

# examinetics

## Occupational Health Pathfinder

## Occupational Asthma

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### Overview

Over 16 million adults suffer from asthma in the USA. The symptoms of asthma include coughing, wheezing and shortness of breath. There is no cure for asthma and, if untreated, the condition can be fatal. However, there are a number of treatments available that can help to control asthma. These treatments fall into two categories: "reliever" medicines that reduce asthma symptoms (for example, albuterol) and "preventer" medicines that help keep the overall condition under control (for example, inhaled corticosteroids).

During respiration, air is drawn into the lungs via a series of tubes that divide into smaller branches called bronchioles. In asthmatic patients, muscles that *surround* the bronchioles can constrict inappropriately, causing a narrowing of the airway. This problem is made worse by inflammation that occurs *within* the bronchioles that further narrows the airway. Reliever medicines relax the muscles surrounding the airways while preventer medicines suppress the inflammation within the airways.

People with asthma find that certain "triggers" can provoke an asthmatic attack including allergic factors such as pollen from grasses and trees. Workplace factors can provoke occupational asthma by acting as "sensitizers". Isocyanates, dust from flour, grain, wood and latex rubber, and fumes from soldering are all common sensitizers. It is important for employers to identify any potential sensitizers in the workplace. And potential hazards should be kept under periodic review, especially when workplace processes change. Steps should be taken to remove those sensitizers where possible or to provide workers with protective equipment.

### Regulation

The OSHA website ([www.osha.gov](http://www.osha.gov)) has excellent information relating to occupational asthma, common causes and preventative measures; it should be considered as required reading. Employers are reminded of Section 5 (a) (1) of the OSH Act that requires employers to, "furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees".

Asthmatics are often monitored with "spirometry" in which the flow of air out of the lungs is measured when the person blows into a simple testing device. Common measurements include Peak Expiratory Flow Rate (PEFR) and Forced Expiratory Volume in One Second (FEV<sub>1</sub>). Regular measurements can indicate whether an asthmatic's condition is stable or either deteriorating or improving. In a workplace with known sensitizing agents, such measurements may be routinely adopted for workers in order to monitor possible development of occupational asthma.

### KEY POINT SUMMARY:

- Asthma affects over 16 million adults in the USA and, if untreated, can be potentially life-threatening
- Symptoms include wheezing, coughing and shortness of breath
- Inhaled medicines are commonly used to both relieve and prevent symptoms
- Environmental trigger factors (eg grass pollen) can provoke an asthmatic attack
- Certain workplace dusts and chemicals can sensitize workers and lead to the onset of occupational asthma
- Employers should identify any such potential sensitizers and either remove them from the workplace or provide protective equipment for employees
- Employees working with potential sensitizers can have their respiratory function monitored easily with simple tests such as PEF<sub>R</sub> and FEV<sub>1</sub>

### FIND OUT MORE...

#### OSHA Website

[www.osha.gov](http://www.osha.gov)

#### American Lung Association

[www.lungusa.org](http://www.lungusa.org)

#### Environ Protection Agency

[www.epa.gov/asthma](http://www.epa.gov/asthma)

#### Business Owner Briefing

"Small entity compliance guide for the revised respiratory protection standard"

[www.osha.gov/Publications/segrev-current.pdf](http://www.osha.gov/Publications/segrev-current.pdf)

#### Medical Director Review

"Standards of Care for Occupational Asthma" (Fishwick et al, 2008)

<http://thorax.bmj.com/cgi/content/full/63/3/240>

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