

# Specialist approaches to managing lipoedema

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Lipoedema is a chronic, progressive condition involving an abnormal disposition of fat cells, predominantly from the waist down, resulting in the lower limbs becoming disproportionately larger than the upper torso (Langendoen et al, 2009; Frambach et al, 2015). Further diagnostic criteria include foot-sparing oedema, spontaneous pain/extreme tissue tenderness, sensitivity to pressure, and bruising after mild trauma (Frambach et al, 2015). Often mistaken for obesity (Todd, 2010; Fetzer and Fetzer, 2015), lipoedematous fat cannot be significantly reduced by exercise or dieting (Herbst, 2011; Lipoedema UK, 2013).

Estimated to affect up to 11% of the female population (Földi and Földi, 2006; Fonder et al, 2007), the condition is widely unknown to health professionals (Todd, 2010; Lipoedema UK, 2013). Research by the charity Lipoedema UK (2013) found that only 5% of GPs recognised the condition to enable diagnosis. However, this trend is changing ever since the launch of a Royal College of General Practitioners Lipoedema e-learning course in 2014, but raising awareness of the condition in primary care remains a key issue (Fetzer and Fetzer, 2015).

There is currently no cure for lipoedema. As lipoedema is not well known in the medical profession (Lipoedema UK, 2013), it is often confused with or misdiagnosed as lymphoedema and/or obesity (Todd, 2010; Lipoedema UK, 2013). The majority of patients who manage to get a diagnosis are diagnosed by specialists working in lymphology. Even when women do receive a diagnosis, it can be difficult for them to access information on the treatments and lifestyle behaviors that can be of benefit. These range from the use of self-management techniques, such as compression garments, maintaining a good diet, carrying out low-impact exercise and aqua therapy, which have been discussed in more detail in a previous paper (Fetzer and Wise, 2015), to more specialist treatments, which are the focus of this paper. Specialist treatments include: compression, kinesio taping, manual lymphatic drainage (MLD), liposuction, deep oscillation therapy, and cognitive behavioral therapy (CBT). However, very few of these treatments are available through the NHS and, apart from tumescent liposuction, there is little clinical evidence of efficacy of the treatments, so research is desperately needed.

Patients should try and access lipoedema services at lymphoedema clinics where lymphoedema nurses and allied health professionals are trained to assess, diagnose, and advise patients about the best possible treatment(s) to manage and prevent further progression. Unfortunately, not all lymphoedema clinics will see lipoedema patients, often because of funding restrictions and referral criteria that are determined by the provider or local clinical commissioning groups (Hardy, 2015).

As lipoedema gradually comes to the attention of the wider medical community, clinical evidence is slowly starting to amass to help assess which treatments are most effective, but more research is needed. This paper outlines the most common specialist treatments for lipoedema patients, although it must be noted that all treatments must be tailored to each patient's circumstances and stage of the condition.

## Compression

Compression is a conservative therapy that aims to reduce the volume of interstitial fluid (Schmeller, 2008) by promoting venous and lymphatic drainage. It tackles oedema by reducing fluid and preventing build up, but it

## ABSTRACT

While there is no proven cure for lipoedema, early detection is key as specialist treatments, complemented by self-management techniques, can improve symptoms and prevent progression. There is no universal approach as the correct treatment or treatments will depend on each patient's particular circumstances; however, when chosen early and appropriately, interventions can provide huge benefits. The most common treatments in the management of lipoedema include compression, manual lymphatic drainage (MLD), tumescent liposuction, intermittent pneumatic compression therapy (IPC), kinesio taping, deep oscillation therapy, and cognitive behavioural therapy (CBT).

## KEY WORDS

- ◆ lipoedema ◆ compression ◆ cognitive behaviour therapy
- ◆ intermittent pneumatic compression therapy ◆ kinesio taping

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does not reduce fatty tissue (Wagner, 2011). Although, as Langendoen et al (2009: 5) note, there is a lack of clinical evidence, compression therapy is generally perceived to improve 'the symptoms of lipoedema and prevent the progression of the lymphatic component of lipoedema'. It also supports the limbs and the soft, loose, connective tissues and streamlines the limbs while enhancing mobility and function.

In very early stages, orthostatic oedema can be prevented by wearing compression garments and hosiery, such as socks, stockings, tights, leggings, capri pants, and arm sleeves (Schmeller, 2008). Compression garments are the mainstay of treatment and should be introduced as early as possible, and worn daily. However, with only 38% of lipoedema patients wearing their compression garments everyday (Lipoedema UK, 2013), Hardy (2015), suggests advising reluctant patients to wear compression when it is needed most, such as while exercising, standing, or traveling.

Sensitivity and tenderness over the legs and hips are symptoms of lipoedema. This can hinder concordance to wearing garments as it leads to discomfort and/or difficulty in putting on the compression garments. Indeed, in Lipoedema UK research (2013), these were the two main reasons patients cited for not wearing garments. This demonstrates the importance of assessment and garment fitting, with aids as necessary.

### Multilayer bandaging

Multilayer bandaging (MLB) is best used when there has been progression to lipo-lymphoedema (where the fat cells begin to obstruct lymphatic drainage). It is believed that the bandages help to reduce the fluid accumulating in the limb, assist in softening of the tissues, improve efficiency of the muscle pumps through support, improve refill of tissue fluid, and improve limb shape and size. This means that compression garments can then be fitted to maintain and optimise the benefits of MLB (Hardy, 2015).

MLB is thought to be of little benefit to those in the early stages of lipoedema, unless there is intense pain, when the bandages can help support the tissues (Hardy, 2015). Bandaging will only help to reduce fluid and will not reduce the adipose tissue. MLB seems to be more effective when manual lymphatic drainage (MLD) is carried out as part of the same treatment plan (Lipoedema UK, 2013), and some clinics combine it with intermittent pneumatic compression therapy (IPC). Research by Lipoedema UK (2013) found that 47% of patients who used the MLB technique felt it had some effect in reducing the swelling (when MLD was employed too), while 55% felt it helped with pain/discomfort. However, 39% felt there was no benefit at all. An alternative to compression bandaging are Velcro wrap devices, which are easier for patients to administer themselves. These can be used on their own, or in conjunction with compression garments (Hardy, 2015).

The measurement and fitting of compression garments is a specialist area and the garment choice, fabric, and strength must be tailored to the patient's lipoedema, vascular circulation, age, mobility, presence of other comorbidities,

and lifestyle. This means patients are often prescribed bespoke garments for optimum fit, greater comfort, and improved results, often through lymphoedema clinics (Hardy, 2015). Lymphoedema clinics can measure for specialised compression garments and monitor the progress of the condition at appropriate intervals.

Once the correct garments have been prescribed, compression can become a very important component of self-management for patients. However, in later stages when 'the edema is no longer spontaneously reversible,' combined decongestive therapy (CDT), such as MLD, may be used as well (Schmeller, 2008: 312).

### Kinesio taping

Kinesio tape is a type of negative compression. Kinesio 'tape has a direct effect on the superficial lymphatic vessels just beneath the skin. The ridges in the recoiled tape lift the skin, thus allowing the lymph fluid immediately underneath to drain more freely' (Lymphoedema Support Network (LSN), undated).

Kinesio taping is known to help with oedema reduction and pain relief. Originally used to treat sporting injuries, it is now being used in the treatment of lymphoedema to help drain fluid from congested areas. It has since been adopted for use with lipoedema, and can be very useful when there is a fluid component to the swelling when compression cannot be tolerated (Hardy, 2015).

Clinical evidence is gradually increasing, but community nurses are rarely trained in kinesio taping, thus restricting its use. Tape is usually applied by a therapist and left on for 3–4 days, after which time the skin needs washing and moisturising (Hardy, 2015, pers. comm. 6 October). In some cases, patients or their carers can be taught how to apply the tape correctly so they can access this treatment more frequently (Hardy, 2015; Wise, 2015, pers. comm., 6 Oct).

### Intermittent pneumatic compression therapy

IPC provides a mechanical massage using air-driven pumps and comfortable, inflatable garments that are used over affected areas/swollen limbs. Machines range from one chamber (which 'squeezes' the limbs at a defined pressures) to multi-chamber devices that work sequentially. The electric pump is attached to the leg/arm garment, which is placed on the patient's limb. Inflation/deflation pressures and times may be pre-set, and the patient experiences a gentle wave of pressure on the limb. Initially thought to cause fibrosis or complicate oedema at the root of the limb, the devices have evolved, with newer models that incorporate a body section so they can replicate a session of MLD with the device following the same pathways (Hardy, 2015).

IPC complements other conservative treatments such as compression and MLD, but are sometimes used in isolation by patients who do not want or are unable to use garments, but can tolerate IPC. There are different types of compression pumps on the market and not all are appropriate and beneficial for lipoedema patients. Community nurses may

not be aware of this and would thus not be able to advise patients accordingly (Wise, 2015, pers. comm, 6 Oct), but lymphoedema clinics might be able to offer advice. Patients can purchase their own equipment to use at home under careful supervision. IPC pumps are not suitable for all patients, especially if pain and tenderness are a problem, but pressures in the new multi-chamber systems can be sufficiently lowered to ensure comfort as well as improvements in symptoms (Hardy, 2015).

### Manual lymphatic drainage

MLD, in combination with compression therapy, is standard therapy for lipoedema if it is available, but the NHS has strict referral criteria. However, while well established, 'good clinical evidence is lacking' (Langendoen, 2009: 5), although there is some evidence, MLD and compression together can 'mitigate oxidative stress in lipoedema and cellulite', especially when combined with shock wave therapy (Siems et al, 2005: 275). It has also been shown to have pain-relieving qualities for patients with other conditions (Ekici et al, 2009) and is used to help patients with discomfort, tenderness, and sensitivity issues.

Therapists start at the non-oedematous trunk and apply varying degrees of pressure by massaging the superficial tissues to increase the transport capacity of the lymph collectors using 'circular, pumping and scooping movements to shift edematous fluid' (Smeller and MeierVollrath, undated: 313) toward the neck, where fluid rejoins the circulatory system. Bandaging is then applied to reduce and prevent swelling. However, like compression, the effect of MLD is not permanent, lasting day(s) to a week before the oedema returns. This means MLD would have to be performed regularly, ideally daily, for life (Schmeller, 2008).

MLD is very specialised and is only taught on advanced lymphoedema training programme. MLD UK are a good resource to find out more about this form of therapy, as they have a register of training courses and qualified therapists. According to C Wise, community nurses who are nurse specialists in lymphoedema/lipoedema may be able to advise patients who would benefit from MLD, and possibly give information on how they can access this treatment, but they are not able to provide this treatment (personal communication, 16 March 2015). However, simplified versions of this treatment are now available, so patients and carers alike can be taught to do this in the comfort of their own home.

### Tumescent liposuction

Tumescent liposuction is one of the few treatment methods where results on lipoedema patients have been fully evaluated and published, with landmark studies by Rapprich et al (2010) and Schmeller et al (2012) documenting sustained improvements from the surgery.

Liposuction was traditionally viewed as a contraindication for lipoedema because it carries 'the risk of iatrogenic damage to the lymphatics' (Langendoen, 2009: 5). This could lead to lipo-lymphoedema and a deterioration of the condition. Introduced as a treatment for lipoedema in the early 2000s,

tumescent liposuction has a much better success rate because it is 'significantly less likely to damage the lymphatic vessels' (Langendoen, 2009: 5). However, some surgeons, such as Alex Munnoch, from Ninewells Hospital, are combining 'dry' and 'wet' tumescent liposuction with promising initial results (A. Munnoch, 2015, pers. comm. 26 June).

In tumescent liposuction, large amounts of fluid (containing saline, lidocaine, sodium bicarbonate, and adrenaline) are infiltrated in the subcutaneous tissues, with blunt vibrating microcannulas of 3mm and 4mm diameter (power-assisted liposuction) (Schmeller et al, 2012). It can be performed, in stages, on all areas of the body, usually starting with the hips and thighs (Schmeller, 2008). Typically, 10–20 litres of fluid can be removed (Schmeller, 2008), leading to distinct reductions in subcutaneous fatty tissues (Schmeller et al, 2012).

While having positive cosmetic implications, patients also report that pain, oedema, range of movement, physical appearance, and quality of life improve significantly, while many report a reduction in lipoedema-associated hematoma (Schmeller, 2008; Rapprich et al, 2011; Fonder, 2012; Schmeller et al, 2012). Mobility, function and gait may also be vastly improved.

Performed properly by experts in specialised centres, liposuction can achieve excellent lasting results with less fat, oedema, and pain, with significant implications on quality of life (Schmeller, 2008). It is not suitable for all patients, and must be administered over several stages, so consultation with a quality surgeon is key to ensure it is chosen appropriately. It is important to note though that tumescent liposuction is non-curative and it can only be undertaken if morbid obesity weight is fully controlled. A healthy lifestyle must be maintained postoperatively, with attention paid to calorie intake. Some decongestive conservative therapy (compression and MLD) is also usually required, although less intensively (Schmeller, 2008; Schmeller et al, 2012).

### Deep oscillation

Low-intensity and low-frequency electrostatic fields technology, patented as deep oscillation®, creates biologically effective oscillations in the treated tissue using electrostatic attraction and friction in the tissue of the patient. This helps to reduce swelling and discomfort (Boisnic and Branchet, 2013). Therapists administer the treatment with an electrode attached to their limb; the patient holding a handheld device. Upon contact with the patient, a circuit is generated, instigating the gentle oscillation within the tissues when massaged. Patients can also learn how to administer the treatments themselves and can purchase small personal devices.

While there is evidence on the therapeutic benefits of the treatment on wound healing (Mikhailchik et al, 2005a), pain relief (Aliyev, 2009), and anti-inflammatory effect (Mikhailchik et al, 2005b; Aliyev, 2009; Boisnic and Branchet, 2013), clinical evidence on the use of deep oscillation on lipoedema is lacking. Patients have anecdotally reported the treatment as being helpful, especially in self-management, and many find regular treatments make managing the condition easier.

## Cognitive behaviour therapy (CBT)

As a long-term condition, lipoedema has a massive effect on patient's lives and their mental health (Fetzer and Fetzer, 2015). Research carried out by Lipoedema UK (2013) found that 85% of women say that lipoedema affects their mental health and ability to cope with life. In addition, 85% stated that their body shape had led to low self-esteem, while many also report having a lack of confidence, depression, and self-harm and suicidal thoughts. Moreover, 51% said it had affected their career, 60% said it restricted their social life, and 50% said it restricted their sex life (Fetzer and Fetzer, 2015).

The National Institute for Health and Care Excellence (NICE) recommends CBT as useful for people with long-term conditions. NHS Choices defines CBT as 'a talking therapy that can help you manage your problems by changing the way you think and behave' (NHS Choices 2014). CBT is a collaborative psychotherapy that involves completing manageable homework between sessions, to complement and reinforce learning. M Durston argues that the 'the appropriate use of Cognitive Behavioural Therapy contextualises not only what has happened to people [with lipoedema], but the way they think about it as individuals and promotes productive, positive ways to learn to cope and live well with this long-term condition' (personal communication, 27 January 2016). CBT shows potential to be a useful tool in helping patients emotionally, from dealing with depression to supporting them in being more proactive in managing their condition.

## Conclusion

While there is no cure, there are treatments that can dramatically improve lipoedema patient's quality of life. The correct approach depends on the patient, the stage of their lipoedema and other factors such as mobility and age. Conservative therapies such as compression and MLD are well established as preventing progression and pain management; techniques such as deep oscillation can help with ongoing management, and treatments such as CBT have the potential to help with the psychological effects of the condition, while potentially helping patients to be more active in their own care.

However, newer therapies, such as tumescent liposuction, are the ones that show the greatest promise. Recent clinical studies on the long-term outcomes for tumescent liposuction (Rapprich et al, 2011; Schmeller, 2012) have

shown lasting improvements in the symptoms of the condition, from pain to fatty deposits. However, caution is still advised to ensure patients are correctly selected for the treatment, and that only surgeons with empathy for the lymphatic system or who are experienced in the treatment of liposuction for lipoedema are used. **BJCN**

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## KEY POINTS

- ◆ There is currently no cure for lipoedema
- ◆ Early detection of lipoedema is key to improve symptoms and prevent progression
- ◆ Use of self-management techniques, such as compression garments, maintaining a good diet, and carrying out low-impact exercise can help in managing the symptoms
- ◆ Specialist treatments include: compression, kinesio taping, manual lymphatic drainage (MLD), liposuction, deep oscillation therapy, and cognitive behavioral therapy (CBT)