# Psoriasis & Eczema: A Practical, Cost-Effective Approach

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## Learning Objectives

- Clinically *identify* psoriasis using typical skin, scalp and nail findings; *diagnose* eczema using history, clinical presentation, and diagnostic criteria.
- *Differentiate* psoriasis and eczema from similar skin disorders, and perform skin biopsy when appropriate.
- *Treat* psoriasis and eczema with topical treatments, systemic therapies, and other physical modalities using cost-effective, evidence-based guidelines.

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# Psoriasis

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## Psoriasis: Diagnosis

*- Requires recognition of characteristic skin, hair and nail findings*

Types:
- Plaque
- Scalp
- Inverse or flexural
- Guttate
- Palmoplantar (isolated, generalized)
- Erythrodermic – severe illness
- Pustular (localized, generalized) – rare
- Nail
- Psoriatic arthritis

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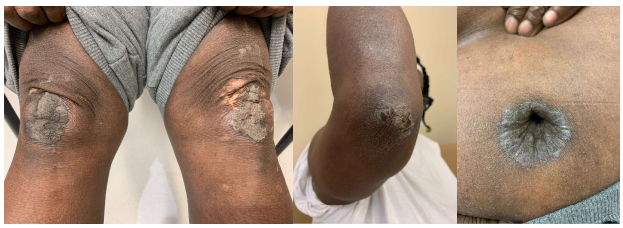
## Plaque Psoriasis



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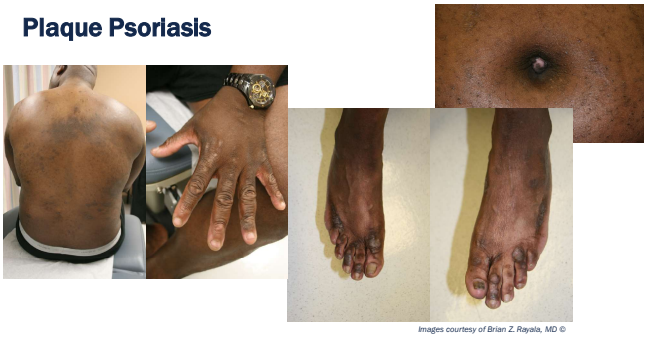
## Plaque Psoriasis



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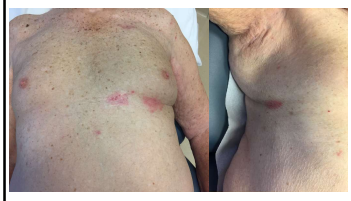
## Inverse or Flexural Psoriasis



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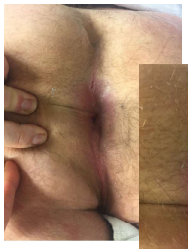
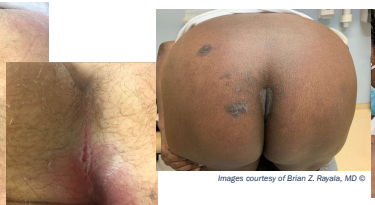
## Inverse or Flexural Psoriasis





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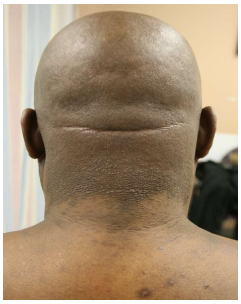
## Scalp Psoriasis



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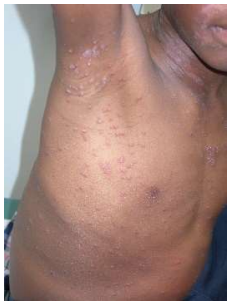
## Guttate Psoriasis



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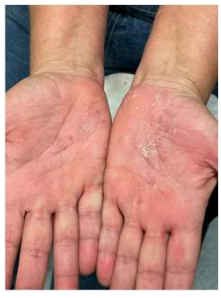
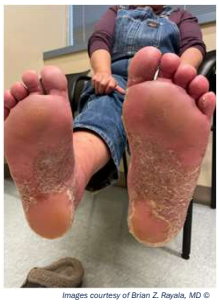
## Palmoplantar Psoriasis





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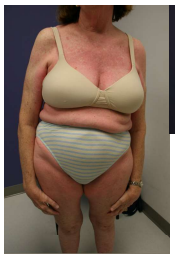
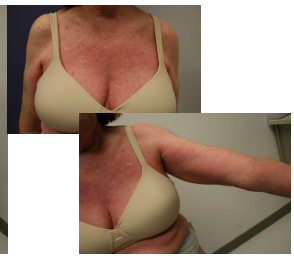
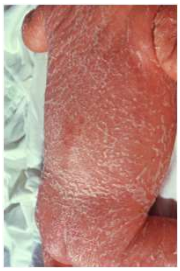
## Erythrodermic Psoriasis







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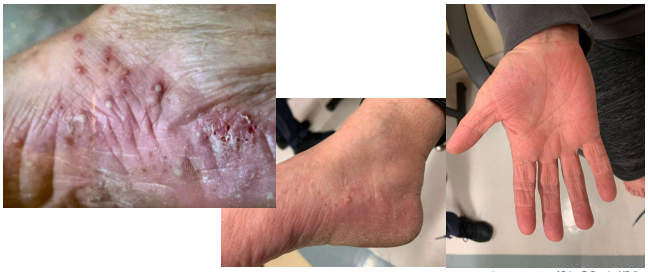
## Localized Pustular Psoriasis



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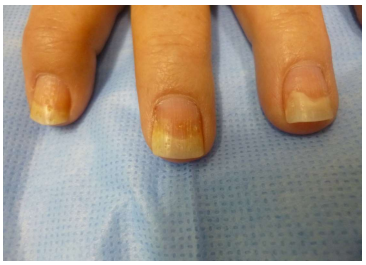
## Nail Psoriasis



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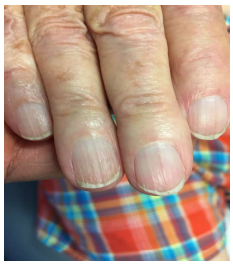

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## Child vs Adult Psoriasis

| Features | Child | Adult |
|---|---|---|
| Sore throat and skin trauma causing exacerbations | More common | Less common |
| New lesions triggered by emotional stress | More common | Less common |
| Drugs that commonly induce psoriasis | Antimalarials, withdrawal of corticosteroids | Beta-blockers, lithium |
| Distribution | Face, scalp, and flexural surfaces in children; diaper area in infants | Extensor surfaces, scalp |
| Lesions | Smaller, thinner, less scale | Larger, thicker, more scale |
| Pustular and erythrodermic variants | Less common | More common |

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## Differential Dx for Psoriasis

- Atopic dermatitis
- Contact dermatitis (allergic, irritant)
- Nummular dermatitis
- Lichen simplex chronicus
- Seborrheic dermatitis
- Lichen planus
- Tinea (dermatophytosis)
- Drug eruption
- Mycosis fungoides (CTCL)
- Secondary syphilis
- Pityriasis rosea
- Cutaneous lupus
- Cutaneous sarcoidosis

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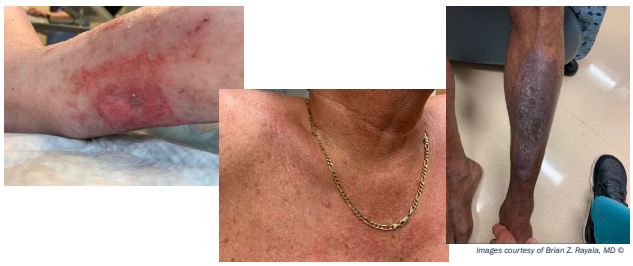
## Contact Dermatitis



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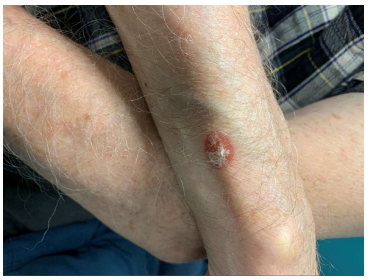
## Nummular Dermatitis



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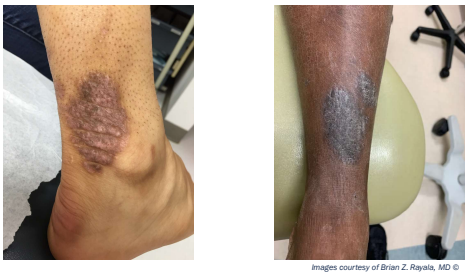
## Lichen Simplex Chronicus



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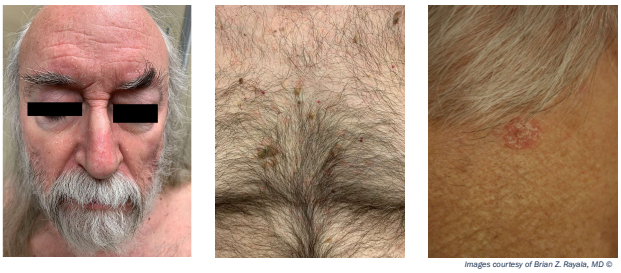
## Seborrheic Dermatitis



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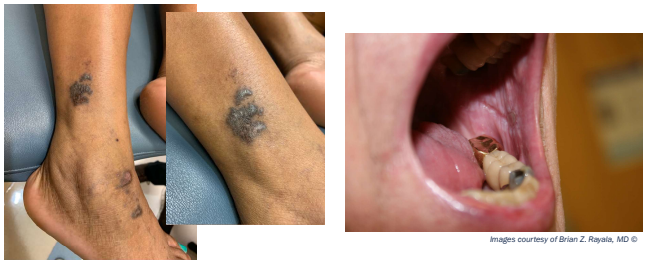
## Lichen Planus



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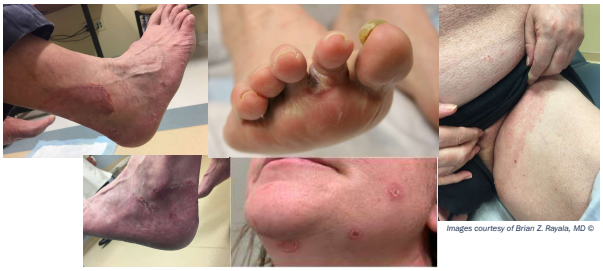
## Tinea (Dermatophytosis)



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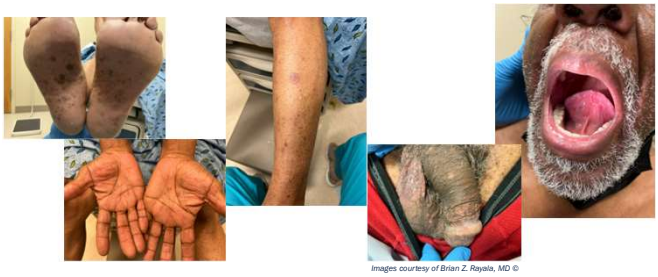
## Secondary Syphilis



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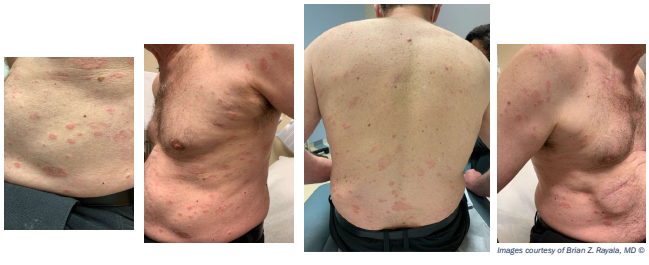
## Pityriasis Rosea



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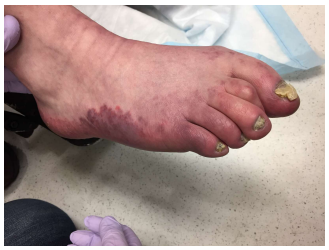
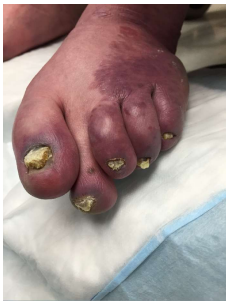
## Cutaneous Lupus





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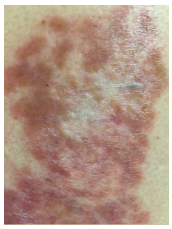
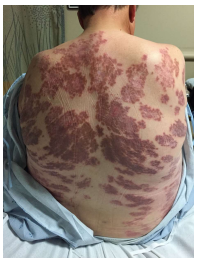
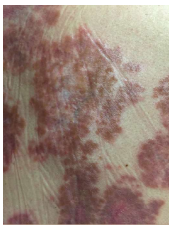
## Cutaneous Sarcoidosis







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## Evaluation and Management

- Consider biopsy if there is diagnostic uncertainty
- Assess severity
  - Body surface area (BSA) >10%, or Psoriasis Area and Severity Index (PASI) ≥ 10
  - Dermatology Life Quality Index (DLQI) > 10
  - Functional impairment
  - Presence of psoriatic arthritis (PsA)
- Identify comorbidities and evaluate triggers
- Explore prior treatments
- Perform detailed skin care history
- Evaluate
  - Social determinants of health (SDOH)
  - Barriers to therapeutic adherence
  - Financial challenges
- Consider availability of subspecialists for biologic therapy
- Discuss patient preferences
- Provide holistic care

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## Treatment of Mild-to-Moderate Psoriasis

***Mild (<3% BSA) to Moderate (3-10%)***: localized, PASI<10, DLQI≤10, no severe functional impairment or psychological distress, no PsA

- Topical therapies (BSA ≤ 20%, max 50-60g/wk TCS)
  - ***1st line***: monotherapy w/ **topical corticosteroids (TCS)**, or combined therapy with **vitamin D analogue + TCS (*SOR A*)**
    - Flares: Class 1- 5 TCS (shortest duration) – (***SOR A***)
    - Duration: 2-4 wks body, 3-12 wks scalp, <12 wks nail – (***SOR B/C***)
    - Maintenance: steroid-sparing topical agents (weekdays), TCS (weekends), adjunctive tx – (***SOR B***)
    - Caution: face, folds, genitals, forearms, pregnancy, children

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## TCS Classification

| WHO potency group | Classification | Topical Corticosteroids |
|---|---|---|
| Ultrahigh | Class 1 | Augmented betamethasone dipropionate 0.05%, **clobetasol propionate 0.05%**, fluocinonide 0.1%, halobetasol propionate 0.05% |
| High | Class 2 | Betamethasone dipropionate 0.05%, **fluocinonide 0.05%**, mometasone furoate 0.1%, **triamcinolone 0.5%** |
| | Class 3 | Betamethasone dipropionate 0.05%, betamethasone valerate 0.1%, **triamcinolone acetonide 0.1%**, fluticasone propionate 0.005% |
| Moderate (medium) | Class 4 | Betamethasone valerate 0.12%, fluocinolone acetonide 0.025%, hydrocortisone valerate 0.2%, mometasone furoate 0.1%, **triamcinolone acetonide 0.1%** |
| | Class 5 | **Fluocinolone acetonide 0.025% and 0.01%**, fluticasone propionate 0.05%, hydrocortisone butyrate 0.1%, hydrocortisone valerate 0.2%, **triamcinolone acetonide 0.025% and 0.01%** |
| Low | Class 6 | Betamethasone valerate 0.05%, **desonide 0.05%** |
| | Class 7 | **Hydrocortisone 0.5% - 2.5%** |

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## Topical Vitamin D Analogues (*SOR A*)

**Available in the U.S.**

- Calcipotriene (calcipotriol) – ointment, cream, solution
  - Maintenance: daily to twice daily
- Calcitriol – ointment (twice daily)
- Calcipotriene/betamethasone dipropionate – ointment, suspension
  - Duration: 4-8 weeks (daily)
  - *Side effects*: local irritation, edema, peeling
  - Caution: sensitive areas

**Not available in the U.S.**

- Tacalcitol
- Maxacalcitol

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## Treatment of Mild-to-Moderate Psoriasis

- *2nd line topical therapies*
  - **Topical calcineurin inhibitors (TCIs)** – (***SOR B***)
    - *Not* FDA-approved
    - **Tacrolimus 0.1% or pimecrolimus 0.1%**
    - Thinner skin (face, intertriginous areas)
    - Maintenance therapy (4-8 wks)
      - Long-term maintenance for inverse psoriasis
    - *Side effects*: burning, pruritus
  - **Topical retinoids** (***SOR B***)
    - **Tazarotene 0.05% and 0.1%**
    - Maintenance therapy (8-16 wks)
    - *Side effects*: local irritation, may increase sunburn risk
    - *Contraindication*: avoid in pregnancy

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## Treatment of Mild-to-Moderate Psoriasis

- *Adjunctive topical therapies*
  - **Emollients** (***SOR B***)
    - Helps reduce itching, desquamation, and prevent relapse
  - **Salicylic acid** (***SOR B***)
    - Duration: 8-16 wks
  - **Anthralin (dithranol)** (***SOR B***)
    - Duration: 8-12 wks
    - Short contact (2 hours/day) to minimize side effects (local irritation, staining)
  - **Coal tar** (***SOR A***)
    - *Side effects*: local irritation, folliculitis, contact dermatitis, phototoxicity
    - Precaution: stained clothes, odor, may increase sunburn risk

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## Treatment of Mild-to-Moderate Psoriasis

- ***Phototherapy (SOR B)***
  - **2013 Cochrane review** – very heterogenous evidence
  - Types:
    - **Narrow-band ultraviolet B (NB-UVB)** – 311-313 nm radiation wavelength
      - Convenient to use; *no need for photosensitizer*!
      - NB-UVB = selective BB-UVB for plaque psoriasis
      - NB-UVB + retinoid = PUVA + retinoid for plaque psoriasis & guttate psoriasis
      - Salt bath + UVB may be more effective than UVB alone for plaque psoriasis
      - NB-UVB and topical PUVA *not* effective for palmoplantar psoriasis
    - Broad-band ultraviolet B (BB-UVB)
      - Selective: 305-325 nm
      - Conventional: 280-320 nm
    - Psoralen ultraviolet A photochemotherapy (cream, oral or bath PUVA)

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## Treatment of Moderate-to-Severe Psoriasis

***Moderate (3-10% BSA) to Severe (>10%)***: severe localized, PASI≥10, DLQI>10, severe functional impairment or psychological distress, PsA present

- Topical therapies
- Phototherapy
- ***Systemic therapies***
- ***1st line***: methotrexate, cyclosporine (***SOR B***)
- ***2nd line***: biologics (***SOR A***)
  - TNF, IL-17A, IL-17RA, IL-23p19 inhibitors, IL-12/23p40,
  - ***Cochrane review 2023*** – best evidence for infliximab, bimekizumab, ixekizumab, and risankizumab (***SOR A***)
  - ***BAD 2020 guidelines*** – TNF or IL-17 antagonist for ***PsA*** (***SOR A***)

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## Therapeutic Considerations

- Use topical therapies as needed to control lesions.
- Consider systemic therapies to induce remission; reduce to lowest effective dose for maintenance.
- Minimal response criteria: ≥50% PASI or BSA, or 4-pt drop in DLQI, or resolution of low mood
- Change to alternative tx if no minimum response, subsequent loss of response, intolerance or contraindications.
- ***Avoid systemic steroids to treat psoriasis!***
- Dietary intervention and exercise may improve psoriasis severity and reduce BMI in obese psoriatic patients.

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## Therapeutic Considerations

- *Palmoplantar pustular psoriasis* – Vit D analogue (***SOR B***); secukinumab, guselkumab (***SOR A***)
- *Nail psoriasis* – infliximab, golimumab, adalimumab (***SOR B***)
  - Insufficient evidence for topical therapies (***SOR B***)
- *Acute guttate psoriasis* or *acute guttate flare of chronic psoriasis* – lack of evidence for topical and systemic therapies (***SOR B***)
- *Erythrodermic or generalized pustular psoriasis* – acitretin, methotrexate, cyclosporine (***SOR B***)

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## Clinical Resources

- 2021 and 2019 American Academy of Dermatology-National Psoriasis Foundation (AAD-NPF) Guidelines
  - https://pubmed.ncbi.nlm.nih.gov/32738429/
  - https://pubmed.ncbi.nlm.nih.gov/30772098/
- 2020 British Association of Dermatologists Guidelines
  - https://pubmed.ncbi.nlm.nih.gov/32189327/



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UNC SCHOOL OF MEDICINE

# Atopic Dermatitis (Eczema)

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## Atopic Dermatitis (Eczema)

**Diagnostic Criteria:**
- Hanifin and Rajka Criteria
- UK Working Party Criteria

**Hallmark:**
- ***Pruritus***
- Flexural distribution
- Personal or FH atopy
- Xerosis
- Early onset (<2yo)

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## Eczema

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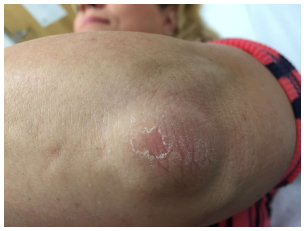
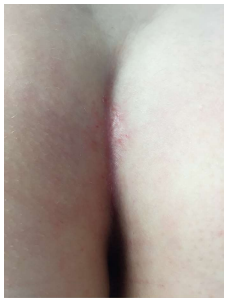
## Eczema





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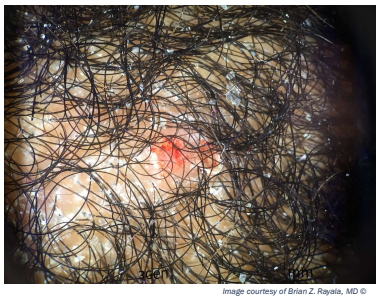
## Eczema



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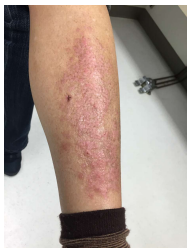
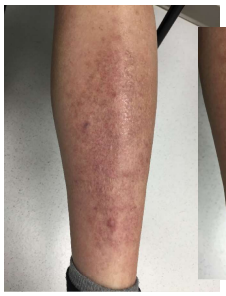
## Eczema





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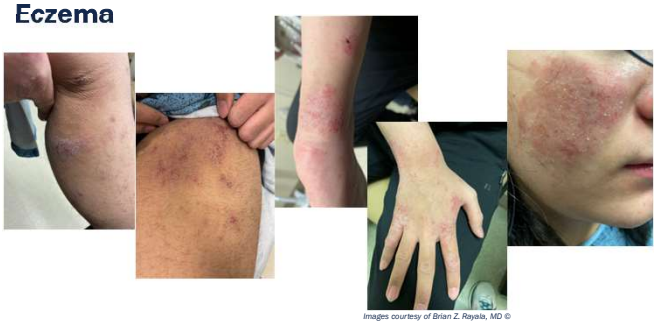
## Eczema



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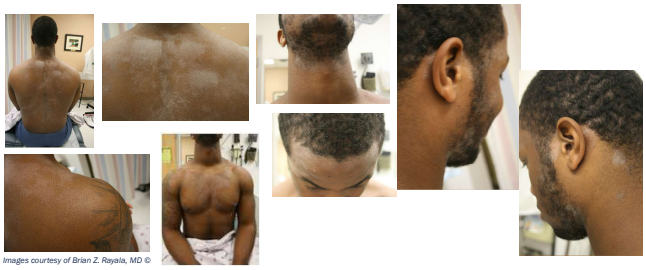
## Eczema



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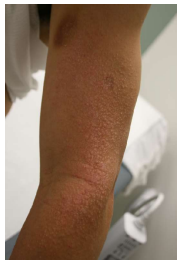
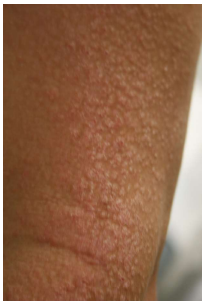
## Eczema





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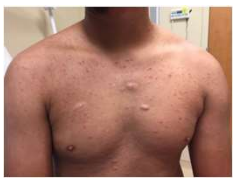
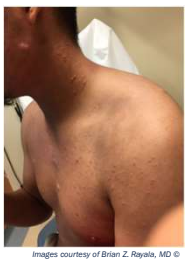
## Eczema





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## Management: Eczema (1st line)

- ***Emollients, TCS*** (***SOR A***)
  - Medium- to high-potency better than low-potency TCS for moderate to severe eczema
  - Once daily = twice daily use of high-potency TCS for flares
  - Weekend use of TCS (proactive therapy) better than no TCS or reactive therapy for prevention
- ***Topical Calcineurin Inhibitors (TCIs)*** - (***SOR A***)
  - TCIs for sensitive areas (eg, face, eyelids, anogenital, intertriginous) and for maintenance
    - Tacrolimus is as effective as medium- to high-potency TCS.
    - Tacrolimus is superior to pimecrolimus and low-potency TCS.

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## Management: Eczema (2nd line therapies)

- ***Topical crisaborole*** - twice daily for mild to moderate eczema in children (>3mos) and adults (***SOR B***)
- ***Phototherapy*** (NB-UVB) – (***SOR B***)
- ***Systemic therapies for moderate to severe eczema***:
  - Oral immunomodulatory drugs (eg, cyclosporine, methotrexate, azathioprine, mycophenolate mofetil, systemic corticosteroids) (***SOR B/C***)
  - ***Subcutaneous dupilumab*** (6yo and older) – (***SOR A***)
  - Oral baricitinib (JAK inhibitor) - not FDA-approved for eczema (***SOR B***)
  - Other immune checkpoint inhibitors (***SOR B/C***)

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## Management: Eczema

- ***Interventions with limited evidence (SOR B)***
  - Specific allergen immunotherapy
  - Egg-free diets for infants w/ egg-IgE positive antibodies
  - Educational and psychological interventions to help families manage eczema
- ***Interventions with insufficient evidence (SOR B)***
  - Oral H1 antihistamines for monotherapy or add-on therapy – *but may help with sleep short-term*
  - Leukotriene receptor antagonist (eg, montelukast)
  - Monotherapy w/ oral antibiotics
  - Dietary supplements
  - Chinese herbal medicine
  - House dust mite reduction and avoidance measures
- ***Ineffective interventions (SOR B)***
  - Oral evening primrose (*Oenothera biennis*) and borage (*Borago officinalis*) oil
  - Probiotics

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## Prevention: Eczema

- ***Interventions with limited or insufficient evidence (SOR B)***
  - Antigen avoidance (eg, cow's milk) by high-risk women during pregnancy and lactation – *may put mother & infant at risk for nutritional deficiencies*
  - Maternal prenatal or postpartum n-3 long chain polyunsaturated fatty acid (LCPUFA) supplementation
  - Supplementing infant feeds w/ polyunsaturated fatty acids
  - Adding prebiotics and probiotics to infant feeds
  - Infant formulas w/ hydrolyzed protein
  - Soy formula to prevent eczema in infants
- ***Ineffective interventions (SOR B)***
  - Skin care interventions in healthy infants

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## Practice Recommendations

- Treat mild to moderate or localized psoriasis with medium- to high-potency TCS or combined Vit D/TCS using shortest effective duration (***SOR A***). Consider steroid-sparing topical therapies during weekdays and TCS during weekends to prevent relapse (***SOR B***).
- Consider phototherapy (***SOR B***) for extensive psoriasis, and systemic therapies (eg, conventional or biologics) for moderate to severe psoriasis (***SOR A/B***).
- Treat mild to moderate eczema using TCS and emollients. Consider TCS during weekends to prevent relapse (***SOR A***). Consider topical tacrolimus for sensitive areas and for maintenance therapy (***SOR A***).
- Subcutaneous dupilumab is effective for moderate to severe eczema (***SOR A***).

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Any questions?

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