



Silicosis and Silica Exposure: What Physicians Need to Know

What is silicosis and why are workers at risk?

Silicosis is an incurable interstitial fibronodular lung disease frequently characterized by pulmonary fibrosis as the result of exposure to respirable crystalline silica dust. Workers in industries such as mining, manufacturing, demolition, agriculture, construction, stone cutting, and pottery are all at risk for developing silicosis.

What are the diagnostic criteria for silicosis?

- Evidence of crystalline silica exposure
- Chest radiography with disease features
- Elimination of competing differentials

Why should I be aware of my patient’s work history?

Should your patient present with signs and symptoms of respiratory disease, consider occupational exposure sources. Determining whether your patient has any workplace silica exposure is the first step towards preventing silicosis.

How can I help protect my patients from silica dust?

- Discuss prevention methods with your patient, and/or refer your patient to the New York State Occupational Health Clinic Network.
- Encourage patients to **use all safety and exposure controls at their worksite, as well as appropriately maintained, approved, and fitted respirators.**
- Observe for early signs and symptoms of respiratory disease. Provide medical monitoring and emphasize the importance of routine medical exams.
- Recommend smoking cessation programs. **1-866-NY-QUITS**
- Urge patients to not bring dust home. This can be accomplished by changing into clean clothes and shoes, and if possible, showering prior to leaving their worksite. They should use on-site laundering services if available; if not, bag and wash work clothes separately from the household laundry.
- Emphasize good hygiene before eating. Instruct patients to wash their hands and face before eating and to not eat in their work areas.

New York State Occupational Health Clinic Network
If you suspect your patient may suffer from an occupational disease, the New York State Occupational Health Clinic Network is a statewide network of clinics specially equipped to handle workplace illness/injury, which providers may use for patient consultations and referrals.
www.health.ny.gov/OHCN

Silicosis Class	Exposure Period	Radiographic Features	Spirometry and Pathological Findings
Chronic	After 10 years of exposure to low levels of silica dust	Simple: typically small, rounded opacities of <1cm in diameter found predominantly in the upper lung zone; “eggshell” calcification of lymph nodes may be seen Complicated: small opacities coalesce to form larger opacities of >1cm in diameter in the upper or mid-zones→ Progressive Massive Fibrosis (PMF)	<ul style="list-style-type: none"> • Restrictive and/or obstructive defects • Fibrotic nodules with concentric “onion-skinned” collagen fibers, central hyalinization, and a cellular peripheral zone with lightly birefringent particles seen under polarized light
Accelerated	Between 5-10 years of exposure to high levels of silica dust	Similar to chronic, but with more rapid clinical and radiographic progression Fibrosis may be more irregular/diffuse, with PMF more frequently observed	<ul style="list-style-type: none"> • Restrictive and/or obstructive defects • Fibrotic nodules with concentric “onion-skinned” collagen fibers, central hyalinization, and a cellular peripheral zone with lightly birefringent particles seen under polarized light
Acute	Between 0-5 years of exposure to very high levels of silica dust	Characteristic bilateral, diffuse, ground glass opacities that are perihilar or basilar Rapid small or large opacity development may be observed	<ul style="list-style-type: none"> • Periodic acid-Schiff positive alveolar exudate (alveolar lipoproteinosis) and alveolar wall cellular infiltrate

For more information about silicosis, the risks of occupational crystalline silica exposure, and effective exposure prevention controls visit:

www.health.ny.gov/silicosis