

Researchers wear gloves to protect themselves and always wash their hands after removing gloves. However, frequent glove changes lead to frequent hand washing which can lead to dry, chapped hands (hand dermatitis). This is not only uncomfortable but provides an entry point for pathogens as well. Careful hand care is therefore an essential part of keeping yourself safe in the lab.

Hand Washing

What is the right way to wash your hands?

Follow the procedure outlined by the Centers for Disease Control and Prevention:

- Wet your hands with clean, warm running water, turn off the tap, and apply soap.
- Lather your hands by rubbing them together. Be sure to lather the backs of your hands, between your fingers, and under your nails.
- Scrub for at least 20 seconds. Need a timer? Hum "Happy Birthday" from beginning to end twice.
- Rinse your hands well under clean, running water.
- Use a clean paper towel to turn off the tap.
- Dry your hands using a clean towel or air dry them with cool air if a blower is available.

Cause of Hand Dermatitis

Constant wetting and drying of hands removes protective oils from the skin, making it less pliable and more prone to cracks and fissures. The frequency of washing, the time of exposure to water/cleansing agents, and temperature of the water are also important factors in causing hand dermatitis. Low humidity and cold weather make the dermatitis even worse.

Prevention of Hand Dermatitis

To reduce the risk of developing dermatitis:

- Follow hand washing guidelines and use warm (not hot) water with mild soap; dry hands thoroughly after washing.
- Use a moisturizer to help replace the barrier function of skin.
Water-based formulations are readily absorbed into the skin without leaving an unpleasant, greasy feeling.
- Petroleum-based moisturizers are not appropriate in the lab because they can compromise the integrity of gloves.

For long-term skin protection, a heavier, oil-based moisturizer can be used under cotton gloves at home to help heal severely dry skin.

Treatment of Hand Dermatitis

If the skin on the hands is red, inflamed and/or fissured, seek medical attention to clear the

skin. This may require the use of topical steroids, soaks or antibiotics if there is evidence of infection.

- The longer hand dermatitis is present, the more difficult it is to treat and the more chronic it may become. Follow the preventive steps described in this SOP.
- Personnel with active hand dermatitis can develop secondary irritation and aggravation of the dermatitis when wearing gloves over inflamed skin. Seek treatment early to prevent this.

Persistent Hand Dermatitis

- If hand dermatitis is persistent despite treatment with topical steroids and minimizing exposure to water/soap/cleansing agents, consultation with a dermatologist or allergist may be appropriate.
- Allergies may be due to contact with antibacterial agents in hand washing products, and/or preservatives or fragrances in moisturizers, etc. Use fragrance-free moisturizers as a precaution.
- A history of eczema in childhood has been shown to increase one's susceptibility to hand dermatitis from chronic exposure to water and cleansing agents.

Prevention

There are numerous products available today to help keep researchers hands in good condition and free of the cracks that are potential entry points for infectious agents. Lab vendors such as Fisher Scientific sell products designed specifically for laboratory personnel who wash frequently, including:

Decon™ Proguard™ Professional Hand Cream 16 oz. (Cat# 04-355-20)

Does not contain grease, oil, perfume, aloe, or other ingredients that can compromise the integrity of gloves. Absorbs instantly, leaving skin soft and pliable.

PROVON™ Moisturizing Hand & Body Lotion 16 oz. (Cat #19-270-227)

Latex and CHG compatible, fragrance free, moisturizing hand and body lotion that is a water-based, deep conditioning moisturizer specially formulated to condition dry, irritated skin. Rubs in quickly and aids in preventing drying and cracking.

Resources:

1. **Handwashing: Clean Hands Save Lives**
Centers for Disease Control and Prevention
<http://www.cdc.gov/handwashing/>
2. **Prevention of Hand Dermatitis in the Health Care Setting**
Safety and Health Assessment and Research for Prevention (SHARP) Program Washington
Department of Labor and Industries