

Lipomodelling in Breast Surgery Information Sheet

Lipomodelling is a procedure in which localised deposits of fat are removed from areas where they are not needed and replaced where there is a soft tissue deficit. Other terms to describe this technique are 'Fat Transfer', 'Coleman Fat Transfer', 'Micro-fat Grafting' and 'Lipofilling'. In breast surgery, this technique can be used for congenital breast problems, in reconstructed breasts after breast cancer or for breasts with implants to recontour the breast surface. It can be an effective tool to disguise the edges or rippling of existing implants or to reduce deficits in breast volume. The use of lipomodelling to completely enhance or augment a breast is controversial and only suitable for a very small number of patients.

This information sheet is a general guide for patients undergoing lipomodelling into their breasts under the care of Mr Paul Harris and should help clarify some questions that you may have.

It is important to recognise that there are many factors affecting your individual operation, your recovery and the long-term result. These include your overall health, previous surgery, any bleeding tendencies that you have and your healing capabilities, some of which will be affected by smoking, alcohol and various medications. Issues specific to you need to be discussed further and are not covered here. Please feel free to ask Mr Harris any additional questions before you sign the consent form.

What should I consider before undergoing lipomodelling?

It is essential that you have realistic expectations about what the procedure can do for you. While lipomodelling to your breasts can enhance their appearance and consequently your self-confidence, it won't necessarily match your ideal. So before you decide to have surgery, please think carefully about your expectations and discuss them with Mr Harris.

The best candidates for lipomodelling are those with easily outlined areas of defect with good quality, elastic skin. Your age is not a major consideration; however, older patients may have diminished skin elasticity and may not achieve the same results as a younger patient with tighter skin. A larger defect may require more than one session and the possibility of a second or even third lipofilling procedure will be discussed.

How do I prepare for surgery?

Pre-operatively no medicine containing aspirin should be taken for one week. If you smoke you should cut down at least three weeks before surgery and stop completely three days before surgery to try and minimise postoperative complications and fat transfer loss, which are more common in smokers.

When should I stop eating or drinking before surgery?

If your operation is in the morning, you will be asked to have nothing to eat or drink from midnight the night before. If it is in the afternoon, then you should have nothing to eat or drink from 7:00am and you should have somebody to drive you to the hospital. You can drink small amounts of water up to two hours before your operation.

What will happen when I arrive at the hospital?

You will be admitted on the day of surgery, and stay until the early evening. You will need a friend or relative to accompany you home after your stay in the hospital.

When you arrive in hospital, you will be seen by a nurse who will talk to you about your general health and examine you to make sure that you are fit for surgery. They may also arrange for you to have some blood tests, a heart trace (ECG) and a chest X-ray especially if you are to have a general anaesthetic. An anaesthetist will discuss the anaesthetic with you. Mr Harris will also come and discuss your surgery in detail with you. He may take some photographs and draw some markings to guide the surgery.

You will then be asked to sign a consent form. Make sure that you are fully informed of and fully understand all the consequences of the surgery prior to signing this. It does not take any of your normal rights away, it merely states that Mr Harris has explained the operation to you and that you have had an opportunity to discuss the anaesthesia with an anaesthetist.

What type of anaesthetic will be used?

For very small defects, lipomodelling can be performed under a local anaesthetic, so you will be awake through the entire operation. This is usually in combination with some intravenous sedation that is always administered by an anaesthetist. For larger areas of modelling, however, general anaesthetic is routinely used, again administered by a fully qualified anaesthetist that regularly works with Mr Harris.

What takes place during the surgery?

Through a tiny incision, a narrow tube or cannula is inserted and used to carefully vacuum the fat layer that lies deep beneath the skin. The cannula is moved through the fat layer, breaking up the fat cells and suctioning them out by a vacuum pump or a large syringe. Once Mr Harris has harvested enough fat tissue, it is usually placed in a centrifuge and spun to separate out the live fat cells. The centrifuge produces three layers in the syringe. The upper layer is the oily substance, extracted from the fat, the middle layer is the concentrated lipoaspirate material (cells), and the bottom layer is the layer containing blood products and cell debris. Only the middle layer is used for the lipofilling. Alternative methods of separating out the live (or viable) cells are also available including filtration and enzymatic techniques.

Once the viable cells are separated out, they are injected in different layers of the breast. The injection technique is critical to achieve permanent survival of the new cells within the breast. Hence they are injected in fine, long threads and only a limited amount of fat can be injected at one operation.

These newly injected cells can survive for up to 48 hours without being in direct contact with blood vessels to provide the oxygen and nutrition they need to survive. In the meantime new blood vessels need to form to supply their longer term needs. This process is strongly inhibited in smokers.

How long will the surgery take?

The time required to perform your operation varies, depending on the size of the area to be modelled, the amount of fat being removed, and the type of anaesthetic used. However, the usual operation time is one to two hours. Lipofilling can be combined with other types of surgery that add to the length of the procedure. For example, in cases of breast reconstruction the combination of fat transfer and nipple reconstruction is frequently scheduled. Private medical insurance companies recognise this combination and assign a single procedure code for this.

What can I expect after my surgery?

After surgery, you will likely experience some fluid drainage from the incisions. Rarely, a small drainage tube may be inserted beneath the skin from where the fat was harvested (removed) for a couple of days to prevent fluid build-up. To control swelling and to help your skin better fit its new contours, you should wear a sports-type supportive bra for two weeks both day and night. Mr Harris may also prescribe antibiotics to prevent infection.

How long will it take for life to return to normal?

Healing should be relatively quick. You may feel well immediately or need a day or two to recover and you should be back at work within a couple of days. The stitches are removed or dissolve on their own within the first week to ten days. Strenuous activity should be avoided for about a month as your body continues to heal. Although most of the bruising and swelling usually disappears within a week, some swelling may remain for three months or more.

Mr Harris will schedule a follow-up visit to determine whether any additional procedures are needed. If you have any unusual symptoms between visits - for example, heavy bleeding, swelling or pain - or any questions about what you can and cannot do, please call Mr Harris' secretary on 0207 927 6520.

How will I feel about my new look?

You will see a noticeable difference quite soon after surgery. However, the contour change will become more quantifiable when any swelling has subsided. After about three months the final contour will be visible. If your expectations are realistic, you should be very pleased with the results of your surgery.

Will the injected cells remain?

The process of liposuction is traumatic, which means some of the cells will not survive after they have been suctioned, centrifuged and replaced back in your body. This will vary from person to person and is especially affected by smoking. It may sometimes be necessary to repeat the procedure after a few months if any defect remains. Some cells may be reabsorbed into the body over time and again this will vary considerably between individuals.

The cells that survive long term provide both volume and stimulation to the recipient area. From the research that has taken place to date, it appears that some of the cells are relatively simple 'fat cells' and hence provide soft tissue volume for contour change. However, some cells are known as 'Adipocyte-derived Regenerative Cells' (ADRCs), which are more like primitive stem cells. They appear to revitalise the tissue into which they are injected. This can improve the quality of the overlying skin, which can be particularly beneficial in areas of previous radiotherapy.

The number of fat cells that survive permanently can vary hugely (0 – 70%) because of factors like smoking, the technique used and previous radiotherapy. However, on the whole lipomodelling is not an efficient method of using fat. For general calculation, if Mr Harris suctions 100 mls of fat from elsewhere on the body, this will produce 40 – 50 mls of viable fat cells, of which only about 15 – 20 mls will survive long term. Hence much greater volumes of fat are harvested than are needed in the breast.

Does lipomodelling carry any risk?

Lipomodelling is normally safe particularly when being performed by a fully trained and accredited plastic surgeon like Mr Paul Harris. Although larger volumes of fat are harvested than are needed,

compared to liposuction for cosmetic reasons, relatively small amounts of fat are removed overall and the risks are minimal.

The scars from liposuction harvest are small and strategically placed to be hidden from view. The bruising may be extensive and will take several weeks to dissipate. The skin surface may be slightly irregular and a compression garment can be used to reduce the chances of this. Numbness and pigmentation changes may occur but these should settle after several months.

The area within the breast that has been injected with fat will be bruised, swollen and inflamed. This should settle over the first few days. If the swelling and redness worsens then this could be an infection developing and you should contact Mr Harris or one of his team if this happens. If the lipomodelling has been performed over a breast implant, there is a theoretical risk that the implant could be damaged by the injection cannulae. This is exceptionally rare because the cannulae are blunt and as long as Mr Harris knows there is an implant present, then he will inject parallel to the surface of the implant to avoid penetration.

Sometimes, inadequate volume transfer takes place and additional lipomodelling may be recommended. Calcification (calcium build-up in tissues) of fat droplets is the most common longer term complication (1.5 –10% of cases). This can be noted on scans (ultrasound, mammogram or MRIs) and may lead to a recommendation for a biopsy of these areas. It is therefore important to tell the radiography team undertaking the scans that you have had previous lipomodelling. In some cases Mr Harris may recommend a scan three months after the lipomodelling to be used as a baseline for future comparison.

Does lipomodelling have any cancer risk?

Lipomodelling is often used in breast reconstruction following breast cancer treatment but it can be difficult to establish if the lipomodelling itself brings any additional cancer risk. The viable cells that are injected contain both fat cells and ADRCs, as described above. Whilst these cells are unlikely to create cancer, there is a theoretical risk that they could stimulate breast cancer cells to grow more rapidly. This potential has been shown with cells grown in the laboratory but never in patients.

It is important to recognise that after a mastectomy, all the breast cells should have been removed even though some of the skin that covers the breast is maintained. It is therefore currently accepted that lipomodelling of a breast reconstruction after a mastectomy is safe.

If patients have previously had a localised removal of a breast cancer (lumpectomy, wide local excision), then the injection of fat cells can be used to fill out a subsequent defect in the remaining breast. Hence the theoretical risk of cancer promotion from the lipomodelling exists in these patients. Although the evidence to date suggests this is not the case, long term high-quality studies have not been undertaken on these patients as yet. Therefore, Mr Harris will only offer this treatment within a strict follow up protocol. This protocol has been established as part of a multi-disciplinary approach between breast and plastic surgeons at The Royal Marsden Hospital. Mr Harris would be happy to discuss this in more detail with you if appropriate.

Can lipomodelling be used for breast augmentation as an alternative to implants?

Some surgeons around the world have used large volume fat transfer as an alternative to cosmetic breast implants. This is appealing to many patients who may wish to reduce fat deposits on their abdomen or thighs and achieve larger breasts without the use of foreign material. However, there are several issues that need to be fully understood before going ahead with such surgery, and it is important to differentiate marketing hype from safe surgery.

Firstly, it is clear from the numbers discussed above that lipomodelling is not an efficient method of volume transfer. Therefore, very large volumes of fat need to be harvested to achieve a noticeable enhancement in overall breast volume. There is also a limitation to how much fat can safely be transferred at one time and hence several episodes of fat transfer, two to three months apart, are usually required. This can be very expensive because of the hospital and anaesthetic costs. Even with several treatments, most surgeons have found that it is difficult to achieve a result that is equivalent to breast implants.

Breast suction devices (such as the BRAVA® system) have been used in combination with lipomodelling to improve the volume enhancement. These devices are heavily promoted on the internet without good scientific evidence to support their use. They can also be extremely time consuming for patients and most reputable surgeons in the UK do not feel these devices offers reliable results.

Finally, there have been no long term (10 or 15 years) properly designed studies analysing the results of large volume lipomodelling in normal breasts. The theoretical stimulation of breast cancer cells exists and there will almost certainly be future abnormal scans (in the form of scattered calcification) as a result of the extensive lipomodelling. This will lead to the need for subsequent biopsies of the breast and the increased anxiety associated with such tests. For these reasons, Mr Harris does not routinely offer lipomodelling as an alternative to breast implants for those patients seeking a cosmetic breast enhancement.

The Practice

Mr Harris practices from 5 Devonshire Place in Central London, where he also performs minor outpatient procedures. Assisted by his regular anaesthetist, he operates at The London Clinic (<http://www.thelondonclinic.com>) and at The Royal Marsden Hospital, Fulham (<http://www.royalmarsden.nhs.uk>). He also consults and operates at Parkside Hospital, Wimbledon (<http://www.parkside-hospital.co.uk>). All provide a full range of medical support services.

Main correspondence, appointments and administration

Many patients are referred by their General Practitioner or Breast Cancer Surgeon. You may, however, arrange your own appointment with Mr Harris, without referral.

Please refer all correspondence to:

5 Devonshire Place
London
W1G 6HL

For appointments please contact:

appointments@paulharrisplasticsurgeon.co.uk, tel: 020 7927 6520

For information and payments advice:

admin@paulharrisplasticsurgeon.co.uk, tel: 020 7927 6521

For nursing support please contact:

nurse@paulharrisplasticsurgeon.co.uk, tel: 074 9622 8878