



COLUMBIA UNIVERSITY

Department of Dermatology

Skin Allergies

Contact Dermatitis and
Patch Testing



What is contact dermatitis?

Contact dermatitis is a common skin disorder and accounts for a significant proportion of visits to the dermatologist. Contact dermatitis may present as an irritant or allergic reaction in the skin and usually appears as an eczema-like rash. Irritant reactions result from the skin's exposure to caustic chemicals or detergents. This may manifest more in certain occupations where frequent hand washing or the handling of chemicals is necessary. These chemicals mechanically break down the skin's natural barrier and provoke an inflammatory reaction. Irritant reactions affect the hands most commonly but any area of the body may be affected.

Allergic contact dermatitis, on the other hand, results from the body's immune system recognizing a chemical as foreign and subsequently mounting an inflammatory response directed toward that substance. It may take only minute quantities of an allergen touching the skin to provoke a reaction. A well known example of this reaction is the rash of poison ivy. Contact with just a few drops of the resin from this plant can cause an extremely itchy rash. It is estimated that there are over 3,000 allergens in our environment to which one can develop an allergy. Allergic reactions may localize around the eyes, mouth, hands, or sometimes all over the body.

Specific allergens are encountered in various occupations. Examples include hair dye in hair salons or textile dyes in the garment industry, but there are approximately 100 allergens encountered in the usual day to day activities of the general population. These allergens include fragrances, chemical preservatives in cosmetics, metals, rubber additives, and topical medications.

Allergic contact dermatitis should not be confused with other types of allergies for which one may see an allergist. Allergic contact dermatitis is different from seasonal allergies one may have to pollen, bee stings, or various foods. A patient experiencing such reactions should see an allergist. Allergic contact dermatitis focuses on substances that are coming into direct contact with the skin thereby causing a skin allergy.

To properly diagnose and treat contact dermatitis, it is important to consult with an experienced dermatologist such as Dr. Belsito. It is also essential for you to bring your personal cosmetics and toiletries and provide a detailed list of the substances you may come into contact with in the home, at work, or during recreational activities. At times, an evalua-

tion of the workplace may be necessary along with an analysis of material safety data sheets (MSDS) that can be obtained at work for various chemicals. In addition to a thorough evaluation, patch testing is frequently needed to determine the culprit allergen.

What is Patch Testing?

Patch testing is a method for diagnosing allergic contact dermatitis. It involves placing various allergens on a patient's back and checking to see if one develops a localized skin reaction to them. Allergens may come in commercialized strips or may be custom made. It has been shown that a limited set of allergens found in commercial packages are not sufficient to diagnose the majority of cases and more expanded series of allergens are needed. Customized patch testing involves placing allergens in discrete aluminum or plastic wells which are then placed on the patient's back (see *Figure 1 and 2*). The patches are removed 48 hours later and the individual areas are marked to record the location of the allergens. Patients return in 48 hours to have a final reading of their back. A detailed consultation with an experienced, well trained physician should then take place to explain any reactions found and how to avoid them in the future.

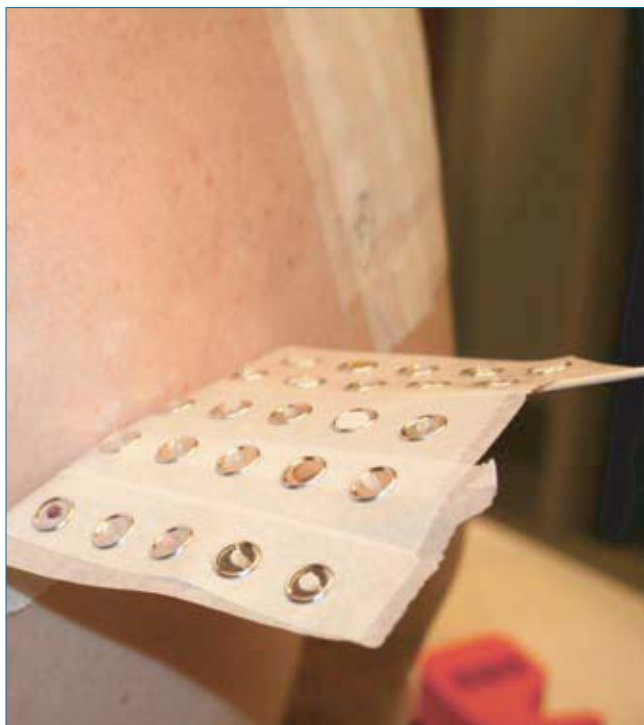


Figure 1



Figure 2

Why patch testing?

Patch testing is the only conclusive way to prove that someone's rash is due to a specific allergen in the environment. It is also the only way to determine if a medication or other topical substance may be worsening a patient's eczema. It has been shown that a proper history is not sufficient to diagnose allergic contact dermatitis. Guessing at the culprit allergen is not ideal and may lead to a great deal of frustration and confusion. Avoiding fragrances, detergents, and cosmetics in a blind fashion is time-consuming, ineffective, and should not be accepted as good medical care. If allergic contact dermatitis is suspected, patch testing should be considered.

Is patch testing right for me?

Your local dermatologist will usually determine if allergic contact dermatitis may be a cause of your rash. If so, he or she may refer you to Dr. Belsito for consultation and detailed evaluation. At that visit, a decision will be made if patch testing should be performed.

How is patch testing performed?

Once it has been determined that you may benefit from patch testing, a series of 3 visits will be scheduled. Your first visit will be with our nurse or medical assistant who will place the allergens on your back and instruct you on how to take care of your back so the patches do not fall off. You will return in 48 hours to have the patches removed and your back properly marked (the markings are temporary). Two or more days later you will come back to see Dr. Belsito for a final reading and a detailed consultation. If an allergic reaction is found, you will be given extensive literature and information on that particular allergen along with a list of products that are safe to use. You will then follow up with your local dermatologist for management of your skin condition.

How to prepare for a consultation?

It is extremely important that you bring in all suspected cosmetics and products to your first visit with Dr. Belsito. He may decide to patch test you to your own products, as this technique has been shown to be very important in diagnosing allergic contact dermatitis. A detailed questionnaire should be filled out prior to your visit. This form, along with a general medical history form and patch test instructions, can be found on the web at www.dermatology.columbia.edu under Our Services, Contact Dermatitis. Alternatively, the forms can be faxed, mailed, or emailed to you. If patch testing is to be scheduled further instructions will be given at your first visit.

What to expect during your week of patch testing?

You may experience some mild discomfort from having patches on your back. The procedure is not painful, and most patients go on with their daily activities without problems. If you develop a reaction to an allergen, you may experience some itching at that site on your back. You should refrain from strenuous activities to prevent the patches from loosening. Minimize sweating, as it will change the markings on your back. You may not get your back wet during the 5 days of testing.

About Dr. Belsito



Dr. Donald V. Belsito is a board-certified dermatologist and Professor of Clinical Dermatology in the Department of Dermatology at Columbia University. He is also the Director of the Contact Dermatitis Unit in the department.

Dr. Belsito received his medical degree from Cornell University Medical College in New York City. He completed an Internal Medicine Residency at Case Western Reserve University Hospital as well as a Dermatology Residency and Fellowship in Dermatologic Immunology at the New York University Medical Center.

He is a diplomate of the American Board of Internal Medicine, the American Board of Dermatology, and the American Board of Dermatology, Special Qualifying Examination in Dermatological Immunology: Diagnostic and Laboratory Immunology. Dr. Belsito is immediate past-president of the North American Contact Dermatitis Group and a founding member and former president of the American Contact Dermatitis Society. He sits on the Expert Panel for both the Cosmetic Ingredient Review and the Research Institute for Fragrance Materials. He has received many national and international honors throughout his career in dermatology.

Dr. Belsito serves on the editorial boards of *Dermatitis*, *Contact Dermatitis*, and the *Online Textbook of Dermatology*. He is author or coauthor of more than 150 articles published in peer-reviewed journals and more than 40 invited reviews and textbook chapters. His major research interests include occupational dermatoses, contact dermatitis, atopic eczema, psoriasis, and other immune-mediated dermatologic disorders.



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