A CHILD WITH ATOPIC ECZEMA (also called atopic dermatitis): A Parent's Guide

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WHAT IS ECZEMA?

The word eczema simply means dermatitis, which is an inflammation of the skin. There are different types of dermatitis or eczema. The most common type of eczema in children is **atopic eczema**. The terms "atopic eczema" and "atopic dermatitis" mean the same thing. The child with eczema has **sensitive skin**, which is irritated very easily. Their sensitive skin often is itchy *(the medical term is pruritus)*, and the eczematous rash results from the scratching or rubbing of the extremely itchy skin from which these children suffer. While it is apparent from observing a child with atopic eczema that the rash is very itchy, it may be more accurate to say that atopic dermatitis is "***the itch that rashes***."

WHY DOES MY CHILD HAVE ECZEMA?

Atopic eczema is believed to be a genetic disorder resulting in sensitive skin. It tends to be associated with the predisposition to become allergic to foods and substances in the air such as pollens, molds, animal danders, and dust mites. Some children with eczema develop severe allergic reactions to foods and many develop asthma and hay fever symptoms as they get older. Often there is someone else in the family with eczema, asthma or hayfever *(allergic rhinitis)*, but this is not always the case. There are many external factors which may influence eczema on a day to day basis; some are irritants and some may be from allergy.

WILL MY CHILD 'GROW OUT' OF ECZEMA?

The tendency for sensitive skin may remain even into teenage years or beyond. However, in most cases your child's eczema will gradually improve as they get older. The age at which eczema ceases to be a problem varies. Many are better by the age of 3 years, and most will have only occasional trouble by the time they are teenagers. It is estimated that about 2/3 of children "outgrow" their eczema, although they may always have a tendency for dry skin. Only a few continue to have troublesome eczema in adult life.

IS ECZEMA DUE TO AN ALLERGY?

No, atopic eczema is not caused by any specific allergy. But atopic eczema may be worsened in some children from allergy to foods. Since this is the case only for some children, restricting diets as a general treatment of atopic eczema is not useful. However, when allergic antibody is demonstrated to a specific food by skin testing or a special blood test *(called a RAST for radioallergosorbent test)*, the possibility that the food can worsen atopic eczema should be investigated by a food challenge under medical observation. This is done by first withdrawing the food from the diet for two weeks and then giving the child that food while under

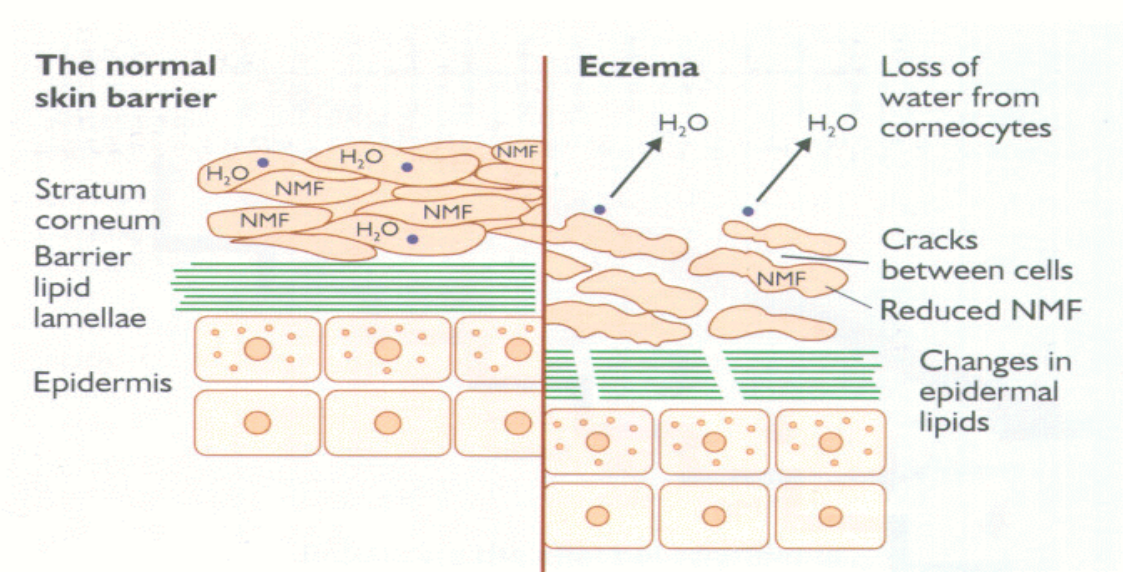
medical observation. The most frequent observation that demonstrates the possibility that the food is worsening the eczema is the presence of redness and itching, particularly at the site of the eczema, within an hour *(and usually sooner)* after ingestion of the food. Of course, a food challenge of this sort is only done if the food has not previously been observed to cause a severe allergic reaction. When there are multiple foods to which allergic antibody is demonstrated, the most important ones to consider are those that are frequently in the diet. There is no need for concern about foods to which tests for allergic antibody are negative.

WILL ALLERGY TESTS HELP MY CHILD'S ECZEMA?

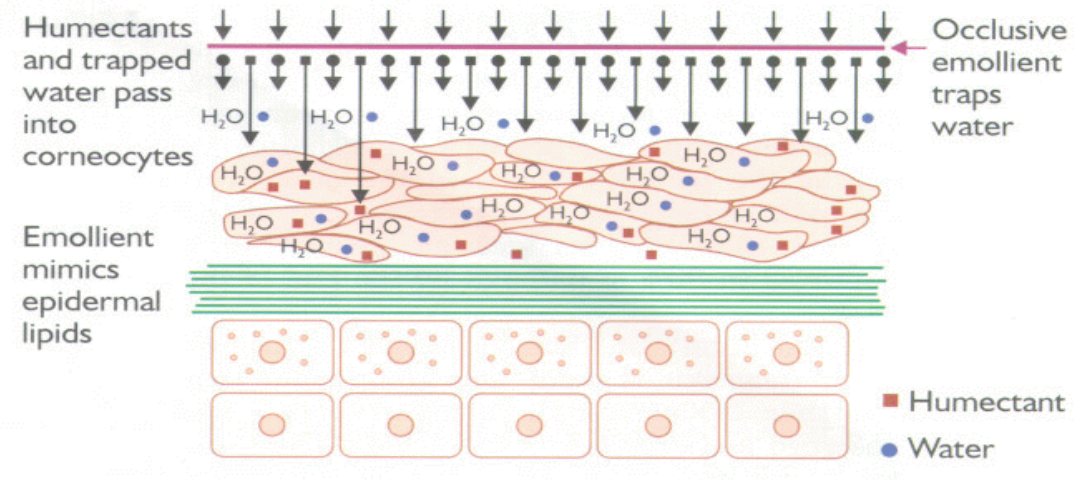
Allergy tests identify the type of antibody that can cause allergic reactions. Children with atopic eczema are prone to make allergic antibody to many things that they eat, contact, and inhale. Some, but certainly not all of the allergic antibodies developed in a child may cause clinical problems. Allergy tests provide information that may or may not help the child's eczema, depending on what is found from the tests, a careful medical history, and in some cases observations during exposure to a suspected food to which a positive allergy test is found. Allergy tests can also provide information about the risk of severe anaphylactic reactions *(generalized hives with or without difficulty breathing)*, allergic rhinitis *(runny or stuffy nose, sneezing)*, allergic conjunctivitis *(itchy red eyes)*, or asthma.

GENERAL ASPECTS OF SKIN CARE FOR YOUR CHILD'S ECZEMA

There is no single medication which will cure eczema. However, for most children, it is possible to treat eczema effectively and keep it in check using a simple treatment plan that focuses on preventing excessive drying of the skin and keeping the skin soft. The skin of the child with atopic dermatitis tends to dry out quickly. This results in the protective layer of the skin developing fine cracks that make it prone to being easily irritated and itchy. This is illustrated in the following picture. Note that the normal skin barrier has a substance that can be called "natural moisturizing factor" that holds water in the outer layer of dead skin called the "*stratum corneum*." The *stratum corneum* and a natural skin oil called the "barrier lipid" provide protection for the living skin cells with their sensitive nerve endings. In a child with atopic eczema, the skin lacks the ability to retain water and the barrier is defective. The living cells with their sensitive nerve endings therefore can be easily irritated which causing itching.



An important part of treating atopic eczema is therefor reestablishment of the protective barrier of the skin. This is illustrated in the following figure:



The strategy is to get water to be absorbed by the outer layer of skin, the stratum corneum and then to seal the water in the skin before it evaporates (which it will do rapidly). Sealing the water is done with emollients.

Emollients and lubricants

These are products which can prevent drying of the skin, thereby moisturizing and softening the skin. This restores the elasticity and suppleness of the skin and helps to reduce the itching and scratching. Emollients and lubricants are safe and should be used frequently as first-line treatment. There are many emollients that are

acceptable to use. Use only those that are unscented. Common ones that are useful and well tolerated include Moisturel, Eucerin, Aquafor, Cetaphil, and Lubriderm. To obtain the greatest benefit from these, the child should be bathed nightly, soaking in warm (not hot) water for at least 10 minutes. Since soap removes natural oils from the skin and is drying, a soap substitute, such as Cetaphil cleansing bar or Oil of Olay bath bar should be used instead of soap. An emollient should then be applied liberally to all areas of dry skin while the skin is still damp. Once the child leaves the bath, it is therefore essential that no more than 2 minutes elapse before the emollient is applied. Simply pat the child with a towel to remove excess water and lubricate the skin well with the emollient. Application of the emollient should be generous and repeated at least one more time during the day, more often if needed *(especially after any daytime washing)* to keep the skin soft and moist. After the evening bath and emollient application, the child should wear soft cotton pajamas with long sleeves and legs to minimize irritation. This moisturization procedure will prevent the skin from drying and keep the skin smooth. This will make it less likely to itch or to become red.

Other general measures for skin care

- Fingernails should be kept short to minimize skin damage when scratching occurs.
- Wear loose-fitting cotton clothing
- Avoid overheating of skin
- Keep the skin lubricated by keeping a small tube of the emollient on hand to use whenever the child washes his hands or face.

MEDICATIONS FOR TREATMENT OF ATOPIC ECZEMA

A topical corticosteroid cream or ointment

The judicious use of an appropriate topical steroid is a safe and essential part of treatment. Creams are white and not very oily or greasy once applied. Ointments are like Vaseline and tend to feel somewhat oily or greasy for a while after they are applied. Ointments are reserved for more resistant areas where the skin is thick and dry. Topical corticosteroids should be applied once to twice daily specifically to the areas of inflammation, that is the areas that are red, pink, and itchy. One of the applications should be applied immediately after the evening bath, while the child's skin is still wet. The steroid should always be applied to the skin first and the emollient moisturizer applied after to all of the skin. Never apply the moisturizer just before the steroid. Topical corticosteroids are classified by their

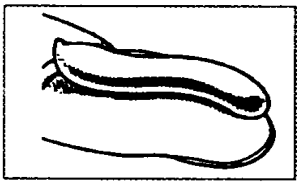
level of potency. The use of a relatively low potency topical steroid, such as 1% hydrocortisone is usually sufficient for most children. Occasionally, a medium potency steroid such as triamcinolone may be required. Nothing more potent than 1% hydrocortisone cream should be applied to sensitive areas such as the face or genitals, since sustained use of higher potency topical corticosteroids can cause thinning of the skin with permanent cosmetic changes. Topical corticosteroids should be stopped in areas that become clear. In general, it is best to avoid sustained use of topical corticosteroids for periods longer than 2 weeks at a time, although resumption is likely to be needed when inflamed areas return. The following is a guide to the amount of cream of ointment to be applied:

Antibiotics

- The correct amount is measured in "Fingertip Units" (FTUs): It's easy, it saves time — and it ensures an accurate application of medication.

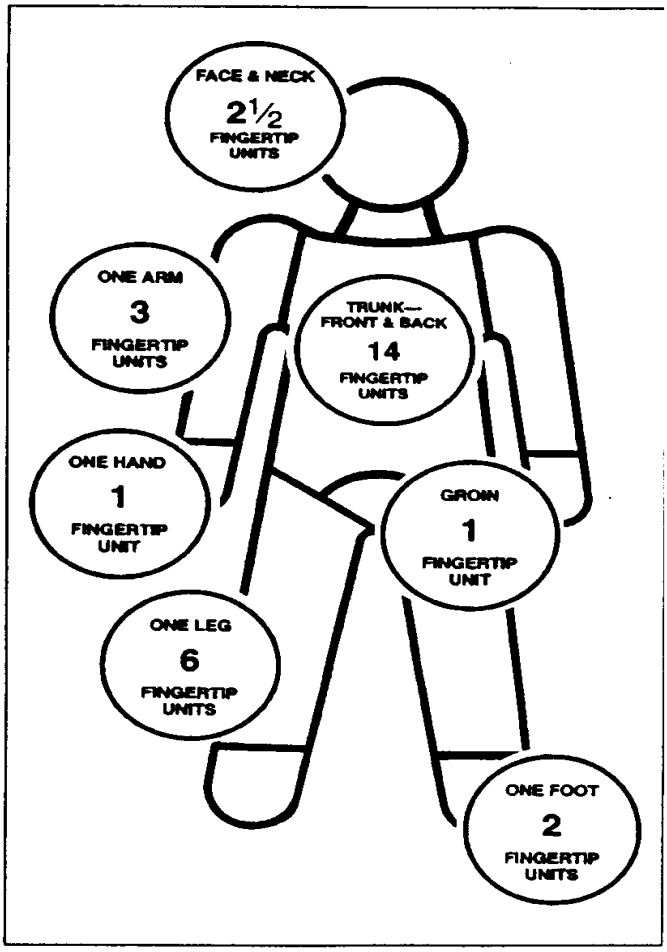
HERE'S HOW IT WORKS:

1. Open the tube of medication.
2. Extend your index finger facing up.
3. Squeeze out a line of medication from the tip of your finger to the first skin crease. This is one Fingertip Unit (see below).



4. Apply the medication to the affected area.

The figure on the right shows the number of FTUs required for different areas of the body.



The skin of children with atopic eczema is particularly prone to a common type of skin infection called impetigo. The bacteria that causes this is Staphylococcus aureus. Whenever crusting or oozing is observed, infection should be suspected and consideration needs to be given for an antibiotic such as cephalexin (Keflex) or dicloxacillin which are effective for treating Staphylococcus aureus. Other much less common types of infection that require treatment are Herpes simplex *(the virus that causes cold sores)*. Consult your physician for any change in the character of the eczematous areas or any generalized spreading or increased severity.

Antihistamines

Although classical antihistamines such as diphenhydramine (Benadryl) and hydroxyzine (Atarax or Vistaril) have frequently been prescribed for atopic eczema, studies have not shown that they relieve itching in children with atopic eczema. While antihistamines relieve itching from hives, which are caused by histamine release, the cause of the itching from atopic eczema is quite different from that of hives and involves mechanisms other than histamine. Since the classical antihistamines can cause some drowsiness, use of these at bedtime for short period may be useful to help the child sleep when they are itchy, but the sedative effects of these antihistamines do not persist with continued usage. There is no indication for the newer generation of antihistamines such as Claritin, Allegra, or Zyrtec since they provide little or no sedation.

Protopic (Tacrolimus)

This is the newest medication for atopic eczema. It is in a new class of drugs called "topical immunomodulators." It currently is indicated only for atopic eczema that does not respond to conventional therapy. It is not a replacement for skin care but may provide an alternative to topical corticosteroids when those are not effective or require excessive use.

TREATING ACUTE FLARE-UPS OF ATOPIC DERMATITIS WITH WET DRESSINGS

The following 6 steps for application of wet dressings can be used to provide relief of the severe itching and redness from acute flare-ups:

1) Apply the steroid cream to the affected areas of your child's skin.
2) Take one pair of child's sleepers and soak it in warm water.
3) Wring out the sleepers until only very slightly damp.

4) Put the damp sleepers on your child and cover with a pair of dry sleepers. Do NOT cover with plastic. The dampness MUST evaporate.
5) Make certain the room is warm enough.
6) Your child may complain at first, but be firm.
7) After the final wet dressing, apply emollient to the still moist skin to seal the water in the skin before it evaporates.

Wet dressings work through several means. The steady evaporation of water results in constant stimulation of temperature-dependent sensory nerve endings in the skin. This constant cooling sensation prevents itch sensations. The wet dressings restore humidity to the dry skin surface and enhance the effect of the steroid ointment. Your child will have less access to their skin, and damage from scratching or rubbing can be avoided. Wet dressings can be used continuously for 24 or 72 hours for severe flares or can be used just nightly for one or 2 nights or up to 5 to 10 nights if necessary to clear up badly eczematous skin.

COMPLICATIONS OF ATOPIC ECZEMA

In addition to infections with Staphylococcus aureus and rarely with Herpes simplex *(the cold sore virus)*, children with atopic eczema are also susceptible to common warts and *molluscum contagiosum*. *Molluscum ontagiosum* are seen as numerous small white bumps that persist for up to 6 months to a year, and sometimes even longer. They eventually do disappear, with or without treatment.

Children with eczema are also prone to have food allergies causing either anaphylaxis in some cases or more subtle reactions that worsen the eczema. Allergies to environmental factors such as animal dander and dust mite can also worsen eczema in some children. Many children with atopic eczema go on to have inhalant allergy to airborne substances such as pollens and mold spores in addition to animal dander and dust mite that results in allergic rhinitis, conjunctivitis, and asthma.

COMMON ADDITIONAL QUESTIONS

Is it better to breast feed?

Yes, if possible. Although there is no evidence that breast feeding will prevent your child developing eczema, breast feeding does seem to have a protective effect in relation to severity during the early months of life and should therefore be encouraged. However, allergenic food substances can come through in Mother's

milk, so breast feeding does not completely protect the infant from exposure to allergens, and some children will have their eczema worsened if they have allergic antibody to milk, egg, or peanut allergenic substances coming through their mother's milk. Allergy tests in the infant can identify if that is a risk factor.

Should my child be on a diet?
Children with atopic eczema should ***not*** automatically be put on a special diet. Many parents are concerned that eczema is caused by something the child is eating. While some children will have their eczema worsened by allergic reactions to foods, this should be assessed by allergy testing and a medically supervised food challenge if suspected. **Routine** exclusion diets and formula changes are usually not helpful.

Eczema in the sun
Eczema usually improves in the sun, especially on vacation. It is important that children with eczema "keep cool" in the hot weather and wear loose cotton clothes. Your child with eczema may develop heat rash easily if the skin is overheated. It is advisable to protect the skin from burning, using a suitable unscented sun-screen product. It is sometimes helpful for the child to wear a loose wet T-shirt in hot weather to cool down the skin and relieve the itching.

Swimming
Swimming in the sea is excellent for eczema. In a pool, the chlorine may irritate the skin. In an attempt to prevent this, apply a thick moisturizer, such as Vaseline beforehand, and afterwards soak in a bath with an oily bath additive.
Taking babies with severe eczema into a swimming pool is not a good idea. Children over 4 years should be actively encouraged to learn to swim and participate in all sporting activities.

Immunizations
Your baby should receive **all** the routine immunizations, like any other baby. There is no cause for concern. In children with eczema in whom there is a history of egg allergy, the **MMR** and measles vaccines are safe.

What things make eczema worse?
Eczema is influenced by many environmental factors which are important to take into account in the day to day management of eczema. These factors are problems when they directly contact the skin surface. Aggravating factors include:

- **synthetic or woolen fabrics** - Children should be dressed in cotton or as high a percentage of cotton as possible.

- **biological detergents or fabric conditioners** - Use non-biological products.

- **irritant foods and drooling** - Foods such as citrus fruits and tomatoes can cause eczema around the mouth. This is often made worse by lip-licking and dribbling. It is helpful to apply a protective barrier of Vaseline around the mouth 2-3 times daily and prior to meals. The infant who is drooling often has chapped skin around the mouth, on the chest, or on the hands. Pat dry with a soft cloth and use Vaseline or other moisturizers on the areas.

- **cigarette smoke** - In an enclosed room, fumes will irritate the skin. It is best to ban smoking within the home.

Other practical advice
School can present problems and it is important to work closely with the teacher. It is best if the child is seated in the center of the class, away from the door, windows, and radiators. They should take their own special soap and moisturizing cream to school. Most children will apply their own creams at break and lunchtime, but this must be supervised. If properly informed, most schools will cooperate and help in this situation. It is important that children do not miss school because of their eczema.

What is the risk of a next child having eczema?
If you have one affected child, the risk of your next child having atopic eczema is about 25%. If both parents are affected the risk rises to about 40%. It is important to remember that the severity of eczema can vary within the same family, so that even if the next child is affected, it may well be much less of a problem.

Are alternative or complementary treatments helpful?
There are no scientific studies which support claims that homeopathy, allergy shots, Chinese herbal medicines, acupuncture, spinal adjustments, or therapeutic touch improve eczema. Eczema waxes and wanes, and there are times when some things seem to help one time but not the next time. Some parents seek alternative medicines out of frustration, but the most reliable success has been when there is focus on treating the sensitive skin.