



Immune, Infectious, and Dermal Disease Prevention Program

What are our priorities?

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

- Reducing immune abnormalities (including immune aspects of asthma) associated with workplace exposures.
- Reducing work-place skin disorders and exposures that result in disease.
- Identifying and reducing exposure and transmission of infectious diseases in the workplace.

What do we do?

- Conduct research to better understand the impact and basic mechanisms of work-place exposures on the immune system, including exposures to chemical, biological, or infectious agents.
- Improve surveillance and statistical modeling 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).
- Identify and increase awareness of work-place immune and dermal health hazards through collaborations with NIOSH sector programs, contributions to field investigations and dissemination of research findings.
- Conduct investigations and provide evidence-based guidance on prevention measures for employers and workers to reduce transmission of infectious disease in the workplace.
- Publish *Skin Notation (SK) Profiles*, hazard warnings used worldwide, to alert workers and employers to the health risks of skin exposures to workplace chemicals.

What have we accomplished?

- Updated a fact sheet on protecting workers from [histoplasmosis](#), an infection caused by the *Histoplasma* fungus, which is often present in agricultural and construction environments.
- Published [research](#) on the systemic toxicity induced by dermal exposure to perfluoroalkyl substances (PFAS).
- Published [research](#) on the reduction of exposure to simulated respiratory aerosols using ventilation, physical distancing, and universal masking, which demonstrated that a layered mitigation approach composed of engineering and administrative controls remains important in reducing transmission in indoor spaces.
- Published [research](#) about the association of the abundant indoor yeast species *Vishniacozyma victoriae* in the homes of asthmatic and non-asthmatic children.

What's next?

- Investigate the effects of dermal exposure to PFAS on the immune system using animal models.
- Conduct research on how exposure to disinfectants used during the COVID-19 pandemic affect the immune system.
- Investigate and publish research on how air purifiers can mitigate the spread of COVID-19 aerosols.
- Assist with planned updates to national guidelines for isolation precautions and prevention of infectious disease transmission in healthcare settings.
- Conduct studies to study the signs of disease involved in the immune response to the fungi *Stachybotrys chartarum* and *Aspergillus versicolor* exposure.



Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

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At-A-Glance

The Immune, Infectious, and Dermal Disease Prevention Program primarily focuses on hazard identification to prevent and minimize the effects of work-related dermal, infectious and immune diseases. This snapshot shows recent accomplishments and upcoming projects and activities.

Systemic toxicity induced by topical application of heptafluorobutyric acid (PFBA) in a murine model



Photo: Port of Seattle Fire Department

PFAS is often a component of Aqueous Film Forming Foam (AFFF), a class B firefighting foam used for suppression of liquid fuel fires.

Publication Spotlight: Histoplasmosis Fact Sheet

What Workers Should Know about Histoplasmosis

What is Histoplasmosis?
Histoplasmosis is an infection caused by a fungus called *Histoplasma capsulatum*. The fungus lives in the environment, particularly soil that contains large amounts of bird or bat droppings. People can get histoplasmosis after breathing in the very small fungal spores (also known as conidia) from the air. In the United States, histoplasmosis mostly lives in the central and eastern states, particularly areas around the Ohio and Mississippi River Valleys.

What are the symptoms of histoplasmosis?
Most people who breathe in spores don't get sick, but those who do may have a fever, cough, and fatigue. Symptoms usually appear between 7 and 17 days after a person breathes in the fungal spores. In some people, the infection can become severe and spread from the lungs to other parts of the body. There is more concern in people with weakened immune systems or other medical conditions.

Some activities have risks for exposure to histoplasmosis:

- Disturbance of large accumulations of bird or bat droppings (cleaning a chicken coop)
- Soil disruption (digging or excavating)
- Plant matter disruption (handling trees, landscaping)
- Demolition, construction, or renovation
- Working in caves

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