# Edema Encyclopedia Article

## Edema

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# Edema

An edema is an accumulation of **extracellular fluid** (also known as **interstitial fluid**) that causes swelling of **tissue**.

There are a number of physiological abnormalities that can result in a rise in interstitial fluid pressure and edema.

Low concentration of proteins in **blood plasma** decreases osmotic pressure that normally acts to prevent the leakage of fluid from blood vessels into the extracelluar tissue space (i.e., the spaces between tissue cells). In cases of trauma or inflammation, there is usually an increase in the permeability of the capillary wall that results in greater fluid passage into tissue spaces.

In addition to infusions of fluid that result in edema, poor drainage of lymphatic fluid inhibits elimination of extracelluar fluid. The tropical disease elephantiasis, a result of blockage of lymphatic drainage by infecting nematodes, produces gigantic swellings in the extremities and scrotum. In extreme cases, scrotal enlargement is so profound a wheelbarrow or other device must be used to carry the scrotum.

Edemas are often characterized by the edematous system or region. For example, **brain** edemas result from increased fluid in brain tissue or ventricles.

Edemas in the respiratory systems can be life threatening. In cases of inflammation of tissue in the respiratory tract, edema may act to block or obstruct the airway. True pulmonary edema result from an accumulation of fluid in the tissue and alveolar spaces in the lung.

Congestive **heart** failure can result from edema in cardiac tissue and/or the pulmonary system.

One form of edema that plagues mountain climbers and other working at high altitude is termed High Altitude Pulmonary Edema (HAPE) is characterized by a build-up of excessive fluid in the **lungs**. HAPE sufferers have trouble **breathing** and fatigue easily. The pulmonary edema results from dramatically increased blood flow through the lungs in an effort to compensate for the low pressure of oxygen at altitude is a result of greatly increased blood flow through the lungs and increased blood pressure.

**Diuretics** work to counteract some edema by increasing the excretion of salts in the urine. Conversely, ingestion of sodium, usually ingested in the form of table salt (sodium chloride, NaCl) acts to increase fluid retention.

In many cases, edema in the extremities is relieved by elevation that allows gravity to assist in the drainage of blood and lymphatic fluids.