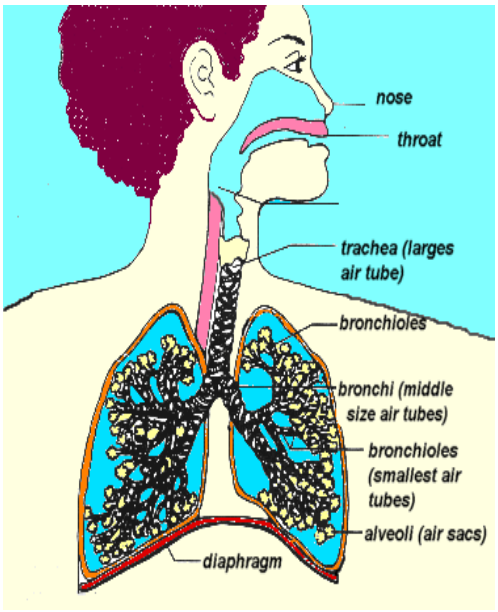
A-Z SEED - A

ASTHMA

Asthma is a respiratory disease. It creates narrowing of the air passages that result in difficult breathing, tightness of the chest, coughing, and breath-sounds such as wheezing.

Occupational asthma refers to asthma that is caused by breathing in specific agents in the workplace. An abnormal response of the body to the presence of an agent in the workplace causes occupational asthma.

The abnormal response, called "sensitization," develops after variable periods of workplace exposure to certain dusts, fumes or vapours. Not all workers react with an asthmatic response when exposed to industrial agents. Asthma strikes only a fraction of workers.



For simplicity, we categorize them into two groups: allergic and non-allergic.

Allergic Asthma

Allergic asthma involves the body's immune system. This is a complex defense system that protects the body from harm caused by foreign substances or microbes. Among the most important elements of the defense mechanism are special proteins called "antibodies." These are produced when the human body contacts an alien substance or microbe. Antibodies react with substances or microbes to destroy them. After a period of exposure to an industrial substance, either natural or synthetic, a worker may start producing too many of the antibodies called "immunoglobulin E" (IgE). These antibodies attach to specific cells in the lung in a process known as "sensitization."

When re-exposure occurs, the lung cells with attached IgE antibodies react with the substance. This reaction results in the release of chemicals such as "leukotrienes" that are made in the body. Leukotrienes provoke the contraction of some muscles in the airways. This causes the narrowing of air passages which is characteristic of asthma.

Non-Allergic Asthma

Following repeated exposure to an industrial chemical, substances such as leukotrienes are released in the lungs. Again, the leukotriene causes narrowing of air passages typical of asthma.

Dust masks and respirators can help to control workplace exposure. However, these protective

devices, in order to be effective, must be carefully selected, properly fitted and well maintained. Preventing further exposure might involve a change of job

The best way to prevent occupational asthma is to replace dangerous substances with less harmful ones. Where this is not possible, exposure. should be minimized through engineering controls such as ventilation and enclosures of processes.