Atopic Dermatitis, Eczema

Diagnosis/Condition: Due to food ingestion/sensitivity
Due to food in contact with skin
Due to drugs and medicines applied to skin

Discipline: ND
ICD-9 Codes: 691.8, 693.1, 692.5, 692.3
ICD-10 Codes: L20.0, L20.81, L20.82, L20.84, L27.2, L25.4, L25.1

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Eczema is a general term for many types of dermatitis. Atopic dermatitis is the most common of the many types of eczema, especially in the pediatric population. "Atopic" refers to diseases that are hereditary, tend to run in families, and often occur together. Atopic dermatitis (AD) is a pruritic disease of unknown origin that usually starts in early infancy and is typified by pruritus, eczematous lesions, xerosis (dry skin), and lichenification on the skin (thickening of the skin and increase in skin markings) which is distributed in age-specific patterns. AD is associated with other atopic diseases (e.g., asthma, allergic rhinitis, urticaria, acute allergic reactions to foods in many patients, with IgE sensitization as one potential causal mechanism. Those with AD are also at an increased risk of developing a latex allergy. The prevalence rate in the US is 10-20% in children and up to 3% in adults. The incidence of AD appears to be increasing worldwide.

Affected individuals must cope with a significant psychosocial burden, in addition to dealing with the medical aspects of the disease. Fetal exposure to maternal stress may also be a contributing factor by enhancing the expression of asthma and atopic phenotypes in children. Because this is primarily a disease of childhood, family members, especially parents, are also affected by the condition. Individuals and family members are burdened with time-consuming treatment regimens for the disease, as well as dietary and household changes. AD has been associated with parental sleep disturbances, anxiety levels, and increased maternal depression. The cost to society is significant, with estimates ranging from less than $100 to more than $2000 per patient per year. It is estimated that the direct cost of atopic dermatitis in the United States alone is almost $1 billion per year. Health care provider visits for contact dermatitis and other eczemas are over 7 million per year.

Subjective Findings and History
- Acute or chronic skin inflammation with excessive pruritis (excoriations and crusting may develop)
- Often characterized by periods of acute flare up and remission
- Episodes generally more severe in first five years of life (early age of onset)
- Intermittent acute “wet” inflamed eruptions and chronic dry itching eruptions
- Etiologic factors: heredity, other atopic conditions: asthma, otitis media, allergic rhinitis in first degree relative

Differential Diagnoses

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Atopic Dermatitis Clinical Pathway
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- Scabies
- Allergic contact dermatitis
- Lichen simplex chronicus
- Mycosis fungoides
- Nummular dermatitis
- Relative zinc deficiency
- Tinea corporis
- Seborrheic dermatitis (SD)
- Mollusca contagiosa with dermatitis
- Cutaneous lymphoma
- Ichthyosis, psoriasis
- Immunodeficiency
- Other primary disease entities

**Objective Findings**
- Inflamed, irritated wet lesions, commonly on flexor surfaces, hands, neck, arms, legs and torso. Lichenification and flexural involvement, xerosis, erythema, deposition of amyloid
- Common around the mouth and anus in infants
- Chronic appearance more commonly dry, lichenified, cracked and inflamed
- Appearance can be anywhere in adults, but is most common on the hands

**Labs**
- No chemical marker for the diagnosis of atopic dermatitis is known, but testing to rule out other immunodeficiencies may be helpful
- Biopsy shows an acute, subacute, or chronic dermatitis, but no specific findings are demonstrated
- Peripheral blood for elevated eosinophils, basophils
- Swab of infected skin may help with the isolation of a specific organism and antibiotic sensitivity.
- Possible allergy and sensitivity testing often indicates triggers such as food and environmental agents
- Elevated IgE and decreased IgA common
- Erythrocyte sedimentation rate (ESR)
- A platelet count for thrombocytopenia helps exclude Wiskott-Aldrich syndrome
- Scraping to exclude tinea corporis may be helpful

**Assessment**
- Laboratory tests if indicated (as above)
- Physical exam (pulmonary, EENT, cardiac, GI, derm)
- Identification of the triggers through testing, or avoidance and reintroduction

**Plan**

*Treatment goals*
- Identification and avoidance of triggers
- Reduction of pruritis and discomfort
- Prevention of secondary infection
• Develop proper skin care habits, bathing and lubricants/emoillents to seal in moisture and allow water to be absorbed through the stratum corneum

Natural Medicine
• Rotation diets (especially in childhood)14, avoidance diets15, vegetarian diet16; assess overall diet with elimination and challenge and/or food sensitivity testing. Food diversification and avoidance diets should be done with supervision to avoid nutritional deficiencies.
• Exclusion of cow’s milk and eggs17,18
• Maternal dietary exclusions in pregnancy and lactation.19,20 Maternal consumption of fatty acids during pregnancy and lactation.21,22 Maternal intake of antioxidant vitamins, zinc, and selenium.23
• Anti-inflammatory nutritional supplements and nutritional support for the GI tract; antihistamine effects anti-oxidant effects.
• Probiotics24,25,26,27,28,29
• Botanicals: anti-inflammatory, liver support, GI support, anti-infective, skin tonics, anti-histamine and anti-allergics herbs
  - Mahonia aquifolium ointment,30 oral Konjac ceramide,31 topical St John’s Wort,32 topical Persimmon leaf.33,34
• Topical and oral γ-linolenic acid (GLA)35, evening primrose (EPO)36 and borage oil have mixed results.37,38,39,40,41,42,43,44,45,46 Therapeutic doses of EPO were 500 g/day for 8 weeks.47
• Constitutional homeopathic prescription

Physical Therapy
• Hydrotherapy. Avoid hot baths. Lukewarm baths followed by the application of a moisturizer to avoid moisture evaporation. Baths can be taken with added oils.
• Local topical poultices to decrease irritation
• Castor oil packs
• Phototherapy (ultraviolet light (ultraviolet B, narrow-band ultraviolet B, and high-intensity ultraviolet A)48. Avoid long-term use.

Relaxation Techniques and Behavioral Modification
• Improved skin hygiene
• Autogenic training49
• Hypnotherapy50
• Behavioral therapy48
• Parental training51
• Allergen and dust mite avoidance48
• Clothing should be soft next to the skin (e.g. cotton) and washed in a mild detergent with no bleach or fabric softener.
• Cool temperatures to reduce sweating which can exacerbate irritation and itch. A humidifier (cool mist) prevents excess skin drying.

Pharmaceuticals
• Topical corticosteroids
• Emollient adjunct,52 wet wrap dressing adjunct53
• Topical calcineurin inhibitors (for patients over 2 y.o.) - Tacrolimus54
• Topical antibiotic treatment if secondary infection

*Traditional Chinese Medicine (TCM)*
• Botanicals and Chinese herbs\(^5\) (Potentilla chinensis, Tribulus terrestris, Rehmannia glutinosa, Lophatherum gracile, Clematis armandii, Ledebouriella saseloides, Dictamnus dasycarpus, Paeonia lactiflora, Schizonepeta tenuifolia, and Glycyrrhiza glabrae.)\(^56\)\(^57\)\(^58\)
• Radix angelicae pubescentis combined with UV-A radiation\(^59\)\(^60\)

**Length of Treatment**
• Up to 4 weeks to achieve sustained improvement and longer for chronic cases

**Criteria for Referral or Re-evaluation**
• Ongoing acute symptoms without resolution after 4 weeks
• Secondary infection not responding to treatment
• Chronic - failure to resolve or repeated acute outbreaks over a period of several months

Provider Resources


**Resources for Patients**


Created by The Nemours Foundation's Center for Children's Health Media, the award-winning Kids Health provides families with accurate, up-to-date, and jargon-free health information they can use. http://www.kidshealth.org/parent/infections/skin/eczema_atopic_dermatitis.html

**Clinical Pathway Feedback**
CHP desires to keep our clinical pathways customarily updated. If you wish to provide additional input, please use the e-mail address listed below and identify which clinical pathway you are referencing. Thank you for taking the time to give us your comments.

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