

Physicians' Alert:

Occupational Silicosis and Silica-Related Illnesses among Construction Workers

This Alert was developed to help ensure that all construction workers who engage in work that could expose them to respirable crystalline silica and put them at risk of developing occupational silicosis or other silica-related illnesses are properly diagnosed. **Please:**

- (1) read and print this Alert;**
- (2) keep the Best Practice tips to help you work safely; and**
- (3) fill in the "To My Doctor" form and give it to your doctor to include in your medical records.**

Best Practices for You

The following are selected best practices a worker should engage in to prevent occupational silica exposure:

- Use local exhaust ventilation (a vacuum system) or wet methods to suppress dust when engaging in silica generating.
- Be careful not to stand in an area where dust is produced by other workers.
- Wear a respirator if required (i.e., when exposures are above the OSHA permissible exposure level) and make sure you receive respirator fit testing and training.
- See your physician if you develop a cough, chest tightness, wheezing or shortness of breath.
- Stop smoking.

To learn more visit:

- Work Safely with Silica
<https://www.silica-safe.org/>
- OSHA Safety and Health Topics: Respirable Crystalline Silica
<https://www.osha.gov/dsg/topics/silicacrystalline/>
- OSHA Frequently Asked Questions: Respirable Crystalline Silica Rule
https://www.osha.gov/silica/Silica_FAQs_2016-3-22.pdf

©2018, CPWR-The Center for Construction Research and Training. All rights reserved. CPWR is the research and training arm of NABTU. Production of this document was supported by cooperative agreement OH 009762 from the National Institute for Occupational Safety and Health (NIOSH). The contents are solely the responsibility of the authors and do not necessarily represent the official views of NIOSH.

Physicians' Alert:

Occupational Silicosis and Silica-Related Illnesses among Construction Workers

To My Doctor: I am a construction worker who has frequent occupational contact with crystalline silica. Please keep this information for reference and to aid in evaluation of possible respiratory conditions.

This document should be filed in the medical records of (patient's full name):

Date of Birth: _____ / _____ / _____
 Month Day Year

Construction workers are exposed to dusts known to contain respirable crystalline silica that can cause silicosis and silica-related illnesses.

Silicosis is a diffuse, nodular, interstitial pulmonary fibrosis often more prominent in the upper lobes. Silica exposure also increases the risk of activating latent tuberculosis and of developing lung cancer, COPD, rheumatoid arthritis, scleroderma, and chronic renal disease. It is not necessary to have silicosis to develop these other conditions.

Silicosis typically occurs after 10 or more years of exposure; however, cases have been diagnosed in workers with fewer years of very high exposure. With increased exposure or progression of the scarring, complicated silicosis or progressive massive fibrosis (PMF) may occur. Symptoms are more common and more severe in individuals with PMF.

The Occupational Safety and Health Administration (OSHA) has issued a new standard that requires medical surveillance for workers exposed to silica at certain levels (<https://www.osha.gov/dsg/topics/silicacrystalline/construction.html>). A summary of common materials and tasks that expose workers to respirable silica, requirements for treatment under the standard, and information on types of silicosis can be found on page 2 of this document.

Appendix B of the standard, *Medical Surveillance Guidelines* (<https://www.osha.gov/silica/AppendixBtosect1926.1153.pdf>), contains specific information to “to aid physicians and other licensed health care professionals (PLHCPs) regarding compliance with the medical surveillance provisions of the respirable crystalline silica standard.”

Diagnosing Occupational Silicosis and Silica-Related Illnesses

The following questions, can be used to screen patients for silicosis and silica-related illnesses):

- 1) Have you ever been exposed to someone with TB?
- 2) What does it take to make you short of breath? (Note: consider using the set of questions in the American Thoracic Society (ATS) and American Lung Association (ALA) questionnaires that describe gradations of

shortness of breath, and be aware that silicosis can sometimes be asymptomatic until it becomes severe.)

- 3) Do any of your co-workers have any similar symptoms? (Note: This question may or may not be helpful since exposures may be different, people can react differently to the same exposure, and some co-workers may be more diligent in using PPE.)

Please note:

- Health professionals must report silicosis cases to their state health department.
- Medical surveillance is not required if certain control measures specified in the standard are implemented.
- If your patient uses a respirator at work, medical clearance and fit testing are required.
- The employer is responsible for arranging for all required testing.

Whenever possible, perform these tests prior to advising the patient regarding employment. Consider referring the patient to a pulmonologist or occupational medicine physician familiar with work-related diseases for assistance with diagnosis and management, and to protect the patient's legal rights in the workers' compensation system.

Additional resources that may be useful for understanding the clinician's responsibilities under the standard:

- OSHA's *Small Entity Compliance Guide for the Respirable Crystalline Silica Standard for Construction* (<https://www.osha.gov/Publications/OSHA3902.pdf>)
- CPWR's guide, *MEDICAL MONITORING UNDER THE OSHA SILICA STANDARD FOR THE CONSTRUCTION INDUSTRY GUIDE FOR EMPLOYERS* (https://www.silica-safe.org/training-and-other-resources/manuals-and-guides/asset/The-Silica-Standard-medical-monitoring_Final_.pdf) .

For more information about occupational health, see the Association of Occupational and Environmental Clinics (AOEC) at www.AOEC.org.

Summary: Exposures/Tasks in Construction, Medical Surveillance Under the Standard, and Types of Silicosis

Sources of Exposure—Materials*: Granite and marble (real or artificial); quartz and quartzite; sand, gravel, and sandstone; slate and traprock; many abrasives used for abrasive blasting; concrete, concrete block, cement; brick and refractory brick; mortar; gunite; soil, especially sandy soil; and asphalt containing rock or stone.

Common tasks performed with the materials that create risks of exposure:*
Cutting, grinding, demolition, abrasive blasting, drilling, jackhammering, sanding, and polishing.

Intervention/Treatment—All silica exposed workers should have a periodic chest radiograph, spirometry, TB testing, and assessment of respiratory symptoms. Based on history and physical findings connective tissue and kidney function testing maybe indicated. Follow OSHA Appendix B – Medical Surveillance Guidelines – <https://www.osha.gov/dsg/topics/silicacrystalline/construction.html>

Types of Silicosis	What to Look For
Simple Silicosis	Diffuse, small rounded opacities on x-ray; there may be little effect on pulmonary function at this stage.
Accelerated Silicosis	Diffuse, small rounded opacities on x-ray; more severe restrictive and/or obstructive defects
Advanced Silicosis	Lung function may be severely compromised, often with a mixed restrictive/obstructive pattern, but either pure restriction or obstruction may be seen; increased profusion of small opacities and development of large opacities on x-ray more severe restrictive and/or obstructive defects and development of heart failure - cor pulmonale
Acute Silicosis	Life threatening shortness of breath with diffuse perihilar alveolar filling process with ground glass opacities on x-ray

*For more information on materials and tasks, visit www.silica-safe.org or <https://www.osha.gov/dsg/topics/silicacrystalline/>