

Atopic Dermatitis (Eczema) in Children

What is atopic dermatitis (eczema)?

Atopic Dermatitis (also called eczema) is a skin disorder that affects 3% of the United States population. It causes itchy, sensitive skin. The appearance of the rash is variable. The skin may be:

- Red
- Rough
- Scaly
- Bumpy

At other times, there might be bleeding, weeping or crusting from scratched or infected areas. With continued scratching or rubbing, the skin can darken and become thick. In areas of a previous rash, the skin color can lighten or darken but these color changes eventually return to normal over time. In general, the skin loses moisture easily and is usually dry. Eczema does not usually cause permanent scars.

What causes eczema?

The cause is unknown. It is often seen in families whose members have had:

- Eczema
- Allergies
- Asthma
- Hay fever

It usually appears during the first 2 years of life, but it may begin in later in childhood or adulthood. Eczema is not contagious.

Will it go away?

Most children improve by preschool age. In some cases, eczema may last a long time, requiring lifelong management. Since it cannot be cured (although it does go away over time in many cases), the goal is to keep the condition under control. Because each child is different, skin care treatment is individualized.

What can cause irritation to eczema?

The following can make eczema worse:

- Contact with water. Irritation can be avoided by **immediately** sealing the moisture with a thick balm.
- Use of soaps.
- Contact with perfumed, unscented or alcohol-containing creams and other skin care products.
 - **Note on the difference between unscented and fragrance-free:**
Unscented products should not be used. **Unscented** generally means that the product may contain chemicals that neutralize (or mask) the odors of other ingredients. Fragrance-free products are best to use. **Fragrance-free** means that fragrance materials or masking scents are not used in the product.
- Extreme humidity or sudden temperature changes.
- Wool, acrylic, fur, or any rough material in clothing, including seams, tags, ruffles, elastic, etc.
- Carpeting and furniture.
- Exposure to pillows, comforters or mattresses filled with feathers or down, which collect large amounts of dust mites.
- Exposure to known allergens such as cats, dogs, rabbits, airborne dust or pollen.
- Skin contact with tomatoes or citrus fruits.
- Sweating from physical activity overheating.
- Exposure to sand boxes.
- Fatigue, illness or emotional frustration.

How do allergies affect eczema?

Some people with eczema are sensitive to certain environmental substances, such as dust, pollen and pets. These substances are called allergens. The most common reaction to allergens is nose and eye itching, but there is not usually an eczema skin reaction.

Certain foods may seem to worsen eczema, especially in infants and young children, but eliminating foods rarely leads to a lasting improvement. Recent data shows that avoiding food is not recommended to manage eczema **unless** a specific food has caused an allergic reaction. An **allergic reaction** means a person immediately develops a combination of the following symptoms:

- Tearing or itchy red eyes
- Sneezing
- Nasal congestion
- Runny nose
- Tongue swelling
- Drooling
- Noisy breathing
- Cough
- Wheezing
- Hives
- Eye swelling
- Lip swelling
- Vomiting
- Diarrhea
- Abdominal cramps
- Dizziness
- Passing out

Eliminating foods for long periods of time could contribute to malnutrition, and could even cause a food allergy to develop.

It is important to discuss food elimination with a medical provider. You should also discuss any allergy test results with your medical provider. Allergy testing is not always reliable, and many children with eczema have “false positive” test results (skin and blood tests), especially to foods. **False positive** means the test result shows they have an allergy when they actually do not.

How is eczema treated?

The goals of treatment are to reduce swelling and itching and to retain the skin's moisture.

How can I manage eczema?

“Soak and Seal”: Prevent moisture loss by following this daily shower routine:

1. Take a daily bath or shower with comfortably warm water.
2. If your child sits in the tub, wet a towel and wrap it around the head and torso to keep moisture in while bathing. Keep the towel wet by pouring water on top frequently.
3. **Do not use** soaps (detergent in soaps will remove the precious little natural oils on skin and change the acidity of the skin, breaking it down even more)
4. Use **fragrance-free** body cleansers (Eucerin, Vanicream, Cerave, Cetaphil (the fragrance-free version only), Aveeno, etc.)
5. Use only your hands to wash, no washcloths.
6. Wash hair at the end and try to use fragrance-free shampoo. Do not allow the water you use to rinse shampoo to run down the skin.
7. Use cleanser on the body again after shampooing.
8. Pat excess water to dry off, do not rub the skin.
9. Within 1 minute after bathing apply an ointment such as 100% petrolatum (Vaseline), and prescribed medications.
10. The rest of the day, apply a thick layer of fragrance-free moisturizer (thicker is better) with every diaper change. Moisturizing creams prevent the drying and flaking of the skin which leads itching. These should be applied every day, several times a day.
 - Examples of moisturizers: Cerave, Vanicream, Cetaphil (the one without masking fragrance), Eucerin, Aveeno.
 - Avoid thin lotions which dry the skin.
11. Try wet wrap therapy: See page 12 for instructions.
 - You can do localized wet wrap therapy when needed by using a damp wash cloth on the area for several minutes, followed by petroleum jelly application or other recommended balm

12. Wash face with water after eating (no wipes) and seal with thick moisturizer or balm

Note: Any time you wet the skin for whatever reason, you should seal the moisture in with a thick moisturizer or balm.

Dilute bleach baths

People with eczema are at increased risk of infection from bacteria on the top layer of the skin, especially the bacteria *Staphylococcus aureus* or “staph”. This is due to itching, scratching and eczema’s effect on the immune system. One technique that can help decrease the number of infections and possibly reduce the need for antibiotics in people with eczema is called "dilute bleach baths." Just like swimming pools are chlorinated to help cut-down on bacteria living in the water, together you will "make your very own swimming pool" in the bathtub. This special water will help remove bacteria on the skin and reduce swelling that can cause itching and infection.

Here are our simple recommendations:

Steps:

1. Start by adding lukewarm water to fill a tub for a normal bath (about 40 gallons).
2. Put 1/4 to 1/2 cup of regular liquid bleach (for example, Clorox) into the bath water. Use 2.5 ml or 1/2 teaspoon per gallon of water if you use a portable tub. Check the bleach bottle to make sure that the concentration of bleach (also known as sodium hypochlorite) is about 6% to 8%.
3. Completely mix the added bleach in the water.
4. Have the person soak in the chlorinated water for about 10 minutes to 15 minutes, following the soak and seal method above.
5. Rinse the skin with warm, fresh water at the end of the bleach bath.
6. As soon as you're finished rinsing off, pat dry. Do not rub dry as this is the same as scratching.

7. Immediately apply any prescribed medication and always thick balms (petroleum jelly).
8. Repeat bleach baths 2 to 3 times a week if the skin is starting to flare, and once a week as maintenance.

Diluted bleach baths can potentially cause dryness or irritation in rare cases, if that is the case use white vinegar instead.

Do not:

- Use undiluted bleach directly on the skin.
- Use bleach baths if there are too many breaks or open areas in the skin (for fear of intense stinging and burning)
- Use bleach baths in people with a known contact allergy to chlorine.

Avoid things that irritate eczema:

- Check product labels and avoid products with fragrances, formaldehyde and formaldehyde releasers. Visit the American Cancer Society website for more information about formaldehyde: <https://www.cancer.org/cancer/cancer-causes/formaldehyde.html>
- Wash all new clothes with free and clear (fragrance-free) detergent.
- Do not use fabric softeners or dryer sheets (not even the free and clear ones). Use tennis balls in the dryer.
- Dry clothes on the lowest setting to prevent puckering of seams.
- Wear 100% soft cotton against the skin.
 - Wear seamless if possible, or wear inside out.
 - Cut all tags out.
 - May cut out neck line.
- Dust mite-proof covers on pillows, comforters or mattresses filled with feathers or down are essential to prevent contact with their feces, which promotes inflammation, allergic reaction and skin breakdown.
- Some foods irritate the skin when they come in contact: to prevent this apply petroleum jelly before eating to create a barrier.

Monitor for bacterial infection:

Children with eczema are more likely to develop skin infections that can appear as:

- Pus-filled bumps
- Blisters
- Oozing
- Crusting

These skin infections may be caused by bacteria, viruses or fungus (yeast). A child with eczema is more likely to catch infections from other people. For example: if a child with eczema is exposed to someone with a cold sore, the child may develop a widespread herpes virus infection. This is not very common but it is a serious infection that needs immediate care. Notify your provider or nurse if you think your child has any infection since it may be necessary to treat this with oral medicine.

Are topical steroids safe?

Topical steroids are medicines such as ointments or creams that are applied on the skin. They reduce inflammation and itching. These come in many brands and strengths. Use these only on red, itchy, or thickened areas of eczema and **not** on normal skin. Your provider will specify which steroid preparation can be used safely and for how long it should be used. For severe itching, an antihistamine (oral medication) may be prescribed, but this is not always effective. An application of wet wraps is often more effective.

Continued use of **very strong** steroid ointments or creams can cause thinning of the skin, stretch marks, accentuation of blood vessels in the skin, and absorption of cortisone into the body. Infants are at greater risk for increased absorption into the body. Prolonged use on the eyelids may lead to eye cataracts and glaucoma. For these reasons, strong topical steroids should be used sparingly and only intermittently. The weaker strength topical steroids are

safe for children and infants if used as directed by your provider. There is a low risk of absorbing amounts of these that would cause unwanted side effects.

How do I use a topical steroid?

Your provider may prescribe a topical steroid. Typically, these are used in what is called a “burst and taper” manner to maximize effectiveness.

For example:

- Apply Hydrocortisone 2.5% ointment two times per day for 2 weeks.
- Then apply it two times per day **on weekends only** for 4 weeks.
 - When applying only on weekends, this means you do not apply the prescription product Monday-Friday. However, you should continue to soak and seal every day.

Why is it written like this?

Steroids are powerful medications. They decrease the irritation associated with eczema and a variety of conditions. However, they have potential side effects and over time, lose effectiveness on the skin. This is why it is essential you use them as your provider recommends. Using them in a manner where you are aggressive for 2 weeks, and then taper off for several weeks allows for safe and effective use. It is never appropriate to use them daily for extended periods of time unless specifically told to do so by your provider. Never use them as moisturizers.

Types of topical steroids

Some topical steroids should only be used on specific parts of the body. In general, milder steroids are used for the face, body folds (like the groin and armpits) and for children. It is very important to use the right steroid in the right place for the best safety and effectiveness.

Be careful with labels, names of steroids can be deceiving. Just because something has “0.5%” next to the name instead of “0.1%”, does not mean it is a stronger medicine. Be sure you understand what medication your provider is

recommending and where it is best used. If possible, write the instructions on the box like this: "for face and folds", "for body", "for eyelids".

How much is the right amount?


It will depend on the area of skin that is affected. A “fingertip unit” (FTU) will describe the amount of cream or ointment needed. See figures 1-3 below for the size of a fingertip unit, and the amount of FTUs to use for children and adults.



Figure 1

This image shows 1 Finger Tip Unit (FTU). **1 FTU is** the amount of cream that stretches along the last section of an adult finger.

Source: Informedhealth.org. Used with permission.




SKIN AREA	FACE AND BACK OF NECK	ARM AND HAND	LEG AND FOOT	CHEST AND BELLY	BACK AND BUTTOCKS
AGE	Finger tip unit (FTU) or 0.5 g of ointment				
3-6 MONTHS	1	1	1.5	1	1.5
1-2 YEARS	1.5	1.5	2	2	3
3-5 YEARS	1.5	2	3	3	3.5
6-10 YEARS	2	2.5	4.5	3.5	5

CHILDREN | Table: Amount of ointment for children

Figure 2

Table showing the amount of fingertip units to use for children. To determine how many fingertip units to use, find the child’s age on the left side of the table and follow it to the column that has the correct skin area on the top of the table.

Source: Informedhealth.org. Used with permission.



SKIN AREA	FACE AND BACK OF NECK	ARM	LEG	CHEST AND BELLY	BACK AND BUTTOCKS	HAND, ELBOW, KNEE, FOOT
	Finger tip unit (FTU) or 0.5 g of ointment					
	2.5	4	6	7	7	1 FTU each

ADULTS | Table: Amount of ointment for adults

Figure 3

Table showing the amount of fingertip units to use for adults. To determine how many fingertip units to use, find the skin area where the ointment is to be applied on the top of the table and locate the fingertip unit below it.

Source: Informedhealth.org. Used with permission

Other treatments

Your provider may recommend other treatments. Do not try any of these without discussing them with your provider first as they are not appropriate for everyone with atopic dermatitis.

Antihistamines

These are medications taken by mouth to help with itching. Some of these (such as Benadryl or hydroxyzine) can be sedating (make you drowsy) while others (like Allegra or Zyrtec) are less sedating. These may or may not be recommended to you as they are not always effective.

Occlusion

Sometimes it can be helpful to moisturize and then place cotton fabric on top of your cream/ointment immediately (wet wrap therapy, see below). This can do several things including prevent the moisturizer from rubbing off on other things or people and can also help the cream “soak in” better. Use caution however, and **do not do this with topical steroids on your own unless recommended by your provider.**

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WET WRAP THERAPY

for Atopic Dermatitis (Eczema)

1 in 5 Children
Suffer with Eczema

*Use under the advice of your child's physician and for suggested length of treatment

step 1

Soak wraps in warm water



Wet wraps have a cooling anti-itch effect.

step 2

Bathe child in warm (not hot) water for 15-20 minutes and use a gentle cleanser



step 3

Lightly pat child's skin dry with a towel



Apply lotion or prescribed cream within 3 minutes!



step 4

step 5

Wring out excess water from wrap and immediately dress child in damp wrap to seal in moisture



Wet wrap therapy relieves eczema by adding needed moisture to the skin.

Ahhhh...

step 6

Apply a dry layer of clothing on top.

Smile.



Studies of WET WRAP THERAPY show an average reduction of symptoms of 71%.

ref: Wet Wrap Therapy in Children with Moderate to Severe Atopic Dermatitis in a Multidisciplinary Treatment Program

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