

Atopic dermatitis (eczema)

Atopic dermatitis, also called *eczema*, is a common and chronic skin condition in which the skin appears inflamed, red, itchy and dry. It most commonly affects children.

Atopic dermatitis is most likely caused by a combination of genetic and environmental factors. Genetic causes include differences in the proteins that form the skin barrier. When this barrier is broken down, the skin loses moisture more easily, becoming more dry, easily irritated, and hypersensitive. The skin is also more prone to infection (with bacteria, viruses, or fungi). The immune system in the skin may be different and overreact to environmental triggers such as pet dander and dust mites.

Allergies and asthma may be present more frequently in individuals with atopic dermatitis, but they are not the cause of eczema. Infrequently, when a specific food allergy is identified, eating that food may make atopic dermatitis worse, but it usually is not the cause of the eczema.

In infants, atopic dermatitis often starts as a dry red rash on the cheeks and around the mouth, often made worse by drooling. As children grow older, the rash may be on the arms, legs, or in other areas where they are able to scratch. In teenagers, eczema is often on the inside of the elbows and knees, on the hands and feet, and around the eyes.

There is no cure, but there are recommendations to help manage this skin problem.

TREATMENT

Treatments are aimed at preventing dry skin, treating the rash, improving the itch, and minimizing exposure to triggers.

1 GENTLE SKIN CARE TO PREVENT DRYNESS

- » Bathe daily or every-other-day in order to wash off dirt and other potential irritants (the optimal frequency of bathing is not yet clear).
- » Water should be warm (not hot), and bath time should be limited to 5-10 minutes.
- » Pat-dry the skin and immediately apply moisturizer while the skin is still slightly damp. The moisturizer provides a seal to hold the water in the skin.
- » Finding a cream or ointment that the child likes or can tolerate is important, as resistance from the child may make the daily regimen difficult to keep up.
- » The thicker the moisturizer, the better the barrier it generally provides.
- » Ointments are more effective than creams, and creams more so than lotions. Creams are a reasonable option during the summer when thick greasy ointments are uncomfortable.

TREATMENT (CONT.)

2 TREATING THE RASH

The most commonly used medications are topical corticosteroids ("steroids"). There are many different types of topical corticosteroids that come in different strengths and formulations (for example, ointments, creams, lotions, solutions, gels, oils). Therefore, finding the right combination for the individual is important to treat and to minimize the risk of unwanted side effects from the corticosteroid, such as skin thinning. In general, these topical corticosteroids should be applied as a thin layer and no more than twice daily. It is very unusual to see any side effects when a topical corticosteroid is used as prescribed by your doctor. A relatively newer form of topical medication – in tacrolimus ointment and pimecrolimus cream – is also helpful, particularly in thin-skinned areas such as the eyelids, armpits, and groin.* For severe and treatment-resistant cases of atopic dermatitis, systemic medications may be necessary. They may be associated with serious side effects and therefore require closer monitoring.

*The FDA placed a black-box warning on both tacrolimus ointment and pimecrolimus cream in 2006 based on animal studies using the medications. Some animals developed skin cancer and lymphoma. Subsequently, the FDA released a statement that there is no causal relationship between the two medications and cancer. Because of this concern, there are ongoing studies to evaluate this relationship in humans. So far, studies support the safety of these medications. One showed that the rates of cancer in patients using these medications topically were *less than the rates* of the general population; several studies have shown that the medicines are undetectable in the blood, even in children using the medication over a large area of the body.

3 TREATING THE ITCH

Tell your physician if your child is very itchy or if the itch is affecting the ability to sleep. Oral anti-itch medicines (antihistamines) can be helpful for inducing sleep, but usually do not reduce the itch and scratching.

4 AVOIDING TRIGGERS

Some children have specific things that trigger episodes of itchiness and rashes, while others may have none that can be identified. Triggers may even change over time. Common triggers include: excessive bathing without moisturization, low humidity, cigarette or wood smoke exposure, emotional stress, sweat, friction and overheating of skin, and exposure to certain products such as wool, harsh soaps, fragrance, bubble baths, and laundry detergents. Many parents and physicians consider allergy testing to identify possible triggers that could be avoided. There is limited utility for specific Immunoglobulin E (IgE) levels; if food allergy is being considered as a trigger for the dermatitis (which is unusual), specific IgE levels are, at best, a guideline of potential allergic triggers and require food challenge testing to further consider the possibility.

5 RECOGNIZING INFECTIONS AS A TRIGGER

Because the skin barrier is compromised, individuals with atopic dermatitis can also develop infections on the skin from bacteria, viruses, or fungi. The most common infection is from *Staphylococcus aureus* bacteria, which should be suspected when the skin develops honey-colored crusts, or appears raw and weepy. Infected skin may result in a worsening of the atopic dermatitis and may not respond to standard therapy. Diluted bleach baths can be helpful to reduce infection by *S. aureus* and thereby help better control atopic dermatitis. Some patients require oral and/or topical antibiotics or antiviral medications for these types of flares. Patients with atopic dermatitis may also be at risk for the spread on the skin of herpes virus; therefore, family and friends with a known or suspected history of herpes virus (cold sores, fever blisters, etc.) should avoid contacting patients with atopic dermatitis when they are having an active outbreak.



The Society for Pediatric Dermatology
8365 Keystone Crossing, Suite 107
Indianapolis, IN 46240
(317) 202-0224
www.pedsderm.net

Contributing SPD Members:
Amanda Cyrulnik, MD
Muhammad Amjad Khan, MD
Tess Peters, MD
Sarah Stein, MD
Megha Tollefson, MD
Ki-Young Yoo, MD

Committee Reviewers:
Brandi Kenner-Bell, MD
Andrew Krakowski, MD

Expert Reviewer:
Amy Paller, MD

The Society for Pediatric Dermatology and Wiley Publishing cannot be held responsible for any errors or for any consequences arising from the use of the information contained in this handout. Handout originally published in *Pediatric Dermatology*; Vol. 33, No. 1 (2016).

© 2016 The Society for Pediatric Dermatology