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## Contact Dermatitis

*A typical scenario: John cuts his hand accidentally while doing household work. After cleaning the wound with hydrogen peroxide, he applies a triple antibiotic cream and covers the cut with a band-aid. Three days later the wound looks worse. Thinking it is infected, he does more of the same once more. A week later he ends up with his doctor who diagnoses contact dermatitis due to hydrogen peroxide (an irritant) or neomycin (in the triple antibiotic cream) or adhesive in the band-aid (both neomycin and glue in the adhesive are potential allergy causing substances). Does it sound familiar? If yes, please read on.*

### **What is contact dermatitis?**

Contact dermatitis is an itchy and eczema-like rash that develops in response to certain industrial chemicals, medications and skin and body care products. There are two types: irritant contact dermatitis and allergic contact dermatitis.

Irritant contact dermatitis accounts for 80% of all cases of contact dermatitis. It is caused by frequent application of irritants such as water, detergents, solvents, acids, alkalis, adhesives, metalworking fluids and friction to skin. Irritants damage the skin by removing oils and moisture from its outer layer, allowing the irritants to penetrate more deeply and cause further damage by triggering inflammation. Most cases of hand dermatitis are due to contact with irritants.

Allergic contact dermatitis accounts for the remainder. It is caused by application of substances such as cosmetics, medications, or skin and body care products to skin. Initial exposure causes sensitization of the skin to the substance. Second or subsequent exposure to the same or similar chemical results in allergic inflammation of the skin at the site of contact. This is characterized by development of red and itchy rash that subsequently spreads to areas of skin beyond the margins of contact. Nickel (in cosmetic jewels), fragrance, neomycin (in Neosporin), formaldehyde, rubber chemicals, PABA containing sunscreens and adhesives on band-aids and surgical tapes are some of the common sensitizers.

### **How is it diagnosed?**

Irritant and allergic contact dermatitis, both have several common clinical features and skin biopsy findings. They are difficult to distinguish from each other without doing Patch tests. In patch tests, three rectangular patches containing 28 chemicals [the ones majority of patients are likely to be exposed] and one negative control are applied to your back and left there for the next 48 hours. The patches are removed after 48 hours; the doctor reviews the test site and looks for any possible reactions. A second reading is done anywhere from 96 to

144 hours after the initial application of the patches. It is very important to do the second reading because sometimes reactions may not show up the first time.

During the entire time it is very important you stay in cool environments and avoid vigorous work or activities to minimize sweating. Also you should not take a shower to avoid wetting the back. However you can take sponge baths. Medications such as steroids [prednisone, prednisolone, Medrol Dosepak and steroid injections], topical steroid creams and chemotherapy for cancer can interfere with the patch test results and can cause false negative results. Antihistamines such as Benadryl, Claritin, Zyrtec or Allegra on the other hand do not interfere with the patch test results. Sometimes false positive reactions [the test is positive but the patient is not truly allergic to the material] can be elicited if the patch test is done when the skin rash is acute and is extensive. It is always prudent to wait until the skin rash gets better before doing the patch test.

### **What can you do about it?**

Once you find out what you are allergic to, you should explore and find out if you are using any chemical, topical medications or any skin and body care products containing the chemical or related chemicals that tested positive. This requires meticulous reading of all active and inactive ingredients on product labels. If the chemical or related chemicals are found, such products should strictly be eliminated. It is useful to create a list of chemicals that should be avoided and write them down on a card. This card should be consulted before purchasing new products. Once you find out the products that you can use safely, it is better to adhere to them and not change products frequently. This will minimize development of new allergies. Frequent use of barrier creams and OSHA approved protective gear will minimize your chances of developing contact dermatitis at work. Use of hypoallergenic and fragrance free skin and body care products at home will also help you in the same way.

### ***About the author:***

*Natarajan Asokan, M.D., F.A.A.P. is a board certified allergist and immunologist and a board certified pediatrician with over 25 years of experience as a physician and 7 years of experience as a practicing allergist & immunologist. He treats adults and children with various allergy & immunology problems. He can be reached at 1739, Beverly Ave, Suite 118, Kingman, AZ 86409, Tel: 928-681-5800, Fax: 928-681-5801, or [www.trinityallergy.com](http://www.trinityallergy.com)*