Emphysema Encyclopedia Article

Emphysema

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Emphysema

Emphysema is an abnormal, permanent enlargement of the airways responsible for gas-exchange in the lungs. Primary emphysema is commonly linked to a genetic deficiency of the **enzyme** &agr;$_1$-antitrypsin which is a major component of &agr;$_1$-globulin, a **plasma** protein. Under normal conditions &agr;$_1$-antitrypsin inhibits the activity of many proteolytic enzymes which breakdown proteins. This results in the increased likelihood of developing emphysema as a result of proteolysis (breakdown) of the lung tissues.

Emphysema begins with destruction of the alveolar septa. This results in "air hunger" characterized by labored or difficult breathing, sometimes accompanied by pain. Although emphysema is genetically linked to deficiency in certain enzymes, the onset and severity of asthmatic symptoms has been definitively linked to irritants and pollutants in the **environment**. A significantly greater proportion of the individuals manifesting emphysemic symptoms is observed in smokers, populations clustered around industrial complexes, and **coal** miners.

See Also

Asthma; Cigarette Smoke; Respiratory Diseases