

# Swollen Ankles & Fluid Retention

I am often asked in the pharmacy why swollen ankles and feet occur and what can be to prevent and treat it. The feet and ankles are the most common areas for swelling to occur because they are furthest away from the heart meaning the heart's force of "pushing" blood through our blood vessels is weakest and because of the forces of gravity. Before discussing the specific problem of swollen ankles and feet, I will discuss in broader terms why and how we can get fluid retention. Oedema is the medical term for fluid retention in the body. The build-up of fluid causes affected tissue to become swollen.

## Why does fluid retention occur?

The swelling can occur in one particular part of the body, for example, as the result of an injury, or it can be more general. More general fluid retention tends to occur as a result of more serious health conditions such as heart failure or kidney failure.

As well as swelling or puffiness of the skin, oedema can also cause:

- areas of skin that temporarily hold the imprint of your finger when pressed (pitting oedema)
- stiff joints
- skin discolouration
- aching or tender limbs
- weight gain or weight loss
- raised blood pressure or pulse

## Types of oedema

Oedema can occur anywhere in the body, it is most common in the feet and ankles, where it is known as peripheral oedema. Other types of oedema can be more serious. They include cerebral oedema (affecting the brain), pulmonary oedema (affecting the lungs) or macular oedema (affecting the eyes). Cerebral oedema can be fatal and can be caused by head injury, strokes (clot), brain haemorrhage (bleeding from a blood vessel in the brain), infection such as meningitis or brain tumours. Pulmonary oedema makes breathing difficult and can be fatal if not controlled; it has many potential causes including heart failure, kidney failure, drug overdose (eg. Aspirin, heroin, methadone) and pulmonary embolism (clot in the lung). Macular oedema is swelling or thickening of the macula, the part of the eye responsible for detailed, central vision. Macular oedema develops when blood vessels in the retina are leaking fluids and is most often a complication of diabetes that is not kept under control.

## What causes oedema?

Oedema is often a symptom of an underlying health condition. It can occur as a result of the following conditions or treatments:

- heart failure
- kidney disease
- chronic lung disease eg. COPD, emphysema (most often caused by smoking)
- pregnancy
- thyroid disease
- liver disease
- malnutrition
- medication (eg) corticosteroids or some medicines for high blood pressure such as calcium channel blockers (eg) amlodipine, lercanidipine
- the contraceptive pill

Fluid retention in the leg may be caused by:

- a blood clot
- varicose veins
- a growth or cyst

Oedema can also sometimes occur as a result of:

- being immobile for long periods
- hot weather
- exposure to high altitudes
- burns to the skin

### **Oedema caused by Congestive Heart Failure**

Congestive Heart Failure (CHF) affects 2% of the Irish population but is more common amongst the elderly. It affects 6 to 10% of the population over 65. The average age of diagnosis is 76. It is the leading cause of hospital admissions in the over 65 age group, accounting for 20% of hospital admissions in this age group. Heart failure is often a cause of swollen ankles, especially in older people. This is because the heart is unable to pump blood as efficiently as it once did causing it to stagnate (due to gravity) in the lower extremities of our body. Ankle swelling is caused by heart failure that is occurring on the right side of the heart. Unlike the heart failure that occurs on the left side of the heart which causes fluid to drain into the lungs, congestive heart failure that occurs on the right side sends fluid to the legs, feet and ankles.

Treatment options include *diuretics* such as furosemide which reduces fluid volume in the body and blood pressure medication such as *ACE inhibitors* (eg. Ramipril, Lisinopril) which dilate blood vessels allowing blood to flow easier, *beta blockers* (eg. Bisoprolol, Nebivolol) which regulate heart rate and *digoxin* which increases the strength of heart muscle contractions and can also slow down heart rate.

Other symptoms of heart failure include Fatigue; Shortness of breath, especially with activity or when lying flat; Weight gain over a short period of time i.e. days; Loss of appetite and abdominal swelling; Dizziness or near fainting episodes; Irritable cough, sometimes producing frothy sputum; Sudden severe breathlessness waking you from sleep and Confusion or difficulties in concentrating. If you are experiencing any of these symptoms you must seek medical advice.

### **Oedema caused by kidney or liver problems**

Kidney disease can also cause foot and ankle swelling. When kidneys are not functioning properly, fluid can build up in the body as our kidneys are the body's fluid extraction system. Liver disease can affect the liver's production of a protein called albumin. Albumin keeps the blood from leaking out of the blood vessels into the surrounding tissues. Inadequate albumin production can lead to fluid leakage. With liver disease, gravity causes fluid to accumulate more in the feet and ankles, but fluid can also accumulate in the abdomen and chest.

### **Oedema due to infection**

Swelling in the feet and ankles can be a sign of infection. People with diabetic neuropathy or other nerve problems of the feet are at greater risk for foot infections. Diabetics are more at risk of minor skin irritations, blisters or tears developing into serious infections very quickly because diabetes causes nerve damage (diabetic neuropathy) that means you may not be able to feel pain in that area and a problem can escalate before they realise it. Diabetics tend to have poorer circulation which can make infection more likely. Diabetics must inspect feet daily for blisters and sores, because nerve damage can blunt the pain sensation and foot problems can progress quickly without the person realising it.

If a diabetic notices a swollen foot or blister that appears to be infected, they must seek immediate medical attention and not be tempted to self-medicate as over the counter medicines can irritate skin of diabetics. Ask your pharmacist if not sure. Whelehan's Pharmacy has a chiropodist in store on Tuesday's and Thursday's who can advise on diabetic foot care; our chiropodist has a special €25 rate for over 60's.

### **Lymphoedema**

Lymphoedema is another cause of fluid build-up in the body's tissues. It occurs when the lymphatic system is damaged or disrupted. The lymphatic system is a series of glands (lymph nodes) around the body connected by a network of vessels similar to blood vessels. Fluid surrounding body tissues usually drains into nearby lymph vessels so it can be transported away and back into the blood. However, if the lymphatic vessels are blocked, excess fluid cannot be re-absorbed and will build up in tissue.

Lymphoedema usually affects the arms or legs, although in some cases there may be swelling in the chest, head and genitals. Lymphoedema is mainly caused as a side effect of cancer treatment, especially breast cancer treatment. Approximately one in five women suffer from lymphoedema in their arm after radiotherapy or lymph nodes are removed due to breast cancer treatment. Once lymphoedema occurs, it is permanent; however it is manageable with proper care. 30 to 50% of people with lymphoedema suffer from pain in the affected area. Maintaining a healthy weight and lifestyle including regular exercise is the best way of controlling lymphoedema and preventing complications like infections. Physiotherapy and the wearing of especially measured compression garments is also part of treatment. Lymphoedema weakens the immune system of the affected limbs making infection like cellulitis in that area more likely. Skin must be kept clean and moist. It is recommended that a low pH skin lotion that contains no perfumes or other irritants be applied to the skin and nails in the affected area daily to prevent bacteria, viruses and other infections.

### **Blood clots**

Blood clots that form in the veins of the legs can block the flow of blood from the legs back up to the heart; this can cause swelling in the ankles and feet. Blood clots can be superficial, occurring in the veins just beneath the skin. However a more serious condition is a deep clot, known as deep vein thrombosis (DVT). Deep clots can block one or more of the major veins of the legs. DVTs can be life-threatening as they can break loose and travel to the heart and lungs causing a potentially fatal clot in these important organs. DVT's most commonly occur below the knee, especially in the calf. It is most commonly caused by immobility, which explains why it is a risk during long haul flights and after surgery. Other risk factors for DVT include obesity, pregnancy, dehydration, the contraceptive pill, cancer and heart failure. If you have swelling in one leg, along with pain, a hot feeling in the affected area, an overall mild fever and possibly a change in color of the affected leg, you must get immediate treatment. Treatment with blood thinners may be necessary. Compression stockings can prevent them if you are at risk, your pharmacist can measure you for them. The incidence increases from 1 in 10,000 for individuals younger than 40 years to 1 in 100 for those older than 60 years. It is estimated that about 1 in 10 people with an untreated DVT develop a PE large enough to cause respiratory symptoms or death. Detailed information on DVT is available at [www.whelehans.ie](http://www.whelehans.ie) or in store; ask our staff for a free copy.

### **Faulty valves**

A common cause of swelling in the lower legs is peripheral venous disease, a condition in which the veins in the legs cannot pump enough blood back up to the heart because the valves in the veins are damaged. Blood clots are a common cause for this. Swollen ankles can be due to damaged valves in the veins; this can lead to varicose veins. This is when the superficial leg veins contain faulty and leaky valves. Blood should be pushed up the veins against gravity through a series of valves, like lock gates. When walking, leg muscles contract and act as a pump, moving the blood upwards.

Leaking valves allow the blood to flow backwards and the increased lower limb pressure forces fluid into the tissues of the foot and ankle, causing varicose veins. More information on varicose veins is available at [www.whelehans.ie](http://www.whelehans.ie) or in store; ask our staff for a free copy.

### Self-help

Some lifestyle changes can be made to prevent fluid retention, especially in the ankles and feet include:

- losing weight (if overweight)
- raising your legs three-to-four times a day to improve your circulation
- avoiding standing for long periods of time
- Keeping active by walking or other physical activity. Immobility can make swollen legs worse
- Elevating the affected leg three to four days a week while in bed (eg) a pillow under the leg to raise it while in bed
- Wearing comfortable well-fitting footwear
- Use moisturising emollients such as aqueous cream or emulsifying ointment regularly. The motion of rubbing in the emollient boosts circulation
- Wearing compression bandage if advised. Your pharmacist can measure for and advise on compression stockings. Compression stockings for the prevention of swollen legs are usually below knee in length rather than thigh length. A compression stocking should be changed after 6 months as elastic wears after this time.

### Diuretics

Diuretics may be prescribed to help reduce fluid build-up. Examples include furosemide (Lasix<sup>®</sup>) or bumetanide (Burinex<sup>®</sup>). They work by increasing the amount of urine produced by the kidneys thus reducing excess fluid. Not everyone can use diuretics and in some cases they can make things worse. They can also cause dehydration if you do not take care while taking them. They are mainly used to treat people who develop oedema as a result of heart failure.

### Why do ankles tend to swell in hot weather?

Ankles puff up in higher temperatures, when there is more blood is drawn to the skin by heat to help regulate your body temperature. In winter, people who sit and heat their legs in front of the fire also tend to get swollen legs, ankles and feet.

### What if I can't raise my legs?

As I discussed, raising your legs a few times a day can help prevent ankle swelling. However this is not so easy for many, for example, those who have arthritis of the hips and knees. In this situation you can try raising your feet up by raising the end of the bed nine inches with bricks, wooden blocks or books. By doing this this will mean that while you sleep, your legs are above the level of your heart and the ankles will lose the troublesome excess fluid.

**Disclaimer: This article is meant to give a general overview of the topic discussed; for more specific and detailed information, please speak to a health care professional**

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