

# Lymphoedema

## What is Lymphoedema?

Lymphoedema is a chronic condition characterised by localised fluid (lymph) accumulation with resultant swelling of body tissues. It may affect any part of the body which has an impaired lymphatic system, but classically affects the arms and legs.

*For the purpose of the of this information page we are referring to lymphoedema affecting the lower limb (leg) unless otherwise stated.*

## What is the lymphatic system?

The lymphatic system is part of the body's vascular system and consists of a network of increasingly large lymphatic channels that drain through lymph nodes and eventually into the venous system in the neck via the thoracic duct or right lymphatic duct.

Lymph is the clear fluid that flows through the lymphatic channels and is formed from the collection of surplus fluid (interstitial fluid) that lies between the cells in the body. The lymph is pumped by the rhythmic contraction of muscles surrounding the lymphatic channels and flows in a unidirectional pattern towards the heart. The lymphatic channels have one way valves that prevent back pressure on the lymph fluid. The lymph passes through lymph nodes en-route to the heart during which harmful bacteria may be destroyed, and debris removed.

## What causes Lymphoedema?

Lymphoedema occurs when your lymphatic system is unable to adequately drain the lymph fluid. This may be as a result of an inherited condition (primary lymphoedema) or as a result of a condition that has damaged the lymphatic system (secondary lymphoedema) e.g. recurrent cellulitis or lymph node dissection/radiotherapy for cancer treatment.

Primary lymphoedema is rare (<0.001%) and occurs as a result of a hereditary or sporadic abnormality in the normal function/development of the lymphatic channels or lymph nodes. It may be evident from infancy (Milroy's disease), develop during puberty (lymphoedema praecox) or not until middle adulthood (lymphoedema tarda). Other vascular abnormalities, e.g. Klippel-Trenaunay syndrome, may accompany primary lymphoedema and careful screening for concomitant venous and arterial abnormalities is essential.

Secondary lymphoedema develops as a result of any condition or treatment that damages the lymphatic system. In the western world axillary lymph node clearance or radiotherapy as part of

treatment for breast cancer is the commonest cause of secondary lymphoedema affecting the upper limbs. Recurrent lower limb cellulitis or groin/leg surgery may cause lower limb lymphoedema.

## Does anything increase my risk of developing Lymphoedema?

Lymphoedema may occur spontaneously or may be triggered by an event in those clients susceptible to developing lymphoedema. A number of factors may trigger the beginning of lymphoedema these include:

- Air travel (changes in air pressure)
- Inflammatory arthritides e.g. rheumatoid arthritis
- Injury to the area e.g. fracture or significant sprain, mosquito bites, cellulitis
- Obesity (increase in lymph production and increases the pressure gradient required for lymph to exit the leg)
- Older age

## How do you diagnose lymphoedema?

An accurate diagnosis is paramount to the successful treatment of lymphoedema and prevention of subsequent complications. There are a number of conditions that can mimic lymphoedema of the lower limbs (see table 1) and each of these are assessed for at the Circulation Clinic when we review a client with lower limb oedema.

The diagnosis ultimately is reached through a combination of accurate clinical assessment supported by collaborative imaging investigations. In particular clients can expect the following tests to be performed as part of their assessment:

1. ABPI: to assess suitability for compression therapy
2. Blood tests to assess client's thyroid status and the presence/level of liver disease or heart failure.
3. Body mass index assessment
4. Duplex Doppler ultrasound examination of the leg to rule out deep vein thrombosis

5. Pelvic ultrasound scan or CT scan to assess for pelvic or intra-abdominal masses compressing the lymphatic channels.

In addition, specialised lymphatic channel/flow assessment may be undertaken to identify the specific area of lymphatic failure.

## What are the treatments of Lymphoedema?

The treatment of lymphoedema is aimed at:

- a) treating the underlying cause where possible,
- b) treating the resultant limb oedema
- c) preventing long term complications.

Treatment of the underlying causes is rarely applicable to primary lymphoedema and often difficult in secondary lymphoedema. As a result the mainstay of lymphoedema treatment is reducing the level of swelling and the early identification and treatment of complications.

## How do you reduce the level of swelling/oedema?

The key treatments are compression, elevation, weight loss and exercise. Diuretics are rarely indicated as the underlying problem is not fluid overload, but fluid mal-distribution.

Compression is undertaken in the form of compression hosiery of which there are many types to fit all shapes and sizes of legs. The compression hosiery should be worn throughout the day and taken off at night or when the client is able to elevate their leg such that their heel is higher than their hip with their leg straight. We also recommend elevating the foot of the bed with a pillow or wedge where possible to encourage drainage during the night. Manual limb drainage through gentle massage may also benefit clients with lymphoedema.

Exercise is important and we recommend 30 minutes of brisk walking per day to improve overall fitness but to also to stimulate and develop the calf muscle which are important in pumping fluid out of the leg.

## What are the complications of lymphoedema?

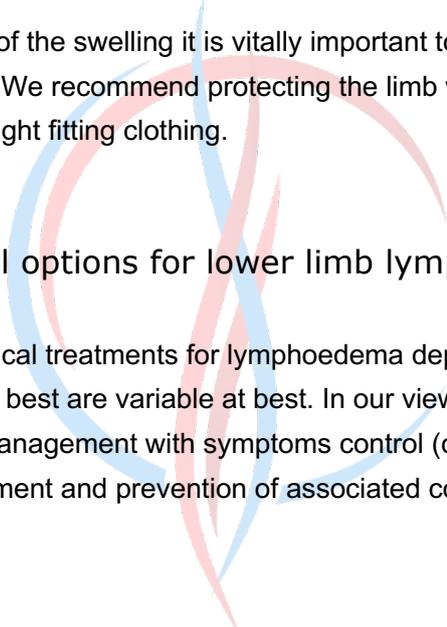
Lymphoedema in the legs can lead to serious complications if ignored. These include recurrent episodes of infection; microorganisms enter through small cracks in the stretched skin and flourish in the warm moist environment underneath causing florid cellulitis and lymphangitis. This further damages the lymphatic channels thereby worsening the lymphoedema in the longer term.

## How do you prevent the complications of lymphoedema?

In addition to the treatment of the swelling it is vitally important to ensure you keep the affected limb moisturised and clean. We recommend protecting the limb whenever possible particularly when outside and to avoid tight fitting clothing.

## Are there any surgical options for lower limb lymphoedema?

There are a number of surgical treatments for lymphoedema depending on the underlying pathology, but the results at best are variable at best. In our view currently, the mainstay of treatment is conservative management with symptoms control (compression, elevation, exercise, weight loss) and rapid treatment and prevention of associated complications.



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