

SILICA AND SILICOSIS

WHAT YOU NEED TO KNOW

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What is silica?

Silica is a very hard mineral found in almost every rock. In fact, it is the main part of sand, sandstone, granite, quartzite, etc. Silica naturally occurs in three forms, but only silica in a crystalline form, or crystalline silica, is a health hazard.

What is silicosis?

Silicosis is a lung disease that can be fatal. It is caused by breathing in the very fine dust of crystalline silica. The crystalline silica particles, which are smaller than sand and oftentimes invisible, enter the person's lungs and produce inflammation and scarring of the lung tissue. This causes severe shortness of breath. When silicosis develops, the lungs can become infected through fungi or bacteria. Silicosis is also linked to other lung conditions, such as fibrosis, emphysema, tuberculosis, and lung cancer.

There are three types of silicosis:

Chronic: Occurs after 10 or more years of exposure to small amounts of silica dust. This is the most common type.

Accelerated: Occurs after 5 to 10 years of exposure to moderate amounts of crystalline silica.

Acute: Can develop within a few weeks to 5 years after exposure to high concentrations of crystalline silica.

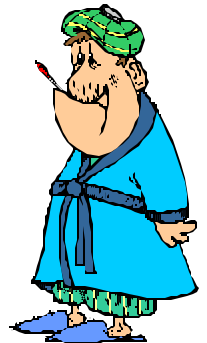
What are the symptoms of silicosis?

The symptoms of silicosis are:

- shortness of breath when you exercise (which can become severe, especially in acute silicosis)
- chronic cough
- weight loss



- fatigue
- loss of appetite
- fever



Symptoms may not be present in the early stages.

Silicosis is often misdiagnosed as pneumonia, tuberculosis, and/or pulmonary edema.

Who is at risk for silicosis?

Silica is used in a number of industries. There is a risk only when crystalline silica particles are airborne.

Silica may be present in the following industries (among others):



- surface and coal mining
- sand blasting
- cement manufacturing
- ceramics, clay and pottery



- abrasive blasting
- electronics industry
- mining
- demolition



Any type of work that creates large dust clouds of silica can be hazardous.

What is the treatment for silicosis?

Since silicosis cannot be cured or reversed, its treatment is mainly supportive care: oxygen and steroids to help people breathe, pain relief medicine, and a few experimental medications to slow down inflammation. In terminally ill silicosis patients, a lung transplant may be the only way to prolong the patient's life.

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Can silicosis be prevented?

Yes, silicosis can be prevented, through awareness of the problem and the use of adequate preventive measures.

What can your employer do to prevent silicosis?

- Conduct air monitoring to measure the workers' exposure to crystalline silica.
- Minimize exposures by controlling the creation of airborne particles, for example, use wet drilling, local exhaust ventilation, dust suppression skirts, etc.
- Eliminate silica by replacing it with safer materials, when possible.
- Provide workers with protective clothes, respiratory protection (according to the OSHA Respiratory Protection Standard), and facilities for washing (showers) and changing.
- Provide workers with information about the dangers of crystalline silica and about silicosis and its health effects.
- Offer training on work practices and proper use of protective equipment.
- Post signs to warn workers about the hazard. For example, label products that contain silica, label machines with signs indicating that silica is being used. Make Safety Data Sheets available to workers.
- Provide medical examinations for all workers exposed to crystalline silica; the examination should include a respiratory questionnaire (previous and present occupation, hobbies, etc., where there was a potential exposure to silica), lung function test, chest X-rays, and annual evaluations for tuberculosis.
- Report all cases of silicosis to the state health department and to OSHA.

Federal OSHA's Permissible Exposure Limit (PEL) establishes the maximum amount of crystalline silica to which workers may be exposed in an 8-hour shift (29 CFR 1910.1000).

What can you do to prevent silicosis?

Avoid unnecessary exposure to silica dust by practicing good personal hygiene:

- Wash your hands and face before eating, drinking, going to the toilet, smoking, or applying cosmetics;
- Do not eat, drink, smoke, or apply cosmetics in areas where crystalline silica is being used.
- Wear protective clothes and respiratory protection according to the OSHA Respiratory Protection Standard. Remember that paper masks are not adequate to protect you from airborne crystalline silica. Respirators must fit tightly. (Do not grow beards or mustaches).
- Before you leave work, shower and change into clean clothes so that you do not contaminate your car and/or home. Leave your dusty clothes at work.
- Do not smoke! Smoking and silicosis are a deadly combination!



For more information contact:



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<http://www.osha.gov/> 1-800-321-6742, (877) 889-5617 (TTY)



www.cdc.gov

Centers for Disease Control and Prevention (CDC)
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