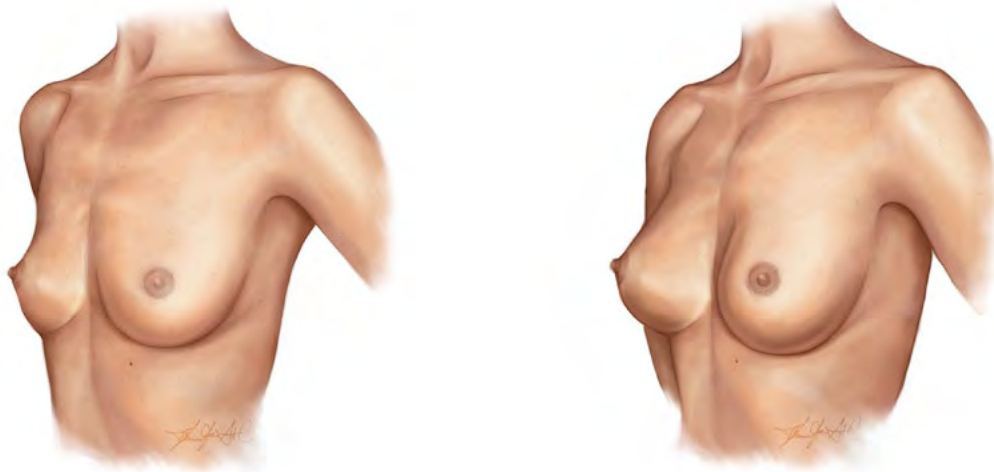




# Breast Augmentation

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*I meet women every day who desire more attractive breasts. I have operated on thousands of women over the years.*

*I saw many patients with truly unsatisfactory outcomes from surgery done in the 60s 70s and 80s, back when I started, in 1989. The results of this operation have improved dramatically in the time since.*

There is little doubt that breast size and shape is an important part of attractiveness. Human behavior and the subconscious motivations behind our sense of well-being and attractiveness are studied extensively by psychologists, anthropologists, and others. Though we may wish to transcend the idea of our physical appearance playing a role in our happiness and how we appear to others, biology is difficult to overcome.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3210352/>

*Plastic surgery can play a role in enhancing your body image.*



*The typical woman having breast augmentation is either in her early twenties and has very little breast development, or is in her thirties and has lost breast volume after pregnancies and breast feeding periods. We have seen woman for augmentation well into their sixties, however.*

## **History**

Breast augmentation with implants has been done since the 1960s by plastic surgeons. The operation is far more sophisticated and successful today than it was a generation ago, and continues to evolve and improve.

In the 1950's some women were treated outside North America, by the injection of materials such as liquid silicone or paraffin. Results were often disastrous. They experienced painful cyst formation, drainage of infected material, and distortion of the breast shape.

Surgeons in North America began searching for more reliable and safer ways of increasing breast size. In 1962 an implant with a silicone rubber outer layer and filled with silicone gel was made to simulate the feel of normal breast tissue. This was a revolutionary development. Soon after, saline filled implants also appeared. Instead of being pre-filled at the factory with silicone, they were filled at the time of surgery with sterile saltwater.

Instead of in the breast gland itself, the implant is placed under the breast, leaving the breast, nipple, and areola intact, as much as possible.

We can think of the breast as roughly a cone-shaped part of the body. The base of the breast is widened, and its projection is increased by adding the implant to the base.

The operation was gradually refined, and some modifications were introduced, but in principle it is much the same today.

Controversy has swirled around the operation, the patients, and plastic surgeons ever since.





## *Sizing*

- There have been many methods used to determine breast implant size, but many were surprisingly dependent on the surgeon's sense of balance and esthetics, rather than the Patient's.
- In our practice, the patient determines the size, with our help.
- We have our patient put on a standard bra and trial a series of sizing devices in the bra. The patient's chest dimensions are used to determine whether her desires are possible, and the volume (cc's) and dimensions are used to decide which "profile" of implant to use. (standard – mod profile; narrower – mod plus; or very narrow – high profile).
- Please read the following for more information: <http://drgelfant.com/sizing-for-breast-ugmentation>



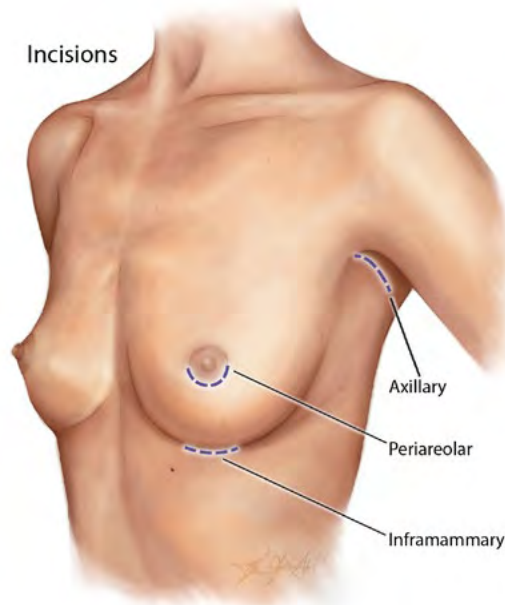
Here is a link to Mentor medical, our usual supplier:

<https://breastimplantsbymentor.net/en-CA/home>

## *How the Operation is Done*

### INCISION OPTIONS

Three incision locations are possible. Each has advantages and disadvantages. Our main aim is to keep the scar as inconspicuous as possible, while maintaining patient safety and excellent results.

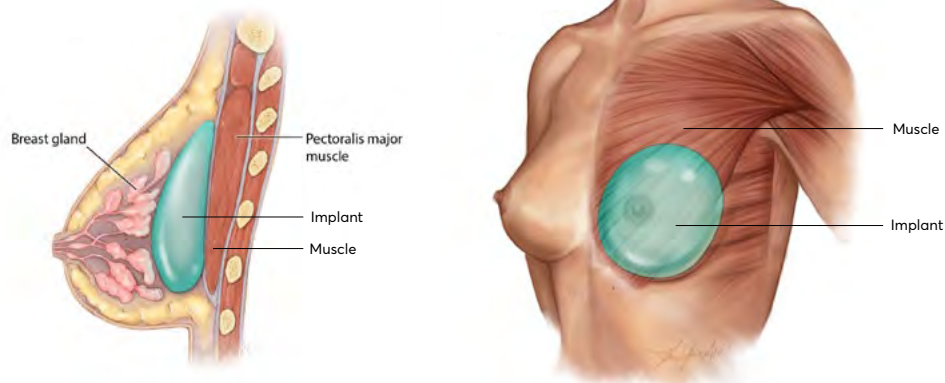


- Most plastic surgeons use the incision under the breast.
- The incision along the edge of the areola has fallen out of favour in recent years. It is associated with higher risk of sensation loss and of possible low-level bacterial contamination from bacteria living in the nipple ducts. This can lead to capsular contracture. In fact, many plastic surgeons now routinely cover the nipples with a plastic cover during surgery.
- The armpit (axillary) approach *became much more controlled and accurate with endoscopic surgery, beginning in the 1990s. We embraced the technique and subsequently have used this approach on well over 2000 patients*, first with saline and more recently with silicone gel implants. It is our preferred approach. Certain conditions relating to pre-surgery breast shape make us opt for a traditional under the breast approach.

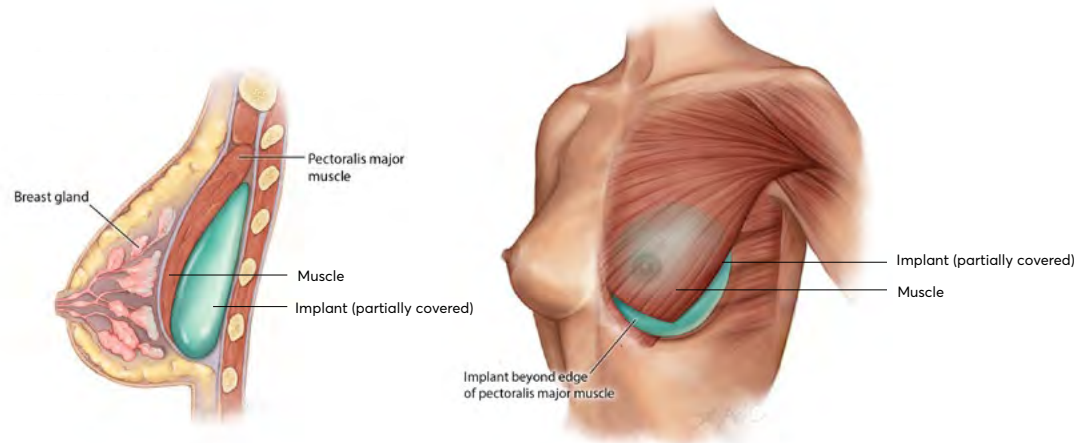
### ABOVE OR "BELOW" THE MUSCLE

The implant can be located either above or what is known as "under the muscle" which usually means the implant is partially covered by the pec major muscle.

*Subglandular, or "above the muscle"*



*(Partial) submuscular placement or "under the muscle"*



Division of the lower pec major fibres, to a greater or lesser extent, is nearly always done in sub-muscular implant (dual plane approach). There are variations of this technique which may be discussed in your consultation.

Sub-muscular augmentation is the single most significant way to reduce the risk of capsular contracture (hardness), the most common problem after augmentation (see page 8). Because of the clearly reduced risk of contracture, implants in our practice are always in the sub-pectoral location. **Always.** There is also a reduction of visibility and rippling as well as a more natural shape.

*With early post op range of motion exercises (beginning on the day of surgery)*

[https://www.youtube.com/watch?time\\_continue=13&v=kG6EAUMO\\_hQ](https://www.youtube.com/watch?time_continue=13&v=kG6EAUMO_hQ) most patients experience minimal pain and rapid return to normal activities, even with routine placement of implants under the muscle.



## SALINE VS. SILICONE?

There is no perfect implant, and the choice of what implant should be used is not as simple as many surgeons or patients think. Saline, although it is used less frequently, still accounts for a significant number of implants used.

### Saline

- Saline is the most natural fill substance, because our bodies are 70% saline.
- Leakage of saline implants are easy to detect, without any special testing. If a leak develops, the implant deflates quickly, and the leak is obvious in the mirror.
- Leaks with Mentor saline implants are extremely rare in our practice. We have thousands of saline implants which were implanted over the past 30 years and only a tiny proportion have leaked.
- Rippling and visibility as well as being able to feel the implant is saline's down-side.
- Some women prefer saline, because they just don't trust the safety of silicone.

### Silicone

- Silicone gel offers the most natural feeling implant.
- This is most relevant when a patient has only a very small amount of breast tissue of her own.
- The greater proportion of the final outcome is implant and the less is natural breast, the more benefit there is to using silicone vs saline.

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## ***Post-op Care***

***We usually see our patient the first working day after surgery and check carefully for any problems, discuss how she is feeling, and review any concerns she may have.*** There are usually no sutures (stitches) to be removed but we have a second visit at about one week for a checkup. Barring any problems or concerns, we usually have another visit six weeks later and at six months. More frequent visits are scheduled as needed.



## ***Breast Feeding***

*The operation does not interfere with the function of the breast gland, especially when implants are placed under the muscle.* As long as there is sensation to the nipple (it is rare for complete loss of sensation to occur) breast feeding is possible. Many, many of our patients have gone on to success in breast feeding. However, not all new mothers are successful at nursing even without implants, so no guarantees can be made.

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## ***Mammography***

### **MAMMOGRAMS**

Routine pre-operative mammograms are recommended for patients who are forty or older. After surgery, the current recommendation is for a mammogram every two years.

Implants placed under the muscle give a better mammogram picture than what was possible with above the muscle implants, but an extra image is done by the mammographer to get the best possible assessment.

*See: <http://www.bccancer.bc.ca/screening/breast/>*

When you have implants, you will require a requisition from your doctor and a visit to a radiology office. Otherwise things are unchanged.

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## ***Risks of Surgery***

*Complications are fortunately few, and most when treated result in a satisfactory outcome. Like any surgery, problems do occasionally occur.*

### **HEMATOMA**

As with any surgery, breast augmentation can occasionally result in **bleeding**. Because a rather large space is created to allow placement of the implant, if post-operative bleeding occurs under the surface, it can fill this space, cause painful swelling, and require urgent treatment. This usually requires a return to the operating room, and this may require admission to hospital. A Hematoma is quite rare, in our practice occurring about once in every 400 or so patients.



## INFECTION

Infection is highly unusual, but it can occur. If it does, removal of the implant may be required followed by re-augmentation several months later when everything is completely settled.

## LOSS OF FEELING

Loss of feeling or reduced feeling of the breast and nipple occurs much less commonly than it used to. Many years ago it was seen in 15% or more of patients. Today it is seen in less than 5% in our practice. It is usually temporary. Although feeling usually gradually returns, it may not, or it may result in increased sensitivity for several months.

## BREAST PAIN

Breast pain occasionally occurs even years after surgery. This is usually short periods of pain radiating through the breast and into the nipple. This often happens during the first few weeks and is almost never long lasting. Sometimes it happens many years later and may be related to a tight-fitting bra putting pressure on the nerves running into the breast. At other times it may be pressure or stretch on the nerves when a patient is sleeping in a position causing pressure. Most times there just doesn't seem to be a good explanation. It is highly unusual for this to be persistent.

## CAPSULAR CONTRACTURE

When a foreign object, whether it is a sliver, a piece of glass, shrapnel, or a breast implant, is placed under the surface of the body, it is recognized by the body as "foreign", and if it is too large to be digested, our bodies react by forming a fibrous wall around it. This wall, which we call a capsule, is very much like scar, and may be thin and soft, or tough and thick.

If the capsule contracts around the implant and the space for the implant becomes tight, (a little like "shrink wrap") the implant comes under pressure, is forced into a more rounded shape, and feels firm or even hard. **This is called capsular contracture.** It is by far the most common problem for plastic surgeons and for our patients.

We are unable to explain why one patient will get contractures and another will not. Some patients will develop a contracture on one side and not on the other. We cannot predict who will get it. It is not a major health risk but may cause enough firmness to be uncomfortable or even painful and the more severe, the less natural the breasts will appear and feel.

Years ago, capsular contracture was very common. Up to a quarter of patients developed it within the first three years, and it became even more common long term. Re-operation long term was very common. Surprisingly few patients were troubled enough to want to have their implants removed for treatment of contracture.





*Things are better today. The risk of capsular contracture may be 1-2% or even less, over many years, when implants are routinely placed "under the muscle".*

Many solutions were tried with little success. In earlier days of breast augmentation, surgeons used cortisone and other medications in and around the implant to reduce scar formation, but this gave rise to significant problems such as implant exposure through thinned out skin. Antibiotics were placed in and around the implant on the theory that unrecognized low grade infection, or at least contamination with normal skin bacteria, caused the contractures. However, this brought little or no success. Many surgeons, and their patients believed that contracture could be warded off by daily massage-like exercises. The idea was to maintain a large, relaxed space around the implant.

*Studies show massage is ineffective.*

### **Sub-muscular placement**

In the early 1980's some surgeons began to place the implant beneath both the breast and the underlying pectoralis major muscle. Because the muscles are being used constantly, as the theory goes, the implant is constantly being moved about within the space, and therefore even without having to think about the exercises, the patient is doing them in her daily life. There is also the feeling that muscle has so much nutrition and defense against infection that placing the implant in this location has a better chance if contamination by normal breast bacteria is felt to be a cause.

Some surgeons dispute the value of under the muscle placement of the implants, but many now believe this to be the single best way to reduce the chances of developing symptomatic capsular contracture to as little as 1% of all augmentation patients.

However, even placement under the muscle results in occasional contractures, so the search for a reliable solution continues.

### **Textured and shaped implants**

Textured implants with the same silicone rubber shell and silicone gel fill, but with a thin outer layer of foam rubber covering were developed.

Because the foam bonded to the body a little like Velcro®, meaning they didn't float around in the capsule unlike smooth implants, they could be shaped in so-called anatomical, teardrop, or natural shape, in addition to traditional round shape. They also seemed reliably to reduce the contracture rate to 1% or less, for the first five to seven years after surgery, but concerns were raised about the long term health risks of the foam as the body broke it down, and the implants (Meme, or Replicon) were withdrawn from the North American market in 1991.

Instead, the rough surface of the foam was imitated with textured surface implants. Made with a firmer silicone ("cohesive" or "memory" gel), these implants were felt to be semi-solid rather than semi-liquid and spread of silicone in the event of a leak, was felt to be minimal. The lay public has referred to them as "gummy bear" implants because of their resemblance to the candy with the same name.



This implant met with some success although opinions vary as to how reliably it resulted in soft breasts, but a major problem came with their use: "ALCL". They are no longer used.

### ALCL (Anaplastic Large Cell Lymphoma)

There is now a well-established connection between textured, and *only textured* implants and a rare form of lymphoma. (At the time of writing) there are now over 700 cases of this and over 20 deaths. ALCL seems to be linked only to the use of textured implants, and **Allergan** implants in particular, although research is ongoing. *In May 2019, Health Canada withdrew Allergan's approval to distribute textured implants.*

<http://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2017/65224a-eng.php>

Both plastic surgery professional organizations and federal regulatory agencies (The FDA in the US and HPB Canada) are working together to develop a clearer understanding of ALCL.

Breast augmentation with smooth walled implants is safe from this problem. Dr. Gelfant has only used smooth walled implants since 1991.

### WHAT ABOUT THE SILICONE "SCARE" AND BREAST IMPLANT ILLNESS

In 1992 the FDA in the USA and Health Canada took silicone gel filled implants off the market except for investigational purposes. That "moratorium" was lifted in 2006 and silicone filled implants have been available ever since.

#### Several concerns which prompted the 1992 Moratorium:

- At the time, there was worry there might be an increase to risk of cancer.
- There is now proof they do not increase breast cancer.
- Possible link to immune related diseases.
- Leakage of the implants.

#### Breast cancer

We know that breast cancer occurs in about one out of every nine women in North America today. It is clear from excellent studies, including those done at University of Calgary, that implants do not increase the risk of breast cancer. Nor do they result in significant compromises in its treatment, when it is found.

#### Immune disease

Connective tissue diseases are illnesses, the most common of which is rheumatoid arthritis, in which the patient's own immune system attacks itself. In rheumatoid arthritis, for example, problems are mainly in the joints, but may also involve other body systems. These autoimmune diseases affect about 2% of all women.



This means some patients with implants will develop autoimmune illnesses, and this should be in the same proportion as women without implants. Since the 1992 – 2006 moratorium on gel filled implants research has continued to show the unlikelihood of a link between the implants and these illnesses. However, these conclusions are based on statistics, and it remains possible, although unlikely, that a very small number of patients develop immune related illness from implants.

### Leaking implants

The third concern relates to leakage of the implants. Careful study, especially from the University of Toronto has shown that gel filled implants used between approximately 1972 and 1987, leaked much earlier and at a much higher rate than was previously thought. The main reason the implants were taken off the market by the FDA was that Dow Corning knew there was a higher risk of leakage than they told plastic surgeons.

*Implants now in use have silicone which is “cohesive” (Allergan’s term) or “Memory gel” (Johnson and Johnson’s Mentor corp. term), meaning that it tends to remain in place even with a break in the outer covering, so there is less concern for the consequences of a leak.*

Most of the time leaks and rupture of implants are “silent”, meaning there are no symptoms or signs. The FDA in the USA were suggesting MRI testing three years after surgery and intermittently thereafter, to check for leaks. They now are aligned with our longstanding recommendation:

- Canadian authorities suggest no special tests unless the patient is experiencing symptoms or signs of concern.
- If a doctor’s examination suggests suspicion of leakage may be a concern, an ultrasound or mammogram should be the first step.
- An MRI may be in order if the ultrasound or mammogram is inconclusive.
- However even MRIs may give false results, and reoperation may be best if tests raise questions about the implant integrity.

Keep in mind, the presence of a leak does not seem to cause illness, nor does it seem to cause very significant silicone amounts to circulate elsewhere in the body. *There is no urgency if a leak is suspected.*

If a leak is detected, most surgeons and most patients feel it is best they be removed and replaced. Manufacturers guarantee against this and will cover the cost of new implants (for life) as well as the operating room costs for a limited time.

### “Breast Implant Illness”

Today there is a renewed controversy about the possible risks of breast implants, fueled largely by unsubstantiated and unscientific statements about “Breast implant illness” in lay press and on the internet.

*There is little to no good scientific evidence a real entity of Breast implant illness exists.*



## ***Why is This Operation so Controversial?***

***We attach great emotional and sexual importance to breasts in most cultures. They are part of what are referred to as secondary sexual characteristics, and a major part of how women define themselves as women.***

In its early days the operation had a very high rate of re-operation for often less than satisfactory results. There is also the tendency of some women **and their surgeons** to over-do augmentation. This resulted in some patients with excessively large and unnaturally hard breasts, and the operation became the subject of scorn, ridicule and negative moral judgment.

*There are still people who believe breast augmentation should not be done and that it is “mutilating surgery” that puts women at “unreasonable risk.”*

This doesn't need to be so. *When carefully considered and for the right patient, breast augmentation is a wonderful way to make a woman feel feminine and whole.*

- Many patients prior to surgery have little or no breast volume and are embarrassed by their chest anatomy.
- Some have never developed and feel like they have “the chest of a boy”.
- Others who may have had moderate breasts in their teens and twenties have lost nearly everything after pregnancy and breast feeding.

*Why would we, as a society, not doubt the motives of the woman who wants a breast reconstruction after cancer surgery but look down upon the woman who has lost all her sense of femininity after she has born children or who never had any?*

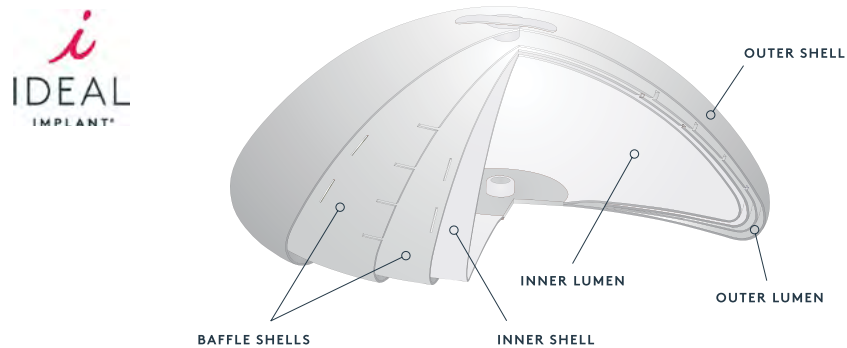
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## ***Alternative Fill Substances and Other Forms of Augmentation***

Research continues in the attempt to find a more ideal implant. To try to make rippling less of a problem, and to make mammograms more accurate, soy oil filled implants were tried. This was a short-lived idea...within a few years the “tri-lucent” implant was withdrawn and women with the implant were urged to have them removed.

### THE IDEAL IMPLANT®

This implant is filled only with saltwater (saline). It was designed to cause less rippling and have a better feel than traditional saline filled implants because its internal structure may prevent excessive fluid movement and "sloshing". It was approved in November 2014 and reached the market in a limited release in September 2015. (Disclosure: Dr. Gelfant is an investor in the Ideal Implant® corporation).



- As of late 2018 we have experience with over 100 cases with the Ideal the implant.

*Experience has led us to believe it is not as satisfactory as we had hoped, and we are no longer recommending its use.*

### FAT GRAFTING

Fat from the same patient can be taken out by liposuction and then injected in multiple tiny amounts through the breast. **Autogenous fat grafting** has become a mainstream procedure. Sometimes this was done with preparation by use of a vacuum bra (the Brava® bra – no longer available) for 6 weeks before, and sometimes it may be done along with the use of an implant (composite augmentation). We have done several dozen cases of grafting along with breast lift to achieve upper pole fullness without the use of an implant, and with some lasting success. But fat augmenting the breast only without other simultaneous procedures is limited in usefulness.

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### Age Restriction

Health Canada and the FDA in the USA state "**breast augmentation with silicone implants is appropriate for women age 22 and older**". For many years we interpreted this as a hard restriction.

However, it is acceptable to use silicone implants for a woman under age 22 if they will provide a superior result and when the patient is capable of understanding the pros and cons of their use. The surgeon can use the devices "off label", under these circumstances. Discuss this with your surgeon.



## Summary

*Breast augmentation with implants has been done for over fifty years. The last three decades have brought improvements in safety, reliability, and the esthetic outcome of surgery. Recovery time has become shorter, pain dramatically lessened, and return to an active life much quicker.*

The addition of fat grafting as a possible option and the development of new implant choices for the future mean an already very good operation will become even better.

## Meet the Doctor

***Benjamin Gelfant, MD FRCSC***

*Dr Gelfant is a member of the Canadian Society for Aesthetic (Cosmetic) Plastic Surgery (CSAPS), as well as the American Society of Plastic Surgeons (ASPS) and the American Society for Aesthetic Plastic Surgery (ASAPS).*

More at [drgelfant.com](http://drgelfant.com)



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