

## Mr Michael Cadier

BA MA (Oxon) MBBS (London) MS (Soton), FRCSEd, FRCS (Plast) President of BAAPS 2014-2016  
Consultant in Plastic, Reconstructive & Aesthetic Surgery

### Liposuction

#### Liposuction - General Information.

Liposuction is a cosmetic surgical procedure for removing excess fat from areas around the body and by so doing give a more aesthetically pleasing shape. It is the commonest cosmetic plastic surgical procedure undertaken. It is not however a treatment for obesity, nor does it treat cellulite. The most common areas where liposuction is used are in the tummy, the thighs, the buttocks and in the chin region. Although it may be undertaken alone it is also frequently used as an adjunct to other procedures including breast reduction, abdominoplasty and facelift surgery.

#### What types of Liposuction techniques are available?

There are many types of liposuction techniques that have been described and the information regarding these is often quite confusing for the patient. Liposuction can be described by the infiltration that is used or by the accessories that may be employed to facilitate the process.

When first described, liposuction was performed by aspirating the fat directly without using any pre-infiltration – this was termed “dry” liposuction. This was associated with significant bruising and blood loss and frequently the results were sub-optimal. Infiltration was added the aim being to put adrenaline into the area to cause blood vessel constriction and so reduce bleeding. The infiltration also contains local anaesthetic either to numb the area (if being

performed under local anaesthetic) or to provide post-operative pain relief (if performed under a general anaesthetic). This was called “wet” liposuction. It was then realized that by adding more infiltration that a smoother result could be obtained. In “superwet” liposuction the volume of fluid added into the area is about the same as the amount of fat aspirated from the area. If very large quantities of infiltration are used the technique is called “tumescent” liposuction. Most surgeons use “superwet” liposuction.

Liposuction is usually performed by applying suction via a tube connected to the liposuction cannula. This is termed SAL (Suction Assisted Liposuction). The cannula may be attached to a device that vibrates and makes the procedure easier. This is termed PAL (Pneumatically Assisted Liposuction). Water Assisted Liposuction (WAL) – Bodyjet - uses pulses of saline emitted from the liposuction cannula to aid in the liposuction.

Over the past 25 years ultrasound probes have been attached to the cannula with the intention of emulsifying the fat at the time of the liposuction. A form of UAL that has gained popularity in the last few years is VASER (Vibration Amplification of Sound Energy at Resonance). VASER is said to have more control on the amount of ultrasound delivered and thus reduce downtime and the risks associated with UAL. UAL (Ultrasound Assisted Liposuction) has also been used to heat up the skin from underneath in an attempt to cause skin tightening. Similarly laser probes have been used with the same aim in mind (Laser Assisted Liposuction). Unfortunately both ultrasound and laser assisted techniques are associated with significantly higher rates of adverse effects, including damage to the skin, and as a result of this Mr Cadier no longer uses these techniques in his practice.

With the development of finer and specialized cannulas and an increased understanding of the liposuction technique the term liposculpture has been introduced to describe the current day technique of liposuction. Additionally, over the past few years newer fat transfer techniques have been developed that enable fat taken from one part of the body to be reinserted into another area. This can be used to correct indentations or used to enhance areas where increased volumes are required. This technique is dependent on the fat that is moved surviving in its new location, this in turn depending on factors such as the volume of

fat being moved, and the area into which it is being moved and the general health and age of the patient. Smaller volumes in a healthy and younger patient are more successful.

### **Specific Areas**

Liposuction can be undertaken in many areas of the body. Some of these are described below.

#### **Submental.**

Submental liposuction is usually used as an adjunct to a lower face and neck lift. When undertaken alone there is a risk of leaving excess skin and it is therefore only appropriate in a younger patient with good skin tone. In all cases some fat needs to be left to reduce the risk of skin irregularities, and deep liposuction is avoided to reduce the risk of mandibular nerve palsy.

#### **Male chest enlargement - Gynecomastia.**

Liposuction alone may correct gynecomastia however frequently the breast bed may need to be surgically excised. Please see the separate information sheet.

#### **Abdomen.**

In the abdomen excess fat can readily be removed by liposuction, however it will not tighten the skin and if there is already some laxity then this be made worse. Sometimes an abdominoplasty (or tummy tuck) is more suitable. In most tummy tuck (abdominoplasty) procedures minor liposuction is used to fine tune the result. More extensive liposuction (removing over 500mls of fat) may be required with abdominoplasties though this does increase the length of the operation and potential wound healing problems. Often in large volume abdominal liposuction life style modification through diet and exercise is required and may even be a better alternative.

### **Back, flanks and arms.**

Liposuction can help reshape these areas and, in the flanks, can help improve the waistline. In the back and arms the effect is more limited as the fat layer is thinner and especially in the arms remnant skin laxity may be a concern. In some cases skin removal may be preferable in the flanks with a lower body lift, in the back a bra strap excision and in the arms an arm reduction procedure.

### **Thighs.**

In the thighs, one of the commonest problems is the presence of saddle bags on the outer aspect. These not only distort the thigh shape but also make the legs look short. In the inner upper thighs fat excess may cause chafing as well as being un-aesthetic. These areas are relatively straightforward to correct.

### **Calves and ankles**

Calves and ankles are less common places to treat however the results can be very dramatic. Prolonged swelling is not uncommon and may necessitate a longer of pressure garment therapy. Around the ankle the treatment has to be more guarded as there are many important structures, and also there is a small risk of skin damage which in the worst-case scenario can lead to ulcer formation.

### **Pre-operative advice.**

Prior to surgery patients will be seen for a consultation where examination and discussion will be undertaken to explain the technique used and what should be a realistic expectation of liposuction. Patients should also have a steady weight, as liposuction is not a weight loss procedure, it is a shape changing technique. In order to optimize the result and minimize the risks a number of factors should be considered. Smokers have a higher risk of developing complications. It is therefore advised that they should refrain from smoking for ideally four

weeks prior to, and four weeks following surgery. Aspirin and related anti-inflammatories should be avoided for a similar time period.

It is recommended that patients on the combined oral contraceptive, and hormone replacement therapy, should stop these for four weeks prior to, and four weeks after surgery, as they may be associated with an increased risk of deep vein thrombosis (DVT). For patients on the pill alternative forms of contraception should be used.

Patients who are overweight also have a higher risk of complications, and liposuction should not be seen as a way of losing weight. If patients are dieting they should aim to get to their desired weight pre-operatively. Mr Cadier and his team have the policy that such surgery will only be offered to patients with a Body Mass Index (BMI) of less than 36. The BMI is calculated from the weight and height, and there are many simple tools available on the internet to help perform this calculation. Patients with a BMI of 36 or over have much higher risks both from the surgery and the anaesthetic and the risks therefore potentially outweigh the benefits.

### **What happens before the operation?**

At the initial consultation with Mr Cadier after discussing regarding the specific concerns a full medical and surgical history will be obtained. Details regarding the operation, the aims, the limitations, the recovery and the risks will be discussed. Before the operation you will usually attend for a pre-operative nurse led assessment. You may require a blood test. Any significant health problems not previously identified may be discussed with Mr Cadier or the anaesthetist, and a further assessment may be required to determine suitability for the procedure.

At admission you will again be assessed by the nurses and you will be measured for a pair of compression stockings. These are worn to reduce the risk of thrombosis formation and should be worn for a minimum two weeks post-operatively. If the procedure is being performed under general anaesthetic you will be seen by the anaesthetist prior to surgery and be able to discuss issues pertaining to the anaesthetic and also pain relief in the immediate post-operative period. You will also see Mr Cadier who will make some pre-

operative markings and will take photographs for the medical records.

### **Operative procedure.**

Depending upon how many areas are being treated the operation can take between 40 minutes and 2 hours and will involve multiple small stab incisions to the areas to be treated. At the end of the operation a pressure garment may be put on in the operating theatre or on the ward, to help reduce the amount of bruising and swelling, and to aid in the moulding of the area treated.

### **What to expect following surgery.**

For the first 24-48 hours following the liposuction blood stained fluid will ooze from the wounds. This may be copious in amount. This is entirely normal, as the fluid that has been used will leak out through the small stab incisions, this being increased by the squeezing effect of the garment. This oozing reduces the amount of blood left behind in the tissues and thus reduces the amount of bruising and swelling that will inevitably occur. Patients are advised when at home to place towelling over their sheets at night to avoid staining of sheets, mattresses and pillows.

There will inevitably be some swelling and bruising in the region that has been treated and this may persist from two to three weeks. Patients are advised to wear their pressure garment for most of the time; it can be removed for hygiene and also washing the garment but certainly will have benefit during the first three weeks and, subsequently, support stockings or cycling shorts may be of use for up to six weeks. The scars from the small stab incisions will be red and lumpy in the initial couple of months and can take up to six to nine months to slowly fade and settle down. On occasions there can be patches of numbness in the area treated where nerves to the skin have been bruised but this usually recovers within a few weeks. At discharge a letter will normally be sent from the ward to your General Practitioner informing them of your admission and of the procedure undertaken. Patients are encouraged to keep their GPs informed however should they wish the admission to remain

confidential please inform the ward staff and no communications will be sent.

### **What restrictions are their following surgery?**

This does vary hugely depending on the nature of the liposuction and will be discussed at the initial consultation.

### **Follow-up.**

Patients will need to return for a wound check by the nurses seven day post-operatively and then are usually reviewed 1 month post-operatively by Mr Cadier to ensure that the bruising and swelling has settled down. There will be a final check usually 5 months post-operatively to ensure that a satisfactory result has been achieved.

### **Risks and complications.**

As with all surgery complications can occur, these include:

- Bruising which may be severe
- Blood loss requiring transfusion
- Infection
- Changes in skin sensation that may persist
- Swelling that may persist for several months
- Haematomas and seromas
- Fluid accumulation and lymphoedema
- Fat necrosis and deep scar formation
- Irregular contours or asymmetries – some are inevitable
- Rippling or loose skin
- Skin damage
- Worsening of cellulite
- Irregular pigmentation
- Poor entry site scars
- Deep vein thrombosis and life-threatening pulmonary embolism
- Anaesthetic risks

- Damage to deeper structures such as nerves, blood vessels, muscles and organs
- Need for revisional surgery
  
- For specific areas:
  - In the submental region this includes mandibular nerve palsy
  - In the chest this includes lung injury
  - In the abdomen this includes bowel injury
  - In the calves this includes skin damage resulting in an ulcer

There is frequently leakage of bloodstained fluid through the wounds (as described above). In very large volume liposuction, there may be an appreciable blood loss. Patients may require a blood test following surgery, and if significant blood loss has occurred treatment with iron tablets, or very rarely a blood transfusion, is advised. There is a small risk of wound infection, which would cause redness around the wounds or even a discharge. If this were to occur then a course of antibiotics will be prescribed and usually problem settles rapidly.

Initially, in the first few weeks there is significant swelling and on occasions this is very marked and it may be difficult to appreciate the full benefits of the surgery. It may take up to three months for this swelling to fully settle. Continued use of the garment beyond the six weeks may help, as well as massage and remaining physically active. Overall patience is required. Seromas and haematomas may very occasionally occur in areas that have undergone a lot of liposuction. These are accumulations of blister like fluid or blood under the skin and will cause a localized swelling. Most will settle spontaneously but some may require aspiration in the clinic.

The results of liposuction depend to a large degree on the quality of skin and this needs to shrink back into the areas that have been treated and initially there may well be some dimpling and ridging within the skin as the swelling settles. If large amounts of fat are being removed and there is scarring within the deep tissues, then this ridging and dimpling can be permanent. If two sides are being treated there may well be some asymmetry – if there is a significant problem or difference this may require further surgery to correct any defect. Contour anomalies may occur, especially in patients who are more overweight. On occasions a second procedure (usually under local anaesthetic) is required to correct these problems,

though usually only several months later. Some numbness around the areas treated is normal and usually resolves after 3-6 months.

Following any surgery there is a risk in developing a deep vein thrombosis (DVT). This is a clot in the calf vein of the leg. In itself it may result in pain and swelling. The risk is that should the clot separate from the vein it can move to the lungs resulting in a pulmonary embolism. This is a potentially life threatening situation. All attempts are made to reduce the risk using compression stockings during and for two weeks after surgery, using pneumatic compression devices on the legs at surgery and in the immediate post-operative period, by encouraging early mobilization, advising patients to stop the combined oral contraceptive pill four weeks prior to surgery and where it is felt appropriate using injections of blood thinning agents.

Damage to deeper structures are rare and are usually associated with secondary procedures or where there is scarring from previous surgery. Submental (under the chin and jaw) liposuction can traumatize the marginal mandibular nerve. This results in altered movement to the lower lip. All attempts are made to reduce the risk by lipo-sucking from the centre outwards and staying superficial. If it should occur in the majority of cases it is simple bruising and will recover fully within a few weeks. In cases of actual damage, the recovery may be very prolonged. In the chest and abdomen, the liposuction cannula may perforate the muscle layer and cause damage to the lungs or bowels. In this latter case emergency surgery may be required as this is a life-threatening event. Fortunately, this is an extremely rare but recognised complication.

Revisional surgery may be required for irregularities however some are inevitable and patients need to be very realistic about what can be achieved. Patient satisfaction is far more variable than for other aesthetic surgical procedures mostly because of unrealistic expectations. The aims and limitations will be discussed at the initial consultation.

Most of the time, the surgery and the subsequent post-operative recovery are uneventful. When complications do occur all attempts are made not only to remedy the problem in as speedy a manner as possible but also to optimize the final result. As with all cosmetic surgical procedures undertaken by Mr Cadier, there is a fixed fee policy, which means that no further

charges are incurred for the treatment of complications that occur within 6 months following the initial surgery. **On the unusual occasions when revisional surgery is required, provided that this is identified and agreed to prior to six months following the original surgery, and undertaken within 12 months of the original surgery, then no charges will be incurred. Any subsequent revision or patients seeking revisional surgery after six months will incur costs.**

### About your Surgeon:



Michael Cadier was educated at the French Lycée in London, studied at Oxford University and undertook Medicine at St Thomas' Hospital, London. After training in London, Salisbury and Bristol he became an NHS Consultant in the Supra-regional Plastic Surgery Unit in Salisbury in 1996, becoming Head of this Service in 1999. In his NHS practice he developed a breast reconstruction service in Portsmouth, and in 2000 was appointed as cleft surgeon to the newly established Spires Cleft Centre, for which he also became the first Clinical Director in 2002. He undertook yearly cleft lip and palate Charity missions in rural Pakistan from 1996 to 2009.

He has a busy aesthetic surgery private practice along the South Coast, undertaking the full range of aesthetic surgery procedures. He has performed over a thousand facelifts, and over 1500 breast augmentations, with similar numbers for all of the more common aesthetic procedures.

He is widely published, and lectures and teaches on aesthetic surgery both nationally and internationally. In 2006 he was invited to become an examiner for the FRCS (Plast). He is the Program Director for the South Coast Reconstructive Cosmetic Surgery Fellowship, was part of the first UK delegation in the CEN in cosmetic surgery (European regulation) and chaired the CSIC Royal College committee on Clinical Quality and Outcomes in Cosmetic Surgery.

The British Association of Aesthetic Surgeons (BAAPS) is the leading organization for aesthetic surgery in the UK. He was elected to BAAPS Council in 2006 and was President of BAAPS from 2014 to 2016. One of his key objectives is to ensure that UK plastic surgeons of the future will practice aesthetic surgery to the highest possible and with that aim he has helped establish a comprehensive national training program in aesthetic surgery.

PA: **Nicola Haicalis**  
Ph: **01725 511 550**  
Fx: **01725 511 846**  
Email: [nicola.haicalis@michaelcadier.com](mailto:nicola.haicalis@michaelcadier.com)

Website : [www.michaelcadier.com](http://www.michaelcadier.com)

**BMI Harbour Hospital**, St Marys Road, Poole, Dorset, BH15 2BH  
Ph : 01202 244 200

**BMI Sarum Road Hospital**, Sarum Road, Winchester, Hampshire, S022 5HA  
Ph : 01962 844 555

**Spire Southampton Hospital**, Chalybeate Close, Southampton, Hampshire, S016 6UY

For all Spire enquiries, please contact Lyn Corlass on :  
Ph : 02380 764 979  
Email on [lyn.corlass@spirehealthcare.com](mailto:lyn.corlass@spirehealthcare.com))