CONDITION

Lymphedema

Lymphedema is long-term swelling caused by lymph fluid building up in body tissues.

WHAT IT IS
Long-term swelling from trapped lymph fluid

BODY SYSTEM
Lymphatic and immune systems

MAIN SYMPTOMS
Swelling, heaviness, tight skin, reduced movement

WHAT CAUSES IT
Underdeveloped or damaged lymphatic vessels

HOW IT IS DIAGNOSED
Medical history, examination, sometimes lymphatic imaging

MAIN TREATMENT
Compression, exercise, skin care, specialist therapy

CAN IT BE CURED?
No, but symptoms can be controlled

IS IT AN EMERGENCY?
Sometimes, with fever and rapidly spreading redness

LONG-TERM OUTLOOK
Often manageable with consistent lifelong care

Overview

Lymphedema is swelling caused by a buildup of lymph fluid. It most often affects an arm or leg, but it can also affect the genitals, face, neck, abdomen, or other areas.

Lymph is a clear fluid that carries proteins, waste, and immune cells through a network of vessels. This lymphatic system normally returns fluid from body tissues to the bloodstream. Lymphedema develops when lymph vessels or lymph nodes are missing, underdeveloped, blocked, or damaged.

The swelling may begin gradually. At first, it may improve overnight or when the affected area is raised. Over time, it can become more persistent. The tissues may become firmer because of inflammation, scarring, and increased fatty tissue.

Lymphedema is usually a long-term condition. There is no standard cure, but treatment can

reduce swelling, improve comfort and movement, protect the skin, and lower the risk of infection. Starting management early may help prevent the swelling from becoming harder to control.

Symptoms

Symptoms may be mild at first. You might notice that a sleeve, shoe, ring, or watch feels tighter than usual before the swelling is obvious.

Possible symptoms include:

Early swelling can be soft and may leave a temporary dent when pressed. This is called pitting . Later, the tissues may become thicker and less likely to pit.

The amount of swelling does not always match the discomfort. Some people have visible swelling with little pain. Others have aching, heaviness, or difficulty moving before there is much visible change.

Lymphedema usually develops slowly, but sudden swelling should not be assumed to be lymphedema. A blood clot, infection, injury, heart problem, or another condition may cause similar symptoms and may need prompt assessment.

- Swelling in part or all of an arm, leg, or another area
- A feeling of heaviness, fullness, aching, or tightness
- Skin that feels stretched, thickened, or firmer
- Reduced movement in a nearby joint
- Clothing, jewellery, or footwear leaving deeper marks
- Repeated skin infections in the affected area

Causes and risk factors

There are two broad types of lymphedema.

Primary lymphedema happens because the lymphatic system did not develop normally. It may be linked to an inherited genetic change, but many people have no known family history or identifiable cause. Symptoms can begin in infancy, during adolescence, or later in adulthood.

Secondary lymphedema develops after a previously functioning lymphatic system is damaged or blocked. Possible causes include surgery that removes or damages lymph nodes, radiation therapy, cancer that blocks lymph drainage, major injury, severe infection, or long-term

inflammation.

Worldwide, certain parasitic infections are an important cause. These infections are less common in places where the parasites do not circulate.

Not everyone with a risk factor develops lymphedema. After cancer treatment, risk is influenced by factors such as which lymph nodes were treated, the extent of surgery or radiation, infections, and body weight. Lymphedema may appear soon after treatment or years later.

Reduced movement can make swelling more noticeable because muscle activity helps move lymph fluid. Vein problems and obesity may also place extra strain on lymph drainage, but they are not the only causes of swelling.

Diagnosis

Diagnosis usually begins with your medical history and a physical examination. A clinician may ask when the swelling began, whether it changes during the day, and whether you have had surgery, radiation therapy, infection, injury, cancer treatment, or similar swelling in your family.

They may compare both sides of your body, measure the affected area, examine the skin, and check how soft or firm the swelling feels. Measurements may be repeated over time to track change.

Tests are not always needed when the pattern and cause are clear. If the diagnosis is uncertain, testing may include:

Blood tests do not confirm lymphedema. They may be used to look for kidney, liver, thyroid, or other conditions that can cause swelling.

- Ultrasound , often to look for a blood clot or vein problem
- Lymphoscintigraphy , which tracks a small amount of radioactive tracer through lymph vessels
- Indocyanine green lymphography , which uses dye and near-infrared imaging to map surface lymph flow
- MRI or CT imaging , when deeper tissues or another cause must be assessed
- Genetic testing , in selected people with possible primary lymphedema

Treatment and management

Treatment is tailored to the location, severity, cause, skin condition, and effect on daily life. A lymphedema therapist or another clinician with specialist training can teach techniques and help choose suitable compression.

A common approach is called complete decongestive therapy . It combines skin care, compression, movement, and sometimes manual lymphatic drainage. An intensive phase may be followed by long-term self-management.

Compression bandages, sleeves, stockings, or other garments provide controlled pressure. This supports the tissues and helps limit fluid buildup. Compression needs to fit correctly. Garments that roll, dig into the skin, cause numbness, or change the colour of fingers or toes need review.

Exercise encourages muscles to pump lymph fluid. Walking, swimming, cycling, stretching, and gradual resistance exercise may all be useful when appropriate. Activity should build gradually, particularly after surgery or during recovery from cancer treatment.

Manual lymphatic drainage is a gentle massage technique intended to guide fluid toward working lymph vessels. It is different from deep-tissue massage. It may help some people as part of a broader treatment plan, but it does not replace compression.

Skin care matters because stretched skin is more likely to crack and become infected. Washing gently, drying carefully, using a plain moisturiser, and treating small cuts promptly can help protect the skin.

A pneumatic compression pump uses an inflatable sleeve to apply changing pressure. It may be considered when standard measures do not control symptoms or are difficult to use.

Surgery is an option for selected people. Procedures may connect lymph vessels to small veins, transfer lymph nodes, or remove excess fatty tissue with liposuction. Surgery does not usually remove the need for ongoing compression and follow-up.

Water tablets like furosemide or hydrochlorothiazide , also called diuretics, do not usually treat the protein-rich fluid of lymphedema. They may still be prescribed for a separate condition, such as heart failure. Do not stop prescribed medicine without medical advice.

Complications

Cellulitis is an important complication. This is a bacterial infection in the deeper layers of skin. The affected area may suddenly become red, hot, painful, and more swollen. Fever, chills, or feeling unwell may occur. Cellulitis needs prompt antibiotic treatment.

Repeated infections can further damage lymph vessels and make swelling harder to manage.

Protecting the skin and seeking early care for signs of infection can reduce this cycle.

Long-standing swelling may lead to thickened, hardened, or folded skin. Fluid can sometimes leak through small breaks in the skin. The added weight of a swollen limb may affect balance, walking, joint movement, work, or sleep.

Lymphedema can also affect body image, clothing choices, relationships, and emotional wellbeing. Support from a specialist service, counsellor, peer group, or cancer support service may help if these effects become difficult.

A rare cancer called lymphangiosarcoma can develop in tissue affected by severe, long-standing lymphedema. A new unexplained purple-red lump, bruise-like patch, or sore that does not heal should be examined. Most skin changes are not this cancer, but persistent new changes deserve assessment.

Prevention

Primary lymphedema usually cannot be prevented because it results from how the lymphatic system developed. Early recognition and treatment may still limit its effects.

Secondary lymphedema cannot always be prevented. Cancer surgery and radiation may be essential treatments even when they increase risk. Where medically appropriate, cancer teams may use techniques that reduce lymphatic damage.

If you are at risk, useful measures include maintaining regular movement, building exercise gradually, caring for your skin, and seeking treatment for infection. Reaching a weight that is sustainable for you may reduce strain on lymph drainage.

Advice about avoiding every injection, blood test, or blood pressure reading on an at-risk arm is not supported by strong evidence in all situations. When there is an easy alternative, it may be reasonable to use it. Necessary medical care should not be delayed when another site is unavailable.

Compression during air travel is not required for everyone at risk. If you already have lymphedema, ask your specialist whether to wear your usual garment and how to manage long journeys.

Living with it and what to expect

Lymphedema usually needs management over months and years. Swelling may rise and fall with heat, activity, infection, travel, hormonal changes, or changes in body weight. It may

improve with treatment without disappearing completely.

Many people continue working, exercising, travelling, and taking part in usual activities. A regular routine often makes management easier. This may include wearing compression, checking the skin, staying active, and replacing garments when they lose their shape or pressure.

The condition may progress slowly in some people and remain mild in others. Early-stage swelling may be more responsive because the tissues have not yet become firm. Even established lymphedema can often be reduced or made more comfortable.

Follow-up may include repeat measurements, skin checks, review of garment fit, and changes to the management plan. Arrange routine review if swelling is gradually increasing, compression no longer fits, movement is becoming harder, or self-management is interfering with daily life.

If you have had cancer, new swelling also needs assessment for causes other than lymphedema. This does not mean the cancer has returned, but it should not be assumed to be harmless without evaluation.

When to get medical help

Arrange a routine medical appointment for new or gradually increasing swelling, especially if it affects one limb or follows surgery, radiation, infection, or injury. Also seek review for persistent heaviness, tightness, skin thickening, or repeated infections.

Ask for timely advice if a compression garment causes pain, numbness, blue or pale fingers or toes, broken skin, or rapidly increasing swelling. Remove a garment that is clearly cutting off circulation while seeking advice.

Seek urgent same-day medical care if the affected area suddenly becomes red, hot, painful, or much more swollen. Fever, chills, or feeling unwell may indicate cellulitis.

Seek emergency help for swelling with severe breathing difficulty, chest pain, coughing blood, fainting, or sudden confusion. Sudden one-sided leg swelling with significant pain may be caused by a blood clot and also needs urgent assessment.

Common questions

Can lymphedema go away on its own?

Temporary swelling can settle, but established lymphedema is usually long term. Treatment

may reduce it substantially and keep it stable. New swelling should be assessed before assuming it is permanent lymphedema.

Does lymphedema always get worse?

No. Its course is not the same for everyone. It may remain mild, fluctuate, or gradually progress. Consistent compression, movement, skin care, and follow-up can help control changes.

Can I exercise with lymphedema?

Most people can and should remain active. Muscle movement supports lymph flow, strength, mobility, and general health. Start gradually and watch for lasting increases in swelling, pain, or heaviness. A specialist can adapt exercise after surgery or for more severe swelling.

Can massage cure lymphedema?

No. Manual lymphatic drainage may help selected people, especially when combined with compression and exercise, but it does not repair missing or damaged lymph vessels. Deep or forceful massage is not the same technique and may irritate tissues.

Can I fly if I have lymphedema?

Most people can fly. Long periods of sitting, heat, and changes in routine may increase swelling. Continue your usual movement and skin-care plan, and wear prescribed compression as directed. New compression should not be tried for the first time during a flight.

Is lymphedema the same as ordinary fluid retention?

No. Lymphedema contains protein-rich lymph fluid and may lead to inflammation and tissue thickening. Other swelling may come from vein, heart, kidney, liver, medication, or hormonal problems. The correct treatment depends on the cause.

Sources

- National Cancer Institute. Lymphedema (PDQ®)-Patient Version
- NHS. Lymphoedema
- International Society of Lymphology. The Diagnosis and Treatment of Peripheral Lymphedema: 2020 Consensus Document. Lymphology . 2020;53(1):3-19
- National Cancer Institute. Lymphedema and Cancer
- British Lymphology Society. Guidelines on the Management of Cellulitis in Lymphoedema