



### Introduction

Augmentation mammoplasty, breast enlargement or breast implant surgery is one of the most frequently performed breast procedures today and is an established surgical technique that aims to improve not only a woman's body image but also her self-esteem and general well being .

### Who chooses to have breast augmentation?

The main reasons for undergoing breast implant surgery are: to increase breast size (volume), to improve breast shape, to correct breast droop (ptosis) or to correct congenital deformity (asymmetry). Some women, usually after completion of their family and or breast feeding, may have found their breasts have naturally reduced in volume or become more 'empty' and they have noticed their breast appearance has deteriorated both in as well as out of clothing. Other, usually younger women who have not yet started a family, may wish to have breast enlargement because of lack of sufficient or symmetrical breast development.

### How do I make the first step?

Unless there is a significant underlying medical condition which has lead to a deformity of the breast or a post-operative deformity that requires correction, it is not usually possible to obtain augmentation mammoplasty on the NHS. Most breast augmentation is still therefore a privately funded procedure. Your General Practitioner (GP) or Breast Specialist should be able to give you advice and refer you to an appropriately trained and recognised surgeon. It is possible for women to approach a surgeon directly through a local private hospital or clinic.

### How do I select a surgeon?

Breast augmentation should only be performed by a Specialist Surgeon trained in the technique, whether their background is in the specialty of Plastic Surgery or as is increasingly the case, a Specialist Oncoplastic Breast Surgeon with a General Surgical background, whose usual clinical workload relates *almost entirely to women with breast disorders*. You should be able to easily check the qualifications and credentials of your surgeon and it is important to ask he/she whether their usual work involves surgery to the breast and about their specific experience with augmentation. You should also check that the surgeon is a member of a relevant specialty organisation. This includes the Association of Breast Surgeons of the British Association of Surgical Oncology (ABS of BASO) or the British Association of Plastic Reconstructive and Aesthetic Plastic Surgeons (BAPRAS).

### How do I go about finding more information on breast augmentation?

There is a wealth of information about breast augmentation in the media, books, magazines and the internet. Your surgeon should be able to give you advice about where best to effectively research the subject and how to obtain quality evidence and find the useful information.



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### Pre-operative evaluation

At your initial consultation, your consultant will discuss with you your reasons for seeking breast enlargement, what you hope to achieve and what your expectations are of the procedure.

You will be asked to fill in a questionnaire about your general and breast health. During the consultation you will be asked about any previous medical or surgical conditions, your fitness for general anaesthesia and any medications you take or allergies that you may have. An important part of your consultation will be an assessment of your breast health and risk of developing a serious breast disease in the future. The need for routine mammography (X-Rays) or a breast ultrasound (scan) will be discussed.

Following this a full physical examination will be performed (in the presence of a nurse if requested). After a general breast examination (to confirm everything is healthy) detailed measurements of your breasts and chest wall will be taken and recorded on a special anatomical form that is kept in your notes. In particular any asymmetry of the natural breast, chest or back must be established in order to plan the best possible method, size and type of implant to be used.

Your surgeon will point out to you any subtle abnormalities of shape, nipple height or position found. Even if barely noticeable pre-operatively, these differences will almost certainly be exaggerated once the breasts are enlarged.

Your surgeon should be able to demonstrate to you realistically what he/she hopes to achieve. This will involve a combination of drawing on your skin with a washable marker in front of a mirror and also taking some digital photographs.

You will be asked to sign a consent form prior to this for medical photography. Medical photographs are an important part of your assessment and treatment. The images taken will not show your face and do not include any other distinguishing features. They are an essential record of your assessment and post-operative progress and are stored on a secure password protected hospital computer on a further password protected database/file.

Following the initial consultation you will be given at least a 2 week “cooling off” period during which time you can conduct further research before making a final decision.

### **Specific considerations**

#### **Ptosis**

Ptosis (sagging) is the medical term for nipples that have dropped below their original position. There are various grades and in extreme cases may be at the bottom of the breast. Breast augmentation will only correct mild ptosis and **if the required nipple elevation is more than about 4cm then an ‘uplift’ or mastopexy procedure may be necessary.** Sometimes an ‘uplift’ is all that is required if a patient’s natural breast volume is satisfactory. **If additional volume** is also required then a **combined mastopexy-augmentation procedure** is indicated. This is a much more involved and complicated procedure. Your surgeon will advise you whether this might be necessary and if a **combined** or **staged approach** to your ptosis would be better.



## Choice of implant

*Careful implant and procedure selection are the keys to success in breast augmentation. As much as possible the surgeon will help to guide you as to the best choice for you. Remember that it is a highly individual choice and should be 'tailor-made' to your own natural shape, tissues and desires.*

### **Size**

It is crucial to establish whether a patient wishes to have her breasts enlarged in proportion to her natural frame (**proportionate** breast enlargement). This is true for the majority of women and it is far more unusual to wish to be 'oversized' (**disproportionate**). The actual volume of the implant is therefore not as important as making sure that the implant chosen has the correct height, width and projection for the chest wall it must sit on and the natural breast tissue that it must sit underneath. In other words choosing an implant requires very accurate measurements of the natural breast, prediction of the desired breast size and also taking into account the characteristics and measurements of a patient's chest wall, natural breast tissue and skin quality. As a rough guide, 125 to 150 mls of volume will increase the bra size by about 1 cup size.

### **Shape**

In certain individuals and depending on the technique used it may be very difficult to tell whether a round or anatomical (tear-drop) shaped has been used. Again only as a general rule, round implants tend to give a fuller appearance to the upper part of the breast (this can give a more artificial look) Anatomical shaped implants give a less pronounced (more natural) upper part of the breast and a heavier more natural lower part to the breast.

### **Type**

Most breast implants have an outer silicone shell but can be either saline-filled or silicone-filled. The stickiness of the silicone inside is known as its 'cohesive' properties. The higher the cohesion of the silicone, the firmer it feels but the better the shape the breast is maintained. If the implant should rupture, (which is less likely with more cohesive gels) then the more cohesive the silicone gel, the less likely it will leak out and adversely affect the shape of the breast. Modern highly cohesive implants when cut in half look like fruit pastilles or Turkish delight sliced in half. Your surgeon will discuss and reassure you about the safety of silicone but it is essential that you read through the information available on the following websites as part of your own research.

- [silicone-review.gov.uk](http://silicone-review.gov.uk);  
<http://www.mhra.gov.uk/home/groups/dtsbi/documents/websiteresources/con2032510.pdf>
- [newton.nap.edu/html/siliconesafety](http://newton.nap.edu/html/siliconesafety);  
<http://www.nap.edu/openbook.php?isbn=0309065321>
- [fda.gov; breastimplantsafety.org](http://fda.gov/breastimplantsafety.org)

### **Position**

The implant can be placed either directly under the breast (**subglandular** position) or under the muscle of chest wall (**subpectoral** position). Sub glandular augmentation produces a more natural ptosis of the breast but there must satisfactory breast tissue to cover and 'hide' the edges of the implant. Generally for women with very little existing breast tissue a sub-muscular approach is recommended. The '**Dual Plane**' approach makes best use of both techniques; the implant is submuscular in the upper breast (providing a 'smooth upper pole "take off"' and is subglandular in the lower pole (giving a more natural ptosis). Your surgeon will discuss the various advantages and disadvantages of each position and what would be the ideal approach for you.



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### The Operation

You must not smoke either before or after surgery ideally from 6-weeks before to 6-weeks after. Smokers have higher rates of all complications both in the short and long term.

The operation is performed under a general anaesthetic. Various approaches can be used to make the implant 'pocket' and for the placement of the implant. The commonest approach is by placing the scars underneath the breast in what is called the **inframammary position**. For highly cohesive silicone implants silicone implants this is the recommended approach; an exact pocket can be safely made using special illuminated instruments and the insertion of the implant is less likely to damage the implant. It is technically more difficult and unwise to squeeze these implants through small incisions in the armpit or around the nipple. Those other approaches are however adequate for saline implants although this is not an approach or an implant that I would routinely use.

There are three layers of dissolvable stitches inside to produce the neatest scar and the safest closure. There are no stitches to be removed after your operation. Following the procedure the wounds will be dressed with white adhesive strips called steristrips and over this a waterproof dressing. A special Microfoam™ adhesive tape dressing is normally used to support the breasts and should be kept on for at least 72hrs (ideally for 1 week). All dressings are water-resistant to allow you to shower and bath in the post-operative period but you should still try to keep the dressings as dry as possible.

An overnight stay is generally required and if the implants are being placed sub-pectorally then an additional nights stay in hospital maybe required for pain relief and if drains have been used (uncommon).

Intravenous antibiotics are given in a drip in the operating room and for the first 24hrs. You will be discharged with tablet antibiotics for a further 5 days as well as some standard painkillers and anti-inflammatories.

### Returning Home

You will be advised to restrict your arm movements for the first 3 days so as not to lift your arms above your head. On the fourth day you will be able to resume routine non strenuous activities and drive a car if it is not uncomfortable to do so. You should continue to avoid lifting your arms above shoulder height to prevent dislodgement or rotation of the implants.

A sports bra without under-wire should be worn as soon as possible after surgery and can be worn over the foam tapes. The bra should be worn 24/7 for at least 4-6 weeks

You will be seen for a review clinic appointment at 10-14 days after the procedure. By then any remaining dressings will be removed. Following the 6 week review appointment normal activities may be resumed safely.

Although not strictly necessary, I have found that my patients feel reassured to have an annual check up thereafter.



### Special Considerations

Pregnancy should preferably be avoided for 6-months after the procedure. It is normally possible to breast feed after breast augmentation but a small number of women will find that they are unable to do so or that the volume of milk has reduced. It should be remembered that some of these women may not have been able to breast feed even without an augmentation.

The antibiotics given during the procedure may make the oral contraceptive pill ineffective. Barrier contraception should therefore be used until an uninterrupted pill cycle is restarted.

### Specific Complications

#### **Haematoma**

Haematoma or bruising is the most common complication after most surgical procedure and occurs in less than 1% of patients undergoing augmentation mammoplasty. It normally appears within the first 48-hours and is associated with a sudden increase in breast volume with a tight feeling and discomfort. Small haematomas can be treated conservatively and will settle. However larger haematomas may need to be treated surgically with evacuation under anaesthetic.

#### **Infection**

The infection rate is extremely low at less than 1%, but if it occurs it usually requires implant removal for a period of time. This obviously produces a marked asymmetry if only one breast is affected. It is possible to place an implant subsequently, but there is an increased risk of infection with the second procedure.

#### **Nipple sensation changes**

At least a third of women report a temporary increased sensitivity of their nipples for the first 2-3 months after augmentation. This can be rather unpleasant but almost always settles down. Approximately 15% of all patients undergoing primary augmentation will have permanent alteration in sensation on one or both sides. This can involve the nipple, the areola (the brown skin surrounding the nipple), or indeed some of the skin on the breast itself. It may be less sensitive or totally numb. It would be considered permanent if it is still present after a year and even removing the implant will not bring it back.

#### **Capsular contracture**

A contracture is a tight fibrous capsule that the body forms around the breast implant causing it to become 'hard' and less natural looking. Approximately 1:4 women will develop some form of contracture around the implant. Whilst most women will not realise there is a thick capsule that has formed, occasionally the contracture produces sufficient discomfort or deformity that re-operation is required. Capsulotomy (division of the capsule), capsulectomy (removal of capsule) with re-insertion of implant are the common procedures although sometimes an entirely new pocket may need to be developed.

With the newer textured surfaces of modern implant and with meticulous technique, the incidence of severe capsular contracture appears to be falling- recent data suggests that re-operation rates with textured anatomical highly cohesive implants are as low as 10-15% in some centres.



### Specific Complications - continued

Various conservative treatments have been suggested including the use of antioxidants such as vitamin E, however good evidence is lacking and a certain percentage of patients will develop contracture no matter what they do or how many times they undergo revisional surgery.

#### **Rippling**

Unobvious ripples may appear in the skin on the outside and inside of the breast particularly when the breast is in a dependent position (eg when bending down). This is due to adherence of the breast and capsule to the underlying implant. It is more common with saline and the older low cohesive implants. Submuscular (under the muscle) rather than subglandular (under the breast) positioning reduces this complication and is recommended if there is little natural breast tissue to cover the implant.

#### **Palpable implants (edges, knuckling, folds, kinks)**

Occasionally the top or edge of the implant can be felt as a definite step or fold under the tissue. This is particularly true if there is only a small amount of overlying natural breast tissue and is a reason why a Submuscular placement is recommended for very small breasted women. Anatomical shaped implants with a less pronounced upper pole “take off” than round prostheses may also produce less upper edge palpability as well as a more natural shape.

#### **Deflation / Replacement**

With saline implants (rarely used) there is the risk of deflation and even with silicone implants no woman should regard her initial augmentation as necessarily being life long. It is possible that at some stage the implants will have to be adjusted or replaced; whether this be for capsular contracture or cosmetic adjustments. Deflation (true rupture) or gel “bleed” (the name given to the slow diffusion of silicone out of its covering) may occur although this is rare with the newer highly cohesive fillers. If there is a loss of integrity in the outer shell then the capsule around the implant prevents leakage of silicone into the breast tissue itself. Even with this so called “intracapsular” rupture the jelly baby like consistency of the silicone should prevent any major change to the overall shape of the augmented breast.

There is no truth to the commonly held assertion that breast implants require changing at 10-15yrs. Older style implants were not guaranteed by the companies beyond this time and since replacement surgery was often required around this time, the concept of a 10yr life-span for implants gained credibility. The message should be that if there is no problem then there is no need to have further surgery!

#### **Scarring**

The risk of overgrowth of a scar is known as over granulation or Keloid scarring. If the scar is hidden under the breast this is less of a problem but in some patients it may be quite troublesome. The scar is at its reddest up to 3 months but usually settles to a fine white line by 6-12 months.

Keeping the scars taped with a thin strip of low allergy tape such as Micropore™, for 3-9 months can help reduce stretching of the scar whilst it matures, and hence help to keep it as imperceptible as possible. If you have a tendency to form thickened or raised scars there are silicone gels that can be used which might be beneficial.



### Specific Complications – continued

#### **The “Double Bubble” phenomenon.**

This unexpected result can occasionally occur leaving a less than optimal cosmetic result. It is more common with pre-existing ptosis (sagging), and with shaped implants placed under the muscle. It is also more common where the crease under the breast is very well defined; the condensed tissue (fascia) fails to expand naturally over the lower part of the implant and still pulls in slightly under the natural breast tissue but above the lowest part of the implant. If it occurs it should improve spontaneously over a number of months but if still present by a year may require revisional surgery.

#### **Granulomas**

It is possible that small lumps may appear over the implant due to the reaction of the body to the ‘foreign’ silicone. Any lump occurring in the breast whether it has been augmented or not should still be appropriately investigated.

### Subsequent Breast Health Issues

Any new lump in the breast, whether it has been augmented or not, requires full examination and investigation by a specialist breast surgeon. As long as the specialist is aware of the presence of implants then appropriate and effective treatment can still be carried out. It is actually thought to be easier to feel changes in the breast tissue after augmentation.

Mammography in the augmented breast is slightly different and requires special views. A patient should inform her mammographer that there are implants present so that these proper studies can be done. It is slightly easier to perform mammographic views on a subpectoral implant than on a subglandular implant.

**Prior to augmentation if the woman is of a more mature age or there are any significant risk factors mammography may be performed as a screening investigation.**

Breast biopsies or needle tests can still be performed after augmentation but can be technically more demanding and require the use of an ultrasound scan at the same time. This will prevent any damage to the underlying implant.



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**Important Myths**

If you are considering augmentation mammoplasty the following points are worth investigating to your own satisfaction:

1. There is no good evidence that silicone implants cause cancer.
2. There is no good evidence that the presence of breast implants delays cancer detection, provided the appropriate investigations are performed.
3. There is no good evidence that silicone implants cause any form of autoimmune disease or rheumatic disorders.
4. There is no evidence that silicone is found in a mother's breast milk
5. The silicone gel of an implant does not spread throughout the body, even if the implant is broken. The gel can be forced into the surrounding local tissues but even if this occurs, it will only produce a non-specific local inflammatory response.

**Finally.....**

Providing you have a **a realistic expectation** of what can and can't be achieved with surgery, the level of satisfaction from breast augmentation is very high and few patients regret their decision to proceed. You should remember however that implants are for life. The cosmetic appearance of your breasts will continue to alter as your natural breast tissues change. There is always the possibility of requiring further surgery in the future (about 10-20%) even if results are initially excellent.

*This information is for general guidance only and represents the views and opinions of Mr Iain M Brown Consultant Oncoplastic Breast Surgeon. It should in no way be regarded as either definitive or representing the views of any other surgeon, doctor or institution.*