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## INFORMATION BROCHURE

# BREAST AUGMENTATION



## DEFINITION, GOALS, PRINCIPLES

Breast augmentation (or augmentation mammoplasty) is a surgical procedure which aims to enhance breast volume and shape to improve a patient's body image and proportions. It may be done for reconstructive or aesthetic (cosmetic) purposes. The exact procedure is tailored to meet the patient's individual needs. It is one of the most performed procedures in cosmetic surgery, with a very high satisfaction rate.

## Candidates

There is no "typical" breast augmentation patient, and women choose to have the procedure for many different reasons.

Ideal candidates for this type of surgery include the following:

- Women with small breasts due to insufficiently developed gland during puberty
- Women who have experienced breast involution (especially after pregnancy, weight loss, hormonal imbalances, etc.)
- Women who have breasts that appear to be "empty", usually following significant weight loss or pregnancy
- Patients with breast asymmetry or malformities (e.g. tuberous breasts)
- Women who simply desire a more proportioned figure to feel more comfortable in their bodies and to improve their self-esteem

*Breast size can have a significant impact on a woman's psychological health and femininity. This can sometimes profoundly affect her self-confidence.*

A breast augmentation procedure can be performed at any age from 18 years old. Minorities are usually not considered suitable for cosmetic breast augmentation, except in cases of severe hypotrophy or in the context of anomalies such as tuberous breasts or breast agenesis (radical absence of any breast development).

## Health insurance

Breast augmentation for purely cosmetic purposes is not covered by health insurance. Only in the case of breast agenesis can a patient sometimes hope for insurance participation.

## TECHNIQUES

Currently, there are three main techniques for performing breast augmentation:

1. Implant-based augmentation
2. Autologous augmentation by fat transfer (lipofilling)
3. Composite augmentation (which combines these last two techniques)

## Implant-based breast augmentation

### *The implants*

Breast implants consist of a shell (always made of silicone) and a filler (the content inside the shell). Implants are differentiated by:

- Their shell surface: smooth or textured (rough)
  - Smooth implants have the advantage of being less palpable and give the softest feeling because they are not as thick. They also tend to move around more freely within the implant pocket, providing similar motion to that of a natural breast.
  - Textured implants develop scar tissue to stick in place, making them advantageously less likely to migrate and rotate inside of the breast, which presents a major advantage when using anatomic implants.
  - Some implants can also be polyurethane-covered. Polyurethane “integrates” into the surrounding tissue also providing a form of grip which can be of interest for some patients. The advantages of these implants are their very low rate of capsular contracture and of rotation. The safety of polyurethane is now clearly accepted. However, these implants also present a certain number of disadvantages which must also be considered.

*It is currently recommended to use a smooth or very slightly textured (micro-textured) implant. This is because of a possible association between textured shell breast implants and the development of Anaplastic Large Cell Lymphoma (ALCL).*

- Their filler: saline, silicone gel, or light silicone gel (B-lite)
  - Saline implants contain salt-water which is completely harmless. Should there be an implant leakage, a saline implant will collapse, and the saline will be absorbed and naturally expelled by the body. Saline implants are either pre-filled at the factory or inflated by the surgeon

during the operation, allowing some intraoperative volume adaptation. They have the disadvantage of feeling less natural than silicone implants, of generating more visible folds and ripples, and have the risk of deflation.

- Silicone gel implants are increasingly being used. They are durable and provide the breast with a more natural feel, close to that of its natural consistency. Silicone gels are more or less cohesive. Cohesiveness has the advantage of limiting the leakage and spread of silicone into the surrounding tissue in the event of a rupture.
  - Recently, a new gel is available to surgeons, they are the B-lite implants. These have the particularity of having a lighter gel, due to the incorporation of small air bubbles inside of it. Therefore, at equivalent volume, these implants are approximately 30% lighter than traditional silicone implants.
- Their volume: variable depending on the desired result
  - Their shape: round or anatomic
    - Round breast implants have a tendency to make breasts appear fuller. Higher profile options can achieve more breast projection. Because round implants are the same shape all over, there is less concern about them rotating out of place.
    - Anatomic (or “teardrop”) implants produce a more natural breast appearance. Smooth textured anatomic implants are equipped with an additional fixation system that reduces the risk of rotation (Motiva TrueFix).



There are constant developments aiming to improve implant quality: shell waterproofing and solidity, palpatory and visual impressions, lifespan and tolerance. There may therefore be additional options available once you consult. As of today, all implants available in

Switzerland are subject to precise and rigorous standards: CE marking (European Community) and SwissMedic authorization.

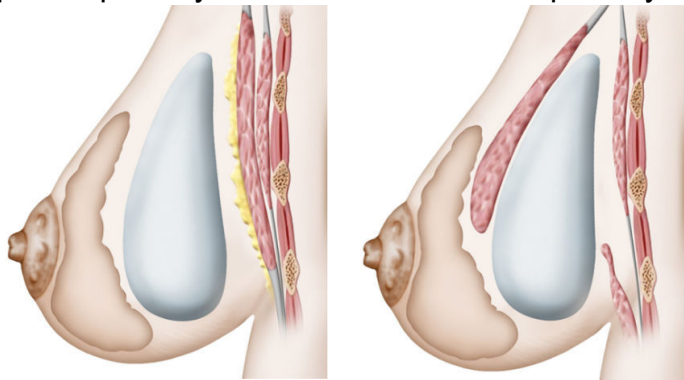
*With the wide variety of implants that exist, the choice of the type of implant will be determined after discussion with your surgeon who will advise you on the most judicious choice in your particular case.*

### **Placement of implants and incision site**

The method of inserting and position breast implants vary based on the type of breast implant, degree of enlargement desired, your particular anatomy and patient-surgeon preference. Different techniques have their respective advantages and disadvantages and you and your plastic surgeon will discuss which implant placement and incision options are appropriate for your desired outcome.

Placement of implants: Implants can be inserted into three possible pockets:

- Subglandular: the implants are placed directly behind the breast tissue, in front of the pectoral muscles
- Subpectoral: the implants are placed deeper, behind the pectoral muscle
- Dual plane (a combination of the two planes): the implants are placed partially behind the muscle and partially in front of it

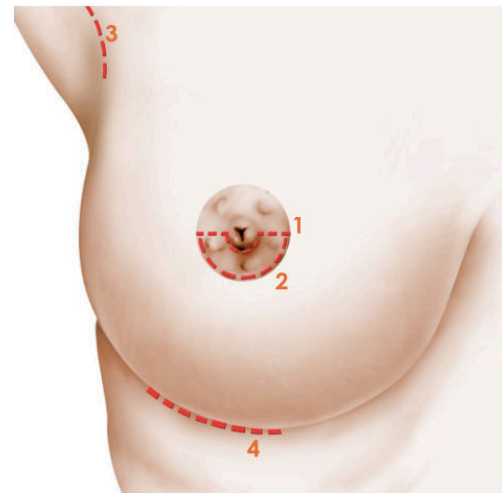


SUBGLANDULAR IMPLANT

SUBPECTORAL IMPLANT

Incision site: There are several possible "routes of entry" to place the implants in the pockets. The incisions are made in inconspicuous areas (junction areas or natural folds) to minimize visible scarring:

- Peri-areolar: incisions are made along the lower edge of the areola circumference, or horizontally, bypassing the nipple from below (1 and 2)
- Trans-axillary: incision in the armpit (3)
- Inframammary: incision in the fold under the breast (4)



### **Lifespan of implants**

Although some patients keep their implants for several decades without major modifications, the placement of breast implants should not be regarded as something definitive for life. Implants are under stress and are subject to wearing, so a patient with implants can expect to one day have to replace her prostheses to maintain their effect and quality. Although the average lifespan of an implant is estimated to be around 10-15 years, it is impossible to precisely estimate their life expectancy and it can therefore in no way be guaranteed. It should be noted, however, that new generation implants have made great progress in terms of resistance and reliability. From the tenth year, it will be

necessary to question the necessity of changing prostheses if there is a change in consistency.

Each choice of implant, location, and scar has its advantages and disadvantages. All these different possibilities will be explained to you by your surgeon, who will guide you on the best choice according to your wishes, your state of health and your anatomy.

### **Autologous augmentation by fat transfer (lipofilling)**

This technique can increase your breast volume moderately (maximum of one cup size difference per session) using your own fat and without the use of any foreign material (e.g. implants). Ideally, this technique is about harmonizing a poorly proportioned body, reducing any excess fat and increasing breast volume. It involves liposuction of the parts with any excess fat (abdomen, thighs, flanks, etc.) and reinjection of the fat obtained into the breast. After an initial phase of resorption (3 months) the reinjected fat which survives will remain in the breast tissue for life. Depending on the desired volume, several sessions may be necessary.

Compared to implant-based augmentation, this technique has the following advantages:

- No prosthesis, so no need to change it if it wears out
- A very natural result, visually and to the touch
- Minimal scars, of only a few millimeters
- Great flexibility to deal with asymmetries
- Harmonization of the silhouette (a benefit that is comparable to liposuction)

Its disadvantages are:

- Maximum half a cup or a cup size increase per session
- Result variability depending on the resorption rate (around 40%)
- Requires a good donor area
- Requires postoperative radiological monitoring

### **Composite breast augmentation**

A composite breast augmentation combines the two preceding techniques (implant and coverage of the prostheses by lipofilling). It is done in only one operation. Using this technique, we can achieve a significant volume increase, while preserving the natural appearance. Most of the volume and projection (upwards and forwards) of the breast will be provided by the implant. The fat will serve to camouflage the implant and give a much more natural look, both visually and to the touch. This procedure is particularly recommended for thin women, whose implants are most likely to be visible.

### **Complementary procedures**

Certain complementary procedures may also be considered during a breast augmentation. For example, patients with breast ptosis (sagging breast with skin distension and areolas that are too low) may also benefit from a breast lift ("mastopexy"). The skin resection during a breast lift will result in larger scars (around the areola  $\pm$  vertical  $\pm$  horizontal in the inframammary fold). Other complementary gestures include liposuction of the axillary region (bulges or axillary ectopic gland) or a change in the size of the nipple or the areola.

## **BEFORE THE OPERATION**

### **Consultation**

A consultation and a careful physical examination will be carried out by your surgeon to note all important parameters that need to be taken into account before the operation. Your surgeon will ask about your medical conditions, current and previous treatments, drug allergies, pregnancies and breastfeeding, and will also examine your height, weight, thoracic and breast morphology, mammary gland, skin quality, fat distribution, musculature, etc.

Then, depending on your anatomical context, your surgeon's habits and preferences, and your expressed wishes, an operation strategy will be agreed upon. The location of the scars, the type and size of the implants as well as their positioning in relation to the muscle will be discussed and thus predetermined. Your surgeon will also explain likely outcomes and any risks or potential complications (see below). Finally, you will be asked to sign a consent form to ensure that you fully understand the procedure, its risks and its potential complications.

## **Preparation**

In preparation for the intervention, a preoperative blood test will be done. You will also have a consultation with the anesthesiologist, at the latest 48 hours before the operation. Additionally, you will be prescribed a radiological breast assessment (mammography, ultrasound).

You should avoid taking aspirin within 10 days of the operation because it can increase bleeding. You should also stop smoking and stop any recreational drugs.

Moreover, you will likely be asked to have an empty stomach (not to eat or drink anything) 6 hours before the procedure.

*Smoking : Scientific data is currently unanimous on the harmful effects of smoking in the weeks surrounding surgery. These effects are multiple and can lead to major scarring complications, surgical failures and promote implant infection. For procedures involving skin manipulation such as abdominoplasty, breast surgeries or neck and face lifts, tobacco can also be the cause of serious skin complications. Apart from the risks directly related to the surgical procedure, tobacco can be responsible for respiratory or cardiac complications during anesthesia. With this in mind, the community of plastic surgeons requests complete smoking cessation at least one month before the operation and during the healing phase (usually 15 days after the operation). This also applies to electronic cigarettes.*

## **THE OPERATION**

### **Type of stay**

The type of stay may be outpatient (ambulatory), with a discharge the same day of the surgery after a few hours of monitoring, or inpatient (with a 24h hospitalisation). In the case of a hospitalisation, entry is in the morning of the operation (or sometimes the afternoon of the preceding day) and discharge is planned the next day.

### **Type of anesthesia**

General anesthesia is usually performed, where you are completely asleep during the operation. In some cases, it is possible to have local anesthesia and be sedated using intravenous tranquilizers. The choice of anesthesia technique that will be used will be the result of a discussion between you, your surgeon and the anesthesiologist.

### **Duration of the operation**

The operation usually lasts 1-2 hours.

### **Drains, dressings and bandages**

During the operation, a small drain can be put in place depending on the surgeon's habits and local conditions. It is a device designed to remove any blood or liquid that may collect around implants.

At the end of the operation, your breasts will be wrapped in gauze dressings which will be removed after a few days and replaced by a lighter dressing. You will also have an elastic bandage or support bra to minimize swelling and support your breasts as they heal.

### **Sutures**

Most of the time, the sutures are internal and absorbable. Otherwise, they will be removed after a few days.

### **Postoperative effects**

It is possible to feel pain the first few days following the intervention, especially if the implants are large or if they are placed behind the muscles. This pain can be easily controlled with analgesics, but the patient may still feel a chest tightness. Swelling, bruising and difficulty raising the arms will also be common at first.

### **Recovery time**

The patient can return to work 3 days to 2 weeks after the operation and can resume physical activity after 4 to 6 weeks.

## **THE RESULT**

The intervention will have improved the volume and shape of the breasts, with usually very inconspicuous scarring. Regaining a more feminine silhouette can have a very beneficial psychological effect.

While a breast augmentation yields larger breasts right away, a period of 2 to 3 months is necessary to assess the final result, the time for swelling to subside, the skin to stretch, the scars to heal and for the prostheses to stabilize.

The goal of this surgery is to improve, not to achieve perfection. If your wishes are realistic, you should be very satisfied with the result.

### **Stability of the result**

Regardless of the lifespan of the prostheses, the breast volume will remain stable in the long term, except in the case of significant weight change and pregnancy. With regards to the shape and "hold" of the breasts, enlarged breasts will, like natural breasts, undergo the effects

of gravity and aging at varying rates depending on patient age, skin quality and implant volume.

### **Result imperfections**

Some imperfections can occasionally be encountered:

- Residual volume asymmetry, incompletely corrected despite implants of different sizes
- Firmness with insufficient flexibility and mobility (especially with large implants)
- A somewhat artificial appearance, especially in very thin patients, where the edges of the prosthesis become visible, particularly in the upper segment
- Palpation of the implants is also possible, especially when the thickness of the tissue covering the prosthesis (skin + fat + gland) is low. Direct palpation of the implant, or palpation of folds, is more frequent in thin patients, with large-volume implants, with saline implants and when placed in the pre-pectoral pocket.
- Worsening of breast ptosis may be observed, especially when using large implants

*If you are unsatisfied with your result, some of these imperfections may benefit from surgical revision after a few months.*

## **POSSIBLE COMPLICATIONS**

Breast augmentation is a surgical intervention, so it involves risks and potential complications as do all operations, no matter how small. Fortunately, serious complications are rare with this operation. However, sometimes unavoidable complications will occur, and they may either be related to the anesthesia and to the surgical procedure.

### **Complications related to anesthesia**

The anesthesiologist will inform the patient of the anesthetic risks during the compulsory preoperative consultation. You should be aware that

anesthesia induces certain reactions in the body that are sometimes unpredictable and more or less easy to control. However, having a competent anesthesiologist in hand and a true surgical context (recovery room, possibility of resuscitation), the risks of complications are statistically very low. It should be kept in mind that the techniques, anesthetics and monitoring methods have made immense progress over the last thirty years, offering optimal safety, especially when the intervention is performed in an elective setting and in a healthy person.

### **Complications related to the surgical procedure**

These risks are limited when your plastic surgeon is qualified and competent and has had adequate training for the specific operation. In practice, the vast majority of breast augmentations do not experience complications, the postoperative effects are elementary, and patients are fully satisfied with their results. However, every surgical procedure is never completely free from possible complications.

#### *Complications inherent to breast surgery*

- Hematoma: The accumulation of blood around the prosthesis is an early complication that can occur during the first hours. If it is important, a return to the operating room is needed to evacuate the blood and to stop the bleeding.
- Serous effusion: An accumulation of lymphatic fluid around the prosthesis is a fairly frequent phenomenon in the immediately after surgery. It is often associated with edema causing a transient increase in breast volume. The swelling will gradually disappear naturally. Away from the surgery, however, a seroma must imperatively lead you to consult your surgeon.
- Infection: Rare after this type of surgery. If the infection does not respond to antibiotic treatment, then a surgical revision will be needed to drain the infection and remove the implant for a few months (the time required before a new prosthesis can be put in place without any risk). Subclinical infection is also possible, where there is an infection without any obvious symptoms or

clinical signs. It can occur several years after the implants are placed. The development of micro-abscesses is also another possible infectious entity and can develop on a suture point. However, micro-abscesses resolve quickly after removal of the offending thread and subsequent local care. A final infectious complication is toxic staphylococcal shock. This is an extremely rare but brutal syndrome of generalized infectious disease.

- Skin necrosis: It can result from a lack of tissue oxygenation due to insufficient blood supply in an area caused by either excessive tension, a hematoma, an infection or smoking. This is a very rare but feared complication because, in the extreme, it can locally expose the prosthesis by opening up the sutures. A revision surgery is often required, sometimes with the need to temporarily remove the implant.
- Poor wound healing: It may happen that the scars, on the long run, do not become as discreet as expected. They may be enlarged, retractile, adherent, hyper or hypopigmented, hypertrophic, or even sometimes, although exceptionally, form keloids.
- Altered breast sensitivity: Is frequent during the first months but end up regressing most of the time. Rarely, some degree of dysesthesia (decreased or exaggerated sensitivity to touch) may persist, especially on the areola and nipple.
- Galactorrhea / milk effusions: Very rare cases of unexplained postoperative hormonal stimulation have been reported, resulting in the secretion of milk ("galactorrhea") with sometimes a collection of fluid around the prosthesis.
- Pneumothorax: Rare, it will benefit from specific treatment.

#### *Complications specific to implants*

- Formation of "folds" or "ripples": Since implants are made up of flexible material, it is possible that their envelope ripples and that these folds are perceptible to the touch, or even visible under the skin in certain positions. This phenomenon, which is somewhat more frequent with saline than with silicone implants, occurs

mainly in thin patients. A lipofilling intervention can sometimes be proposed to "camouflage" the implant in this case.

- Capsular contracture: The natural response of the human body in the presence of any foreign material is to isolate it from the surrounding tissues by forming a fibrous capsule around it, called "periprosthetic capsule". When this happens, it is not obvious, and the breast remains soft and flexible. However, if the reaction is exaggerated, which is the case for some patients, the fibrous capsule thickens, retracts and compresses the implant. Most patients are still not too troubled by this as the breast still looks satisfactory despite a firm sensation. However, if the contracture is more intense, the breast can become unacceptably firm, tender and may take on a spherical and eccentric shape. Although capsular contracture is sometimes secondary to a hematoma or an infection, it is most of the time due to random organic reactions, so its occurrence remains unpredictable. The important progress that has been made recently in implant design (cohesive gel, shell texture) and surgical techniques has significantly reduced the rate of capsular contractures and their intensity. If necessary, capsular contracture can be corrected by releasing the capsule (capsulotomy) or removing it (capsulectomy). Polyurethane-coated implants can be a solution for recurrent capsular contractures.
- Rupture: Implants have an average lifespan of 10 years. Overtime, the shell wears and can lose its tightness, become porous, acquire cracks and a leak can occur. Most of the time a leak is not a serious event, it may be inconsequential and go completely unnoticed or patients may notice a change in the size, shape or consistency of the implant. Rarely, leaks may cause other problems such as capsular contractures, which is why a ruptured implant such be replaced. If a leak occurs, the consequence will depend on the type of filler. A leak in a saline implant will cause a deflation (partial or total, rapid or slow). A leak in a silicone gel implant will not deflate and the silicone gel will usually remain in the capsule around the implant. Because of the better "cohesiveness" of current silicone

gels, rarely will the silicone penetrate out of the capsule into the surrounding tissue in the case of a leak. If it does, however, it can form a siliconoma. An intervention will be needed to change the implant in case of rupture. Any major trauma to the breast can potentially result in implant rupture or the diffusion of an otherwise contained leak into the surrounding tissue.

- Misposition, displacement, rotation: A bad positioning, or secondary displacement of the implants is possible and can sometimes justify a surgical correction. Although relatively rare in practice, the pivoting of an "anatomical" prosthesis remains theoretically possible and can affect the aesthetic result.
- Chest wall deformities: In rare cases, implants that have developed fibrous capsules and have been left in place for a long time can "imprint" on the surrounding tissue, leaving a deformation of the chest wall once the implant is removed. This remains difficult to correct.
- Late peri-prosthetic seroma: Although very rare, late effusions, especially if associated with other clinical breast abnormalities, require an ultrasound-guided breast puncture by a radiologist for analysis. In the event of a recurrent breast lumps or effusions, surgical exploration will allow analysis of the periprosthetic capsule in order to rule out Anaplastic Large Cell Lymphoma

associated with breast implants (LAGC-AIM), which remains very exceptional.

### **MONITORING**

It is essential to undergo the weekly and monthly check-ups scheduled by your surgeon after your breast augmentation. Then, a monitoring consultation, specific to implants, is recommended every two to three years. It is essential to consult your surgeon as soon as a modification of one or both breasts is detected or after severe trauma.

If needed, breast ultrasound is the test of choice to examine the integrity of the prosthesis. It is non-irradiating and very accurate. An ultrasound



should be performed at the slightest clinical doubt and for certain patients, systematically once a year.

Moreover, changing your prosthetic will only be considered in the event of a clinical or radiological abnormality or at your personal request. It is not systematic after a certain time, that is to say, there is no expiry date for implants.

Finally, having implants does not preclude the usual gynecological and breast cancer screening medical surveillance. Having implants does not require any additional examinations but it is essential to specify to your various doctors involved that you have breast implants.

### **MORE INFORMATION**

#### **Pregnancy and breastfeeding**

Pregnancy is possible without any risk for either the mother or the child after placing breast implants, but it is recommended to wait at least six months after the operation. As for breastfeeding, it is also not dangerous and is still possible in most cases.

#### **Implants and autoimmune diseases**

The large number of important international scientific studies that have been conducted on this subject have unanimously demonstrated that the occurrence of autoimmune diseases in patients with implants (in particular silicone) is not greater than in the general female population.

#### **Implants and cancer**

Until recently, science has suggested that implants, including those made of silicone, do not increase the risk of developing breast cancer. This is still accurate for the most frequent type of breast cancer (adenocarcinoma), the incidence of which is not increased by the placement of a breast prosthesis. Breast implant-associated anaplastic large cell lymphoma (BIA-ALCL) is a very exceptional clinical entity

which has been observed in France since 2011. The FDA believes that women with breast implants that have textured surfaces have a very low but increased risk of developing BIA-ALCL. However, further research is needed to understand the relationship between the condition and breast implants. BIA-ALCL should only be suspected in a patient with evocative clinical signs (recurrent peri-prosthetic effusion, redness, breast enlargement, lumps). In this case, a breast assessment must be carried out to specify any lesions and rule out BIA-ALCL. In nearly 90% of cases, BIA-ALCL has a very good prognosis and is usually cured with appropriate surgical treatment combining the removal of the implant and the peri-prosthetic capsule. However, in about 10% of cases, BIA-ALCL is more serious and requires chemotherapy and / or radiotherapy with a medical team specialized in the treatment of lymphomas.

#### **Implants and cancer screening**

During breast cancer screening, clinical examination and palpation may be disturbed in a patient with implants, especially in the case of periprosthetic capsule or siliconoma. Also, breast implants are radiopaque and can interfere with mammograms. You must therefore always specify that you have breast implants and certain specialized radiological techniques (particular incidences, digital images, ultrasound, MRI, etc.) may be used instead and depending on the case.

In the event of a diagnostic doubt about breast cancer, it should be noted that the presence of prostheses may prompt a more invasive exploration to obtain diagnostic certainty.

*The information provided in this brochure is in addition to the discussion you will have with your surgeon during your consultation. We recommend you keep this document, read it over and take the time to reflect upon it. If any questions arise, we are available to discuss them during your consultation, by telephone, or even on the day of the intervention.*



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