

Contact Dermatitis: Cause, Symptoms, Prevention and treatment.

Mohammad Maaz Ahmad

Student: MBBS Second Year
Asfendiyarov Kazakh National Medical University, Kazakhstan

Abstract:

Contact dermatitis, also called contact eczema is a red, itchy rash caused by direct contact with a substance or an allergic reaction to it. The rash isn't contagious or life-threatening, but it can be very uncomfortable. An estimated 15–20% of the general population suffers from contact allergy. "Contact dermatitis can lead to significant sleep disturbances, difficulty concentrating at work or in school, inability to work, significant itching and, at times, pain. Work place exposure, age, sex, use of consumer products and genetic predispositions were identified as the most important risk factor. **In India more than 10 million cases per year.** Contact dermatitis is an irritant reaction that causes a painful or itchy skin rash. As the name suggests, you get contact Dermatitis from coming into contact with an allergen (likepoisonivy)oran irritant(likeachemical).There are two type of contact dermatitis: irritant contact dermatitis (ICD)and Allergic contact dermatitis (ACD) and Photo contact dermatitis (PCD) is less common. It's a reaction that can occur when the active ingredients in a skin product are exposedtothesunandresultinirritation).ICDismorecommon(80%)andcanoccurinanyone, especially after repeated exposure. Symptoms are a burning or stinging sensation with redness, swelling or peeling. Soaps, detergents, acids, bases, solvents, saliva, urine and stool are the most common triggers for ICD. Allergic CD, on the other hand, is seen in genetically predisposed and previously sensitized individuals who react to even low concentrations of the agent. Cosmetics, medicines, clothes dyes, as well as foods, rubber and poison ivy are common causes of ACD. Any topical cream or ointment may contain chemicals that irritate the skin. It is important to bring your personal products with you when you see your doctor so they can be examined as a potential cause of the dermatitis.

Keyword: Contact Dermatitis, Dermatitis, Allergen, isk factors

Date of Submission: 11-08-2020

Date of Acceptance: 27-08-2020

There are three main types of contact dermatitis: irritant, allergic and photo contact dermatitis

I. Irritant contact dermatitis (ICD).



Irritant contact dermatitis, which accounts for 80% of all contact dermatitis, doesn't involve an allergic reaction by the immune system. Instead, it happens when skin cells are damaged by exposure to irritating

substances. Toxic substances that can cause irritant contact dermatitis include: battery acid, bleach, drain cleaners, kerosene, detergents and pepper spray. Irritant contact dermatitis, however, can occur in anyone who is repeatedly exposed to potentially irritating substances. Diaper rash is a common form of the condition, with the rash caused by repeated contact with biochemical in urine and stool. Makeup, hair dye, nickel-containing scissors, belt buckles or clothes with metal snaps or zippers can also trigger reactions— as can over-washing hands with hot water and soap and wearing scratchy wool.

II. Allergic contact dermatitis(ACD):



Allergic contact dermatitis occurs when the skin develops an allergic reaction after being exposed to a foreign substance. This causes the body to release inflammatory chemicals that can make the skin feel itchy and irritated. Allergic contact dermatitis is a delayed allergic reaction that appears as a rash a day or two after skin is exposed to an allergen. “The most common example is poison ivy. After exposure, the body generates a robust inflammatory reaction to the oils in the plant leading to an itchy rash within one to two days. Fragrances, nickel and the preservative thimerosal, which is found in some topical antibiotics, are also common causes of allergic contact dermatitis. Common causes of allergic contact dermatitis include contact with: Jewelry made from nickel or gold, latex gloves, perfumes or chemicals in cosmetics and skin care products, poison oak or poison ivy. Allergic contact dermatitis is common in the general population and in specific employment groups.

- It is more common in women than men, mainly due to nickel allergy and, recently, to acrylate allergy associated with nail cosmetics.
- Many young children are also allergic to nickel.
- Contact allergy to topical antibiotics is common in patients over the age of 70 years old.
- Allergic contact dermatitis is especially common in metal workers, hair dressers, beauticians, health care workers, cleaners, painters and florists.

III. Photocontact dermatitis(PCD):



Photocontact dermatitis is the result of an interaction between a harmful substance present in the skin and ultraviolet radiation. Another cause of photocontact dermatitis is from the interaction of UV radiation and photosensitising compounds found in various plants. This type of dermatitis is called phytophotodermatitis. The most common plant family to cause phytophotodermatitis is the Umbelliferae family. Other plant families that cause phytophotodermatitis are Rutaceae, Moraceae and Leguminosae. The main photosensitising substances found in these plants are called furocoumarins and consist of psoralens and 5- methoxypsoralens, 8-methoxypsoralens, angelicin, bergaptol and xanthotal. Photocontact dermatitis most often arises from the interaction between UV radiation and one or more of the products listed below:

- Some sun screens, such as oxybenzone or cinnamates and others
- Coal tar products
- Fragrances, such as musk
- Insecticides and disinfectants

The reaction can be phototoxic or photoallergic or both.

- Phototoxic reactions result from direct damage to tissue caused by light activation of the photosensitising agent.
- Photoallergic reactions are a cell-mediated immune response in which the antigen is the light-activated photosensitising agent.

CAUSE AND SYMPTOMS OF CONTACT DERMATITIS:

Contact dermatitis usually occurs on areas of your body that have been directly exposed to the reaction-causing substance — for example, along a calf that brushed against poison ivy or under a watchband. The rash usually develops within minutes to hours of exposure and can last two to four weeks.

Signs and symptoms of contact dermatitis include:

- A red rash
- Itching, which may become severe
- Dry, cracked, scaly skin
- Bumps and blisters, sometimes with oozing and crusting
- Swelling, burning or tenderness

Depending on the substance that caused the reaction, you may also experience some additional symptoms. For example, allergens may cause affected areas of the skin to itch and irritants may cause a burning or stinging sensation.

Occasionally, areas of skin affected by contact dermatitis can become infected. Signs of an infection can include:

- Your existing symptoms getting rapidly worse
- Discharge from your skin
- Increasing pain
- Feeling generally unwell
- Feeling hot or shivery

Seek immediate medical advice if you think your skin may have become infected, as you may need to take antibiotics.

PREVENTION:

Avoiding initial exposure to irritants can help prevent contact dermatitis. Try these tips avoiding known allergens and irritants is the best way to prevent contact dermatitis. But you can't always stay away from every possible irritant. These steps can help:

- Choose fragrance-free moisturizers.
- Use mild, fragrance and dye-free soaps and cleansers.
- Wash immediately after coming into contact with a known allergen or irritant.
- Purchase products labeled "hypoallergenic" or "unscented."
- Refrain from wearing latex gloves if you have a latex allergy. Opt for vinyl gloves instead.
- Wear long-sleeved shirts and pants when hiking in the wilderness.
- If you notice irritation from a new product, stop using it immediately.

If you know you have sensitive skin, do a spot test with any new products. You can apply the new product to one place on your forearm. Cover the area, and don't expose it to water or soap. Check for any reaction at 48 and 96 hours after application. If there's any redness or irritation, don't use the product.

TREATMENT:

Clinical examination can reveal clues to the underlying diagnosis of irritant or allergic contact dermatitis. A careful history can uncover clues as to the offending agent.

With either type of contact dermatitis, you can avoid the substance for a while to see if the rash goes away. If avoidance is not possible or not sustainable, further diagnostic testing may be indicated.

For suspected cases of allergic contact dermatitis, a series of tests called patch testing can identify the underlying cause of allergic contact dermatitis.

With a patch test, you wear adhesive patches on your skin. The patches contain chemicals known to commonly trigger allergic reactions. After 48 hours, your healthcare provider checks your skin for reactions. You'll see your provider again in another 48-96 hours for one last skin check.

There isn't a test for irritant contact dermatitis. Your healthcare provider may be able to determine what's causing the rash based on the types of irritants or chemicals you're exposed to regularly.

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Mohammad Maaz Ahmad. "Contact Dermatitis: Cause, Symptoms, Prevention and treatment."
IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), 19(8), 2020, pp. 58-61.