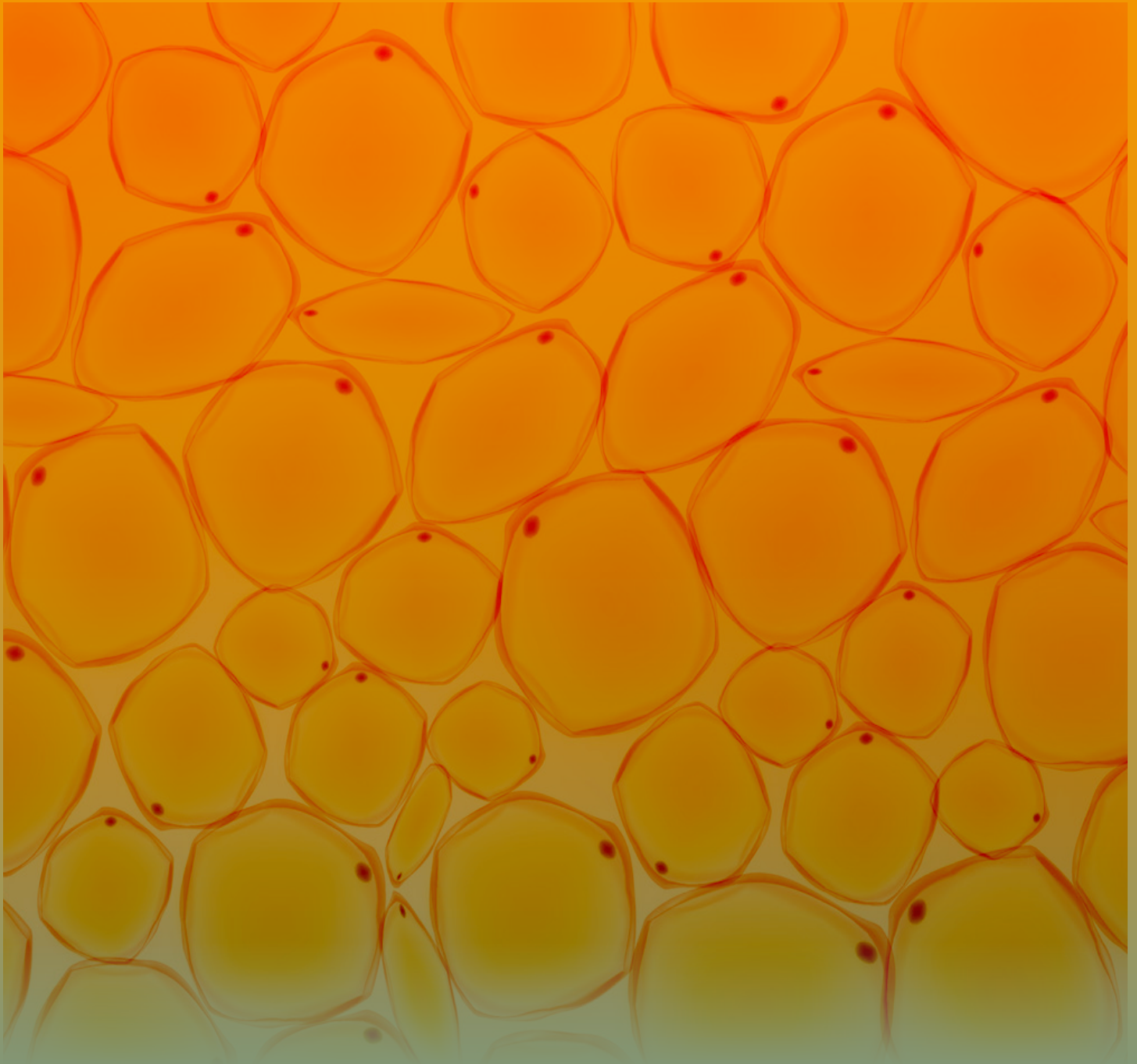




The impact of obesity on lymphoedema

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Foreword



Scan the QR code to access further reading on lymphoedema by the NHS

The guidance in this document sets out expert panel consensus on the interrelationship between lymphoedema and obesity and concerns about lymphoedema treatment for people living with obesity. It presents agreed guidance for the assessment and referral of lymphoedema patients living with obesity in general and specialist settings, and for setting objectives for lymphoedema care for this patient cohort. It concludes with appropriate management pathways for patients with varying levels of lymphoedema and obesity.

The document has the following sections:

1. Overview of obesity and lymphoedema
2. Assessment and referral for lymphoedema patients living with obesity
3. Setting objectives of care for the patient cohort
4. Management pathways for lymphoedema patients living with obesity.

Jacqui Fletcher, Chair

Glossary

Chronic oedema: Persistent tissue swelling from fluid buildup lasting over three months, usually due to lymphatic, venous, or systemic causes.

Adipose Tissue Deposition (ATD): The accumulation of fat cells in the body, often in specific areas, which can affect body shape and metabolic function.

Decongestive Lymphatic Therapy (DLT): A treatment for lymphoedema that uses a combination of manual lymphatic drainage, compression therapy, exercise, and skin care to reduce swelling and improve lymphatic flow.

Modified high intensity lymphoedema treatment (mDLT): A version of DLT adapted for patients who are largely self-managing or when adaptations, such as wraps instead of bandages, are required.

Body Mass Index (BMI): A measure of body fat based on a person's weight in relation to their height, used to classify underweight, healthy weight, overweight, or obesity.

Sleep apnoea: A sleep disorder in which a person's breathing repeatedly stops and starts during sleep, leading to poor sleep quality and other health risks.

Cellulitis: A bacterial skin infection that causes redness, swelling, warmth, and pain in the affected area, and can spread rapidly if untreated.

High intensity lymphoedema treatment: A form of decongestive lymphatic therapy (DLT) delivered in an intensive phase followed by maintenance. It typically includes multicomponent bandaging (MCB), and may also involve manual lymphatic drainage (MLD) depending on the presentation. Standard care also incorporates skin care, exercise and movement guidance, positioning advice, compression therapy, and weight management support.

Low intensity lymphoedema treatment: A less intensive approach to managing lymphoedema, often used for patients with milder symptoms or those who are self-managing. It usually involves compression therapy (such as garments or wraps), skin care, exercise and movement guidance, positioning advice, and support with weight management, without the full multicomponent bandaging or daily supervised therapy used in high intensity treatment.

Specific Polysaccharide Antibody Deficiency (SPAD): A mild type of primary immunodeficiency where those affected do not produce sufficient antibodies to protect the body from certain bacteria.

Overview of obesity and lymphoedema

To effectively manage lymphoedema in patients living with obesity and set objectives for lymphoedema care, a healthcare professional (HCP) must understand lymphoedema and obesity, the interrelationship between them, and the impact of obesity on lymphoedema treatment pathways and efficacy.

The interrelationship between lymphoedema and obesity

Lymphoedema results from a failure of the lymphatic system, and is characterised by swelling, skin and tissue changes, and a predisposition to infection in the affected tissues (NHS, 2023). The swelling associated with lymphoedema can occur anywhere in the body. Most commonly it affects the arms and legs, but can also impact the head, neck, chest, and genitals (British Lymphology Society [BLS], 2023). Primary lymphoedema is caused by an intrinsic abnormality of the lymphatic system, often genetically determined. Although the abnormality is present at birth, the onset of lymphoedema swelling may not occur until later in life, including adulthood. Secondary lymphoedema arises from damage to a normally functioning lymphatic system. This damage can be caused by various factors such as surgery, trauma, radiotherapy, or infection in areas rich in nodes and vessels (BLS, 2023; Carroll and Singhal, 2024), or by problems with the movement and drainage of fluid in the lymphatic system (NHS, 2023).

Secondary lymphoedema is more common than the rarer primary lymphoedema. Between 265,000 and 456,500 people are thought to be affected by lymphoedema in the UK (Moffatt et al, 2017). Its pathophysiology is complex and while recent research has advanced understanding (Grada and Phillips, 2017; O'Donnell et al, 2017), it remains unresolved (Azhar et al, 2020). Lymphoedema is characterised by several pathophysiological events including lymph stasis, lymphatic vessel remodelling and dysfunction, inflammation, adipose tissue deposition, and fibrosis, but the exact sequence of these events, and their interplay during the development and progression of lymphoedema, needs further research (Azhar et al, 2020).

Chronic oedema and lymphoedema are often discussed together, but their definitions vary across the literature. Chronic oedema is generally described as swelling persisting for more than three months (Moffatt et al, 2019b; Cooper-Stanton, 2020). However, experts emphasise that all chronic peripheral oedema represents lymph drainage failure, whether due to an absolute reduction in lymph transport, as in lymphoedema, or because lymphatic drainage is overwhelmed by excess fluid load, such as in venous disease or heart failure (Mortimer, 2021). In this context, chronic oedema is considered a clinical sign, while lymphoedema is a disease; both share the same pathophysiology and can be managed in the same way.

Obesity is a frequent, serious, complex, relapsing, adiposity-based condition (Frühbeck et al, 2019; Lin and Li, 2021) that has many causes including biological, genetic, psychological and environmental factors, with no single dominating factor (Foresight, 2007). The World Health Organisation (2025) defines obesity as abnormal or excessive fat accumulation that impairs health and is a risk factor for several chronic diseases, such as heart disease, stroke, diabetes, osteoarthritis, and some cancers.

The European Commission maintains that obesity as a chronic disease (Burki, 2021) represents a major public health problem (Jia and Liu, 2021) and is increasing (Office for Health Improvement and Disparities, 2025). However, the misconception that obesity is a lifestyle choice that can be reversed simply by exercising willpower is now considered incorrect and a reductionist view of a complex condition. Recent obesity research emphasises the impact of structural inequalities and social determinants on rates of obesity, particularly in terms of socioeconomic status, neighbourhood-level factors, and food and exercise availability (Kahan and Mehrzad, 2020; Keaver et al, 2020; Libuy et al, 2021; Baez et al, 2023; Hoffman et al, 2024), psychological issues (Gillison, 2019; Robinson et al, 2020), as well as biological and genetic factors. Understanding and addressing obesity needs a holistic approach

MYTH

Obesity is a lifestyle choice that can be addressed and reversed by willpower alone.

TRUTH

Obesity is a complex and chronic disease that is driven by 'biopsychosocial' factors, especially socioeconomic inequalities, neighbourhood deprivation, and limited access to nutritious food and physical activity opportunities.



Scan the QR code to view 'Tackling obesity: future choices project report (2nd edition)' by GOV.UK

Overview of obesity and lymphoedema (Continued)

MYTH

Obesity causes lymphoedema.

TRUTH

1. Obesity is just one cause of lymphoedema. While obesity may be the main contributing factor to lymphoedema in many cases, patients present with several issues that are part of the aetiology of their lymphoedema, and understanding obesity as one of a range of factors is important
2. Increasing evidence indicates a complex, reciprocal relationship between obesity and lymphoedema. Obesity can impair lymphatic transport capacity, while in lymphoedematous limbs, pathophysiological changes can lead to local adipose tissue deposition. This localised tissue change is distinct from generalised obesity but may, in some cases, be suitable for liposuction (Mehrra and Greene, 2014).

that considers social, environmental, biological, and psychological factors, reflecting a biopsychosocial model (Capoccia et al, 2025).

Obesity is a known risk factor for the development of lymphoedema because of its deleterious effects on lymphatic function (Mehrra and Greene, 2014; Sudduth and Greene, 2022; Carroll and Singhal, 2024). Obesity is linked to significant localised lymphoedema of the limbs, a condition observed exclusively in individuals with Class III (historically known as morbid) obesity. Class III obesity is a disease state marked by excessive body fat, usually a BMI over 40 kg/m² (or lower with added risk factors), and evidence of organ dysfunction or major limits on daily life (Rubino et al, 2025). While obesity may not be the primary cause of lymphoedema, it is a major contributing factor to the severity of its symptoms (Carroll and Singhal, 2024). A BMI over 25 is associated with a higher risk of developing lymphoedema (Park et al, 2008). Individuals with a BMI of 25 kg/m² or less are generally considered to be within a healthy weight range and are often encouraged to maintain this BMI. This means they should focus on strategies to prevent weight gain and support their overall health and wellbeing.

There remains uncertainty on how obesity affects lymphoedema. Research suggests that several factors may contribute to the impact of obesity on lymphoedema. These include increased lymph production that overwhelms the lymphatic system due to an expanding limb, and excess adipose tissue deposition producing pro-inflammatory cytokines that damage lymphatic vessels. Additionally, lymphatics may be compressed as a result of adiposity. Decreased lymph clearance due to reduced mobility and venous insufficiency may also play a role (Mehrra and Greene, 2014; Provan, 2019).

Obesity is a significant contributing factor to the development of lymphoedema, and while it may be the main contributing factor to the condition in many cases, patients present with several issues that are part of the aetiology of their lymphoedema. Understanding obesity as one of a range of factors is important. Adipose tissue deposition (ATD) can occur in individuals with

lymphoedema regardless of obesity status. In this context, ATD is not inherently linked to body weight, which makes the notion of a reciprocal relationship between obesity and ATD somewhat misleading. Rather, ATD tends to develop as a consequence of unmanaged or progressive lymphoedema. While obesity may exacerbate lymphatic dysfunction and complicate clinical presentation, it can also obscure the distinction between adiposity due to systemic weight gain and localised ATD associated with lymphoedema.

Lymphoedema promotes adipose tissue deposition in sites affected by lymphatic impairment/lymphoedema. Increasing evidence supports the concept that this relationship is reciprocal such that obesity impairs lymphatic transport capacity and impaired lymphatic function promotes adipose deposition (Mehrra and Greene, 2014).

The impacts of lymphoedema on individuals' quality of life are well-documented (Mercier et al, 2019), and include (Morgan et al, 2005; Gethin et al, 2012; Gjørup et al, 2017; Greene and Meskell, 2017; Mercier et al, 2019; Moffatt et al, 2019a):

- Function limitations
- Psychological distress (e.g. anxiety, depression)
- Reduced social participation
- Negative body image and low self-esteem
- Physical symptoms such as pain, discomfort, infection and cellulitis.

The Lymphoedema Framework emphasises that obesity exacerbates lymphoedema by complicating management, suggesting weight loss support is a key component of treatment. The support system of family, friends, and caregivers can play a crucial role in helping or hindering a person's ability to improve their weight and lifestyle.

Traditionally, lymphoedema has been under-recognised and under-treated in healthcare where understanding of the pathophysiology of lymphoedema and treatments beyond compression have been limited (Moffatt et al, 2003; Keast et al, 2015; 2019; Nairn et al, 2019; Carroll and Singhal, 2024). This may, in

part, be due to limited and varied guidelines of lymphoedema care and management (O'Donnell et al, 2020), which affects its identification and treatment in primary care settings (NHS, 2023).

Evidence from the recent LIMPRINT study, an international epidemiological study of lymphoedema and chronic oedema (International Lymphoedema Framework, 2019), revealed that rates of lower limb lymphoedema are higher in the UK than in other European countries (France, Italy and Turkey; Keeley et al, 2019). Robust research on the cost and clinical effectiveness of different models of care for lymphoedema remains sparse (Stout et al, 2013; Moffatt et al, 2019b), while there are also limitations and variation in guideline recommendations for care and a lack of clear consensus on lymphoedema management (O'Donnell et al, 2020), which affects its identification and treatment in primary care settings (NHS, 2023).

The LIMPRINT study (International Lymphoedema Framework, 2019) sets out the following recommendations for lymphoedema diagnosis and care:

- Greater recognition of the prevalence and impact of lymphoedema and the diversity of lymphoedema patients
- Improving early diagnosis and treatment, including activity/movement/exercise, compression and skin care
- Addressing barriers to access to treatment and improving equitable access
- Addressing risk factors for lymphoedema, including obesity and immobility
- Addressing the psychological impact of lymphoedema, and integrating psychological support into care plans
- Increasing research on lymphoedema.

Consensus statements

- Obesity is a complex condition driven by biological factors and psychological factors, as well as social determinants such as socioeconomic status and geographic location, thus addressing obesity needs to take a biopsychosocial approach
- Lymphoedema is often under-recognised in people living with obesity, and timely diagnosis is essential to ensure access to treatment. Its impact on mobility can also contribute to further weight gain, highlighting the importance of proactive recognition by clinicians
- There should be equity in access to lymphoedema care regardless of the presence of obesity.

Obesity is a complicating factor in the management of lymphoedema and renders the treatment of swelling more challenging in patients with obesity (Provan, 2019). Achieving control of swelling with compression is more difficult in patients with obesity (Burian et al, 2024). Achieving control of swelling with compression is more difficult in patients with obesity (Burian et al, 2024), but it is vital that their lymphoedema is treated as evidence suggests that there is a 2.5-fold increase in cellulitis for patients with obesity (Mehrara and Greene, 2014). For patients with large, misshapen limbs requiring compression therapy, careful consideration of garment class, stiffness, and application is crucial to achieving effective pressure and containment.

Patients living with obesity often experience reduced long-term benefits from lymphoedema management, including interventions such as decongestive lymphatic therapy (DLT; Mehrara and Greene, 2014; Lee, 2023). This can pose challenges for sustained symptom control and lead to increased service use, particularly where ongoing treatment may be required.

In response to rising demand and constrained resources, some services have introduced eligibility criteria that include weight management prior to initiating treatment. The NICE (2025) guideline states to "Start managing comorbidities as soon as they are identified; do not wait until the person has lost weight." While this aims to optimise clinical outcomes and efficient use of NHS services, the emphasis on weight management may inadvertently shift focus away from timely interventions for lymphoedema. This risks underrecognising the bi-directional relationship between lymphoedema and obesity, where each condition can exacerbate the other.



Scan the QR code to view a summary by Obesity UK of the multitude of causes of obesity and how a lot of these causes are outside a person's control



Scan the QR code to view a summary and definition of obesity by NICE

Overview of obesity and lymphoedema (Continued)

Box 1. Updated classifications of obesity (NICE, 2025)

- Obesity class I – BMI 30 to 34.9 kg/m²
- Obesity class II – BMI 35 to 39.9 kg/m²
- Obesity class III – BMI ≥ 40 kg/m².

Without timely intervention, unmanaged lymphoedema may progress, increasing the risk of complications such as infection and ulceration. This not only affects patient wellbeing but also contributes to greater service pressures in the long term.

A person-centred approach, addressing both lymphoedema and the wider health and social factors associated with obesity, is essential to improving outcomes and reducing demand. Collaborative strategies that promote inclusion, continuity of care, and sustainable weight management may help bridge the gap between clinical guidelines and equitable access. This includes providing patients with support for healthy eating, psychological guidance to understand barriers to weight management, and practical advice on lifestyle changes, as without these supports, weight loss and long-term health improvements are unlikely.

These challenges have particular relevance in the UK: The LIMPRINT study found that the UK has a higher prevalence of obesity, with 39.7% of patients living with obesity and 24.9% living with class III obesity compared with other countries. At the same time, only 51% of patients living with lower limb lymphoedema in the UK are able to walk unaided, compared with more than 80% in other countries (Keeley et al, 2019).

Weight stigma

A recurrent issue in lymphoedema diagnosis and care for people living with obesity is the bias/prejudice of HCPs towards them, where weight bias may result in discrimination, limited access to care, and compromised health outcomes because HCPs disregard health concerns (Puhl and Brownell, 2001; Phelan et al, 2015; Tomiyama et al, 2018; British Dietetic Association, 2022; Mellor et al, 2022; Ryan et al, 2023; Ginsburg et al, 2024). Research indicates that patients are aware of weight stigma in healthcare, which manifests non-verbally and subtly to verbally and explicitly (Ryan et al, 2023). This can lead to people living with obesity postponing seeking medical help because of fear of judgment or discrimination and delays in diagnoses and treatment (Phelan et al, 2015; Ginsburg et al,

2024). Such bias misattributes health conditions, affects care provision and ability to gain equitable access to services, and perpetuates a poor systemic infrastructure to support the needs of patients with obesity (Breen et al, 2022; Ryan et al, 2023).

When it comes to weight management, Body Mass Index (BMI) is the most widely used tool to determine if a person has obesity, see **Box 1**. BMI was originally developed for population-level research, not for assessing individual health. As a result, it does not accurately reflect how weight affects health in individuals or across different groups, such as women versus men, people from ethnic minority backgrounds, or individuals at various life stages. For example, in older adults, some studies suggest that BMI values in the 'overweight' range may be associated with lower risk of certain adverse health outcomes, such as mortality or frailty, compared with lower BMI ranges (Flegal et al, 2013). However, BMI is an imperfect measure of health, and its use can contribute to weight stigma. Language around BMI categories should be used carefully, especially when discussing clinical recommendations, to avoid reinforcing bias or assumptions about health based solely on weight.

A BMI between 30 and 39.9 is classified as obese, while a BMI of 40 or higher is considered severely obese. However, these classifications should not be used in isolation to determine access to services. Care decisions should also consider the patient's preferences, current weight trends (gain, stable or loss), and the specific areas where they want support.

The use of BMI to classify obesity has, however, been challenged due to its simplicity in measuring a complex condition, thus measures of adiposity and body composition are now recommended (Rubino et al, 2025).

A BMI of 35 or higher with comorbid health conditions, or a BMI of 40 or more, can trigger a referral for assessment for bariatric surgery before intensive lymphoedema clinic care (National Institute for Health and Care Excellence, 2025; see



Scan the QR code to view the BLS #EveryBodyCan campaign

Box 1 on BMI cut-offs). Recent research distinguishes between clinical and preclinical obesity, highlighting the point at which excess weight begins to significantly affect activities of daily living (Rubino et al, 2025). This distinction emphasises the need for a more individualised approach, considering not only BMI but also functional impact, comorbidities, and patient goals when planning care or interventions.

Importantly, patients should not be denied treatment for lymphoedema based on their BMI alone; BMI is frequently biased in individuals living with lymphoedema, often leading to misclassification into higher obesity categories than is clinically accurate. This distortion arises from fluid accumulation and adipose tissue deposition, which BMI cannot differentiate from true adiposity. As such, complementary anthropometric measures such as waist-to-hip ratio or waist circumference, may offer more reliable insights into metabolic risk and body composition in this population. Instead, healthcare systems should provide equitable access to appropriate, tailored management and support, including person-centred, non-stigmatising interventions including education and resources to carry out self decongestive lymphatic treatment, this may include a variety of compression options such as Velcro adjustable wrap systems and MTM garments, in combination with skin care and exercise advice.

It is important to acknowledge that treatment outcomes are likely to be less effective without weight loss (Lymphoedema Network Northern Ireland, 2022). However, receiving treatment may serve as a catalyst for improved self-care and motivation to lose weight. The phrase, “intensive treatment” has referred to direct, clinic-administered interventions such as DLT. However, current thinking recognises that patients can carry out their own form of intensive treatment at home (e.g. by self-applying and adjusting compression wraps under appropriate guidance).

In lymphoedema management, BMI is an important consideration for intensive treatment:

- Treatment efficacy: Higher BMI is linked to reduced treatment success and greater risk

of progression in BCRL (Vignes et al, 2010; Hinrichs et al, 2004; Mak et al, 2009; Bar et al, 2010). Patients with BMI >36 are less likely to maintain limb volume reductions after therapy, with the greatest recurrences seen above BMI 45 (Pearson et al, 2025)

- Practicality and safety: Treating larger limbs can be physically challenging and poses a manual handling risk for staff
- Resource allocation: Providing intensive treatment before weight management may be less efficient; integrating structured weight support can optimise outcomes and use of resources.

Patients with a high BMI may initially respond well to DLT but frequently return with recurrent limb swelling within a short space of time if they are not actively losing weight at the same time. Addressing the obesity itself through weight management is crucial for managing the underlying cause of the persistent swelling. Additionally, practical challenges, such as difficulty bending down to apply compression garments properly, as well as psychological and societal barriers, can lead some patients to become reliant on clinics or HCPs for ongoing care. As such, patients with high BMI may require more specialised and individualised treatment plans to address the complexities of both of their conditions and improve the sustainability of DLT benefits.

Nonetheless, the BMI ‘cut off’ of 40 in the UK raises concerns that BMI is utilised inappropriately as a criterion to deny lymphoedema treatment. BMI does not consider the complexity of obesity (Frühbeck et al, 2019; Rubino et al, 2025) as a health condition intrinsically linked to biopsychosocial circumstances (Rosenbaum and White, 2016; Gillison, 2019; McCabe et al, 2019; Fuller-Tyszkiewicz et al, 2022; McCabe et al, 2023).

There are also concerns about the ethics and inequity of potentially denying or reducing lymphoedema treatment based on BMI alone and an arbitrary cut off point. Provan (2019) notes that a review of lymphoedema management guidance suggests that, while there is an acceptance among experts that



Scan the QR code to view WHO document for patient engaging in weight management

Overview of obesity and lymphoedema (Continued)



Scan the QR code to view the Lymphoedema Support Network, a sister charity to the British Lymphology Society that supports patients

weight management plays an important role in the treatment of lymphoedema, guidance varies on the emphasis placed on weight management. This suggests that, unlike the core principles of lymphoedema management (physical activity, bandaging and/or compression garments, and skin care, with or without manual lymphatic drainage), there is limited agreement about the practical application of weight management strategies. It is also important to manage patient expectations, as some individuals may anticipate MLD as a routine component of their treatment (Medical Education Partnership, 2006; All Wales Lymphoedema Obesity Policy Group, 2014; London Cancer Alliance, 2015; Lymphoedema Network Northern Ireland and Health Service Executive, 2022).

This lack of consensus raises two questions (Provan, 2019):

1. Is adequate importance placed on the role of weight management in clinical lymphoedema practice?
2. Are there barriers to, and confusion about, the implementation of weight loss interventions?

Ethical questions also consider the fairness of implementing a lower BMI target for patients engaging in weight management because of the difficulty of achieving significant and enduring weight loss. There is evidence that lifestyle interventions can result in a 5–10% reduction in body weight. However, for people with lymphoedema secondary to obesity, effective management may require access to specialist weight management services, rather than relying solely on

general lifestyle interventions, to support meaningful and sustainable weight loss. This has beneficial health benefits (Ryan and Yockey, 2017), but a high proportion of individuals will regain the weight within 5 years, often going beyond their starting weight. To improve the chances of sustained weight loss and health benefits, comprehensive, multimodal approaches combining diet, increased physical activity, and behavioural therapy are often recommended.

There is agreement that irrespective of a patient's BMI, all patients living with obesity should receive modified decongestive lymphatic treatment alongside sensitive discussions regarding the impact of a higher weight on lymphoedema, and with consent, referral to weight management services, until it is appropriate to offer DLT. It should involve more than just compression; at a minimum, it should also include goals for movement or physical activity, as well as skin care.

Consideration of the biopsychosocial factors that can influence obesity, alongside combined clinical judgement and patient input, is encouraged when assessing appropriate types of treatment that should be administered to patients living with higher levels of obesity – treatment should be tailored to the individual and their goals. If a patient is actively engaged in lifestyle changes and progressing towards weight management goals, high intensity treatments may be considered and favoured as addressing the underlying issue of obesity is crucial for effective and lasting lymphoedema management.

Consensus statements

- As a long-term, chronic disease, it is essential to identify and treat lymphoedema as early as possible to achieve the best outcomes for patients
- Address HCP bias against people living with obesity that inhibits care provision and fair access to lymphoedema services
- Movement, wellbeing and healthy weight are key for managing lymphoedema. Regular activity supports lymphatic function, reduces swelling and improves mental and physical health. A holistic approach to lifestyle enhances overall outcomes
- Where there is evidence of patients with higher levels of obesity engaging with lifestyle changes and starting to achieve weight loss goals, more intensive lymphoedema treatment may be appropriate as weight reduction can positively impact lymphoedema management.

It is important to acknowledge the inherent inequalities in current lymphoedema guidelines. Rather than accepting that DLT is less effective in people with larger bodies, research should focus on improving treatment efficacy for this population. Development of

safer protocols, appropriate equipment, and tailored approaches can enable effective DLT for patients with higher BMI, ensuring that limitations of current practice do not unfairly restrict access to care.

Assessment and referral for lymphoedema patients living with obesity

Box 2. Examples of biological, psychological, and social factors that contribute to obesity

Biological

- Family history of obesity
- Comorbid health conditions that impact body size (e.g. type 2 diabetes, cardiovascular disease, osteoarthritis)
- Medication side effects
- Sleep quality
- Stress and its physiological impacts
- Neurodiversity.

Psychological

- Disordered eating
- Emotional eating
- Stress and coping mechanisms
- Adverse childhood experiences impacting relationship with food and bodies (is food seen as a way to soothe a hypervigilant nervous system? Is weight seen as protection from harm?)
- Learning disability
- Habits.

Social

- Access to food and opportunities for movement (i.e. considering location, time and financial means)
- Cultural messages around food and movement
- Social support.

Assessment for people living with obesity and lymphoedema refers to the initial assessment in the GP surgery and assessment in specialist lymphoedema services after referral. Both general and specialist lymphoedema assessment for people living with obesity should be person-centred and holistic (Epstein and Street, 2011; Hudon et al, 2012; Scholl et al, 2014) to assess the patient's lymphoedema, obesity, treatment needs, and weight management needs within a biopsychosocial framework/assessment approach (Rosenbaum and White, 2016; Gillison, 2019; McCabe et al, 2023).

Person-centred, holistic assessment

Assessments should include a discussion to set expectations with the patient, covering what the assessment will involve, what topics may be discussed, and what the patient is comfortable sharing. These conversations may be led by the GP in primary care or by the lymphoedema team in specialist services, depending on the point of referral. Patients should also be clearly informed about the purpose of the assessment and how the information gathered will be used. Assessments should include inherent restrictions of living in a larger body in terms of obesity (e.g. engaging in physical activity) and lymphoedema (e.g. reaching extremities to perform skincare or to apply compression) and should acknowledge with the patient that the potential length of treatment, most effective intervention, and barriers to treatment outcomes, will vary depending on restrictions.

It is essential to discuss the relationship between obesity and lymphoedema during the initial assessment so that patients understand the significant role weight management will play in their ongoing care plan. However, it may not always be appropriate to initiate a referral for weight management support at this stage; the initial focus should also include obtaining a general assessment, explaining lymphoedema, and supporting the patient to understand why they have it and what it is, before modified treatments begin. The process of introducing and starting to address obesity may therefore be gradual, and will be person-centred and supportive, when a trusting relationship has

been established and some treatments for lymphoedema are in place (Scott et al, 2004; Hughes et al, 2021). HCPs should ensure that the assessment focusses on the patient's lymphoedema and treatment options (i.e., goal setting and active patient involvement), in which weight is a factor, rather than focusing only on weight management. Whether related to weight or lymphoedema, there must be a clear motivation to change. Both conditions demand significant self-management, making the individual's capacity and willingness to change crucial. Service providers should therefore be skilled in motivational interviewing and brief interventions to effectively support behaviour change and ongoing self-management.

Then, it is important to apply biopsychosocial assessments (Gillison, 2019) to understand the biological, psychological, and social factors that contribute to obesity that vary from person to person and to target weight management interventions effectively, see **Box 2** for examples. Assessments should also consider learning needs, disabilities and the presence of other conditions; a higher proportion of people with learning disabilities are living with obesity, often because of issues such as capacity and choice around diet and physical activity. Where HCPs meet people with learning disabilities at assessment, they should consider mental capacity (i.e. by completing a capacity assessment), understanding care environment and food provision and related issues such as chronic constipation (distorting weight) and atypical body shapes (Public Health Limited, 2020; British Dietetic Association, 2021b).

Engaging with weight management

Assessments may also include consideration of a patient's readiness to engage in and suitability for self-care practices and weight management if not already in place. It should be remembered that treatment should be individualised to each patient and not withheld due to obesity levels (NICE, 2025).

Clinicians should consider discussing capabilities, the patient's understanding of weight-related issues, weight management,

and their knowledge of lymphoedema. Education and advice surrounding self-care treatments should also be discussed, including levels of support in life and changing their health conditions.

Here, language is crucial (British Dietetic Association, 2021a; 2022; Mellor et al, 2022). For example, clinicians might use neutral, patient-first language such as 'body size' rather than 'obesity', avoiding the term 'morbid', or referring to 'BMI as an indicator of health conditions' (Scott et al, 2004; Public Health England, 2017; Obesity UK, 2020; National Institute of Diabetes and Digestive and Kidney Diseases, 2023). Ultimately, the patient's preferences should guide which terms are used. HCPs should be mindful of language during assessment, especially around weight and its management, and establish with the patient their preferred language and terminology. Conversations about weight management should take place only with the consent of the patient. This approach to assessment is important not only in supporting the patient to talk about weight concerns when they are ready but also in reducing the stigma-bearing clinical interactions patients may have experienced before. These conversations should be included in the assessment record so that the patient does not need to have similar conversations with each clinician. While this document uses the term 'obesity' throughout for consistency, clinicians are encouraged to adopt person-first language wherever possible.

Where available and with informed consent, clinicians should consider referral to tiered weight management services, which are structured to offer progressively more intensive support:

- **Tier 1:** Self-care where the focus is on encouraging healthy lifestyles and empowering individuals to take responsibility for their own weight management through self-directed activities
- **Tier 2:** Structured programmes, typically lasting from 12–24 weeks, delivered generally in community settings, that focus on lifestyle modifications such as diet, nutrition, and behaviour modification

- **Tier 3:** Multidisciplinary team (MDT) approaches after a GP referral that provide more intensive, personalised support for individuals with more complex weight issues
- **Tier 4:** Complex obesity interventions that may include bariatric surgery.

Signposting for patients to guide them to areas where they can start taking action to manage their weight loss, and movement and exercise, is recommended. Service areas may offer different support in the community, including mental health support services, often accessed online, by phone, through third-sector organisations, or via statutory services.

Lymphoedema referrals and red flags

Referrals to specialist lymphoedema services and assessments should consider a patient's readiness to engage in lymphoedema treatment and self-care (skincare, exercise, and movement). Where a patient is not ready or able to engage with treatment or self-care, a referral might not be made. Patients can also be educated in the general setting on self-care before referral to specialist services so they can put practices in place while they wait for specialist care (London Cancer Alliance, 2015; BLS, 2017).

Referrals to specialist lymphoedema services from the general setting should not take place in isolation and without necessary investigation and management of issues. Patients should, at the very least, have a full set of bloods checked, including (but not limited to) HbA1c (to check for diabetes), TSH (thyroid function), FBC (to check for anaemia), WCC (infection or inflammatory markers), LFTs (to check liver function), U&E and eGFR (to check renal function/CKD), and ProBNP, if appropriate, to check for heart failure. It is important that patients have their blood pressure checked for hypertension before being referred to the specialist clinic, as undiagnosed hypertension is commonly identified during the initial ABPI assessment with people with obesity. Clinicians should remain alert to presenting features or symptoms that may indicate other conditions, such as new or worsening breathlessness, unexplained fatigue, or changes in swelling,



Scan the QR code to view a summary on weight management tiers by NICE



Scan the QR code to view the BLS lower limb inflammatory pathway

Assessment and referral for lymphoedema patients living with obesity (Continued)

Box 3. Key red flags for referring patients during lymphoedema assessment

- Cellulitis
- DVT
- Cancer that is obstructing lymphatic pathways
- Decompensated heart failure.

even if the patient's weight has been stable, rather than attributing all symptoms to body size.

Some presenting features or symptoms reported by patients may serve as important red flags, particularly in individuals living with obesity who often do not receive appropriate investigations. Symptoms are frequently dismissed as merely a consequence of body size, even when the patient has maintained a stable weight for some time. For example, a patient may report increasing breathlessness, which is commonly seen in clinic. While often attributed to weight, this symptom may actually signal an undiagnosed underlying cardiac issue.

Patients with lymphoedema related to comorbidities can be managed in the general setting (e.g. with compression) and then referred to specialist provision if treatment becomes more complex. Patients living with obesity who have a BMI of over 60, or significant metabolic issues (e.g. Specific Polysaccharide Antibody Deficiency (SPAD) immunodeficiency, sleep apnoea, uncontrolled hypertension, or uncontrolled diabetes), should be referred to an expedited review by a bariatric weight management service if available.

Assessments must also identify 'red flags' where there are indicators of a more serious underlying condition, see **Box 3**. Assessing patients with obesity for lymphoedema can be challenging, not because the condition is absent, but because excess body weight can complicate evaluation. It is important to understand the underlying cause of the lymphoedema, whether obesity-related, primary, or secondary, and to ensure that other reversible causes of oedema are investigated. Careful assessment helps prevent assumptions based solely on body size and supports appropriate diagnosis and management. Additionally, other conditions such as chronic

venous insufficiency or lipoedema can cause symptoms that closely resemble those of lymphoedema, making diagnosis more complex. It is also important to make sure other reversible causes of oedema are addressed as often this population group are dismissed and all symptoms are put down to them living in a larger body. Diagnostic procedures such as Duplex ultrasound and echocardiography are often complicated by body habitus and, in some cases, patients may exceed the physical limitations of scanning equipment or facilities, such as room size or examination couches (BDA, 2022).

At present, red flag criteria exist for urgent referrals to obesity services, but not for lymphoedema services; there are red flags to refer lymphoedema patients to other services (e.g. if a patient develops cellulitis or DVT).

With regard to cancer-related lymphoedema, this is often unilateral and may present proximally (e.g. in the thigh) due to obstruction of the limb's draining lymph nodes by cancerous cells. The assessment and management principles are the same as for any other lymphoedema patient. However, in patients with obesity, the condition can be easily overlooked due to excess body tissue.

There is agreement that the lower limb red flag system developed by the National Wound Care Strategy Programme (NWCSP) is appropriate for use with lymphoedema patients living with obesity (NWCSP, 2021). It provides a useful way of determining whether compression therapy can be safely applied, especially in cases where obtaining an accurate ABPI is challenging. However, it is important to distinguish this system from red flags used in differential diagnosis, such as signs of undiagnosed comorbidities, which are frequently overlooked in people living with obesity. Heart failure, for example, is often missed because symptoms are incorrectly attributed solely to obesity.

Consensus statements

- Assessments for lymphoedema for people living with obesity should be person-centred and holistic to assess the patient's lymphoedema, obesity, treatment needs, and weight management needs, and should use a biopsychosocial framework/assessment approach
- Conversations about the relationship between weight management and the prognosis of lymphoedema should begin as early as possible, using person-centred, neutral, and non-stigmatising language. These discussions should be collaborative, with preferred language and terminology agreed with patients, to ensure they feel supported and respected. Following assessment of people living with obesity, clinicians may consider referral to appropriate tiered weight management services available locally and should signpost patients to relevant weight management resources and community support services
- Referrals to specialist lymphoedema services from the general setting should not take place in isolation and without necessary investigation and management of related issues in the general setting; urgent referrals should be made for patients at end-of-life patients, and patients with cancer-related lymphoedema and primary lymphoedema. Patients with lymphoedema, including those with obesity-related lymphoedema, often require prompt assessment and management to address swelling, discomfort, and potential complications. However, in obesity-related lymphoedema, symptoms such as pain may be less pronounced, while functional limitations and mobility challenges can be more prominent
- Patients living with severe obesity, with a BMI of over 60, or significant metabolic issues (e.g. SPAD) immunodeficiency, sleep apnoea, uncontrolled hypertension, or uncontrolled diabetes) may, in specific cases, be fast-tracked for referral to specialist weight management services (e.g. patients with cancer or organ transplant who require weight loss so they can have treatment)
- The red flag system developed by the National Wound Care Strategy Programme (NWCSP) is appropriate for use with lymphoedema patients living with obesity (NWCSP, 2021). The NWCS red flags primarily focus on the safety of applying compression therapy. In contrast, red flags for lymphoedema identify the underlying cause of the swelling to ensure that no serious conditions are overlooked. For example, it is important to determine whether the oedema is due to an untreated acute or chronic DVT, recurrent cellulitis, or another cause. Obesity can complicate and contribute to all of these scenarios.

Setting objectives for care for the patient cohort

Setting objectives for lymphoedema care for people living with obesity begins at the point of assessment. Using patient-centred, holistic and a biopsychosocial assessment, with adjustments for people with learning disabilities, clinicians should guide patients to set realistic, appropriate, and achievable goals. These goals should include immediate (or modified) treatments, plans for weight management, and escalation to more intensive lymphoedema care when needed. Lymphoedema patients living with obesity may also require MDT intervention, including lymphoedema care, weight management, psychological support for weight management and long-lasting lifestyle change, and pharmacological intervention.

Acknowledging complexity and setting achievable objectives

When patients have been referred to specialist lymphoedema care, HCPs should be mindful that lymphoedema patients living with obesity may have had several healthcare experiences where their lymphoedema was not recognised and prioritised (Moffatt et al, 2003; Keast et al, 2015; 2019) and where the focus was on weight issues alone. It is important to discuss with the patient the complex nature of weight and obesity, and that difficulties in addressing weight is likely to be a longer-term objective for patients alongside lymphoedema treatment. Supporting patients to address weight issues within healthcare settings and in the community needs to be realistic to ensure that patients are provided with the tools and skills needed to engage with weight management, including considering psychosocial conditions and the impacts of previous negative experiences on patient confidence (Medical Education Partnership, 2006; Macmillan Cancer Support, 2023b; NHS, 2023; Payne, 2024).

Objectives for care depend on the range of issues identified during assessment including the patient's psychosocial and socioeconomic circumstances in particular, and the sources of support (e.g. family) available to patients for self-management and skin care, as well as potential impediments to achieving objectives (e.g. living with other comorbidities

or challenging demands). Care objectives will also be informed by what a patient can achieve if they are living with obesity, where weight is distributed, how a patient can reach their extremities and clean their skin, and where the lymphoedema is. Care plans must be personalised and focused on individual, achievable outcomes negotiated and set between the patient and clinician.

Key principles in clinical care

The revised key principles of lymphoedema care, which can be applied together to support each other, are compression, movement, skin care and lymphatic drainage (BLS, 2017; NHS, 2023). Weight management should also be addressed through education and information, ensuring individuals understand the rationale behind each aspect. This understanding is essential to encourage active participation in care planning and the development of shared, achievable goals.

Compression reduces swelling and keeps it under control. Its efficacy is enhanced by exercise and activity to encourage movement of lymph through the vessels. Compression treatment may involve the use of compression garments (socks/stockings/tights or sleeves and gloves), and bandages or Velcro wraps to compress affected areas to help drain fluid and reduce swelling. Providing compression garments for individuals with obesity and lymphoedema can present challenges related to comfort and fit. Adaptations provided by specialist lymphoedema services, such as adjustable waistbands, strategically placed seams, layering, or separating garments into segments, can help improve comfort, flexibility and customisation.

Movement is concerned with remaining active safely and will help the lymphatic system in collecting, transporting and safely removing lymph (fluid and cells) (BLS, 2023). Movement does not need to be strenuous exercise (see below); simple activities like walking, stretching to hang out the washing on the line, and heel-raises will help the lymphatic system. In many cases, it is important to encourage increased movement, including upper limb activity.



Scan the QR code to view the BLS lymphoedema care video

Guidance on goal setting, along with practical tips for maintaining ongoing engagement should also be considered (Hopkins, 2021).

Skin care should include regular washing (e.g. with non-drying products, such as a soap substitute), drying and moisturising of the skin (e.g. with bland emollients, such as creams), with particular emphasis on skin folds. These three components of skin care should be applied daily and are all as important as each other (Woods, 2019). Skin care keeps skin moisturised and clean to prevent cellulitis. It is also important to avoid sunburn and insect stings and injury by wearing protective clothing when outside.

Acknowledging that managing skin folds can be particularly challenging for individuals living in larger bodies is key, especially if they experience significant physical limitations. If a person is having difficulty with personal hygiene tasks like washing, drying, or applying moisturiser, it is crucial for them to discuss this with their clinician. This enables the clinician to assess the situation, identify the cause of the difficulty, and explore appropriate support options.

Manual lymphatic drainage (MLD) is not recommended as a sole treatment for lymphoedema, especially in individuals with obesity. While MLD, an intensive and often costly treatment, may bring about small improvements in the lymphatic system's fluid flow, and may reduce swelling, its effects are temporary and limited (Ramadan, 2024). Compared to compression therapy, MLD will not achieve long-lasting reduction in limb volume. Research evidence on the efficacy of MLD as a treatment for lymphoedema is sparse and contradictory (Williams, 2010; Müller et al, 2018; Thompson et al, 2021; Palmer, 2024; Ramadan, 2024), and MLD should be used only as part of a broader and more comprehensive lymphoedema treatment plan (BLS, 2024).

Self-lymphatic drainage (SLD), a simplified version of manual lymphatic drainage, may be a more effective method of lymphatic drainage. SLD, if advised, is directed by HCPs as part of self-management treatment for lymphoedema (BLS, 2022; Macmillan Cancer Support, 2023a).

Where infection or cellulitis occurs for people with lymphoedema, it must be treated with antibiotics. The dose of antibiotic may also need adjusting to treat cellulitis (BLS, 2025). If a patient has had two or more infections in a 12-month period, prophylactic antibiotics should be considered. According to the BLS and LSN Cellulitis Guidelines (2025), phenoxymethylpenicillin 250 mg 12-hourly is the first choice, increasing to 500 mg 12-hourly if BMI $\geq$ 33 (Dalal, 2017). This adjustment reflects the longer time it can take for antibiotics to reach tissue in patients with lymphoedema. Lymphoedema specialists generally do not prescribe antibiotics; however, those who are trained as independent prescribers may do so. Regardless, it is important that they are involved in the patient's care to oversee infection management.

All people living with lymphoedema should proactively reduce the risk of infection by maintaining skincare, hygiene, and foot care, and by continuing with compression therapy to minimise inflammatory changes in tissue. For patients with obesity, extra attention may be needed in areas such as skin folds and abdominal aprons, where moisture and friction can increase the risk of skin irritation or infection.

Pharmacological interventions for weight management

Novel incretin (hormone)-based pharmacotherapies, including single glucagon-like peptide 1 receptor agonist (GLP1) and dual GLP1/gastric inhibitory Polypeptide (GIP) agonists such as semaglutide (Wegovy) and tirzepatide (Mounjao), respectively, have gained widespread recognition for their significant effect on weight loss in the short term, by improving satiety and reducing calorie intake. Their impact on lymphoedema is yet to be explored. A phased rollout of these medications is currently underway, and the approach is expected to evolve as further evidence and clinical experience emerge.

From a therapeutic standpoint, these interventions should be considered within the broader spectrum of treatment options outlined in the previously discussed tiers. Additional

Setting objectives for care for the patient cohort (Continued)

pharmacotherapies such as orlistat alongside very low-calorie diets and bariatric surgery, may all have a role in supporting patient outcomes. However, the appropriateness of any given approach must be guided by individual patient preferences, clinical goals, overall health status and the tolerability of potential side effects.

Supporting psychological aspects in patients living with obesity

Understanding barriers to engagement

Barriers to health behaviors are highly individual, so there is no universal solution. The first step is exploring why a patient may not be engaging with care or weight-related interventions. Clinicians should adopt a curious, non-judgmental stance, using active listening and non-verbal cues to foster openness. A person-centred approach is key. Begin with open questions such as, "What do you think is making it difficult to do X?" and follow with targeted questions to clarify specific barriers. Behavioural models like COM-B (Capability, Opportunity, Motivation – Behaviour) can guide this exploration. The goal is twofold: to deepen both clinician and patient understanding of barriers. Summarising these barriers at the end of the conversation helps patients gain a global view of their challenges.

Formulating a collaborative plan

Once barriers are understood, co-create a plan to address them. Use open questions to elicit the patient's perspective on viable strategies and involve them in decision-making to support motivation and self-efficacy. Develop a specific plan using tools like SMART goals (Specific, Measurable, Achievable, Relevant and Time-bound), and offer signposting or referrals where appropriate (Hunziker and Newman, 2023). If ambivalence arises, the BRAIN decision-making tool (Benefits, Risks, Alternatives, Intuition and doing Nothing) can help support informed choices (Local Maternity and Neonatal System, 2024).

When and how to refer to psychological services

Mental health as a barrier

Referral to mental health services is appropriate if patients identify mental health as a barrier to lifestyle change or express general

psychological distress. Clinicians should be aware of high rates of trauma and adverse childhood experiences (ACEs) in people living in larger bodies and use broad, sensitive questions such as, "How is your mental health?" or "Does your mental health get in the way of making changes?" Familiarity with local risk protocols is essential in case of disclosures involving self-harm or suicidal ideation.

Common psychological comorbidities

Depression can reduce motivation, lower activity levels, and increase appetite. Anxiety or agoraphobia, often linked to weight stigma, may limit access to movement spaces or food shops. PTSD or trauma may lead to using food as a coping mechanism, so removing it without alternatives can worsen distress. Eating disorders may lead people experience a loss of control over their eating behaviours, limiting the amount of change that is possible without support.

Neurodiversity can also influence engagement with weight management. ADHD may present as impulsivity or difficulty with planning and routines, while ASD may involve sensory sensitivities and rigid patterns that impact dietary or lifestyle changes.

Referral pathways

- Mild to moderate mental health symptoms: talking therapies service (formerly IAPT)
- Moderate to severe mental health distress or risk: GP review > community mental health team
- Suspected eating disorder: GP referral to specialist ED services
- Suspected neurodiversity (ADHD/ASD): GP referral via right to choose for autism assessment and guidance.

Additional considerations

Access to specialist psychological support for weight management is limited and typically available only through NHS Tier 3 or Tier 4 services, subject to internal criteria. Local Tier 2 Weight Management Services and the NHS Digital Weight Management program offer support at the behavioural level, often providing 1:1 guidance alongside structured programs through behaviour change experts.

Given the highly individual reasons behind difficulties with weight loss, there are no universally effective tools that non-psychological professionals can provide to their patients to support the psychological aspects of weight management; a personalised approach is essential. Therefore, clinicians without specific training or supervision in behaviour change should signpost patients to appropriate services for further support.

Rather than relying on a fixed set of tools or techniques, psychology is most effective when applied as a framework to guide individual case work. In this context, it may also be valuable for lymphoedema teams to have access to a psychologist for consultation or supervision, helping to formulate tailored assessments, presentations, and treatment plans for each patient.

Encouraging exercise and lifestyle modifications

Objectives for care should also include exercise to improve the lymphoedema condition (Macmillan Cancer Support, 2023c), health and quality of life (Vasiljevic et al, 2012; Jepsen et al, 2015; Kolotkin and Andersen, 2017; Buckell et al, 2021), and help mobility (Niemiro et al, 2023).

The UK Chief Medical Officers recommends that all adults achieve 150 mins of moderate intensity physical activity a week plus two strength training sessions a week for general health. To achieve significant weight loss via exercise and physical activity alone, it is recommended to complete over 300 minutes a week (Donnelly et al, 2009). This is often unachievable and not typically recommended by clinical guidelines, as it can be difficult to sustain and may increase the risk of injury or burnout. However, exercise and physical activity have significant health benefits irrespective of its impact on weight loss, such as improving muscle strength, glycaemic control and quality of life.

Reducing sedentary time, building strength and cardiorespiratory fitness, should be the main priority of any exercise/physical activity plan as this can have a positive impact on the

lymphatic system (Macmillan Cancer Support, 2023c), general function, health and subsequent quality of life (Warburton et al, 2006; Vasiljevic et al, 2012; Kolotkin and Andersen, 2017; Buckell et al, 2021). Health benefits for lymphoedema are gained from even the smallest of movements and challenges and the biggest health benefit are seen when people who are least fit become more physically active (Warburton et al, 2006).

Research by Schmitz et al (2019) suggests that supervised, facility-based exercise programmes may be more effective for improving lymphoedema outcomes compared to home-based programmes in breast cancer survivors, for example. Supervised programmes may offer benefits such as (Schmitz et al, 2019):

- Proper technique and safety: trained professionals can ensure exercises are performed correctly, minimising the risk of injury and maximising effectiveness
- Individualised programmes: supervised programmes can be tailored to individual needs and abilities, offering a more personalised approach to exercise
- Motivation and support: the social aspect and guidance of a supervised programme can help with motivation and consistency (i.e. more frequent interactions with HCPs, whether face-to-face or digital).

Despite the well-established knowledge that physical activity and exercise is good for health and wellbeing, there can be many barriers and reasons why moving to the recommend levels is not achieved, especially in individuals who have bigger bodies due to obesity and/or lymphoedema. Patients may already be mobile, and it is important that HCPs speak with patients to learn what they are already doing in terms of exercise and movement, and to identify any barriers to exercise that they experience (e.g. larger limbs, comorbidities, psychological barriers, being unable to afford to go to a gym, feeling shamed if exercising in public, and the lymphoedema itself). As well as supporting people to manage and deal with these barriers, education about how therapeutic movement can help their lymphatic system [Figure 1] is important. Practical dietary tools



Scan the QR code to view Wounds UK referral guidelines and national wound care red flag strategy

Setting objectives for care for the patient cohort (Continued)

MYTH

I need to do strenuous exercise/aerobic activity for 150 to 300 minutes a week to lose weight.

TRUTH

All forms of exercise and movement are beneficial for your health, regardless of how it impacts your weight. The best exercise is what works for you and what you will do. Health benefits are gained from even the smallest of movements increased over time, while lymphoedema also improves through movement.

Figure 1: The lymphatic system is a fluid collection system spread all over the human body; the left-hand image shows how plasma fluid leaked by the blood capillaries into the interstitial tissue space is taken up by the lymph capillaries and eventually dropped back into the blood via venules; the right-hand image depicts the overall structure of the lymphatic system across the body.

such as the British Dietetic Association's "How to achieve a healthier weight" guide provide concrete support around portion sizes, balanced meal planning and avoiding excessive or restrictive fad diets, which may strengthen self-management and behaviour change (BDA, 2021).

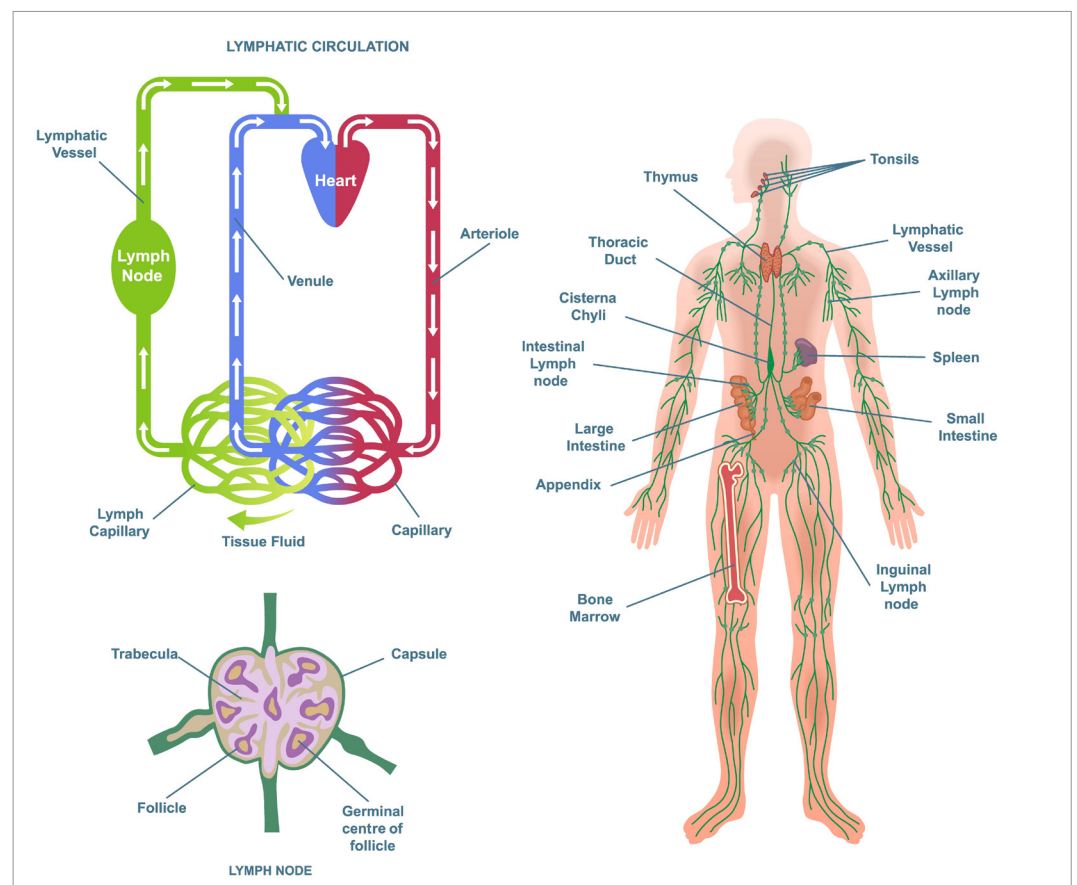
HCPs should be mindful of the complexity of obesity and its physical, psychological and social determinants (Anekwe et al, 2020; Kahan and Mehrzad, 2020; Keaver et al, 2020; Libuy et al, 2021; Baez et al, 2023) and move away from an individualist model of understanding obesity as the individual's fault.

At initial assessment, if appropriate and with consent, patients should be sign-posted to services in the community that can help with physical activity while lymphoedema treatment begins or patients wait for a lymphoedema referral (above). Patients should be encouraged to begin some form of exercise/physical activity

as soon as it is realistic and achievable.

Addressing concerns and barriers to exercise and physical activity and supporting individuals to become more active can be done in many ways:

- Encouraging individuals to look at their sedentary time and find small ways to change this (e.g. use alarms and reminders to get up and move more frequently)
- Referral to a suitably qualified HCP (e.g. physiotherapist specialising in lymphoedema and/or weight management) to support physical activity and exercise prescription
- Exercise on prescription schemes (also known as exercise referral). HCPs refer individuals to a qualified exercise specialist or local leisure centre, where the specialist or centre work with the individual to create a personalised exercise plan- often involving gym equipment or classes
- Social prescribers can connect people with activities, groups, and services in their community to meet the practical, social and



- emotional needs related to their health and wellbeing (NHS England, 2022)
- HCPs with appropriate training and knowledge of exercise and lymphoedema (e.g. physiotherapists and exercise physiologists, personal trainers) can develop exercise programmes with the patient. These may or may not be delivered within the lymphoedema services
- If the barriers to exercise are more psychological in nature (e.g. anxiety about being in public), then referral to psychological support may be necessary.
- Use of technology such as apps and online resources may be appropriate for individuals, especially those who have the confidence to exercise more independently.

Consensus statements

- Objectives for care should be set using supportive, patient informed, and holistic and biopsychosocial approaches, they should be achievable and appropriate, and should include immediate low intensity lymphoedema treatment at a minimum and working towards weight management and more intensive lymphoedema treatment, if necessary
- Lymphoedema patients living with obesity require MDT interventions, which may include lymphoedema care, weight management, psychological support for weight management and long-lasting lifestyle change, and pharmacological intervention
- The principles of lymphoedema care (i.e. compression, movement, skin care and lymphatic drainage) should be the focus of all lymphoedema care for patients living with obesity
- Manual lymphatic drainage (MLD) should not be used as a standalone treatment for lymphoedema with patients living with obesity; self-lymphatic drainage (SLD), directed by HCPs, may be more effective for patients with lower levels of obesity
- Where infection or cellulitis occurs for people with lymphoedema, it must be treated with antibiotics as per local guidance
- Lymphoedema specialists should be involved in the overseeing of infection treatment
- Weight loss injections, including GLP-1 receptor agonists such as semaglutide (Wegovy®) and tirzepatide (Mounjaro®), can lead to significant weight reduction when combined with lifestyle interventions (Wong et al, 2025). Tirzepatide is recommended by NICE for use in primary care and specialist weight management services
- While these medications are effective for weight loss in the short term (up to ~1 year), evidence regarding their effects on lymphoedema is currently limited. Side effects are usually short-term, including vomiting and fatigue, though more serious effects may occur
- Movement, general wellbeing, and weight management are interconnected and crucial for managing lymphoedema. Regular, low-impact exercise like walking and yoga stimulates the lymphatic system, which can reduce swelling and inflammation. Maintaining a healthy weight is also important, as excess body fat can impede lymphatic drainage and worsen lymphoedema. Movement also boosts mental health, increases energy, and improves overall wellbeing, helping to reduce pain and improve morale
- Assessment should signpost patients to community support for weight reduction and consider support for lifestyle changes
- Objectives for care should consider 'exercise prescriptions' for patients living with obesity to make long-term, sustainable changes for their health
- Any exercise is better than no exercise, and benefits for lymphoedema are gained from even the smallest of movements and challenges, while moving more and strength training also helps with weight management.

Management pathways for lymphoedema patients living with obesity

Treatment pathways for lymphoedema are well-established, but they can be difficult for people living with obesity to follow for practical reasons. An obesity-specific lymphoedema treatment pathway is needed where there is closer collaboration between weight management and lymphoedema services to avoid the risks for patients that come with siloed working.

Services and HCPs should engage in education, and knowledge and information-sharing, particularly on the impacts of obesity and lymphoedema conditions on each other where lymphoedema specialists could learn about how weight management could help lymphoedema treatment outcomes and weight management practitioners could understand how obesity risks or exacerbates lymphoedema. Lymphoedema clinicians should also develop knowledge on the biopsychosocial aspects of obesity.

Current pathways for people living with obesity and lymphoedema are limited. Thorough evaluation and implementation plans should be developed to explore the optimal service for people living with lymphoedema and obesity. In the interim, it is tentatively proposed that

services should be primary, secondary and tertiary, considering variations in local services and resources.

Primary pathway: As a minimum and at the local level, and as soon as possible, all lymphoedema patients living with obesity should receive modified DLT, if appropriate, and skincare techniques in a self-management plan, as well as support with weight management.

Secondary pathway: Referral is made to a bariatric unit for patients who fulfil the NICE criteria for consideration of bariatric surgery and who also have lymphoedema. Treatment may include GLP-1 therapy (where patients meet eligibility criteria for weight loss injections) or bariatric surgery, delivered alongside lymphoedema management. Care should be provided by local lymphoedema therapists and clinicians, with additional input from national specialist units via a virtual MDT where appropriate, rather than always requiring referral to a dedicated centre.

Tertiary pathway: Where patients have both extreme obesity (BMI of approximately 60 or over), and extreme severe lymphoedema

Consensus statements

- Pathways for people living with obesity and lymphoedema should be primary, secondary and tertiary, where the vast majority of patients will access a primary or secondary pathway, and should take account of variations in local services and resources
- Primary pathway where local treatment is administered to patients with mild obesity, including education in self-management and support with weight management
- Secondary pathway where referral is made to a bariatric unit for patients who fulfil the NICE criteria for consideration for bariatric surgery and who have lymphoedema
- Tertiary pathway where patients presenting with extreme obesity (BMI ≥ 60 , or BMI ≥ 50 with very severe lymphoedema and/or severely reduced mobility secondary to lymphoedema) should, with patient consent, first be referred to their local bariatric service. If the local service is unable to accept the patient due to the complexity of obesity and lymphoedema, referral to a specialist bariatric unit with a dedicated lymphoedema team may be appropriate. Care should be coordinated between local lymphoedema services and the specialist bariatric team to ensure continuity and comprehensive management
- Services and HCPs should also engage in education, and knowledge and information-sharing, where needed. This should focus on the impacts of obesity and lymphoedema conditions on each other, the impact of weight management on lymphoedema treatment outcomes, how obesity risks or exacerbates lymphoedema, and the biopsychosocial aspects of obesity.

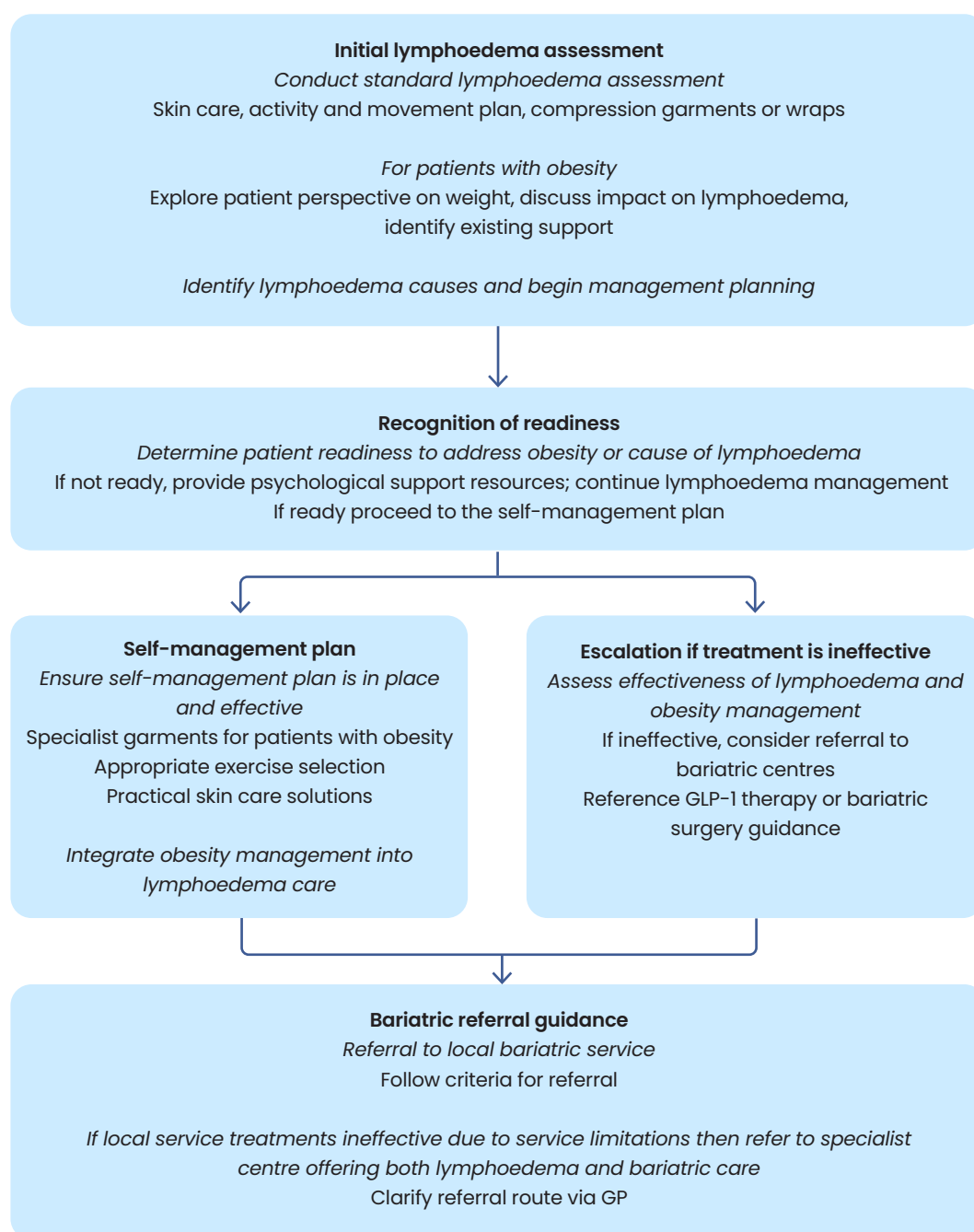


causing reduce mobility these patients need a referral to a specialist bariatric unit with a dedicated lymphoedema team to address the complexity of both of their conditions. f both conditions.

It is expected that the majority of lymphoedema patients living with obesity will access care via the primary or secondary pathways, with only a small number requiring the tertiary pathway

66 Patient experience

Over the course of my treatment the team at the lymphoedema clinic gave me a variety of garments to try which I found very helpful over the course of my treatment. I found a specific garment that worked best. Me and my wife attended a workshop last autumn where we learnt about self wrapping techniques which we have implemented into our daily regime and has helped my physical health and well-being greatly. Since having gastric bypass surgery in late March and losing 9 stone so far my lymphoedema has improved significantly which has had a positive impact on my daily life. I am grateful to the team for their continued support and advice.



Conclusion

The management of lymphoedema in people living with obesity requires a shift away from reductionist approaches and towards a more integrated, person-centred model of care. While obesity complicates treatment pathways and may limit the effectiveness of conventional therapies, focussing on BMI cut-offs alone risks reinforcing inequities, delaying treatment and perpetuating stigma. Instead, early recognition, equitable access to care and individualised treatment plans that combine compression, movement, skin care and realistic weight management support are essential to improving outcomes.

Embedding psychological support, education and shared decision-making within lymphoedema services can empower patients to take an active role in their care, even where weight loss

may be challenging. For clinicians, greater training and clearer guidance are needed to reduce variation in practice and increase confidence in managing complex cases. At a system level, investment in research, resources and care pathways that bridge obesity and lymphoedema services will be critical to addressing unmet needs.

By prioritising inclusivity, tackling stigma and supporting sustainable interventions, healthcare systems can not only reduce complications and service demand but also improve quality of life for patients. Ultimately, the goal should not be to deny care until weight loss is achieved, but to deliver effective lymphoedema management in parallel with sensitive, structured support for long-term weight and health goals.

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