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Weekly Safety Tip

Life Is All About Choices![®]

November 14, 2016

SCI Safety Tip: Skin Exposures & Effects (Part 2)

Source: <http://www.cdc.org>

Date: July 2, 2013



Skin Hazards

Causes of OSD include chemical agents, mechanical trauma, physical agents, and biological agents.

- **Chemical agents** are the main cause of occupational skin diseases and disorders. These agents are divided into two types: primary irritants and sensitizers. Primary or direct irritants act directly on the skin through chemical reactions. Sensitizers may not cause immediate skin reactions, but repeated exposure can result in allergic reactions.

A worker's skin may be exposed to hazardous chemicals through:

- direct contact with contaminated surfaces,
- deposition of aerosols,
- immersion, or
- splashes.
- **Physical agents** such as extreme temperatures (hot or cold) and radiation (UV/solar radiation).
- **Mechanical trauma** includes friction, pressure, abrasions, lacerations and contusions (scrapes, cuts and bruises).
- **Biological agents** include parasites, microorganisms, plants and other animal materials.

SCI Safety Slogan

We
Believe in
Keeping
You Safe

James Lehrke-SCI

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Contact Us Today!

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Dermal Absorption

Dermal absorption is the transport of a chemical from the outer surface of the skin both into the skin and into the body. Studies show that absorption of chemicals through the skin can occur without being noticed by the worker, and in some cases, may represent the most significant exposure pathway. Many commonly used chemicals in the workplace could potentially result in systemic toxicity if they penetrate through the skin (i.e. pesticides, organic solvents). These chemicals enter the blood stream and cause health problems away from the site of entry.

The rate of dermal absorption depends largely on the outer layer of the skin called the *stratum corneum* (SC). The SC serves an important barrier function by keeping molecules from passing into and out of the skin, thus protecting the lower layers of skin. The extent of absorption is dependent on the following factors:

- Skin integrity (damaged vs. intact)
- Location of exposure (thickness and water content of stratum corneum; skin temperature)
- Physical and chemical properties of the hazardous substance
- Concentration of a chemical on the skin surface
- Duration of exposure
- The surface area of skin exposed to a hazardous substance

Research has revealed that skin absorption occurs via diffusion, the process whereby molecules spread from areas of high concentration to areas of low concentration. Three mechanisms by which chemicals diffuse into the skin have been proposed:

1. Intercellular lipid pathway
2. Transcellular permeation
3. Through the appendages

Continued next week

SCI OSHA Compliance: OSHA's Final Rule to Protect Workers from Exposure to Respirable Crystalline Silica

Source: <http://www.osha.gov> (Part 2)

Compliance Schedule

Both standards contained in the final rule take effect on June 23, 2016., after which industries have one to five years to comply with most requirements, based on the following schedules. OSHA approved State Plans have six months to adopt standards that are at least as effective as federal OSHA standards. Many State Plans adopt standards identical to OSHA's but some State Plans may have different or more stringent requirements.

Establishments in states that operate their own safety and health plans should check with their State Plan for the implementation date of the new standards.

Construction - June 23, 2017, one year after the effective date.



Aurora Health Care®

Quick Tips for Healthy Living

Fall Fitness

Fall is a great time to start a new fitness routine. Stuck in a rut? Try a class you never have done before or get outside to enjoy the beautiful fall colors. We often lose our sense of excitement for exercise when we are not doing something we enjoy!

Today we go everywhere by car and sit for hours in front of the TV or computer. This sedentary lifestyle has been tied to obesity and many other health-related problems. Family exercise can, be fun, improve the health of your loves one, and at the same time develop stronger connections among all of you.

The goal is to get youth active with 60 minutes of moderate to vigorous exercise every day; adults need 30-45 mins minutes every day. So, how do you find a way to make it work for everyone? Combine exercise and household chores by having the entire family walk the dog, rake the lawn, or weed the garden.

Engaging the entire family in household chores/activities makes the workload lighter for everyone and builds a sense of teamwork. Designate one evening as family fitness night and take turns deciding what the family will all do together.

Eventually, all family members get to do their preferred workout activities and all will benefit from a workout that will never be dull. In the process, you'll teach your children not only about health, but also family connection. Most importantly, make it fun for everyone!

General Industry and Maritime - June 23, 2018, two years after the effective date.

Hydraulic Fracturing - June 23, 2018, two years after the effective date for all provisions except Engineering Controls, which have a compliance date of June 23, 2021.
Background

The U.S. Department of Labor first highlighted the hazards of respirable crystalline silica in the 1930s, after a wave of worker deaths. The department set standards to limit worker exposure in 1971, when OSHA was created. However, the standards are outdated and do not adequately protect workers from silica-related diseases. Furthermore, workers are being exposed to silica in new industries such as stone or artificial stone countertop fabrication and hydraulic fracturing.

A full review of scientific evidence, industry consensus standards, and extensive stakeholder input provide the basis for the final rule, which was proposed in September 2013. The rule-making process allowed OSHA to solicit input in various forms for nearly a full year. The agency held 14 days of public hearings, during which more than 200 stakeholders presented testimony, and accepted over 2,000 comments, amounting to about 34,000 pages of material. In response to this extensive public engagement, OSHA made substantial changes, including enhanced employer flexibility in choosing how to reduce levels of respirable crystalline silica, while maintaining or improving worker protection.

More Information and Assistance

OSHA looks forward to working with employers to ensure that all workers exposed to respirable crystalline silica realize the benefits of this final rule. Please check back for frequent updates on compliance assistance materials and events, and learn about OSHA's [on-site consulting services for small business](#).

OSHA approved State Plans have six months to adopt standards that are at least as effective as federal OSHA standards. Establishments in states that operate their own safety and health plans should check with their [State Plan](#) for the implementation date of the new standards.

What do you think?

Send us an email at:
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*In Loving Memory
of Jessica Lehrke*

In Loving Memory...
Jessica, Kristin and Nick

