Understanding eczema

A leaky skin barrier plus an overactive immune response.

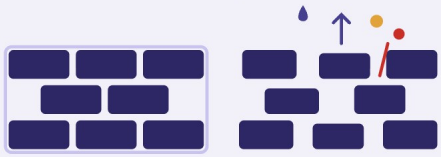
1. What is eczema?

Atopic dermatitis (eczema) is a **long-term skin condition** with dry, very itchy, red or darkened patches that flare and settle. It is **not contagious** and not caused by poor hygiene.

Where it shows up: cheeks and outer arms and legs in babies; elbow and knee creases, neck, hands and eyelids in older children and adults.

Common triggers: dry air, heat and sweat, soaps and fragrance, wool, stress, skin infections, and allergens in some people.

THE SKIN BARRIER IS A BRICK WALL



Healthy skin
tight, holds water in

Eczema skin
gaps: water out, irritants and germs in

2. Filaggrin: the skin's built-in moisturizer

What it does. A protein that packs skin cells tightly, then breaks down into the skin's **natural moisturizing factor**, which holds water in.

Inherited changes. About **1 in 10** people of European ancestry carry a filaggrin gene change[1] (other changes occur in other groups).

Inflammation lowers it too. Eczema itself reduces filaggrin, so the barrier weakens during flares in everyone. That is why daily moisturizer matters.

THE EVIDENCE

3×

higher odds of eczema with one filaggrin gene change (24 studies).[2]

3. How eczema works: the itch-scratch cycle

1 Leaky barrier
Low filaggrin and dry skin leave gaps.

2 Things get in
Irritants, allergens and *Staph* bacteria enter the skin.

3 Immune overreaction
Allergic-type (type 2) signals **IL-4**, **IL-13** and **IL-31** cause redness and itch.

4 Scratching
Damages the skin more and lowers filaggrin. Back to step 1.

Breaking the cycle: moisturizer seals the barrier (step 1), bleach baths reduce bacteria (step 2), and anti-inflammatory creams or Dupixent, which blocks IL-4 and IL-13, calm the immune response (step 3). See page 2.

4. Eczema and allergy

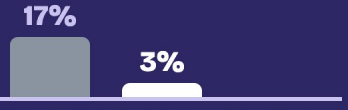
Skin first, then food allergy. Food proteins entering broken skin can cause allergy: up to **6×** the odds of food sensitization in babies with eczema.[3]

Don't cut foods without testing. Food is rarely the main cause. Needless avoidance can **raise** the risk of true allergy.[6]

The "allergic march." About **1 in 3** young children with eczema later develop asthma.[5]

Airborne allergens. Dust mites, pets or pollen can worsen flares if you are allergic. Testing guides avoidance.

FEED PEANUT EARLY



Peanut allergy at age 5 in high-risk babies: **avoided** vs **ate peanut** from infancy.[4] Ask us first.

Sources

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5. van der Hulst AE, et al. Risk of developing asthma in young children with atopic eczema: a systematic review. *J Allergy Clin Immunol.* 2007;120(3):565-569. · 6. Chu DK, et al. Atopic dermatitis guidelines: 2023 AAAAI/ACAAI Joint Task Force. *Ann Allergy Asthma Immunol.* 2024;132(3):274-312.

Caring for eczema

Daily skin care is the foundation; medicines are added when it is not enough.

1. Moisturize every day, even when skin looks clear

Thick and fragrance-free. Ointments or thick creams from a tub beat thin lotions.

At least twice a day on the whole body, and after hand washing.

Soak and seal. Lukewarm bath (5–10 min), pat dry, moisturize **within 3 minutes**.

Use plenty. Adults often need a 1-lb tub a week; children about half.

THE EVIDENCE

~60% fewer

flares with regular moisturizer vs none.[1]

2. Skin care for flares and everyday comfort

FOR BAD FLARES

Wet wraps

1 Bathe, apply prescribed cream and moisturizer.

2 Put on a **damp** cotton layer.

3 Cover with a **dry** layer on top.

4 Leave on 2 hours to overnight, as directed.

Severity improved about **71%** in 72 children.[2]

2–3 TIMES A WEEK

Dilute bleach baths

½ cup plain bleach per full tub (~40 gal); **¼ cup** per half tub.

Soak **10 minutes**, head out of water.

Rinse, pat dry, moisturize right away.

Never undiluted. Stop if it stings badly.

In the 2023 U.S. guideline; helps most with frequent infections.[3,4]

EVERY DAY

Wear soft cotton

100% cotton, loose, next to the skin.

Avoid wool and scratchy synthetics.

Wash new clothes first; cut out tags.

Fragrance-free detergent, no softener.

Costly silk clothing added no benefit in 300 children.[5]

3. Medicines: when skin care is not enough

First line: topical steroids

SAFE WHEN USED AS DIRECTED

Flares: thin layer on red, itchy areas 1–2 times a day until smooth, then stop. One fingertip covers two adult palms.

Prevent flares: usual trouble spots **2 days a week**, even when clear: about half as many flares.[6]

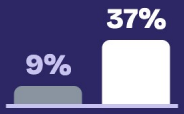
Side effects: thinning or stretch marks, mostly with strong steroids used too long or on thin skin. Seen in only about **1%** in trials.[7] Use the strength we prescribe for each area.

Non-steroid creams (tacrolimus, pimecrolimus, crisaborole, ruxolitinib, roflumilast, tapinarof) suit the face, folds and long-term use.

SECOND LINE

Dupixent (dupilumab)

For moderate to severe eczema. Blocks IL-4 and IL-13. A home shot every 2–4 weeks, ages 6 months and up; no routine labs.



Clear or almost clear at 16 weeks: **placebo** (grey) vs **Dupixent** (white).[8]

Side effects: injection-site redness, pink eye, cold sores.

Call us right away for yellow crusts, pus, fever, or painful spreading blisters or punched-out sores: signs of infection.

Sources

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