

Skin Disorders

Atopic Dermatitis *(most common type of eczema)*

- Chronic inflammatory skin condition
- **Characteristics:** pruritic skin, erythema, edema, weeping vesicles, thickened skin
- **Epidemiology:** commonly in urban areas, dry climates, begins before 5 y/o, family history of dermatitis
- **Triad:** atopic dermatitis + allergic rhinitis + asthma
- **Etiology:** genetic + environmental factors but unknown true cause
 - ↓Cytokines, ↑eosinophils, ↑IgE
- **Stages**

Infancy	<ul style="list-style-type: none">• Begins at 6-12 weeks old• Locations: cheeks, chin, knees & elbows (when mobile)• Gets better by 18 months old
Childhood	<ul style="list-style-type: none">• Locations: behind knees, inside elbows, sides of neck, wrists, ankles, hands• Rash → papules → hard & scaly papules• Puberty usually causes flare
Adulthood	<ul style="list-style-type: none">• Similar pattern as in childhood• Locations: hands & feet may be dry, itchy, red, cracked• Affects sleep patterns & work performance

- **Signs & symptoms:** atopic pleat, cheilitis, hyperlinear palms, hyperpigmented eyelids, ichthyosis, keratosis pilaris, lichenification, papules, urticaria
- **Common irritants:** wool & synthetic fibers, soaps, detergents, perfumes, cosmetics, chlorine, mineral oil, solvents, dust, sand, cigarette smoke
- **Common allergens:** dust mites, pollens, molds, animal dander, food allergens (eggs, milk, nuts, whey, soy, fish)
- **Nonpharmacological treatment**
 - Proper bathing: qd, no soap, fragrance-free soap, avoid washcloths/loofas, air dry or gently pat dry, moisturizer immediately after, emollient bid
 - Lifestyle: short & clean fingernails, cotton sheets & pj's, avoid harsh laundry detergents
 - Moisturizers: apply prn ≥bid; creams > ointments > lotions
- **Pharmacological treatment**
 - Hydrocortisone 0.5-1%: short term use, bid-qid, best for chronic non-oozing dermatoses, relieves itching
 - Antihistamines (Benadryl): breaks itch-scratch cycle, oral or topical, sedation may be problem
 - Topical immunomodulators: Rx only, reduces severity & extent of symptoms, but risk of malignancy
 - Pimecrolimus: mild to moderate
 - Tacrolimus: moderate to severe
 - Tar preparations: ↓itching, ↓inflammation, in combo with topical steroids, don't apply to acute oozing lesions, odorous, stains clothing
 - UV light: UVA (acute) ± UVB (adjunctive)

Contact Dermatitis

- Skin inflammation from direct contact with irritating substance or allergen
- **Irritant contact dermatitis:** most common type
 - Exposure to irritant → mechanical or chemical trauma → direct damage to tissues
 - Irritants: fiberglass, cacti, tobacco, garlic, SLS, benzoyl peroxide, adhesive bandages, lip licking (saliva)
- **Allergic contact dermatitis:** 2nd most common
 - Sensitization phase: chemical contact → binds to skin → produces allergen → sensitization
 - Elicitation phase: upon re-exposure → T-cell aggregation → immune reaction → symptoms
 - Offending agents: poison ivy, poison sumac, poison oak, nickel

- **Epidemiology:** fair skin, red hair, advanced age, atopy, pre-existing dermatitis, physical skin damage, ↑hydration, occlusion
- **Common allergens:** poison ivy/oak/sumac, nickel, metals, medications (topical antibiotics or anesthetics), rubber, cosmetics, fabrics, detergents, solvents, adhesives, fragrances, perfumes
- **Signs & symptoms:** itching, erythema, inflammation, tenderness, localized skin swelling, warmth, lesion, rash
- **Diagnosis:** skin appearance, history of exposure, patch testing (gold standard) over 3 office visits
- **Nonpharmacological treatment:** washing with water to remove irritant, avoid exposure, leave area alone (not all cases), wet dressings
- **Pharmacological treatment:** topical corticosteroids, astringents, skin protectants
 - **Poison ivy:** calamine + pramoxine, pramoxine + zinc, zinc acetate, hydrocortisone, zinc + benzyl alcohol + menthol + camphor, colloidal oatmeal, aluminum acetate, aluminum sulfate + calcium acetate
- **Prevention:** avoid exposure, protective gloves, barriers, wash skin thoroughly if contact
- **Refer to MD:** severe pruritus, large affected area, underlying medical conditions, OTC w/o relief, >7 days, worsening rash, near eyes/ears/nose

Xerosis (dry skin, "winter itch")

- **Epidemiology:** ↑risk in arid, windy, or cold environments; most common cause of pruritus
- **Etiology**
 - Conditions: hypothyroidism, dehydration, malnutrition
 - Lifestyle: prolonged detergent use, hot water when bathing, excessive soap use
 - Other: low relative humidity, high wind velocity physical damage to stratum corneum
- **Pathophysiology:** ↓water content in stratum corneum, disruption of keratinization
- **Signs & symptoms:** roughness, scaling, flexibility loss, fissures, inflammation, pruritus
- **Nonpharmacological treatment:**
 - Modify environment: ↑room humidity
 - Modify bathing habits: tepid tub baths 2-3x/week with bath oil for 3-5 mins then pat dry & apply lotion
 - Bath oils: mineral oil/vegetable oil + surfactant, mineral oil better adsorbed, more effective as wet compresses than diluted in tub, can combine with colloidal oatmeal
 - Lotion: apply ≥3 more times throughout day
 - Avoid: caffeine, spices, alcohol
 - Cleansers: mildly foams + leaves thin lipid layer (unscented Dove, glycerin soaps, Cetaphil, pHisoDerm)
 - Emollients/moisturizers: lubricants (creams/lotions), moisturizers, repair/replenishing products
- **Pharmacological treatment**
 - Humectants (5%): glycerin, propylene glycol, phospholipids
 - Urea (10-30%): lotions/creams (removes scales), emollient ointments (rehydration)
 - Lactic acid/alpha hydroxyl (2-5%): stabilizes & hydrates
 - Other uses: acne, melasma, photoaging
 - Allantoin (0.5-2%): keratolytic, less effective than urea
 - Astringents: aluminum acetate, witch hazel
 - Retards oozing, discharge, or bleeding
 - Cleanses skin of exudates, crusts, debris
 - Compresses: cools & dries skin
 - Anti-inflammatory & anti-pruritic
 - Hydrocortisone (0.5-1%): bid-qid, avoid aloe-containing products
 - Benadryl: topical or oral

Product selection

- *If it's wet → dry it:* solutions, gels, creams
- *If it's dry → wet it:* creams, lotions, ointments