Two stage breast reconstruction with tissue expander and implant

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Oncoplastic breast surgeon

- Immediate Two-Stage Breast Reconstruction Using a Tissue Expander and Implant

- Delayed Expander/Implant Sequenced Breast Reconstruction

When Is Delayed Breast Reconstruction Indicated?

- There is no **absolute** indication
- patients are not candidates for IBR
- The ideal patient is one who

  has not undergone PMRT (fat transfer & autologous breast reconstruction)

  normal BMI (controversy)

  smoking

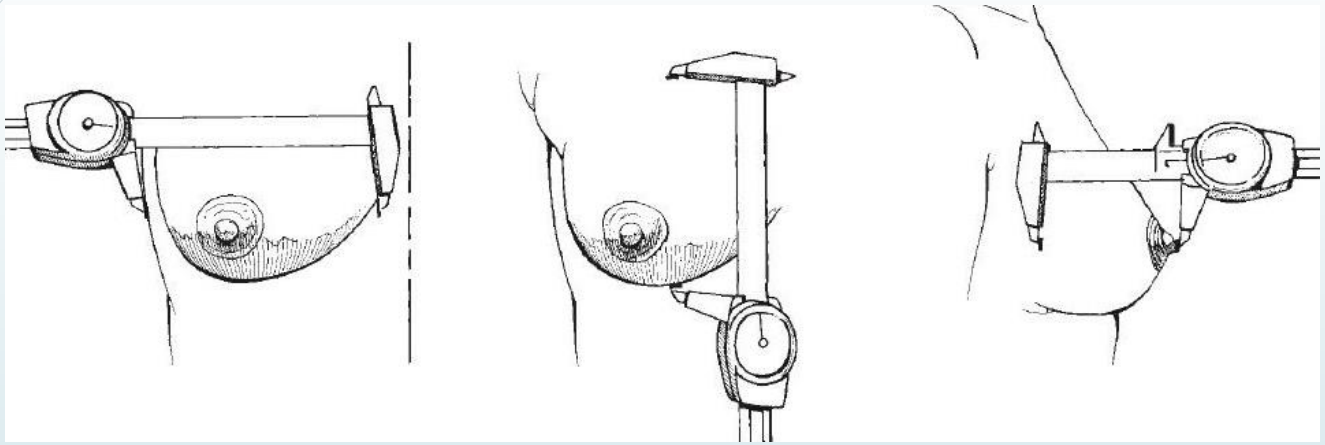
  has a soft and supple skin envelope.

  patient wants to increase the size of her breasts significantly

	Advantages	Disadvantages
Total muscle coverage	Most protective with ischemic skin flaps	Compromised lower pole projection and shape, pain with expansion
Partial muscle coverage with acellular dermal matrix (ADM)	Improved lower pole projection and shape	May have higher complication rate in some series or in inexperienced hands, animation with pectoralis contraction
No muscle coverage (prepectoral)	No animation, may have improved symmetry in unilateral reconstructions	Increased upper pole visibility and rippling compared to partial muscle coverage, increased cost of ADM

	Allergan	Mentor	Sientra
Fill	Saline	Saline	Saline
Texture	Biocell	Siltex	TRUE
Series	133	CPX	ACX

Tissue expander selection



- base width (most important)

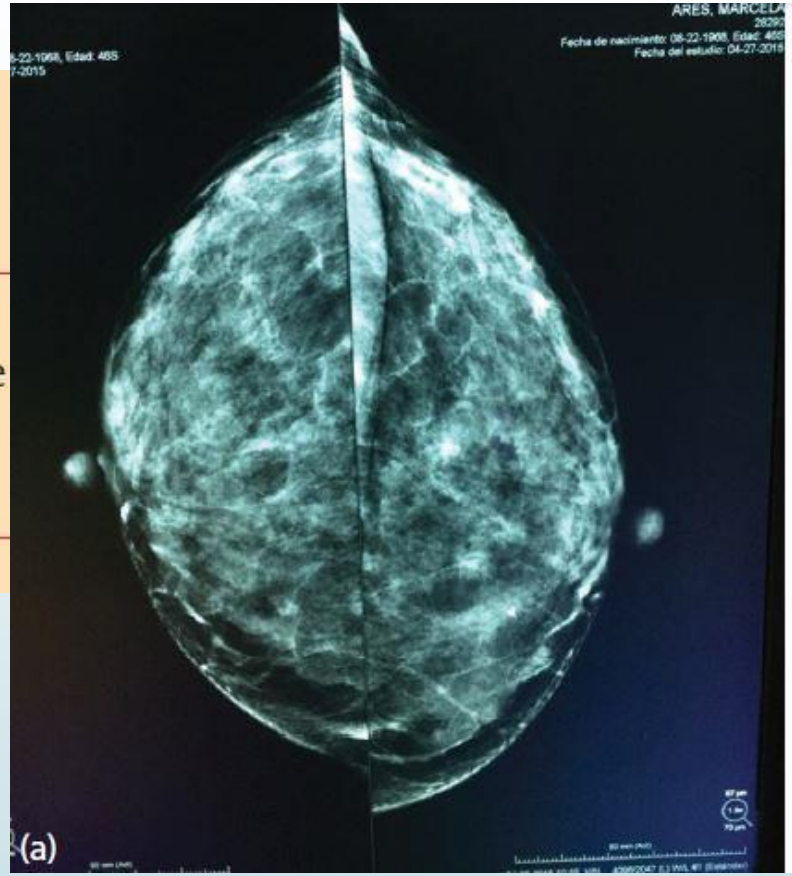
  TE that is 1 cm less than the base width of the breast pocket

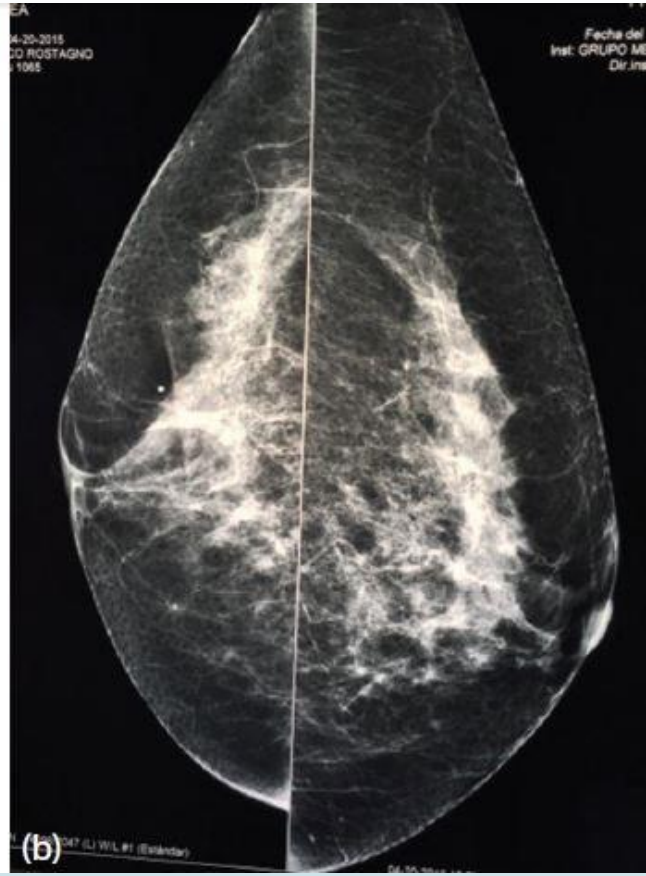
- sternal notch to nipple
- nipple to IMF
- nipple to midline

Tissue coverage

Table 19.2.2.1 Breast tissue coverage classification

TYPE 1	Up to 1 cm	Poor Coverage
TYPE 2	Between 1 and 2 cm	Medium Coverage
TYPE 3	More than 2 cm	Good Coverage





(type 1)
ADM, retropectoral,fat grafting
(type 2), a two-stage reconstruction should be recommended to avoid tension over flap closure
(type 3)
one-stage reconstruction

Tissue expander selection

- extremely long thorax >>> medium height
- extremely short nipple-to-fold distance>>>short-height

  to avoid overexpanding the central and upper poles

- I routinely use an **extra full projection** device (bostwick)

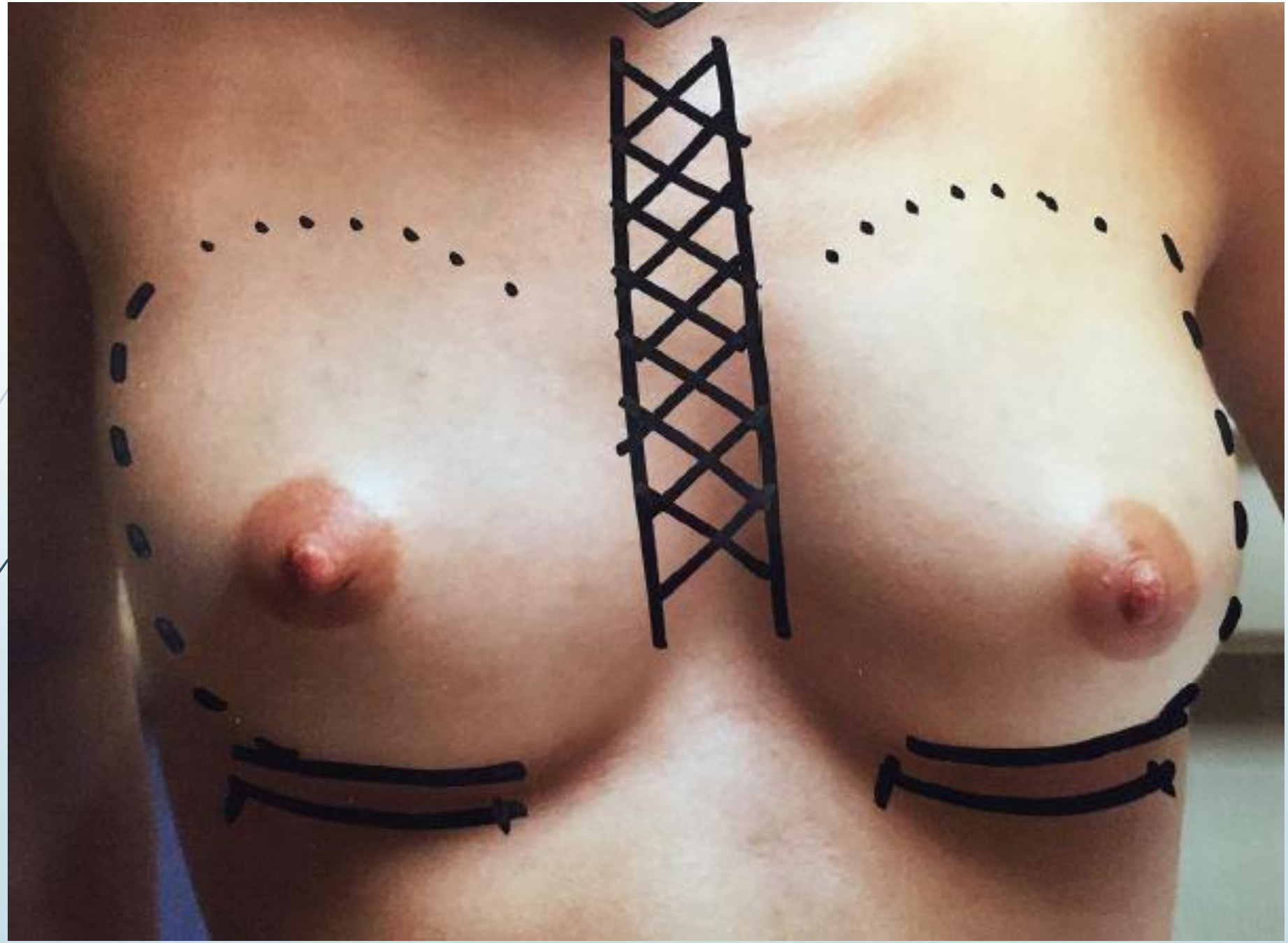
Surgical Plan

- **Type of mastectomy :SSM / NSM / skin-reducing mastectomy**.
  smaller breasts - grade 0 or 1 ptosis>> IMF incision
  larger breasts - grade 2 ptosis, a vertical or oblique pattern.
  extremely large–breast> breast reduction prior to mastectomy

- **Choose muscle position: total, partial, or no muscle coverage**

- **Choose support matrix: ADM or synthetic matrix**.

- **Determine tissue expander style: projection, width, volume.**



Technique

- After mastectomy, redraped and reprepped with Betadine
- the pocket irrigation with diluted Betadine
- pocket irrigation with triple antibiotic solution (bacitracin, gentamicin, and cefazolin)
- bathes the tissues for 2 minutes before suctioning
- Assessment of the skin flaps perfiusion
- Bupivacaine is injected into pocket diffusely under the **pectoralis** and **serratus fascia** and into the **fat** for postoperative pain control
- muscle relaxation prior to the subpectoral dissection

Technique

- Subpectoral
  edge of the expander location

  2-0 PDS suture (IMF)

  marionette sutures

  lower border of the pectoralis major through the lower mastectomy flap to keeps the pectoralis

  major from migrating superiorly during expansion

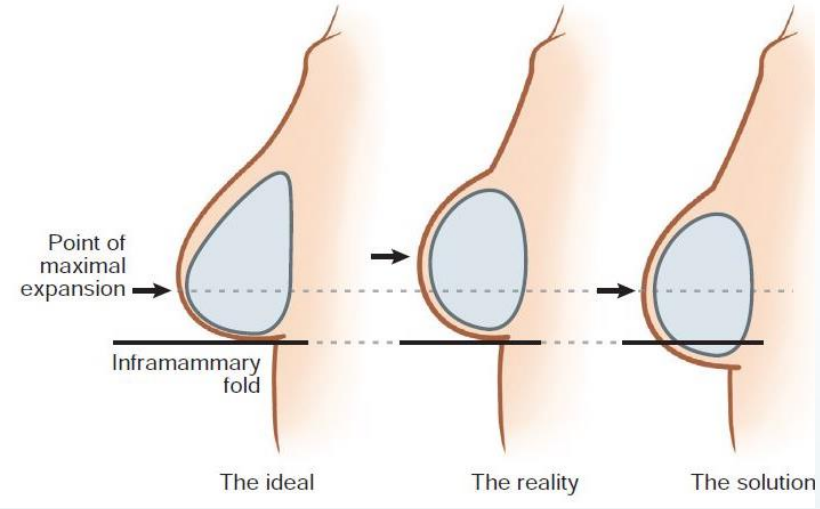
  Two 15 Blake drains

  superior / IMF

- DUAL PLANE

  modification of the subpectoral technique + piece of tissue to bridge the

  gap between the lower border of the **pectoralis major** and the **chest wall.**



Technique

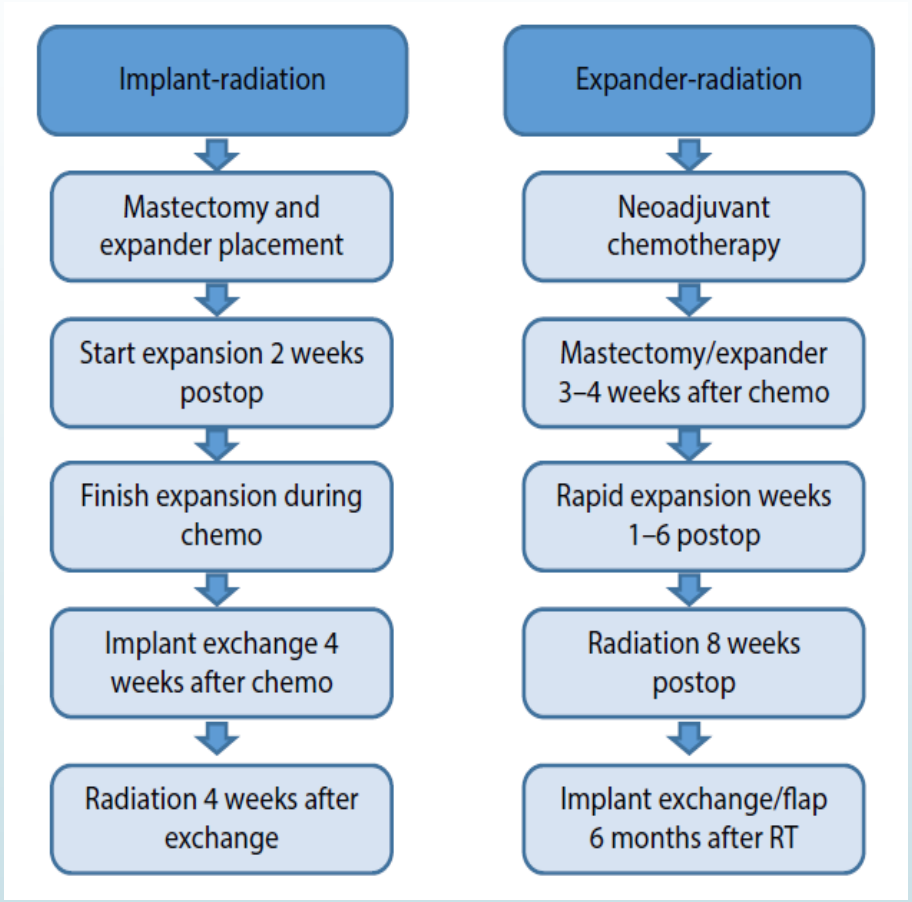
PREPECTORAL

- lower postoperative pain, decrease recovery time, and eliminate animation deformity
- A single piece of **nonperforated ADM** is placed in the upper pole and sutured to the pectoralis major with 3-0 PDS.
- Next a **perforated piece of ADM** is placed in the lower pole and sutured to the IMF and chest wall with 3-0 PDS.
- Next, the tissue expander is deflated of any air in it and placed into the prepectoral pocket with nonperforated ADM superiorly and perforated ADM inferiorly.
- The sutures tabs are sutured down to the chest wall and the two pieces of ADM are sutured together to cover the expander.

POSTOPERATIVE CARE

- The upper drains are removed at the first postoperative visit POD7.
- The lower drains are removed at the second visit (following week)
- The first postoperative expansion is done at the same visit as the removal of the lower drains. (<30cc/day)
- Expansion typically takes 3 to 4 weeks to complete
- the second-stage surgery is scheduled approximately 3 months later
  (no need for chemotherapy or radiation).
- If **chemotherapy** is indicated then the second stage is delayed until after the completion of chemotherapy. (WBC)
- If **radiation** is indicated then exchange is further delayed for approximately 4 to 6 months after the completion of radiation

ALGORITHMS FOR IMPLANT RECONSTRUCTION IRRADIATION



Memorial Sloan Kettering Cancer Center (MSKCC) algorithms for implant and tissue expander (TE) irradiation.

STAGE TWO: FINAL IMPLANT PLACEMENT

- condition of the radiated mastectomy flaps

  significant change >> autologous reconstruction should be considered

- Incision location

  NO XRT (prior scar about 6 cm) XRT (new site)

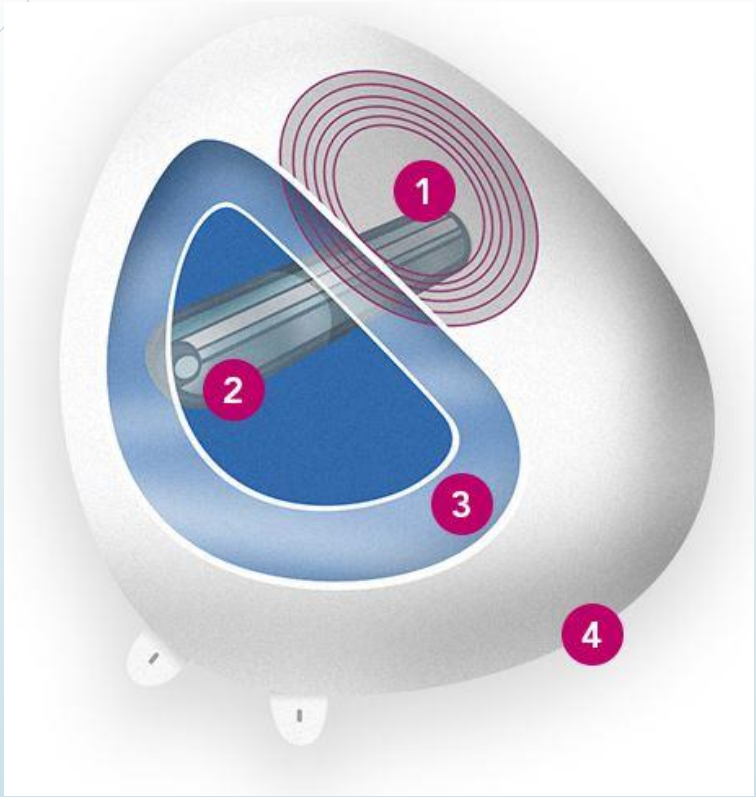
- Capsulorrhaphy(2-0 PDS suture to prevent lateral migration) and capsulotomy, liposuction contouring are occasionally required to adjust the pocket symmetry
- The pocket is irrigated with triple antibiotics and the new permanent implant is placed via Keller funnel.
- fully expanded tissue expander will often necessitate a full or high-profile implant to match its projection

complication

- Skin necrosis (TE can be deflated further and the necrotic portion of the skin can be excised and the open area can be closed)
- Infection(IV AB or removal of the TE)

  Red breast syndrome >>> observation or oral AB
- Seroma (needle aspiration)
- Hematoma
- Nipple necrosis
- Expander malposition
- Expander deflation

Air Xpander



Thank you for your attention