



## PEDIATRICS CLINIC

UpToDate®

Official reprint from UpToDate®  
[www.uptodate.com](http://www.uptodate.com) ©2014 UpToDate®

 Wolters Kluwer  
Health

[Print](#) | [Back](#)

The content on the UpToDate website is not intended nor recommended as a substitute for medical advice, diagnosis, or treatment. Always seek the advice of your own physician or other qualified health care professional regarding any medical questions or conditions. The use of this website is governed by the [UpToDate Terms of Use](#) ©2014 UpToDate, Inc.

### **Patient information: Atopic dermatitis (eczema) (Beyond the Basics)**

#### Authors

William L Weston, MD

William Howe, MD

Section Editor

Robert P Dellavalle, MD, PhD, MSPH

Deputy Editor

Rosamaria Corona, MD, DSc

**Disclosures:** William L Weston, MD Nothing to disclose. William Howe, MD Speaker's Bureau: Galderma [rosacea]. Robert P Dellavalle, MD, PhD, MSPH Nothing to disclose. Rosamaria Corona, MD, DSc Employee of UpToDate, Inc.

Contributor disclosures are reviewed for conflicts of interest by the editorial group. When found, these are addressed by vetting through a multi-level review process, and through requirements for references to be provided to support the content. Appropriately referenced content is required of all authors and must conform to UpToDate standards of evidence.

#### **Conflict of interest policy**

All topics are updated as new evidence becomes available and our [peer review process](#) is complete.

**Literature review current through:** Oct 2014. | **This topic last updated:** Apr 01, 2014.

**ECZEMA OVERVIEW** — Atopic dermatitis, also known as eczema, is a skin problem that causes dry, itchy, scaly, red skin. It can occur in infants, children, and adults, and seems more common in certain families. Eczema can be treated with moisturizers and prescription ointments.

More detailed information about atopic dermatitis is available by subscription. (See "[Treatment of atopic dermatitis \(eczema\)](#)" and "[Management of severe refractory atopic dermatitis \(eczema\)](#)".)

**ECZEMA CAUSES** — The cause of eczema is not completely understood, although hereditary factors appear to play a strong role. In most people, atopic dermatitis is caused by a genetic dysfunction in the outermost layer of the skin (the epidermis). The epidermis is the first line of defense between the body and the environment. When the epidermis is intact, it keeps environmental irritants, allergens, and microbes from entering the body.

Despite popular belief, in children, eczema is rarely linked to food allergies. If a food allergy is suspected, the child should be evaluated by an allergy specialist. (See "[Patient information: Food allergy symptoms and diagnosis \(Beyond the Basics\)](#)" and "[Role of allergy in atopic dermatitis \(eczema\)](#)".)

**ECZEMA SYMPTOMS** — Most people with eczema develop their first symptoms before age five. Intense itching of the skin, patches of redness, small bumps, and skin flaking are common. Scratching can cause additional skin inflammation, which can further worsen the itching. The itchiness may be more noticeable at nighttime.

Features of eczema vary from one individual to another, and can change over time. Although eczema is usually confined to specific areas of the body, it may affect multiple areas in severe cases:

- In infants, there may be red, scaly, and crusted areas on the front of the arms and legs, cheeks, or scalp. The diaper area is not usually affected.
- In children and adults, eczema commonly affects the back of the neck, the elbow creases, and the backs of the knees ([picture 1](#)). Other affected areas may include the face, wrists, and forearms ([picture 2](#)). The skin may become thickened and darkened, or even scarred, from repeated scratching.

The skin can also become infected as a result of scratching. Signs of infection include painful red bumps that sometimes contain pus; a healthcare provider should be consulted if this occurs.

Other findings in people with eczema can include:

- Dry, scaly skin
- Plugged hair follicles causing small bumps to develop, usually on the face, upper arms, and thighs
- Increased skin creasing on the palms and/or an extra fold of skin under the eye
- Darkening of the skin around the eyes

**ECZEMA DIAGNOSIS** — There is no specific test used to diagnose eczema. The diagnosis is usually based upon a person's medical history and physical examination.

Factors that strongly suggest eczema include long-standing and recurrent itching, a personal or family history of allergic conditions, and an early age when symptoms began. Other factors include worsened symptoms after exposure to certain triggers or any of the skin findings noted above.

**ECZEMA TREATMENT** — Eczema is a chronic condition; it typically improves and then flares (worsens) periodically. Some people have no symptoms for several years. Eczema is not curable, although symptoms can be controlled with a variety of self-care measures and drug therapy.

**Who treats eczema?** — Many patients with atopic dermatitis can initially be treated by their primary care provider. However, a skin specialist (dermatologist) may be recommended in certain situations, such as if the condition does not improve with treatment, if certain areas of the body are affected (face or skin folds), and if another condition could be causing symptoms.

**Eliminate aggravating factors** — Eliminating factors that worsen eczema can help to control the symptoms. Aggravating factors may include:

- Heat, perspiration, dry environments
- Emotional stress or anxiety
- Rapid temperature changes
- Exposure to certain chemicals or cleaning solutions, including soaps and detergents, perfumes and cosmetics, wool or synthetic fibers, dust, sand, and cigarette smoke.

### **Keep the skin hydrated**

**Emollients** — Emollients are creams and ointments that moisturize the skin and prevent it from drying out. The best emollients for people with atopic dermatitis are thick creams (such as Eucerin, Cetaphil, and Nutraderm) or ointments (such as petroleum jelly, Aquaphor, and Vaseline), which contain little to no water. Emollients are most effective when

applied immediately after bathing. Lotions contain more water than creams and ointments and are less effective for moisturizing the skin.

**Bathing** — It is not clear if showers or baths are better for keeping the skin hydrated. Lukewarm baths or showers can hydrate and cool the skin, temporarily relieving the itching of eczema. An unscented, mild soap or nonsoap cleanser (such as Cetaphil) should be used sparingly. An emollient should be applied IMMEDIATELY after bathing or showering to prevent the skin from drying out as a result of water evaporation.

However, hot or long baths (greater than 10 to 15 minutes) and showers should be avoided since they can dry out the skin.

In some cases, healthcare providers may recommend dilute bleach baths for people with eczema. These baths help to decrease the number of bacteria on the skin which can cause infections or worsen symptoms. To prepare a bleach bath, ¼ to ½ cup of bleach is placed in a full bathtub (about 40 gallons) of water. Bleach baths are usually taken for five to ten minutes twice per week.

### **Treat skin irritation**

**Topical steroids** — Prescription steroid (corticosteroid) creams and ointments may be recommended to control mild to moderate atopic dermatitis. Steroid creams and ointments are available in a variety of strengths (potencies); the least potent are available without a prescription (eg, [hydrocortisone](#) 1% cream). More potent formulations require a prescription.

Steroid creams or ointments are usually applied to the skin once or twice per day. These help to reduce symptoms and moisturize the skin. As the skin improves, a non-medicated emollient can be resumed. Strong topical steroids may be needed to control severe flares of eczema; however, these should be used for only short periods of time to prevent thinning of the skin.

**Other skin treatments** — Newer skin treatments for eczema include [tacrolimus](#) (Protopic) and [pimecrolimus](#) (Elidel). These are effective in controlling eczema, although they do not work as quickly as topical steroids. They are useful in sensitive areas such as the face and groin, and can be used in children over age two. Due to safety concerns, these treatments should only be used as instructed by a healthcare provider.

**Oral steroids** — Oral steroids (eg, [prednisone](#)) occasionally are used to treat a severe flare of eczema, although this treatment is not usually recommended on a regular basis because of potential side effects.

**Ultraviolet light therapy (phototherapy)** — Ultraviolet light therapy (phototherapy) can effectively control atopic dermatitis. However, this therapy is expensive, may increase a person's risk for skin cancer, and is therefore recommended only for people with severe eczema who do not respond to other treatments.

**Immunosuppressive drugs** — Drugs that weaken the immune system may be recommended for people with severe eczema who do not improve with other treatments. Treatment with these drugs can cause serious side effects, including an increased risk for infection.

### **Control itching**

**Oral antihistamines** — Oral antihistamines sometimes help relieve the itching of eczema. The over-the-counter antihistamine [diphenhydramine](#) (Benadryl), and prescription antihistamines, such as [hydroxyzine](#) (Atarax) and [cyproheptadine](#), are most effective for itching caused by eczema, although these drugs can cause drowsiness.

The nonsedating antihistamines such as [cetirizine](#) (Zyrtec) and [loratadine](#) (Claritin) may relieve symptoms, and both are available without a prescription in the United States.

**Wet dressings** — Wet dressings help soothe and hydrate the skin, reduce itching and redness, loosen crusted areas, and prevent skin injury from scratching. Dampened cotton garments may be worn over the affected area and covered with a dry garment. The person may wear these dressings overnight or change them every eight hours during the day.

**WHERE TO GET MORE INFORMATION** — Your healthcare provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site ([www.uptodate.com/patients](http://www.uptodate.com/patients)). Related topics for patients, as well as selected articles written for healthcare professionals, are also available. Some of the most relevant are listed below.

**Patient level information** — UpToDate offers two types of patient education materials.

**The Basics** — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

[Patient information: Eczema \(atopic dermatitis\) \(The Basics\)](#)

[Patient information: Seborrheic dermatitis \(The Basics\)](#)

[Patient information: Giving your child over-the-counter medicines \(The Basics\)](#)

[Patient information: Melasma \(The Basics\)](#)

[Patient information: Peanut allergy \(The Basics\)](#)

**Beyond the Basics** — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

[Patient information: Food allergy symptoms and diagnosis \(Beyond the Basics\)](#)

**Professional level information** — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

[Approach to the patient with a scalp eruption](#)

[Epidemiology, clinical manifestations, and diagnosis of atopic dermatitis \(eczema\)](#)

[Introducing formula and solid foods to infants at risk for allergic disease](#)

[Primary prevention of allergic disease: Maternal avoidance diets in pregnancy and lactation](#)

[The impact of breastfeeding on the development of allergic disease](#)

[Treatment of atopic dermatitis \(eczema\)](#)

[Management of severe refractory atopic dermatitis \(eczema\)](#)

[Role of allergy in atopic dermatitis \(eczema\)](#)

The following organizations also provide reliable health information.

- National Library of Medicine

([www.nlm.nih.gov/medlineplus/healthtopics.html](http://www.nlm.nih.gov/medlineplus/healthtopics.html))

- National Institute on Arthritis and Musculoskeletal and Skin Diseases

([www.niams.nih.gov/hi/index.htm](http://www.niams.nih.gov/hi/index.htm))

- American Academy of Dermatology

([www.aad.org](http://www.aad.org))

- American Academy of Allergy, Asthma and Immunology

([www.aaaai.org](http://www.aaaai.org))

- EczemaNet

([www.skincarephysicians.com/eczemanet/](http://www.skincarephysicians.com/eczemanet/))

- National Eczema Association

(<http://www.nationaleczema.org>)

[1-4]

Use of UpToDate is subject to the [Subscription and License Agreement](#).

## REFERENCES

1. Brenninkmeijer EE, Schram ME, Leeflang MM, et al. Diagnostic criteria for atopic dermatitis: a systematic review. *Br J Dermatol* 2008; 158:754.
2. Akdis CA, Akdis M, Bieber T, et al. Diagnosis and treatment of atopic dermatitis in children and adults: European Academy of Allergology and Clinical Immunology/American Academy of Allergy, Asthma and Immunology/PRACTALL Consensus Report. *J Allergy Clin Immunol* 2006; 118:152.
3. Fonacier L, Spergel J, Charlesworth EN, et al. Report of the Topical Calcineurin Inhibitor Task Force of the American College of Allergy, Asthma and Immunology and the American Academy of Allergy, Asthma and Immunology. *J Allergy Clin Immunol* 2005; 115:1249.
4. Eichenfield LF, Tom WL, Chamlin SL, et al. Guidelines of care for the management of atopic dermatitis: section 1. Diagnosis and assessment of atopic dermatitis. *J Am Acad Dermatol* 2014; 70:338.

Topic 7638 Version 13.0

## GRAPHICS

### Atopic dermatitis on the backs of the knees



Atopic dermatitis often affects the crease of the skin where the leg bends.  
*Courtesy of James C Shaw, MD.*

## Atopic dermatitis



Numerous erythematous papules are present on the hands of this patient with atopic dermatitis.  
*Reproduced with permission from: [www.visualdx.com](http://www.visualdx.com). Copyright Logical Images, Inc.*

Graphic 81398 Version 5.0

### Disclosures

**Disclosures:** William L Weston, MD Nothing to disclose. William Howe, MD Speaker's Bureau: Galderma [rosacea]. Robert P Dellavalle, MD, PhD, MSPH Nothing to disclose. Rosamaria Corona, MD, DSc Employee of UpToDate, Inc. Contributor disclosures are reviewed for conflicts of interest by the editorial group. When found, these are addressed by vetting through a multi-level review process, and through requirements for references to be provided to support the content. Appropriately referenced content is required of all authors and must conform to UpToDate standards of evidence.