery
  - ✓ Microscope
  - ✓ Advanced training
  - ✓ Specialized centers
- Abdomen most common
- Other Sites
  - ✓ Buttock
  - ✓ Hip
  - ✓ Inner Thigh



Selected Readings Plastic Surgery

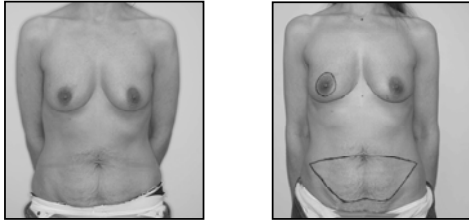
## CT Angiograms

- ✓ Identifies blood vessels in the abdomen
- ✓ Allows for more muscle preservation



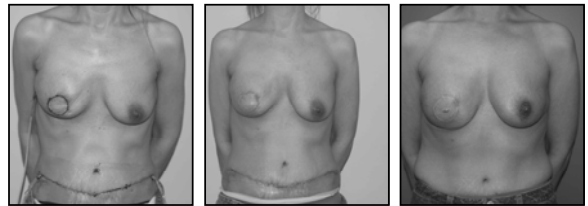


## Free Flap Reconstruction Patient Example

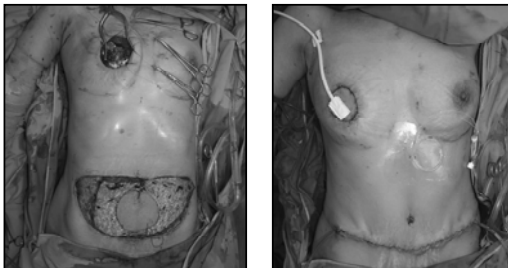


Skin Sparing Mastectomy

## Free Flap Reconstruction Patient Example



## Free Flap Reconstruction Patient Example



## Free Flap Breast Reconstruction

### • Advantages

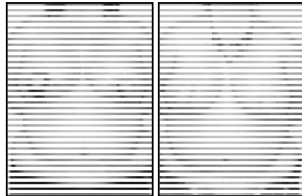
- ✓ Permanent reconstruction
- ✓ No implant material
  - No capsular contracture
  - No infections
  - No ruptures
- ✓ "Tummy Tuck"
- ✓ Skin sparing mastectomy
- ✓ Physiologic
- ✓ Long term cost savings



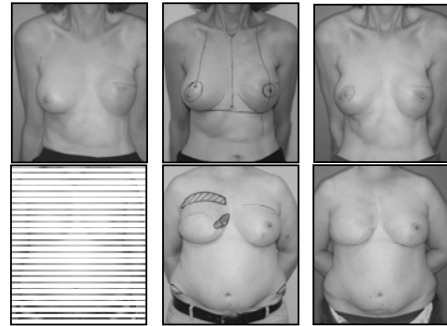
## Free Flap Breast Reconstruction

- **Disadvantages**

- ✓ Longer surgery
- ✓ Longer hospitalization
- ✓ Total failure risk <5%
- ✓ More pain?
- ✓ Not everyone a candidate
  - Too small
  - Too big
  - Previous abdominal surgeries



## Secondary Surgeries



## Latissimus Dorsi Flap

- Pedicled flap reconstruction
- Usually combined with implant
  - ✓ “Mixed reconstruction”
- Usually “Plan B”
- Benefits
  - ✓ No microsurgery
  - ✓ Reliable
- Risks
  - ✓ Tightness in back
  - ✓ Need implant



Selected Readings Plastic Surgery

## Other Surgeries

- ✓ Surgery to the other breast for symmetry
  - Augmentation
  - Reduction
  - Lift
- ✓ Nipple Reconstruction
- ✓ Fat Grafting