

Contact Dermatitis

Contact dermatitis is a delayed allergic response of the skin to certain industrial chemicals, medications and skin and body care products. There are two types: irritant contact dermatitis (80%) and allergic contact dermatitis (20%).

Irritant contact dermatitis is much more common than allergic contact dermatitis. It is caused by application of irritants such as water, detergents, solvents, acids, alkalis, adhesives, metalworking fluids and friction to skin. It is characterized by well demarcated with a glazed surface but there may be redness, itching, swelling, blistering and scaling of the damaged area. This may be indistinguishable from other types of dermatitis. 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 is much less common. It is caused by application of substances such as cosmetics, medications, or general skin and body care products to skin. Initial exposure causes sensitization of the skin to the substance. Second or subsequent exposures may result in allergic inflammation of the skin at the site of contact. This is characterized by development of red and itchy rash that spreads to areas of skin beyond the margins of contact. Both types have several common clinical features and skin biopsy findings and may be difficult to distinguish from each other.

During acute presentations, other symptoms may be present such as weeping, crusting, scabbing and secondary infections from scratching. When it is present for a long time, the lesions become thickened, cracked and lightly or darkly pigmented and become more difficult to treat.

Contact dermatitis can occur both at home and at work environment. Allergic contact dermatitis requires a period of sensitization. Usually the reaction takes place at the site of initial contact. For example someone who is allergic to mascara or eye makeup products, will develop rash around the eyelids and face. However with continued use, the rash can spread to rest of the body and become more extensive. It is very important to determine where the rash appeared initially and this may give clues as to the possible cause for the rash. If occupational contact dermatitis is suspected, it will be useful to know the type of chemicals the patient is exposed to at work and get MSDN worksheets from work for the doctor to review.

The contact dermatitis is usually diagnosed by obtaining good clinical history, by conducting physical examination and by doing patch tests. In patch test, two rectangular patches containing 23 chemicals [the ones majority of patients are likely to be exposed] and one negative control are applied on the patient's back and left there for the next 48 hours. The patches are usually secured by additional application of hypoallergenic tapes. The patient returns to the office after 48 hours. The patches are removed and after 30 minutes, the doctor reviews the test site and looks for any possible reactions. The patient is sent home and is told to come back after another 48 hours without the patches being put back. At the time of second visit [96 hours after

the initial application of patch and 48 hours after the first reading] the doctor examines the patient's back for any possible reaction. The second reading can be 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 at the time of first reading at 48 hours.

During the entire time it is very important the patient stays in cool environments and avoid vigorous work or activities to minimize sweating. Also the patient should not take a shower to avoid wetting the back. However the patient 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. Therefore we recommend not taking these medications for at least 4 weeks before the application of patches. Please check with your doctor before you stop taking any of these medications. Antihistamines such as Benadryl, Claritin, Zyrtec or Allegra on the other hand do not interfere with the patch test results and therefore can be continued.

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.

Patch testing to antigens at standard concentration and in standard vehicles is an extremely safe procedure. One of the most frequent is flare-up of the contact dermatitis with a positive test reaction to the relevant antigen. This may actually provide a clue to the clinician that the patch test is relevant. Severe reactions (allergic or irritant) can lead in rare cases to blistering, necrosis, scarring, keloids, light or dark pigmentation of the skin at the test site. Occasionally, persistent reactions or bacterial or viral infections can occur. An anaphylactic reaction can occur to antigens that are responsible for contact urticarial responses. Very rarely patients are sensitized to an antigen by patch testing. Complications from patch tests with a standard series are rare and are no excuse for the omission of this valuable test procedure. It is our policy to get informed verbal and written consent from the patient before applying patch tests.

If you experience significant itching, irritation or pain at the site of patch application, you should contact us immediately and can remove the offending patch and leave the other patch on with the physician's permission.

The patch tests have 70% sensitivity and specificity. The patient should explore and find out if he or she is using any chemical, topical medications or any skin and body care products containing the chemical that tested positive or related chemicals. This requires meticulous reading of all the chemicals on product labels. If found, such products should be strictly eliminated. It is useful to create a list of chemicals [and other chemicals which are related] which the patient is allergic to and write them down on a card. This card should be consulted before purchasing new products.

The patient also can do Repeat open application test (R.O.A.T.) before buying new products. In this test, a small amount of the skin and body care product which the patient would like to use is applied on the outer aspect of the elbow twice daily for 5 days. If there is no rash at the site of application after 5 days, the product can be used elsewhere on the body. Otherwise the product should be avoided. This is simple enough test that most people can do. However you should not use this test for testing for chemicals which cause irritation of the skin such as

cleaning products, industrial products, shampoos, soaps, detergents etc. Check with your doctor and read product manufacturer's recommendations before undertaking the test. Once you find out the products that you can use safely, it is better to stick to them and not change products frequently. This will minimize sensitization to other chemicals and substances.

Read GENERAL SKIN CARE for treatment guidelines.