NICE guidance

# Liposuction for chronic lipoedema

Interventional procedures guidance
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## Your responsibility

This guidance represents the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take this guidance fully into account. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

## 1 Recommendations

1.1 Evidence on the safety of liposuction for chronic lipoedema is inadequate but raises concerns of major adverse events such as fluid imbalance, fat embolism, deep vein thrombosis, and toxicity from local anaesthetic agents. Evidence on

the efficacy is also inadequate, based mainly on retrospective studies with methodological limitations. Therefore, this procedure should only be used in the context of research. Find out what only in research means on the NICE interventional procedures guidance page.

1.2 Further research should report:

- patient selection, including age, effects of hormonal changes (which should include effects seen during puberty and menopause) and the severity and site of disease
- details of the number and duration of procedures, the liposuction technique used (including the type of anaesthesia and fluid balance during the procedure), and any procedure-related complications
- long-term outcomes, including weight and body mass index changes
- patient-reported outcomes, including quality of life.

1.3 Patient selection should be done by a multidisciplinary team, including clinicians with expertise in managing lipoedema.

1.4 The procedure should only be done in specialist centres by surgeons experienced in this procedure.

# 2 The condition, current treatments and procedure

## The condition

2.1 Lipoedema is characterised by an abnormal, usually symmetrical, accumulation of fat in the legs, hips, buttocks, and occasionally arms. It is a different condition from obesity and from lymphoedema. The aetiology of lipoedema is unknown, but hormonal changes, weight gain and genetics are each thought to be involved. Lipoedema is considerably more prevalent in women and very rarely affects men. Symptoms include swollen, heavy legs that are painful to touch and bruise easily. Feet do not usually have fat accumulation. The size and shape of legs, and the resultant mobility issues and pain, can have a profoundly negative effect on quality of life, and physical and mental health.

# Current treatments

2.2 Treatment typically involves healthy lifestyle changes, conservative therapy and, in severe cases, surgery. The fat associated with lipoedema is usually resistant to diet modification and exercise. Conservative therapy, including compression and manual lymphatic drainage (a specialist type of light massage that is mainly used to reduce swelling caused by fluid) is sometimes used to treat lipoedema, but is ineffective at removing abnormal fat. The main surgical treatment for lipoedema is liposuction. In people who also have obesity, there is emerging evidence that bariatric surgery may help reduce fat from both lipoedema-affected and unaffected areas of the body.

# The procedure

2.3 The aim of liposuction for lipoedema is to reduce limb bulk, reduce pain, and to improve mobility and functioning. Liposuction for chronic lipoedema can be done under general or local anaesthesia. Several small incisions are made in the limb. Liposuction for chronic lipoedema usually involves infiltrating the limb with large volumes of fluid (tumescence) to allow the cannula to glide through the tissue with minimal damage to blood vessels and lymphatics. Liposuction can also be done using a tourniquet with no or minimal initial fluid infiltration. Tumescent liposuction needs an infiltration pump to deliver the tumescent fluid. Cannulas, connected to a vacuum pump, are then inserted into the incisions and oedematous adipose tissue is removed by vacuum aspiration. Using vibrating cannulas (power-assisted liposuction) or water-jet-assisted liposuction can help remove fat more easily. Water-jet-assisted liposuction needs less initial infiltration because fluid is simultaneously infiltrated and aspirated during liposuction. Liposuction is done around and all the way along the limb. In tumescent liposuction, both fat and tumescent fluid are suctioned out together.

2.4 The procedure can take 1 to 4 hours depending on the size of the treatment area. Immediately after liposuction, a compression bandage is applied to the limb to control any bleeding and to prevent postoperative oedema. Antibiotics are typically prescribed as prophylaxis after the operation. When the wounds are healed after the procedure, a custom-made compression garment is worn. This may need to be revised until the oedema volume has been reduced as much as possible.

# 3 Committee considerations

## The evidence

3.1 NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 9 sources, which was discussed by the committee. The evidence included 8 before-and-after studies. It is presented in the summary of key evidence section in the interventional procedures overview. The committee also considered safety data from a coroner's regulation 28 letter. Other relevant literature is in the appendix of the overview.

3.2 The professional experts and the committee considered the key efficacy outcomes to be: patient-reported outcomes including quality of life, and reduction in the volume of lipoedema.

3.3 The professional experts and the committee considered the key safety outcomes to be: pain, bleeding, infection, fat embolism, deep vein thrombosis, fluid imbalance and toxicity from local anaesthetic.

3.4 There were 29 commentaries from patients who have had this procedure that were discussed by the committee.

## Committee comments

3.5 The committee was delighted to receive detailed patient commentary and input from patient organisations. The patient commentary was mostly positive about the procedure and highlighted the serious nature of lipoedema.

3.6 The committee was informed that lipoedema was common, under-recognised and extremely debilitating.

3.7 The committee recognised that there were currently limited treatment options for this condition and that there was a need to define the most safe and effective treatment for it. The committee also recognised that there needs to be more research into patient selection, to understand who would benefit most from this procedure. These factors underpinned the recommendation for further research.

3.8 The committee noted that this condition is distinct from obesity and lymphoedema.

3.9 The committee noted that liposuction is often a multi-stage procedure, depending on the extent of fat deposition. Furthermore, liposuction may not be a curative procedure and multiple procedures may be needed.

3.10 The committee was informed that several different liposuction techniques are used and that they may have different safety and efficacy profiles.

3.11 The committee acknowledged that a randomised controlled trial was currently in progress in Germany and that NICE will review this guidance upon publication of this trial.

3.12 The committee encourages the creation of a registry for all patients having liposuction for chronic lipoedema to support research.

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# Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.

# Accreditation