Northwestern

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Respirable Crystalline Silica

Respirable crystalline silica (RCS) is a common mineral found in materials such as stone, concrete, asphalt, brick, tile, mortar, drywall, and sand. Many workplace tasks and renovation projects expose workers to breathing in RCS dust, including the use of saws, grinders, drills, sanders, and jackhammers. Annually, according to the Occupational Safety and Health Administration (OSHA), about 2.3 million workers in the United States are at risk for exposure to RCS dust.

Breathing RCS dust can cause uncurable diseases, so it's important that you understand the hazards and precautions associated with RCS dust in your workplace.

Tips for Success When Talking to Your Team

Preparation is Key: Keep the topic relevant. Work with your team to review potential RCS risks in your work area and discuss how the hazards can be avoided.

Stay Positive: Keep the focus on what can be done to create a safe workplace instead of focusing on what has gone wrong in the past.

Share a Story, Ask for a Story: Storytelling is a powerful method to convey information. Stories from your employees make the topic even more relatable.

RCS exposure diseases

Your age, overall health, amount of inhaled dust, and length and frequency of exposure all influence the development of RCS exposure diseases. Below are some common diseases which typically occur after ten years of occupational exposure to RCS dust:

Silicosis is the formation of scar tissue in the lungs, which makes it difficult for the lungs to take in oxygen.

Lung cancer is a disease where abnormal cells grow uncontrollably into tumors, interfering with lung function.

Chronic obstructive pulmonary disease (COPD) is a disease that causes airflow blockage and breathing-related problems. It includes emphysema and chronic bronchitis.

Kidney disease is a condition in which the kidneys are damaged and cannot filter blood as well as they should.

Tips for preventing RCS exposure

- ✓ Use dust collection systems such as vacuums and local exhaust ventilation to prevent dust from being released into the air
- ✓ Use equipment with integrated water delivery systems that continuously feed water to the point of operation; applying water substantially reduces the amount of dust created
- ✓ Wear disposable or washable work clothes, when feasible
- ✓ When possible, remove RCS dust at worksites with a water hose rather than with compressed air or dry sweeping
- ✓ Do not eat or drink in areas that may contain RCS dust
- ✓ Wear respiratory protection if required by your supervisor, in accordance with Northwestern's Respiratory Protection Program

Learn more: Visit the OSHA website for more information and complete the Silica Awareness course

Report all injuries online or call (847) 491-5582

Safety at Home

There is a good chance you operate hand and power tools at home, such as drills, saws, sanders, and grinders. You should follow the same safe work practices at home when working with tools and equipment. Below are some tips to help keep you and your family safe when performing tasks at home:

- Always ensure you are using the correct tool for the task at hand
- Ensure tools are working properly and inspect them for any damage prior to each use; follow and understand equipment manual guidelines
- Keep children at a safe distance from the work area
- Never leave hand and power tools accessible or unattended after use

For Additional Information

Contact Environmental Health & Safety at ehs@northwestern.edu

Do you or your team have a safety story you'd like to share? Contact Environmental Health and Safety for details.