INFORMATION ON ECZEMA

Eczema is a common chronic skin condition that affects about 15% of the population. In most individuals it starts before age five. The most common complaint is dry, scaly skin that can occur all over the body. In very young children it commonly starts on the face and neck but can occur all over the body. In older children and adults a common location is on the flexural areas of the elbows and knees. The appearance can be variable and is modified by scratching. The skin can be thickened with increased creasing often evident on the face or with fissures (or cracks) in the skin especially on the hands and feet. Hair follicles can become blocked causing little bumps or papules on the skin. Eczema in any location can become infected with pus formation and crusting. Chronic eczema in any location can be associated with increased pigmentation of the skin especially in people of darker complexion; many people are particularly bothered by this on the face.

WHAT CAUSES ECZEMA? This is a complicated question and all of the answers are not in yet. A genetic component has long been recognized. People with eczema have an increased frequency of other diseases such as asthma, nasal allergy and food allergy. All of these conditions tend to cluster in families. Specific genetic defects are starting to be identified including mutations in genes that code for specific proteins such as filaggrin. Some of these proteins are important in maintaining a normal protective skin barrier.

WHAT IS THE NATURAL HISTORY OF ECZEMA? Eighty-five percent of eczema starts under age 5. Up to 40% of individuals with childhood eczema will clear completely by adulthood. There is great fluctuation in severity over time in individuals and the cause for this is often hard to determine.

HOW IS THE DIAGNOSIS OF ECZEMA MADE? There are no specific blood tests available. Skin biopsies are seldom helpful except when a very unusual appearance makes it necessary to rule out other skin conditions. The diagnosis depends on the symptoms and appearance over time.

SOME AGGRAVATING FACTORS AND HOW THEY ARE MITIGATED: There are many things that aggravate eczema and can keep it active. Treatment is directed toward mitigating these factors.

1. Dryness of the skin. Avoid hot, dry environments or excessive bathing or showering with hot water and detergent soaps. Maintain skin hydration. The applicaton of non-scented products that have a low water content are useful because they do not evaporate but enhance the barrier function of the skin. Examples of these are thick creams (such as Vanicream, Eucerin, Cetaphil, Nutraderm, etc.) or ointments (such as petrolatum jelly, Aquaphor, etc). These products should always be applied after a tepid bath or shower in the morning.

2. Exposure to irritants. Avoid scented skin products or soaps. Also keep strong chemicals or cleaning products from contact with the skin.

3. Scratching can break the skin barrier and lead to infection and penetration of allergens and irritants. This leads to a vicious cycle that keeps the eczema active. The use of antihistamines is useful here. Non-sedating antihistamines can be used during the day (loratadine or Claritin, fexofenadine or Allegra). Cetirizine or Zyrtec is mildly sedating in a minority and is much more effective; it can be used during the day if the other antihistamines are not effective. To control nighttime scratching a more potent and sedating antihistamine can be used (hydroxazine or Atarax, cyproheptadine or Periactin). Diphenhydramine or Benadryl can also be tried but it has a shorter half life in the blood and may wear off too soon. Doxepin which is an antidepressant is also a powerful antihistamine and can be used if other drugs fail.

4. Stress can increase the amount of scratching. However eczema also causes stress!

5. Exposure to allergens on the skin to which a person is sensitive. Dust mite and animal danders have been particularly implicated here. Skin testing or blood testing can be done to detect sensitivity to environmental allergens or food. A positive test does not always mean that that substance is causing the eczema especially if the tests are mildly positive. Your physician's judgment here is important.

6. Food allergy is often a factor in children under age 5. Food as a major trigger for eczema is less common in adults. Ingestion of a food to which a person is sensitive usually will often aggravate eczema within 2-3 hours. A positive skin test to a food or environmental allergen does not always mean that this is causing or aggravating the eczema especially if the skin test reaction is not intense.

7. Contact allergy to metals or a component of cosmetics can aggravate eczema but usually at the site of contact. Patch testing is sometimes done to evaluate contact sensitivity. In the presence of active eczema the patch test is sometimes very difficult to interpret and can be non-specifically positive.

8. Infections of the skin.

a. **Bacterial infection** can be treated with various antibiotics. Staph is frequently the organism involved; resistant Staph is sometimes difficult to treat but less common in non-hospitalized individuals.

b. **Herpes simplex virus** can infect eczema and cause a very severe reaction that requires the use of anti-viral drugs. This is unusual and requires an examination to make the diagnosis.

DRUGS THAT CONTROL INFLAMMATION:

1. Topical corticosteroids are a mainstay in the treatment of eczema. They vary greatly in potency and it is a good principle that the mildest one that is effective should be used. Long term side effects include thinning of the skin and the effects of absorption into the body which can be a factor if the more potent topical corticosteroids are applied to large surface areas of the skin for a long time. Your physician will need to guide you as to when these risks become significant. Dozens of topical creams are available some examples are listed below with an increasing potency rating of I to VII (ointments tend to penetrate the skin more and have a higher potency rating):

I - hydrocortisone cream, lotion and ointment at 1.0 to 2.5% (Hytone, Pramasone)

II - desonide 0.05% cream or lotion (DesOwen), triamcinolone 0.01% lotion or cream

III - triamcinolone cream 0.1%, fluocinolone 0.025% cream (Synalar), betamethasone valerate 0.1%, hydrocortisone valerate cream 0.2% (Wescort), desonide ointment 0.05% (DesOwen)
IV - triamcinolone ointment 0.1%, flurandrenolide 0.05% ointment (Cordran), amcinonide ointment 0.1% (Cyclocort), mometasone cream 0.1% (Elocon)
V - triamcinolone cream 0.5%, mometasone oint 0.1% (Elocon), betamethasone dipropionate cream 0.05% (Diprasone), smcinonide lotion or cream 0.1% (Cyclocort)
VI - fluocinonide cream, ointment or gel 0.05% (Lidex), mometasone ointment 0.1% (Elocon), halocinonide cream, ointment or solution 0.1% (Halog)
VII - clobetasol 0.05% cream, ointment, gel (Temovate) or foam (Olux), halogetasol cream or ointment 0.05% (Ultravate), augmented betamethasone lotion 0.05%, (Diprolene)
[Note: The amount of penetration into the skin varies in location and more potent topical corticosteroids need to be applied where the penetration is less. Absorption rates are as follows: Sole of foot- 0.14%, Palm- 0.83%, Forearm- 1%, forehead- 6%, lower face and around the eyes- 13%, genitalia- 13%]
2. Oral corticosteroids such as prednisone are useful for a week or two when eczema has become severe.
3. Topical calcineurin inhibitors (tacrolimus and pimecrolimus creams) do not cause thinning of the skin and may be particularly useful on the face. There are some safety concerns with these drugs.

OTHER TREATMENTS OPTIONS:
1.) Ultraviolet light with PUVA
2.) Immunosuppressives such as cyclosporin and methotrexate. These measures are used in very severe cases unresponsive to the usual kinds of treatment but less often utilized now due to the availability of newer treatment options.
3.) Dupixent which is a new FDA approved treatment for atopic dermatitis not well managed with prescription therapies. Dupixent is a monoclonal antibody which targets the interleukin-4 (IL-4) receptor alpha subunit (IL-4Rα) and blocks the intercellular signalling of IL-4 and IL-13. In simpler terms, Dupixent helps to reduce inflammation in your body, which tends to be overactive in patients with eczema resulting in flare-ups. By controlling this inflammation, Dupixent helps to reduce flares.
4.) Xolair, which is still in the clinical trial stage. Xolair targets IgE, which is high in many patients with eczema. Xolair was originally made to treat patients with asthma, who also have elevated IgE levels, but not typically as high as patients with eczema. Potential therapeutic benefits might be seen in selected patients with eczema.