Crystalline silica health assessments

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It's important that people who work with crystalline silica have a respiratory health assessment.

Why assessments are needed

The Occupational Health and Safety Regulations 2017 (Vic) require health assessments where there is a hazard to health of workers. This may occur when working with materials such as concrete, bricks, tiles, mortar and in artificial stone benchtop fabrication and installation. Working with artificial stone may be particularly hazardous.

Early and accurate identification of respiratory disease, including silicosis, allows for early intervention which can improve the health outcomes for workers. An assessment can also provide a baseline for future assessments, when conducted before a person starts work in a crystalline silica process, or before a new process is implemented.

What a health assessment involves

Safe Work Australia's publication Hazardous Chemicals Requiring Health Monitoring includes guidance on respiratory health assessments for workers exposed to crystalline silica. It sets out a process for baseline respiratory health assessments:

1. Collection of demographic data (details like age and gender)
2. Work history
3. Medical history
4. Physical examination with emphasis on the respiratory system
5. Investigations (tests): standardised lung function testing and chest x-ray

The Safe Work Australia guidance recommends that an assessment be done annually during the time a worker is exposed to crystalline silica. It also includes a template for collecting this information.

Who can do the health assessments

Health assessments should be done regularly, and by registered medical practitioners with experience in provision in occupational health services.

Tests

According to the Royal Australian College of Physicians (RACP), health assessments should include:

- spirometry
- gas transfer, also called diffusing capacity of the lungs for carbon monoxide (DLCO)
- ILO chest x-ray

Spirometry and DLCO are lung function tests.

In some circumstances other tests may be needed.

DLCO

Asbestos Council of Victoria

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Phone: 5127 7744
PO Box 111, Moe, VIC 3825

These tests should be performed in a laboratory setting. Spirometry done outside of laboratories can give false negatives, and may falsely reassure practitioners and patients. The RACP consider DLCO a more sensitive way to detect early disease.

For a list of accredited respiratory laboratories in Australia, see the Thoracic Society's website (link below).

ILO chest x-ray

An ILO chest x-ray uses a standard classification system for identifying pneumoconiosis (occupational lung disease - silicosis is one type).

It's important that a specially qualified radiologist reviews the ILO chest x-ray. To qualify, the radiologist must pass the B reader examination run by the National Institute for Occupational Safety and Health (NIOSH). This certifies them to classify chest x-rays using the ILO system.

Using a B reader has become established practice for detecting early x-ray changes. For a list of qualified Australian B readers, see the NIOSH website (link below). At the time this page was last updated, the NIOSH site listed one B reader in Victoria, at MIA Radiology (link below). There may be other B readers not known to WorkSafe, or who practise outside of Victoria, who can perform the testing.

Diagnosing and treating respiratory disease

Suspected cases should be referred to respiratory physicians with expertise in assessing and managing complex occupational lung diseases, including silicosis or interstitial lung disease. A respiratory physician should coordinate treatment and ongoing health monitoring.

More information

- **Compliance code: Managing exposure to crystalline silica – engineered stone**

  https://www.worksafe.vic.gov.au/resources/compliance-code-managing-exposure-crystalline-silica-engineered-stone

- **Crystalline silica health assessments**

  https://www.worksafe.vic.gov.au/resources/crystalline-silica-health-assessments

- **结晶二氧化硅健康评估 (Crystalline silica health assessments - Chinese simplified)**

  https://www.worksafe.vic.gov.au/resources/crystalline-silica-health-assessments-chinese-simplified

- **結晶二氧化矽健康評估 (Crystalline silica health assessments - Chinese traditional)**

  https://www.worksafe.vic.gov.au/resources/crystalline-silica-health-assessments-chinese-traditional

- **Accertamento sanitario per l'esposizione alla silice cristallina (Crystalline silica health assessments - Italian)**

  https://www.worksafe.vic.gov.au/resources/crystalline-silica-health-assessments-italian

- **Giám định sức khỏe liên quan đến tinh thể silica (Crystalline silica health assessments - Vietnamese)**

  https://www.worksafe.vic.gov.au/resources/crystalline-silica-health-assessments-vietnamese

- **SWA: Hazardous chemicals requiring health monitoring**

  https://www.worksafe.vic.gov.au/resources/swa-hazardous-chemicals-requiring-health-monitoring

- **RACP: Accelerated silicosis FAQ**

  https://www.worksafe.vic.gov.au/resources/racp-accelerated-silicosis-faq

- **NIOSH: Successful international examinees**

  https://www.worksafe.vic.gov.au/resources/niosh-successful-international-examinees

- **TSANZ: List of Accredited Respiratory Labs**

  https://www.worksafe.vic.gov.au/resources/tsanz-list-accredited-respiratory-labs

- **MIA radiology**

  https://www.worksafe.vic.gov.au/resources/mia-radiology

- **Health assessments for stonemasons: Supporting your emotional health**

  https://www.worksafe.vic.gov.au/resources/health-assessments-stonemasons-supporting-your-emotional-health