

Chronic obstructive bronchitis or emphysema in miners working in underground coal mines

Definition of causal agent

Coughing and sputum on most days for a period of at least three months per year for two consecutive years. - Chronic obstructive bronchitis is associated with significant obstructive impairment. Chronic obstructive bronchitis may progress over several years with periods of exacerbation and occurrence of emphysema. Emphysema is defined as the destruction of the alveolar walls.

Main occupational uses and sources of exposure:
Underground working in hard coal mines

Manifestations

Chronic exposure to coal mine dust may cause chronic obstructive bronchitis or emphysema. These diseases are strongly related to cigarette smoking. While the risk in coal workers is independent of that of cigarette smoking it is increased considerably by smoking. Since tobacco smoke is the most common cause of chronic bronchitis and emphysema, it must be considered carefully alongside occupational exposures in attributing an occupational cause.

Diagnostic criteria

- Chronic bronchitis (coughing and sputum) on most days for a period of at least three months per year for two consecutive years, associated with obstructive ventilation impairment in lung function tests.
- Emphysema may be suspected by the presence of dyspnoea on exercise, obstructive ventilatory impairment with increase of the Total Lung Capacity, and/or bullae on Chest X-ray or CT scan.

Exposure criteria:

Minimum intensity of exposure: Confirmation of occupational exposure underground in a hard coal mine, if possible assessed by:

History and working conditions showing significant levels of respirable and inhalable dust, totalling approximately 100 mg/ m³ . year or more.

Minimum duration of exposure: 5 years

Maximum latent period: A maximum period cannot be fixed, the occurrence of disease being a function of the cumulative dose.