

Liposuction for chronic lymphoedema

Interventional procedure guidance

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nice.org.uk/guidance/ipg251

1 Guidance

- 1.1 Current evidence on liposuction for chronic lymphoedema is based on small numbers of patients but suggests that there are no major safety concerns; however, the evidence on efficacy is limited in quantity. Therefore, this procedure should be used with special arrangements for clinical governance, consent, and audit or research.
- 1.2 Clinicians wishing to undertake liposuction for chronic lymphoedema should take the following actions.
 - Inform the clinical governance leads in their Trusts.
 - Ensure that patients understand the uncertainty about the procedure's efficacy in the long term, and that they will be required to wear compression garments for at least 1 year after the procedure. Clinicians should provide patients with clear, written information. In addition, use of the Institute's [information for patients](#) ('Understanding NICE guidance') is recommended.
 - Audit and review clinical outcomes of all patients having liposuction for chronic lymphoedema (see section 3.1).
- 1.3 Further publication of efficacy outcomes will be useful. The Institute may review the procedure upon publication of further evidence.

2 The procedure

2.1 *Indications and current treatments*

2.1.1 Lymphoedema is the abnormal accumulation of lymph fluid in body tissues that results from an impaired lymphatic system. It most commonly affects the arms and legs. It can limit mobility and cause recurrent infection, pain, disfigurement and distress.

2.1.2 Secondary lymphoedema results from damage to the lymphatic system or removal of lymph nodes by surgery, radiation, infection or injury, while primary lymphoedema results from congenital inadequacy of the lymphatic system. In the UK, the most common type of chronic lymphoedema is secondary lymphoedema of the arm following breast cancer.

2.1.3 Treatment for lymphoedema aims to decrease swelling, pain and discomfort, and is usually conservative. Manual lymph drainage (MLD) uses massage techniques to help drain lymph fluid away from the limb. Decongestive lymphatic therapy (DLT) consists of a combination of MLD followed by graduated compression bandaging, skin care advice and 'decongestive exercises'. This application is repeated up to once or twice daily to reduce limb volume progressively. Once it is judged that no further limb volume reduction is possible, the patient is fitted with a custom-made garment to be worn daily.

2.1.4 Surgery can be used to treat lymphoedema, either with the aim of reducing the size of the affected limb by removing lymphoedematous skin and subcutaneous tissue, often in stages and followed by skin grafting (debulking), or with the aim of restoring lymphatic flow from the limb – for example, attempting to construct an alternative lymph drainage pathway by creating a lymphovenous anastomosis.

2.2 *Outline of the procedure*

2.2.1 Liposuction for chronic lymphoedema involves the surgical removal of excess subcutaneous fat tissue through several small incisions. It can be performed under general or regional anaesthesia. Cannulas connected to a vacuum pump are inserted into small incisions and lymphoedematous fat tissue is removed by vacuum aspiration.

- 2.2.2 Immediately after liposuction, a compression bandage is applied to the limb to control bleeding and to minimise the development of postoperative oedema, and the limb is elevated for a few days. In the upper limb, a glove is placed on the hand after the operation and a custom-made compression garment is applied to the limb about 2 weeks later. The compression garment is replaced with a new one three or four times during the next year until the swelling has been reduced as much as possible.

Sections 2.3 and 2.4 describe efficacy and safety outcomes which are available in the published literature and which the Committee considered as part of the evidence about this procedure. For more details, refer to the Sources of evidence.

2.3 Efficacy

- 2.3.1 In a case series, 35 patients underwent liposuction combined with controlled compression therapy (CCT) and 14 underwent CCT alone. CCT involves wearing a custom-made sleeve-and-glove garment taken in gradually and replaced with new custom-made garments, usually at 3, 6 and 12 months after the operation. Compared with baseline, mean reductions in oedema volume at 12 months were 103% and 50%, respectively, for the two groups ($p < 0.0001$).
- 2.3.2 A non-randomised study using matched-pairs analysis ($n = 16$ in each group) reported that liposuction with CCT was significantly more effective in reducing oedema volume than CCT alone ($p < 0.0001$).
- 2.3.3 In the above study and in a further case series of 28 patients, mean pre treatment oedema volumes of 1745 ml and 1845 ml were reduced to 30 ml and -122 ml (that is, the removed oedema volume exceeded the baseline volume), respectively, at 12-month follow-up.
- 2.3.4 In the case series of 35 patients treated with liposuction and CCT, all had reductions in self-rated pain, swelling and fatigue, and increases in mobility and activities of daily living at 12-month follow-up ($p < 0.01$ for all outcomes). In the 14 patients treated with CCT alone, only swelling of the arm improved significantly ($p < 0.04$).
- 2.3.5 Four Specialist Advisers considered key efficacy outcomes to include reduction in limb volume and swelling, patient comfort, patient satisfaction, quality of life

and lymphatic function. They also considered that the long-term benefit and durability of the procedure and its efficacy compared with optimal compression regimens were unknown.

2.4 Safety

- 2.4.1 Three of the five studies reported that there were no complications associated with the procedure. In the case series of 28 patients, 1 patient sustained transient paraesthesia, 2 patients developed temporary superficial abrasion at the wrist caused by the compression garment, and 2 patients developed erysipelas 3 months after the operation. In addition, 8 patients required blood transfusions. A case series of 15 patients reported 1 patient with cellulitis, 1 patient with hypaesthesia and 1 patient with necrosis of the wound margins.
- 2.4.2 The Specialist Advisers stated that theoretical adverse events include haemorrhage, skin necrosis, infection, bruising, pain, scarring and neurovascular injury. One Specialist Adviser stated that the risk of adverse events is significantly different between treatment of the upper and lower limb.

3 Further information

- 3.1 This guidance requires that clinicians undertaking the procedure make special arrangements for audit. The Institute has identified relevant audit criteria and has developed an audit tool (for use at local discretion).

Andrew Dillon
Chief Executive
February 2008

Sources of evidence

The evidence considered by the Interventional Procedures Advisory Committee is described in the following document.

'Interventional procedure overview of liposuction for chronic lymphoedema', July 2007.

Information for patients

NICE has produced [information describing its guidance on this procedure for patients and their carers](#) ('Understanding NICE guidance'). It explains the nature of the procedure and the decision made, and has been written with patient consent in mind.

4 About this guidance

NICE [interventional procedure guidance](#) makes recommendations on the safety and efficacy of the procedure. It does not cover whether or not the NHS should fund a procedure. Funding decisions are taken by local NHS bodies after considering the clinical effectiveness of the procedure and whether it represents value for money for the NHS. It is for healthcare professionals and people using the NHS in England, Wales, Scotland and Northern Ireland, and is endorsed by Healthcare Improvement Scotland for implementation by NHSScotland.

This guidance was developed using the NICE [interventional procedure guidance](#) process.

We have produced a [summary of this guidance for patients and carers](#). Tools to help you put the guidance into practice and information about the evidence it is based on are also [available](#).

Changes since publication

14 January 2012: minor maintenance.

Your responsibility

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

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way which would be inconsistent with compliance with those duties.

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Endorsing organisation

This guidance has been endorsed by [Healthcare Improvement Scotland](#).