UPDATES IN BREAST RECONSTRUCTION

Adelphi Breast Cancer Hotline -11/27/18

Noël Blythe Natoli, MD

LONG ISLAND PLASTIC SURGICAL GROUP, PC

Breast cancer diagnosis

-316,120 women estimated to be diagnosed in 2017

-#2 newly dx cancer in women

-2nd leading cause of cancer death among women

-Most common in non-hispanic whites followed by African-Americans

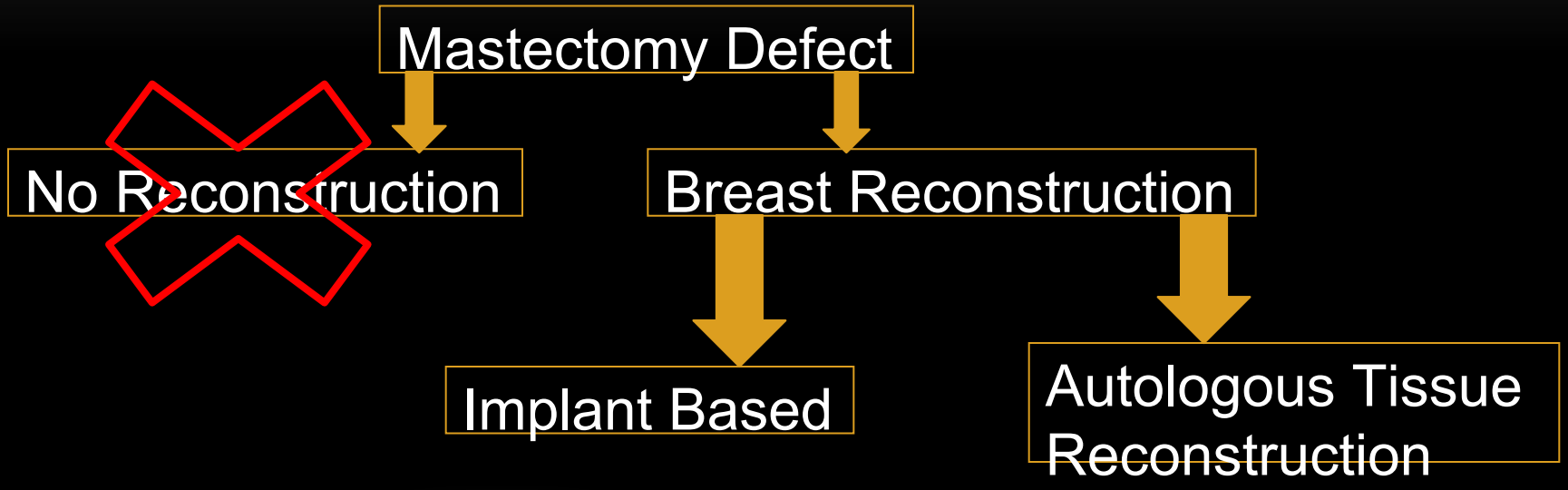
POST-MASTECTOMY RECONSTRUCTIVE OPTIONS

- Implants:
  - Saline
  - Silicone
- Autologous Reconstruction:
  - TRAM flap
    - Pedicled
    - Free flap
  - DIEP (Deep Inferior Epigastric Artery Perforator flap)
  - SIEA flap
  - Latissimus flap (+) implant / ELD
  - Gluteal flap

TRENDING IN BREAST RECONSTRUCTION

- ***Innovations:***
- Nipple-sparing mastectomy ***(NSM)***
- Decreasing drain time with tissue expansion
- Pre-pectoral breast reconstruction
- Fat Grafting
  - Simultaneous Implant Exchange with Fat Grafting ***(SIEF)***
- 3-D Nipple tattooing

POST-MASTECTOMY RECONSTRUCTIVE OPTIONS



IMPLANTS

Silicone/Gel:

Advantages:

-More natural consistency

-Less rippling

Disadvantages:

-?rupture/leak

Types:

-smooth/textured

-gel

-cohesive gel “Gummy”- *Allergan (Natrelle 410)*

- Mentor -memory gel

-Sientra

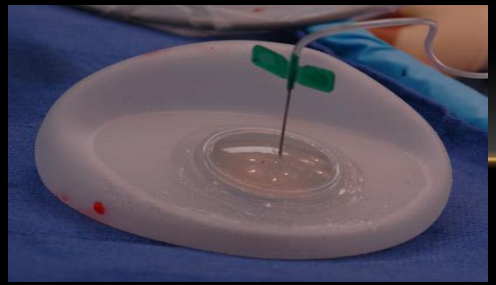
Saline:

TISSUE EXPANDER RECONSTRUCTION

-Newer tissue expanders incorporate drains

-ALLOX2 by Sientra with patented "Port2"

se drain related post-op infections

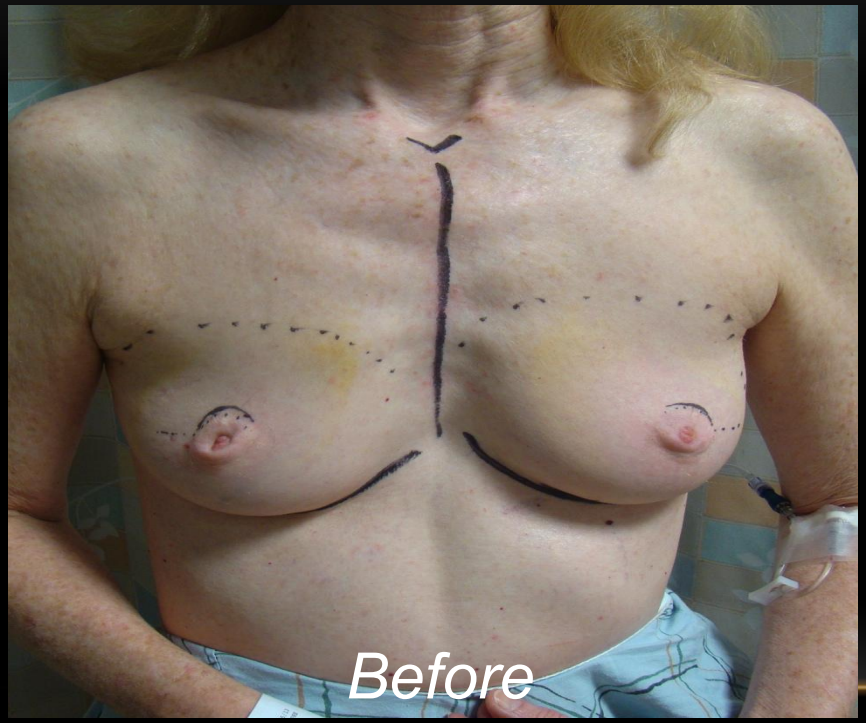


NIPPLE-SPARING BREAST RECONSTRUCTION

- Contraindications:
  - Multiple areas of disease
  - Behind nipple, *<2cm from nipple*
  - Hx of Pagets disease
  - Large tumor (>5cm)
  - *Relative contraindications: aesthetic*

NIPPLE-SPARING MASTECTOMY

NIPPLE-SPARING MASTECTOMY



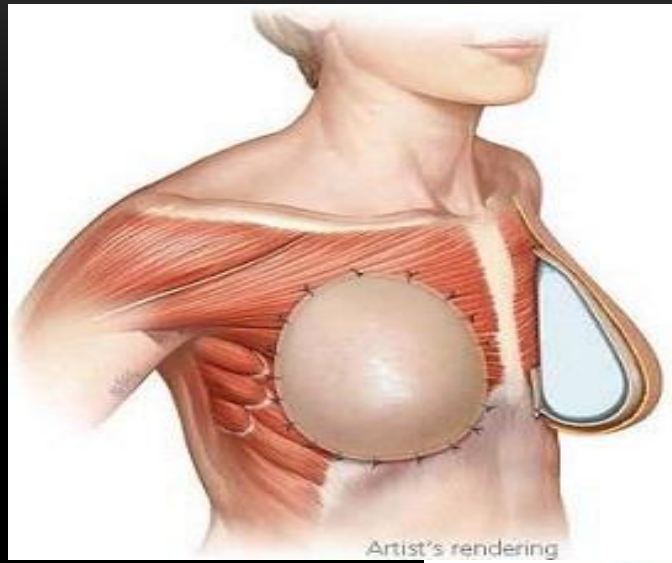
NIPPLE-SPARING MASTECTOMY

FREE NIPPLE-GRAFTING WITH MASTECTOMY

PRE-PECTORAL IMPLANT PLACEMENT

- Placing implant or expander on top of pectoralis muscle and wrapping with skin substitute (ADM)
- Advantages:
  - Keeps pectoralis muscle in anatomic “normal” position
  - ses p
  - ses a

PRE-PECTORAL IMPLANT PLACEMENT

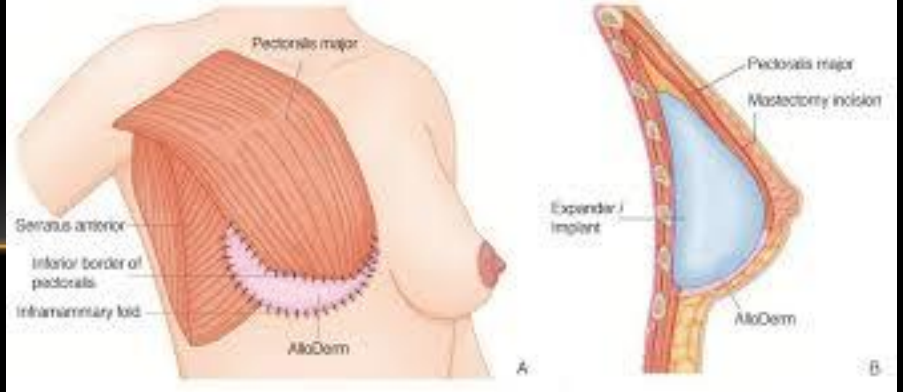


Artist's rendering

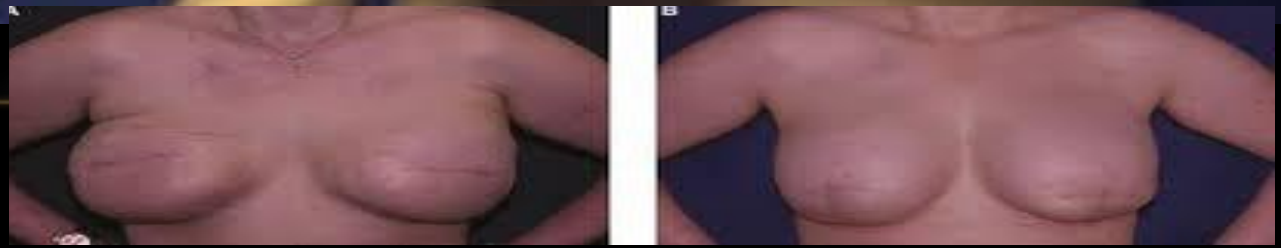
Pre-Pectoral technique

AlloDerm® Tissue Matrix provides full anterior reinforcement of weak tissue

Vs. traditional



PRE-PECTORAL IMPLANT PLACEMENT



PRE-PECTORAL IMPLANT PLACEMENT

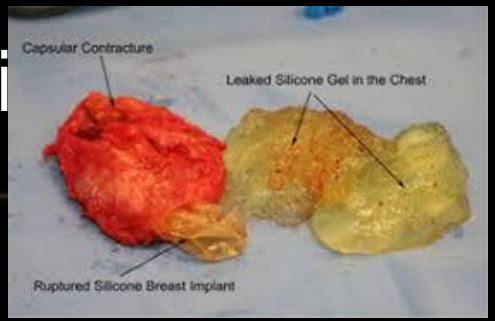
CAPSULAR CONTRACTURE

DURABILITY

SPECTRUM OF CAPSULAR CONTRACTURE

CAPSULAR CONTRACTURE

- Changes in technique:
  - No touch technique
  - Declining use of betadine
  - Abx prophylaxis
  - Early treatment with Singulai
    - *Leukotriene inhibitors*



ALCL- ANAPLASTIC LARGE CELL LYMPHOMA

- BIA-ALCL- (Breast implant associated ALCL)
- 359 MDR (medical device reports currently)
- 183 confirmed US cases *(467 worldwide)*
- Associated with implants, largely textured
  - *28 smooth implant cases (15%)*
- 9 US deaths *(16 worldwide)*
- The current lifetime risk of BIA-ALCL in the U.S. is estimated to be 1:30,000 women with textured implants
- ***300,000 br aug/ yr, nearly 5% of women with augs***

ALCL- ANAPLASTIC LARGE CELL LYMPHOMA

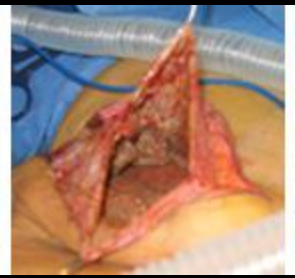
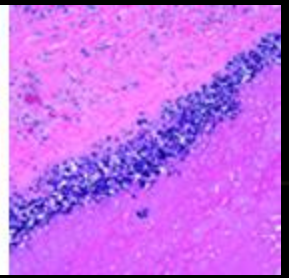
- Presents as painless enlarging mass, seroma
- For a suspected patient with a delayed seroma (>1 year):

  -*fluid should be aspirated*

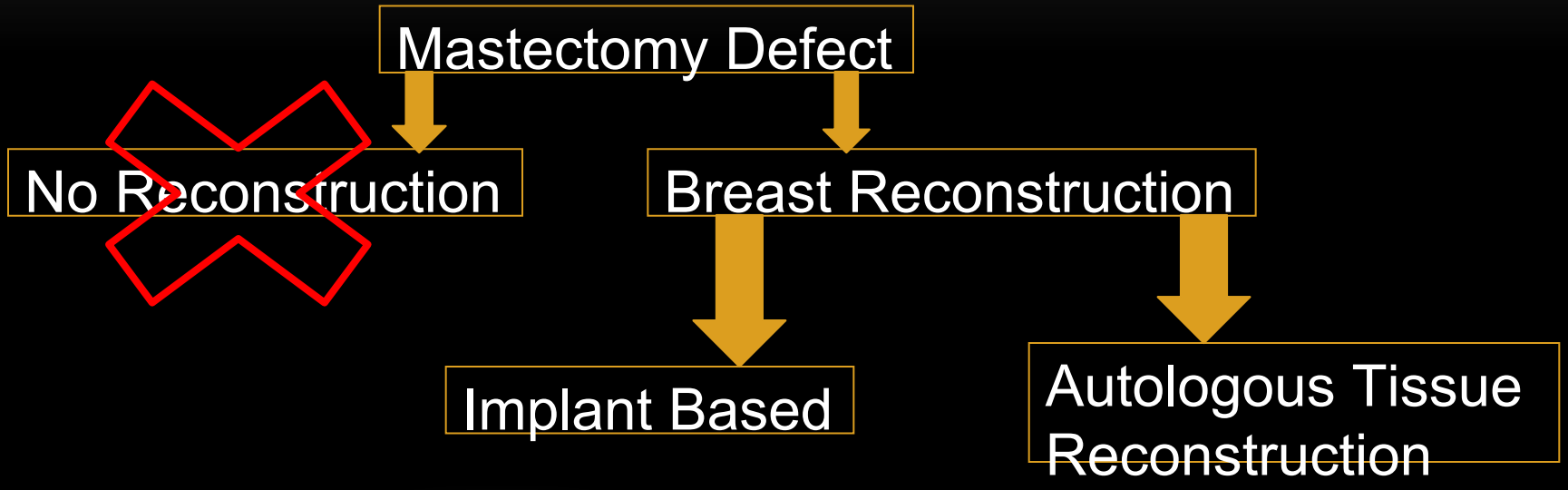
  -*sent for CD30, immunohistochemistry, cytology, and flow cytometry*

-*CD30 is the main diagnostic test* *

- Texturing method matters: *Risk Allergan>Sientra>Mentor*
- Dec

POST-MASTECTOMY RECONSTRUCTIVE OPTIONS



AUTOGENOUS RECONSTRUCTION:

TRAM FLAP

- Transverse Rectus Abdominus Myocutaneous Flap
- Advantages over implant recon:
  - No foreign body reaction, lower risk of infection
  - No capsular contraction
  - Greater durability - *lifespan of implants*– esp. in younger patients
  - Can replace irradiated skin

ADVANTAGES OVER IMPLANTS

- Better sensation in skin- nerves can grow into flap skin
  - *New trends: recent intercostal nerve transfers*
- Moves more naturally- more natural breast mound
- Better match in unilateral recon
- Can shift in weight with patient's weight
- Get an abdominoplasty (thigh, buttock lift)

TRAM PEDICLED FLAP

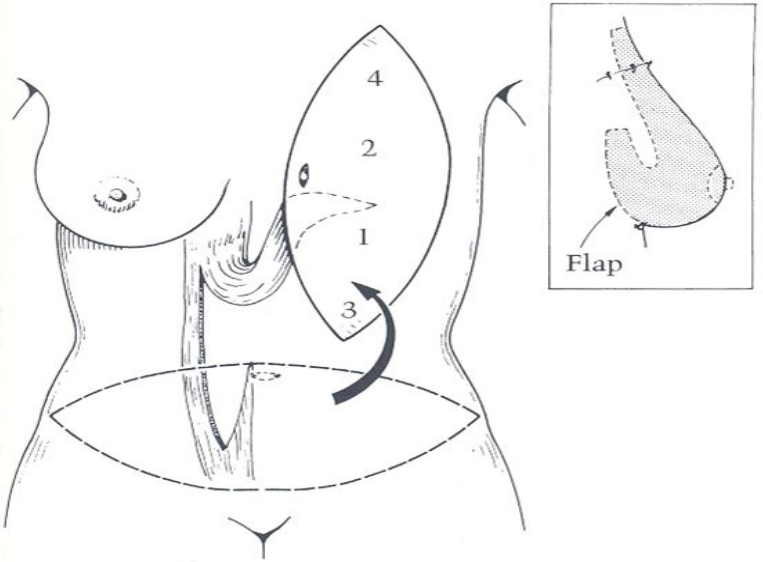
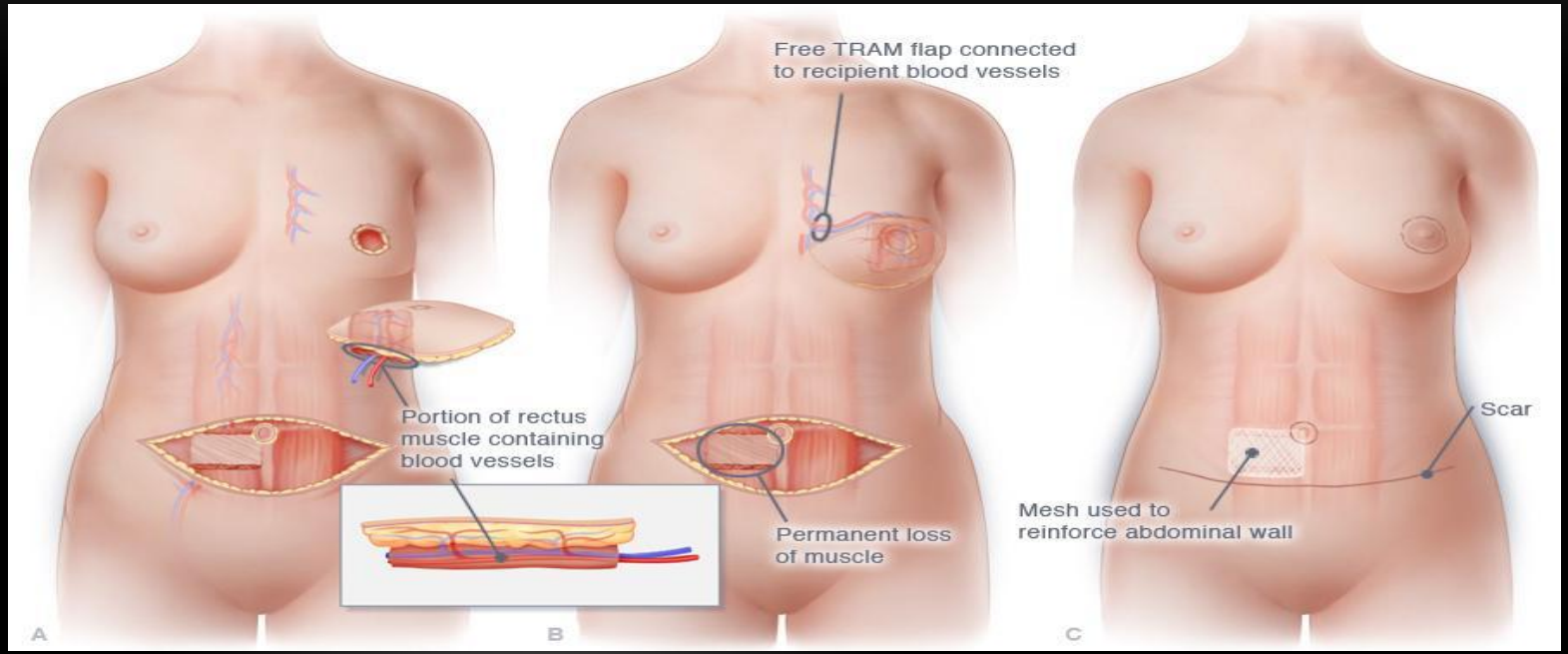


FIG. 16. Vertical orientation for breast mound contouring using a contralateral single-muscle TRAM flap: applies to single- or double-pedicle flaps. (From Maxwell, G. P. Technical alternatives in transverse rectus abdominis breast reconstruction. *Persp. Plast. Surg.* 1:1, 1987.)

FREE TRAM


Free TRAM flap connected to recipient blood vessels
Portion of rectus muscle containing blood vessels
Permanent loss of muscle
Scar
Mesh used to reinforce abdominal wall
A
B
C

LESS MUSCLE

- Muscle-sparing free TRAM

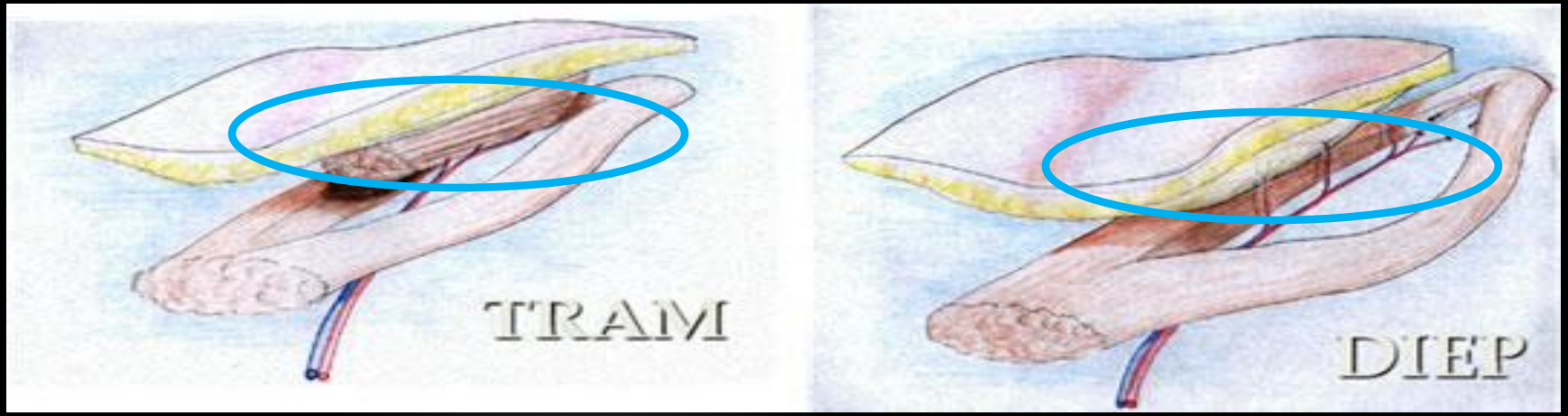
NO MUSCLE

- SIEA- Superficial Inferior Epigastric Artery flap

SIEA- Superficial Inferior Epigastric Artery flap

DIEP

Deep Inferior Epigastric Perforator Flap



DIEP

DIEP

DIEP

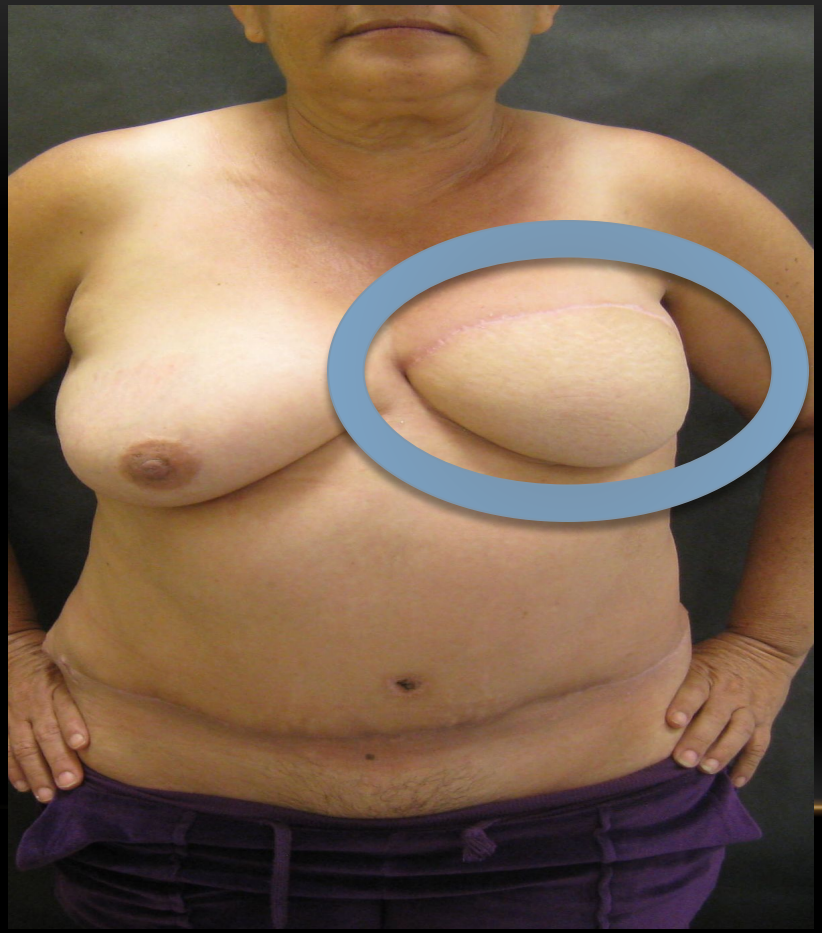
DIEP

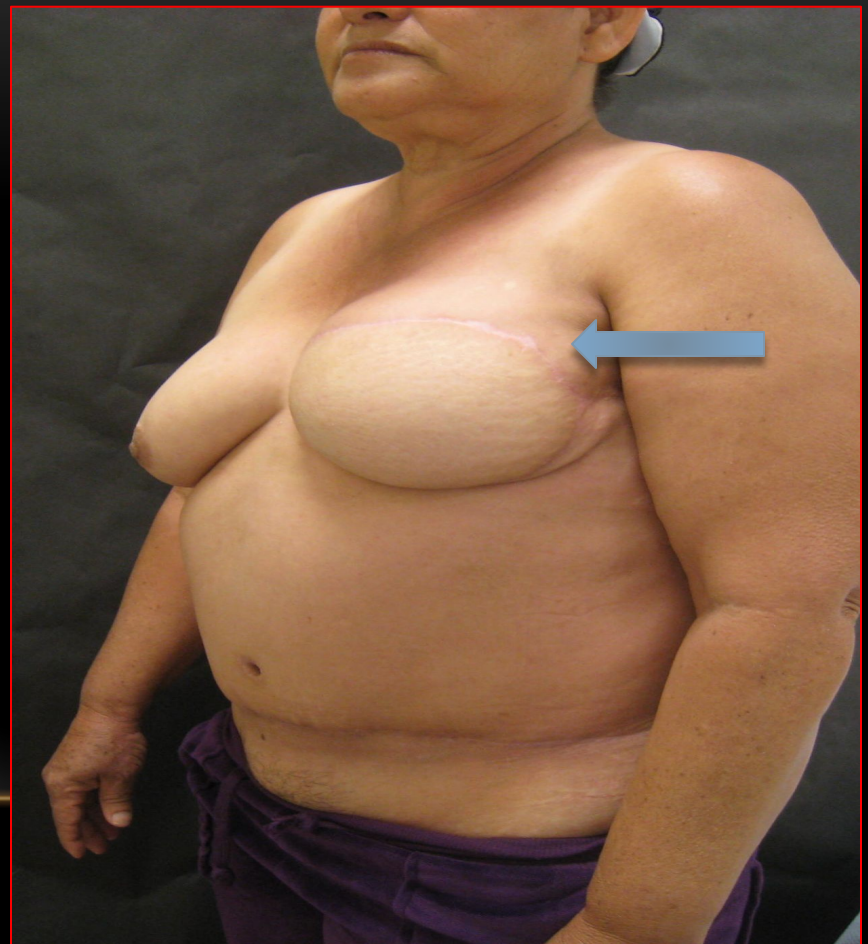
DIEP

YOU GET WHAT YOU GIVE!

DELAYED RECONSTRUCTION

DELAYED BREAST RECONSTRUCTION





DELAYED BREAST RECONSTRUCTION

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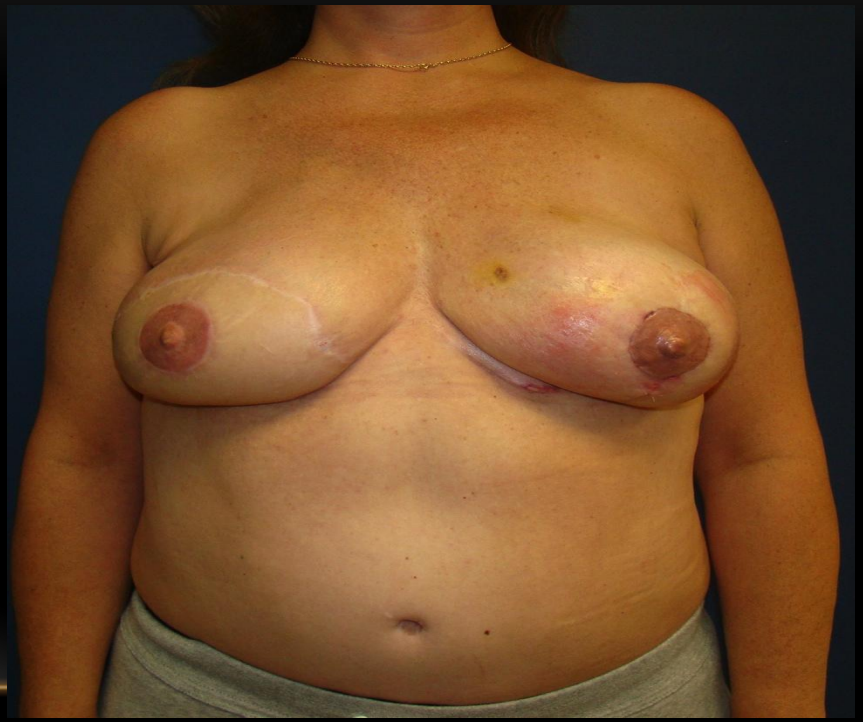

DELAYED BREAST RECONSTRUCTION

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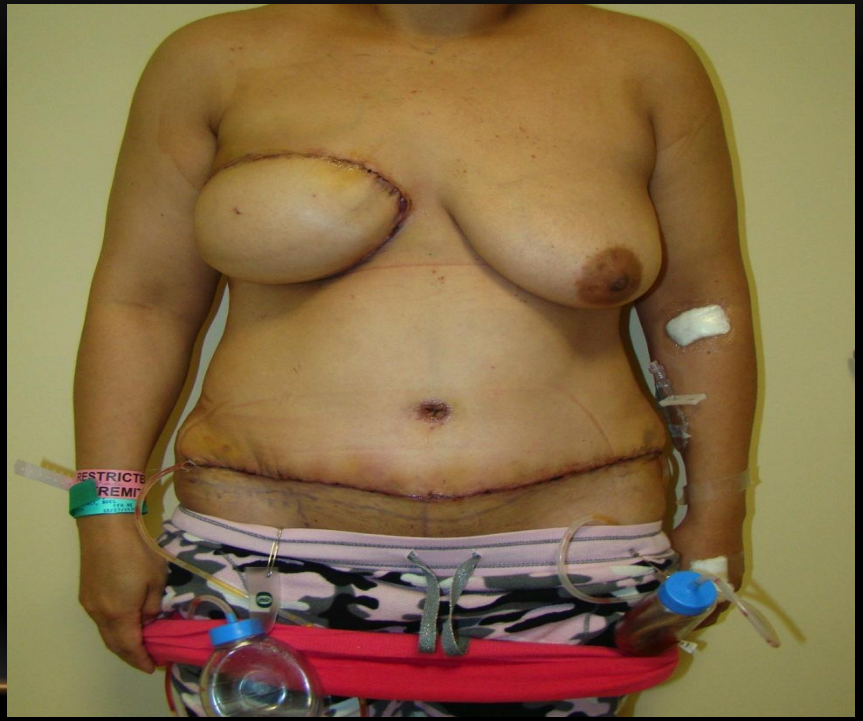


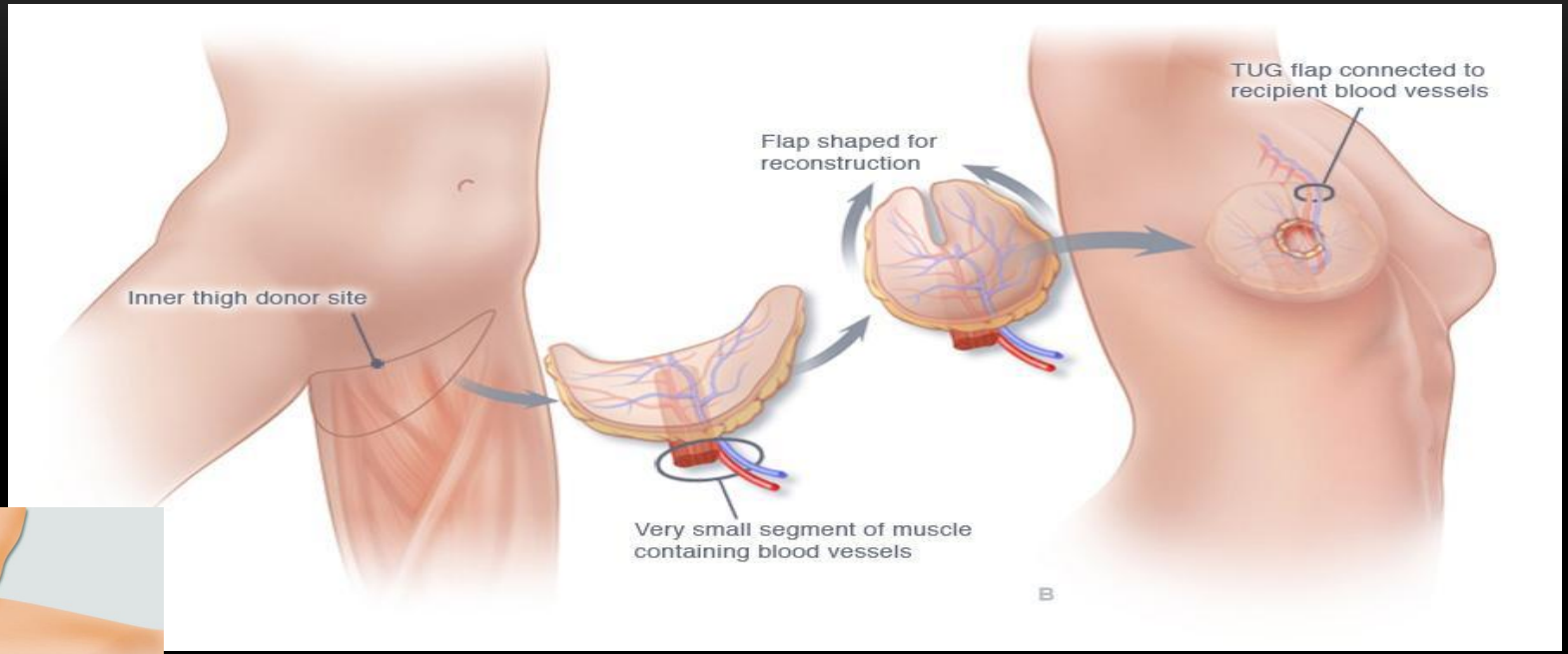
DELAYED BREAST RECONSTRUCTION

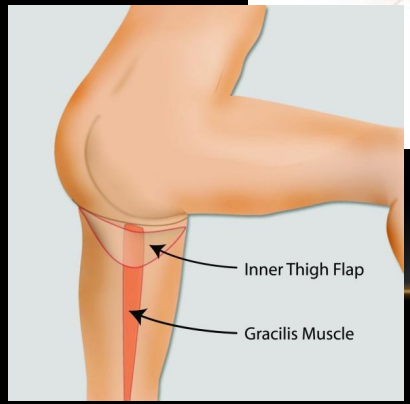
DELAYED BREAST RECONSTRUCTION

DELAYED BREAST RECONSTRUCTION

TUG

Transverse Upper Gracilis Myocutaneous Flap

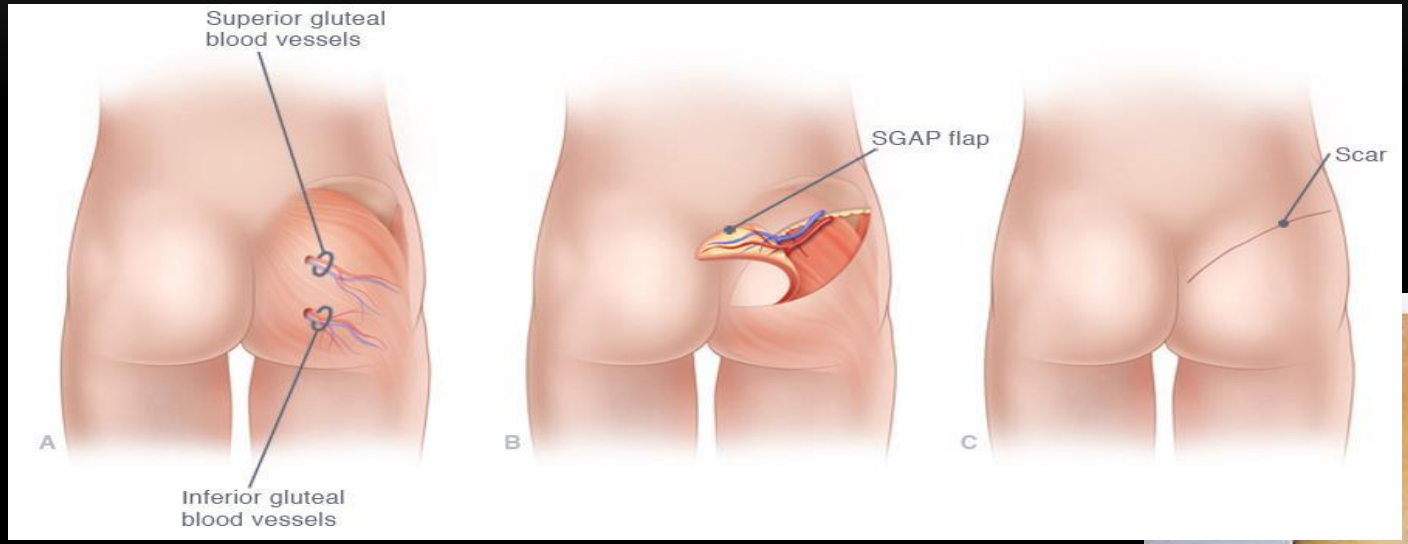




TUG DONOR SITE

SGAP

Superior Gluteal Artery Perforator Flap



IGAP

Inferior Gluteal Artery Perforator Flap

WHAT IS FAT GRAFTING?

- Harvesting fat from one area for transfer to another area
  - *Stealing from Peter to pay Paul*
- Uses liposuction to improve contour

FAT GRAFTING IN BREAST RECONSTRUCTION

- Indications for fat grafting in breast reconstruction:
  - Improvement of contour deformities and implant edges
  - Reconstruction of lumpectomy defects
  - Improvement of breast asymmetry
  - Replacement of implants (SIEF)

FAT GRAFTING IN BREAST RECONSTRUCTION

- How is fat grafting performed?
- +/- pre-operative Brava expansion
- Liposuction- Harvesting of fat
- Harvesting devices- *Revolve, Cytori, Puregraft*
- Grafting of fat

FAT GRAFTING IN BREAST RECONSTRUCTION

- How is fat grafting performed?
- +/- pre-operative Brava expansion
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BRAVA

External tissue expander

FAT GRAFTING IN BREAST RECONSTRUCTION

- How is fat grafting performed?
- +/- pre-operative Brava expansion
- Liposuction- Harvesting of fat
- Harvesting devices- *Revolve, Cytori, Puregraft*
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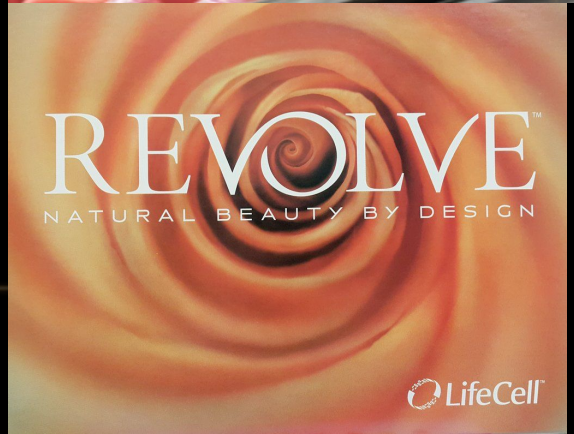
FAT GRAFTING

FAT GRAFTING



FAT GRAFTING IN BREAST RECONSTRUCTION

Advantages of fat grafting:

-uses patients own tissue instead of an implant

-unwanted fat is removed

-fat-graft-recon breast has some sensation, fee

FAT GRAFTING IN BREAST RECONSTRUCTION

Disadvantages of fat grafting:

-No large clinical studies with long-term follow-up; small studies report good results

?Reliability

?Reproducable

?Longevity

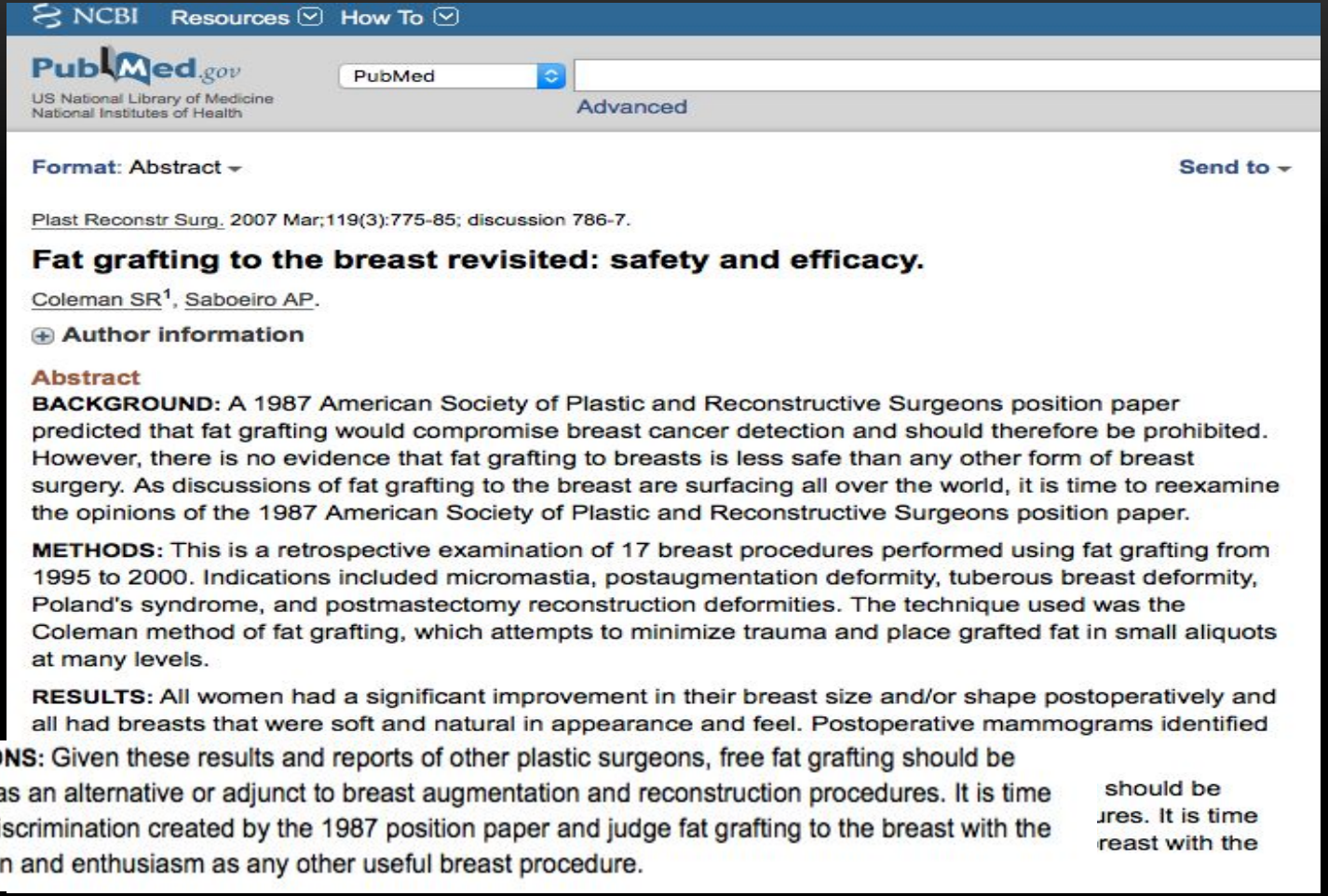
-Brava

-Multiple sessions

-Partial resorption

-Fat necrosis/oil cysts

FAT GRAFTING



NCBI Resources How To

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US National Library of Medicine
National Institutes of Health

PubMed Advanced

Format: Abstract Send to

Plast Reconstr Surg. 2007 Mar;119(3):775-85; discussion 786-7.

Fat grafting to the breast revisited: safety and efficacy.

Coleman SR[1], Saboeiro AP.

Author information

Abstract

BACKGROUND: A 1987 American Society of Plastic and Reconstructive Surgeons position paper predicted that fat grafting would compromise breast cancer detection and should therefore be prohibited. However, there is no evidence that fat grafting to breasts is less safe than any other form of breast surgery. As discussions of fat grafting to the breast are surfacing all over the world, it is time to reexamine the opinions of the 1987 American Society of Plastic and Reconstructive Surgeons position paper.

METHODS: This is a retrospective examination of 17 breast procedures performed using fat grafting from 1995 to 2000. Indications included micromastia, postaugmentation deformity, tuberous breast deformity, Poland's syndrome, and postmastectomy reconstruction deformities. The technique used was the Coleman method of fat grafting, which attempts to minimize trauma and place grafted fat in small aliquots at many levels.

RESULTS: All women had a significant improvement in their breast size and/or shape postoperatively and all had breasts that were soft and natural in appearance and feel. Postoperative mammograms identified

CONCLUSIONS: Given these results and reports of other plastic surgeons, free fat grafting should be considered as an alternative or adjunct to breast augmentation and reconstruction procedures. It is time to end the discrimination created by the 1987 position paper and judge fat grafting to the breast with the same caution and enthusiasm as any other useful breast procedure.

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FAT GRAFTING

BREAST

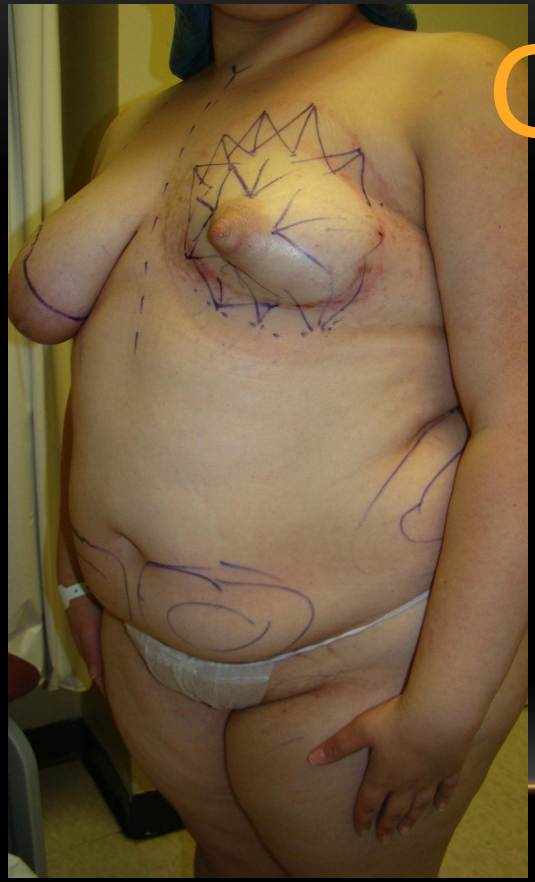
Determining the Oncologic Safety of Autologous Fat Grafting as a Reconstructive Modality: An Institutional Review of Breast Cancer Recurrence Rates and Surgical Outcomes

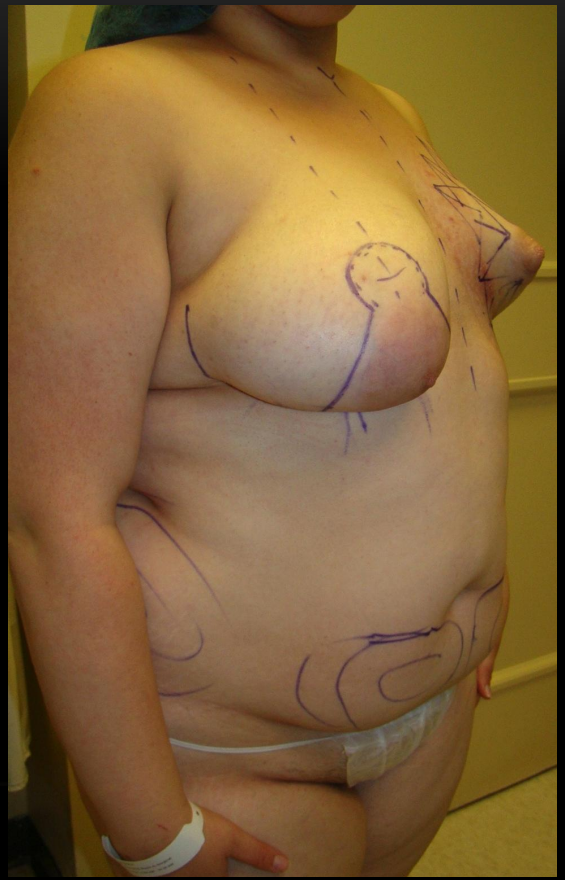
Oriana Cohen, M.D.
Gretl Lam, M.D.
Nolan Karp, M.D.
Mihye Choi, M.D.
New York, N.Y.

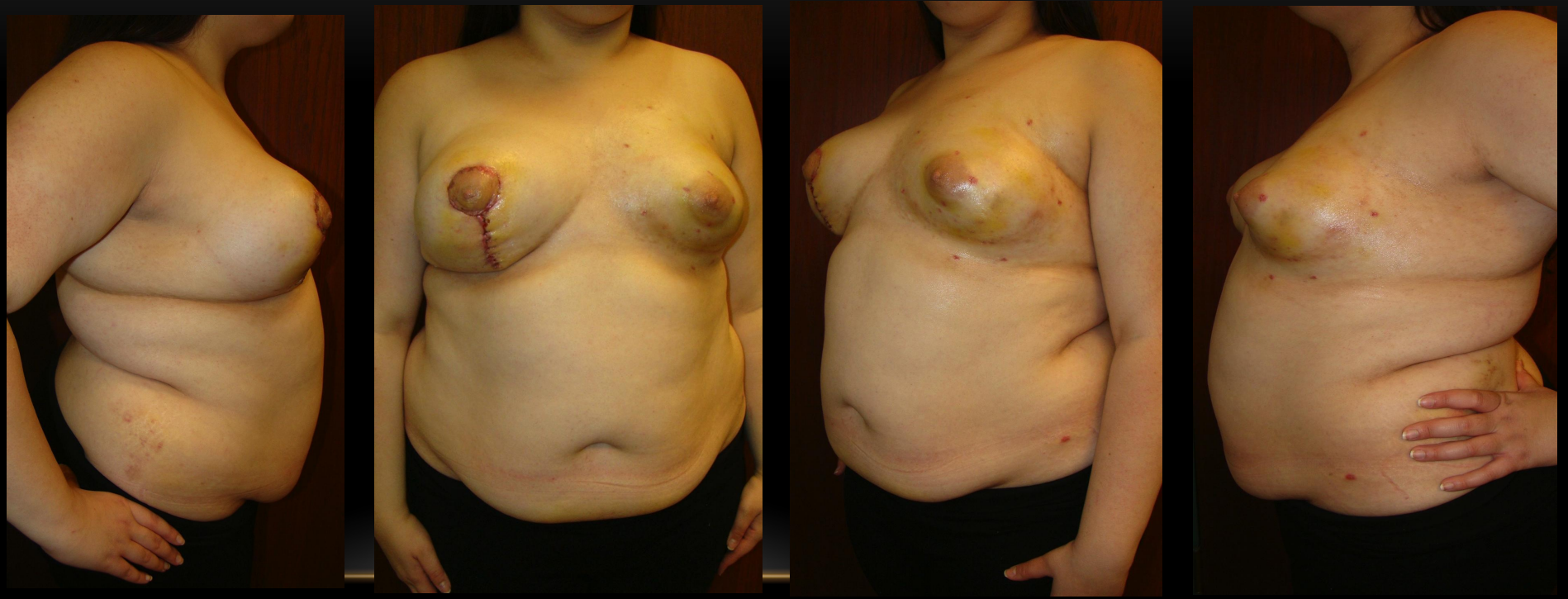
Background: The increasing use of autologous fat grafting in breast cancer patients has raised concerns regarding its oncologic safety. This study evaluated patient outcomes and tumor recurrence following mastectomy reconstruction and autologous fat grafting.
Methods: Retrospective chart review identified patients who underwent mastectomy followed by breast reconstruction from 2010 to 2015. Eight hundred twenty-nine breasts met inclusion criteria: 248 (30.0 percent) underwent autologous fat grafting, whereas 581 (70.0 percent) breasts did not. Patient demographics, cancer characteristics, oncologic treatment, surgical treatment, surgical complications, local recurrence, and distant metastases were analyzed.
Results: Autologous fat grafting patients and control patients were of similar body mass index, smoking status, and *BRCA* status. Patients who underwent fat grafting were significantly younger than control patients and were less likely to have diabetes, hypertension, or hyperlipidemia. The two groups represented similar distributions of *BRCA* status, Oncotype scores, and hormone receptor status. Patients underwent one to four grafting procedures: one procedure in 83.1 percent, two procedures in 13.7 percent, three in 2.8 percent, and four in 0.4 percent. Mean follow-up time from initial surgery was 45.6 months in the fat grafting group and 38.8 months in controls. The overall complication rate following fat grafting was 9.4 percent. Among breasts undergoing surgery for therapeutic indications, there were similar rates of local recurrence (fat grafting group, 2.5 percent; controls, 1.9 percent; $p = 0.747$). Interestingly, mean time to recurrence was significantly longer in the fat grafting group (52.3 months versus 22.8 months from initial surgery; $p = 0.016$).
Conclusions: Autologous fat grafting is a powerful tool in breast reconstruction. This large, single-institution study provides valuable evidence-based support for its oncologic safety. (*Plast. Reconstr. Surg.* 140: 382e, 2017.)
CLINICAL QUESTION/LEVEL OF EVIDENCE: Therapeutic, III.

FAT GRAFTING

FAT GRAFTING









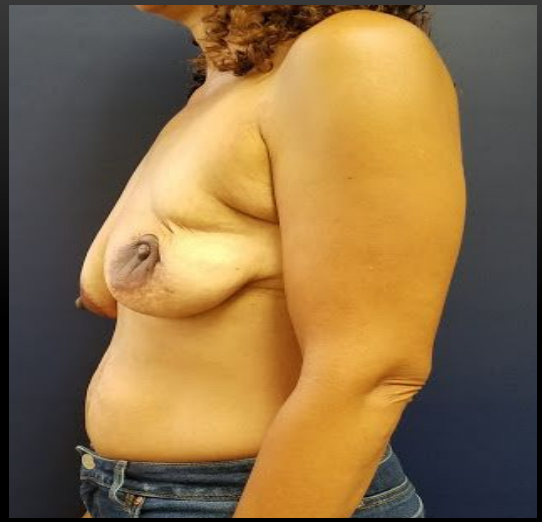





ONCOPLASTIC RECONSTRUCTION

SECONDARY REVISIONS FOR LUMPECTOMY WITH FAT GRAFTING



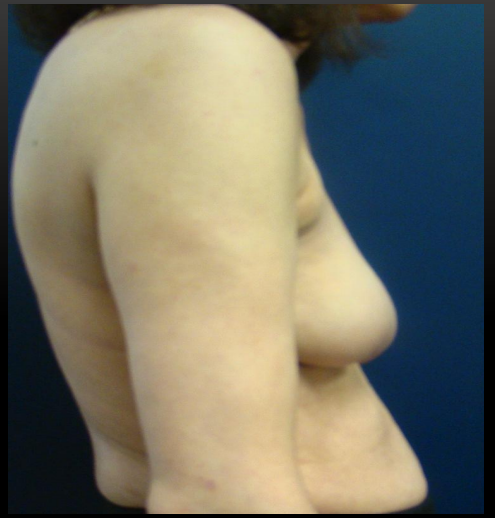










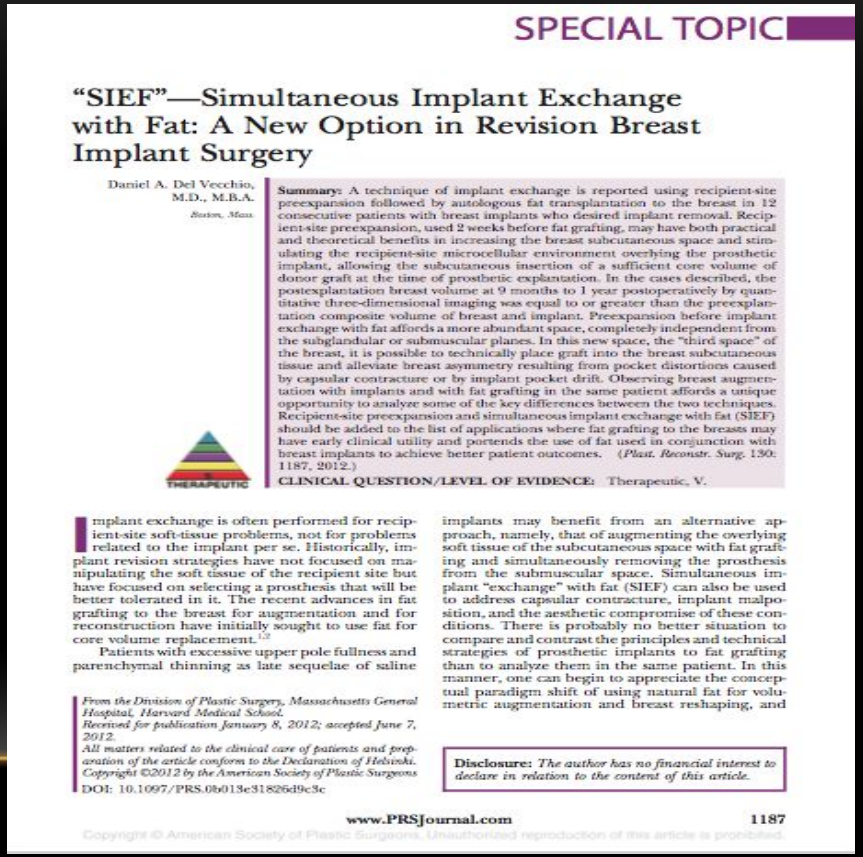



LUMPECTOMY RECONSTRUCTION

SIEF- SIMULTANEOUS IMPLANT EXCHANGE WITH FAT GRAFTING

- Large amounts of fat grafting
- Fat grafted into the pec muscle and into subQ pocket
- Requires multiple procedures
- Best results with external expansion device

SIEF- SIMULTANEOUS IMPLANT EXCHANGE WITH FAT GRAFTING



SPECIAL TOPIC

"SIEF"—Simultaneous Implant Exchange with Fat: A New Option in Revision Breast Implant Surgery

Daniel A. Del Vecchio, M.D., M.B.A.
Boston, Mass.

Summary: A technique of implant exchange is reported using recipient-site preexpansion followed by autologous fat transplantation to the breast in 12 consecutive patients with breast implants who desired implant removal. Recipient-site preexpansion, used 2 weeks before fat grafting, may have both practical and theoretical benefits in increasing the breast subcutaneous space and stimulating the recipient-site microcellular environment overlying the prosthetic implant, allowing the subcutaneous insertion of a sufficient core volume of donor graft at the time of prosthetic explantation. In the cases described, the postexplantation breast volume at 9 months to 1 year postoperatively by quantitative three-dimensional imaging was equal to or greater than the preexplantation composite volume of breast and implant. Preexpansion before implant exchange with fat affords a more abundant space, completely independent from the subglandular or submuscular planes. In this new space, the "third space" of the breast, it is possible to technically place graft into the breast subcutaneous tissue and alleviate breast asymmetry resulting from pocket distortions caused by capsular contracture or by implant pocket drift. Observing breast augmentation with implants and with fat grafting in the same patient affords a unique opportunity to analyze some of the key differences between the two techniques. Recipient-site preexpansion and simultaneous implant exchange with fat (SIEF) should be added to the list of applications where fat grafting to the breasts may have early clinical utility and portends the use of fat used in conjunction with breast implants to achieve better patient outcomes. (*Plast. Reconstr. Surg.* 130: 1187, 2012.)

CLINICAL QUESTION/LEVEL OF EVIDENCE: Therapeutic, V.

Implant exchange is often performed for recipient-site soft-tissue problems, not for problems related to the implant per se. Historically, implant revision strategies have not focused on manipulating the soft tissue of the recipient site but have focused on selecting a prosthesis that will be better tolerated in it. The recent advances in fat grafting to the breast for augmentation and for reconstruction have initially sought to use fat for core volume replacement.[1,2]

Patients with excessive upper pole fullness and parenchymal thinning as late sequelae of saline implants may benefit from an alternative approach, namely, that of augmenting the overlying soft tissue of the subcutaneous space with fat grafting and simultaneously removing the prosthesis from the submuscular space. Simultaneous implant "exchange" with fat (SIEF) can also be used to address capsular contracture, implant malposition, and the aesthetic compromise of these conditions. There is probably no better situation to compare and contrast the principles and technical strategies of prosthetic implants to fat grafting than to analyze them in the same patient. In this manner, one can begin to appreciate the conceptual paradigm shift of using natural fat for volumetric augmentation and breast reshaping, and

From the Division of Plastic Surgery, Massachusetts General Hospital, Harvard Medical School.
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All matters related to the clinical care of patients and preparation of the article conform to the Declaration of Helsinki.
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Disclosure: *The author has no financial interest to declare in relation to the content of this article.*

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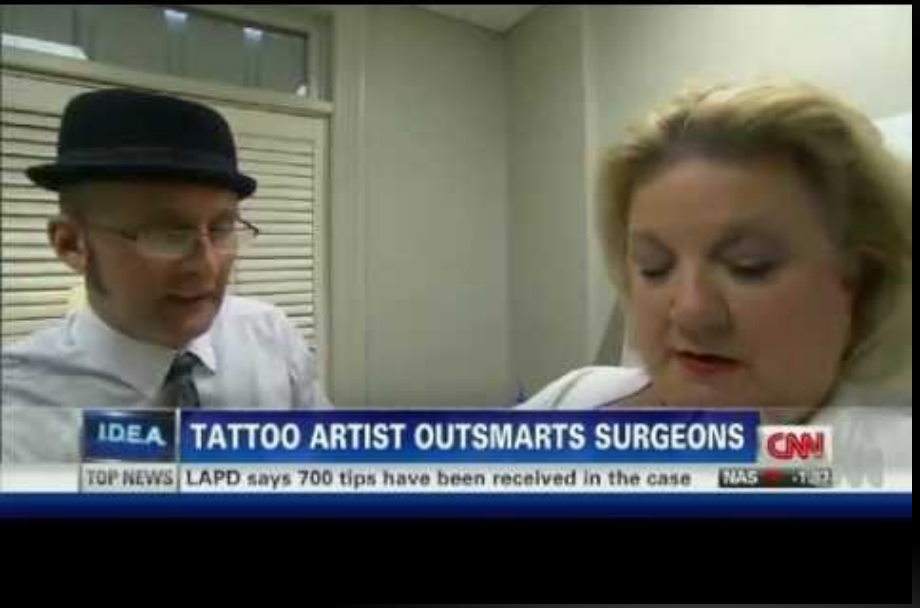
3-D Nipple tattooing

3-D Nipple tattooing

3-D Nipple tattooing

A Tattoo That Completes a New Breast

By **CAITLIN KIERNAN** JUNE 2, 2014 June 2, 2014 5:00 pm



The New York Times

3-D Nipple tattooing

Without leaving home…

The Whitney Center for Permanent Cosmetics also offers 3-D
Nipple tattoos with location in NYC….She is professionally Associated with physicians in NYC including New York Presbyterian Weill Cornell Medical College and
The Dubin Breast Center at Tisch Cancer Institute at Sinai Hospital.

LONG ISLAND
PLASTIC SURGICAL
GROUP, PC

THANK YOU!