

Silicosis



Principle:

Workers are protected from exposure to occupational health and safety hazards that are likely to pose a risk of permanent injury, illness or death.



Key message:

Silicosis is incurable and can be fatal.

Definition

Silicosis is a preventable diseases resulting from “lung fibrosis caused by the inhalation of dust containing silica”¹

What is silicosis?

- Silicosis is a lung disease.
- It is caused by inhaling small particles of silica, often from rock, sand, stone and clay.
- These particles cause scarring of lung tissue, and the formation of growths.
- This can restrict breathing, and lead to a range of symptoms, disability and death.

Who is at risk from silicosis?

- Mine, quarry, masonry and factory workers are at most risk of developing silicosis
- This is because of their routine exposure to airborne particles of silica

What are the symptoms of chronic silicosis?

- Silicosis gets progressively worse over time
- Symptoms may start as difficulty breathing, coughing and general weakness
- Symptoms can then progress towards chest pain, night sweats, weight loss and loss of appetite and fever.
- Further symptoms may include heart disease and blue skin.
- Silicosis can often also lead to complications, including tuberculosis and other lung infections, cancer and injury to joints, fingers and the face.

Facts

- Silicosis resulted in over 46,000 deaths in 2013.²
- Between 30–50% of workers in high risk sectors in developing countries may suffer from silicosis.³
- Inhilable silica is found in rocks, stones, sands, and clay.⁴
- Silica inhalation can cause scarring in lungs, leading to a range of symptoms and death.⁵

Types of silicosis

- Chronic silicosis - the most common form, developing after long exposure to silica. Symptoms often appear after 10-30 years, and include difficulty breathing, coughing, weakness, often leading to disability and death.
- Accelerated silicosis - more rapid onset of symptoms than chronic silicosis. This often follows higher exposure to silica, but the symptoms are similar to that of chronic silicosis.
- Acute silicosis - after exposure to very high amounts of silica. Symptoms occurring within weeks to years after exposure, which are severe, and often include inflammation of the lung and build up of fluid.
- Complicated silicosis - the scarring leads to the development of nodules in the lung.

Continued...

Silicosis



How is chronic silicosis treated?

- There is no cure for silicosis.
- Treatment is used to reduce the severity of symptoms and reduce the risk of complications.
- Those suffering from silicosis should reduce their exposure to silica. Smoking also causes lung damage, so avoiding smoking is also advised.

How sites can protect workers from silicosis?

- Silicosis is incurable but preventable - therefore prevention measures are essential.
- A risk assessment should be used to identify the risk of silica exposure, and the ways that the risk can be managed.
- Measures should then be taken to control or remove silica dust, including:
 - spraying water on dusty ground
 - using blades or drills that add water whilst cutting
 - using dust cabinets or other methods to extract dust
 - providing respirators and dust masks that block silica - these must be designed to protect against silica, close fitting, and should not be tampered with
 - providing washing facilities for workers to wash their hands and face, and changing out of clothes after being exposed to silica
 - regular health screening for workers, by medical professionals who are familiar with the signs and symptoms of silicosis
- Workers should be trained in understanding:
 - what silicosis is and the risks of silica exposure
 - the measures taken to prevent silicosis
 - what are the symptoms of silicosis and what to do if they have these symptoms



These workers are in a ventilated area, and are using water. However, should also be using dust masks



Silica dust on floor of quarries can become airborne in the wind - water should be sprayed on the ground to prevent the dust from rising

Additional information and resources

- Silicosis - American Lung Association
- Health and Safety factsheet
- Sample - health and safety policy
- Sample - risk assessment
- Sample - PPE request form and records
- Sample - workers training plan
- Sample - training records: training description
- Sample - training record: attendance list

1. Oxford Dictionaries, 2015. Silicosis. www.oxforddictionaries.com

2. Collaboration, 2015. Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*; 10; 385(9963): 117-171.

3. World Health Organization: The Global Occupational Health Network, 2007. GOHNET newsletter: Elimination of silicosis. www.who.int

4. Health and Safety Executive, 2015. Silicosis. www.hse.gov.uk

5. American Lung Association, 2015. Learn about silicosis. www.lung.org