

The Dermatitis Detective

STOKO® TECH-ALERT

Tracking the causes of dermatitis in your shop

Recently, researchers at the University of Michigan made public the results of an unusual study involving hand washing. When students washed their hands after making a choice (decision), they appeared to experience less indecision (question their choice) than fellow students who did not wash their hands after making a decision. In short, “washing your hands” of the matter apparently makes you feel better about your choices...unless you were Shakespeare’s Lady Macbeth.

In the workplace, poor decisions about hand hygiene often lead to dermatitis, and too often employees and supervisors jump to the wrong conclusion that the hand cleanser being used is the one and only source of the health concern. Why is this injustice shown toward soap? It is the most obvious answer: I wash my hands with soap. My skin hurts and is red. Therefore the soap is causing my dermatitis. An obvious conclusion, but quite often an incorrect hypothesis.

Let’s have a quick lesson about the skin. The skin is the largest organ in the human body, and its pH of 5 is slightly acidic. This acid mantle is the skin’s defensive shield against bacterial growth. When the acid mantle is damaged or the pH disrupted and loses its acidity, the skin is vulnerable (more prone) to damage and infection. pH neutral is 7. The more acidic a substance is, the lower the pH value. Conversely, the more alkaline a substance, the higher the pH value. Substances with higher pH values dry out the skin and cause irritation. In example: A machinist may be working with coolants, with a pH value of 8.5-9. Using a high pH hand cleanser (7.0-8.0) contributes to altering the skin’s natural pH and causes dryness. A scrape on the knuckles breaks the protective barrier of the skin. This cycle continues until the machinist requires medical attention and perhaps time away from work to start repairing skin damage.

Where do you start your investigation as to the causes of occupational dermatitis in your shop?

At the end of this article is a more detailed list of questions to assist in your dermatitis detective work, but let’s consider some of the basic starting points.

- Have pre-work (“barrier”) creams been provided to help promote skin health? Have employees received training on the use of these products?
- Have you provided a solvent free or low solvent content hand cleanser? Always use the least aggressive cleanser for the work hazard. Never use paint thinners, gasoline or acetone for skin cleansing.
- Is the worker properly washing their hands? Discretely observe the worker during the clean up process. Are they using the appropriate amount of product? Using too much of a concentrated cleanser can disrupt the pH balance of the skin. Are they scrubbing too aggressively? Using a stiff bristled brush or even excessive hand friction can lacerate the skin. Are they washing too frequently? Are they thoroughly rinsing the cleanser from the skin? Has soft toweling been provided for complete drying of the hands after cleansing?
- Are conditioning creams provided for use during breaks and at the end of a shift? Skin lipids (moisture) must be replaced.

Safety and healthcare personnel must often use their best investigative skills to find the true source for dermatitis. So what’s the big deal about employees having skin health issues?

Employers who do not consider the possibility that dermatitis may occur at their workplace could be making a very costly mistake. Results of a study published in the *Archives of Dermatology* of the American Medical Association clearly demonstrate the significant financial impact to business that occupational dermatitis claims represent.¹

For starters, dermatitis on the job was found to account for nearly 15% of total workplace injuries, putting it among the most prevalent of occupational disorders. In addition, the mean cost-per-dermatitis

claim — including total temporary disability, medical treatment, partial permanent disability, and vocational rehabilitation — was found to be \$3,552.35. Equally impacting a company's productivity was the documented average disability time: 23.9 days. How profitable would your business be if a vital piece of machinery were unavailable for nearly a month? An employee's hands are the most valuable tools in the workplace.

Investigating the causes of dermatitis may be anything but elementary, but detecting the true culprits of skin problems can improve the health of your workers and save your company a lot of money.

Reference:

¹ <http://archderm.ama-assn.org/cgi/content/full/141/6/713>
Archives of Dermatology, Vol 141, June 2005, "Incidence Rates, Costs, Severity, and Work-Related Factors of Occupational Dermatitis," Brian P. McCall, PhD; Irwin B. Horwitz, PhD; Steve R. Feldman, MD, PhD; Rajesh Balkrishnan, PhD., p. 715.

Key Questions about Dermatitis

If you think you may have a dermatitis problem with employees in your facility, here are some key questions you should ask as you go about trying to find the cause of the problem:

1. Have ventilation systems been checked out carefully to see that they are really working effectively?
2. Were any new chemicals or materials introduced to the workplace within the month before the first case was diagnosed?
3. Were any new processes introduced in the month prior to the onset of the first case?
4. Are employees prohibited from using solvents to clean oil and grease from skin surfaces?
5. Are employees prohibited from washing machine parts in solvents with bare hands?
6. Do employees know the importance of thoroughly washing any skin surface after contact with any dermatitis-causing agent?
7. Is personal protective equipment – impervious gloves, aprons, hoods – individually fitted and assigned to employees?
8. Is personal protective equipment required during spill clean-up?
9. Is personal protective equipment readily available to employees and required on all shifts?

10. Are barrier creams readily available and required before starting work?
11. Are mild or lanolin-type soaps and soft hand towels provided in wash-up areas?
12. Are employees working with chemicals provided with a change of work uniforms or required to change work clothes daily?
13. Are new hires screened for skin irritation problems in the pre-placement medical examination and assigned to work that will not further irritate the condition?
14. Is personal hygiene stressed in training to correct dermatitis problems?
15. Are solvent-soaked rags kept in separate drums or containers for removal by a cleaning service?
16. Do supervisors understand the nature of the potential dermatitis problem in your facility?
17. Do afflicted employees have outside – of – work activities like camping, gardening, or house painting which might have triggered the attack?
18. Is alternate duty work available for employees who may be suffering a dermatitis problem on their present job?



About the Author

Armand Coppotelli is the Senior Technical Manager for STOKO® Skin Care by Evonik. Armand has nearly 30 years experience advising best practices to maintain good skin health. Over the course of his career, Armand has lectured in AIHC roundtables and has served as AIHA section guest speaker. He has also hosted presentations on overcoming work-related skin dermatitis for many occupational medicine/nursing organizations including: the Chicago area occupational nurses section, the Australian Occupational Health Nurses Association and the Toronto Occupational Physicians Association. He has implemented corporate skin care programs for large scale manufacturing operations such as Goodyear Tire & Rubber, Amtrak, Rohm & Haas, Lear and Delphi. He is a past member of the American Industrial Hygiene Association and has served on its Protective Clothing and Equipment Committee in recent years. He may be reached at armand.coppotelli@evonik.com.