

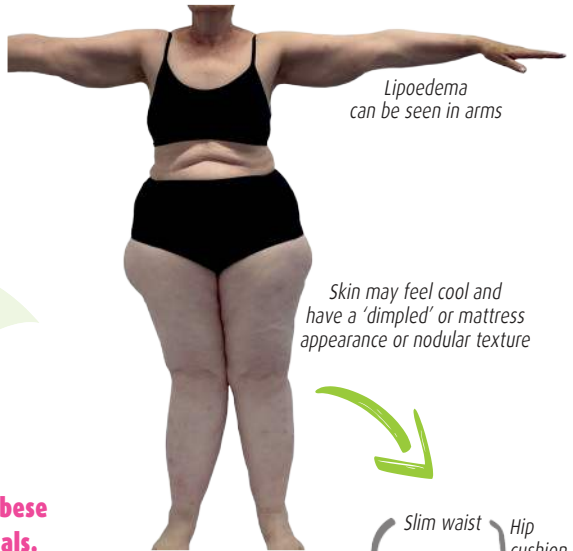
How to distinguish between:

- a) **lipoedema**
- b) **obesity**
- c) **lymphoedema**

Differential diagnosis is vital in lipoedema

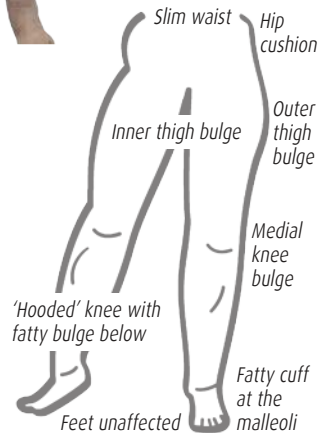
Women with lipoedema are often incorrectly diagnosed and treated as obese by their primary healthcare professionals.

- **Lipoedema is a chronic connective tissue disease that occurs mostly in females.**
- It is characterised by abnormal, excess adipose tissue which mainly affects the buttocks, hips, upper and lower bilateral leg area and/or arms.
- Hormonal and genetic factors are linked to lipoedema.¹ It often presents around puberty, pregnancy or menopause.
- Lipoedema can have a severe impact on quality of life (QOL) and physical and psychosocial well-being.²
- Left untreated, the condition can be debilitating and cause a massive cost burden to the NHS, as well as other public services.
- Early diagnosis and treatment is vital for lipoedema patients. Yet service provision is varied and often non-existent.



Lipoedema can be seen in arms

Skin may feel cool and have a 'dimpled' or mattress appearance or nodular texture



Find out more inside...

Differential diagnosis

How to distinguish between lipoedema, lymphoedema and obesity

There is no diagnostic tool for lipoedema as yet and identifying the condition relies on key clinical indicators based on history taking, clinical assessment, examination and differential diagnosis.

DIFFERENTIATING LIPOEDEMA FROM LYMPHOEDEMA & OBESITY

CHARACTERISTIC	LIPOEDEMA	LYMPHOEDEMA	OBESITY
Gender	• Almost exclusively female	• Male or female	• Male or female
Age at onset	• Most commonly presents at puberty, pregnancy or menopause – times of hormonal change	• Childhood (mainly primary); adult (primary or secondary)	• Childhood onwards
Family history	• Common	• Only for primary lymphoedema	• Very common
Areas affected	• Bilateral • Usually symmetrical • Most frequently affects legs, hips and buttocks; may affect arms • Slim waist and disproportionately larger body size below waist • Feet/hands spared	• Can affect any area of the body • Can be bilateral but usually unilateral limbs affected • Feet usually affected in lower limb lymphoedema	• All parts of the body • Usually symmetrical
Psychological impact	• High psychological burden • Can lead to low self esteem, eating disorders, anxiety, depression	• High psychological burden – reminder of disease in some cases – leading to anxiety and depression	• High psychological burden
Effect of dieting on condition	• Lipoedema fat unresponsive to dietary intervention	• Proportionate loss from trunk and affected limbs	• Weight reduction with uniform weight loss
Effect of limb elevation	• No effect	• Initially effective in reducing swelling; may become less effective as disease progresses	• No effect
Pitting oedema	• Absent in early stages of the disease	• Usually present but pitting may cease as the disease progresses and tissues fibrose	• No
Bruises easily	• Yes	• Not usually	• No
Pain/discomfort in affected areas	• Often • May be hypersensitive to touch and pressure	• May be uncomfortable • No hypersensitivity to touch	• No
Skin consistency	• Normal or softer/looser	• Thickened and firmer	• Normal
History of cellulitis	• Unusual	• Often	• Unusual
Stemmer sign*	• Usually negative	• Usually positive	• Usually negative

*A positive Stemmer sign represents failure to pinch a fold of skin at base of second toe – this will be negative in a patient with lipoedema. In some cases patients can present with a combination of a secondary lymphoedema and obesity

Table based on Best Practice Guidelines: The Management of Lipoedema, London: Wounds UK, 2017

Because lipoedema can appear alongside obesity, clinicians may not always distinguish between the two. But lipoedema is NOT the same as obesity.

Signs and symptoms

There are different types and stages of Lipoedema



4 STAGES OF LIPOEDEMA

- 1 Skin appears smooth. On palpation, the thickened subcutaneous tissue may contain small nodules.
- 2 Skin has an irregular texture that resembles the skin of an orange ('peau d'orange') or a mattress. Subcutaneous nodules occur that vary from the size of walnut to that of an apple in size.
- 3 The indurations are larger and more prominent than in Stage 2. Deformed lobular fat deposits form, especially around thighs and knees, and may cause considerable distortion of limb profile.
- 4 Lipoedema with secondary lymphoedema

TYPES OF LIPOEDEMA

TYPE I Pelvis, buttocks and hips (saddle bag phenomenon)

TYPE II Buttocks to knees, with formation of folds of fat around the inner side of the knees

TYPE III Buttocks to ankles

TYPE IV Arms

TYPE V Lower legs

DESCRIPTION ACCORDING TO THE SHAPE OF TISSUE ENLARGEMENT

COLUMNAR Enlargement of the lower limbs which become column-shaped or cylindrical

LOBAR Presence of large bulges or lobes of fat overlying enlarged lower extremities, hips or upper arms

KEY CHARACTERISTICS Individual patients may present with all or some of these signs and symptoms

- Onset of symptoms is usually during puberty, during/after pregnancy or menopause.
- Symmetrical presentation involving both legs. Significant disproportion of hip to waist ratio.
- Arms may be affected.
- **Early stages:** the upper body may remain slender as the lower body enlarges and fat accumulates in the hips, thighs and legs.
- **Later stages:** Mobility is restricted and the condition becomes more chronic with joint problems and skin changes can be seen. A secondary lymphoedema may also develop. Can lead to disability and poor QoL.
- Likely psychological distress, low self-esteem, anxiety and depression.
- Fatigue and pain/heaviness in tissues, may have hypersensitivity to touch. Easily bruised.
- Weight loss diets have little/no effect on lipoedemic fat.
- Fat pads above, inside and below knees and in outer regions of upper thighs.
- Gait can be affected, and patients may have fallen arches.
- Feet and hands are generally unaffected with a 'cuffing' or 'bracelet' effect seen to the ankles or wrists.
- Skin may feel cool and have a 'dimpled' or mattress appearance or nodular texture.

Early diagnosis and management of lipoedema in primary care

Despite lipoedema first being described in 1940,³ until recently, there has been poor awareness of the condition in the medical community, leading to it being widely misunderstood and misdiagnosed,⁴ and many waiting 30-40 years to receive a diagnosis. Most patients report the onset of symptoms in their teens, while their body is still slender. In later stages, social isolation, pain and lack of mobility may be complicated by obesity.

Conservative management

Patients require a holistic, multi-disciplinary approach with support for pain and fatigue management, healthy eating and psychosocial impact. Compression garments can alleviate pain and heaviness and improve QOL. Referral to a lymphoedema service can be helpful with complex diagnosis and assessment. Also consider referrals to other specialities such as endocrinology, orthopaedics, physiology and weight management.

Surgical management

Liposuction is a surgical treatment option that has indicated a positive impact on pain and other symptoms resulting in an improved QOL for patients.⁵ The National Institute of Health and Care Excellence (NICE) recommends that liposuction should only be used in the context of research but acknowledged that this decision will be reviewed when a randomised controlled trial being undertaken in Germany is published.^{6,7}



REFERENCES

- ¹ Grigoriadis D, Sackey E, Riches K, van Zanten M, Brice G, et al. (2022) Investigation of clinical characteristics and genome associations in the 'UK Lipoedema' cohort. PLOS ONE 17(10): e0274867. <https://doi.org/10.1371/journal.pone.0274867>
- ² Lipoedema UK, Fetzter S., Warrilow, M. (2021) Non-cosmetic liposuction in the treatment of chronic lipoedema: <https://www.lipoedema.co.uk/wp-content/uploads/2021/11/LUK-NCL-Bklt-Sept21-WEBv9.pdf>
- ³ Allen EV, Hines EA. (1940) Lipedema of the legs: a syndrome characterized by fat legs and orthostatic edema. Proc Staff Meet Mayo Clin. 15:184-87.
- ⁴ Lipoedema UK (2016) Lipoedema UK Big Survey 2014 Research Report. Available online: <https://www.lipoedema.co.uk/wp-content/uploads/2016/04/UK-Big-Survey-version-web.pdf>
- ⁵ Dadras M, Mallinger PJ, Corterier CC, Theodosiadi S, Ghods M. (2016) Liposuction in the treatment of lipoedema: a longitudinal study. Archives of plastic surgery. 44(4):324-31.
- ⁶ NICE (2022) Liposuction for chronic lipoedema – Interventional procedures guidance [IPG721]: <https://www.nice.org.uk/guidance/ipg721>
- ⁷ Podda M, Kovacs M, Hellmich M, Roth R, Zarrouk M, Kraus D, Prinz-Langenohl R, Cornely OA. (2021) A randomised controlled multicentre investigator-blinded clinical trial comparing efficacy and safety of surgery versus complex physical decongestive therapy for lipoedema (LIPLEG). Trials: 22(1):758. doi: 10.1186/s13063-021-05727-2. PMID: 34717741; PMCID: PMC8557553

FURTHER INFORMATION ON LIPOEDEMA

Ishaq, M., Bandara, N., Morgan, S. et al (2022) Key signaling networks are dysregulated in patients with the adipose tissue disorder, lipoedema. *Int J Obes* 46, 502-514.

Lipoedema Foundation LEGATO library: <https://www.lipoedema.org/library>

Lipoedema Foundation. Learning by Listening – Early findings from the Lipoedema Foundation Registry Survey: https://static1.squarespace.com/static/5775899ac534a5e813c050db/t/62902cd923a0156d8fcea1e/1653658317504/LF_First+Look+Registry+Report.pdf

NHS Conditions Pages. Lipoedema: <https://www.nhs.uk/conditions/lipoedema/>

RCGP learning. Lipoedema: An adipose tissue disorder. <https://elearning.rcgp.org.uk/course/info.php?id=146>

Wounds UK (2017) Best Practice Guidelines: The Management of Lipoedema. London.