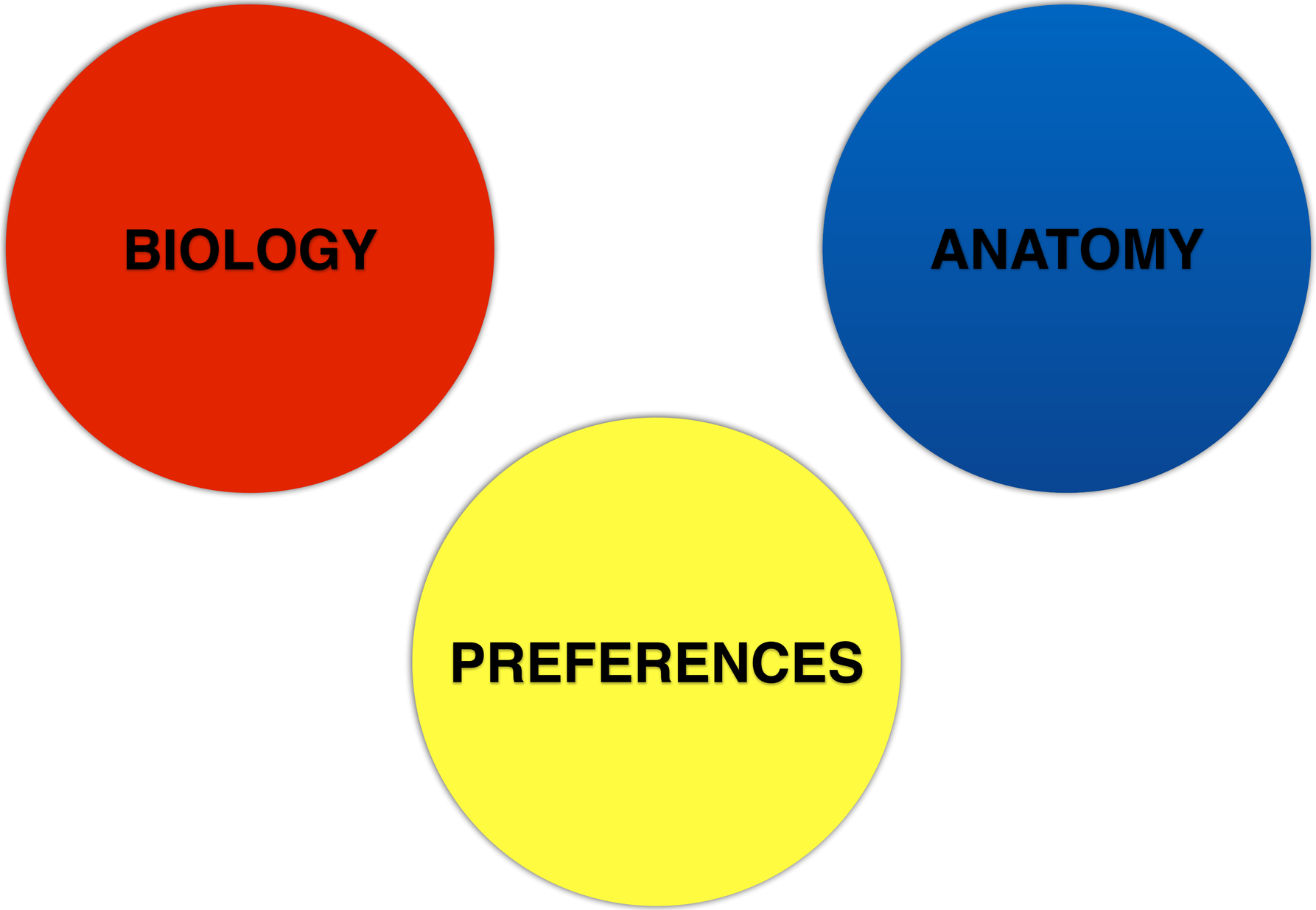
of

Oncoplastic Breast Surgery

Barry Rosen, MD, FACS

“The Perfect Plan”



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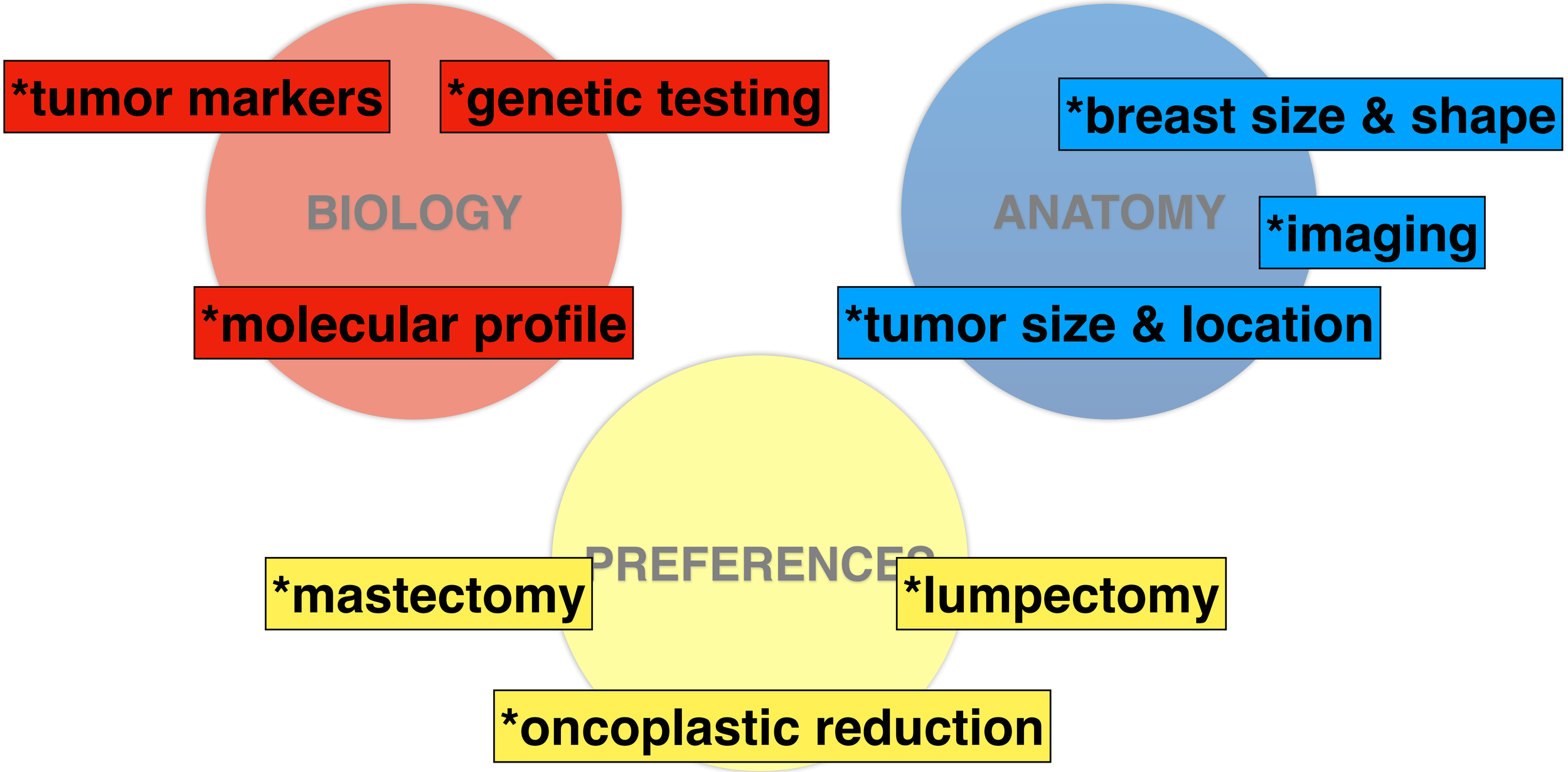

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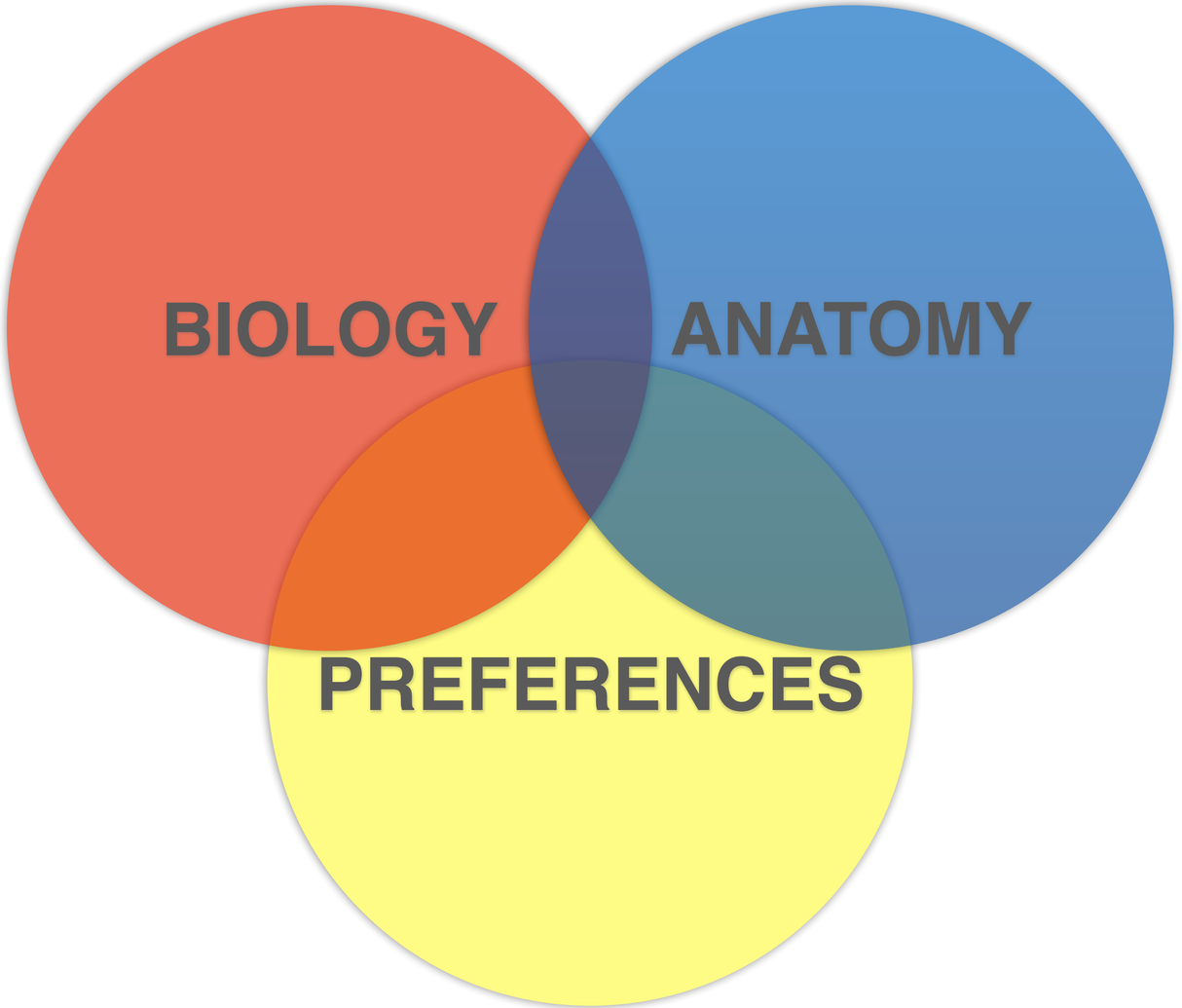


SHARED-DECISION MAKING

- **Balanced discussion of potential outcomes**
  - **Oncologic**
  - **Aesthetic**
  - **Psychosocial/Quality-of-life**
  - **Potential complications**
- **Open conversation about patient goals, concerns**
  - **Get to really know your patient and their life**

“ONE SIZE FITS ONE”

SURGICAL TREATMENT OF BREAST CANCER

- **OLD: LUMPECTOMY vs. MASTECTOMY**

- **NEW: CARE ACROSS A CONTINUUM, INCORPORATING PLASTIC SURGICAL PRINCIPLES TO ALL SURGICAL OPTIONS**

LUMP-X → **LEVEL I ONCOPLASTIC LUMP-X** → **LEVEL II ONCOPLASTIC LUMP-X with LIFT** → **NIPPLE-SPARING MAST-X** → **SKIN-SPARING MAST-X** → **MOD-RAD MAST-X**

- **CHOICE BASED ON PATIENT-PREFERENCE, BREAST SIZE & SHAPE, AND TUMOR SIZE/GROWTH PATTERN**

“ONE SIZE FITS ONE”

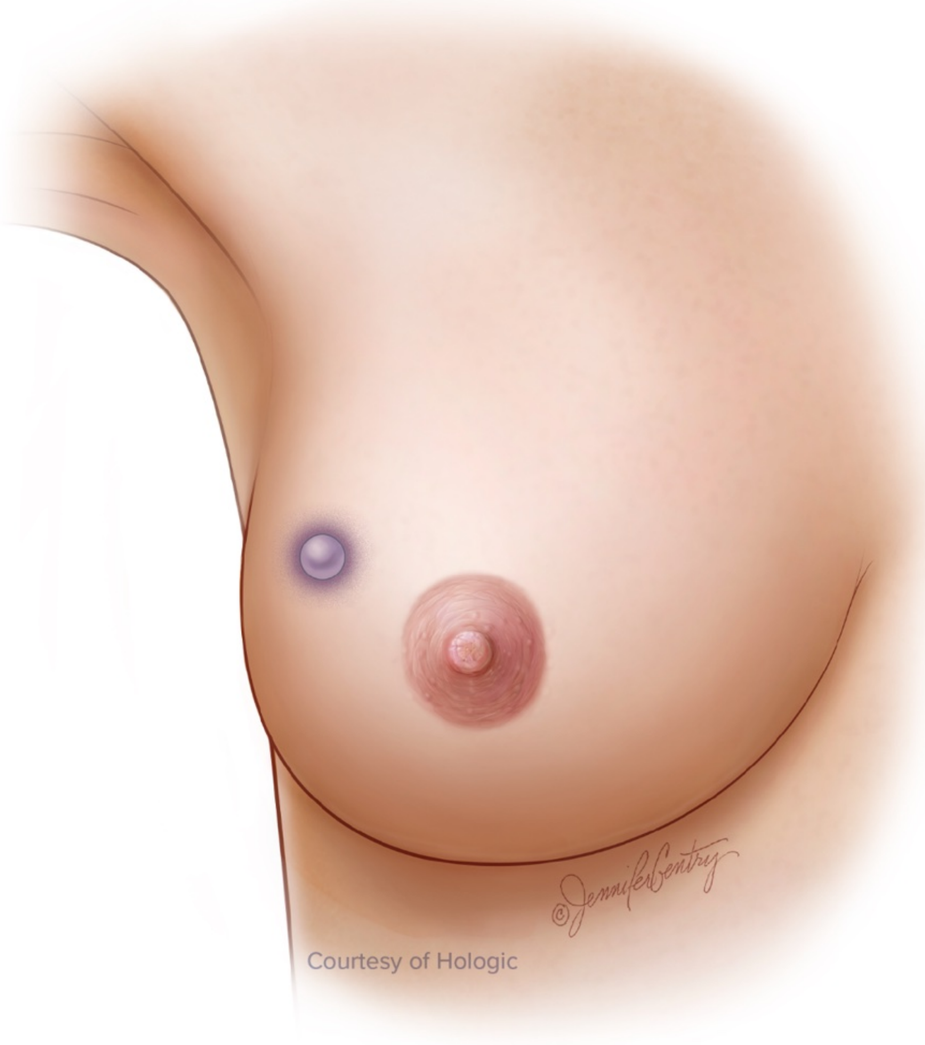
BREAST CONSERVING SURGERY

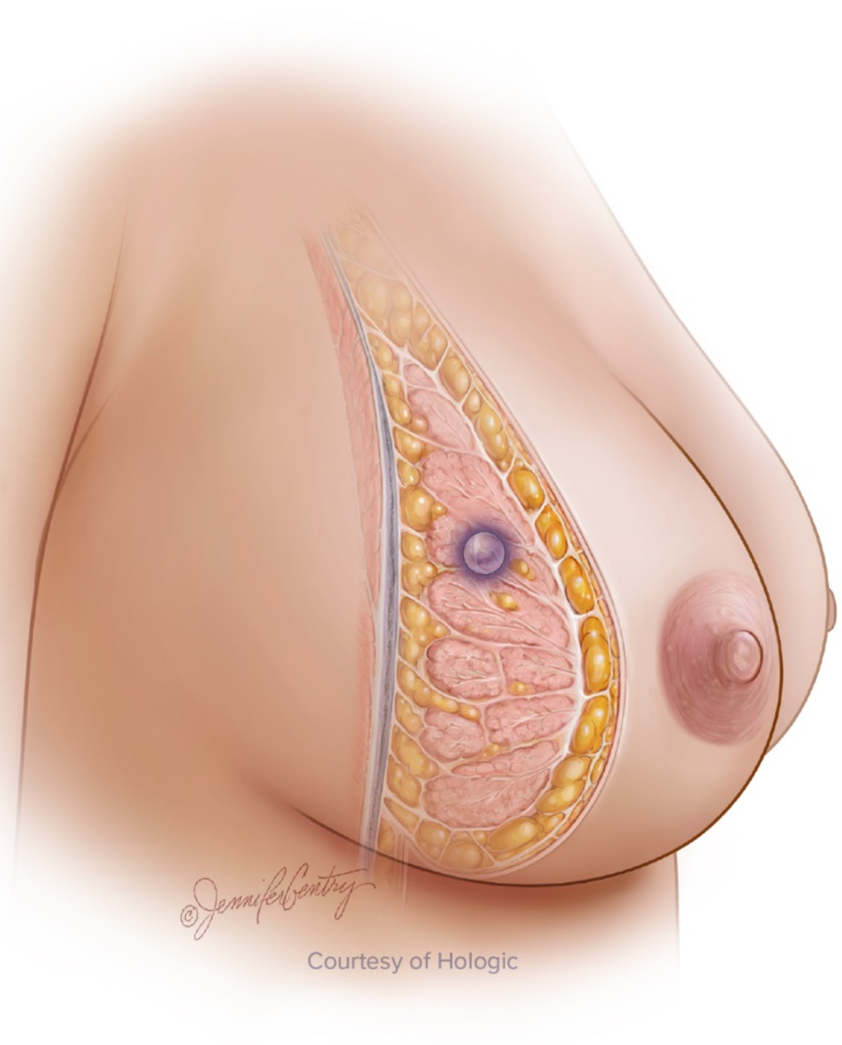
- SCAR DIRECTLY OVER THE TUMOR
- DEFECTS COMMON (CAVITATION)
- CURRENT ‘STANDARD OF CARE’

- SCAR ‘HIDDEN’ IN SKIN CREASE, AREOLA
- CAVITY CLOSED

- EXCESS SKIN REMOVED ALONG WITH TUMOR (LIFT AND REDUCTION)
- LIFT AND REDUCTION OF OPPOSITE BREAST

Basic Lumpectomy





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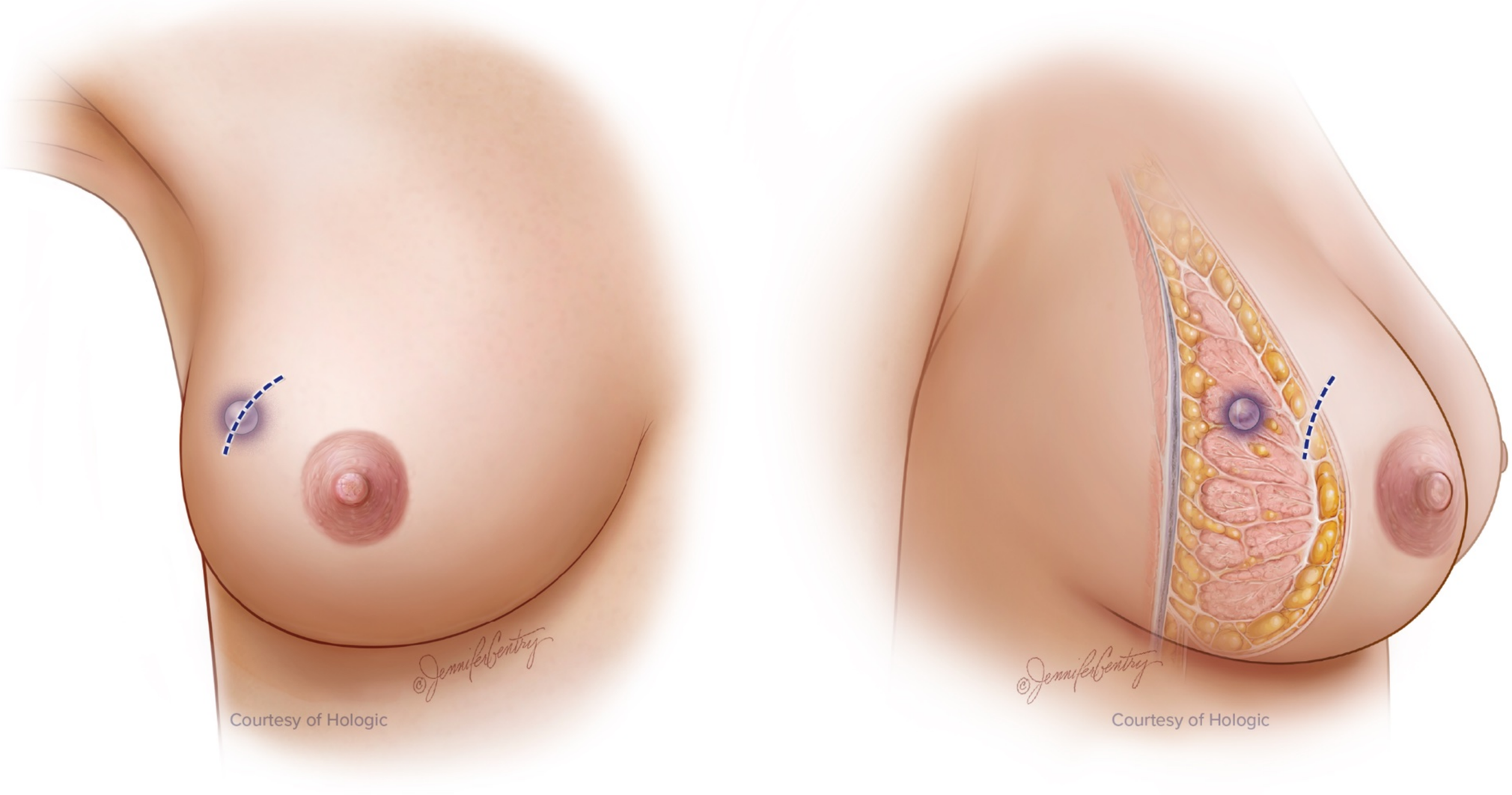

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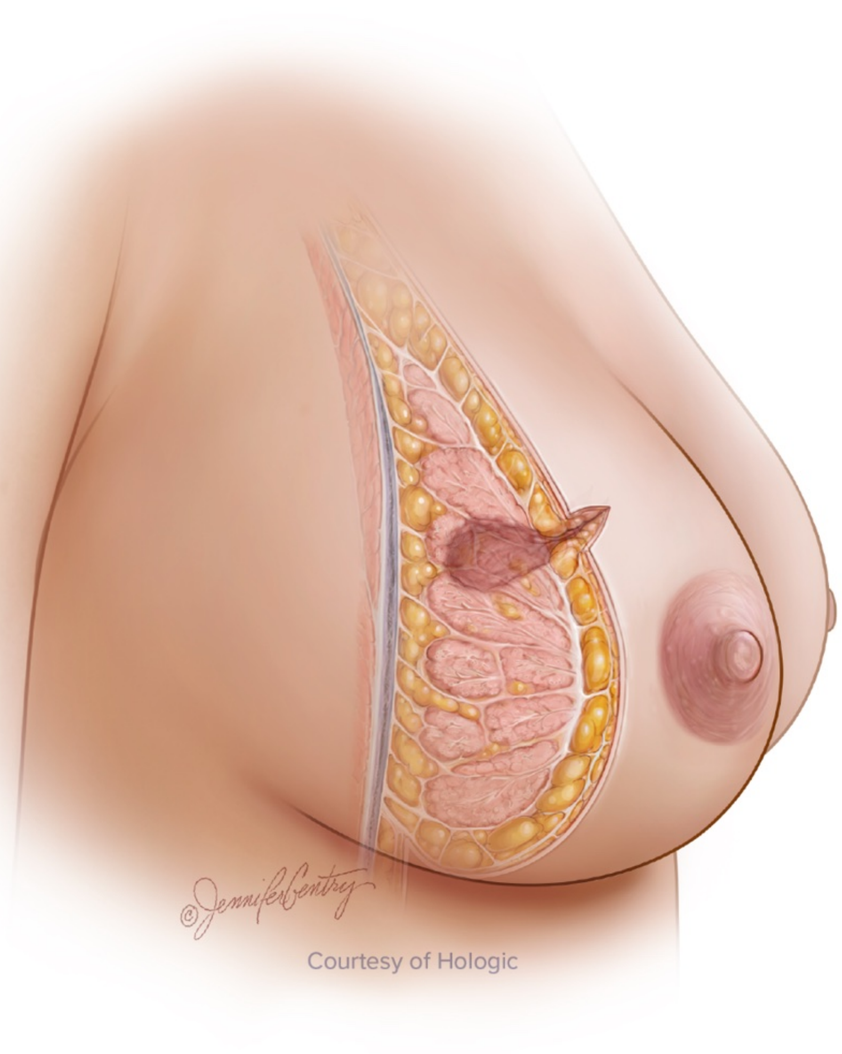
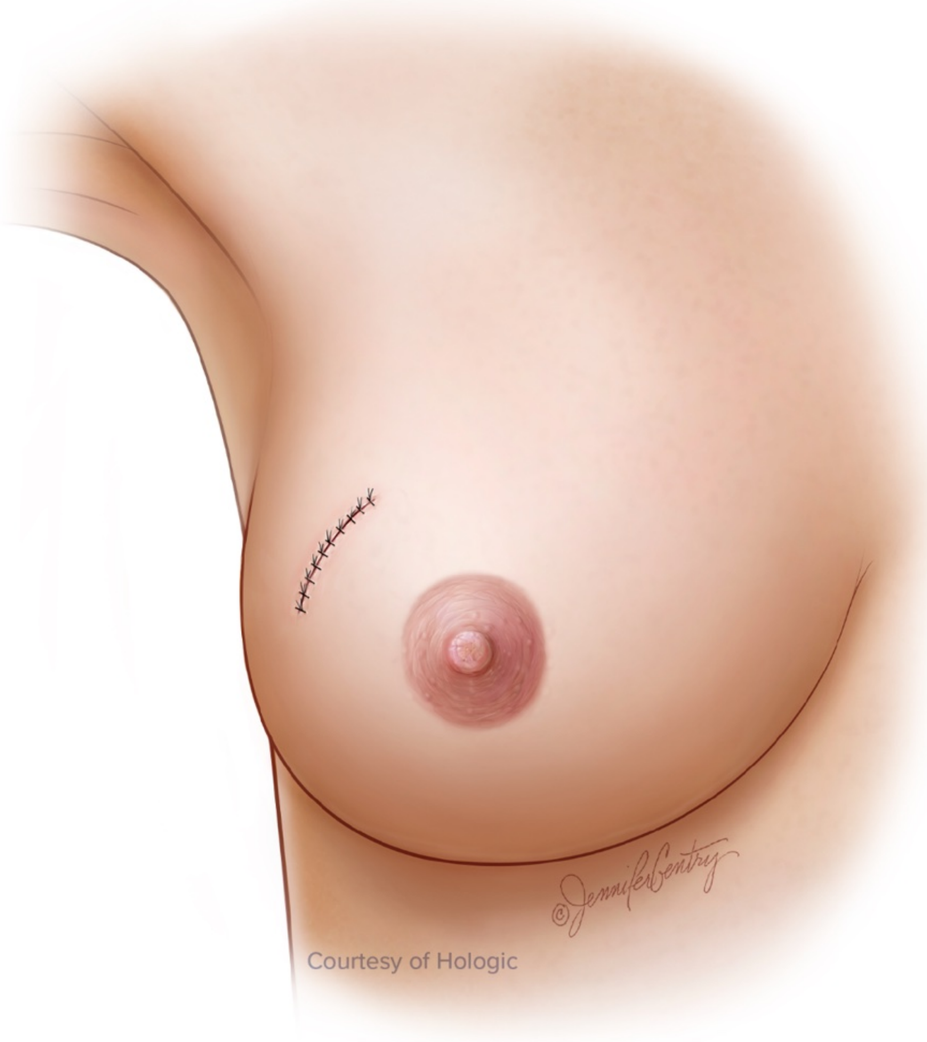
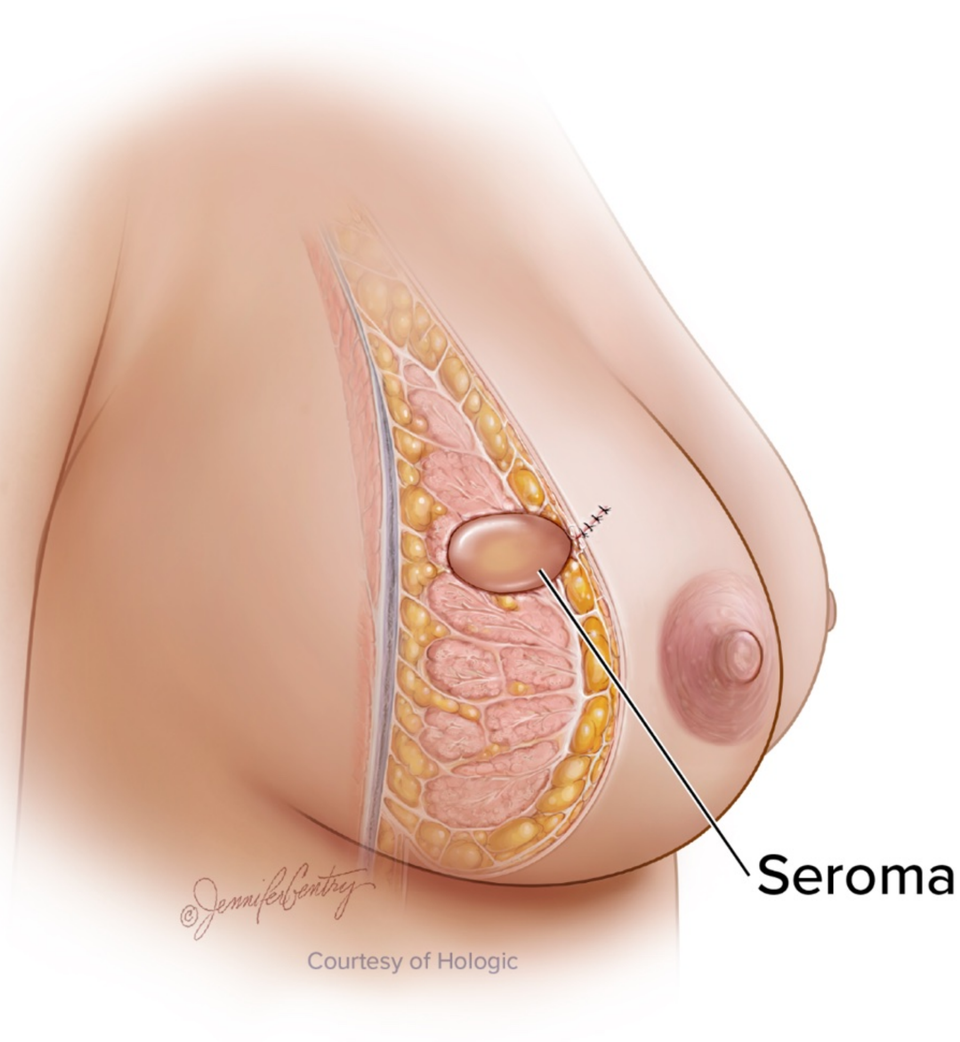


Basic Lumpectomy





The all-too-common outcome…

…that is completely avoidable.

Clough KB et al. Improving breast cancer surgery: A classification and quadrant per quadrant atlas for oncoplastic surgery. Ann Surg Oncol.17;1375-1391.2010

WHAT IS ONCOPLASTIC BREAST SURGERY?

- **Application of plastic surgical principles to cancer surgery**
- **Goal: restore and/or improve a patient's aesthetic result without compromising cancer treatment**
- **Patients may look better after surgery than they did before***

*this is not about vanity; it's about returning to a normal life

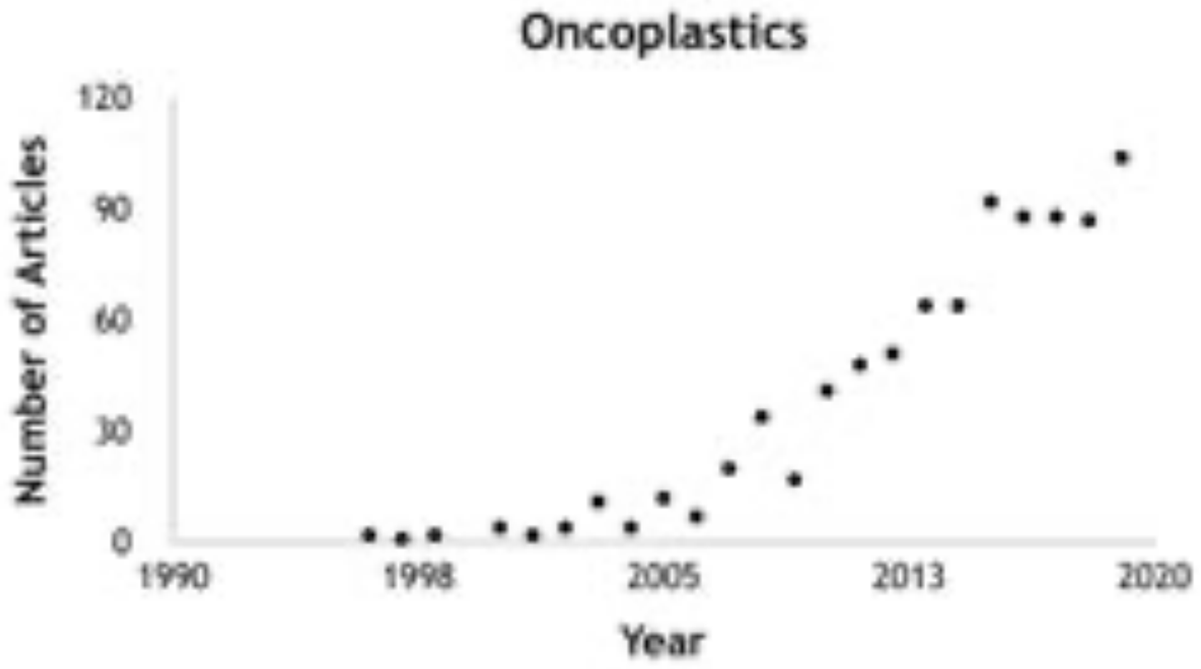
ONCOPLASTICS AS A PHILOSOPHY RATHER THAN A TECHNIQUE

Who is the ideal candidate for Oncoplastics?

EVERYONE

THE *Science* OF ONCOPLASTICS

ONCOPLASTICS ARTICLES PUBLISHED OVER THE LAST QUARTER-CENTURY



THE *Science* OF ONCOPLASTICS

- **OPS reduces (+) surgical margins and reduces re-excision rates**
- **OPS does not negatively impact recurrence rates**
- **OPS has a low complication rate**
- **OPS does not delay initiation of adjuvant therapy**
- **OPS is cost-effective**
- **OPS improves QOL**

THE *Art* OF ONCOPLASTICS

“ONE…

SIZE…

FITS…

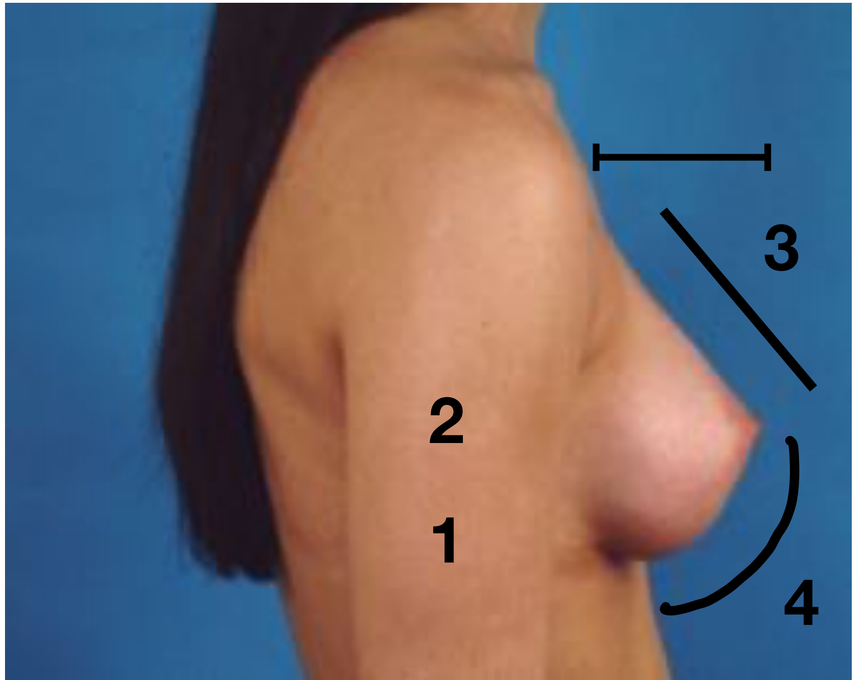
…ONE”

ONCOPLASTIC BREAST SURGICAL PLANNING

THE ‘IDEAL’ BREAST

1-IMF at mid-humeral line

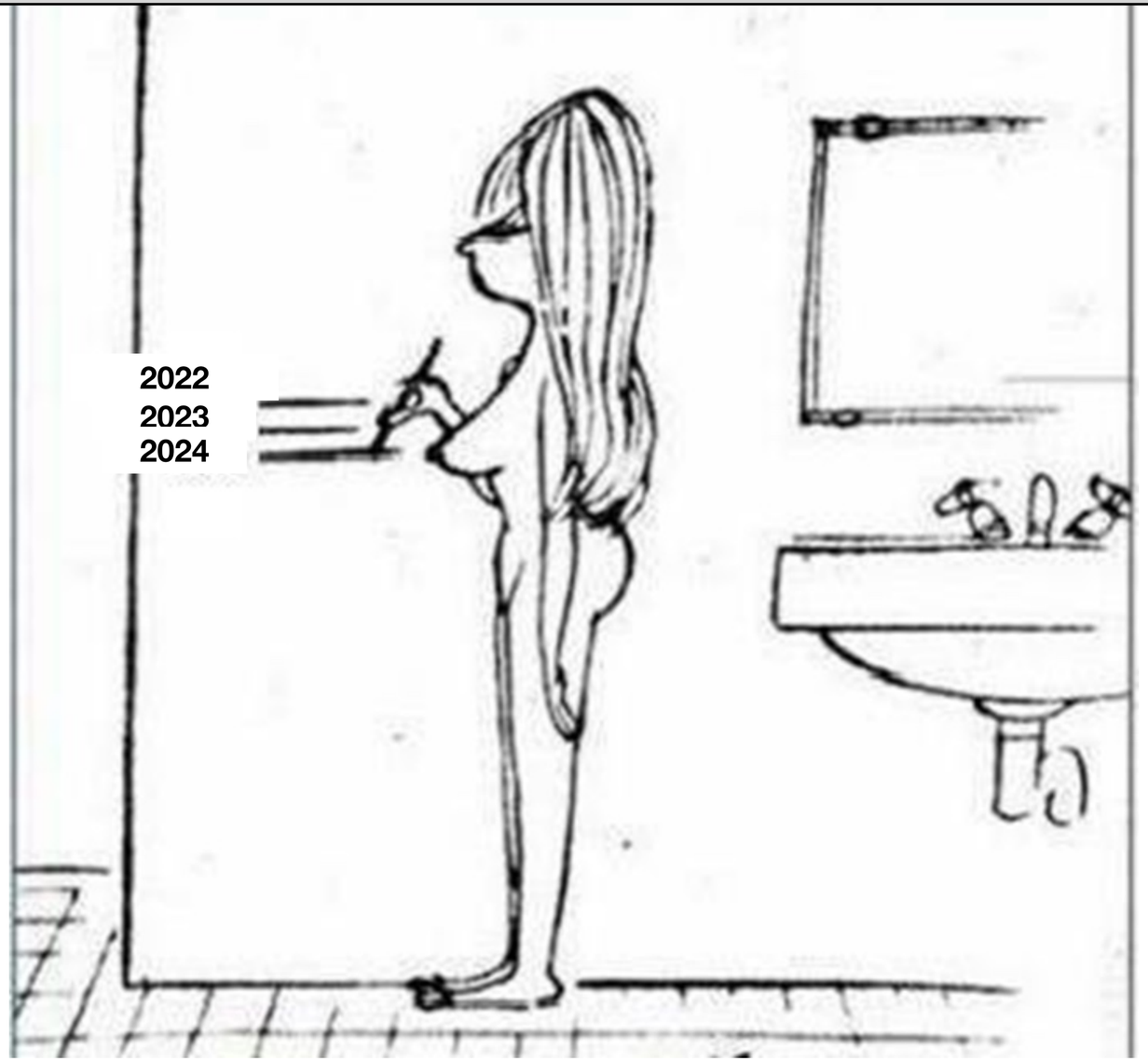
2-NAC above the level of the IMF, at the point of maximal projection



3-linear trajectory of upper pole

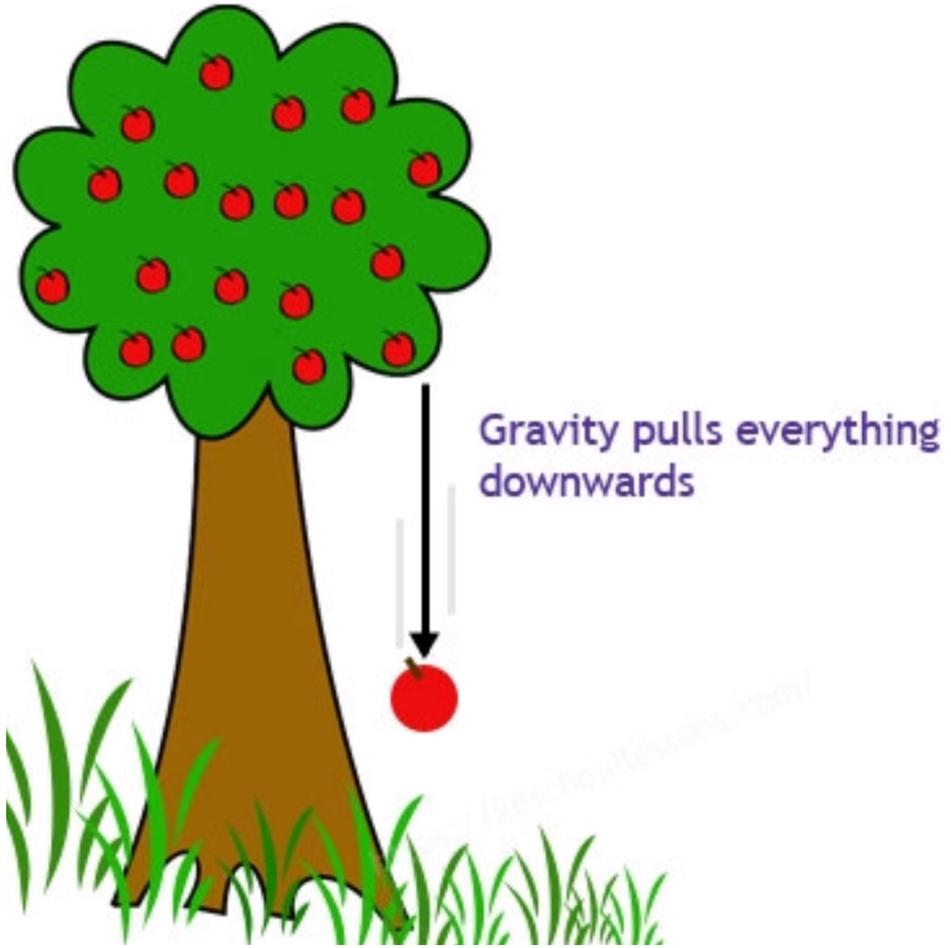
4-rounded lower pole

TIME MARCHES ON…



PTOSIS: the “frenemy” of the plastic surgeon

- **Aging**
- **Pregnancy**
- **Weight loss/gain**



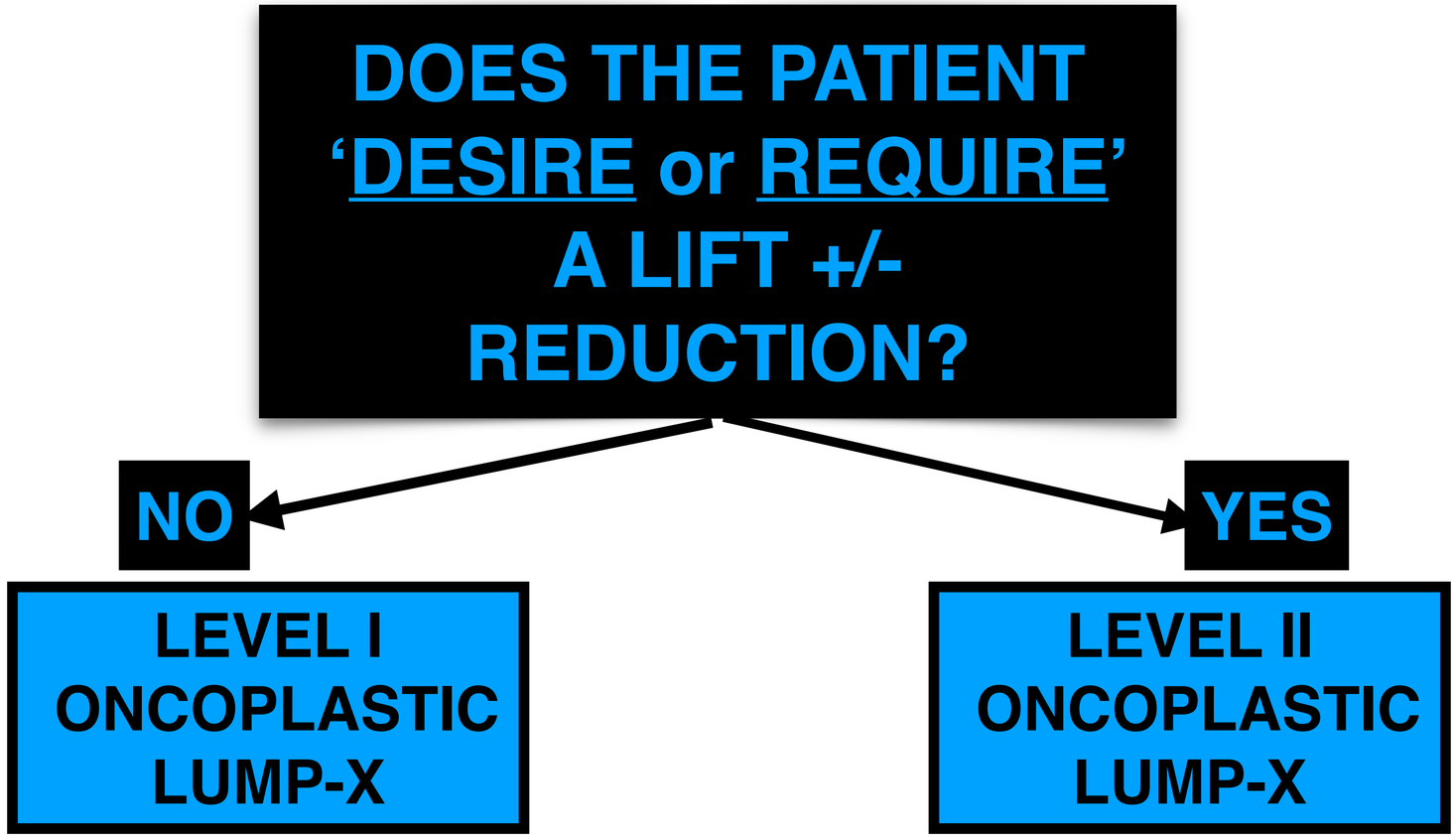
The Goal of Aesthetic Breast Surgery is to Restore the Breast to It's Ideal Size and Shape

- **Augmentation**
  - **Mastopexy ("Lift") +/- Augmentation**
    - **Mammaplasty ("Lift and Reduction")**

The Goal of *Oncoplastic* Breast Surgery is to Remove the Cancer while Maintaining or Improving the Breast Size and Shape

PREOPERATIVE PLANNING: DESIGN THE OPERATION TO FIT THE PATIENT

- OPBS is the ultimate example of PERSONALIZED MEDICINE
- Need to first determine the IDEAL oncoplastic operation for a patient
    - BREAST SIZE & SHAPE
        - TUMOR SIZE & LOCATION
            - IMAGING
- THEN...need to determine if that patient wants to look the SAME or BETTER than BEFORE the cancer diagnosis


DOES THE PATIENT
'DESIRE or REQUIRE'
A LIFT +/-
REDUCTION?
NO
YES
LEVEL I
ONCOPLASTIC
LUMP-X
LEVEL II
ONCOPLASTIC
LUMP-X
*hide the scar
*close the cavity
*remove skin
*re-center nipple
*symmetry

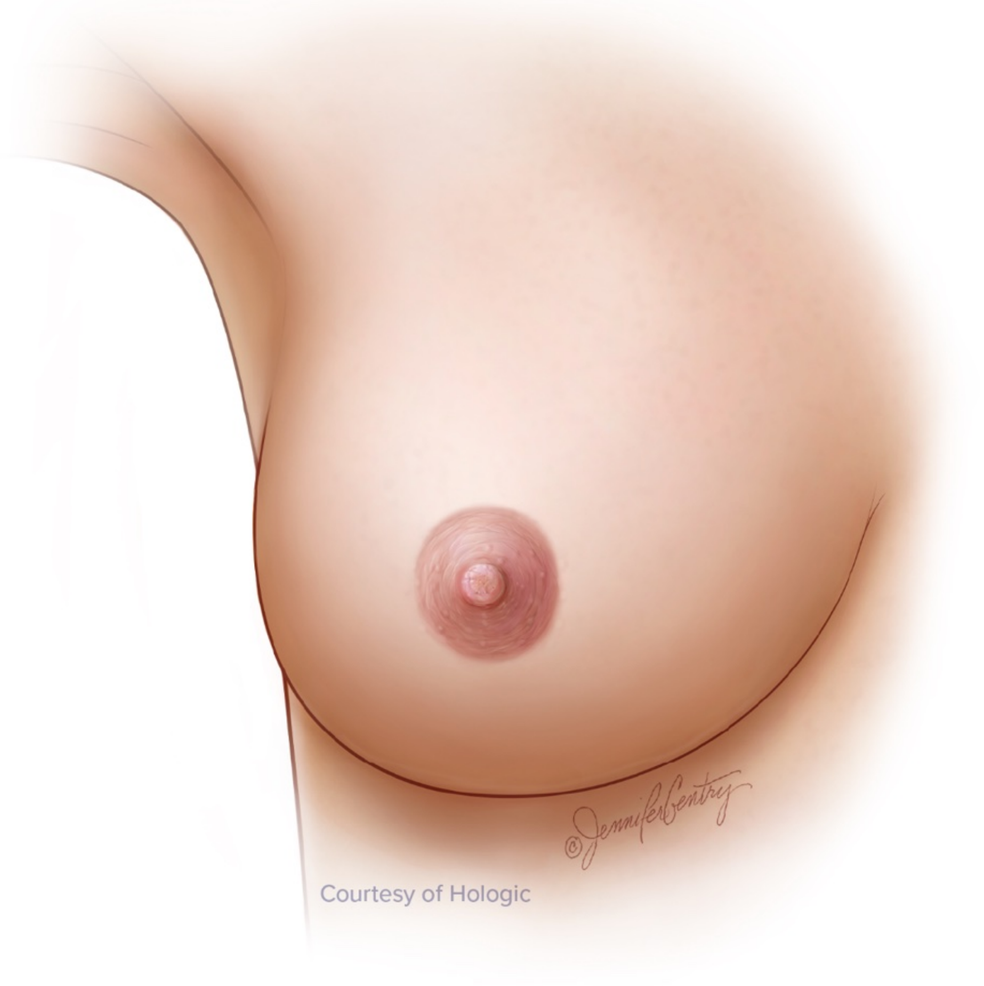
LEVEL I ONCOPLASTIC LUMPECTOMY TECHNIQUES

Level I Oncoplastic Lumpectomy: “closing the cavity”

- Re-shaping of the breast via
  volume displacement = rearrangement

- Dual-plane undermining
  - Anterior (anterior mammary fascia)
  - Posterior (prepectoral space)

Step 1: Localize Tumor & Make Periareolar (Axillary; Inframammary) Incision



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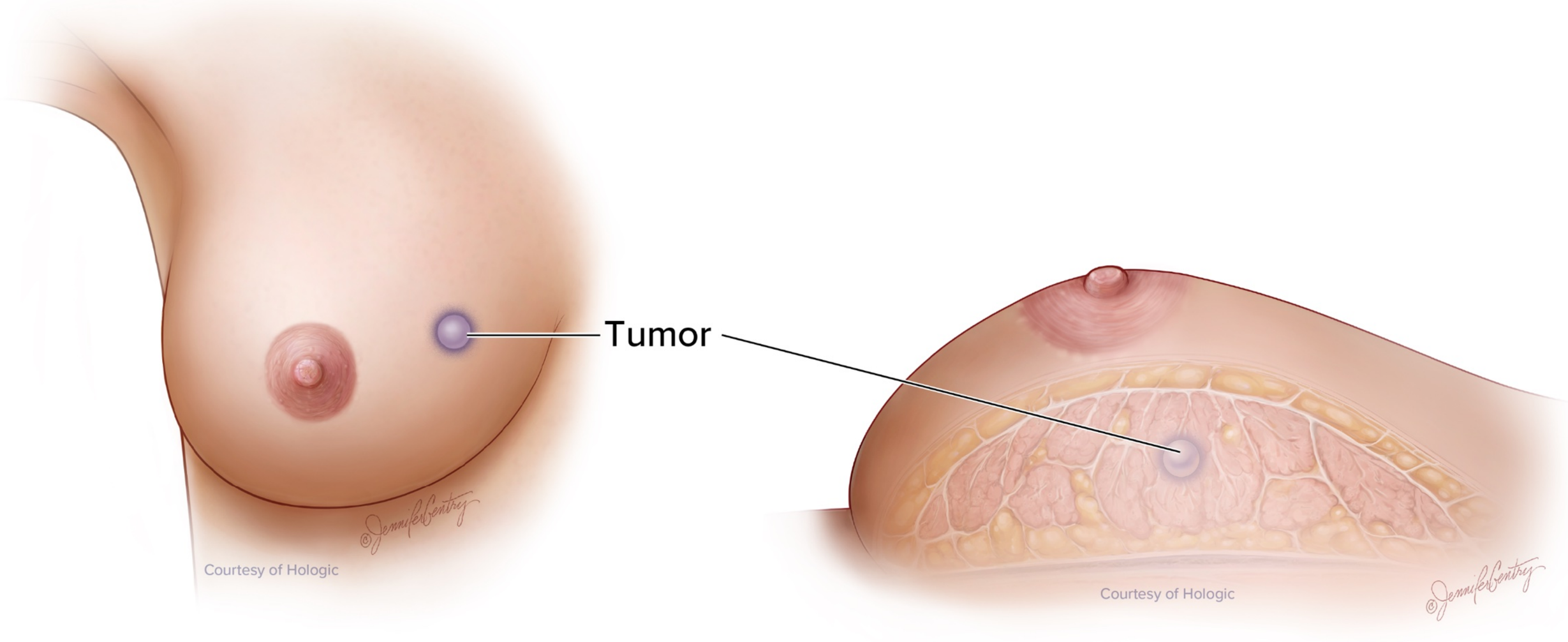

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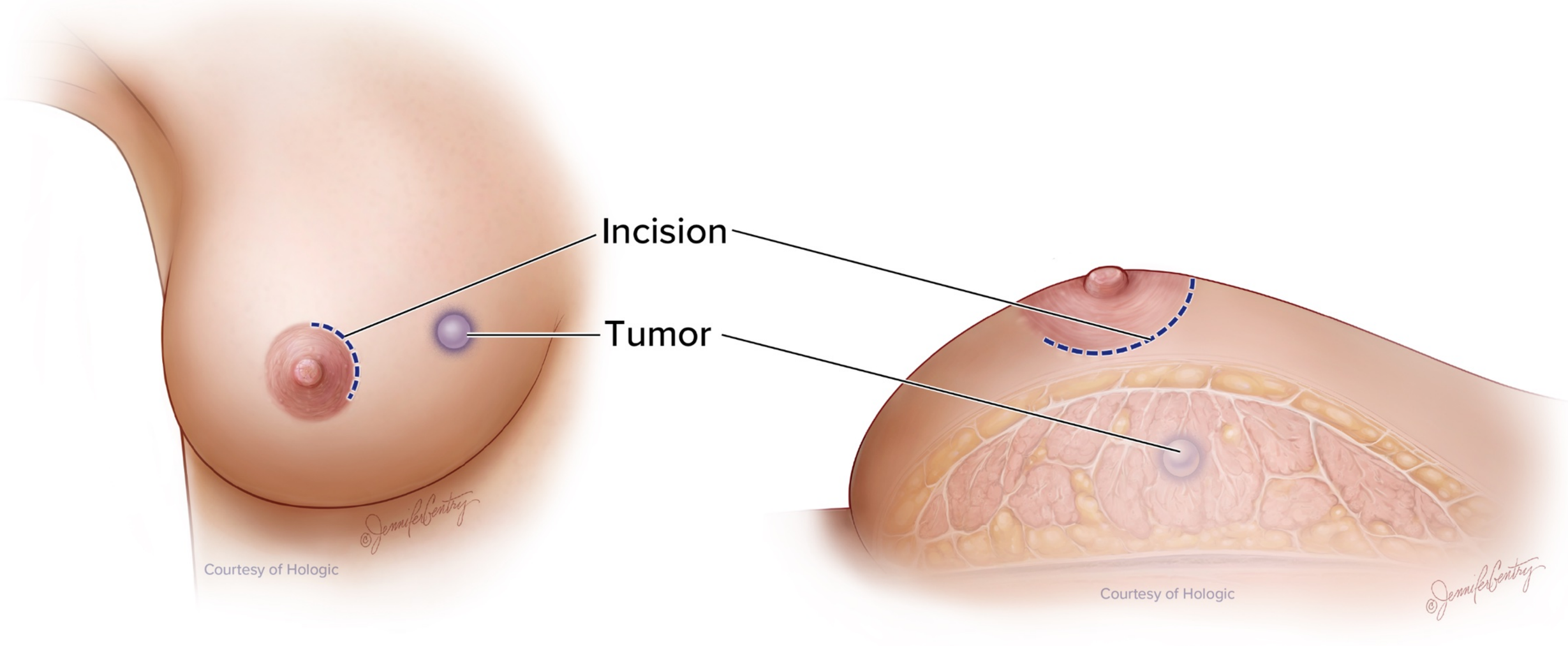
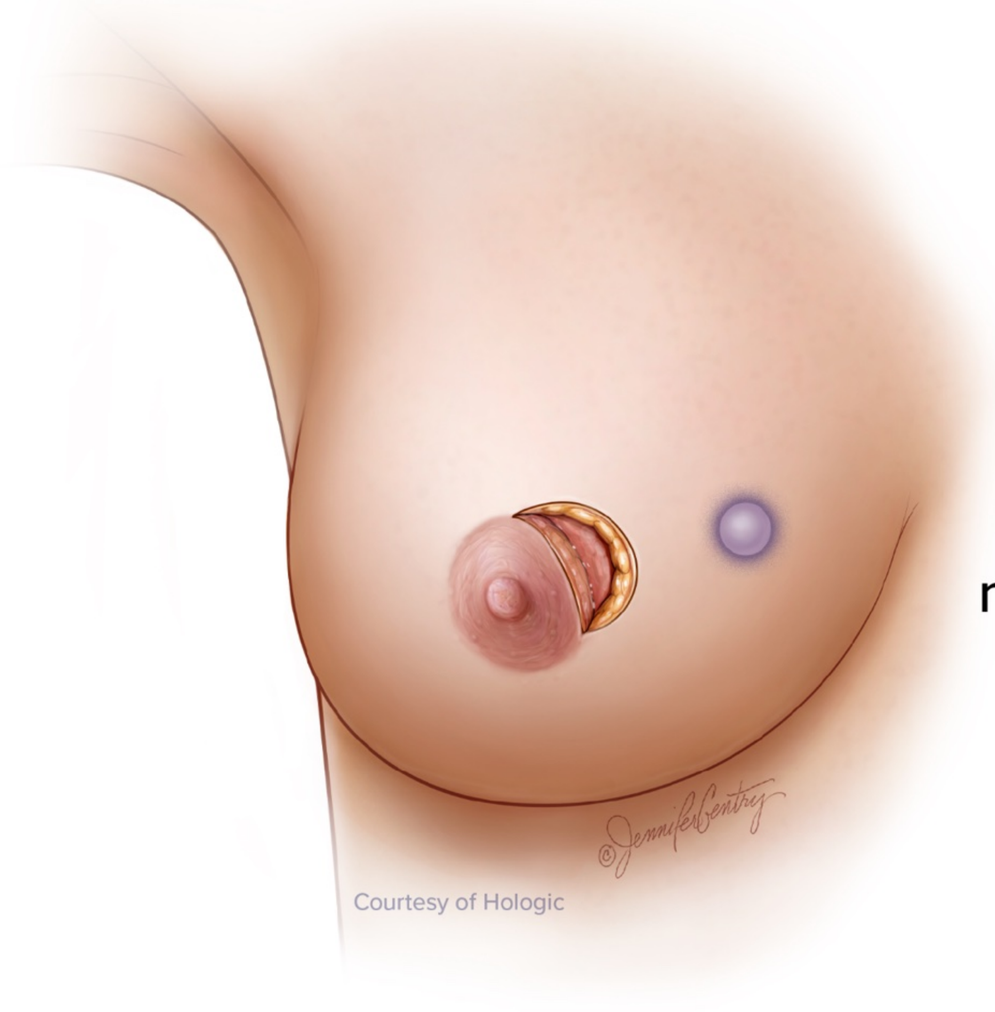
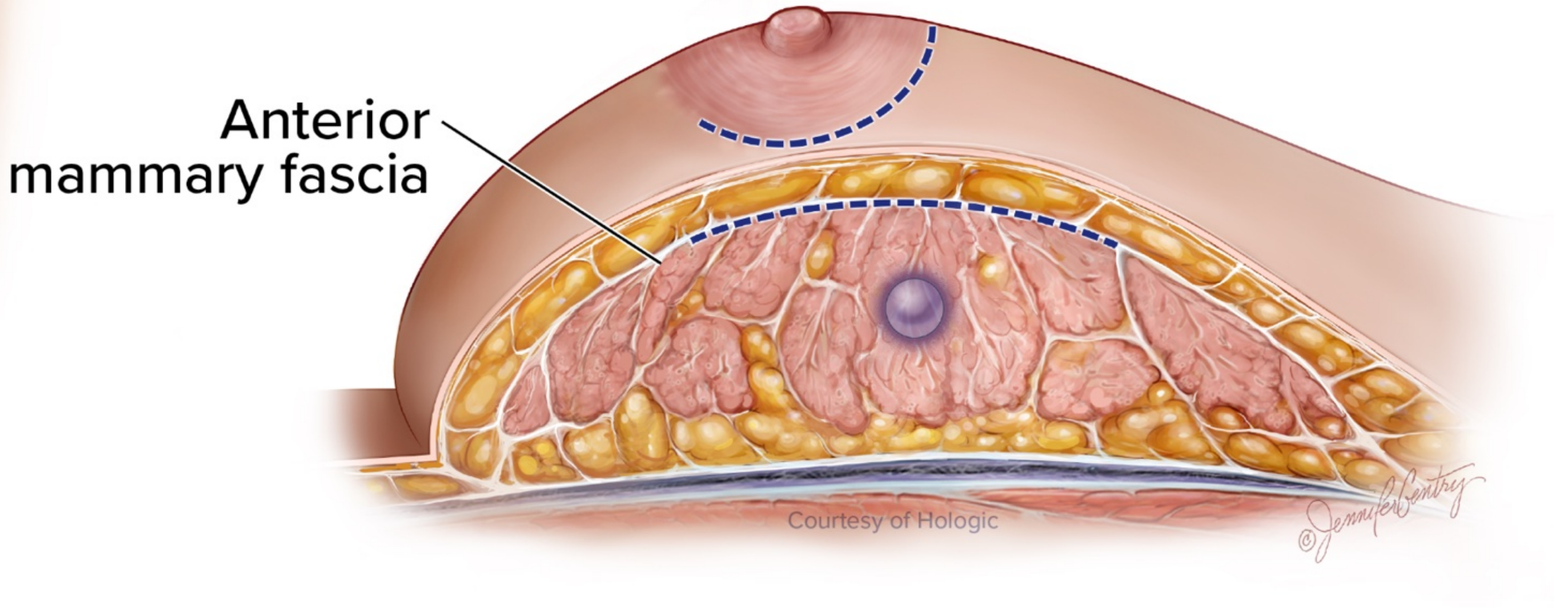


Step 2: Dissect Sub-Q Flap Well Beyond Tumor





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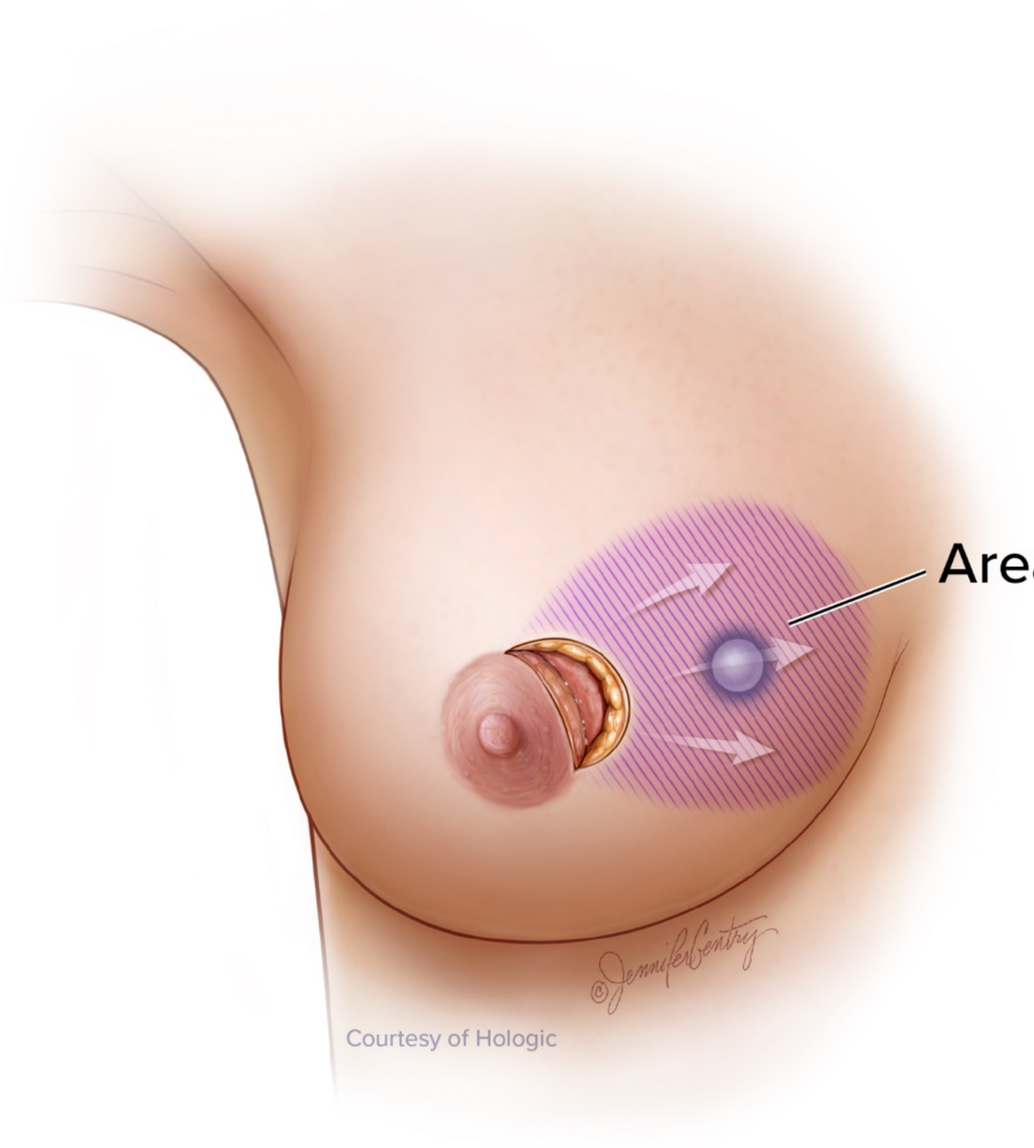
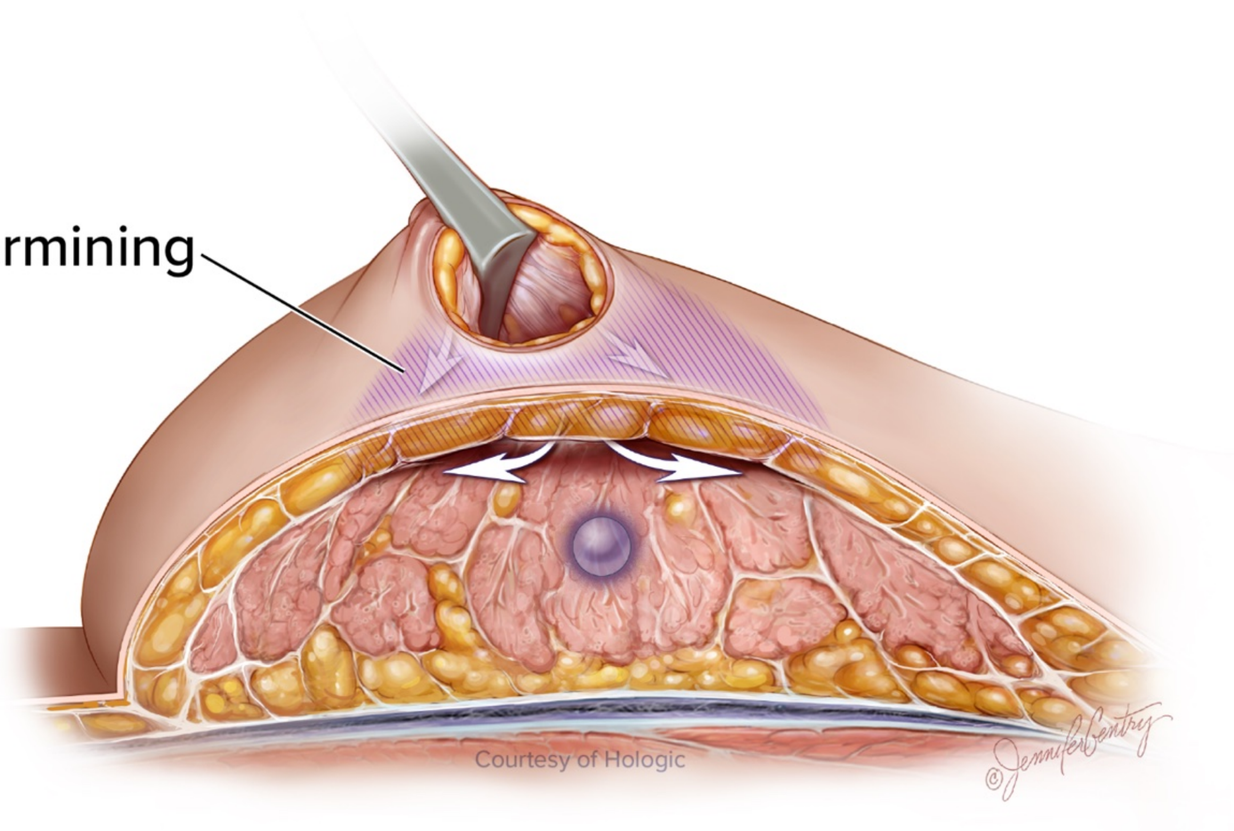
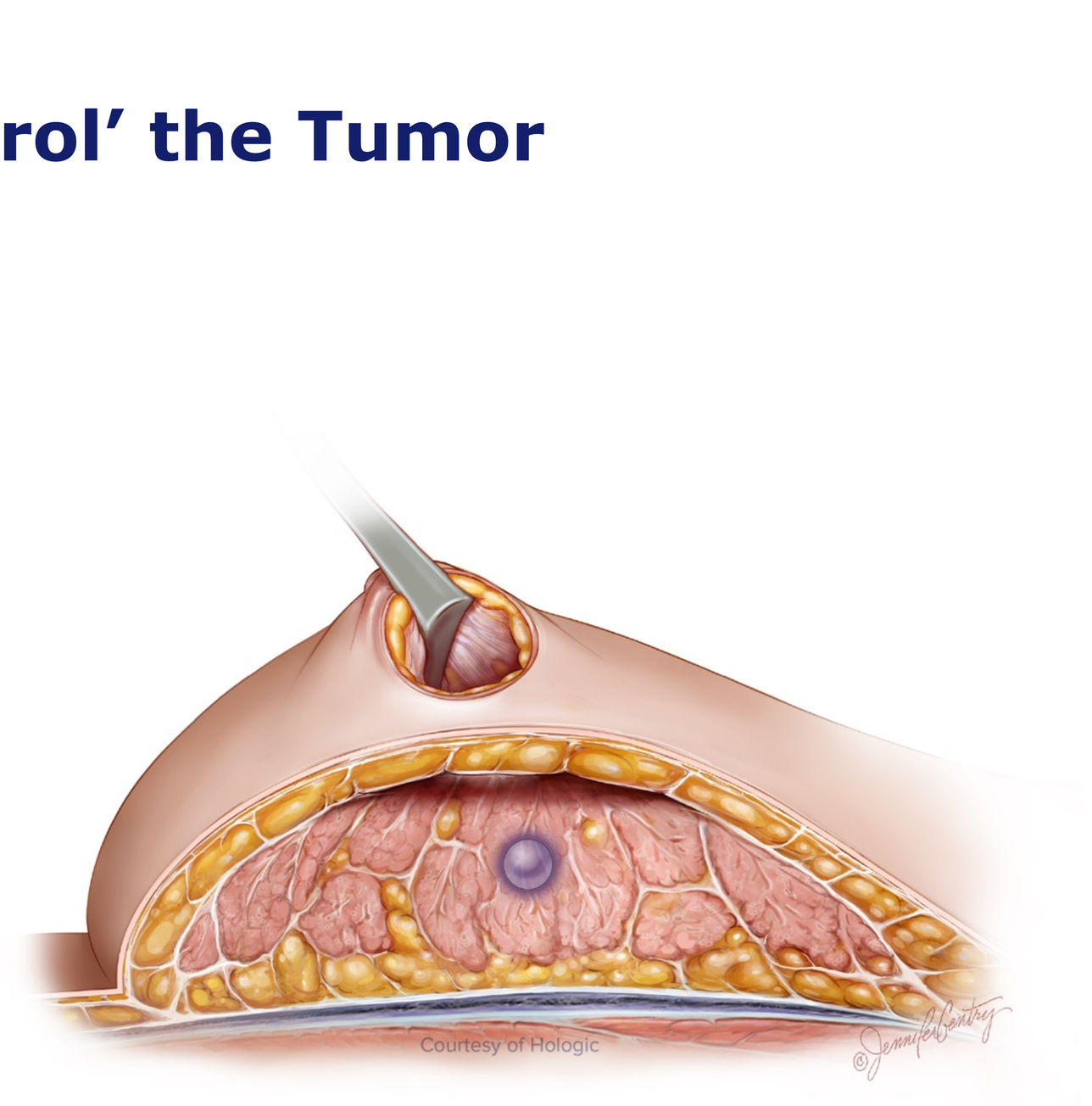




Step 3: Identify and ‘Control’ the Tumor



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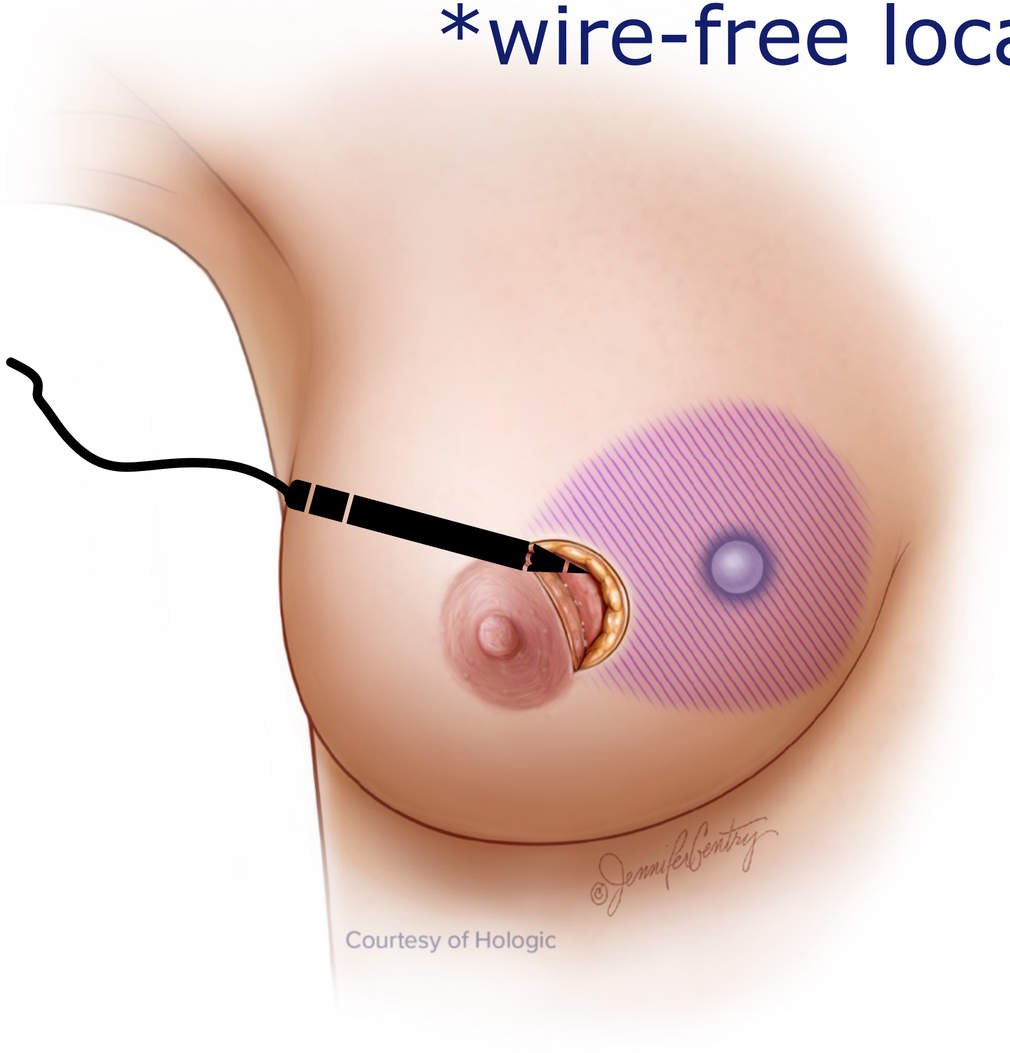
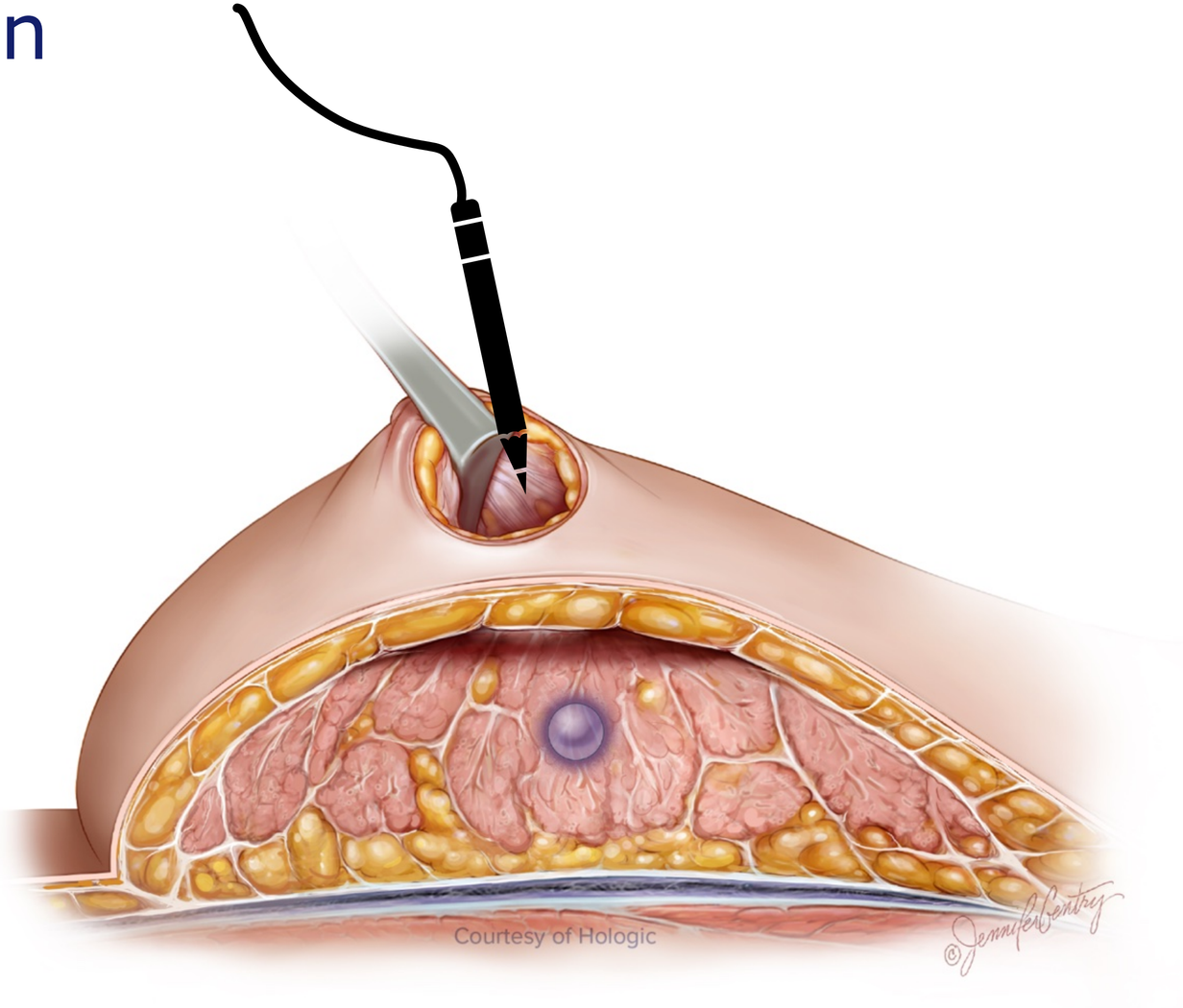
*wire-free localization





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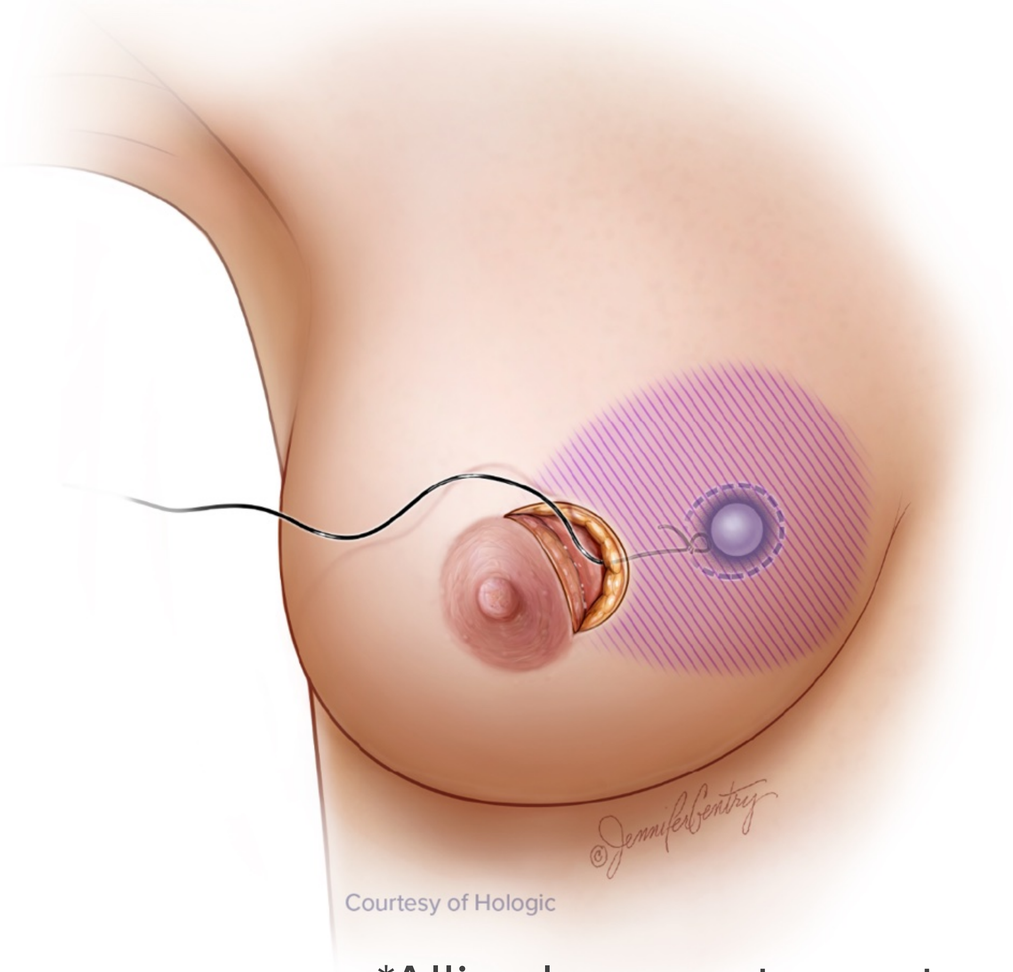
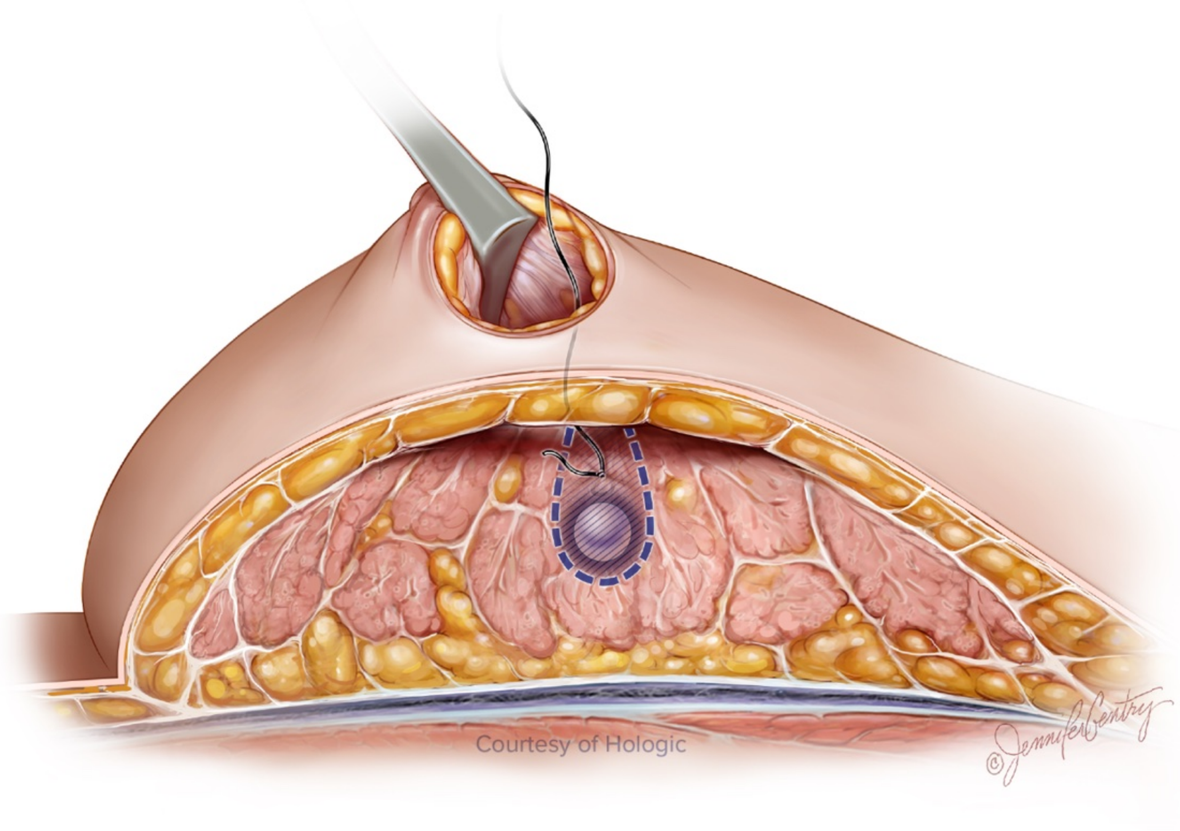


*Allis clamp, suture, etc.



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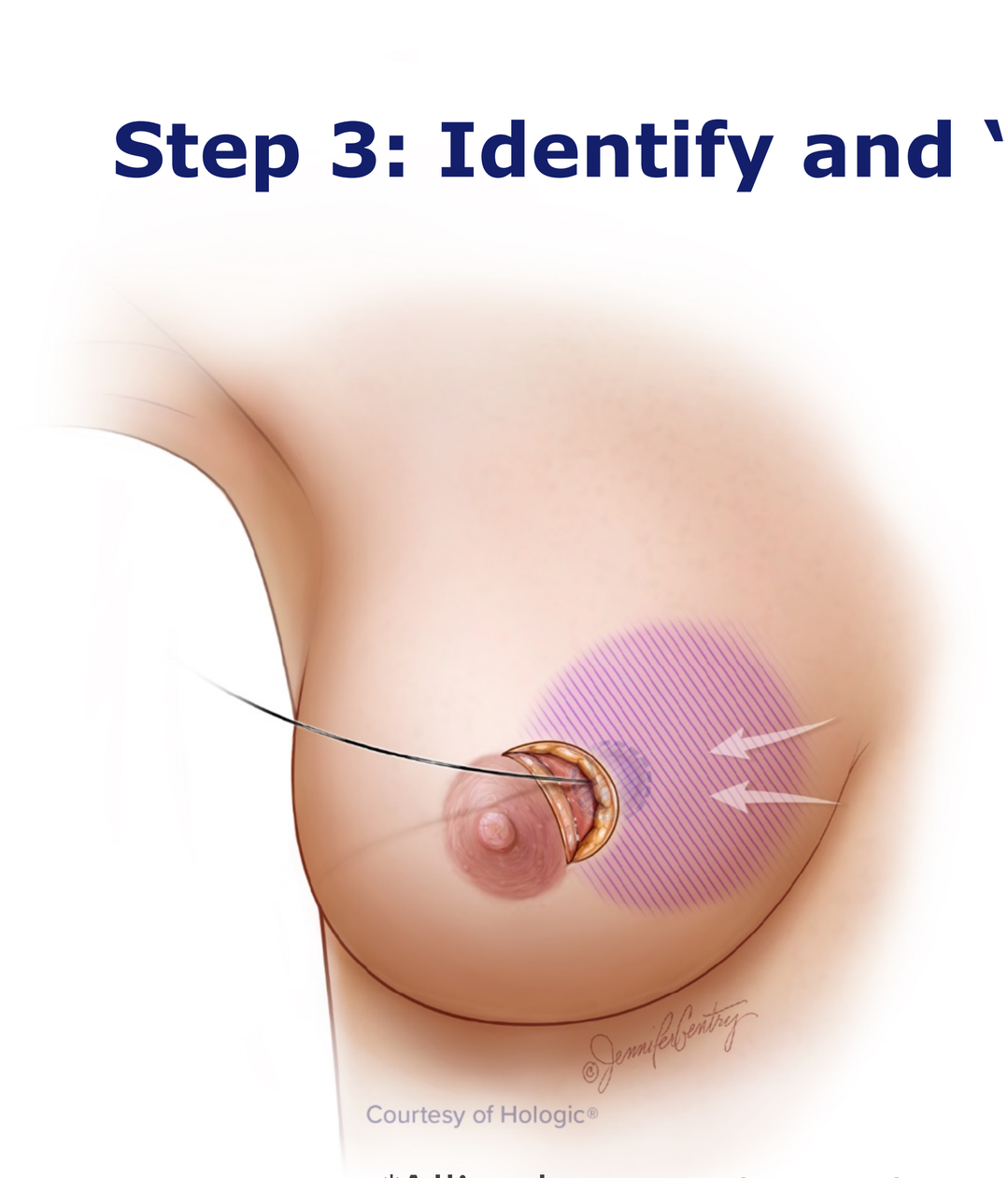

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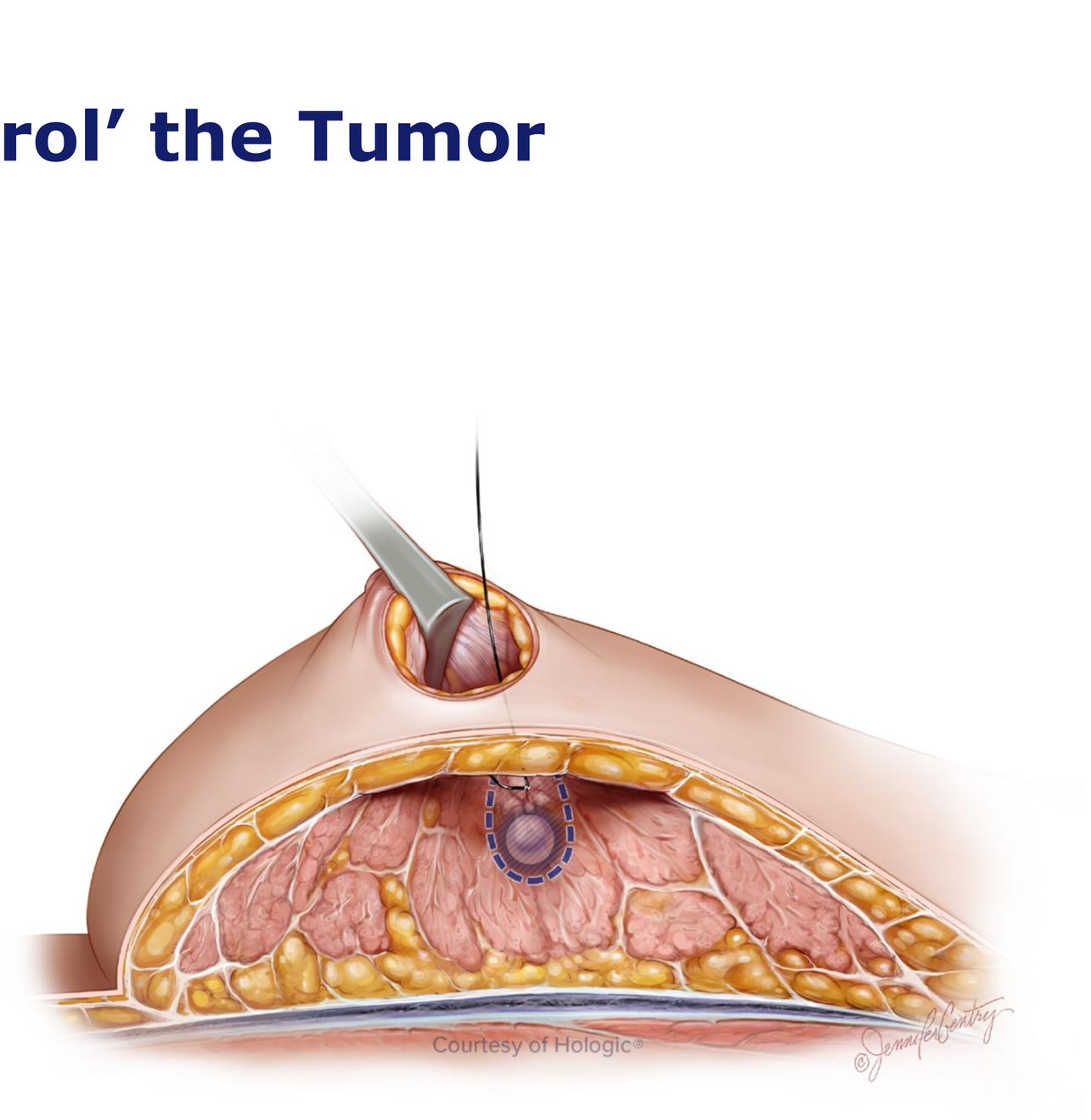

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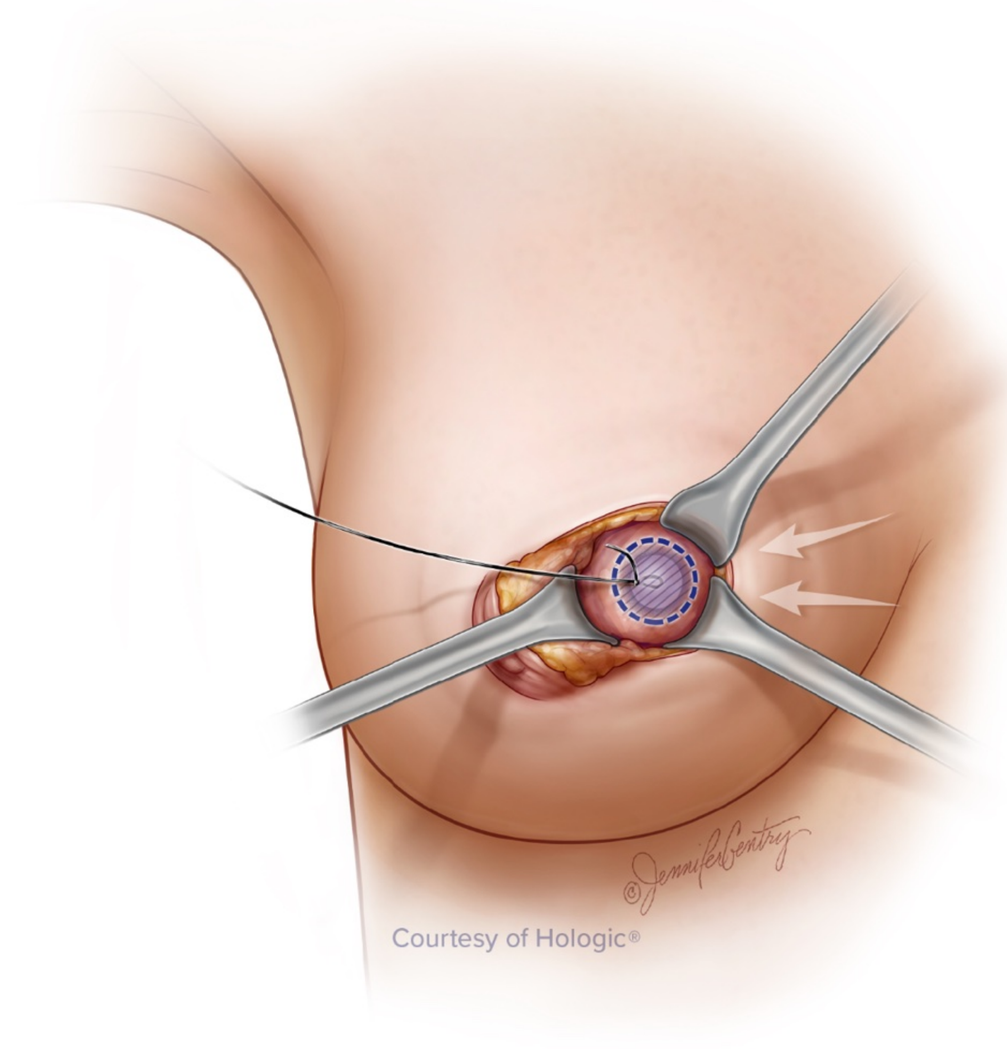
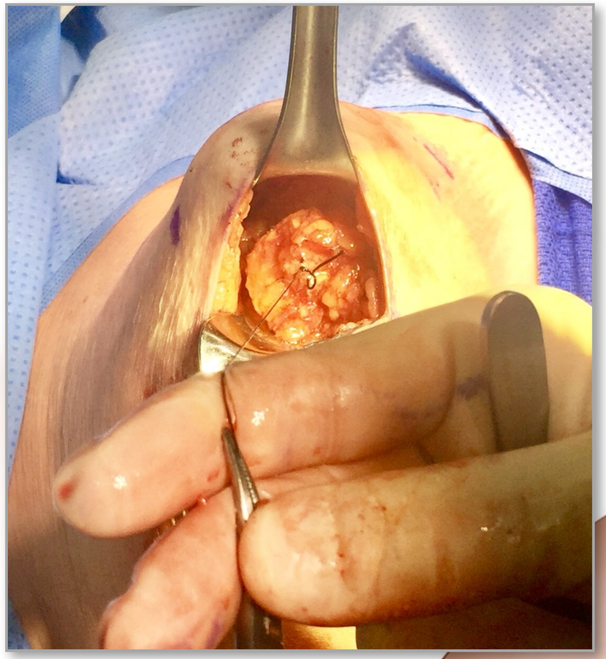
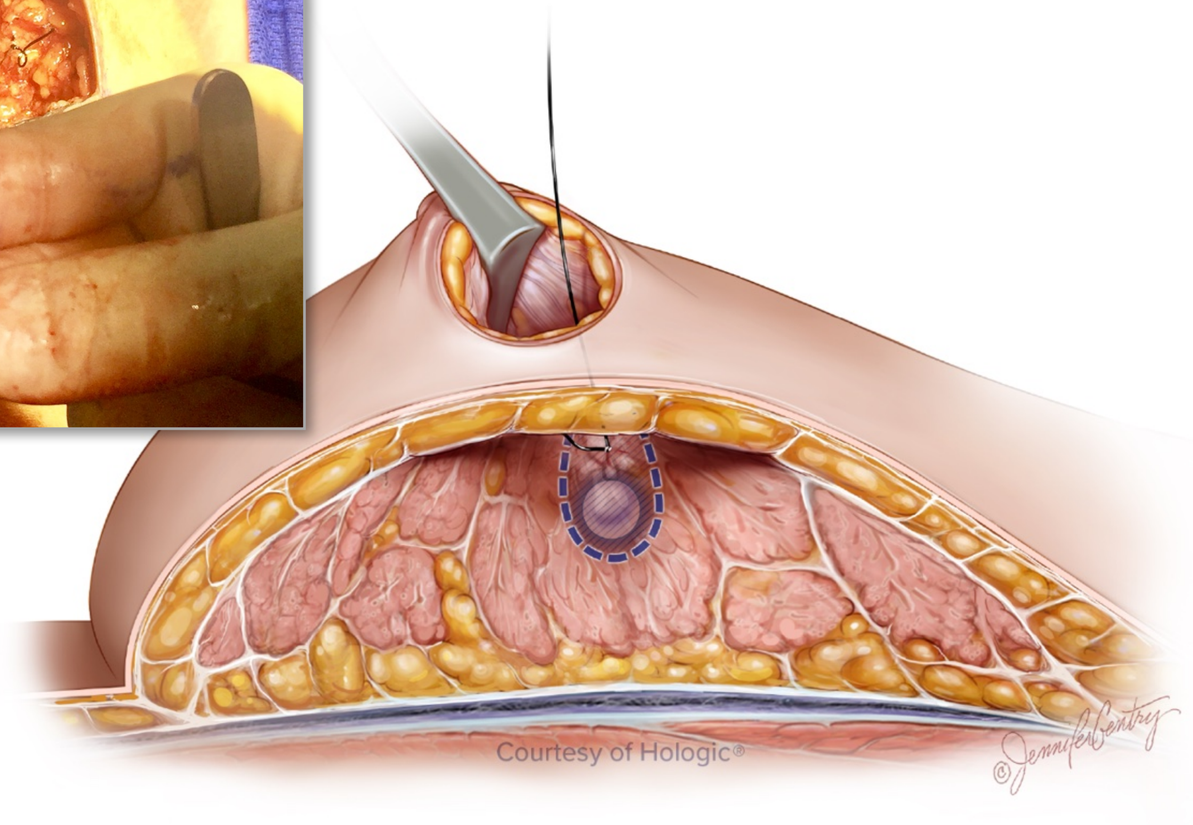
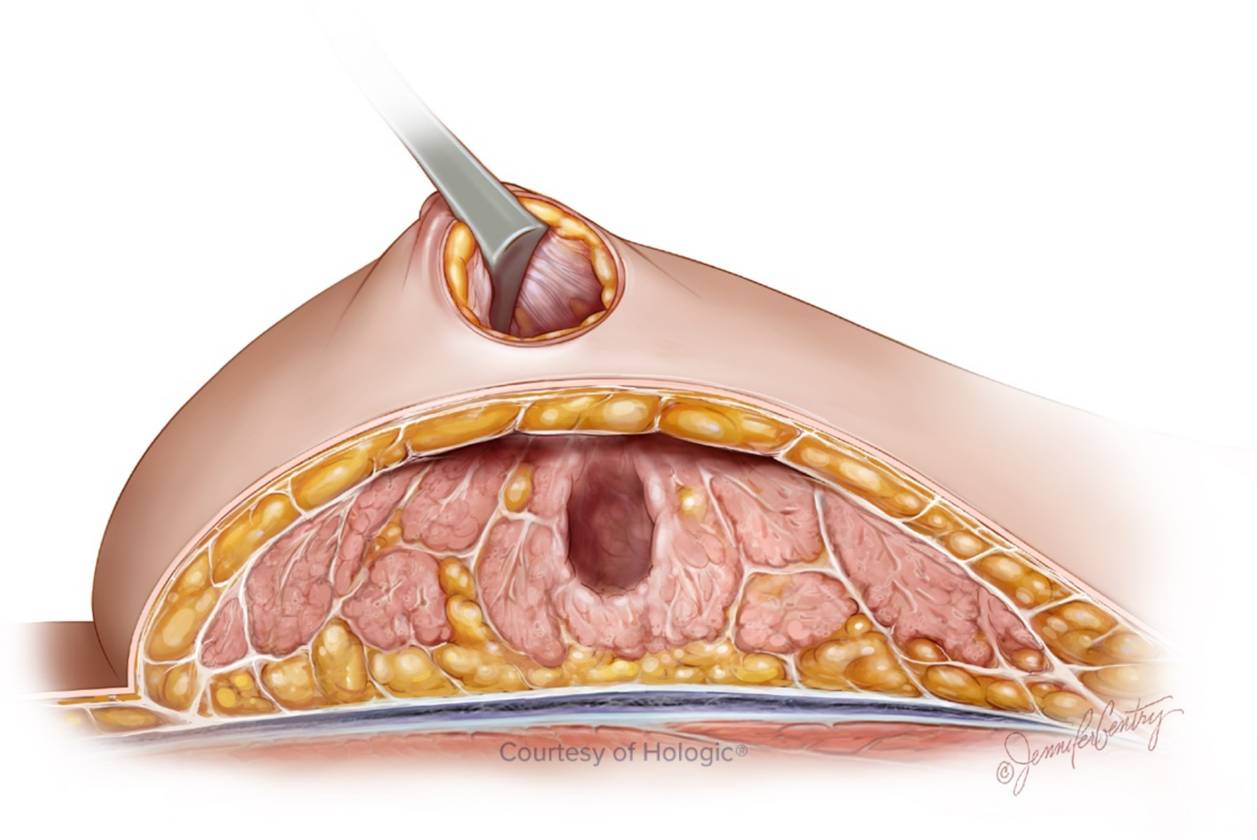


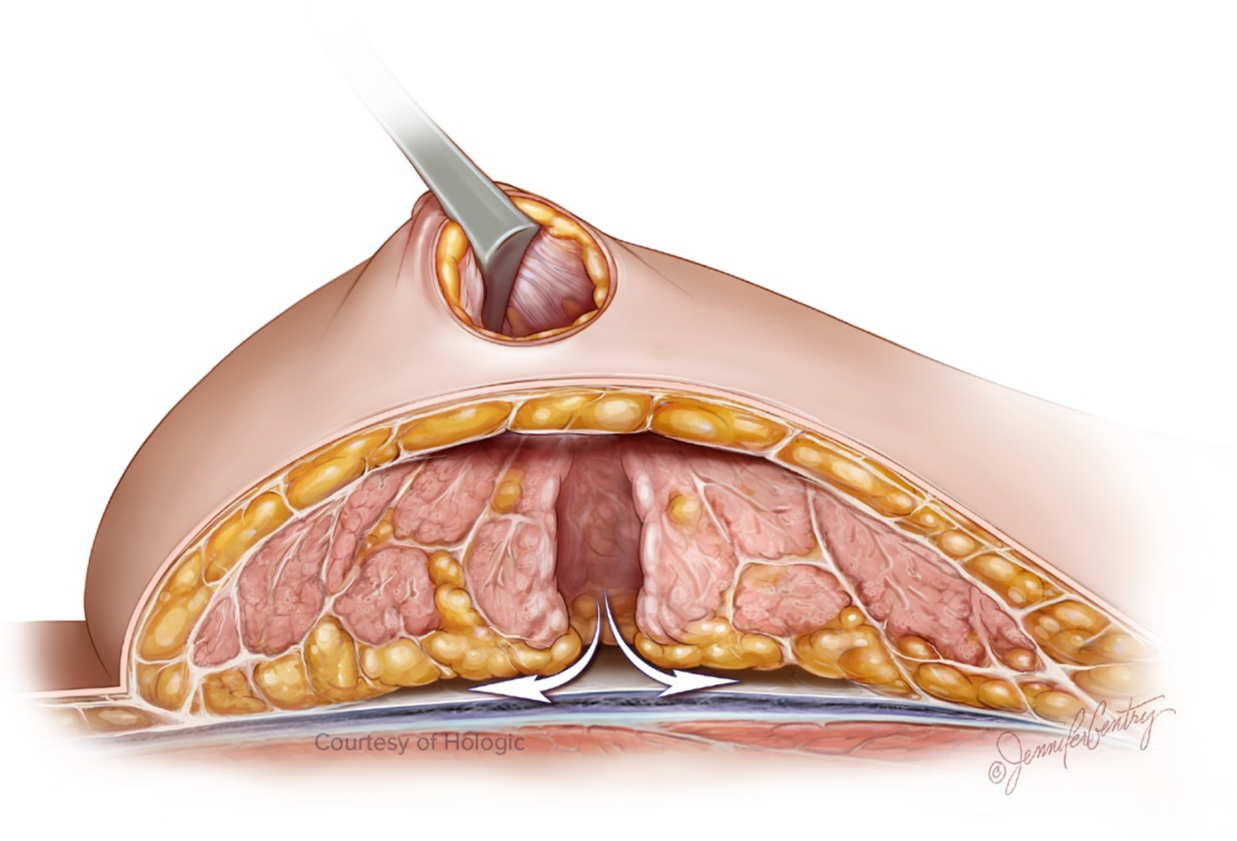




Step 4: Excise Tumor (Shave Margins)

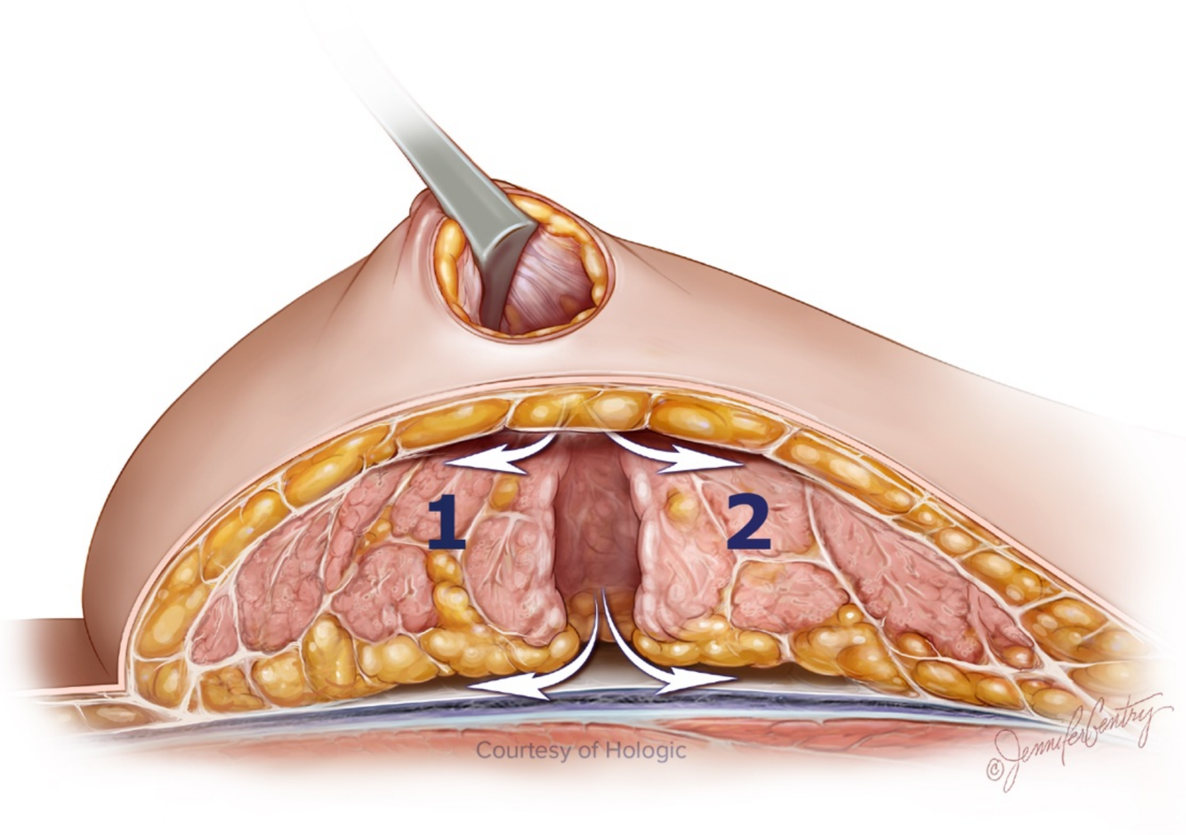


Step 5: Undermine Breast Anterior to Pectoralis Fascia

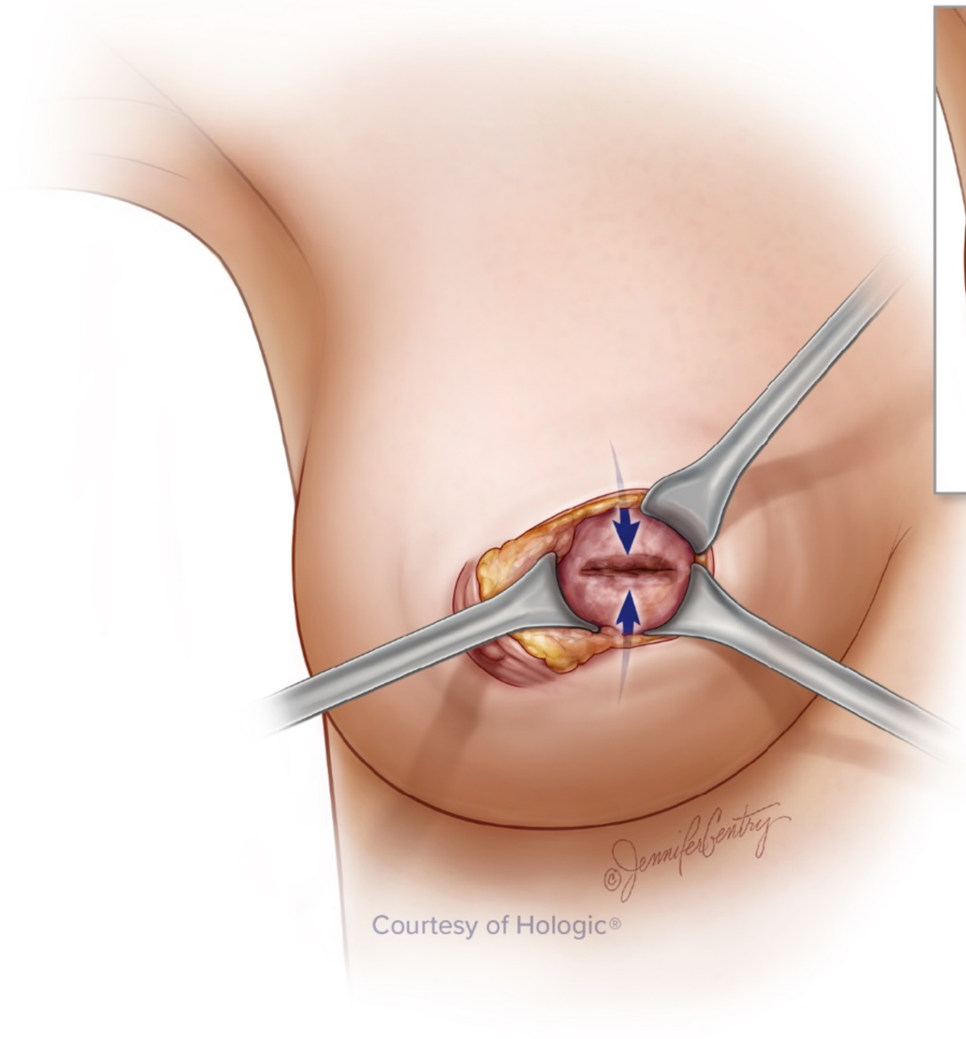


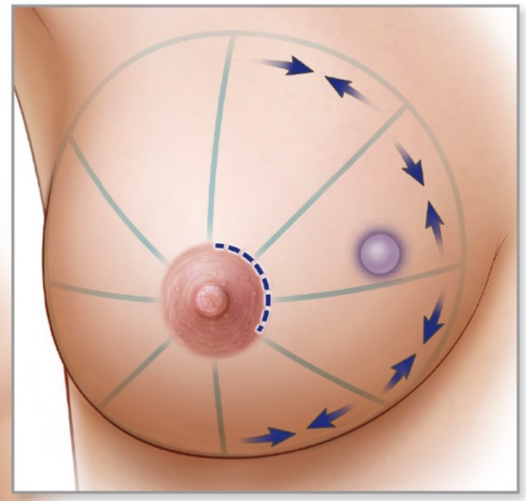
Step 5: Undermine Breast Anterior to Pectoralis Fascia

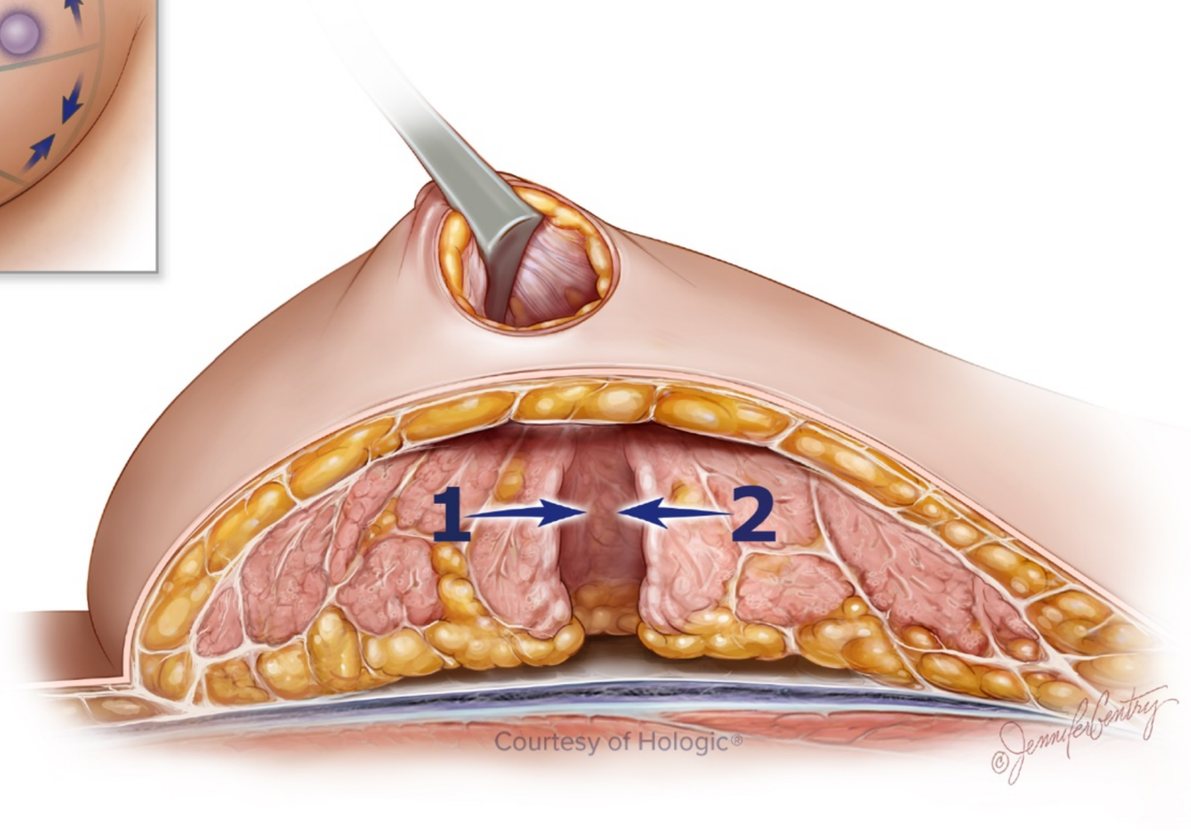
Dual-plane undermining



Step 6: Close The Cavity (“Rearrangement”)





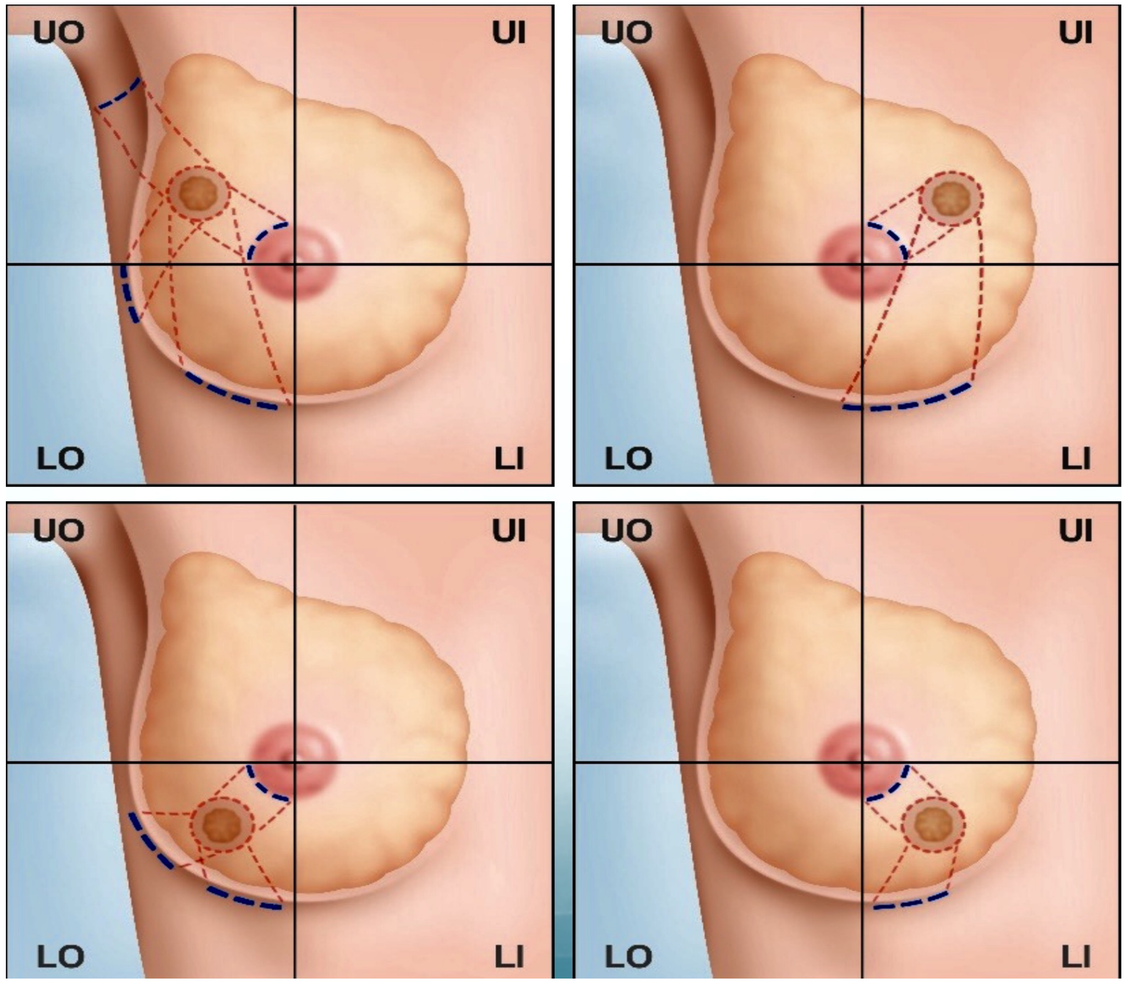


ONCOPLASTIC BREAST SURGICAL PLANNING

- **Need to keep the incisions away from “exposed” non-pigmented skin**

“HIDDEN SCAR SURGERY”

- PERIAREOLAR
- AXILLARY
- INFRAMAMMARY



ONCOPLASTIC BREAST SURGICAL PLANNING

- Need to keep the incisions away from “exposed” non-pigmented skin

- **Need to avoid seromas**

ALWAYS ATTEMPT TO CLOSE THE LUMPECTOMY CAVITY

COMPLICATIONS OF SEROMAS POST LUMPECTOMY/RADIATION:

- Higher infection rate*
- Inferior cosmesis*
- Breast induration at tumor bed and whole breast*

*Mukesh MB, et.al., Association of Breast Tumor Bed Seroma with post-operative complications and late normal tissue toxicity. EJSO 38 (2012) 918-924

ONCOPLASTIC BREAST SURGICAL PLANNING

- Need to keep the incisions away from “exposed” non-pigmented skin
- Need to avoid seromas
- **Need to limit re-excision lumpectomies**

What is the incidence of re-excision in the US?

Kacmarski, K, et.al.,
SURGEON RE-EXCISION RATES AFTER BCS: A MEASURE OF LOW-VALUE CARE
JACS 228:504 APR 2019

- **Medicare claims data, 2012-2018**
- **291,065 pts; 5337 surgeons; 19% re-excision rate**
- **17.5% of all surgeons had re-exc rates >30%**

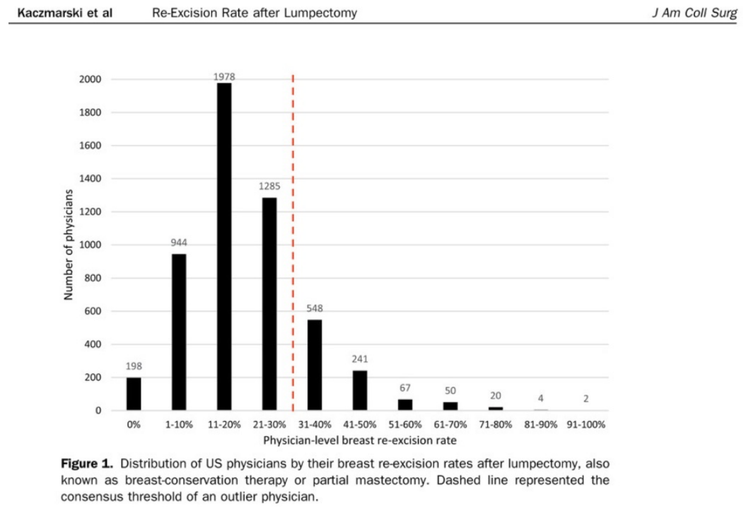


Figure 1. Distribution of US physicians by their breast re-excision rates after lumpectomy, also known as breast-conservation therapy or partial mastectomy. Dashed line represented the consensus threshold of an outlier physician.

STRATEGIES TO AVOID RE-EXCISION LUMPECTOMY

STRATEGIES TO AVOID RE-EXCISION LUMPECTOMY

- Excellent lighting
  - Lighted retractors
  - Headlight
- Wire-free Localization
- Intraoperative Ultrasound
- Shave Margins
- Intraoperative Margin Analysis
  - Pathology
  - Radiology
  - Novel Techniques

WHY WIRE-FREE BREAST LOCALIZATION?

WHAT'S WRONG WITH WIRES?

- INCREASED patient anxiety
- IMPRECISE ("blind leading the blind")
- SUBOPTIMAL surgical planning
- INEFFICIENT radiology workflow
- COSTLY operating room delays

INTRAOPERATIVE ULTRASOUND (IOUS)

Utilize ultrasound visible marker or lesion for targeting[1]

Results: Improves margin clearance and tissue preservation compared to WL[2]

CHALLENGES

- Significant learning curve/operator-dependent
- Continuous re-orientation of probe
- Size of probe>Size of Incision
- Procedure stops for intraoperative ultrasound
  - Remove retractors
  - Turn down OR lights
  - Scan tissue

1. Blumencranz, PW. Use of Hydrogel Breast Biopsy Tissue Markers Reduces the Need for Wire Localization. Ann Surg Oncol (2014) 21:3273-3277
2. Silverstein, MJ, Blumencranz, PW, et al. 2009 Consensus Conference. Image-detected breast cancer: state-of-the-art diagnosis and treatment. J Am Coll Surg. 2009 Dec: 209(6): 802.

STRATEGIES TO AVOID RE-EXCISION LUMPECTOMY

“TO SHAVE OR NOT TO SHAVE?”

- **‘No shaver’**
- **‘Comprehensive shaver’**
- **‘Selective shaver’**

SHAVE II, DuPont,etal, Ann Surg 2021

RESULTS	SHAVE (N=196)	NO SHAVE (N=200)
MARGIN (+) RATE	9.7%	36.0%
RATE OF SECOND SURGERY	8.7%	23.5%
TOTAL VOLUME OF EXCISED TISSUE	101.1 cm2	73.4 cm2

STRATEGIES TO AVOID RE-EXCISION LUMPECTOMY

	SENSITIVITY	SPECIFICITY
FROZEN SECTION	86%	96%
CYTOLOGY (TOUCH PREP)	91%	95%
INTRAOPERATIVE ULTRASOUND	59%	81%
SPECIMEN XRAY (2-D)	53%	84%

META-ANALYSIS

Diagnostic Accuracy of Intraoperative Techniques for Margin Assessment in Breast Cancer Surgery

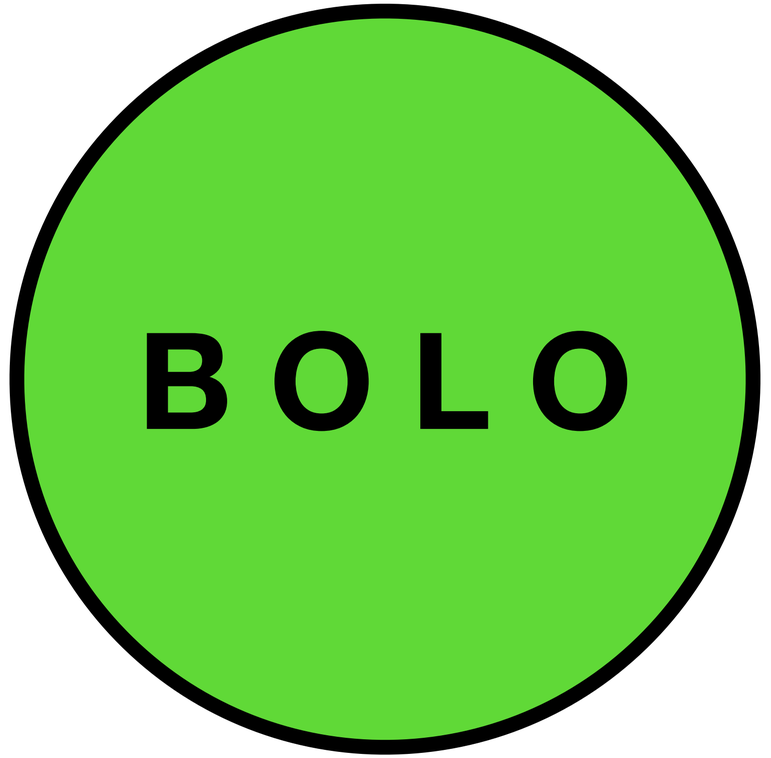
A Meta-analysis

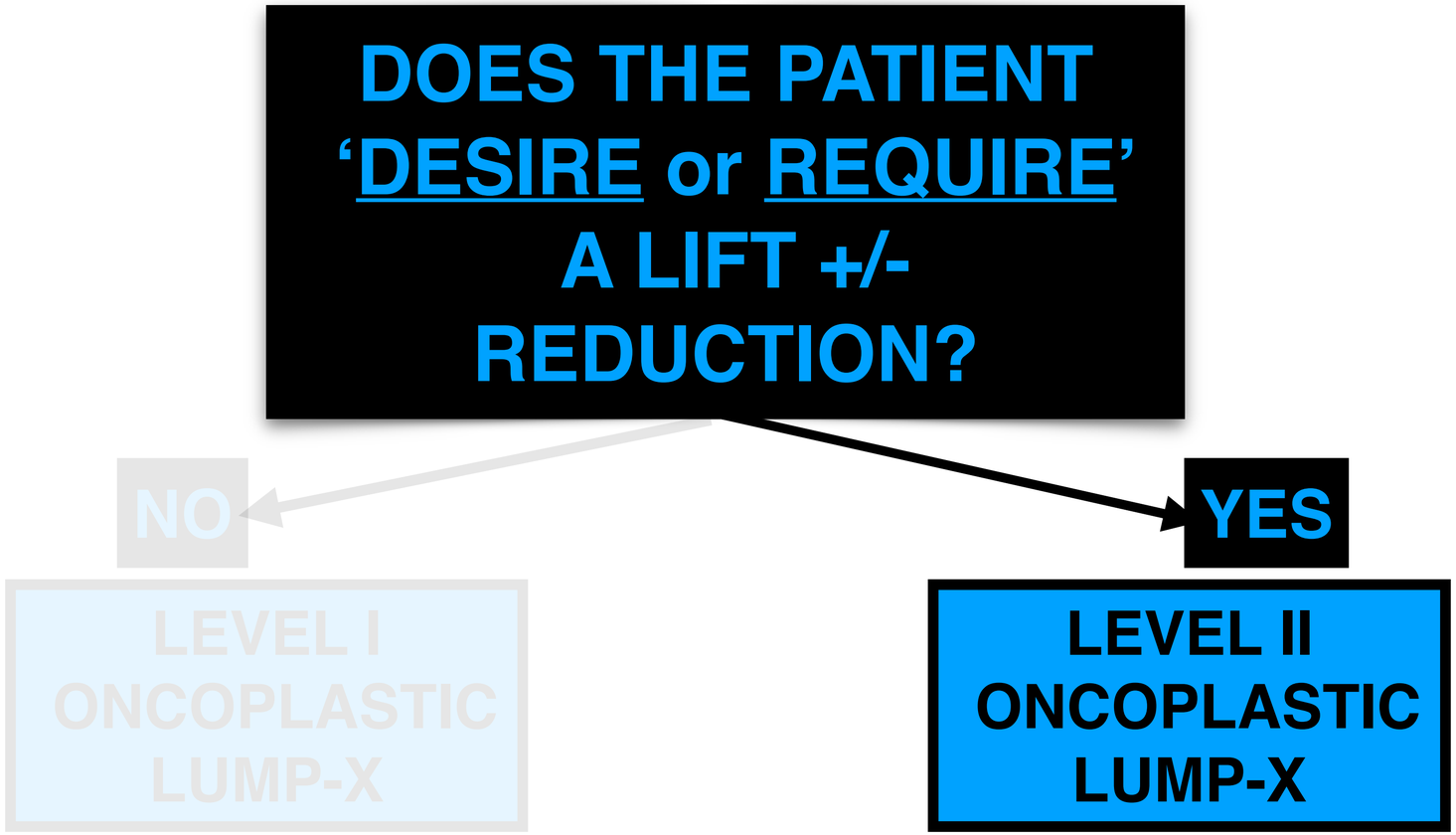
Edward Robert St John, BSc, MRCS, Rashed Al-Khudairi, BSc,† Hutan Ashrafian, PhD, MRCS, MBA,*‡ Thanos Athanasiou, MD, PhD, MBA, FECTS, FRCS,* Zoltan Takats, PhD,‡ Dimitri John Hadjiminas, MD, MPhil, FRCS,§ Ara Darzi, MD, FRCS, FACS, FMedSci, FRS,* and Daniel Richard Leff, MS (Hons), PhD, FRCS*§*

ANN SURG (2017) 265:300

Enter the 21st-century of margin analysis

- **3-D imaging (Kubtec, Clarix)**
- **Radio frequency Spectroscopy (MarginProbe)**
- **Optical Coherence Technology (Perimeter)**
- **Intraoperative MRI analysis (ClearCut Medical)**
- **Fluorescence (Lumicell)**

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YES
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*hide the scar
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*remove skin
*re-center nipple
*symmetry

IDEAL CANDIDATES FOR LEVEL II ONCOPLASTIC REDUCTION

MOD-LARGE BREASTS, PTOSIS, and...

- ...MULTIFOCAL TUMOR
- ...PATIENT DESIRES REDUCTION ("the ask")
- ...LARGE TUMOR* (neoadjuvant chemo-Rx)
- ...PATIENT DESIRES NIPPLE-SPARING MAST-X

LIMITATIONS OF LEVEL II ONCOPLASTIC REDUCTION

- RETROAREOLAR (CENTRAL) CANCER
- MULTICENTRIC CANCER
- RATIO OF EXCISION-TO-BREAST VOLUME
- CO-MORBIDITIES

WHAT HAPPENS WHEN YOU START TO OFFER PATIENTS WITH SMALL TUMORS BREAST REDUCTIONS?

“THE SILVER LINING”

Dr. Barry S Rosen - Reviews

Surgery · Barrington, IL

PHONE NUMBER READ REVIEWS

surgery went off without a hitch, I took pain medication for two days. I'm 71 and I can go bra-less for the first time since I was 20. No more dents in my shoulders from straps holding up heavy breasts, no sagging. I have moderately sized beautiful breasts. This was such a bonus following a very scary diagnosis. All the physicians on his team were amazing.

Self-verified patient of Dr. Barry S Rosen - Posted on January 20th, 2019

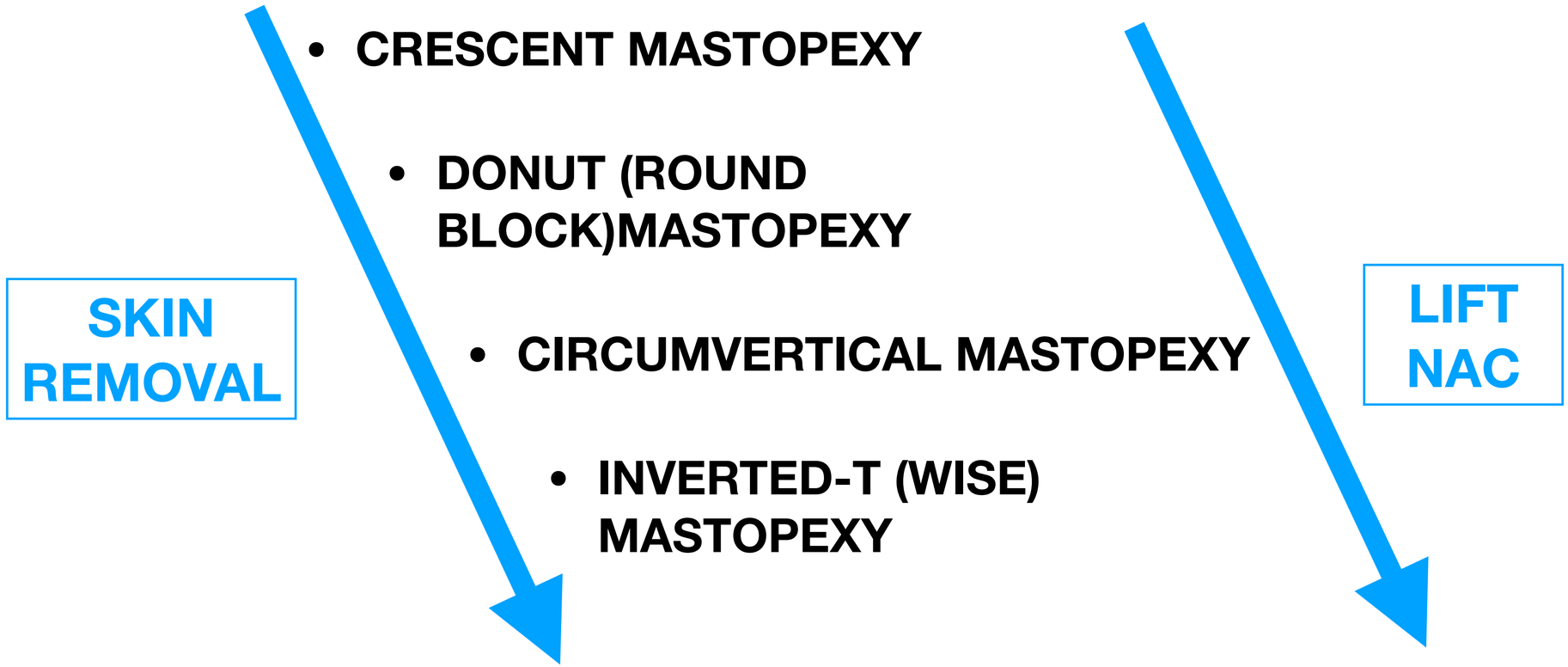
I have been seeing Dr. Rosen for several months since he diagnosed me with breast cancer. I can't say enough about how caring he is, taking all the time I need to answer questions and provide information. He has provided referrals to

LEVEL II ONCOPLASTIC LUMPECTOMY TECHNIQUES

DESIGNING THE OPERATION

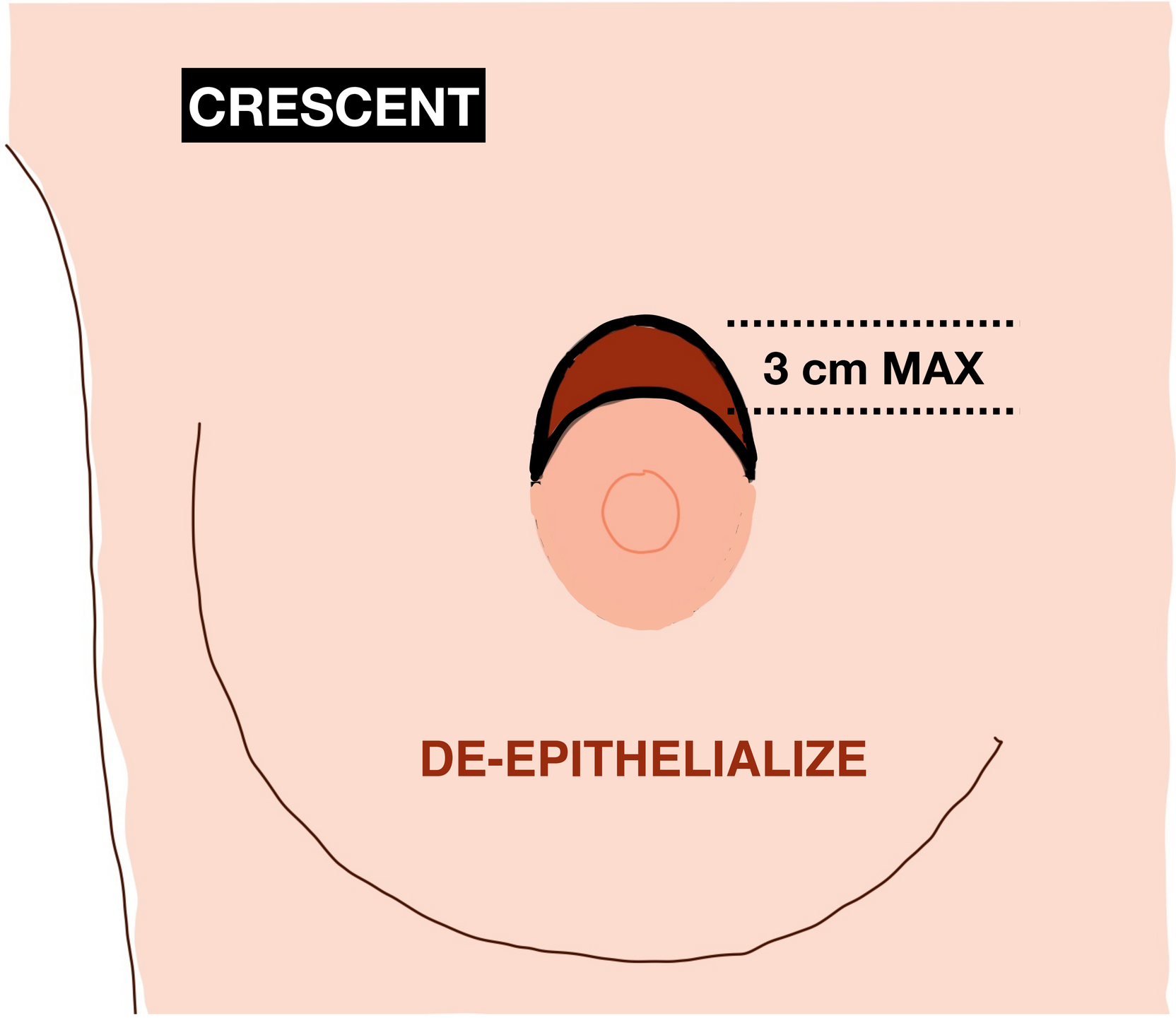
- How much breast tissue needs to be removed and where?
- How much skin needs to be removed to correct the ptosis?
- How far does the NAC need to be moved?

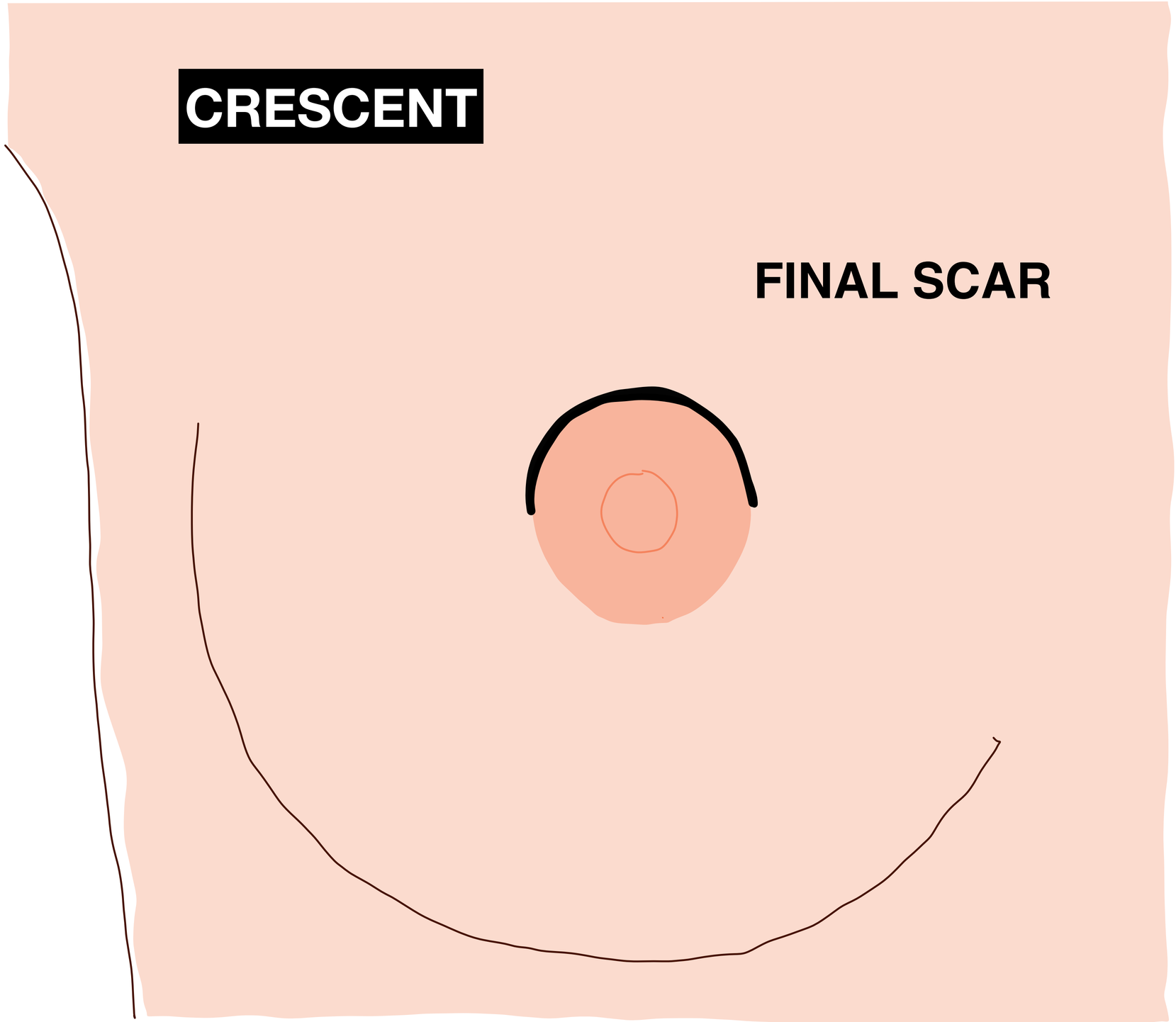
DESIGNING THE OPERATION

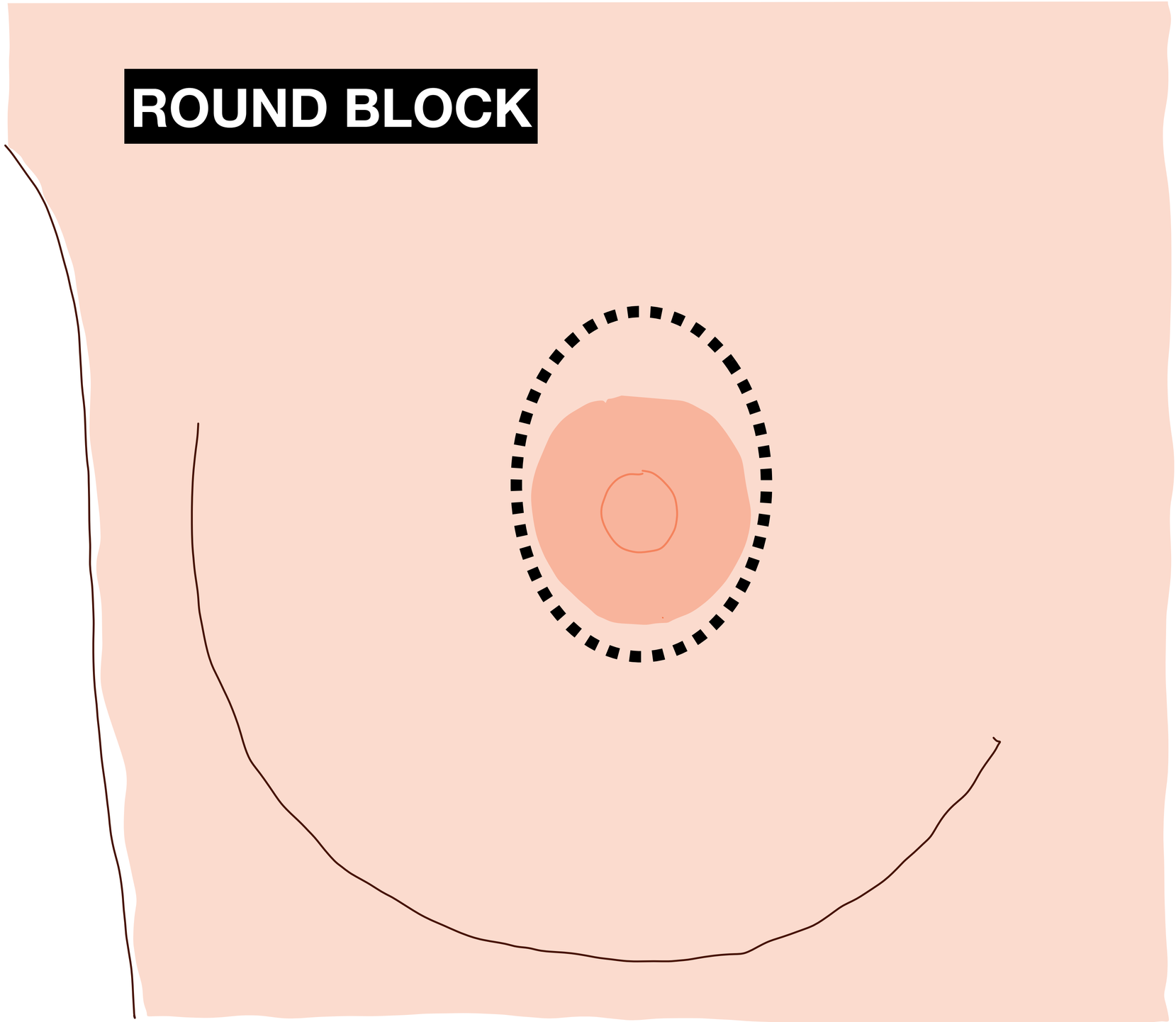


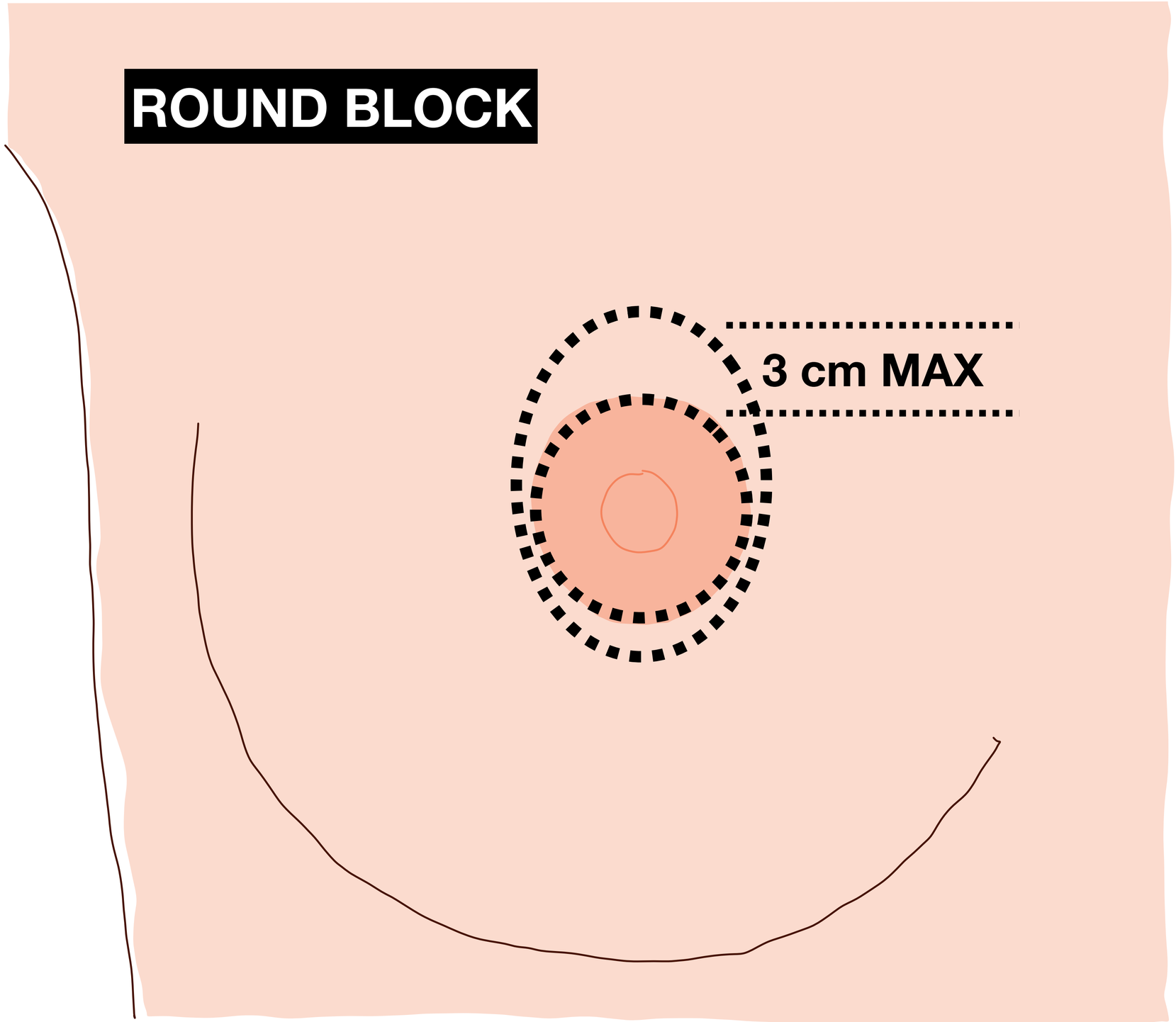
INVERTED-T (WISE PATTERN) REDUCTION MAMMOPLASTY

- **“Work-horse” operation for the (onco)plastic surgeon**
- **Pedicle may arise from anywhere on the breast, usually opposite the tumor**


CRESCENT
3 cm MAX
DE-EPITHELIALIZE

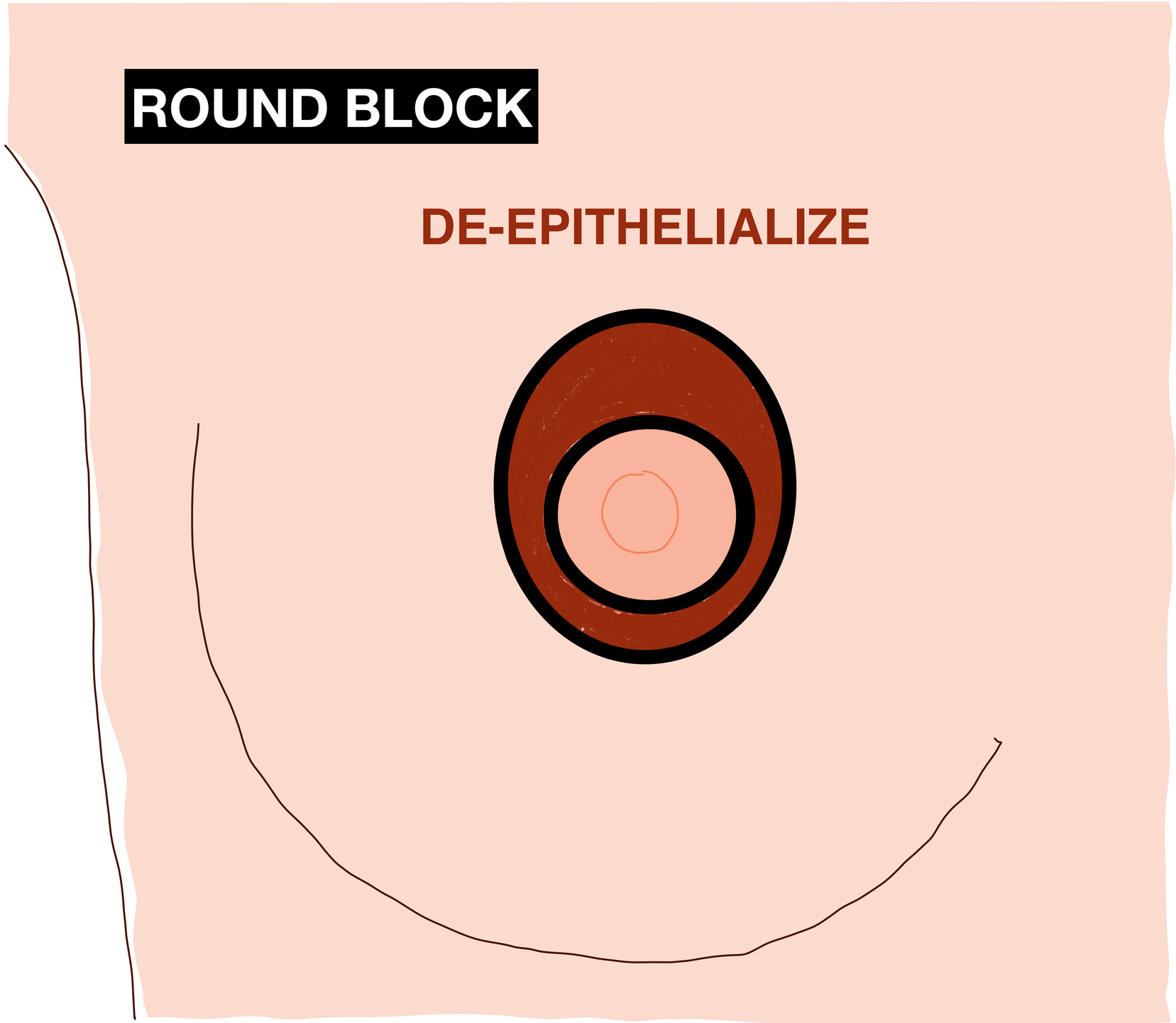

CRESCENT
FINAL SCAR

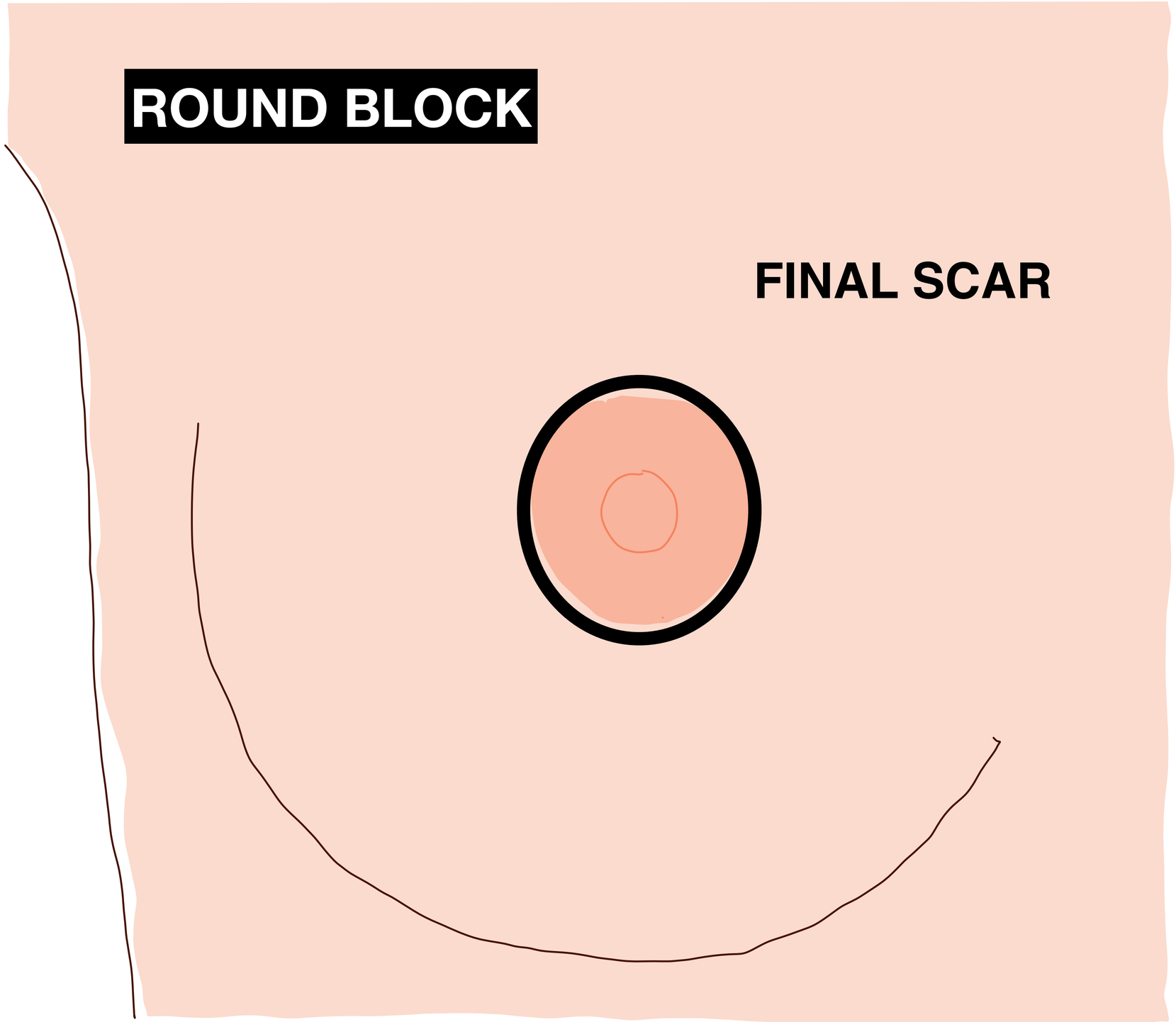

ROUND BLOCK


ROUND BLOCK
3 cm MAX

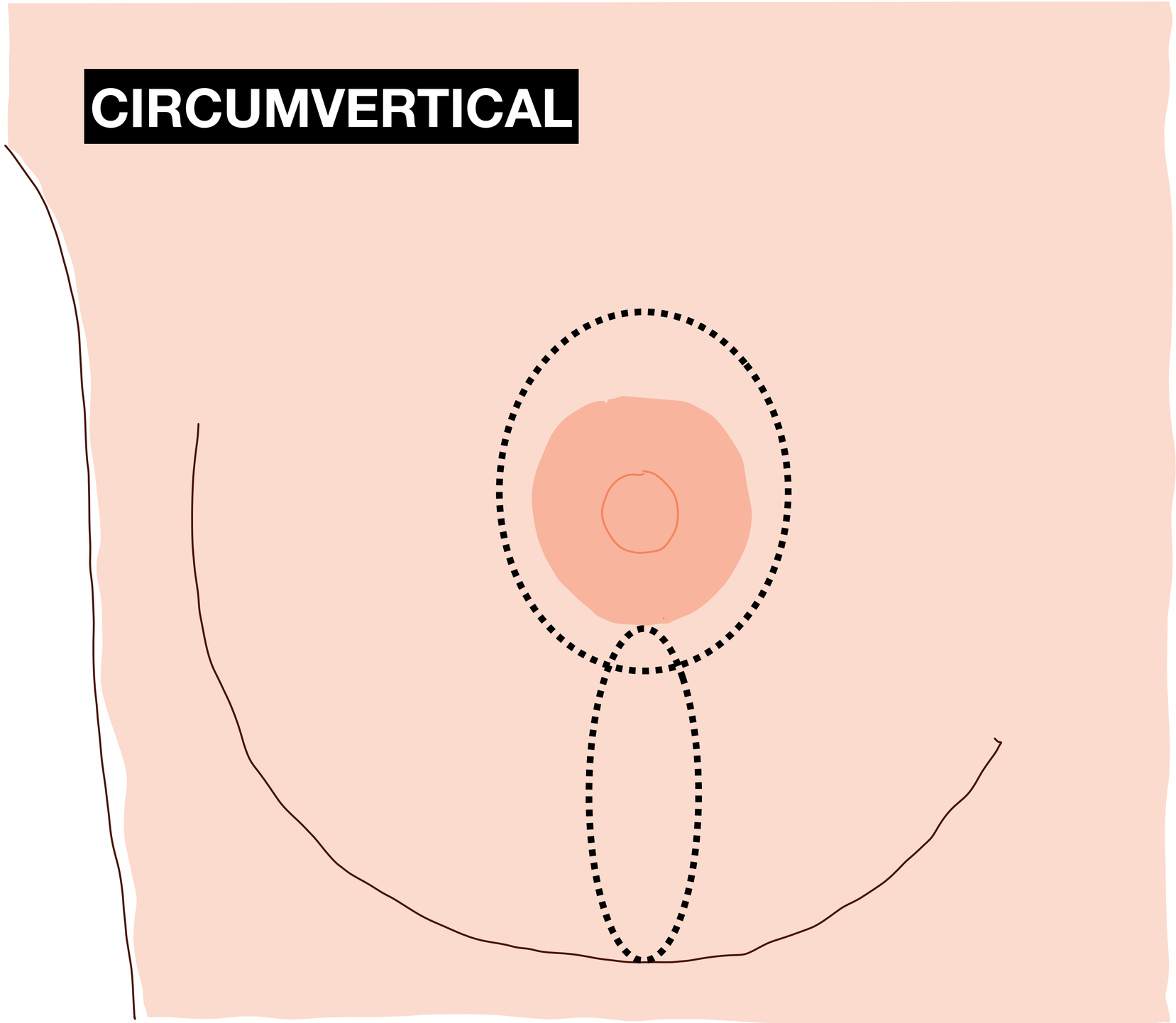
ROUND BLOCK

DE-EPITHELIALIZE



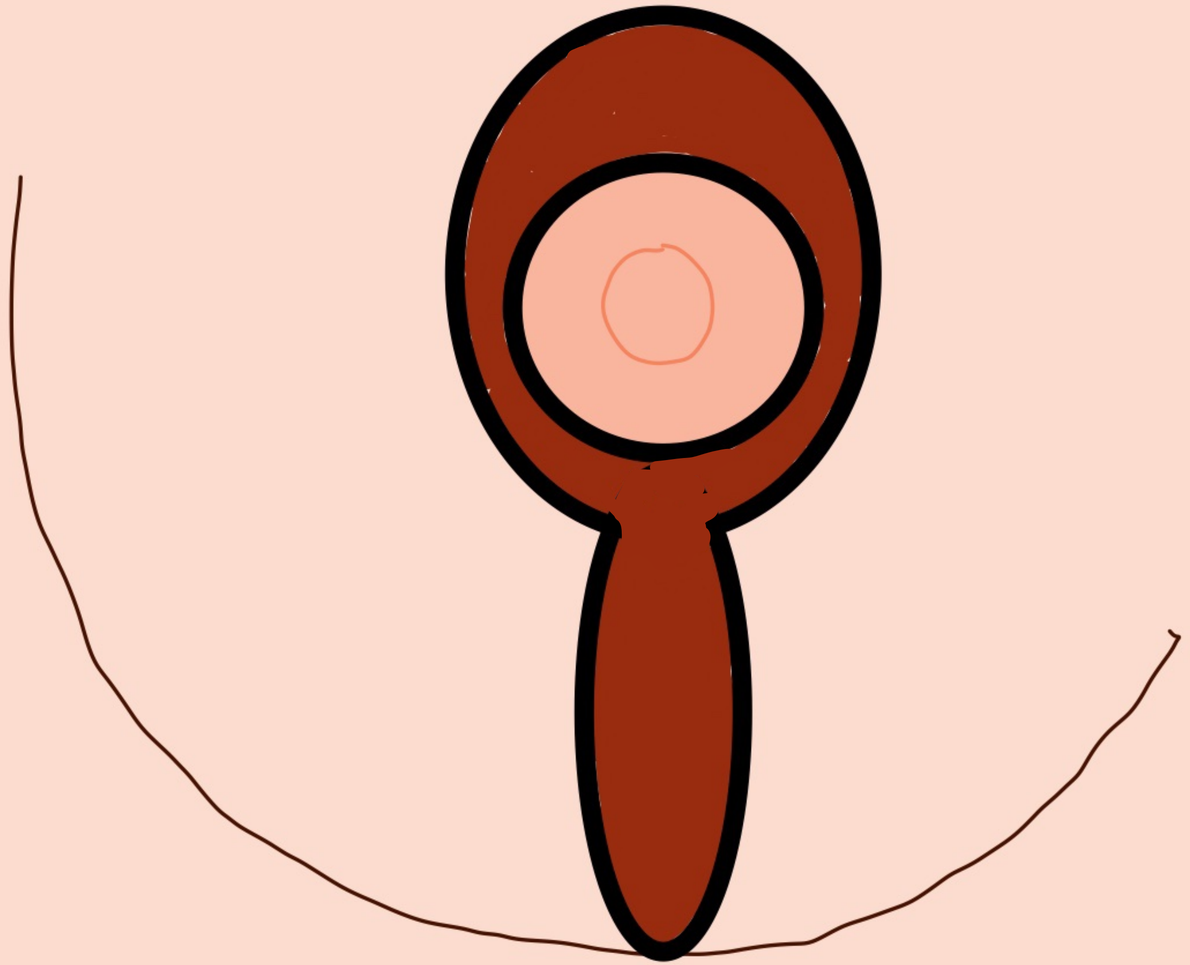

ROUND BLOCK
FINAL SCAR

CIRCUMVERTICAL

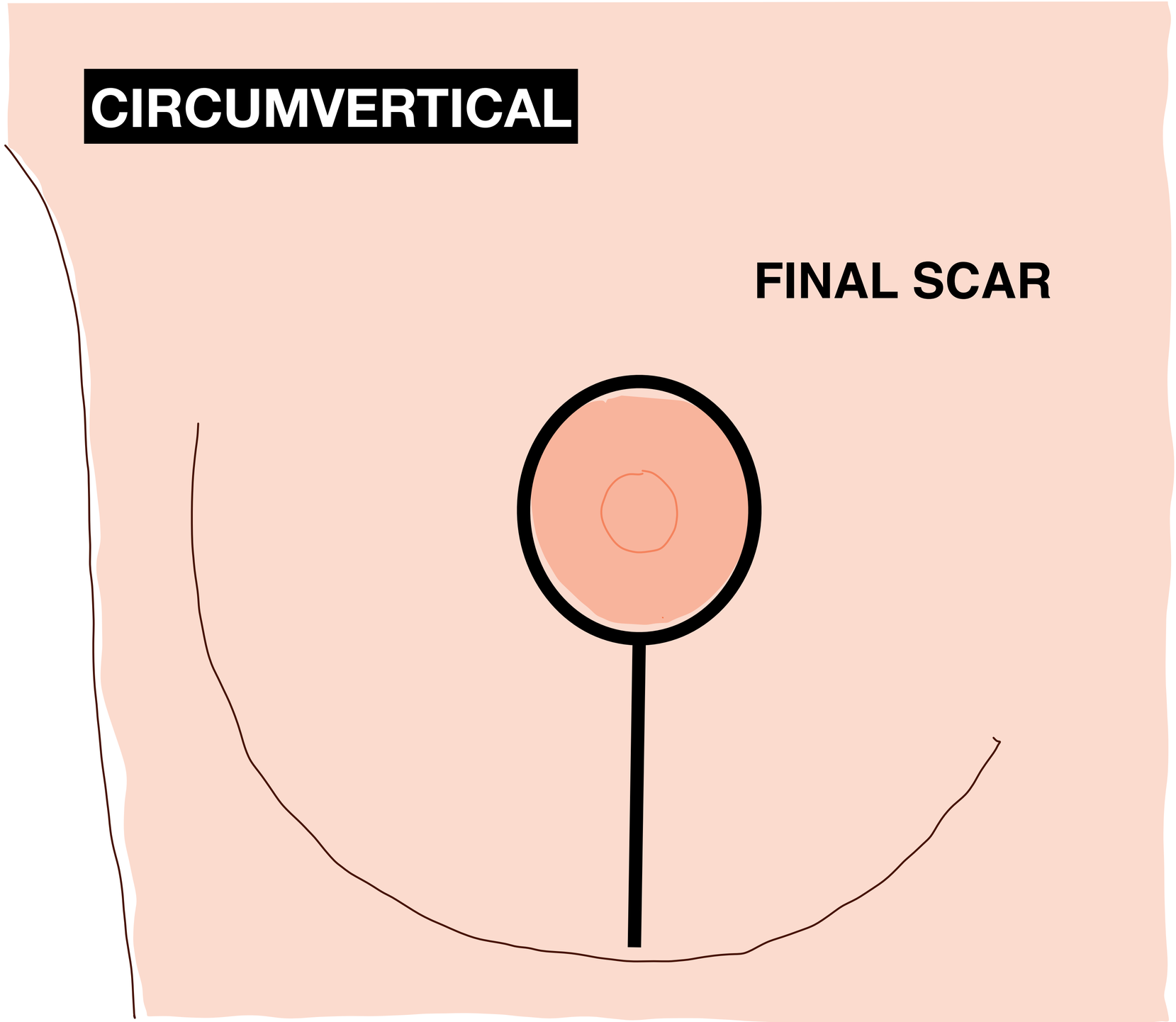


CIRCUMVERTICAL

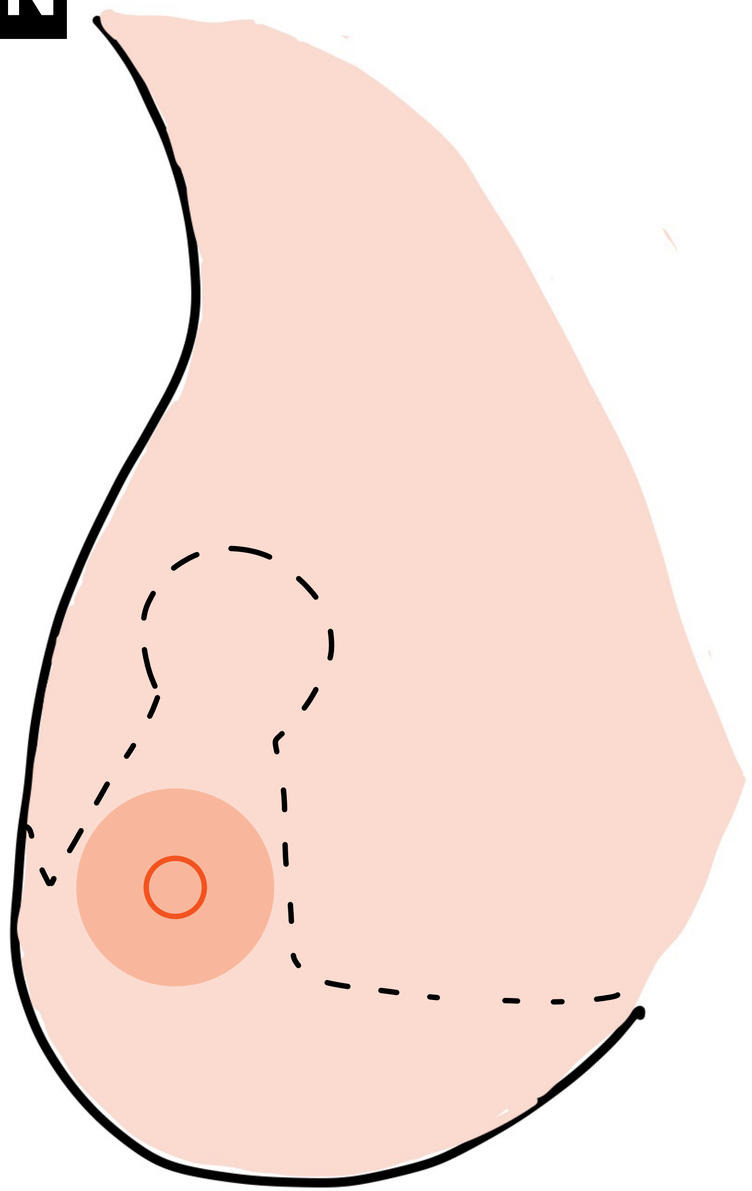
DE-EPITHELIALIZE



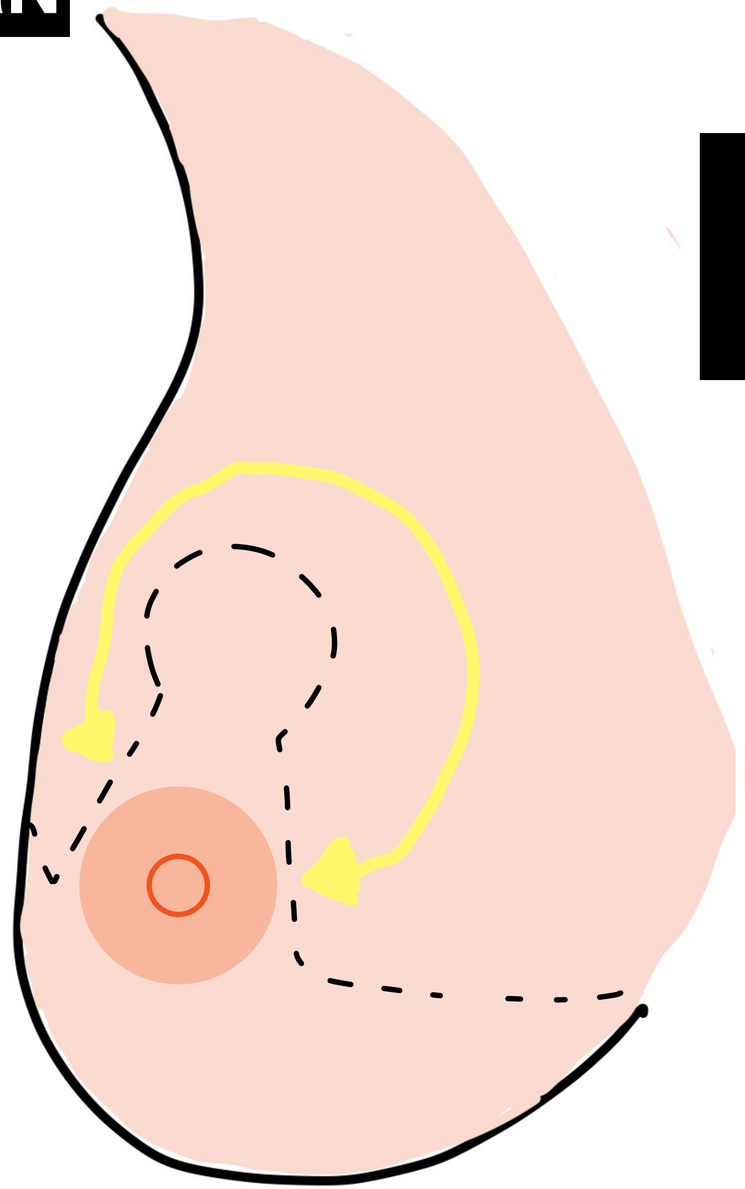
CIRCUMVERTICAL



WISE-PATTERN

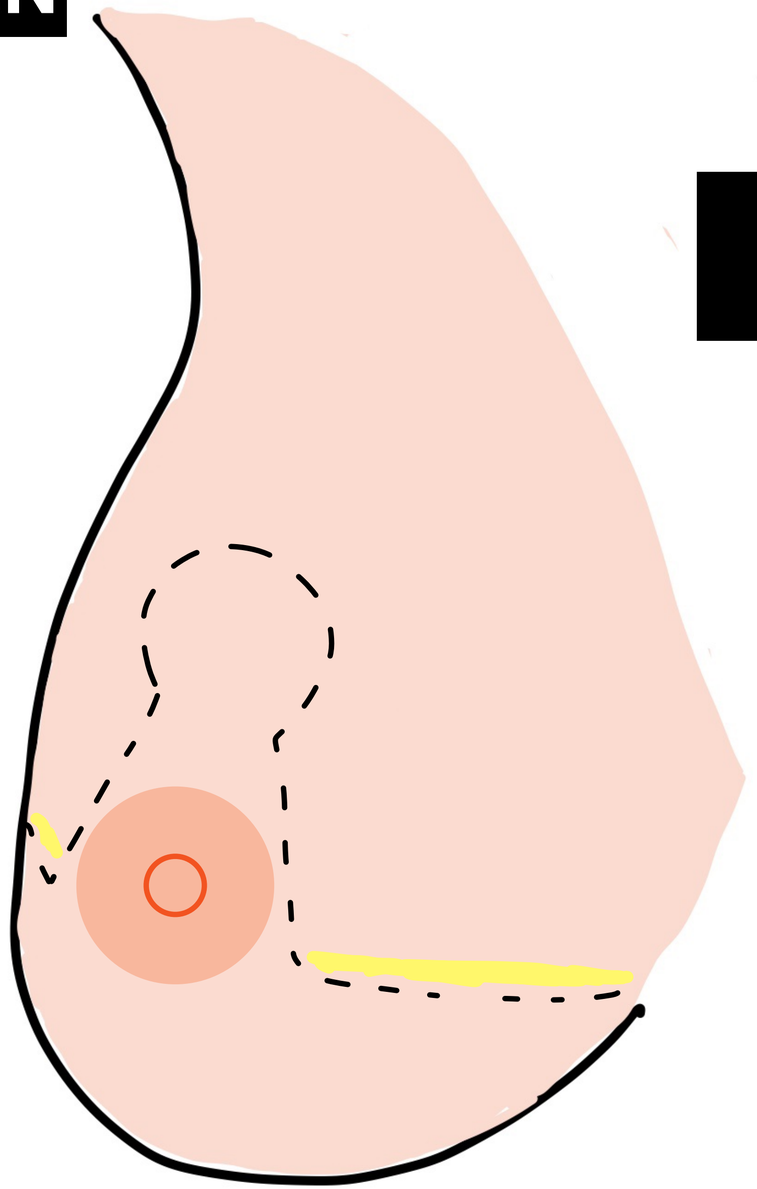


WISE-PATTERN



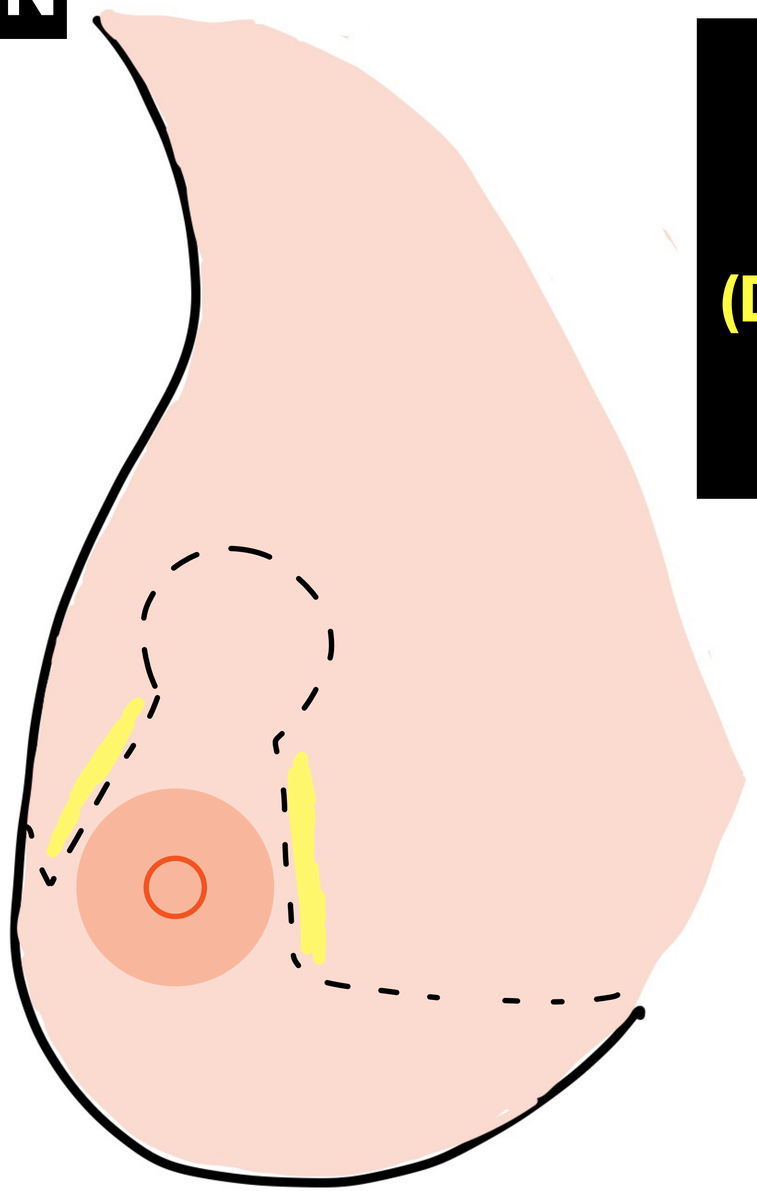
NEW SKIN ENVELOPE

WISE-PATTERN



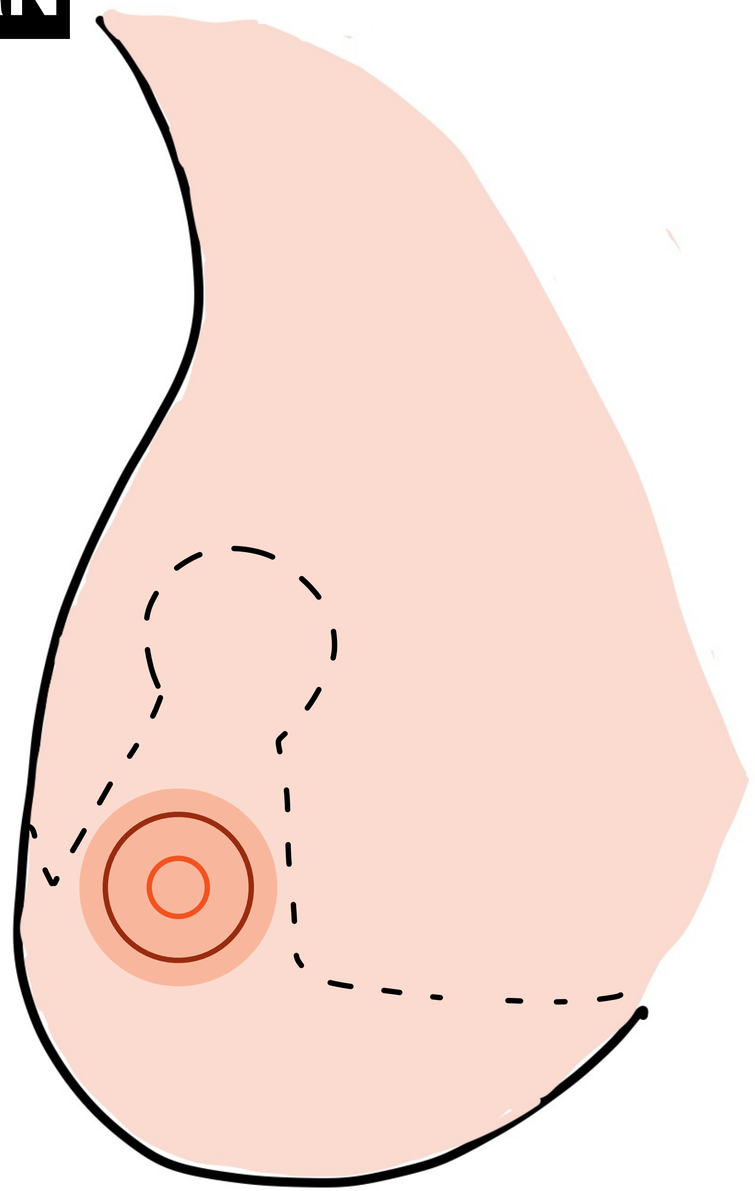
NEW
IMF

WISE-PATTERN



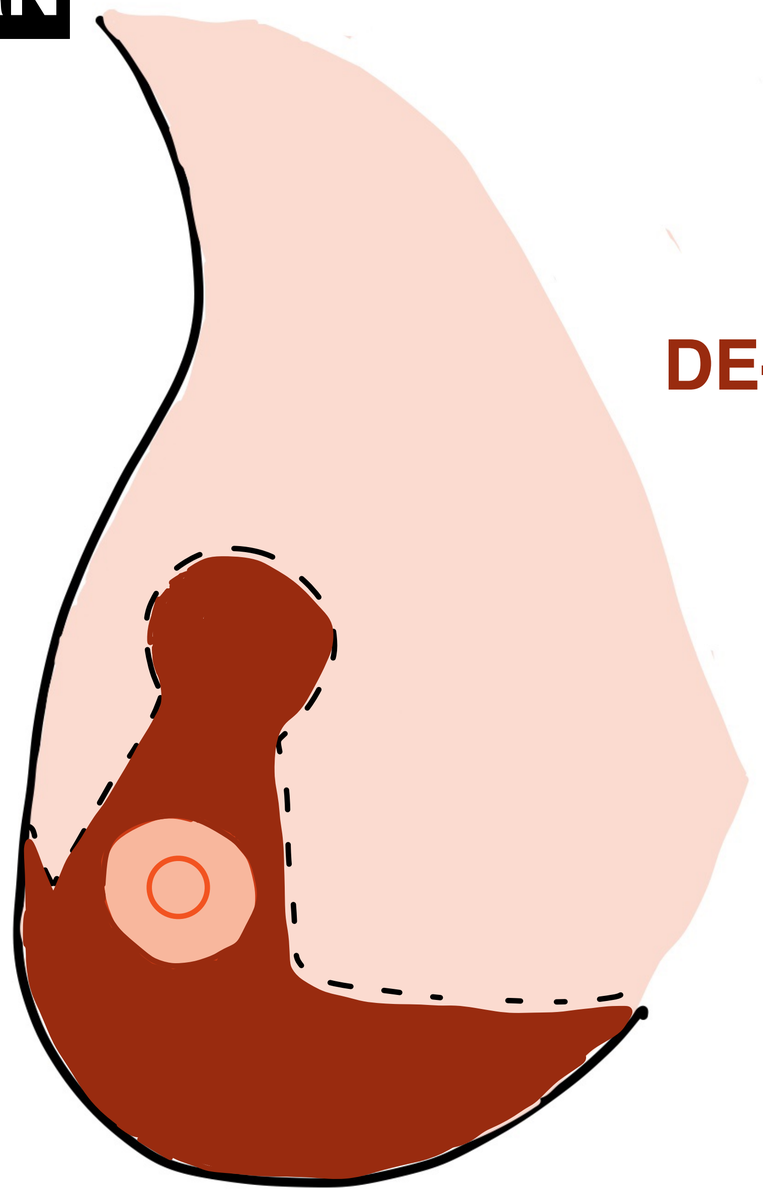
LENGTH OF VERTICAL LIMB (Distance between lower edge of areola and IMF)

WISE-PATTERN



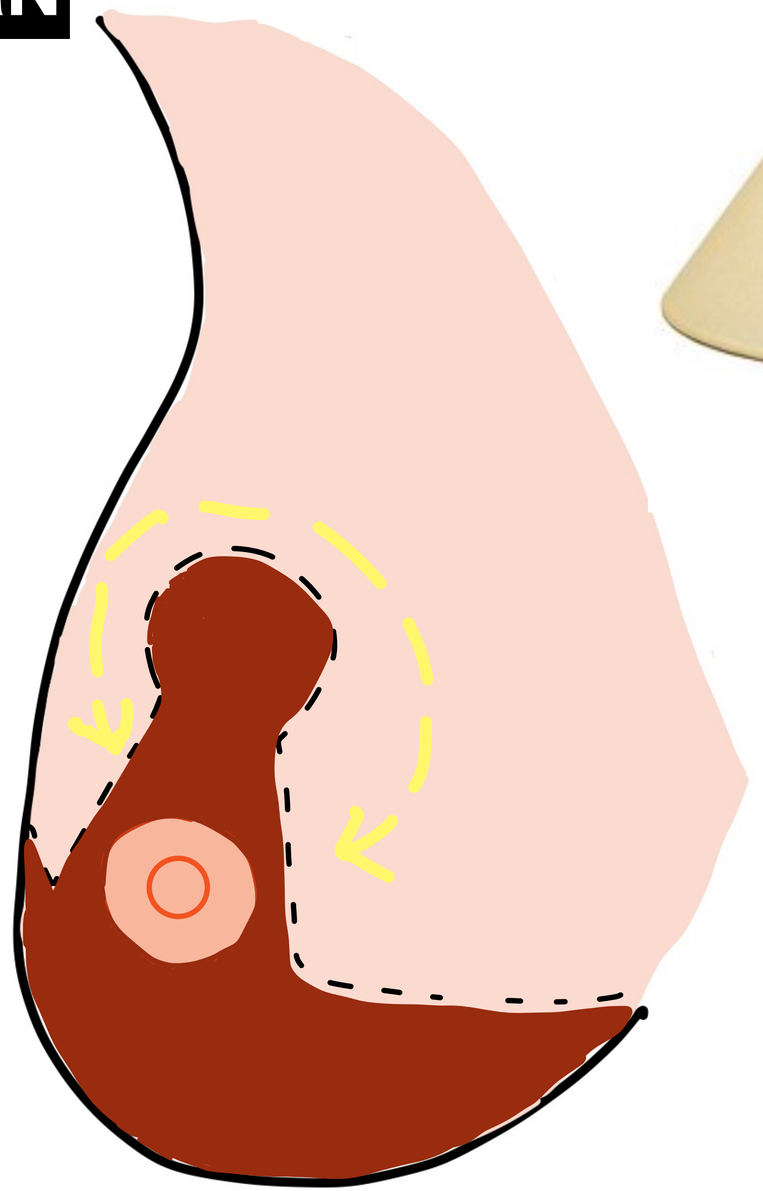
RE-SIZE THE AREOLA

WISE-PATTERN

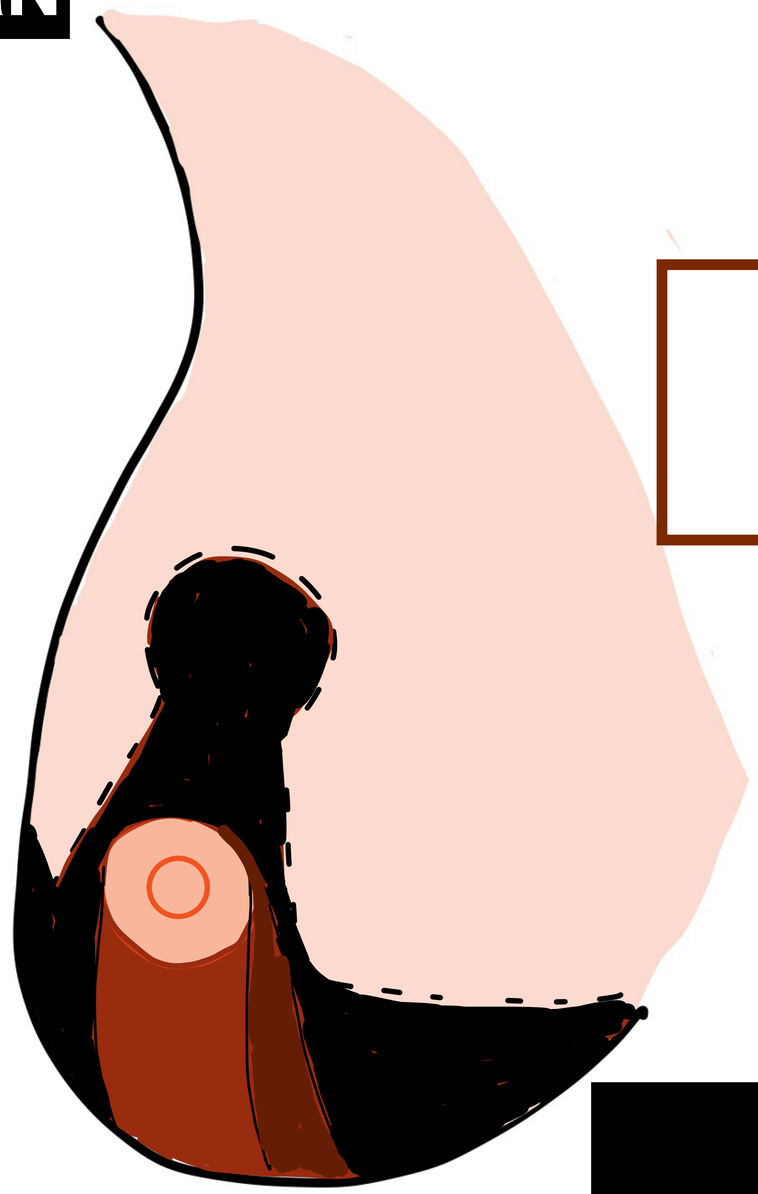


DE-EPITHELIALIZE

WISE-PATTERN



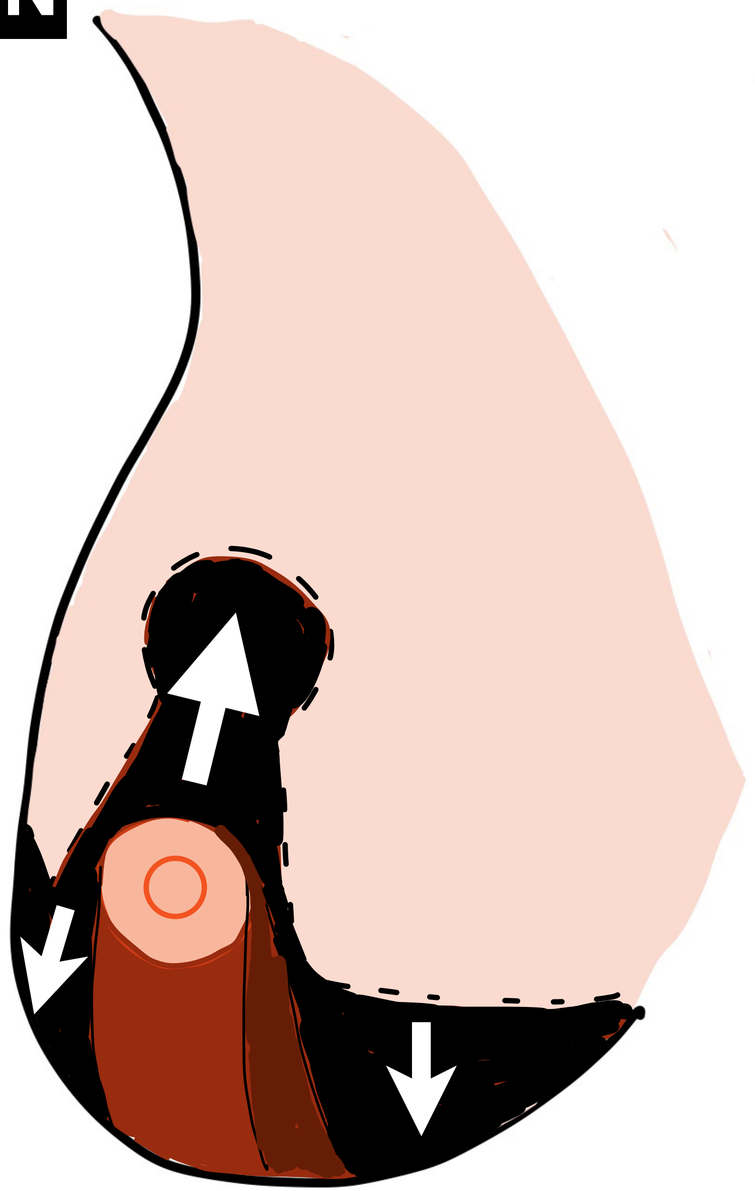
WISE-PATTERN



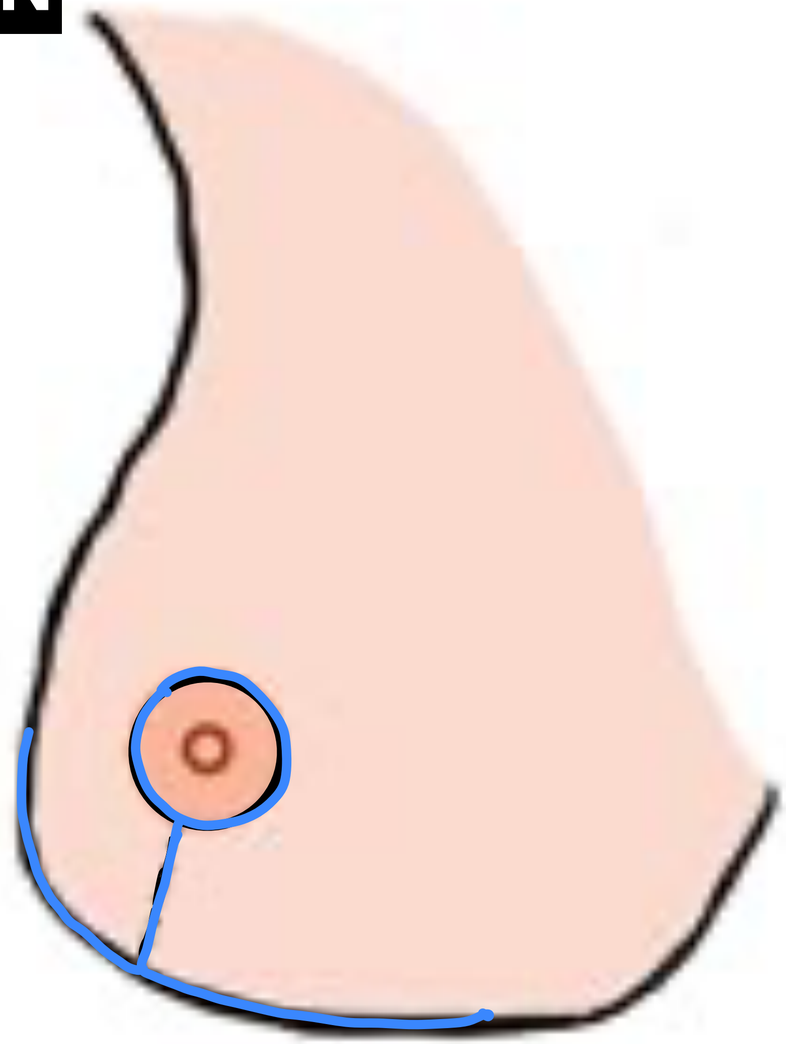
CREATE
(INFERIOR)
PEDICLE

EXCISE
(INCLUDING TUMOR)

WISE-PATTERN



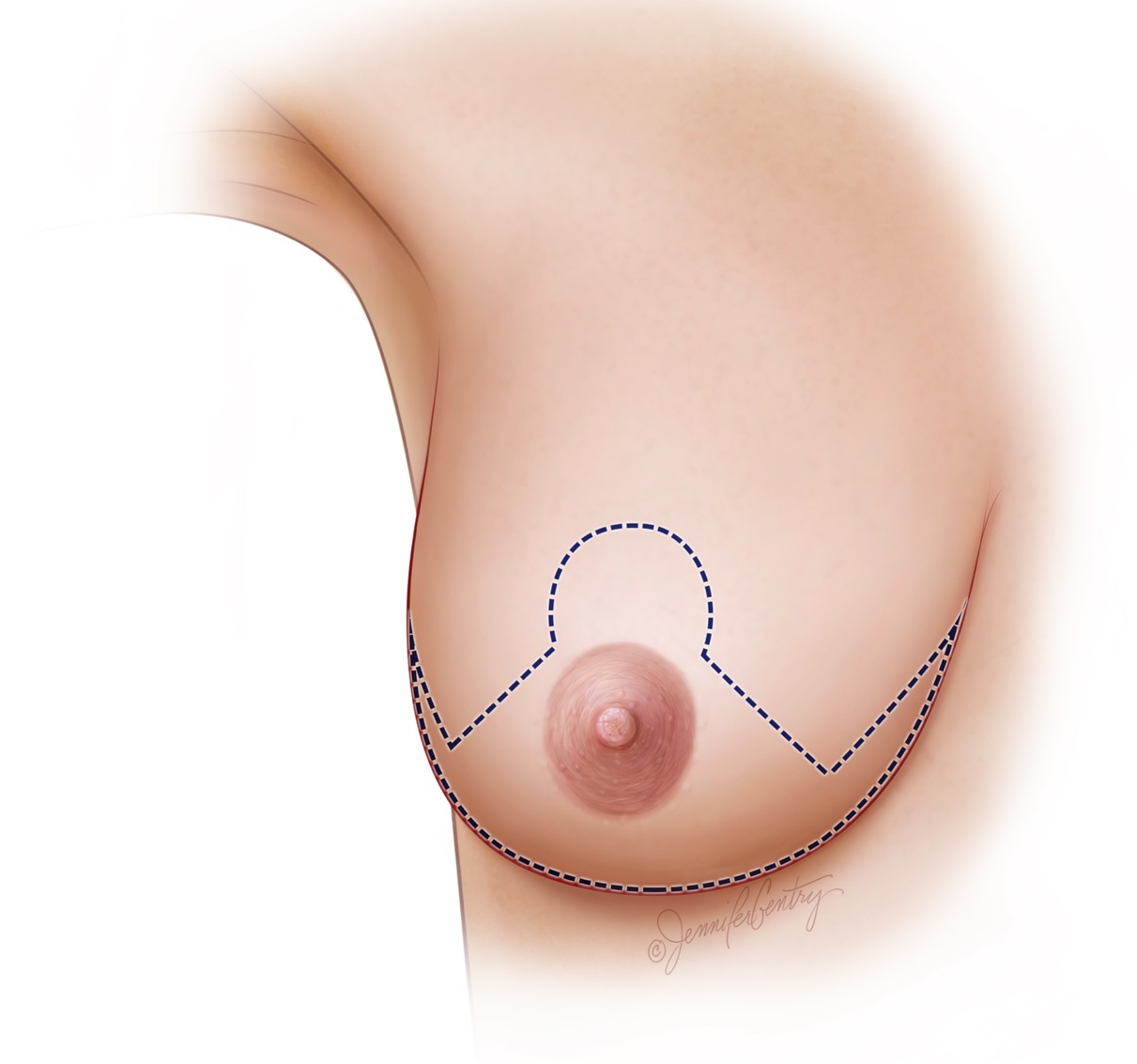
WISE-PATTERN



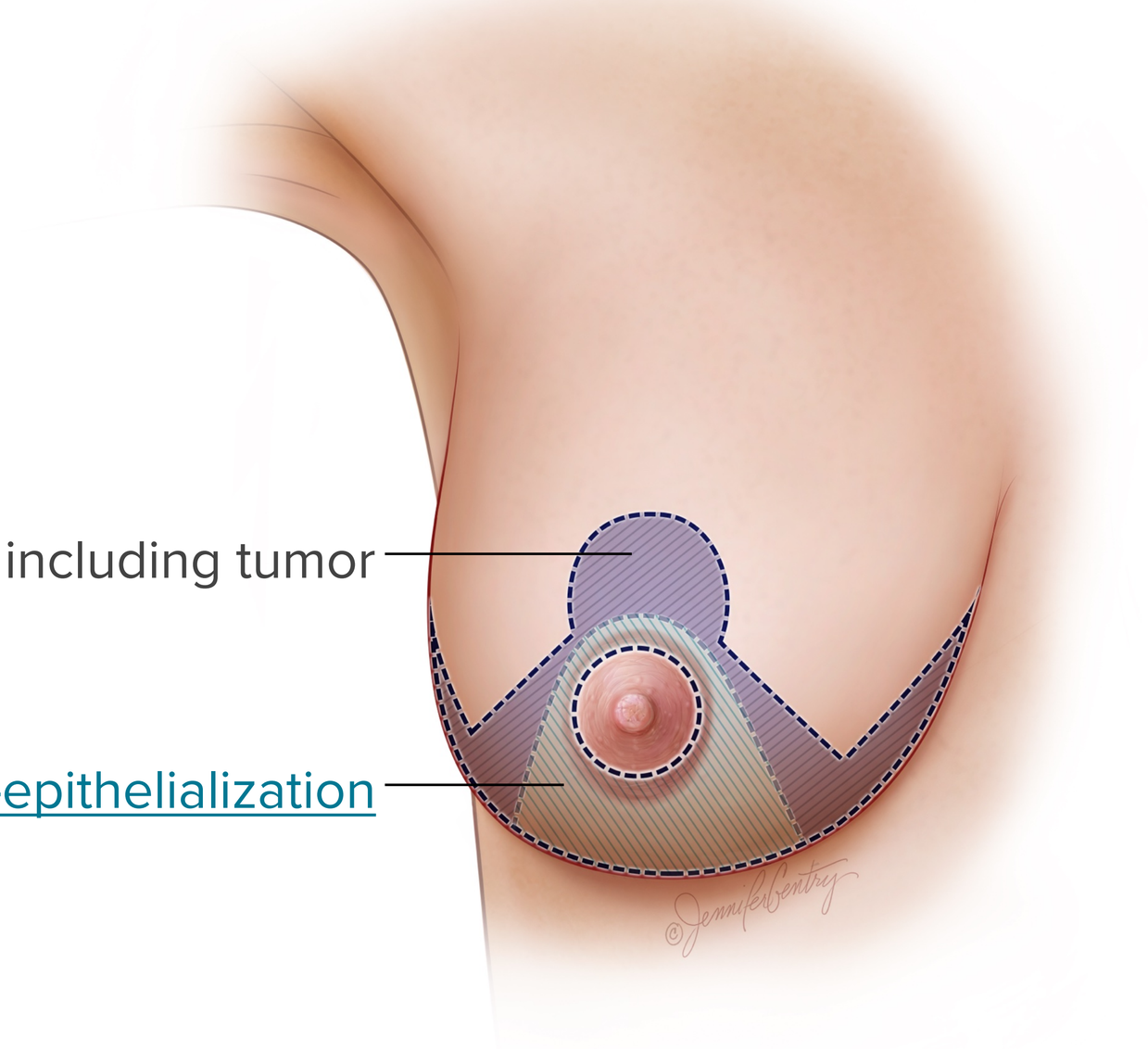
FINAL SCAR

“anchor”

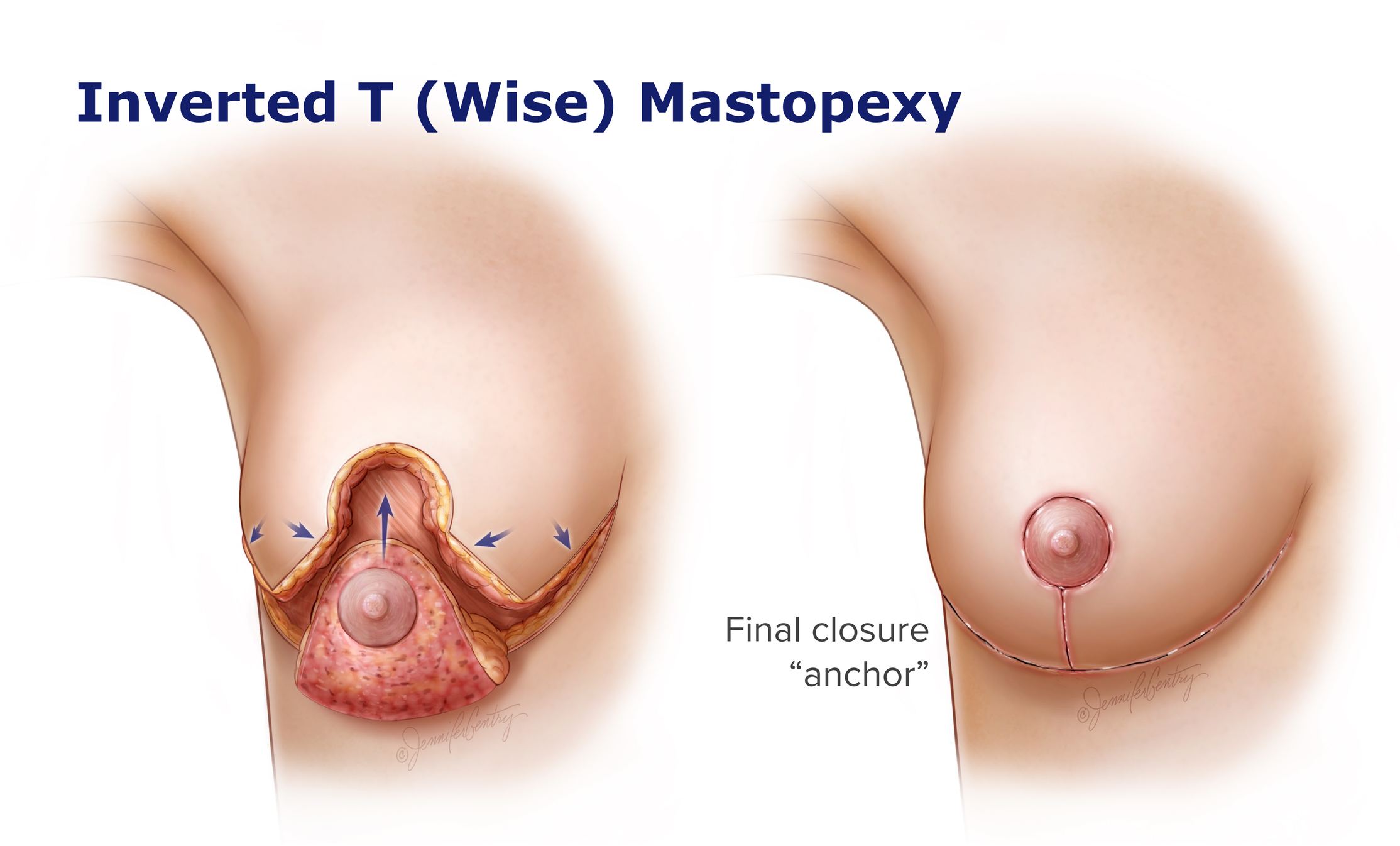
Inverted T (Wise) Mastopexy



Inverted T (Wise) Mastopexy



Inverted T (Wise) Mastopexy



Final closure
“anchor”

LEVEL II ONCOPLASTY TECHNIQUE

STEP 1

MARK SKIN IN HOLDING AREA

STEP 2

MAP OUT TUMOR WHEN SUPINE

STEP 3

SENTINEL NODE BIOPSY

STEP 4

EXCISE REDUNDANT SKIN

LEVEL II ONCOPLASTY TECHNIQUE

STEP 5

EXCISE TUMOR/
MOBILIZE BREAST
TISSUE

STEP 6

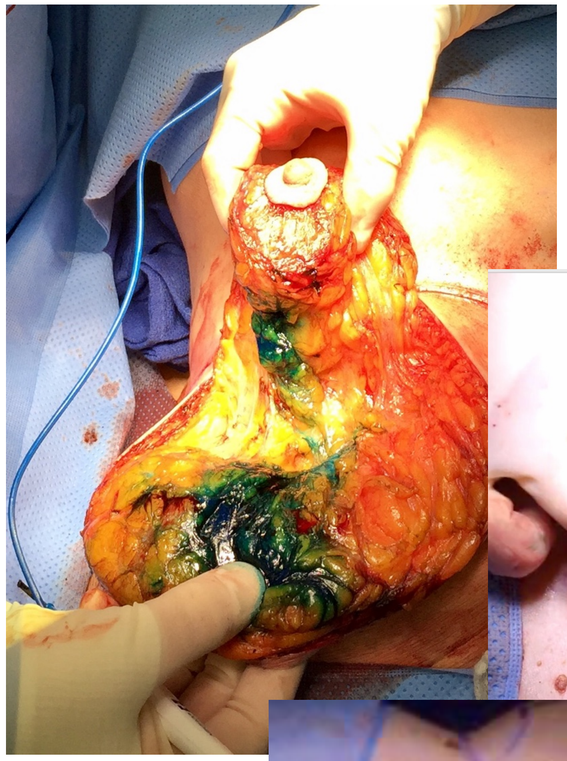
IORT
(BUILD TISSUE
AROUND APPLICATOR)

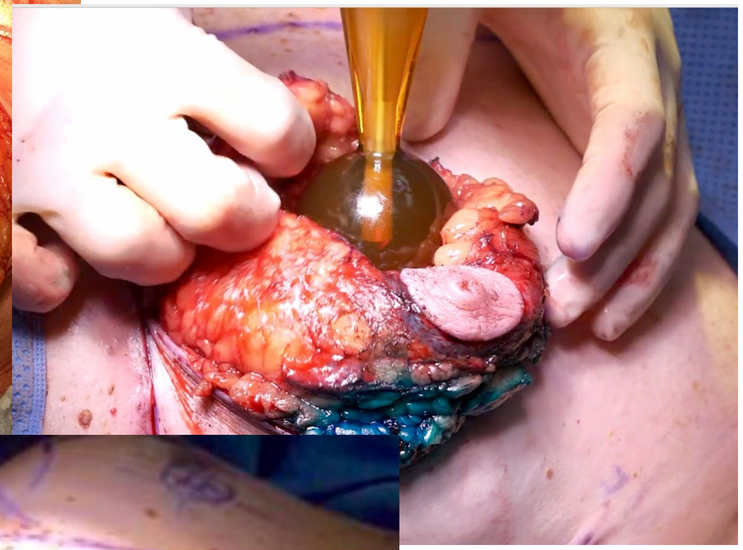
STEP 7

RE-FILL THE DEAD
SPACE

STEP 8

ADVANCE
PEDICLE/
CENTER THE
NAC





PRE-OP

ONE YEAR POST-OP

(She lost 25# postoperatively)

Let’s move from
BREAST CONSERVATION
to MASTECTOMY…

MODERN ERA:
Mastectomy vs. Lumpectomy

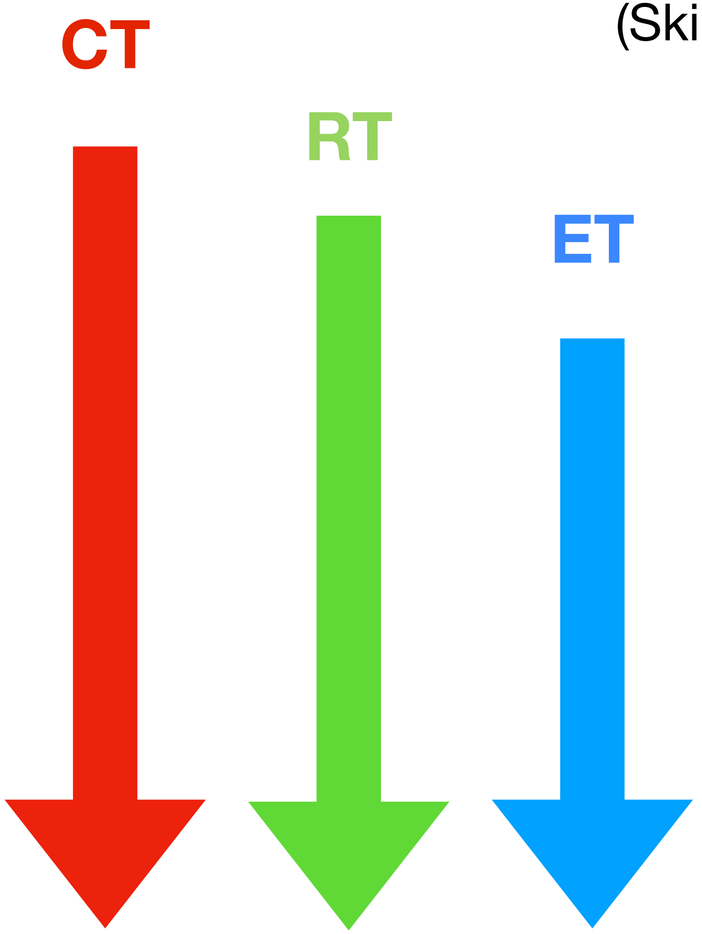
-Since the 1970s, it has been well-established that survival rates are comparable

-Why would a woman ever choose a mastectomy?

Why do a mastectomy?

- Prevention
- Treatment

MODERN ERA: Evolution of Mastectomy



- **Radical Mastectomy** — **1880's-1970's**

  (Skin, Breast, Chest Wall Muscles, Many Lymph Nodes)

- **Modified Radical Mastectomy** — **1980's-1990's**

  ([less] Skin, Breast, Lymph Nodes)

- **Skin-Sparing Mastectomy** — **2000's**

  (NAC, breast, SLN)

- **Nipple Sparing Mastectomy** — **2010's**

  (no skin, breast, +/- SLN)

THE EVOLUTION OF MASTECTOMIES

RADICAL MASTECTOMY

MOD/RAD MASTECTOMY

SKIN-SPARING MAST-X
W/RECONSTRUCTION

NIPPLE-SPARING MASTECTOMY

Can we *prevent* breast cancer?

- **Pharmacological: NSABP P-1 (50% reduction)**
- **Behavioral (⬇️ EtOH, fat: ⬆️ exercise)**
- **Surgical (RRM…90-95% risk-reduction)**

22-yr old woman with BRCA1 Mutation

Pre-Op

6 months Post-Op

Why do a mastectomy?

- Prevention
- Treatment

INDICATIONS FOR MASTECTOMY

- **Hereditary predisposition* (option, not mandate)**
- **Multicentric cancer* (‘extreme’ oncoplasty)**
- **Large tumor* (NACT/NAET)**

INDICATIONS FOR MASTECTOMY

- **Hereditary predisposition* (option, not mandate)**
- **Multicentric cancer* (‘extreme’ oncoplasty)**
- **Large tumor* (NACT/NAET)**
- **Patient preference**

WHAT TYPE OF MASTECTOMY?

- ~~Radical Mastectomy~~
- Modified-Radical Mastectomy
- **Skin-Sparing Mastectomy**
- **Nipple-Sparing Mastectomy**

Mastectomy Shared-Decisions

- **Single vs. Double…**
  - "CPM"
- **With or without a reconstruction…**
  - "going flat"
- **Types of Reconstruction…**
  - autologous vs. implant
  - pre- vs. sub-pectoral
  - expander vs. D-T-I
  - "Goldilocks"

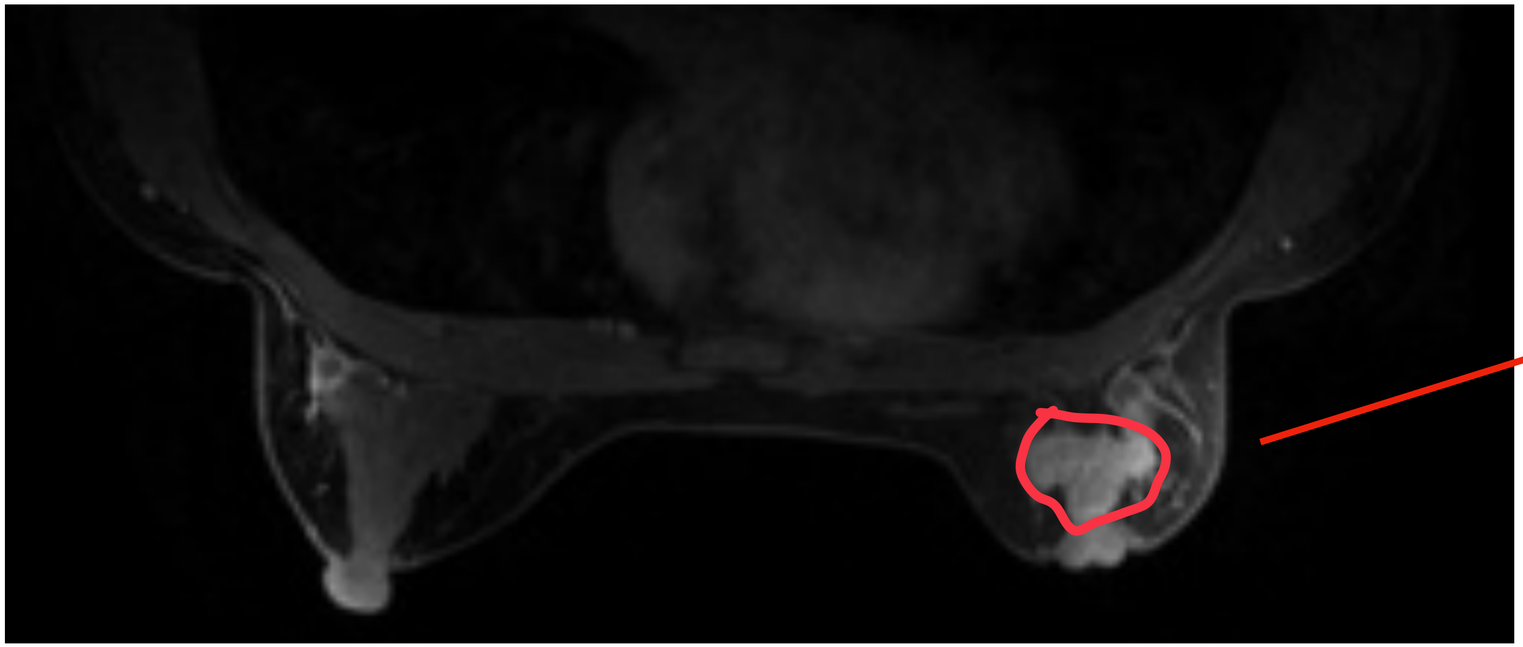
CASE STUDY

- 28 YR OLD WOMAN PRESENTS W/ PALPABLE MASS IN LEFT BREAST FOUND ON SELF-EXAMINATION; NO FHx
- PEx: L RETROAREOLAR MASS W/NIPPLE RETRACTION
- Dx MAMM: 26MM OF CENTRAL Ca++ 1.5CMFN WITH ARCHITECTURAL DISTORTION
- STEREO Bx: Gr 3 DCIS, ER/PR(+)

CASE STUDY

- **MULTIPANEL GENETIC TEST (-)**
- **MRI**
- **SURGICAL OPTIONS: lumpectomy vs mastectomy**
    - **Patient desires bilateral nipple-sparing mastectomy**

HOW DO ‘WE’ FEEL ABOUT CONTRALATERAL PROPHYLACTIC MASTECTOMY?



ONCOLOGIC ARGUMENT

*does not **impact** survival…

REAL-WORLD ARGUMENT

*…but, does it **improve** QOL?

Ann Surg Oncol (2016) 23:3100–3105
DOI 10.1245/s10434-016-5443-5

Annals of
SURGICAL ONCOLOGY
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ORIGINAL ARTICLE – BREAST ONCOLOGY

Contralateral Prophylactic Mastectomy (CPM) Consensus Statement from the American Society of Breast Surgeons: Data on CPM Outcomes and Risks

Judy C. Boughey, MD[1], Deanna J. Attai, MD[2], Steven L. Chen, MD, MBA[3], Hiram S. Cody, MD[4], Jill R. Dietz, MD[5], Sheldon M. Feldman, MD[6], Caprice C. Greenberg, MD, MPH[7], Rena B. Kass, MD[8], Jeffrey Landercasper, MD[9], Valerie Lemaine, MD, MPH[1], Fiona MacNeill, MB, BS[10], David H. Song, MD[11], Alicia C. Staley, BS, MBA, MS[12], Lee G. Wilke, MD[7], Shawna C. Willey, MD[13], Katharine A. Yao, MD[14], and Julie A. Margenthaler, MD[15]

[1]Department of Surgery, Mayo Clinic, Rochester, MN; [2]Department of Surgery, David Geffen School of Medicine at UCLA, UCLA Health Burbank Breast Care, Burbank, CA; [3]Department of Surgery, OasisMD, San Diego, CA; [4]Department of Surgery, Memorial Sloan Kettering Cancer Center, New York, NY; [5]Department of Surgery, Case Western Reserve School of Medicine, Seidman Cancer Center, Cleveland, OH; [6]Department of Surgery, Columbia University, New York, NY; [7]Department of Surgery, University of Wisconsin, Madison, WI; [8]Department of Surgery, College of Medicine, The Pennsylvania State University, Hershey, PA; [9]Department of Surgery, Gundersen Health System, Lacrosse, WI; [10]Department of Surgery, Royal Marsden Hospital, London, UK; [11]Department of Surgery, University of Chicago, Chicago, IL; [12]Akari Healthcare, Charleston, MA; [13]Department of Surgery, Medstar Georgetown University Hospital, Washington, DC; [14]Department of Surgery, NorthShore University Health System, Evanston, IL; [15]Department of Surgery, Center for Advanced Medicine, Breast Health Center, St. Louis, MO

Ann Surg Oncol (2016) 23:3100–3105
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reviewed and approved the statement. This consensus statement was developed to guide patient and physician discussion and should not affect insurance coverage.

The consensus group agreed that CPM should be discouraged for an average-risk woman with unilateral breast cancer. However, patient's values, goals, and preferences should be included to optimize shared decision making when discussing CPM. The final decision whether or not to proceed with CPM is a result of the balance between benefits and risks of CPM and patient preference.

Chicago, IL; [13]Akan Healthcare, Charleston, WV; [14]Department of Surgery, Medstar Georgetown University Hospital, Washington, DC; [14]Department of Surgery, NorthShore University Health System, Evanston, IL; [15]Department of Surgery, Center for Advanced Medicine, Breast Health Center, St. Louis, MO

Available online at www.sciencedirect.com

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Growing Trends of Contralateral Prophylactic Mastectomy and Reconstruction in Young Breast Cancer

*Hongliang Chen, MD, Peng Zhang, MD, Mingdi Zhang, MD, Maoli Wang, MS, Fang Bai, MD, and Kejin Wu, MD**

Department of Breast Surgery, Obstetrics and Gynecology Hospital of Fudan University, Shanghai, China

ARTICLE INFO

Article history:
Received 5 August 2018
Received in revised form
29 January 2019
Accepted 1 February 2019
Available online 8 March 2019

ABSTRACT

Background: The aim of this study was to evaluate the trends of surgical treatments among young patients in $T_1N_{0-1}M_0$ stage based on the Surveillance, Epidemiology, and End Results database.

Materials and methods: Patients aged less than 40 y diagnosed between 1998 and 2015 were enrolled, with tumors in $T_1N_{0-1}M_0$ stage and not located in the central area. Differences in clinical-pathological characteristics were evaluated using chi-square tests. Multivariate logistic regression was used to measure the various factors associated with contralateral

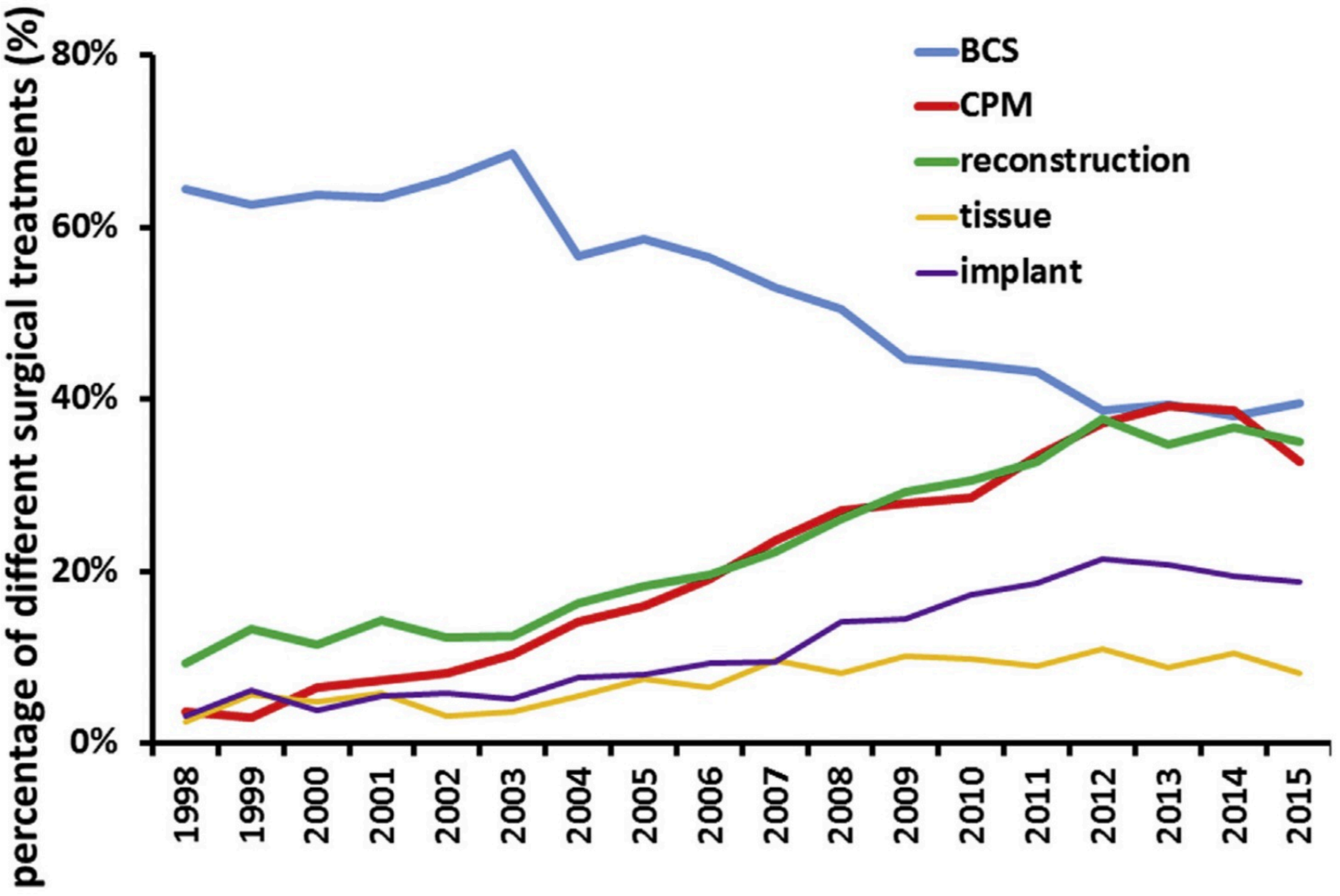


Fig. 1 – Trend of surgical treatments among young patients in early stage from 1998 to 2015. (Color version of figure is available online.)

What contributing factors may be playing a role?

What contributing factors may be playing a role?

Increase availability of genetic testing

Increase use of MRI Breasts

Increase internet and media information hence increase public awareness of breast cancer risk

Increase options of Mastectomy techniques

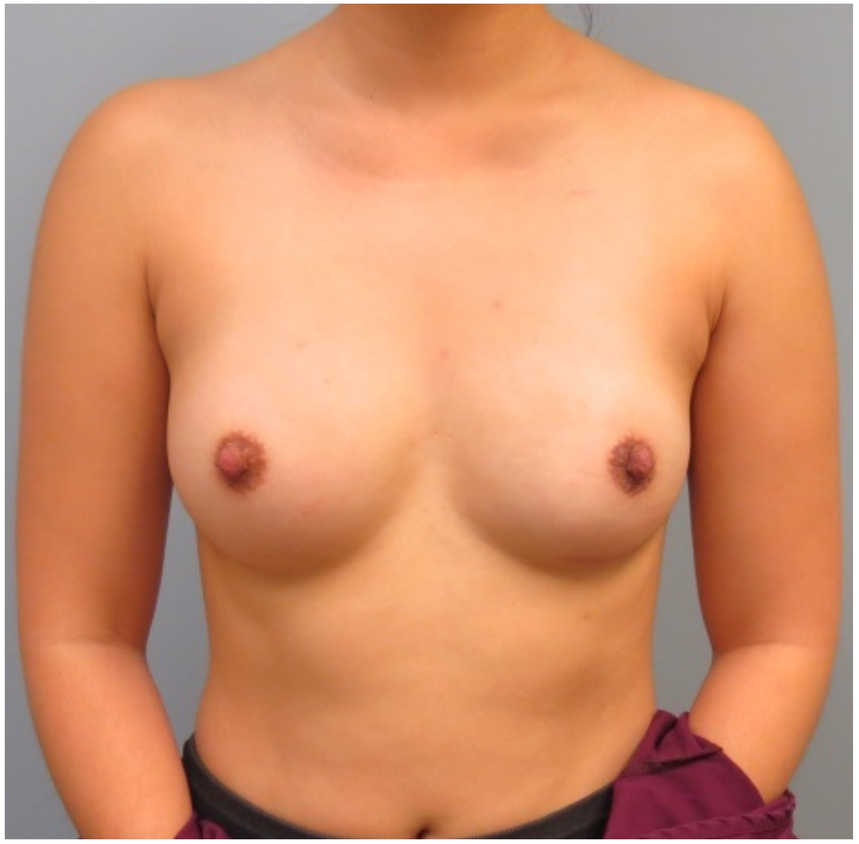
Increase options of Reconstructive techniques

The ability of achieving better and more acceptable cosmetic outcomes and better achievement of symmetry

CASE STUDY

OR: BILATERAL NIPPLE-SPARING MASTECTOMY;
left SLNBx; PATH:5.2 cm DCIS, clear margins, node negative

PRE-OP



POST-OP

POST-OP

WHAT TYPE OF MASTECTOMY?

- ~~Radical Mastectomy~~
- Modified-Radical Mastectomy
- **Skin-Sparing Mastectomy**
- **Nipple-Sparing Mastectomy**

Limitations of Nipple-Sparing Mastectomy (NSM)

- ***Oncological…***

  (will the cancer recur?)

  - ***Anatomical…***

    (will it look right?)

    - ***Functional…***

      (training, experience, PITA-factor)

Oncologic Safety of NSM

(Headon, et al,2016)

- Retrospective review of 12,358 NSM from 73 studies published up till 2015
- Local recurrence rate of 2.4% (mean follow-up of 38 months)
- Nipple necrosis rate 5.9% (8.7% v. 3.4% comparing before/after 2013)

Patient Selection for NSM

HISTORICAL

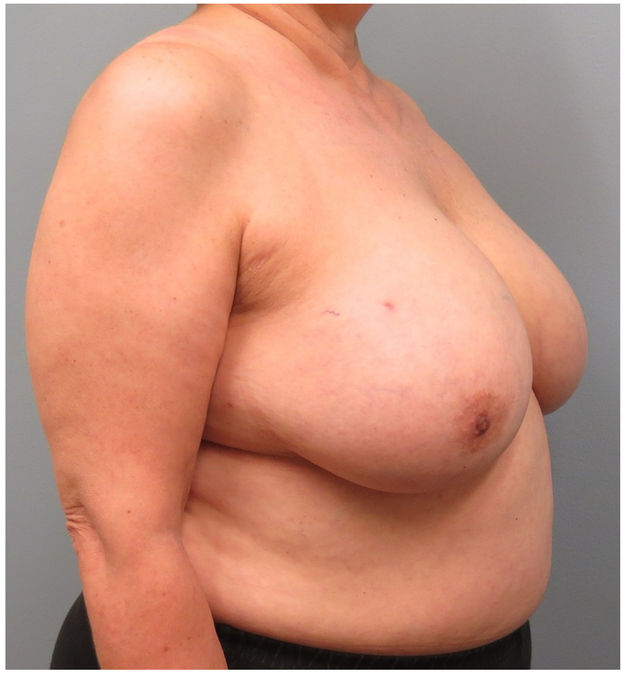
- Tumor size less than 5cm
- Distance from nipple >2cm
- HER2/Neu nonamplified
- No prior radiation, smoking*

CURRENT

- **No clinical/radiologic evidence of nipple involvement**
- **No Hx of inflammatory breast cancer**
- **No bloody nipple d/c due to tumor**

Anatomical Limitations of NSM

- **Breast size and shape**
  - **Technical challenge of NSM in breasts D-cup size or greater or with significant ptosis (moderate Grade II/III)**



Overcoming Macromastia/Ptosis

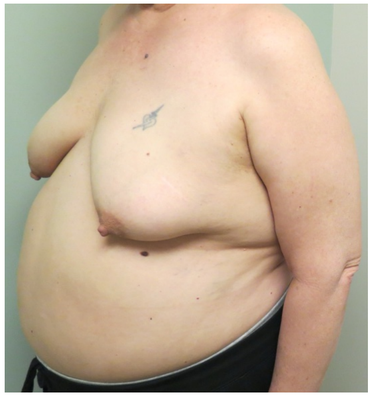
- 2- or 3-staged NSM with initial breast reduction/mastopexy
- SSM with reduction of skin envelope
  +/- free nipple grafting
- 1-staged skin-reducing NSM

BREAST

Breast Reconstruction Using a Staged Nipple-Sparing Mastectomy following Mastopexy or Reduction

Scott L. Spear, M.D.
Steven J. Rottman, M.D.
Laura A. Seiboth, M.D.
Catherine M. Hannan, M.D.

Background: To address those patients who do not meet an nipple-sparing mastectomy, the authors use a staged appro or breast reduction, (2) nipple-sparing mastectomy thro incisions after a minimum of 3 to 4 weeks, and (3) the fir



“Staged” NSM

- First stage lumpectomy/SLNB and bilateral oncoplastic reduction/mastopexy
- Systemic therapy as indicated
- No post-lumpectomy XRT (can do after mast-x***)
- NSM ~3 months post-lumpectomy
- Either 2-stage (DTI) or 3-stage (TE)

2-Stage NSM






Not all NSM's turn out that well…

Ann Surg Oncol (2017) 24:2863–2868
DOI 10.1245/s10434-017-5962-8

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CrossMark

ORIGINAL ARTICLE – BREAST ONCOLOGY

Nipple-Sparing Mastectomy: Pitfalls and Challenges

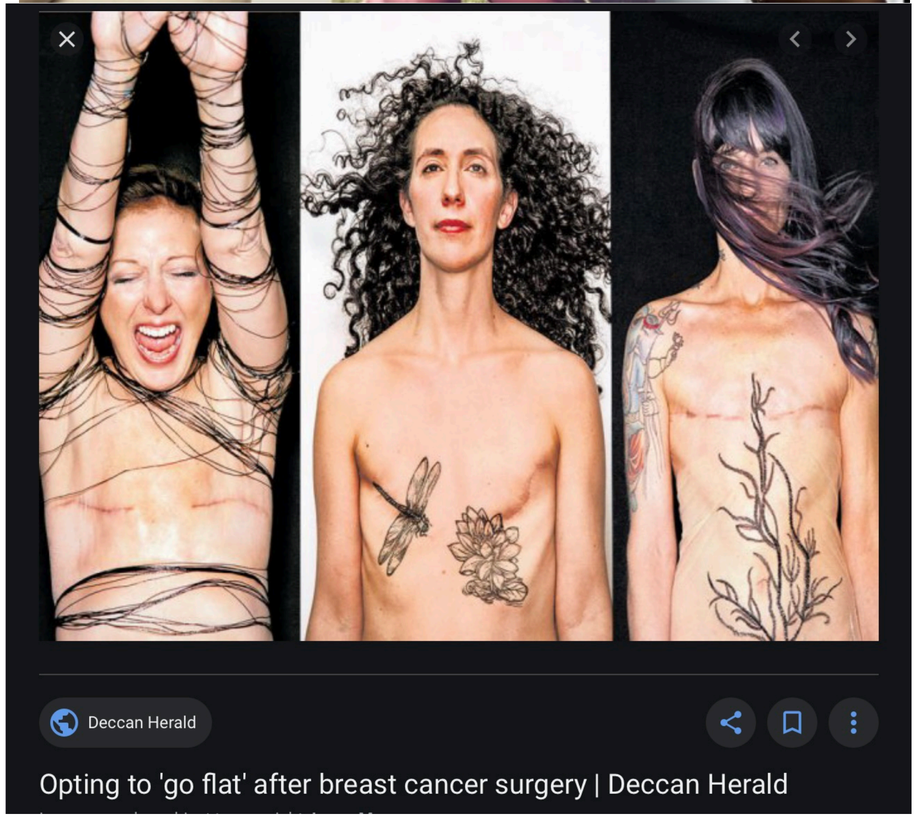
Suzanne B. Coopey, MD[1] and Sunny D. Mitchell, MD[2]

[1]Division of Surgical Oncology, Massachusetts General Hospital, Boston, MA; [2]Stratford, CT

FIG. 2 *Left* partial-thickness nipple necrosis. *Right* complete healing with observation and topical agents

FIG. 3 *Left* full-thickness nipple necrosis. *Right* progression to infection, which required operative debridement and implant removal

What about no reconstruction… “going flat”



Deccan Herald

Opting to 'go flat' after breast cancer surgery | Deccan Herald

COSMOPOLITAN

subscribe SIGN IN

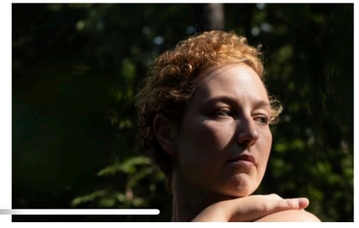
STEPHANIE STRASBURG

These Cancer Patients Wanted to Get Rid of Their Breasts for Good. Their Doctors Had Other Ideas.

Breast cancer survivors increasingly want to opt out of reconstruction after their mastectomies, but they report a horrifying culture in which their desire to go flat is challenged or outright ignored.

by CATHERINE GUTHRIE SEP 6, 2018

When Kim Bowles woke up in the hospital recovery room, a thick white gauze blanketed her chest. She knew she shouldn't disturb the surgical dressing, but she *had* to see. She tugged at the edges of the



Ann Surg Oncol
https://doi.org/10.1245/s10434-020-09448-9

Annals of
SURGICAL ONCOLOGY
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

ORIGINAL ARTICLE – GLOBAL HEALTH SERVICES RESEARCH

"Going Flat" After Mastectomy: Patient-Reported Outcomes by Online Survey

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ABSTRACT

Background. The Going Flat movement aims to increase awareness and acceptance of mastectomy alone as a viable option for patients. Little is known about motivations and satisfaction with surgical outcomes in this population.

Methods. An online survey was administered to 931 women who had a history of uni- or bilateral mastectomy for treatment of breast cancer or elevated breast cancer risk without current breast mound reconstruction. Satisfaction with outcome and surgeon support for the patient experience were characterized using 5-level scaled scores.

Results. Mastectomy alone was the first choice for 73.7% ($p < 0.0001$) and having a surgeon with a specialized breast surgery practice (OR, 0.56; 95% CI, 0.38–0.81; $p = 0.002$).

Conclusions. Most patients undergoing mastectomy alone are satisfied with their surgical outcome. Surgeons may optimize patient experience by recognizing and supporting a patient's decision to go flat.

For women with early-stage breast cancer, similar oncologic outcomes are achieved with breast-conservation surgery (BCS), mastectomy alone (MA), and mastectomy with immediate breast reconstruction (IBR)[1–5]. Thus,

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"Going Flat" After Mastectomy: Patient-Reported Outcomes by Online Survey

931 Respondents

Top 2 Reasons:
Fewer complications
No foreign body

22% experienced flat denial

Not offered flat
Surgeon not supportive
Surgeon left additional skin

74% satisfied with outcome

Predictors:
Surgeron support
Adequate information

Baker JL et al. *Ann Surg Oncol.*
Visual Abstract by @DrAttai for @AnnSurgOncol

ANNALS OF SURGICAL ONCOLOGY

without current breast mound reconstruction. Satisfaction with outcome and surgeon support for the patient experience were characterized using 5-level scaled scores.

For women with early-stage breast cancer, similar oncologic outcomes are achieved with breast-conservation surgery (BCS), mastectomy alone (MA), and mastectomy

THE MODERN MASTECTOMY

“Hey, Doc: did you get it all?”

- **It is impossible to remove ALL the breast tissue without removing ALL the skin**
- **“Risk-REDUCING” (not “preventing”) mastectomy**
- **How much breast tissue do we actually leave behind?**

Ann Surg Oncol (2020) 27:2288–2296
https://doi.org/10.1245/s10434-020-08516-4

Annals of
SURGICAL ONCOLOGY
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

REVIEW ARTICLE – BREAST ONCOLOGY

Residual Glandular Breast Tissue After Mastectomy: A Systematic Review

Orit Kaidar-Person, MD[1,2], Liesbeth J. Boersma, MD, PhD[3], Philip Poortmans, MD, PhD[4], Miri Sklair-Levy, MD[5], Birgitte Vrou Offersen, MD, PhD[6], Maria-Joao Cardoso, MD, PhD[7], and Dirk de Ruysscher, MD, PhD[3]

TABLE 1 Magnetic resonance studies reporting residual breast tissue after mastectomy

References	No. pts (no. breasts)	Surgical procedure	MRI seq/method	No. rBGT per breast (%)	rBGT mean volume	% rBGT per procedure	rBGT per indication	rBGT location % (range and/or mean diameter, mm)
Zippel et al.[13] *	45 (88)	M + Im-IBR	Fast spin-echo axial T2-weighted & sagittal T1-weighted	88 (100%)	N/R	100%	Therapeutic 10.63 ± 5.41 mm Prophylactic 11.86 ± 6.77 mm	3 o'clock (0- 31.7, 8.8 mm) 6 o'clock (2.1-47.8, 13.3 mm) 9 o'clock (0-42.2, 9.3 mm) 12 o'clock (1.3-53.4, 13.3 mm)
Giannotti et al.[8]	367 (501)	M (21.8%) SSM (28.7%) NSM (49.5%) ±flap-IBR	Unenhanced fast spin-echo axial T1-weighted slice thickness 3 or 4 mm no gap no fat suppression	208 (41.5%)	N/R	2.8% M 13.2% SSM 51% NSM	Therapeutic: 114/385 (29.6%) Prophylactic: 84/108 (77.8%)	UOQ 10.2% (9 mm) UIQ 4.6% (9.5 mm) LOQ 12.6% (7.4 mm) LIQ 6.4% (10.4 mm) NAC****65.7% (6.9 mm) Inframammary fold 1.4% (23.5 mm) Infraclavicular 1% (21.6 mm) Upper parasternal 5.8% (13.9 mm) Axillary tail 4.6% (16.5 mm)
Woitek et al.[9]	58 (85)	SSM (81.2%) NSM (18.8%)	1.5, 3 Tesla Unenhanced axial T1, T2-weighted	17 (20%)	4.4 ± 3.7 cc***	13% SSM 50% NSM	N/R	UOQ-All- 64.3%, SSM-44.4%, NSM-100% UIQ- All- 21.4%, SSM-22.2%, NSM-20% LOQ- All- 35.7%, SSM-55.6%, NSM-0% LIQ- All- 14.3%, SSM-22.2%, NSM-0% NAC****66.7%
Grinstein et al.[10]	169 (338)	SSM (83.8%) NSM (12.1%)	1, 1.5, 3 Tesla Unenhanced and enhanced T1, T2-weighted Sagittal, axial and coron...	128 (37.9%)	N/R	N/R	Therapeutic 18% Prophylactic: bilateral ≠ 53.1%; unilateral 28.9%	NAC**** > 90% (2 mm)

SKINI-TRIAL

- 160 mastectomies; 7 surgeons
- On completion of the mastectomy, biopsies taken along the post-mastectomy area in search of residual breast tissue (RBT)
- RBT found in 40% of SSM and 69% of NSM
- Individual surgeon variation 26%-100%
- RBT not correlated with skin necrosis rates

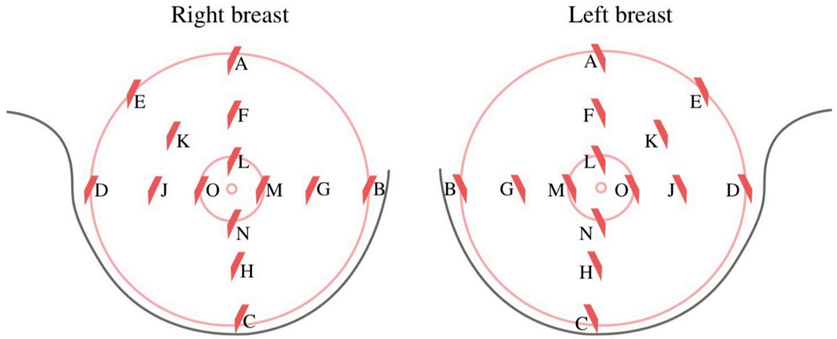
Ann Surg Oncol (2019) 26:1254–1262
https://doi.org/10.1245/s10434-019-07259-1

Annals of
SURGICAL ONCOLOGY
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

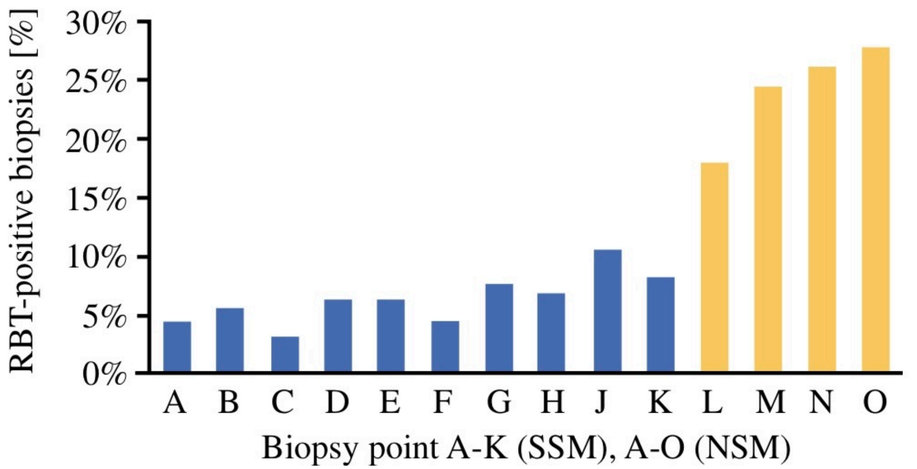
ORIGINAL ARTICLE – BREAST ONCOLOGY

Prospective Evaluation of Residual Breast Tissue After Skin- or Nipple-Sparing Mastectomy: Results of the SKINI-Trial

Bärbel Papassotiropoulos, MD[1], Uwe Güth, MD[2], Federica Chiesa, MD[2], Christoph Rageth, MD[2], Esther Amann, MD[2], Astrid Baege, MD[2], Constanze Elfgen, MD[2], Zsuzsanna Varga, MD[3], Linda Moskovszky, MD[3], Katharina Endhardt, MD[3], Regina Masser, MD[4], Marianne Tinguely, MD[4], Jian Farhadi, MD[5], Alessia Lardi, MD[5], Florian Dammann, MD[6], Joachim Diebold, MD[7], Qiyu Li, MSc[8], Peter Dubsky, MD[9,10], and Christoph Tausch, MD[2]



RBT After Skin- or Nipple-Sparing Mastectomy



IN SUMMARY

- Oncoplastics combines the “best of both worlds”, optimizing aesthetic outcome without compromising cancer treatment
- Oncoplastics is more than a technique; it’s a philosophy applicable to all patients (“one size fits one”)
- The Art of Oncoplastics: patients may look better after their cancer diagnosis
- The Science of Oncoplastics: we may lower mastectomy rates, re-excision rates, ?complication rates