5 years General Surgery
3 years Plastic Surgery
Advanced Training In Surgical Techniques
- UT Southwestern Med Center
- Duke Univ Med Center
- Mayo Clinic in Rochester, MN
- Austin-Weston Center for Cosmetic Surgery
- Breast Reconstruction
- Microsurgery Techniques
- Facial Plastic Surgery
- Cosmetic Surgery

Rola Eid, D.O.
Medical Director of Plastic & Reconstructive Surgery
LEARNING OBJECTIVES:

2. Identify Breast-Related Issues That May be Successfully Addressed Through PS
3. Advances in PS, incl. Fat Transfer, Stem Cells, Spy Tech, Biologics, 3D tattoos
4. Basic Understanding of Fed Law that Affords Women Opportunities to Restore Breast Beauty

No Disclosures
Essentially 2 basic components of everything:

**FORM & FUNCTION**

Plastic Surgery = Cosmetic + Aesthetic
Plastic Surgery = Reconstructive

*Plastic* (Greek: *plastikos*): to shape/fashion/mold...

I WAS IN THE POOL

Self-Talk  Inner-Discourse
Immediate Breast Reconstruction

- All Stages of Breast reconstruction
  - Prostheses
  - Nipple reconstruction
  - Nipple-areola tattooing
- Surgery of other breast to produce symmetrical appearance
  - Breast Reduction
  - Breast Lift
  - Breast Augmentation

Health Insurers Mandated to Cover:

- BREAST FOOTPRINT
- SOCIAL BREAST

- 20 cm
- 13.5 cm
- 10.5 cm
- 5.5 cm
- 5.0 cm
- 5.0 cm
All breasts are somewhat ASYMMETRIC
**BREAST RECONSTRUCTION OPTIONS**

- Tissue expander/Implant reconstruction
- Autologous Flaps
  - Latissimus Dorsi Flap +/− Expander
- Abdominal Flaps
- Gluteal Flaps
- Thigh flaps (TUG)

<table>
<thead>
<tr>
<th>Expander</th>
<th>Latissimus</th>
<th>SIEP</th>
<th>DIEP</th>
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<tbody>
<tr>
<td>OR Time (hrs)</td>
<td>1.5 each side</td>
<td>4 (unilateral)</td>
<td>4 (unilateral)</td>
</tr>
<tr>
<td>LOS (days)</td>
<td>1-2</td>
<td>2-3</td>
<td>3-4</td>
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<tr>
<td>Recovery 75% (weeks)</td>
<td>2</td>
<td>3-4</td>
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- In 2013, about 95,000 US women underwent breast reconstruction
- Over 75,000 chose breast implants (mostly silicone)

Approx 8 out of 100 choose implant reconstruction. About 8 out of these women choose a DIEP flap reconstruction.

Approximately 80 out of 100 women choose implant reconstruction.
SKIN SPARING MASTECTOMY

PROPHYLACTIC NIPPLE SPARING MASTECTOMY
Post-op adjustable saline implants + ADM

TISSUE EXPANDERS
Acellular Dermal Matrix (ADM)

- Soft Tissue Support
- ECM (ExtraCellular Matrix)
- Tissue Regeneration
- Creates additional plane for fat injection

First Stage Breast Reconstruction

INDOCYANINE GREEN ANGIOGRAPHY

SPY Elite

OPTIMAL TISSUE EXPANSION VIA THE SPY

First Stage Breast Reconstruction
BIOLOGIC TISSUE

Tissue regeneration: Blood vessels grow into the implanted ADM (Acellular Dermal Matrix).

SECOND STAGE BREAST RECONSTRUCTION

RECONSTRUCTION BREAST FOOTPRINT

Each year, approximately half-a-million women in the US undergo BREAST AUGMENTATION.

Nearly 2 million women worldwide...
Medical Grade Silicone found in
- breast implants
- heart catheters
- heart valves
- cardiac pacemakers
- implantable infusion pumps.
- Most medical devices implanted in soft tissue are coated with silicone at the material-tissue interface.

Miller, Michael J, M.D. (2011) Silicone Gel Breast Implants, Surgery of the Breast, 3rd Ed
U.S. Institute of Medicine (2000), The Safety of Silicone Breast Implants

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US FDA: “…should be no major concern to patients as the absolute risk remains very low due to the extreme rarity of implant-related Anaplastic Large Cell Lymphoma (ALCL).”

Suzanne Turner et al (2014) from University of Cambridge reported in the journal Mutation Research

- Nearly all cases successfully treated by removing implants and scar tissue capsule
- Most cases of breast ALCL occurred in women with breast implants, with and without prior cancer history
- Tumors always developed in the scar tissue surrounding the implant

ESTIMATED RISK: .0000001

Anaplastic Large Cell Lymphoma (ALCL)

ALCL lesions PRESENTED AS...
- Late Onset (4 months to 25 years) Peri-implant SEROMAS
- Often dramatic Swelling of breast from peri-implant fluid
- Most pts reported the swelling merely caused discomfort rather than pain

Collect Fresh Seroma Fluid & Capsule for Pathology

FAT GRAFTING

Mesenchymal Stem Cells (MSCs)
- Stromal Origin
- Differentiate into variety of tissues
- Adipose tissues contain 100,000 MSCs in each gram of fat

FAT TRANSFER
AUTOLOGOUS FAT TRANSFER
First fat transfer to breast recorded 1895 by Vincenz Czerny.
Lipoma transferred from woman’s trunk region to breast for a partial mastectomy defect.

FAT GRAFTING


THIN MASTECTOMY FLAP
FAT GRAFTING + SILICONE IMPLANT

800 cc implant + 250 fat/mastectomy flap

TISSUE EXPANDER/IMPLANT RECONSTRUCTION + FAT GRAFTING + ADM

“BIOENGINEERED BREAST”

First Stage

Second Stage

FAT GRAFTING BENEFITS= BODY CONTOURING
LATISSIMUS DORSI FLAPS
Used in cases with breast radiation
Salvage procedure / Plan B

AUTOLOGOUS TISSUE TRANSFER
Abdominal Flaps

Disadvantages:
- Longer procedure
- Longer recovery/hospital stay
- Separate donor site, more scars
- Can have abdominal weakness/hernia
- May require revisions, more complications
- Can not use donor site again
- Fat Necrosis
3D Nipple-Areola Tattooing

3D Nipple Tattooing

2D tattoo by plastic surgeon 7 years ago.

3D Nipple-Areola Tattooing

PLASTIC SURGERY

Award-winning 3D Realism Artist

RADIATION EFFECTS ON BREAST

“The gift that keeps on giving”

Contracture /fibrosis of skin and muscle

Atrophy of subcutaneous fat

Increase capsular contracture

Hyperpigmentation

Delayed wound healing

3D Nipple-Areola Tattooing

PLASTIC SURGERY

Lifetime Student
REVISION OF RECONSTRUCTED BREASTS

- Replace implants/Change size
- Release scar tissue
- Utilize ADMs
- Fat grafting
- Breast lifts
- Breast reduction
- Nipple reconstruction/3-D tattoo
- Usually a combination of the above

Revision of a Reconstructed Breast
Revision of a Reconstructed Breast