

Eczema

What's the difference between eczema and atopic dermatitis?

Eczema is a general term encompassing various inflamed skin conditions. One of the most common forms of eczema is atopic dermatitis (or “atopic eczema”). Atopic dermatitis is a chronic (long-lasting) disease that affects the skin. Approximately 10 percent to 20 percent of the world population is affected by this chronic, relapsing, and very itchy rash at some point during childhood. Fortunately, many children with eczema find that the disease clears and often disappears with age.

In general, atopic dermatitis will come and go, often based on external factors. The word “dermatitis” means inflammation of the skin. “Atopic” refers to a group of diseases where there is often an inherited tendency to develop other allergic conditions, such as asthma and hay fever. In atopic dermatitis, the skin becomes extremely itchy. Scratching leads to redness, swelling, cracking, “weeping” clear fluid, and finally, crusting and scaling. In most cases, there are periods of time when the disease is worse (called exacerbations or flares) followed by periods when the skin improves or clears up entirely (called remissions).

Although atopic dermatitis may occur at any age, it most often begins in infancy and childhood. As some children with atopic dermatitis grow older, their skin disease improves or disappears altogether, although their skin often remains dry and easily irritated. In others, atopic dermatitis continues to be a significant problem in adulthood. Although its cause is unknown, the condition appears to be an abnormal response of the body's immune system. In people with eczema, the inflammatory response to irritating substances is overactive, causing itching and scratching. Eczema is not contagious and, like many diseases, currently cannot be cured. However, for most patients the condition may be managed well with treatment and avoidance of triggers.

What does eczema look and feel like?

Although eczema may look different from person to person, it is most often characterized by dry, red, extremely itchy patches on the skin. Eczema is sometimes referred to as “the itch that rashes,” since the itch, when scratched, results in the appearance of the rash.

Eczema can occur on just about any part of the body; however, in infants, eczema typically occurs on the forehead, cheeks, forearms, legs, scalp, and neck. In children and adults, eczema typically occurs on the face, neck, and the insides of the elbows, knees, and ankles. In some people, eczema may “bubble up” and ooze. In others, the condition may appear more scaly, dry, and red. Chronic scratching causes the skin to take on a leathery texture because the skin has thickened (lichenification).

What makes patients with eczema itch?

Many substances have been identified as itch “triggers” in patients with eczema, and triggers are not the same for every person. Many times it is difficult to identify the exact trigger that causes a flare-up. For some, it seems that rough or coarse materials coming into contact with the skin causes itchiness. For others, feeling too hot and/or sweating will cause an outbreak. Other people find that certain soaps, detergents, disinfectants, contact with juices from fresh fruits and meats, dust mites, and animal saliva and danders may trigger itching. Upper respiratory infections (caused by viruses) may also be triggers. Stress can also sometimes aggravate an existing flare-up.

Who gets eczema?

Eczema occurs in both children and adults, but usually appears during infancy. Although there is no known cause for the disease, it often affects people with a family history of allergies.

Those who are genetically predisposed and then exposed to environmental triggers may develop eczema. Many people who have eczema also suffer from allergic rhinitis (hay fever) and asthma, or have family members who do. The cause of atopic dermatitis is not known, but the disease seems to result from a combination of genetic (hereditary) and environmental factors.

Children are more likely to develop this disorder if one or both parents have had it or have had allergic conditions like asthma or hay fever. While some people outgrow skin symptoms, approximately three-fourths of children with atopic dermatitis go on to develop hay fever or asthma. Environmental factors can bring on symptoms of atopic dermatitis at any time in individuals who have inherited the atopic disease trait.

Atopic dermatitis is also associated with malfunction of the body's immune system: the system that recognizes and helps fight bacteria and viruses that invade the body. Scientists have found that people with atopic dermatitis have a low level of a cytokine (a protein) that is essential to the healthy function of the body's immune system and a high level of other cytokines that lead to allergic reactions and swell.

Some people with atopic dermatitis develop an extra fold of skin under their eyes. Patchy loss of eyebrows and eyelashes may also result from scratching or rubbing.

Major and Minor Features of Atopic Dermatitis

Major Features

- Intense itching
- Characteristic rash in locations typical of the disease
- Chronic or repeatedly occurring symptoms
- Personal or family history of atopic disorders (eczema, hay fever, asthma)

Some Minor Features

- Early age of onset
- Dry skin that may also have patchy scales or rough bumps
- High levels of immunoglobulin E (IgE), an antibody, in the blood
- Numerous skin creases on the palms
- Hand or foot involvement
- Inflammation around the lips
- Nipple eczema
- Susceptibility to skin infection
- Positive allergy skin tests

Types of Eczema (Dermatitis)

- Allergic contact eczema (dermatitis): a red, itchy, weepy reaction where the skin has come into contact with a substance that the immune system recognizes as foreign, such as poison ivy or certain preservatives in creams and lotions
- Atopic dermatitis: a chronic skin disease characterized by itchy, inflamed skin
- Contact eczema: a localized reaction that includes redness, itching, and burning where the skin has come into contact with an allergen (an allergy-causing substance) or with an irritant such as an acid, a cleaning agent, or other chemical
- Dyshidrotic eczema: irritation of the skin on the palms of hands and soles of the feet characterized by clear, deep blisters that itch and burn
- Neurodermatitis: scaly patches of the skin on the head, lower legs, wrists, or forearms caused by a localized itch (such as an insect bite) that become intensely irritated when scratched
- Nummular eczema: coin-shaped patches of irritated skin-most common on the arms, back, buttocks, and lower legs-that may be crusted, scaling, and extremely itchy
- Seborrheic eczema: yellowish, oily, scaly patches of skin on the scalp, face, and occasionally other parts of the body
Stasis dermatitis: a skin irritation on the lower legs, generally related to circulatory problems
Skin Features of Atopic Dermatitis
- Atopic pleat (Dennie-Morgan fold): an extra fold of skin that develops under the eye
- Cheilitis: inflammation of the skin on and around the lips
- Hyperlinear palms: increased number of skin creases on the palms
- Hyperpigmented eyelids: eyelids that have become darker in color from inflammation or hay fever
- Ichthyosis: dry, rectangular scales on the skin
- Keratosis pilaris: small, rough bumps, generally on the face, upper arms, and thighs
- Lichenification: thick, leathery skin resulting from constant scratching and rubbing
- Papules: small raised bumps that may open when scratched and become crusty and infected
- Urticaria: hives (red, raised bumps) that may occur after exposure to an allergen, at the beginning of flares, or after exercise or a hot bath

What can be done for children with eczema?

Children are unique patients because it may be difficult for them to resist scratching their eczema, thereby making the condition worse. Fortunately, for mild to moderate cases, the application of moisturizer on a regular basis can be very helpful. And, in most cases, the eczema will disappear as the child ages. In the meantime, avoid as many eczema triggers as possible. Keep your child's skin moist. After bathing, apply moisturizer within three minutes to retain the moisture in the skin. Avoid sudden temperature changes. Keep your child's bedroom and play areas free of dust mites (a common trigger). Use mild soaps – both on your child's skin and on your child's clothing. Dress your child in breathable, preferably cotton, clothing.

If these methods fail to help your child, you should seek further advice from a dermatologist. After consultation, it may be recommended that your child use a hydrocortisone cream or perhaps a prescription cream, ointment, antihistamines, or antibiotics. Regardless, most children will see improvement as time goes by.

Treatment

The doctor has two main goals in treating atopic dermatitis: healing the skin and preventing flares. These may be assisted by developing skin care routines and avoiding substances that lead to skin irritation and trigger the immune system and the itch-scratch cycle. It is important for the patient and family members to note any changes in the skin's condition in response to treatment, and to be persistent in identifying the treatment that seems to work best. Medications and Other Therapies Used to Treat Eczema

Topical (applied to the surface of the skin) medications play an integral role in controlling the signs and symptoms of eczema, and moisturizer is an essential part of most treatment plans. Systemic medication (medication that circulates throughout the body and is taken orally or given by injection or infusion) also may be prescribed.

Dermatologists use medication and other therapies to:

- Control itching
- Reduce skin inflammation
- Clear infection
- Loosen and remove scaly lesions
- Reduce formation of new lesions

A patient (or parent) may be instructed to use one medication or a combination of therapies. Research is showing that combination therapy (use of two or more therapeutic agents) can in some cases increase effectiveness and reduce side effects. Medications and other therapies that dermatologists may use to treat eczema include:

MEDICATIONS

Antibiotics

Skin affected by eczema frequently becomes infected. A topical or systemic antibiotic may be prescribed to clear the infection. Research demonstrates that an oral antibiotic can be highly beneficial when skin becomes infected or a secondary infection develops.

Antihistamines

When itching is severe, antihistamines may be prescribed. While there is little scientific evidence that either sedating or non-sedating antihistamines are effective in relieving itch and other symptoms, sedating antihistamines can be useful for patients experiencing significant sleep disruption due to a constant, unbearable itch and other symptoms. It is believed that the improvements associated with antihistamine use are due primarily to the patient getting a restful sleep.

Calcineurin Inhibitors

Pimecrolimus and tacrolimus belong to a class of drugs called calcineurin inhibitors, which effectively reduce the inflammation of atopic dermatitis. Available in topical form by prescription, these two steroid-free medications are the newest treatment option for atopic dermatitis and a much-welcomed addition because they do not produce the side effects, such as thinning skin and loss of effectiveness, associated with long-term use of topical corticosteroids.

Avoid sunlight and other UV exposure: Patients should avoid exposure to sunlight, tanning beds, sun lamps and treatment with ultraviolet (UV) light while taking these medications. Sun protection is essential. Be sure to avoid the midday (between 10 a.m. and 4 p.m.) sun.

Coal Tar

Coal tar has a soothing effect on inflamed skin and has been used for many years to treat atopic dermatitis. Today, coal tar comes in numerous preparations, and some of these are available over-the-counter. Best results are typically seen when use is supervised by a dermatologist.

Corticosteroids

Available both over-the-counter and by prescription, dermatologists use topical corticosteroids more than any other medication to alleviate the signs and symptoms of eczema. Also known as glucocorticoids and steroids, corticosteroids come in a variety of strengths, ranging from mild to extremely potent.

Cyclosporine

Cyclosporine is a potent immunosuppressant used to prevent rejection of a transplanted heart, kidney or liver. It also is used to treat severe cases of psoriasis and atopic dermatitis. In fact, oral cyclosporine has been used for many years to treat severe atopic dermatitis that does not respond to other treatment.

Interferon gamma

Not traditionally used to treat eczema, interferon gamma has been investigated in a small number of studies. Findings indicate that while injections can provide significant relief, a high overall rate of side effects was demonstrated. Interferon gamma is a protein produced by the human body that is involved in the regulation of the immune system and inflammatory responses. More research is needed to fully understand how interferon gamma works.

Mycophenolate mofetil

Approved for preventing organ rejection in transplant patients, research suggests that the medication may effectively treat severe atopic dermatitis in adults.

OTHER THERAPIES

Cold Compresses- A cold compress is a cloth dipped in ice water that is wrung out and applied directly to the skin that itches. When first placed on the skin, the itching or pain may become more intense.

Moisturizers- Most eczema treatment plans include use of moisturizers, also called emollients, since one of the symptoms of eczema is an intense almost unbearable itching. Contrary to popular belief, moisturizers do not add moisture to the skin. Rather moisturizers serve as a barrier that reduces water loss from the skin. This is why dermatologists recommend that a moisturizer be applied after bathing while the skin is still damp. This “locks in” the moisture from the bath or shower. Moisturizers come in many, many forms.

Ointments are best for very dry skin.

Cream

A cream consists of two agents, oil and water, that combine to form an emulsion of oil (50%) in water (50%). This form helps the medication contained within to penetrate the stratum corneum, the horny outer layer of the skin.

Use:

- Soothing moisturizer

Liquid

Commonly used liquids include baths, wet dressings, paints and gels that liquefy upon contact with the skin. The tar bath, which is used to treat eczema and other skin conditions, is a liquid. Oil is a liquid that cannot be dissolved in water. Oil is often combined with other ingredients to form oil-in-water agents and water-in-oil agents.

Uses:

- Dries sweaty and/or oozing skin
- Reduces inflammation

Phototherapy: A Treatment Option for Atopic Dermatitis

Phototherapy exposes a patient to ultraviolet (UV) light for a controlled amount of time in order to treat skin conditions, such as atopic dermatitis, seborrheic dermatitis and psoriasis. While effective, phototherapy is not appropriate for everyone. It is not recommended for children, patients whose eczema flares when exposed to sunlight, or anyone who develops a sun-induced allergic reaction.

1. UV light therapy may be used alone or with a topical agent, such as coal tar. Ultraviolet A (UVA), ultraviolet B (UVB) or a combination of UVA and UVB therapy may be used. During therapy, the patient's skin, or just the affected area(s), is exposed to the UV light. Goggles are worn during treatment to protect the eyes. Patients usually receive treatment in a dermatologist's office.

There are 2 types of UVB phototherapy:

- Broadband (3-5 treatments per week)
- Narrowband (2-3 treatments per week)

Broadband. This UVB therapy has been around for more than 80 years, and it is still highly effective. The biggest drawbacks are that the patient must travel between 3 and 5 times per week to a site that offers this therapy and that broadband light does not reach the scalp and areas where skin folds occur.

Narrowband. This newer form of UVB therapy is called "narrowband" because it emits a narrower band of UVB wavelengths. Narrowband UVB therapy is proving to be more effective than the traditional broadband therapy. However, it does have the potential to produce severe burning. Like broadband, it is still not known if narrowband UVB therapy poses a long-term risk for development of skin cancer.

2. PUVA requires the patient to ingest, topically apply or bathe in a medication called psoralen before being exposed to UVA rays. Psoralen makes the skin more sensitive to UVA rays. After treatment, patients must wear UVA-blocking sunglasses for the rest of the day when exposed to sunlight because psoralen remains in the eyes for awhile. PUVA's effectiveness is limited to carefully selected patients whose condition is likely to respond to PUVA. PUVA has a number of side effects, which may include nausea, headache, fatigue, burning skin, itching and irregular skin pigmentation. A series of treatments is usually needed, and a full course of treatment may take 6 months. Several studies have demonstrated substantial improvements when PUVA is combined with topical corticosteroids.

Why Phototherapy Works

UV light of certain wavelengths affects the immune system. By carefully exposing patients to these UV wavelengths for specified amounts of time, dermatologists are able to prevent the exaggerated immune response that causes the inflammation.

Benefits

The beneficial effects of phototherapy vary from person to person. Phototherapy can:

- Significantly improve, and even clear, atopic dermatitis. One study conducted in Germany investigated the effects of phototherapy on severe atopic dermatitis. Investigators found more than 80% of the patients with atopic dermatitis who were treated with phototherapy showed significant improvement, and in some cases, complete clearance within three weeks.
- Help prevent bacterial infections, which are common in the skin of patients with atopic dermatitis.
- Reduce the strength of topical corticosteroids required, and in some cases, eliminate the need for topical corticosteroids.

Acupuncture

Acupuncture for eczema is a natural healing method that comes from Traditional Chinese Medicine (TCM). It involves inserting thin metal needles at specific anatomical (meridian) positions in the human body. Acupuncture for eczema helps by restoring balance to the body by removing energy imbalances and blockages in the body with the insertion of needles at appropriate meridian points. In this manner, eczema is not merely treated for its symptoms but also addressed at the root cause.

During the acupuncture procedure, the needles are manipulated by bare hands or electric signals. The needles are free from any medicine or any injecting purpose, and its role is just to simulate the acupuncture points. If done by an expert acupuncturist, there should not be any pain or sensation at all. The patient may not even realize that the needle has indeed been inserted into the skin.

Acupuncture for eczema is usually done after a detailed diagnosis of the patient. The acupuncturist must first study the existing eczema condition of the patient, his or her body imbalances, age and medical history. Different people may require varying extent of acupuncture treatment, and hence the treatment duration varies from one individual to other.