Immune, Dermal, and Infectious Disease Program

May 2016

What are our priorities?

The National Institute for Occupational Safety and Health (NIOSH) Immune, Dermal, and Infectious Disease Program works with partners in industry, labor, trade associations, professional organizations, and academia. The program focuses on these areas:

- Reducing immune abnormalities (including asthma) associated with workplace exposures
- Reducing occupational skin disorders and exposures that result in disease

What do we do?

- Conduct research to better understand the impact of occupational exposures to chemical, biological, or infectious agents on the immune system.
- Identify occupational allergens that cause disease in workers in the industries with the highest burden.
- Research occupational chemical exposures to raise awareness of materials that can cause skin injury and develop strategies to prevent exposure.
- Maximize resources by using modeling to prioritize chemicals to research, rather than investigating all potentially hazardous chemicals.
- Publish Skin Notations (SK), hazard warnings used worldwide, to alert workers and employers to the health risks of skin exposures to workplace chemicals.
- Improve surveillance for hazard identification, exposure assessment, and risk characterization of chemicals absorbed through the skin that lead to immune or systemic toxicity (e.g., damage to internal organs).
- Increase awareness of occupational immune and dermal health issues through collaborations with Industry Sector Programs; contributions to field investigations; and publications and presentations of research findings.

What have we accomplished?

- Collaborated on numerous NIOSH Health Hazard Evaluations (HHEs) including investigations into outbreaks of contact dermatitis at an ink manufacturing plant; asthma among workers at a soy processing plant; sensitization potential of metal working fluids; and evaluations of biological agents in water damaged indoor environments.
- Developed the NIOSH sampler for the detection of airborne influenza and is being used worldwide, to alert workers and employers to the suspected health effect.
- Published 30 NIOSH SK Notations and 220 publications which have been cited by others over 1800 times.
- Published dermal permeation data for nitrile gloves.
- Published dermal permeation data for perfluorooctanoic acid (a synthetic chemical used in the manufacture of Teflon and other consumer products). The New Jersey Department of Environmental Protection used the data for their dermal risk assessment of ground water contamination due to its suspected health effect.
- Developed an ASTM analytical standard for the quantification of contact allergens in rubber and nitrile gloves.

What’s next?

- Develop and publish 29 NIOSH SK Notation Profiles.
- Publish research on the dermal uptake potential of benzene and other chemicals in gasoline and crude oil after occupational exposures.
- Hold a meeting with external partners and stakeholders to set research priorities; identify research gaps; and to discuss ways to advance the science.

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