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Edema

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Overview

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Edema is swelling caused by excess fluid trapped in your body's tissues. Although edema can affect any part of your body, you may notice it more in your hands, arms, feet, ankles and legs.

Edema can be the result of medication, pregnancy or an underlying disease — often congestive heart failure, kidney disease or cirrhosis of the liver.

Taking medication to remove excess fluid and reducing the amount of salt in your food often relieves edema. When edema is a sign of an underlying disease, the disease itself requires separate treatment.

Symptoms

Signs of edema include:

- Swelling or puffiness of the tissue directly under your skin, especially in your legs or arms

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- Stretched or shiny skin
- Skin that retains a dimple (pits), after being pressed for several seconds
- Increased abdominal size

Edema in foot and ankle

When to see a doctor

Make an appointment to see your doctor if you have swelling, stretched or shiny skin, or skin that retains a dimple after being pressed (pitting). See your doctor immediately if you experience:

- Shortness of breath
- Difficulty breathing
- Chest pain

These can be signs of pulmonary edema, which requires prompt treatment.

If you've been sitting for a prolonged period, such as on a long flight, and you develop leg pain and swelling that won't go away, call your doctor. Persistent leg pain and swelling can indicate a blood clot deep in your vein (deep vein thrombosis, or DVT).

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Causes

Edema occurs when tiny blood vessels in your body (capillaries) leak fluid. The fluid builds up in surrounding

tissues, leading to swelling.

Mild cases of edema may result from:

- Sitting or staying in one position for too long
- Eating too much salty food
- Having premenstrual signs and symptoms
- Being pregnant

Edema can also be a side effect of some medications, including:

- High blood pressure medications
- Nonsteroidal anti-inflammatory drugs
- Steroid drugs
- Estrogens
- Certain diabetes medications called thiazolidinediones

In some cases, however, edema may be a sign of a more serious underlying medical condition. Several diseases and conditions may cause edema, including:

- **Congestive heart failure.** If you have congestive heart failure, one or both of your heart's lower chambers lose their ability to pump blood effectively. As a result, blood can back up in your legs, ankles and feet, causing edema. Congestive heart failure can also cause swelling in your abdomen. Sometimes, this condition can cause fluid to accumulate in your lungs (pulmonary edema), which can lead to shortness of breath.
- **Cirrhosis.** Fluid may accumulate in your abdominal cavity (ascites) and in your legs as a result of liver damage (cirrhosis).
- **Kidney disease.** When you have kidney disease, extra fluid and sodium in your circulation may cause edema. The edema associated with kidney disease usually occurs in your legs and around your eyes.
- **Kidney damage.** Damage to the tiny, filtering blood

vessels in your kidneys can result in nephrotic syndrome. In nephrotic syndrome, declining levels of protein (albumin) in your blood can lead to fluid accumulation and edema.

- **Weakness or damage to veins in your legs.** If you have chronic venous insufficiency, the one-way valves in your leg veins are weakened or damaged, which allows blood to pool in your leg veins and causes swelling. Sudden onset of swelling in one leg accompanied by pain in your calf muscle can be due to a blood clot (deep vein thrombosis, or DVT) in one of your leg veins. If this occurs, seek medical help immediately.
- **Inadequate lymphatic system.** Your body's lymphatic system helps clear excess fluid from tissues. If this system is damaged — for example, by cancer surgery — the lymph nodes and lymph vessels draining an area may not work correctly, and edema can occur.
- **Severe, long-term protein deficiency.** An extreme lack (deficiency), of protein in your diet over a long period of time can lead to fluid accumulation and edema.

Risk factors

If you are pregnant, your body retains more sodium and water than usual due to the fluid needed by the fetus and placenta. This can increase your risk of developing edema.

Your risk of edema may be increased if you take certain medications, including:

- High blood pressure medications
- Nonsteroidal anti-inflammatory drugs
- Steroid drugs
- Estrogens
- Certain diabetes medications called thiazolidinediones

A chronic illness — such as congestive heart failure or liver or kidney disease — can increase your risk of edema. Also, surgery can sometimes obstruct a lymph node, leading to

swelling in an arm or leg, usually on just one side.

Complications

If left untreated, edema can cause:

- Increasingly painful swelling
- Difficulty walking
- Stiffness
- Stretched skin, which can become itchy and uncomfortable
- Increased risk of infection in the swollen area
- Scarring between layers of tissue
- Decreased blood circulation
- Decreased elasticity of arteries, veins, joints and muscles
- Increased risk of skin ulcers

By Mayo Clinic Staff

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