



BREAST AUGMENTATION: YOUR OPTIONS

FROM THE SHAPE AND TYPE OF THE BREAST IMPLANT THROUGH TO THE INCISION SITE AND PLACEMENT, THERE ARE MANY VARIABLES TO CONSIDER BEFORE UNDERGOING BREAST AUGMENTATION. AIMÉE SURTENICH REPORTS.

For many women, breast implant surgery brings great rewards, both physically and emotionally. However, before making a decision to undergo breast augmentation surgery, it is important to consider all the options available.

Making a choice may seem overwhelming when you first investigate all the factors involved. There is no one breast implant type, size, shape, texture, location placement and incision site for everyone. A thorough consultation with your surgeon – taking into account your body shape, existing breasts and individual circumstances – is essential to best achieve your goals, desires and expectations.

Types of implant

There is a range of breast implants available and there is a type to suit just about everyone.

Implants are either saline or silicone-gel filled and are produced in round and teardrop (anatomical) shapes, with a smooth, textured or polyurethane foam-covered surface.

Saline-filled implants

Saline implants have a silicone outer shell that is filled with a medical-grade saltwater solution which is biocompatible. The implant can be filled through a valve during the procedure to a fixed or non-fixed volume, or it can be

prefilled to a determined volume during manufacture.

Saline implants generally feel firmer than silicone gel implants and due to their thinner consistency they tend to wrinkle more readily. Deflation is also a potential problem and requires replacement if this occurs. Saline implants can also be relatively under-filled in the upper part and be subject to rippling in their upper aspect.

Silicone gel-filled implants

Many implants used in breast augmentation procedures are silicone gel filled. Silicone is regarded as one of the most compatible materials for implanting into the body and is commonly used in medical devices and medicines.

Modern silicone gel implants are vastly superior to the silicone implants of 10 to 15 years ago. The silicone gel is cohesive, meaning it is pre-shaped with a viscous, Turkish Delight-type consistency. Because the gel is not runny or liquid in property, its use in breast implants minimises the risk of leakage problems.

Many surgeons and patients also find silicone implants generally feel softer and more like natural breasts than saline implants.

Size

Your body shape and individual preferences are the main determinants of implant size. Breast implants do not come in cup sizes but instead come in cubic centimetres (cc). Discussing your desired breast size with your doctor, trying on different implant sizes and shapes in your bra and looking at before and after photographs from breast augmentation procedures can all help you to choose the most appropriate size for your body.

Shapes and forms

There are generally two different forms of breast implants: round or teardrop (anatomical) shaped.

Round implants, depending on their fill, can give a defined round shape or assume more of a teardrop form when the patient is upright. They tend to provide more upper pole fullness than anatomical implants, which are fuller in the lower pole.

Anatomical implants demand a greater degree of accuracy in positioning, and if they shift after surgery the shape of the breast may be distorted. They normally have a textured surface to avoid rotation.

Anatomical implants can also provide greater projection in proportion to the size of the base, making them particularly suitable for women with little natural breast tissue.

While the size of the base of the implant is limited by your chest wall, the choice of projection is to a large extent a personal one. If you have adequate breast tissue and a shape you are happy with, you may opt for a low-profile

implant that will simply increase the size of your breasts. If you wish to create cleavage or if your breasts have some degree of sag, a high-profile implant might be a more suitable option. Your surgeon can help you with this important aspect of implant selection.

Textures: smooth vs textured

The shell of a breast implant can be either smooth or textured. Smooth implants may achieve a smoother look and feel in some patients, but generally have a greater risk of capsular contracture.

Capsular hardening is the most common complication in breast augmentation surgery. It occurs when the body forms a capsule of fibrous tissue around the implant which can make the implant feel hard and often distort its shape. Secondary surgery is required to correct this problem.

Textured implants tend to minimise the incidence of capsular contracture and promote tissue adherence which may help maintain proper implant positioning.

Incision sites

There are generally four choices for the incision site and the decision is mostly up to you. They each have their advantages and disadvantages.

1. Inframammary

The inframammary incision is made in the crease under the breast close to the inframammary fold. The surgeon creates a pocket for the breast implant, which is slid up through the incision, then positioned behind the nipple.

The scar is hidden in the crease under the breast and is not normally visible when wearing a bikini top.

This incision offers the best exposure for visualisation and allows the implant to be placed in a precise pocket formation. There is some uncertainty involved in placing the incision with regard to its position on the augmented breast. While this is not a problem for an experienced surgeon, it can present difficulties when there is little breast tissue or natural crease.

2. Periareolar

The periareolar incision is made around the nipple near the area between the dark areola and surrounding breast skin. It is made at the outer limit of the areola so that there is areola skin on both sides of the incision where scarring is least visible.

The breast implant is inserted through the incision into a prepared pocket, then positioned behind the nipple.

One advantage is that there may be no visible scar because of the colour and texture of the areola. This incision allows the implant to be placed precisely in the pocket formation. The disadvantage is that it involves cutting through breast tissue and ducts and sensitivity in the nipple may be reduced. Any complication in healing is highly visible in the scar.



3. Transaxillary

The transaxillary incision is made in the natural crease of the armpit and a channel is created down to the breast.

This may be performed with an endoscope (a small tube with a surgical light and camera in the end) to provide visibility. The implant is inserted and moved through the channel into a prepared pocket, then positioned behind the nipple.

The scar is virtually invisible in the armpit fold and lack of tension generally allows for straightforward healing. There is no scar on the breasts.

Disadvantages include the fact that the transaxillary site is relatively far from the breast, where the surgeon needs to create a pocket to house the implant, so visibility is limited. There is also a higher incidence of the implant being placed too high. If the scar heals poorly it is noticeable in bikinis and sleeveless tops. If capsular contracture develops another incision will be necessary for treatment.

4. Transumbilical or navel (TUBA)

The TUBA incision is made on the rim of the navel. A tunnel is made under the skin through the subcutaneous fat layer on the torso into the layer of loose tissue between the breast and pectoral muscles.

An endoscope can be used to create the tunnel and to provide visibility to the surgeon. After a pocket is created in the breast, the implant is inserted through the incision and moved into the breast area, then positioned behind the nipple.

There are no incisions or scars in the breast area, however this site can only be used for saline implants. The distance of the incision from the breast can reduce the surgeon's ability to control bleeding and to position the implant correctly. If capsular contracture develops, another incision will be necessary for treatment.

Implant placements

Factors such as the quantity of breast tissue, natural breast size and symmetry, the dimension and shape of the chest wall, the amount of subcutaneous fat and the quality of breast skin will influence your doctor's decision as to the placement of the implant.

Placement of the implant can help determine the result of breast augmentation. It is important you are well-informed about the options available as well as the suitability of each option for your individual body type.

Generally, there are three placement options: subglandular (in front of the muscle), submuscular (behind the muscle), and dual plane (partially under the muscle).



Subglandular

The subglandular pocket is created between the breast tissue and the pectoral muscle. This position resembles the plane of normal breast tissue and the implant is positioned in front of the muscle. Sometimes the implant is covered by a thin membrane, the fascia, which lies on top of the muscle. This is called subfascial placement.

This position is suitable if you who have sufficient breast tissue to cover the top of the implant. This procedure is faster and may be more comfortable for the patient than submuscular placement. The implant moves more naturally in this position.

One disadvantage is that there may be more bleeding. If you are thin and do not have sufficient breast tissue, the edge of the implant may be visible. Any rippling of the implant will be more noticeable in this position. With smooth implants, some studies have reported an increase in capsular contracture with this position.

Submuscular

The implant is placed under the pectoralis major muscle after some release of the inferior muscular attachments. Most of the implant is positioned under the muscle.

This position creates the most natural-looking contour at the top of the breast in thin patients and those with very little breast tissue. There is a decreased chance of visible and palpable implant edges or rippling.

There may be more postoperative discomfort and a longer recovery period. The implants may appear high at first and take longer to drop. The 'Snoopy' deformity where breast tissue falls downwards and forwards away from the implant is more common with this placement.

Dual plane

The implant is placed partially beneath the pectoral muscle in the upper pole, where the implant edges tend to be most visible, while the lower half of the implant is in the subglandular plane.

This placement is best suited if you have insufficient tissue to cover the implant at the top of the breast but need the bottom of the implant to fully expand the lower half of the breast due to sag or a tight crease under the breast.

This position helps to minimise the rippling and edge effect in thin patients while avoiding abnormal contours in the lower half of the breast. It does, however, involve more complex surgery, which if not performed correctly may result in visible deformities when the pectoral muscles are contracted.



BREAST ANATOMY

THE FORM OF
THE HUMAN
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SHAPED BY ITS
FUNCTION.

Breasts are specialised organs located on the anterior chest wall. Medically referred to as mammary glands, their primary function is to provide milk for nutrition of the infant.

The female breast is more developed than the male breast. The interior of the female breast consists mostly of fatty and fibrous connective tissue, with an intricate network of glands and ducts that produce and carry milk to the nipple complex.

Breasts are universally regarded as objects of feminine beauty. Just as there is a considerable range of variation in facial features between individuals and different ethnic backgrounds, there are many variations in the appearance of the breast.



Development

Breasts are such an important part of the human anatomy that they take shape in the unborn embryo within a couple of months of conception. The tissue that will become the nipple, areola and the cells that will become the milk-producing glands and ducts form at this stage in the womb. In the final eight weeks of gestation the lobules (or milk-producing glands) mature. The influence of their mothers' hormones means both boy and girl babies are born with swollen breasts that can secrete colostrum but there is no anatomical difference between their breasts until puberty.

At puberty, the influence of oestrogen on girls' breasts, at first alone and then in combination with progesterone as the ovaries mature, gives rise to the development of the mature form of the female breast. This normally occurs over three or four years and is complete by around the age of 16.

The mature breast is a mass of glandular, fatty and fibrous tissues attached to the chest and underlying pectoral muscles by strands called Cooper's ligaments. Younger women's breasts are composed primarily of glandular tissue, with comparatively little fat, which makes them firmer than older women's.

Further changes occur with pregnancy and later with the loss of oestrogen at menopause when the breasts' composition is mostly fat and consequently very much influenced by fluctuations in weight.

Structure

The basic structure of the breast is composed of four elements: fat, connective tissue, lobules or glands, and milk ducts feeding into the areola and nipple complex. The pectoral muscle lies behind the breast structure and over the ribs.

The lobules, or milk glands, group together into larger units called lobes (also called alveoli). On average there are 15 to 20 lobes in each breast. The milk ducts carry the milk from the milk glands to the nipple. This system of lobules and ducts resembles several bunches of grapes: the glands are the grapes, the ducts are the stems.

Towards the nipple, each duct widens to form a sac called the ampulla – the cavity that stores the milk before it reaches the nipple surface.

The small nodes on the areola called the Montgomery glands produce oil that lubricates and protects the nipple complex.

All parts of the breast are influenced by hormones but the glandular tissue is the most sensitive. This is the part of the breast affected by fluctuations of the menstrual cycle, frequently becoming swollen and tender prior to menstruation when levels of oestrogen and progesterone are at their highest. After menopause the lobes shrink and breasts become softer and lose their support, making it easier to detect abnormalities in the tissue through examination or mammograms.



Breast shape and size

Breasts come in all sorts of shapes and sizes and nipples too can vary immensely in size, form and colouration. Some women have more glandular tissue in their breasts, some have less, some have more connective tissue, some more fat. Most of the size differences between women's breasts are due to fatty tissue.

The size and shape of women's breasts can also change over time due to pregnancy, breastfeeding and menopause. The only muscles in the breast are those involved in the erectile function of the nipple. The supporting semi-elastic Cooper's ligaments, like the skin of the breast, stretch over time due to gravity, creating a degree of droop. Pregnancy and breastfeeding can contribute to stretching; breasts are also affected by loss or gain in weight.

Women's breasts are rarely symmetrical. In most cases, one breast is usually slightly larger or smaller, higher or lower or of different shape to the other. Sometimes the base is narrow at the breast wall, which affects development. Hypoplastic or tubular breasts don't tend to have much glandular tissue and often have a large nipple complex.

Nipples can be flat or protruding and an areola can be confined to a small ring around the nipple or cover almost half of a small breast. Colour can range from pink to black and usually becomes larger and darker during pregnancy.

Sometimes the nipples are folded in on themselves. In most cases inverted nipples are functional for breastfeeding because the baby can suck them outwards. A very small percentage of people (less than six percent of men and women) have either additional nipples, which can occur along the foetal milk line (pre-birth area of breast development), or additional breast tissue that usually forms in the armpit.

Breast components and their function

THE BREAST CONSISTS OF:

LOBULES – milk glands that produce and supply milk

MILK DUCTS – small tubes that transfer milk from the lobules to the nipple

NIPPLE – the most anterior part of the breast

AREOLA – skin around the nipple that contains glands that help to lubricate the nipple during breastfeeding

FAT AND CONNECTIVE (FIBROUS) TISSUE

– provides the bulk for the breasts and supports the milk-producing areas of the breast



PLACEMENT OF BREAST IMPLANTS

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The placement of breast implants can have a significant impact on the final outcome of breast augmentation and therefore it requires individual consideration. It is important patients are well informed about the options available as well as the suitability of each option for their body type. Experienced surgeons base their implant placement decisions on factors such as the individual patient's quantity of breast tissue, natural breast size and symmetry, the dimension and shape of the chest wall, the amount of subcutaneous fat and the quality of breast skin.

Generally, there are three placement options: subglandular (in front of the muscle), submuscular (behind the muscle) and dual plane (partially under the muscle). There are pros and cons for each position.

SUBGLANDULAR

The subglandular pocket is created between the breast tissue and the pectoral muscle. This position resembles the plane of normal breast tissue and the implant is placed in front of the muscle. Sometimes the implant is covered by a thin membrane, the fascia, which lies on top of the muscle. This is called subfascial placement.

This position is suited to patients who have sufficient breast tissue to cover the top of the implant. This procedure is typically faster and may be more comfortable for the patient than submuscular placement. There is generally less post-operative pain and a shorter recovery period because the chest muscles have not been disturbed during surgery. The implant also tends to move more naturally in this position.

However, subglandular breast implants may be more visible, especially if the patient has little breast tissue, little body fat and thin skin. With subglandular implants, there tends to be more of a pronounced 'roundness' to the breasts, which may look less natural than those placed under the muscle, but this is a matter of personal preference.

Any rippling of the implant will be more noticeable in this position. With smooth implants, some studies have reported an increase in capsular contracture when placed over the muscle.

SUBMUSCULAR

The implant is placed under the pectoralis major muscle after some release of the inferior muscular attachments. Most of the implant is positioned under the muscle. This position can create a natural-looking contour at the top of the breast in thin patients and those with very little breast tissue. The implant is fully covered, which helps to camouflage the edges of the implant, as well as rippling. With this placement, there is less chance of capsular contracture occurring.

There may be more post-operative discomfort and a longer recovery period. The implants may appear high at first and take longer to 'drop'. When the patient contracts the pectoral muscles, the implant is squashed and may noticeably move upwards and outwards. The 'Snoopy' deformity where breast tissue falls downwards and away from the implant is more common with this placement.

DUAL PLANE

The implant is placed partially beneath the pectoral muscle in the upper pole, where the implant edges tend to be most visible, while the lower half of the implant is in the subglandular plane. This placement is best suited to patients who have insufficient tissue to cover the implant at the top of the breast but who need the bottom of the implant to fully expand the lower half of the breast due to sag or a tight crease under the breast.

This position minimises the rippling and edge effect in thin patients while avoiding abnormal contours in the lower half of the breast. Generally, this placement is able to achieve a more natural shape to the upper portion of the breast instead of the 'upper roundness' that can be more common with subglandular implants.

However, it involves more complex surgery, which if not performed correctly may result in visible deformities when the pectoral muscles are contracted.

