

1 to 2 Million Workers in the US are Still Exposed to Silica

INCIDENT

The worst case of acute silicosis occurred in the 1930s during the construction of the Gauley Bridge hydroelectric tunnel at Hawk's Nest, W.Va.

Approximately 2,000 workers were digging a tunnel through high-silica rock with no respiratory protection, even though the health effects of silica exposure had been documented for decades. As many as 1,500 men died as a result of inhaling silica dust.

Silicosis is caused by breathing small particles of crystalline silica. Once the particles are inside the lungs, they become trapped and cause areas of swelling around them. Over time, these swollen areas grow larger, breathing becomes increasingly difficult, and lung failure may cause death. In addition, silica exposure is also being connected to diseases besides silicosis, including cancer, tuberculosis, immunological disorders and kidney ailments.

Occupational exposure to silica particles of respirable size occurs in a variety of occupations, including mining, quarrying, drilling and sand blasting activities. Because silica sand is an inexpensive and versatile component of many manufacturing and construction processes, millions of workers throughout the world are at risk for the disease.

There are three types of silicosis:

- Chronic silicosis, the most common form of the disease, usually develops after 10 or more years of exposure to relatively low dust concentrations.
- Accelerated silicosis results from exposure to high concentrations of silica over a 5- to 10-year period.
- Acute silicosis is a rare but highly fatal disease that is caused by brief but massive exposure to dust with high

quartz content.

The unchecked use of silica in industry continued. In March and April of 2014 at OSHA hearings, Hispanic and immigrant workers testified to their experience working with silica.

Jonas Mendoza a construction worker from New Jersey said that proper equipment and training is not available in many construction jobs. In the construction industry contractors do not provide the workers with the basics to do the job. "If you ask for protective equipment, they give you a mask from the 99-cent store to shut you up."

Santos Edilberto Alemendarez who came to the United States from Honduras in 2007. He described his experience manufacturing cabinets out of wood and granite at a small factory in Texas.

"The process of cutting the granite was dry and this produced an excessive amount of dust generated by cutting a processing the granite. The dust filled the entire environment in the place. The company did not provide adequate protection for the workers and they did not provide dust masks to protect their employees. During the time I was at Craft Master I was inhaling granite dust most of the time. Regularly I wore a dust mask but this was not adequate to protect himself from such dust."

"We are exposed to the poison," said **José Granado**, a construction worker from Houston who came to the United States from El Salvador 15 year ago.

"I came to U.S. looking for a better life. However due to risky and unsafe work that I'm doing in the construction industry, it looks like instead of getting a better life, I came to give mine away."

NEED TO KNOW

Silicosis is one of the oldest recognized occupational diseases. Experts say they really do not know how many people are suffering and dying from it today. It may be that the principal reason silica remains such a deadly hazard in U.S. workplaces is because

too many people think it's no longer a serious problem.

BUSINESS / REGULATIONS

There is linkage between regulation to address silica hazards and "bad data". Bad data stems from the silicosis which is so often misdiagnosed or not recognized. This bad data, in turn complicates the government's effort to address the silica hazards through effective regulations.

Silica litigation is not yet rising at the rate of asbestos, but is increasing because lots of plaintiff's attorneys are searching around for the "next asbestos."

" Federal legislation that would put an end to asbestos litigation remains a possibility, and many states already have passed laws that limit such lawsuits. Silica is a logical hazard for lawyers to pursue. Moreover, there is now a "litigation infrastructure" of physicians and expert witnesses in place and ready to testify on both hazards.

Many lawsuits now include both silica and asbestos, which complicates the effort to compare the two hazards, while confirming the link between them.

Still, in terms of the numbers of lawsuits and plaintiffs, silica has a long way to go to reach the level of asbestos, but silica claims are growing.

OSHA have been lobbying for almost 40 years to implement exposure levels to ensure safety levels or permissible exposure limit (PEL) for workers exposed to silica dust.

But in 2015, OSHA established a new rule to protect America's workers. The rule established a new permissible exposure limit PEL that apply to the construction industry.

KEY PROVISIONS of OSHA's new crystalline silica rule:

- Reduce the permissible exposure limit (PEL)
- Requires employers to use engineering and work practice controls to reduce worker exposure to silica dust (e.g.,

water to wet down the dust, or HEPA-filtered vacuums and local exhaust ventilation and dust collection systems to capture and remove dust), provide respirators when engineering and work practice controls cannot adequately limit exposure, limit worker access to high exposure areas, provide training, develop a written exposure control plan, measure exposures, and offer medical exams to highly exposed workers.

In a perfect world, effective regulation would greatly mitigate the deleterious effects of silicosis in the workplace. The best possible scenario is the coupling of effective regulation and not to use silica at all by substituting silica with other cost-effective measures.

Apart from that tragic loss of life in building the Gauley Bridge in West Virginia in the 1930's who are the workers most affected by the silica dust?

They are Hispanic Central American and temporary workers. This genre of people who have few options, take dirty, dangerous jobs that lack proper safety protection or regulation.

STATISTICS

"Over the past several decades, silicosis mortality has declined, from well over 1,000 deaths annually in the late 1960s to fewer than 200 per year in the late 1990s."

The annual number of silicosis deaths does not begin to tell the whole story of how many people suffer from the disease.

First, not all cases of silicosis are fatal.

Second, even in death, the disease is often undiagnosed.

Experts point out to research that shows silicosis deaths represent 4 to 8 percent of the silicosis cases per year. Estimates based on deaths alone miss more than 90 percent of the silicosis cases in the country. By that calculation, some 2,500 to 5,000 silicosis cases could be occurring each year.

A NIOSH study reveals that although the number of silicosis deaths has declined in the past decade, the occupational lung disease still kills about 100 people every year.

From 1999 to 2013, silicosis was the underlying or contributing cause of death for 2,065 people. The number of deaths in 1999 was 185, but fell to 88 by 2011. In 2012 and 2013, 103 and 111 people died due to silicosis, respectively.

Caused by inhaling particles containing crystalline silica, silicosis takes at least 10 years to develop after the first exposure, and death typically does not occur until several years later. Because about 4 percent of silicosis deaths in recent years were among adults younger than 44. Younger workers may have a higher level of exposure to silica.

PREVENTION

Silicosis cannot be cured, but experts say it can be prevented.

Experts say that silicosis should not occur. It's the result of ignorance. Effective strategies for protecting workers from silica dust will depend upon the specifics of the worksite.

This theme has been echoed by NIOSH who called the disease "an occupational obscenity because there is not scientific excuse for its persistence."

The symptoms of silicosis include shortness of breath, cough and difficulty in breathing with physical exertion, according to the National Institute for Occupational Safety and Health (NIOSH). Because of the common nature of these symptoms, the disease is frequently misdiagnosed or proceeds undetected. The disease is diagnosed on the basis of its symptoms in conjunction with work history and X-ray assessments of dust-induced lung damage.

The following are the procedures which are designed to prevent silicosis in the workplace:

- Hazard Recognition is the first step in protecting workers, one that is often missed, according to silicosis experts.

NIOSH recommends assessing the potential for worker exposure to crystalline silica before rock drilling or other possible exposures begin. "Keep your eyes open for any operation that produces fine dust," advises Tee Guidotti, MD, Ph.D., an occupational physician in the School of Medicine at George Washington University.

- Use Engineering Controls to reduce silica exposures, or find safer alternatives.
- Conduct Air Sampling to measure worker exposures.
- Regular Medical Examinations must be provided to any worker exposed to silica.
- Educate Workers about health effects, work practices and personal protective equipment for silica.
- Wear Washable Protective Clothes or clothes that can be disposed of at the worksite. Shower and change into clean clothes before leaving the worksite to prevent the contamination of cars, homes and other work areas.
- Use Respiratory Protection as a last line of defense if silica exposures cannot be kept below NIOSH's recommended exposure limit of 0.05 mg/m³. Consult OSHA's Respiratory Code.
- Store silica if it is found in large quantities.
- Don't smoke as exposure to both cigarettes and silica dust result in more severe lung disease than silica alone.
- Isolate work processes that produce silica dust.
- Wash hands and face before eating, drinking or smoking following exposure.

An ounce of prevention will deliver you more than a pound of cure if proactive prevention programs and measures are taken in the workplace.