BREAST AUGMENTATION TECHNIQUES
Breast Augmentation

- Top Surgical Procedure in 2015 (Worldwide)
  - Surgical Procedure: Breast Augmentation
  - Rank: 1
  - Total: 1,488,992
  - Percent of Total Surgical Procedures: 15.4%

(Source: ISAPS International Survey on Aesthetic/Cosmetic Procedures Performed in 2015)
History of the Procedure

• Both saline-filled and silicone-filled implants have been used since the 1960s to enhance and enlarge women's breasts. Initial silicone implants in the early 1960s had a thick elastomer shell and were filled with a relatively firm silicone gel.

• In the mid 1970s, silicone implants tended to have a thin elastomeric shell and a less viscous gel, though gel cohesiveness was varied. Over the years, modifications have been made to implant shape, shell texture and properties, and the substance with which the implant is filled.

• Currently, they are the preferred method for augmentation mammoplasty.
Breast augmentation

• Breast augmentation is a cosmetic surgery procedure to increase breast size and enhance breast shape, typically through the placement of silicone or saline breast implants.

• From a cosmetic surgeon’s perspective, the ultimate goal of breast augmentation is to enhance a patient’s natural proportions and create a more symmetrical, aesthetically pleasing breast profile. The exact procedure is tailored to meet a woman’s individual needs.
Why Breast Augmentation

- Restoring breast fullness lost after pregnancy & breastfeeding
- Feeling more confident in a swimsuit
- Adding balance to better complement curvy hips
- Enhancing self-image
Breast Implant Choices

• Filling type: Saline, Silicone Gel, or Highly Cohesive Silicone “Gummy Bear” Implants. Silicone implants require a larger incision for placement than do saline implants. Silicone implants are prefilled and are, therefore, available in fixed volumes, in contrast to saline implants, which are filled after they are placed in the patient and may be adjusted to compensate for any difference in volume between the patient's two breasts.

• Shape: Saline & Silicone Gel implants are typically round, while gummy bear implants come in shaped and round options. Round implants will typically achieve a fuller upper pole (the top portion of breast), while shaped implants lend a gently sloping look to breast profile. Both can look very natural with a skilled cosmetic surgeon’s help.

• Profile: The cosmetic surgeon will help in this based on patient’s existing proportions and goals. Generally, patients with a more petite frame will require a higher profile implant to achieve the desired size increase while ensuring the implants are not too wide at the base.

• Size: Breast implants range in size from about 150cc to 800cc or larger. Many patients require a different sized breast implant for each breast; this helps to achieve the best possible symmetry. The size depends on patient’s existing breast size, personal goals, and cosmetic surgeon’s recommendations.
Preoperative measure

• Preoperative laboratory analysis should include pregnancy testing when appropriate.

• For elective surgery in women younger than 40 years who are healthy, no preoperative testing is required.

• If there are specific abnormalities in the patient history, those areas should be explored further when appropriate.
Surgical Approaches for Breast Implant Placement Include:

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Inframammary Breast Augmentation

- An inframammary incision is the **most common approach for placement of a breast implant**. This approach, which entails a 3- to 4-cm incision, attempts to place the incision in or adjacent to the inframammary crease (Medscape). The inframammary approach provides the most direct route and generally requires the least operative time for placement of the implant.

**Advantages**
- **a wider access point**, allowing a cosmetic surgeon to place larger silicone implants or gummy bear implants with precision.
- **less impact to milk production with this technique as neither the glandular tissue nor innervation is affected**. However, if the implant is placed on top of the pectoral muscle, it can exert pressure on the ducts and glands, which may reduce milk production functionality.

**Disadvantage**
- **a visible scar on the anterior surface of the breast**.
- **additional problems center on the difficulty in placing the incision in the inframammary crease; this difficulty is potentially exacerbated with low-profile implants.**
**Transaxillary Breast Augmentation**

- Involves a small incision made within the armpit, through which cosmetic surgeon will place the breast implant using a specialized camera and instruments to ensure optimal placement.

- Implants are usually placed below the muscle. As with the other incision techniques, placement of the implant above the muscle will result in greater impairment than placement underneath.

**Advantage:**
- leaves a small scar within the armpit but no scar on the breast itself.
- The impact to milk production is usually minimal because the glandular tissue and nerves are largely undisturbed.

**Disadvantage:**
- provides the worst exposure for placement of the implant.
- increased incidence of paresthesia
- obtaining symmetric pockets is more difficult with this approach, and damage to the intercostal brachial nerve and subclavian venous thrombosis has been reported.
- if infection results, removal of the implant may require conversion of the transaxillary incision to one of the other incisions described.
- hypertrophic scar formation also can occur in the axilla, and the incision may be visible when the patient elevates her arms while wearing a sleeveless shirt.
- because silicone implants are prefilled and, therefore, require a larger incision for placement, only smaller silicone implants are typically placed via this route.
TUBA (trans-umbilical breast augmentation) or Periumbilical

- Is performed by inserting the implant through an incision in the umbilicus (navel) and moving it into place in the breast.
- In this technique, no incisions are made on the breast or into the breast tissue, although the breast tissue is disrupted and sometimes damaged as the implant is brought into position. Insertion through the umbilicus makes it difficult to position the implant accurately, requiring the use of a camera scope. It also permits placement only above the muscle.

**Advantage**
- a single scar with no scarring on the breast itself.
- it preserves glandular function and nerve response so that the impact to milk production is usually minimal.

**Disadvantage**
- Placement of the implant is restricted to a prepectoral plane, and this approach provides the worst control for dissection of the pockets. Superior dissection and symmetry of placement are difficult, even in the most experienced hands.
- Complications of hematoma or infection require conversion to one of the other incisions for implant removal.
- Additionally, placement of saline-filled implants through a periumbilical approach requires a special type of valvular mechanism, and the long-term reliability of the valvular mechanism in these implants has not been fully clarified.
Periareolar Breast Augmentation

- Implants placed by an incision within the pigmented areolar tissue, referred to as a periareolar incision, often result in the least conspicuous scar.

**Advantage:**
- Cosmetic surgeons will often use this incision type if they are also performing a mild to moderate breast lift at the same time.

**Disadvantage:**
- Dissection of the pocket required for implant placement is more difficult with a periareolar incision. Dissection must proceed through a portion of the breast tissue or in the subcutaneous plane.
- Problems with subcutaneous dissection include nodularity and inflammation. Incisions placed through the breast tissue or in the subcutaneous plane are associated with microcalcification and cyst formation.
- Placement of the implant in this location results in considerable duct, glandular, and nerve damage, carrying significant risk to milk production. Ducts and glands are likely to be severed because the incision penetrates deeply through the breast tissue. If the implant is placed above the muscle, it may further impede milk production functionality by placing pressure upon the glandular tissue.
Implant Placement

Implants may be placed:

1. directly beneath the mammary gland (subglandular)
   - **Advantages**: ease of dissection, predictable sizing and contouring, and satisfactory results, provided that capsular contracture does not occur. Allows for placement of larger implants than submuscular position.

2. in a plane below the pectoralis major muscle (submuscular).
   - developed in response to problems associated with subglandular placement, like capsular contracture and visibility of the edge of the implant.
   - Submuscular breast implants can be placed completely or only partially below the muscle.
     - In total submuscular placement, implants are located beneath both the pectoralis major muscle and the anterior portion of the serratus anterior muscle.
     - With subpectoral placement, implant is placed behind the complete pectoralis major muscle.
   
   **Advantage**: Reduced sensory changes in the nipple, decreased rates of hematoma, capsular contracture, and ease of interpretation of mammographic studies.

   **Disadvantages**: Potential limitations on the size of the implant, increased postoperative pain, and the possibility of lateral displacement of the implant. In addition, obtaining significant cleavage is more difficult.

3. the implant is placed under the superior portion of the pectoralis major muscle; inferiorly, the implant is placed in a subglandular plane (dual Plane)
Autologous fat transfer (Breast augmentation with fat injections)

- Breast augmentation using the patient’s own fat (autologous fat transfer or fat micrografting) is a procedure that involves removing fat from one or several areas of the body by liposuction and then injecting that fat into the breast tissue to achieve a cosmetic augmentation.

- Modest augmentations are possible with current fat grafting techniques.

Limitations:

- Results from injection of autogenous tissue have lacked predictability.

- In addition to the risks of scarring and uneven texture that may be visible in patients who have undergone tissue injection into the breasts, microcalcifications may develop. This makes performing follow-up mammography on these women for early diagnosis of breast cancer difficult.

(Source: Cosmetic Breast Surgery © 2014 ISCGYN)
Preoperative Details

• Patients are marked in a standing position.

• The distance from the nipple to the inframammary fold is noted, along with the position of the nipples relative to the sternal notch and the width medially and laterally of the breast.

• Clearly larger implants require a larger pocket for placement compared with a smaller implant, and it is important for the surgeon to confirm that sufficient space is available for the implant chosen based on the patient’s preoperative anatomy.
Intraoperative Details

- For round implants, an appropriate pocket dissection should be performed to accommodate the size and shape of the implant. The pocket should facilitate movement of the implant. The patient is placed in the sitting position in the operating room to confirm correct implant placement. Sutures are typically placed to reinforce the position of the inframammary fold prior to wound closure. The sutures are placed in the deep fascia (Scarpa fascia) in a manner that secures the fascia to the chest wall. Two to 3 sutures are required to achieve adequate stability of the fold to the underlying chest wall. In selected cases, the position of the inframammary fold may be altered based on preoperative assessment. The key determinant is the distance from the nipple to the inframammary fold, which typically ranges from 7-8 cm. In cases in which there may be inferior drift of the inframammary fold postoperatively, repositioning of the fold is achieved by reattachment of the Scarpa fascia to the chest wall.

- Anatomic or shaped implants represent a specific intraoperative demand for the surgeon. Because of the asymmetric teardrop shape of the implant, a precise surgical pocket needs to be dissected at the time of implant placement. The implant pocket needs to fit the shaped implant with very high precision. A very precise pocket-sized dissection performed in conjunction with stabilization of the inframammary fold by suturing the Scarpa fascia to the chest wall minimizes the tendency for postoperative rotation of an anatomic implant, thereby enhancing the final result.
Follow-up

• Patients are seen the day following surgery for removal of the compressive dressing.

• Additional follow-up appointments are at the discretion of the surgeon.

• Usually at one week, one month, then monthly to six months, and then yearly.
Complications

• Hematoma (frequency < 2%) : Associated symptoms of are unilateral pain, swelling, and, occasionally, fever.

• Infection

• Sensory changes : changes in nipple-areolar sensation are common

• Scars

• Asymmetry of the implant position

• Contour irregularity and implant extrusion may rarely be associated with the placement of implants.
Information for patient

• Breast augmentation is an outpatient procedure, typically performed using general anesthesia.
• You can expect to walk around on your own a few hours after surgery, and most patients feel up to leaving the house within the next day or two.
• You may feel sore the first week or so, and you will need to limit strenuous exercise for about 2-4 weeks.
• Your cosmetic surgeon may also ask you to wear a supportive surgical bra or sports bra for a certain period of time after breast augmentation—it is crucial to follow your cosmetic surgeon’s instructions to ensure you heal optimally.
• Once you have your breast implants, you’ll want to keep the following in mind:
  – It’s safe to have mammograms with breast implants, so be sure to maintain regular screening as prescribed by your doctor.
  – For silicone implants, it is recommended that patients undergo periodic monitoring (via mammogram, ultrasound or MRI) to screen for ruptures, which are rare.
  – Future pregnancies or weight fluctuations may affect your results, and a secondary surgery may be needed to correct any changes you are unhappy with over time.
  – Nothing can stop the normal aging process; over time, breast tissue will change. You can help prevent unnecessary sagging by wearing a bra with adequate support for your activity level.
• When performed by a qualified cosmetic surgeon, breast augmentation is a safe surgery with long-lasting results, and the overwhelming number of patients are very glad they chose to have the procedure.
• Despite the extensive list of potential complications, breast augmentation remains one of the safest and most predictable procedures performed.

• The surgery provides a balance between the size and shape of the patient's breasts and the rest of her body.

• The low incidence of complications and the predictability of surgical outcome have prompted an increasing number of individuals to undergo the procedure.
Thank you!