# Psoriasis

AND OTHER PAPULOSQUAMOUS ERUPTIONS

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# Disclosure

- I have no financial disclosure or conflicts of interest with the presented material in this presentation

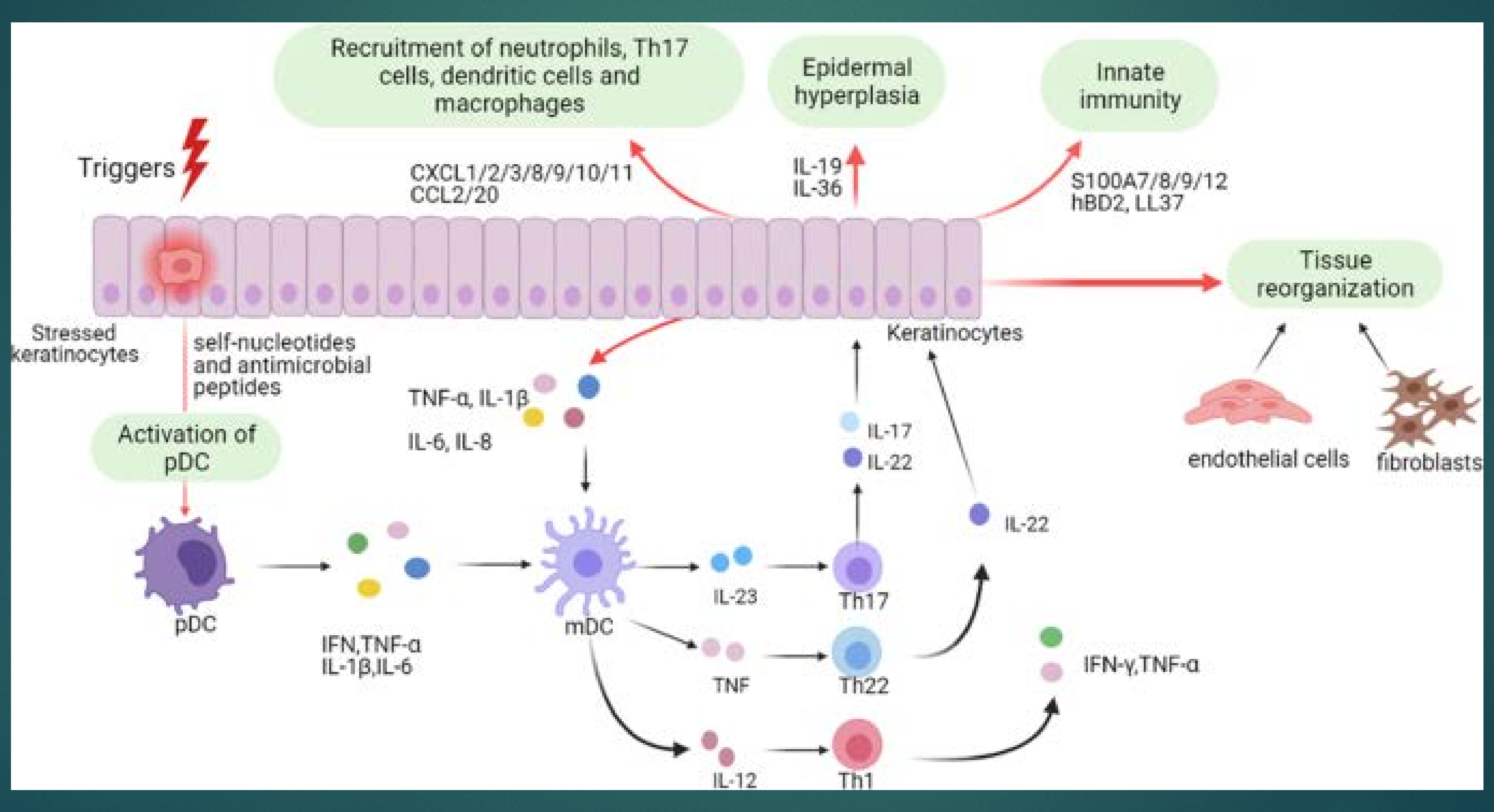
# Objectives

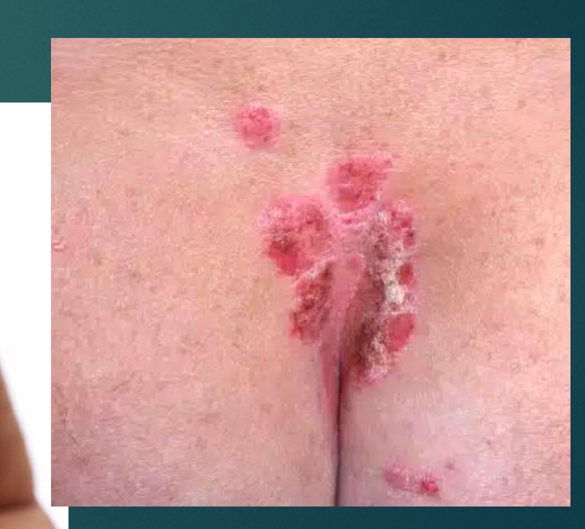
- Understand the pathogenesis of Psoriasis (PsO)
- Identify variants of PsO
- Discuss the link between PsO and metabolic syndrome (MetS)
- Outline therapeutic management of PsO
- Briefly highlight other papulosquamous eruptions

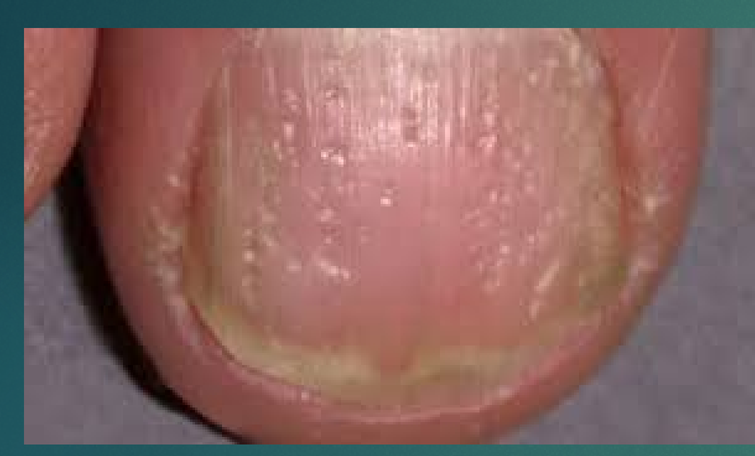
# Psoriasis

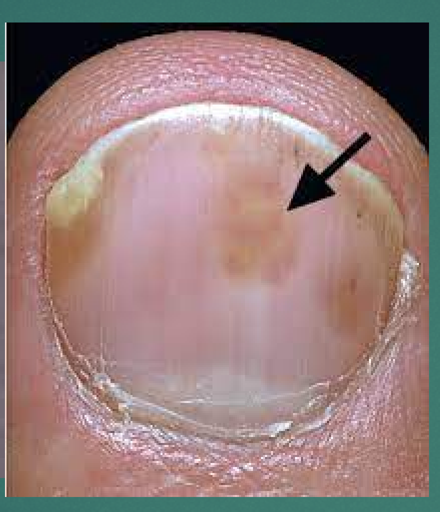
- Occurs in 2% of the population
- Systemic, chronic, recurrent inflammatory disease that can also involve nails and joints
  - Skin: scalp, elbows, knees, umbilicus, sacrum, groin
  - Nails: onycholysis, oil spot, pitting
  - Joints: Most commonly oligoarthritis
- Hyperproliferative disorder driven by a complex cascade of inflammatory mediators
  - Th1, Th17, TNF alpha, IL-12, IL23, etc...

# Psoriasis Pathogenesis



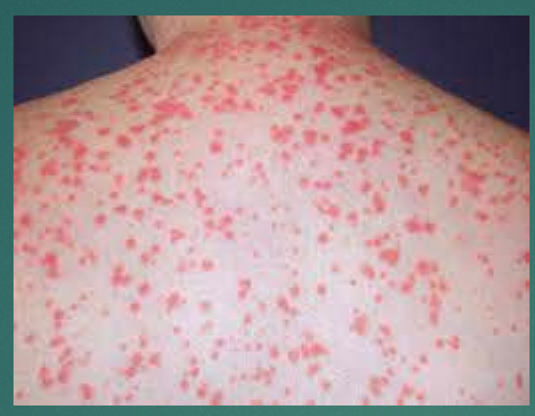


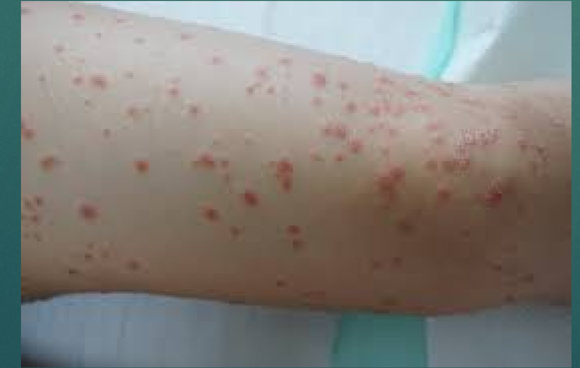
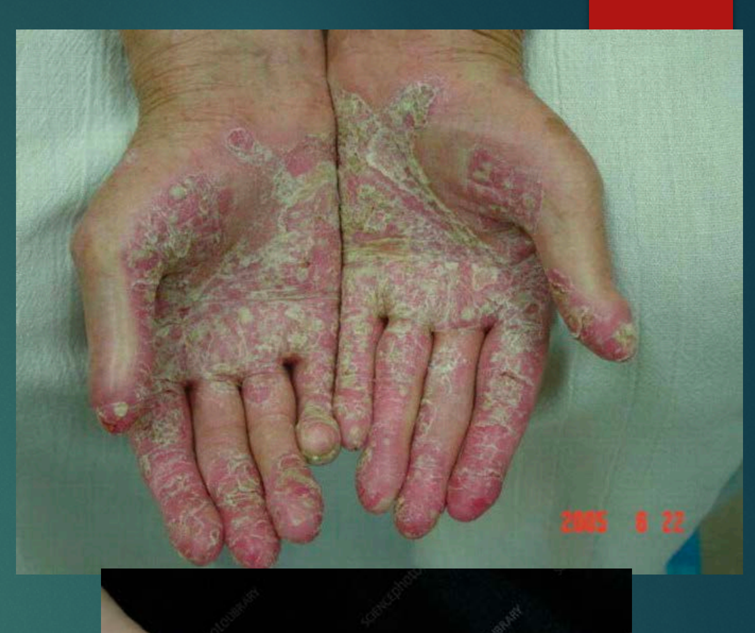


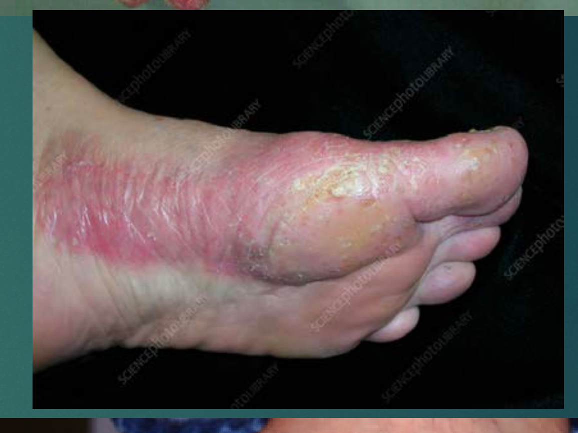
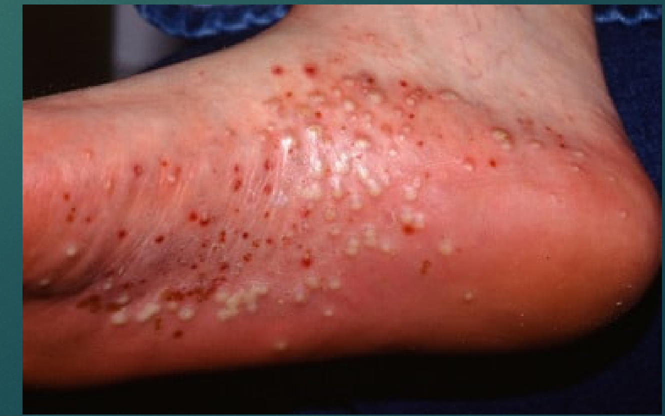


DermNetNZ.org

# Variants



# Management

- TCS, TCI, calcipotriene, tazarotene, tapinarof, roflumilast
- Methotrexate, Cyclosporin, acitretin
- Apremilast and deucravacitinib
- Biologics
  - TNFs
  - IL-12/23
  - IL-17s
  - IL-23s
- Phototherapy

# Orals

- MTX, Cyclosporin, acitretin
- Apremilast
- Deucravacitinib

# Biologics

- Etanercept, certolizumab, adalimumab, infliximab
- Ustekinumab
- Secukinumab, ixekizumab, brodalumab, bimekizumab
- Guselkumab, risankizumab

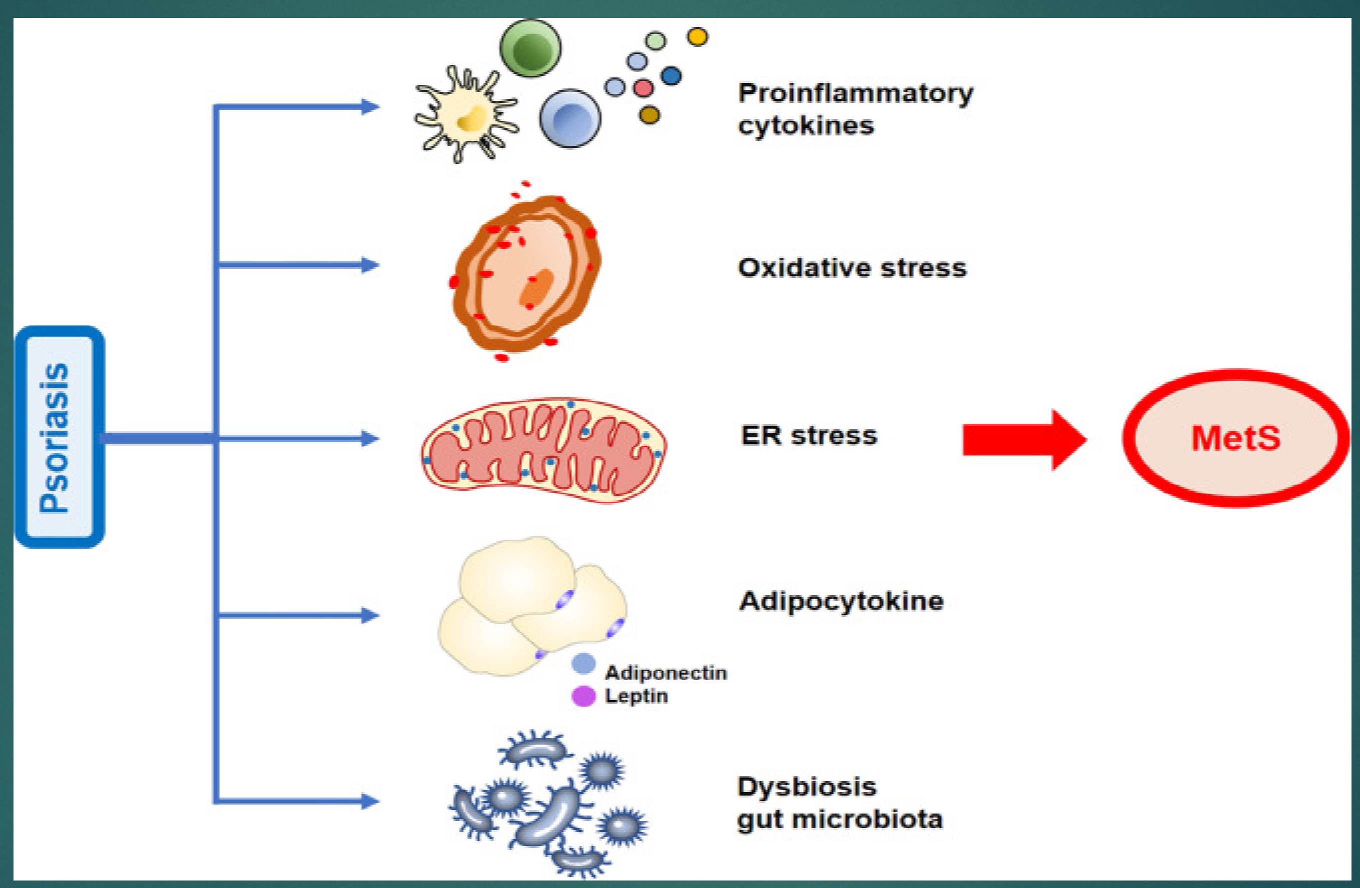
# Phototherapy

- NbUVB
- PUVA

# Metabolic Syndrome (MetS)

- Group of conditions that increase risk of CVD
  - BP, HDL, waist circumference, TGs, fasting glucose
- PsO is a systemic inflammatory disease
  - MetS, CVD, IBD, NAFLD, malignancy, PsA
- Patients with moderate to severe PsO are at increased risk for MetS
- There is overlap in proinflammatory cytokines implicated in PsO and MetS

# MetS



# Proinflammatory Cytokines

- IL-17 is elevated in individuals with MetS
- IL-17 plays role in insulin resistance, T2D, angiotensin II induced HTN
- TNF-alpha decreases insulin signal transduction leading to insulin resistance
- TNF-alpha causes increases extracellular accumulation of LDL
- PsO drugs that target IL-17 and TNF-alpha can potentially decrease factors that contribute to MetS

# Adipocytokines

- Adiponectin is an insulin sensitizer and functions in glucose and lipid metabolism
  - Increases HDL and decreases TGs
  - TNF-alpha causes decreased adiponectin
  - PsO severity has inverse relationship with serum adiponectin levels
- Leptin is a hormonal regulator of metabolism and is associated with metabolic disorders
  - Increased leptin levels are seen in obese patients and patients with PsO and is positively correlated with PsO severity
  - Leptin level appears to be affected by IL-17
  - Decreased leptin levels can restore leptin hypothalamic sensitivity increasing insulin sensitivity

# Oxidative Stress

- Dysregulation between ROS and endogenous antioxidant defense mechanisms
- Oxidative stress in adipocytes is one of the mechanisms of obesity-associated metabolic diseases
- Evidence suggests that oxidative stress plays a role in PsO progression
  - Activated neutrophils/monocytes

# Endoplasmic Reticulum Stress

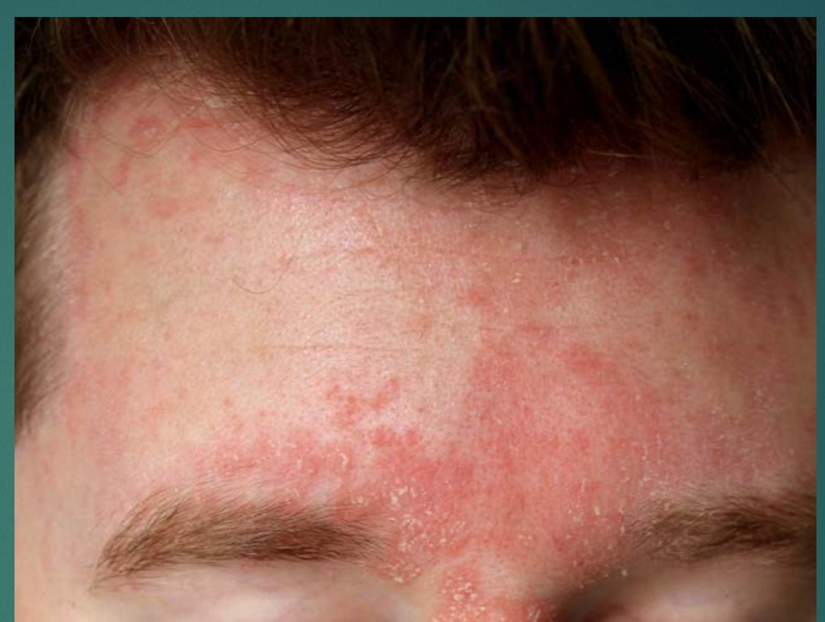
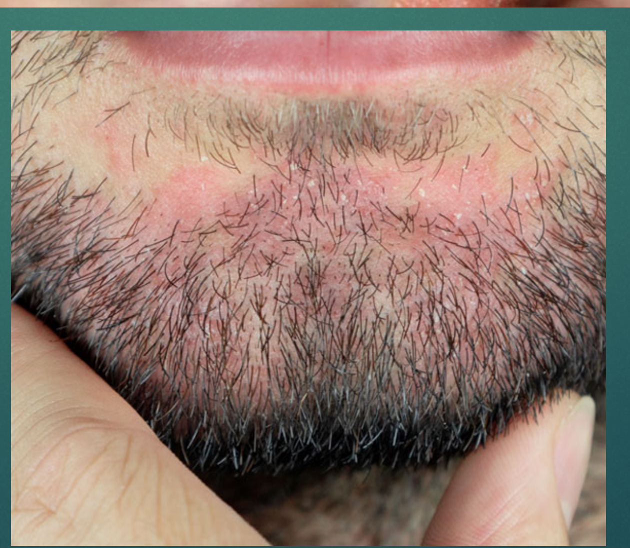
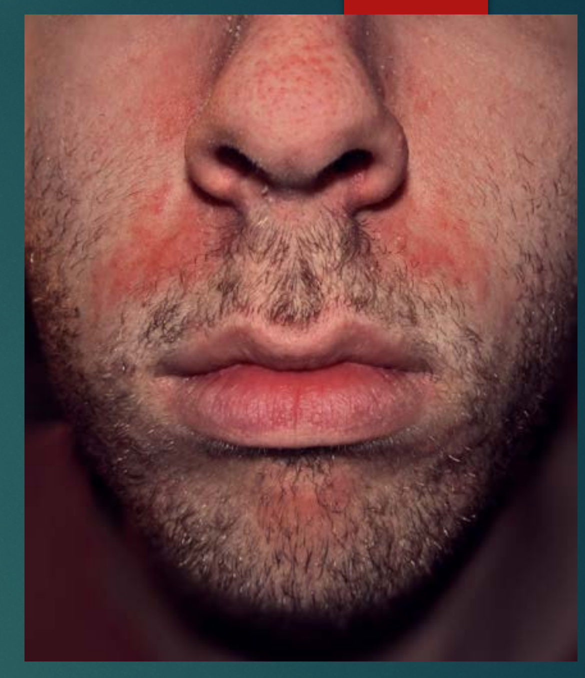
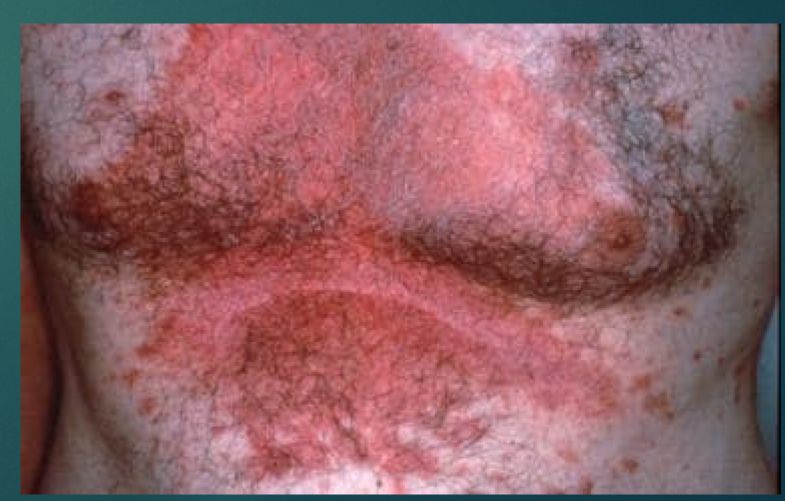
- Organelle responsible for protein synthesis, folding, transport and lipid and steroid synthesis among other things
- Proinflammatory mediators in PsO cause prolonged ER stress contributing to MetS

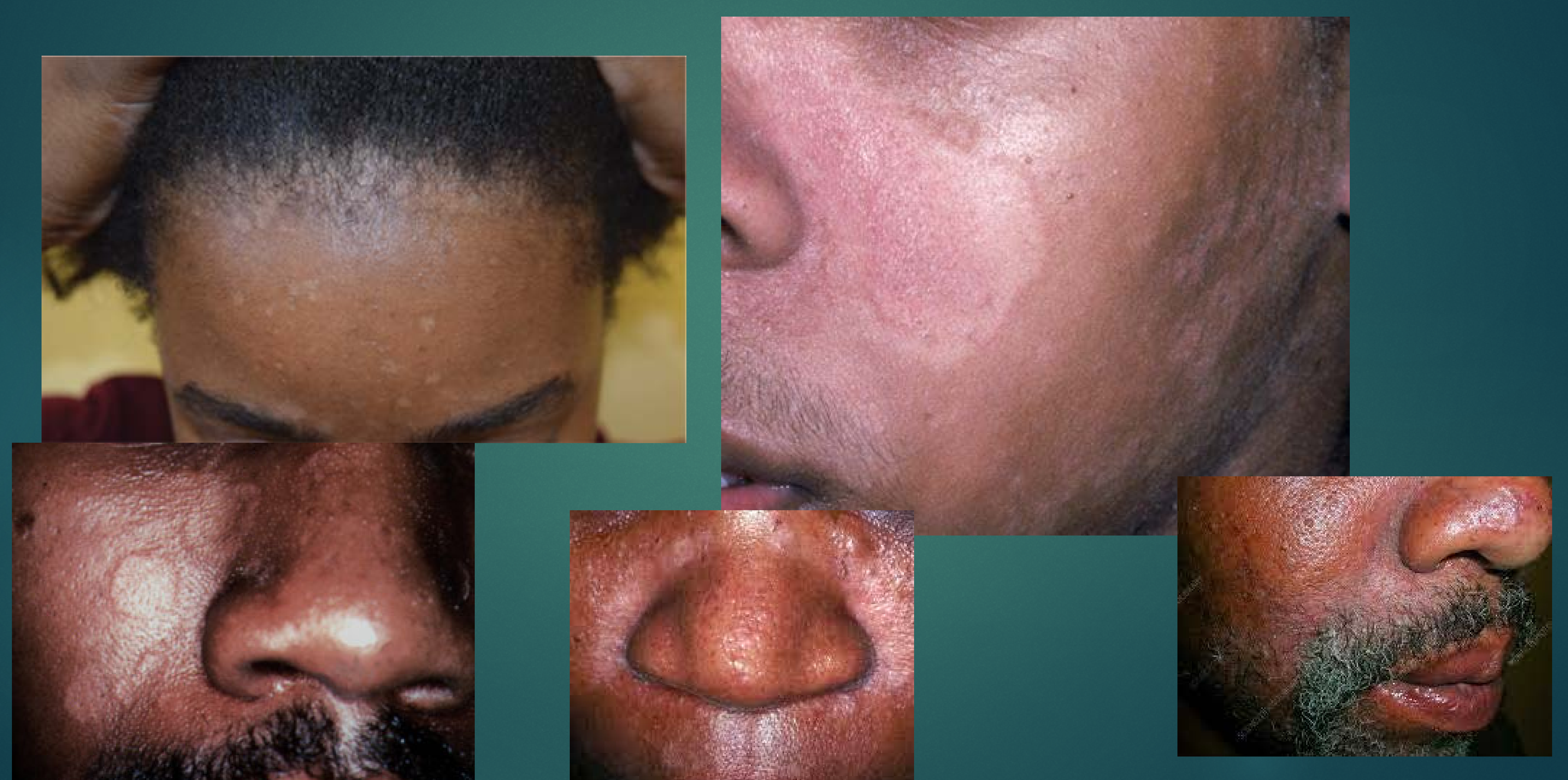
# Dysbiosis of Gut Microbiota

- Patients with PsO appear to have an altered intestinal microbiome which may contribute to MetS

# Seborrheic Dermatitis

- Occurs in 2-5% of the population
  - Dandruff is a mild form
- Chronic, superficial inflammatory disease
  - Scalp, eyebrows, alar crease, beard, ears, chest, axillae, groin, intergluteal cleft, umbilicus, inframammary folds
- Upregulation of inflammatory response to *Malassezia furfur*
- May be more recalcitrant or severe in patients with Parkinson disease, stroke, or HIV
- Can coexist with psoriasis

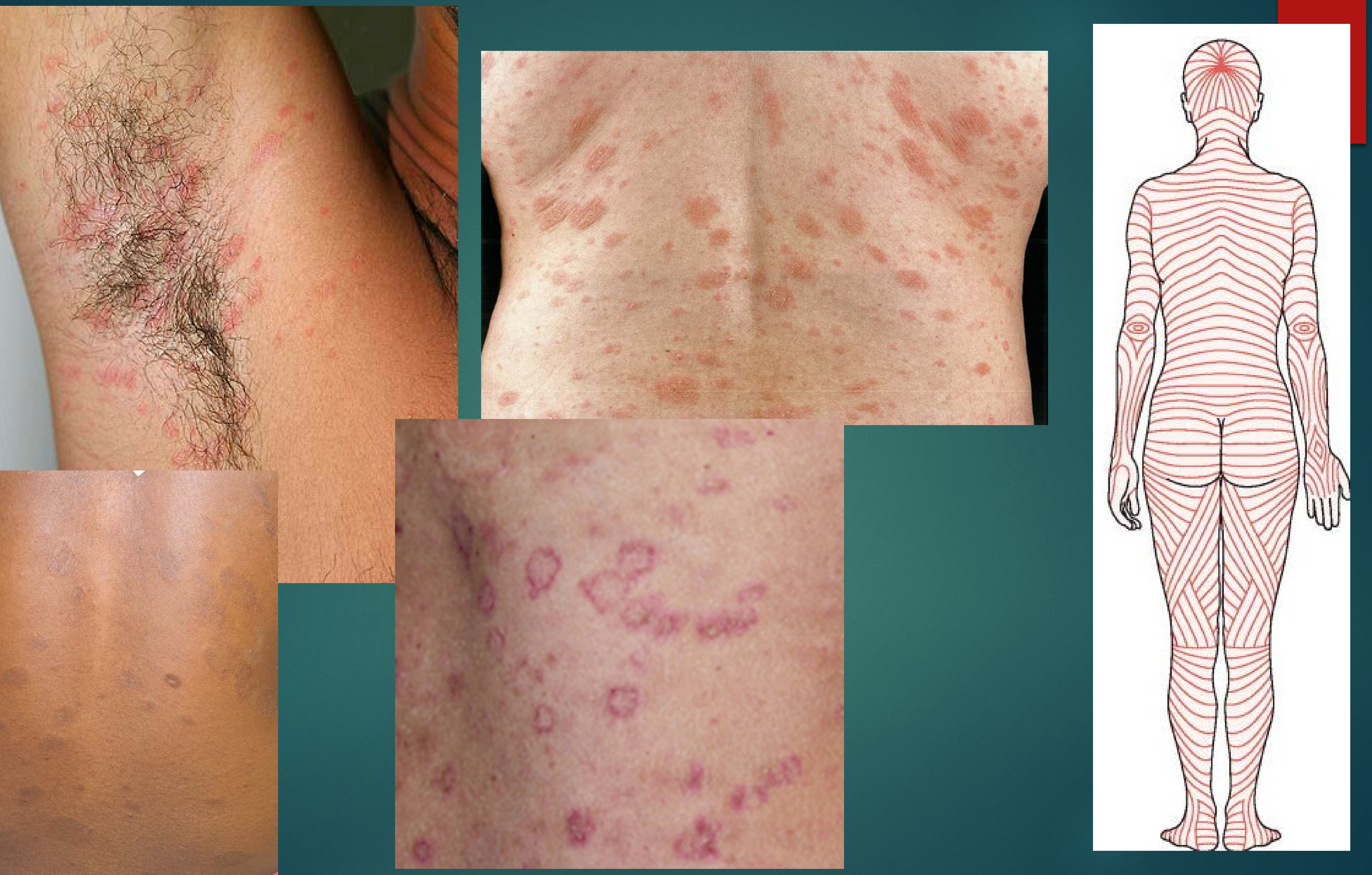


# Management

- Zinc pyrithione, selenium sulfide, salicylic acid, tar, sulfur, tea tree oil
- Ketoconazole, ciclopirox, sodium sulfacetamide with sulfur, topical steroids, topical calcinuerin inhibitors, roflumilast

# Pityriasis Rosea (PR)

- Reactivation of latent virus (HHV6/HHV7) in mononuclear cells leading to viremia and rash
- Herald patch occurs first and may resolve prior to development of new lesions
  - Subsequent lesions tend to follow skin cleavage lines (Christmas tree pattern)
- Most commonly involves sun protected areas
  - Less common areas include axillae, neck, and groin
  - Papular variant more common in darker skin types and more prone to face and scalp involvement
- Self limited
  - Typically 6-8 weeks and can last as long as 12 weeks
  - Consider drug-related PR if it fails to improve after 12 weeks



- Symptomatic treatment for itching
  - Moisturizers, antihistamines, TCS
- Acyclovir 400mg TID for 1 week
  - May be helpful with those with extensive disease if started early in the course
  - May be beneficial for pregnant patients

**Pregnancy complications associated with pityriasis rosea: A multicenter retrospective study**

Julian Stashower, BA • Katherine Bruch, BA • Anastasia Mosby, MS • ... Robert T. Brodell, MD
Lida Zheng, MD • R. Hal Flowers, MD • Show all authors

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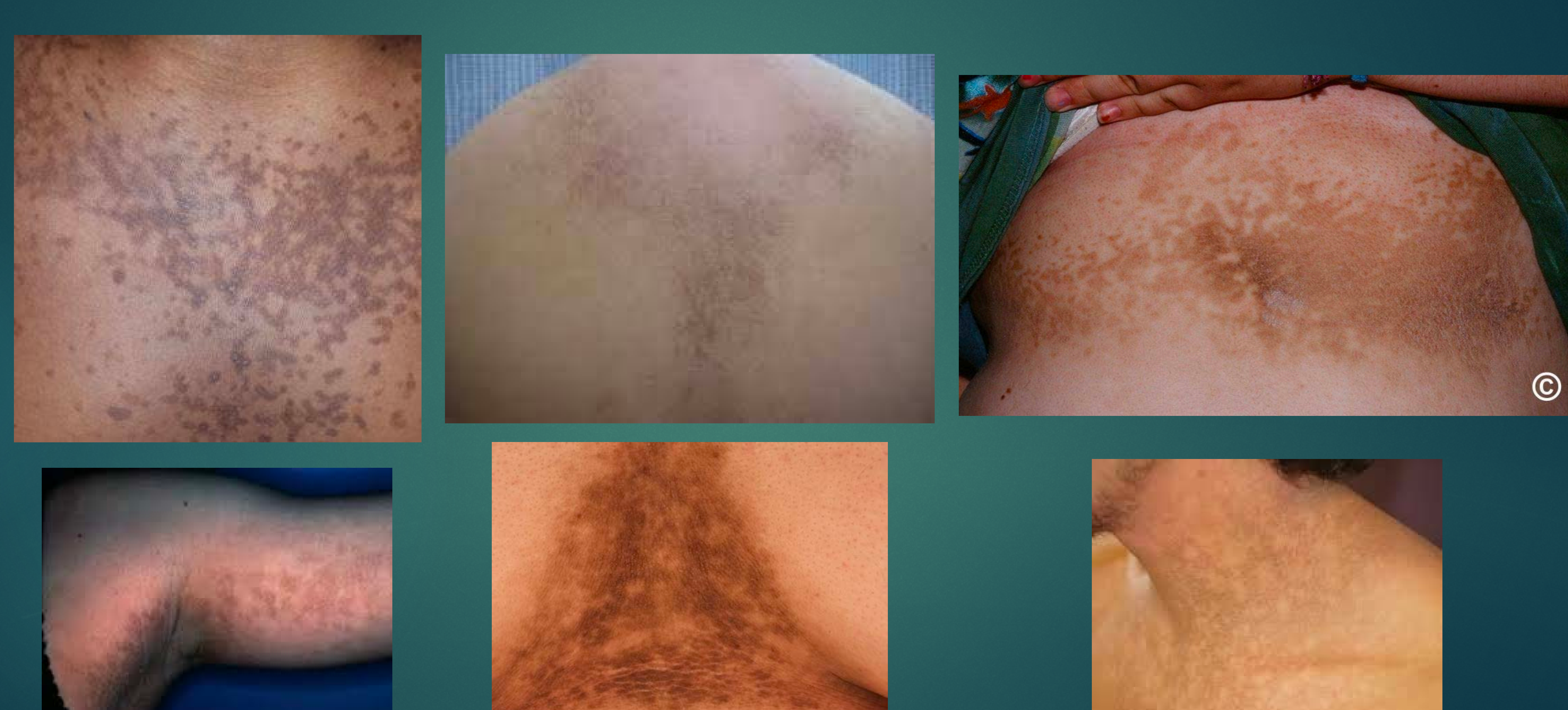
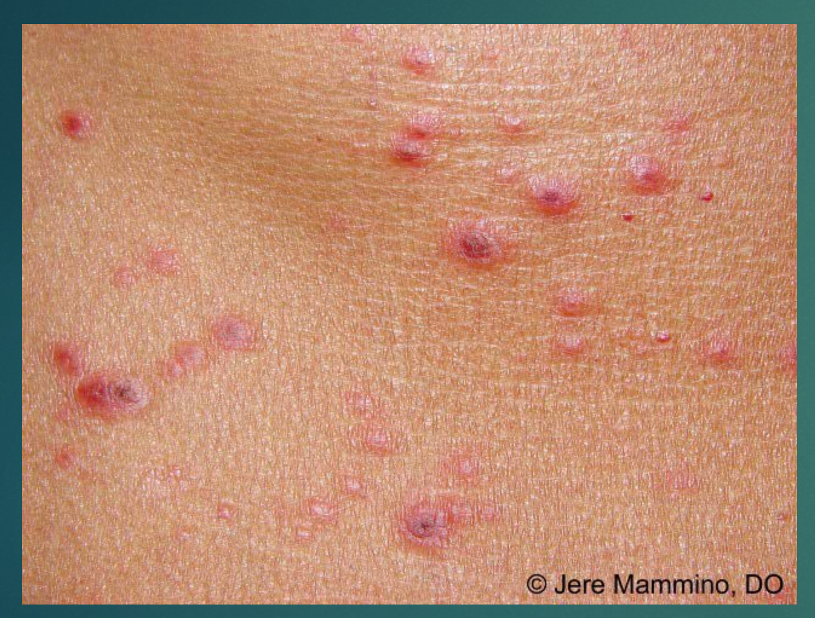
# Confluent and Reticulated Papillomatosis (CARP)

- Unclear etiology
- Can resemble acanthosis nigricans or tinea versicolor
- Typically affects the upper central trunk
- The macules/papules coalesce creating a reticulated border
- Management
  - Doxycycline or minocycline for 4-6 weeks



# Pityriasis Lichenoides et Varioliformis Acuta (PLEVA)

- Crops of papules and vesicles that resolve with crusted erosions
  - Often coexists with pityriasis lichenoides chronica
- Benign disorder that can last 1-3 years
- Etiology is unclear, but may be an immune response to viral infection, medication, or vaccination
- Management
  - Doxycycline, azithromycin, phototherapy, TCS, TCI, prednisone for severe disease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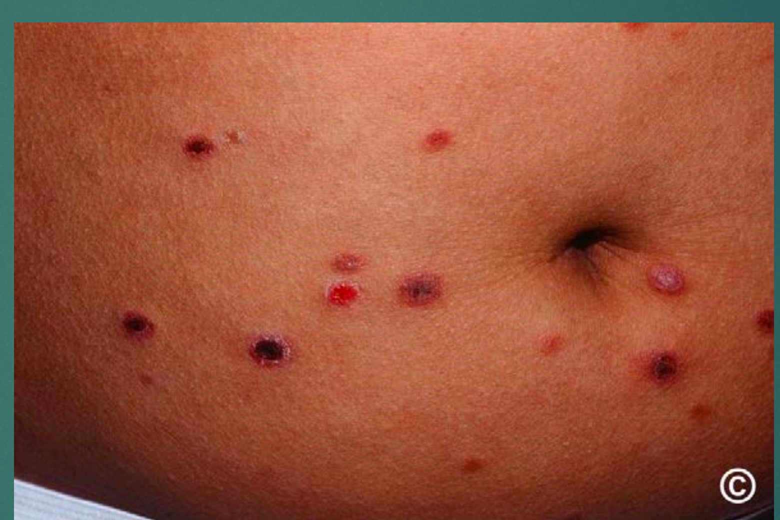
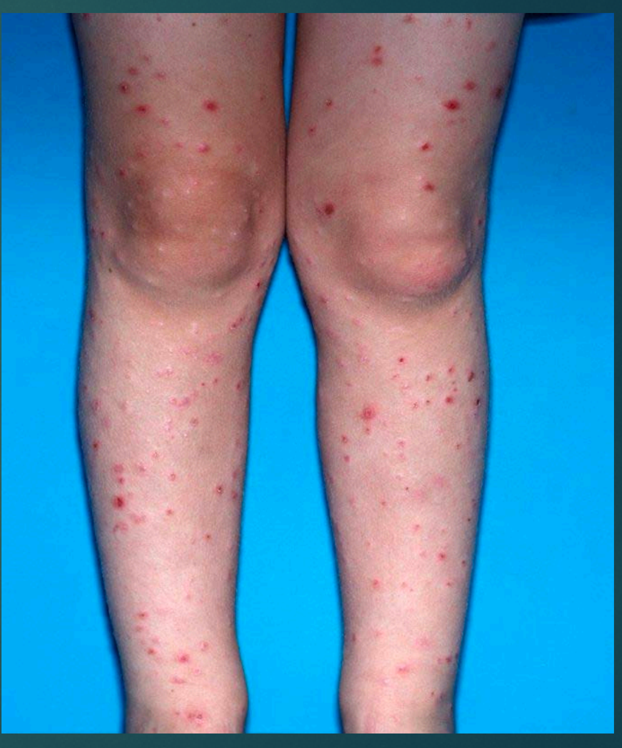
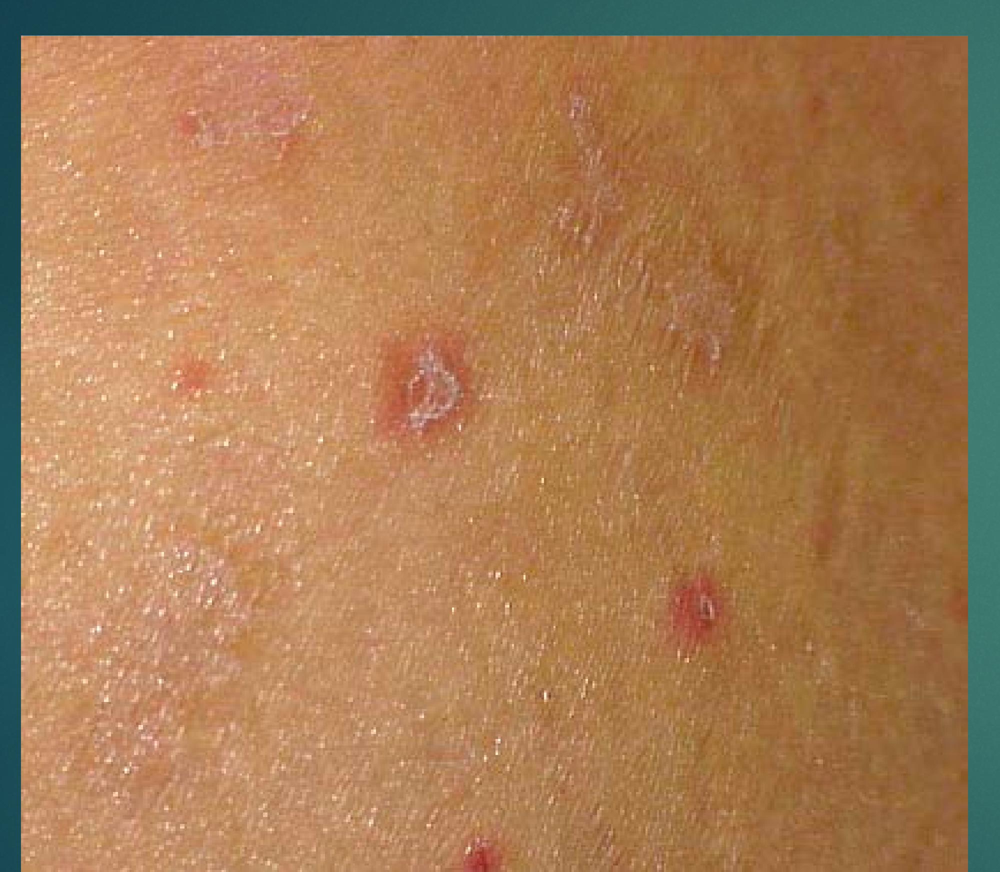
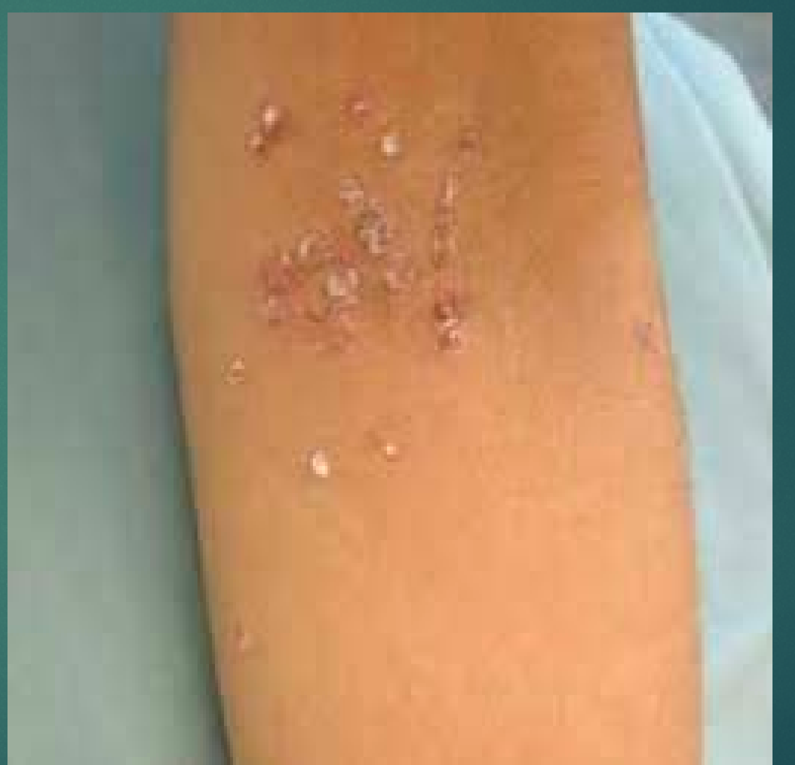
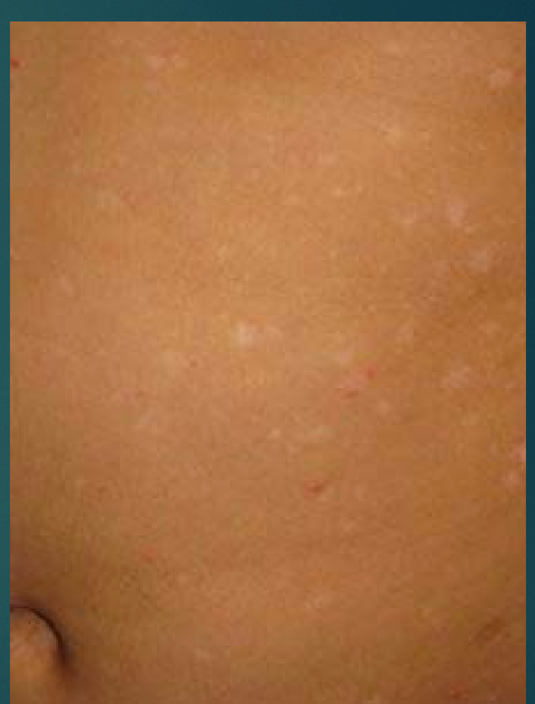




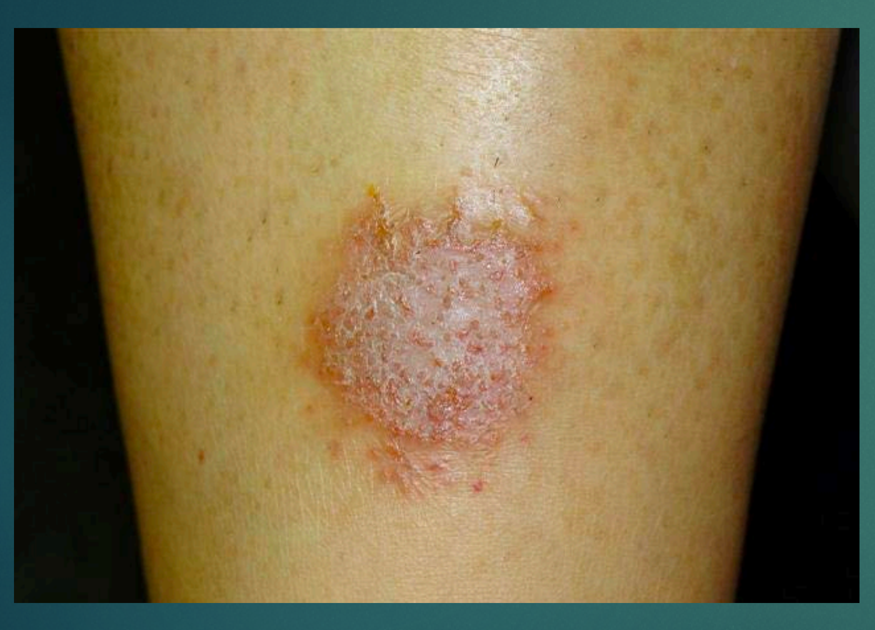
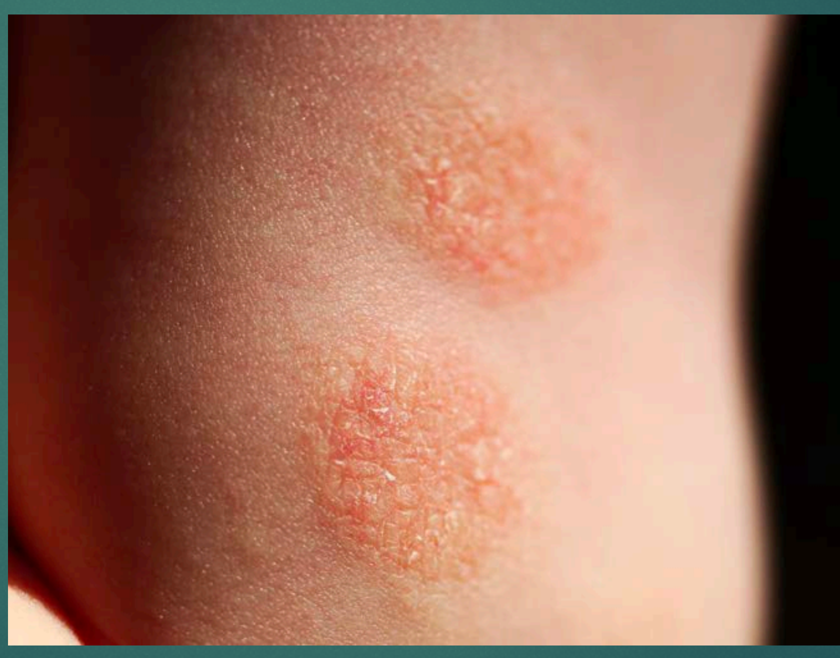
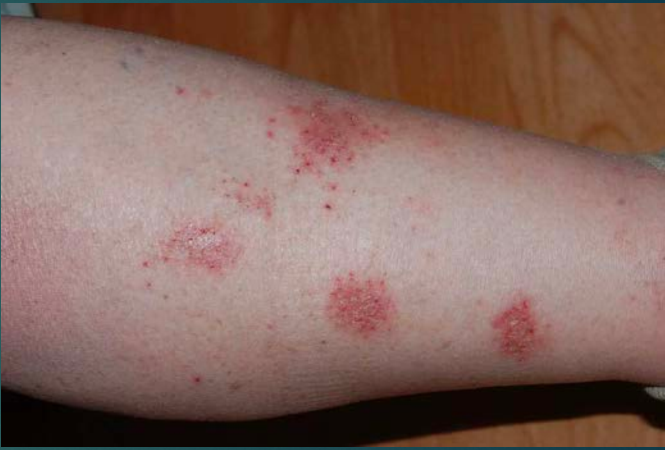
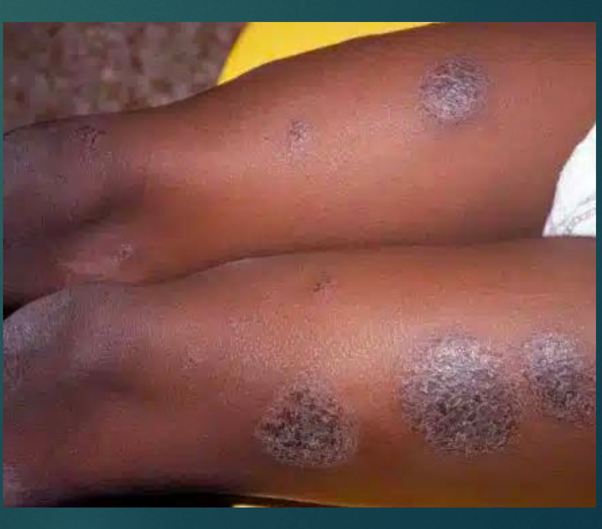
# Pityriasis lichenoides Chronica (PLC)

- Recurring crops of erythematous scaly papules on trunk and extremities that often heal with hypopigmentation
  - Often coexists with PLEVA
- Can last from months to years
- Etiology is unclear, but may be an immune response to viral infection, medication, or vaccination
- Management
  - Doxycycline, azithromycin, phototherapy, TCS, TCI, prednisone for severe disease

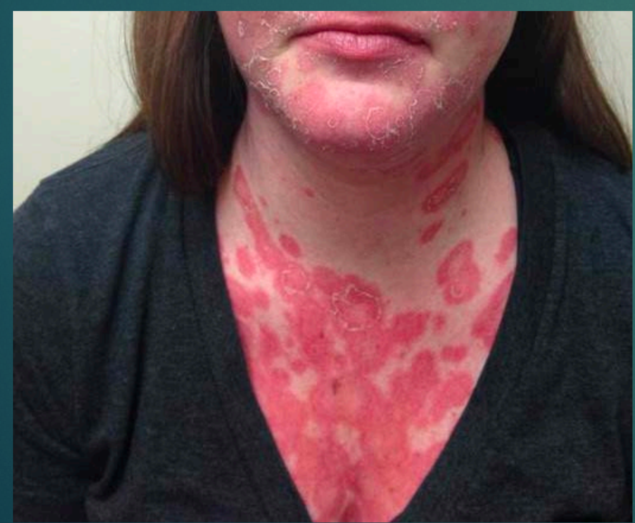
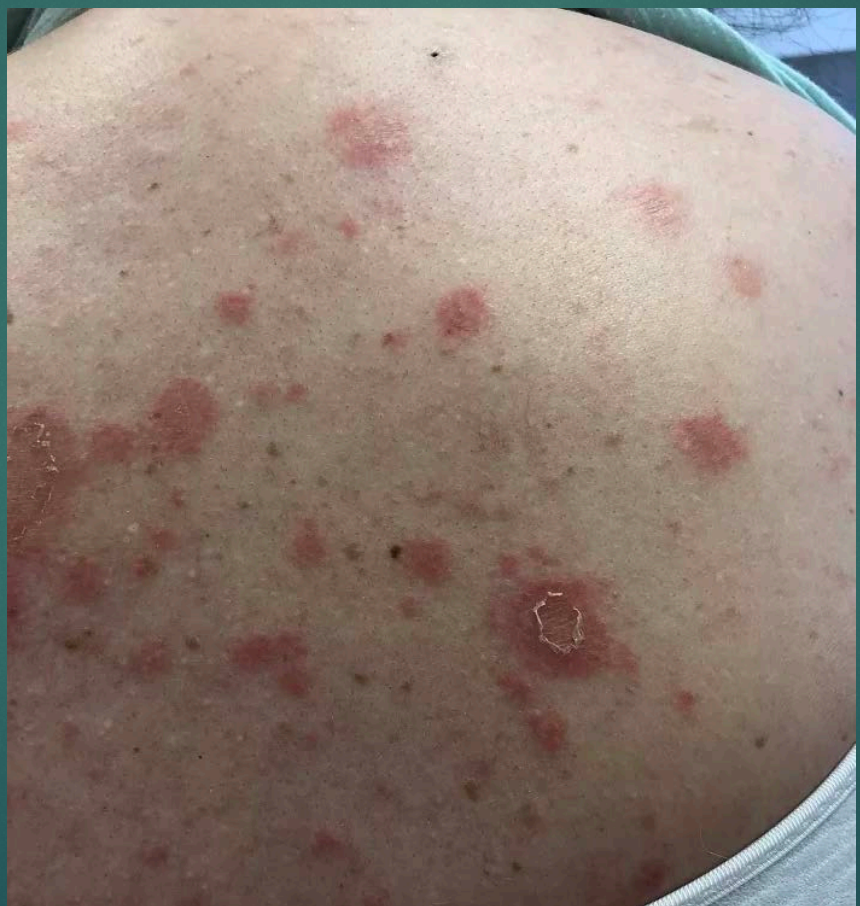
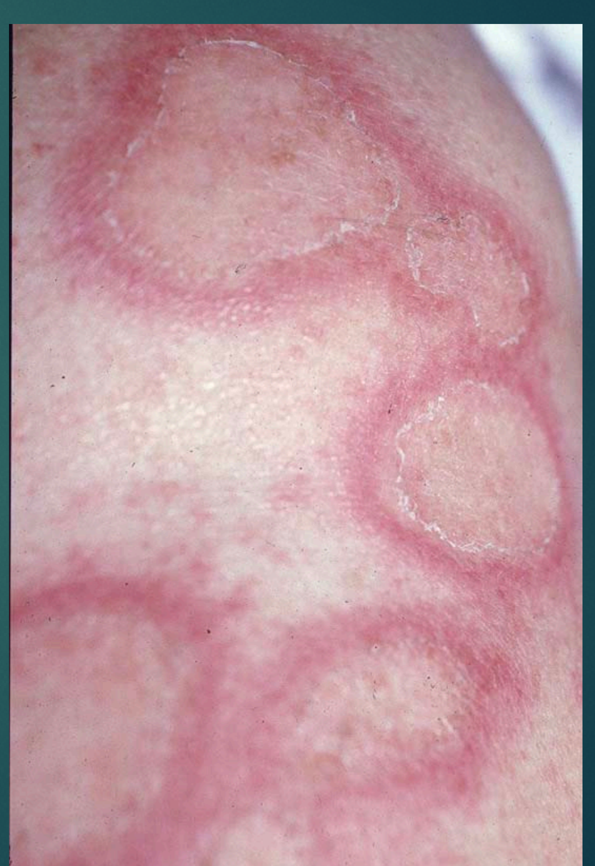
# Nummular Eczema

- Most commonly in men age 50-65
- Patients often has atopic background
- Triggers/Predisposing factors
  - Frequent bathing, low humidity, drying/irritating soaps, venous stasis
  - May be component of contact dermatitis
- Management
  - Mid to high potency TCS, TCI, nbUVB
  - Liberal use of thick moisturizers, limit shower duration, use gentle soaps

# Subacute Cutaneous Lupus (SCLE)

- Photosensitive cutaneous eruption in those with genetic predisposition
  - Sides of face, lower neck, upper trunk, extensor surfaces
- 10-15% will have systemic lupus
- Associated with +ve ANA and SSA; less likely +ve SSB
- Certain drugs have been reported to trigger it
  - HCTZ, CCB, ACE-I, terbinafine, NSAIDs, PPI, TNF-I, etc...
  - May not clear completely after discontinuing offending drug
- Management
  - Discontinue offending drug, sun protection, smoking cessation
  - TCS, ILK, TCI, hydroxychloroquine, methotrexate, etc...

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