



# Developing Dermatology Detective Powers: Allergic Contact Dermatitis

Allergic contact dermatitis (ACD) is an important disease that affects 14.5 million Americans each year. It ranks among the top 10 reasons people visit primary care offices and is among the most common reasons for work-related disability. For providers and patients alike, the condition can be frustrating. In general, individuals are not allergic to a product. Instead, they are allergic to specific chemicals. ACD is difficult to diagnose because rashes do not appear immediately and may be caused by something a patient has used for years (delayed sensitivity).

As spring arrives, many of our patients are happy to get back to their gardens and hiking. Unfortunately, it also means they are coming in with itchy, red rashes. The likely cause this time of year is poison ivy, oak, or sumac. This rash is caused by contact with the oil (urushiol). The oil is present in all parts of the plants, including the leaves, stems, flowers, berries, and roots. Indirect contact with urushiol can also cause a rash. This may happen when touching clothing, pet fur, sporting gear, or gardening tools that have come in contact with these plants. A rash usually appears 8 to 48 hours after contact and

contagious and cannot be transferred or spread to others by contact with it or the blister fluid. Without treatment, the rash usually lasts about 10 days to 3 weeks, but in people who are very sensitive it may take up to 6 weeks to heal.

The best way to prevent the rash is to learn to identify and avoid the plants. If contact with the plants cannot be avoided, heavy clothing (long pants, long-sleeved shirt, and vinyl gloves) and barrier creams or lotions can protect skin from urushiol. Skin (and affected clothing) that has touched poison ivy, oak, or sumac should be washed to help prevent a reaction.

Allergen of the Year is an annual “award” of dubious distinction voted on by the American Contact Dermatitis Society. This award is designed to draw attention to allergens that are very common, underrecognized and merit more attention because they are causing significant ACD.

The substance neoprene won this award in 2009. Neoprene is a water-resistant, temperature-controlling, and flexible material. This makes it perfect for things like computer sleeves, wet suits, swim goggles, continuous positive airway pressure masks, athletic shoes, gloves, mouse pads, and knee braces. The chemicals particularly leak out of neoprene when there is sweating or water that gets between the neoprene and the sensitive individual. From an occupational health standpoint, gloves were the most frequently cited cause of ACD from neoprene. In sensitive individuals, it causes redness, itching, scaling, and sometimes blistering. A neoprene allergy should be suspected in those who have an eczema-like rash in a specific pattern (eg, right-handed only—the mouse hand). Again, avoidance is the best treatment.

## HOT TOPICS IN PRIMARY CARE

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will continue to develop in new areas over several days but only on the parts of the skin that had contact with the urushiol. The rash is not

Nickel is one of the most common causes of ACD and was Allergen of the Year in 2008. In affected individuals, eczema develops in places where nickel-containing metal touches the skin. The most common sites are the earlobes (earrings), the wrists (watch strap), and the lower abdomen (jean studs). Zippers, bra hooks, hairpins, buttons, studs, cell phones and ear pieces, keys and key rings, and eyeglass frames are all likely to contain nickel. Affected areas become intensely itchy and may become red and blistered (acute dermatitis) or dry, thickened, and pigmented (chronic dermatitis). In those affected, it is essential to avoid contact with any nickel-containing metals. Nine-carat gold and white gold both contain nickel. "Hypoallergenic" solid gold (12 carat or more) and silver jewelry should be safe. Plastic covers for earring studs can be obtained. Coating the stud with nail varnish is not effective. Substitutes made of plastic, stainless steel (not nickel plated), coated or painted metal, or some other material are recommended.

The term *cosmetic* is used synonymously with *makeup* in the general population. However, it has a much broader definition and includes personal care products, hair care, nail products, and sunscreens. People, on average, use 9 products daily, and 25% of women apply 15 or more products each day. These contain 126 unique ingredients. Skin care products have been found to account for the majority of cases of ACD to cosmetics. The most common responsible cosmetic allergens are fragrances (2007 Allergen of the Year) and preservatives (methylchloroisothiazolinone, 2013 Allergen of the Year). Even products labeled "unscented" or "fragrance free" may still contain small amounts of fragrances needed to cover the odor of other chemical ingredients. Products control microorganism growth in most aqueous-based, multiuse products by incorporating preservatives to prevent spoilage.

Individuals can help to protect themselves from preventing cosmetic allergy with the following simple steps: always read the label first (some active ingredients can trigger allergic

reactions), perform a patch test to determine whether the substance causes reactions, choose a cosmetic with the simplest formula and fewest ingredients, and apply perfume on clothes instead of skin.

Over-the-counter-medications can also be responsible for causing ACD, and patients may not think to include ointments in their medication lists. Rashes are the most common symptoms occurring from adverse drug reactions. The aminoglycoside antibiotic neomycin was Allergen of the Year in 2010. Its most frequent use is as a topical preparation (eg, triple antibiotic ointment). This dermatitis often develops 7 days or more after exposure. It can cause a type IV, cell-mediated, delayed reaction, and antihistamines such as diphenhydramine will not help. Neomycin is also frequently used in many topical medications and eye and ear drops and may also be used as a preservative in some vaccines. Once this allergy has been discovered, the patient needs to be aware of the uses of this antibiotic and other products that may contain it and should inform all health care providers of the allergy. Patients should be educated regarding antibiotic cross-reactivity to other aminoglycosides (eg, gentamicin, tobramycin, and bacitracin).

When ACD affects hands or the face or is occupationally related, it can have an appreciable effect on quality of life. The emotional impact of the disfigurement of this disease can be significant to patients. Be a careful detective in evaluating ACD and think of some of those common Allergens of the Year. **JNP**

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