Pharmacotherapy of Common Skin Diseases

Dermatologic Therapy
Lecture Outline

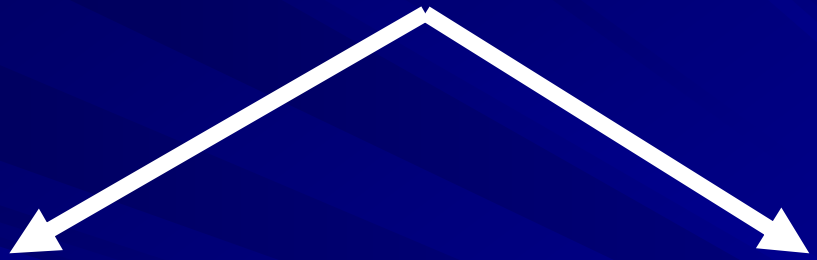
I. Acne Vulgaris and Rosacea
II. Psoriasis
III. Eczema

Acne Vulgaris and Rosacea

- Defined: Chronic papulopustular eruption affecting the pilosebaceous units of the face and trunk.
- Types: Comedonal, Papulopustular, Nodulocystic, Conglobata, Fulminans, Rosacea.
- Primary Lesion: red papule/nodule, pustule, comedones (white and black heads).
- Keys to Dx: Age, Flushing?

The Fate of the Closed Comedo

Closed comedo (“Time bomb of acne”)



Rupture and Inflammation

Open Comedo

Potent chemoattractant
for neutrophils

Acne: Natural History

- Comedonal: closed and open comedones
- Papular: + red inflamed papules
- Papulopustular: + pustules
- Nodulocystic: + inflamed nodules/cysts

Acne Vulgaris Therapeutic Agents Classes of topical agents

- Retinoids: tretinoin, adapalene (micro gels, gels, creams, solutions)- comedolytic, shrink sebaceous glands

  Should not be used in pregnant women

- Antibiotics:
  - Clindamycin & Erythromycin (solution, gel, pads, lotion)- antibacterial
  - Sulfur-containing products (lotion, cream)- antibacterial
- Benzoyl Peroxide (cream, gel)- antibacterial, comedolytic

Acne Vulgaris Therapeutic Agents Classes of oral agents

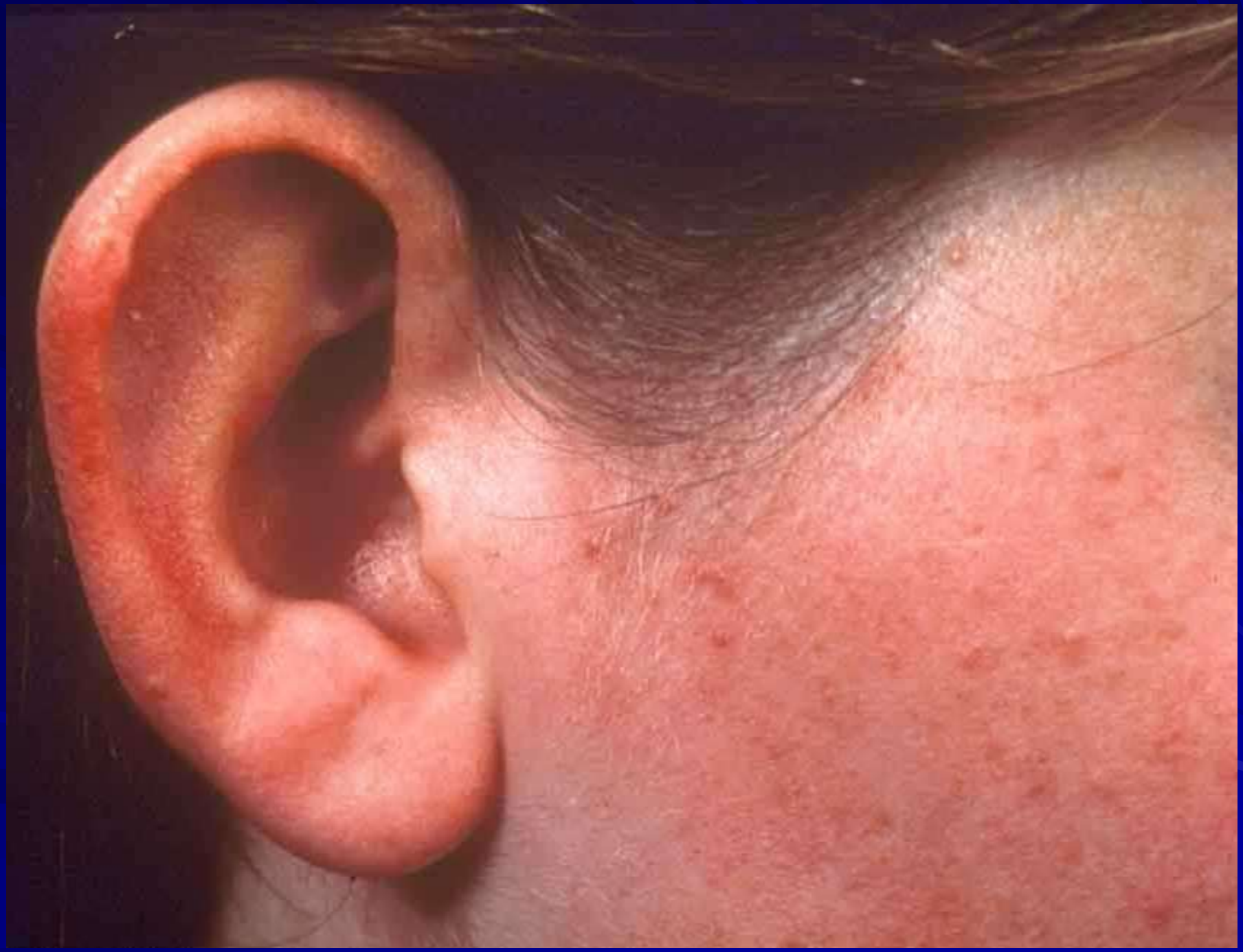
- Antibiotics
- Retinoid (Isotretinoin)
- Spironolactone
  - Uncommonly used
- Oral contraceptives (low progesterone)
  - Yasmin, Orthotricyclen
  - Only for adjunctive therapy

Acne Vulgaris Therapeutic Agents Oral Antibiotics

- Tetracycline: 500mg bid - tid (Photosensitivity, GI upset- empty stomach)
- Doxycycline: 100mg qd - bid (Photosensitivity, $$)
- Minocycline: 100mg qd (Dizziness, skin pigmentation, $$$)
- Erythromycin: 500mg bid-tid (GI upset)
- Trimethoprim/sulfamethoxazole: 800/160mg (1 DS tab) bid (Photosensitivity, renal effects)

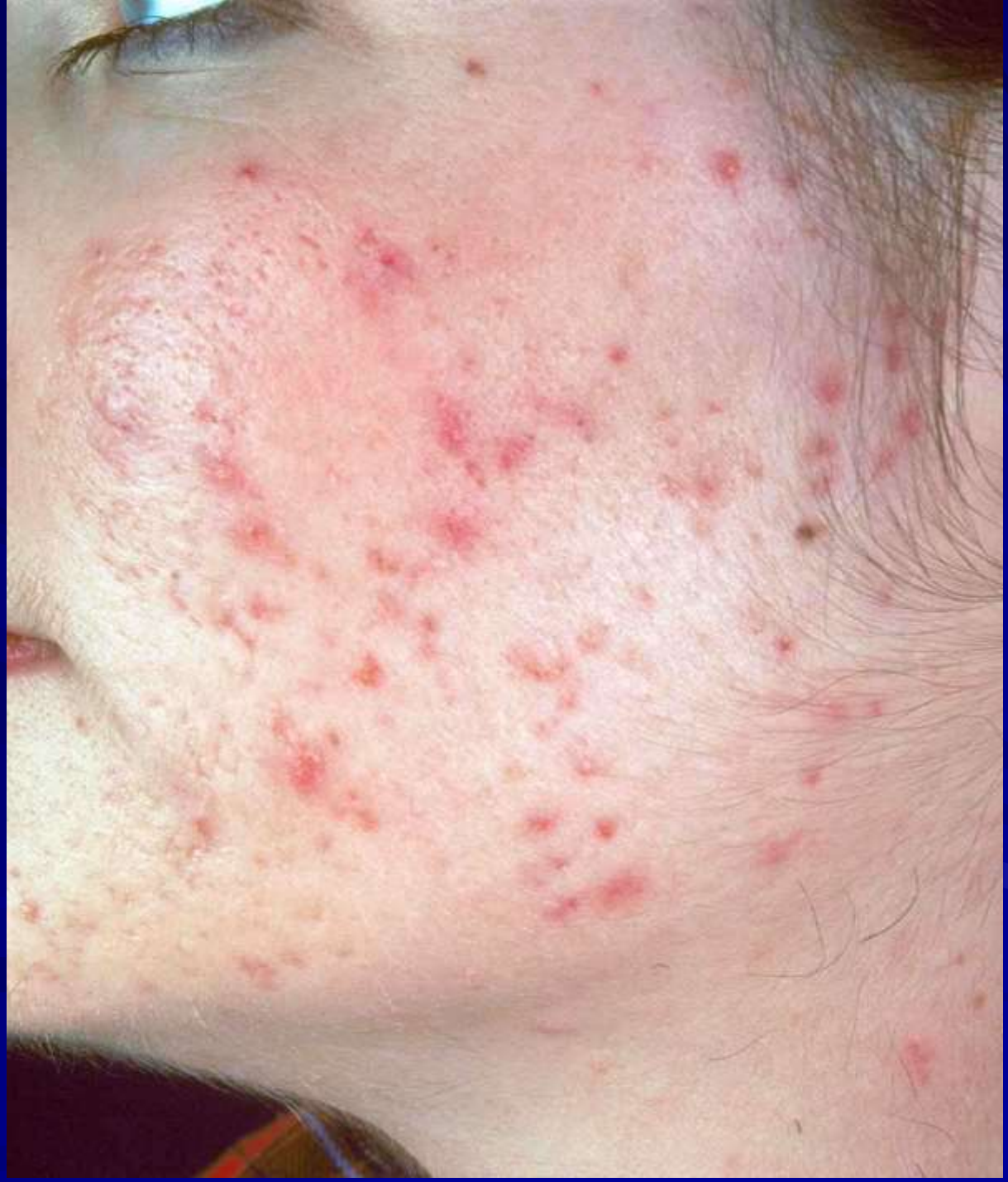
Acne Vulgaris Therapeutic Agents Oral Isotretinoin

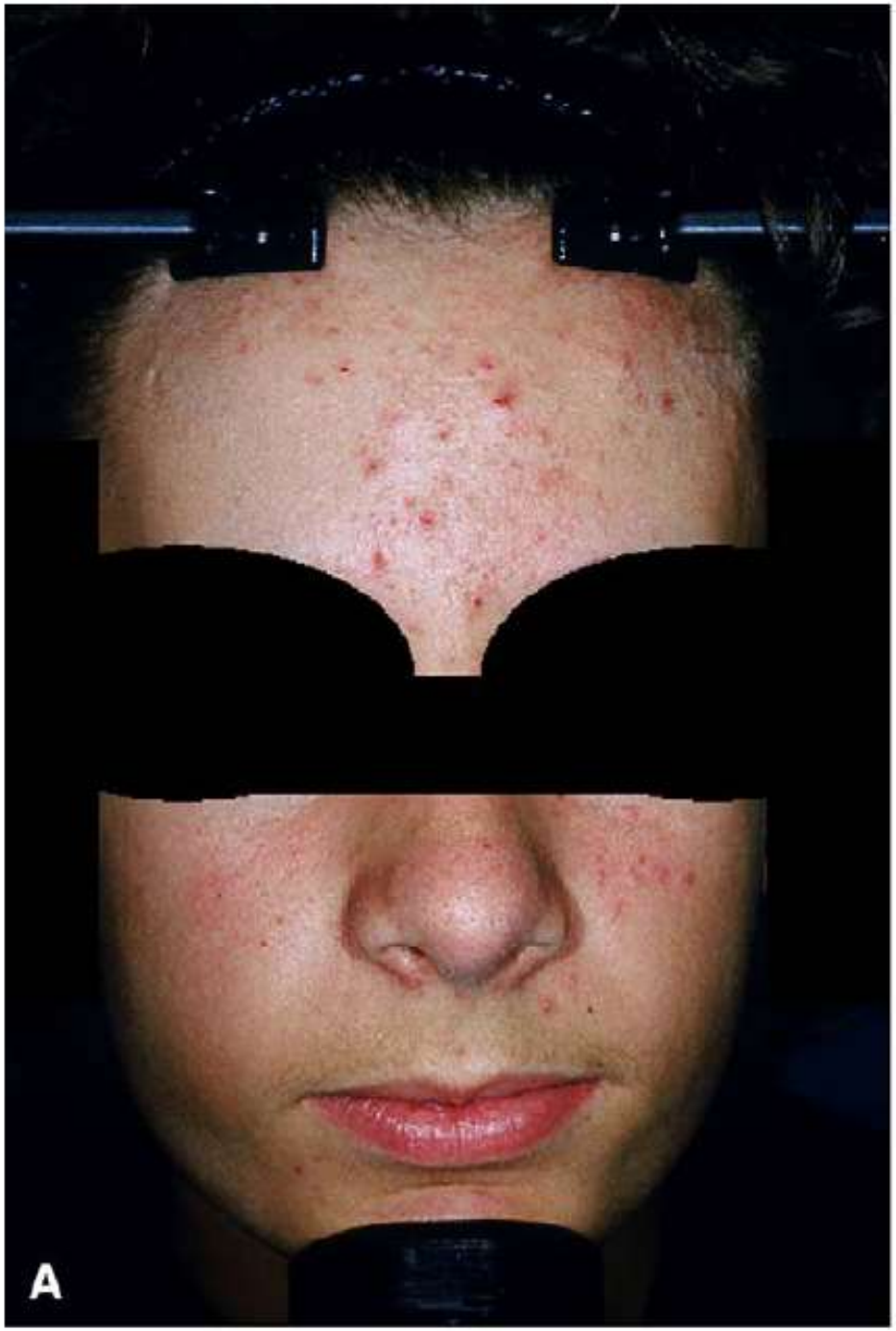
- Nodulocystic acne or refractory acne
- 1.0 mg/kg/d with food for 16 to 20 wks.
- Teratogenicity, extreme xerosis, increased liver function tests & triglycerides, etc.
- **March 1, 2006: FDA iPledge Begins**
  - To prevent use in pregnant women
  - Pt, MD, & Pharmacist must register with FDA
  - All women of child bearing age must list 2 forms of contraception to register
- No evidence to support increased risk of depression and suicide



Acne Vulgaris Therapy
Comedonal Acne

- Topical tretinoin cream or gel at bedtime
  * Apply a small amount (pea-sized) to affected regions of face.
  * Apply to dry face, not wet.
  * Try applying every other night if irritating
- Consider adding a topical antibiotic or topical benzoyl peroxide in the morning.

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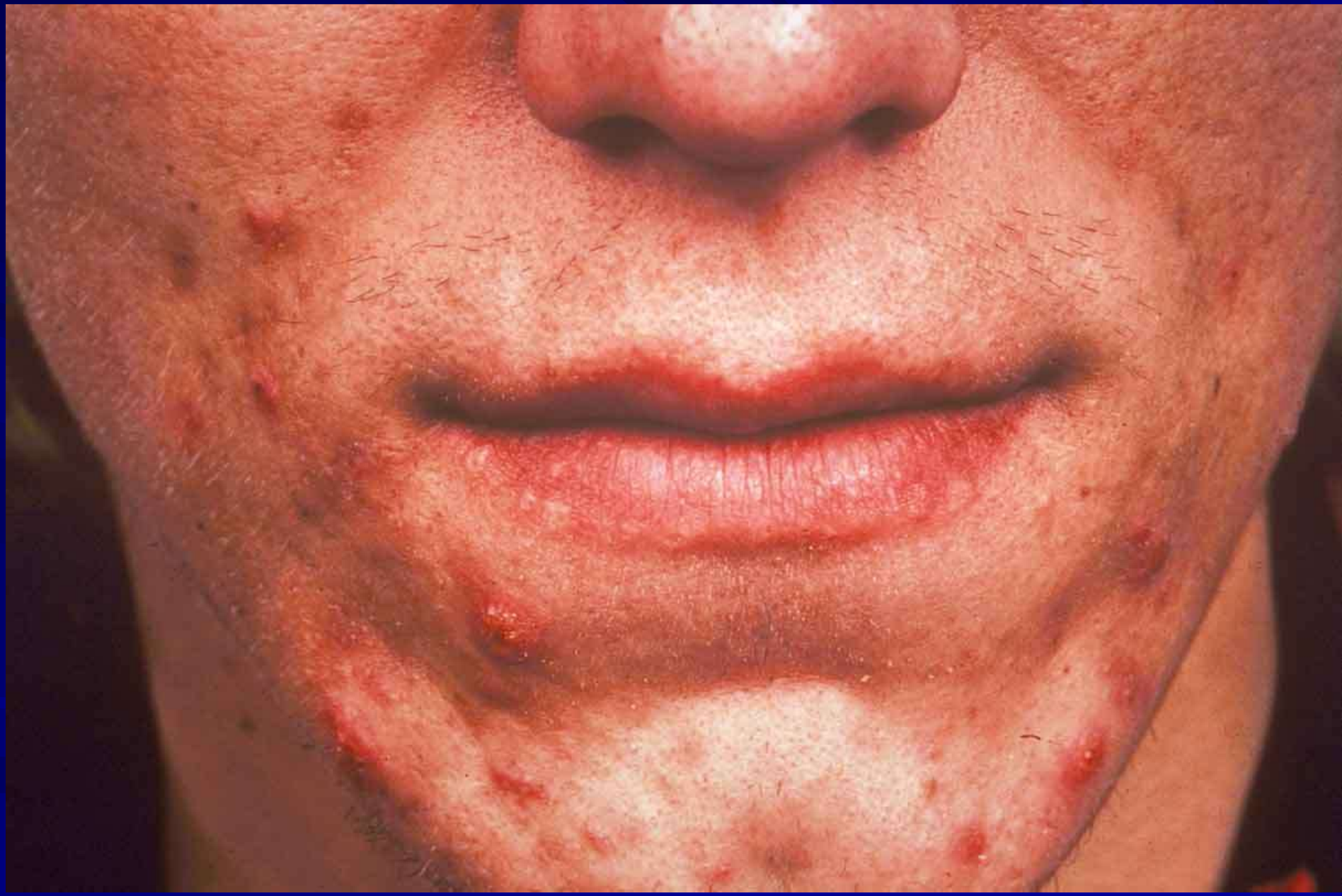
Acne Vulgaris Therapy
Papular Acne

- As per Comedonal Acne
- Add oral antibiotic if moderately severe or if chest and back are involved.
  * Continue oral antibiotic for at least 6 to 8 weeks then slowly decrease daily dose to avoid flare-ups.
  * Do not abandon a given therapy until a 6 week trial has been completed.

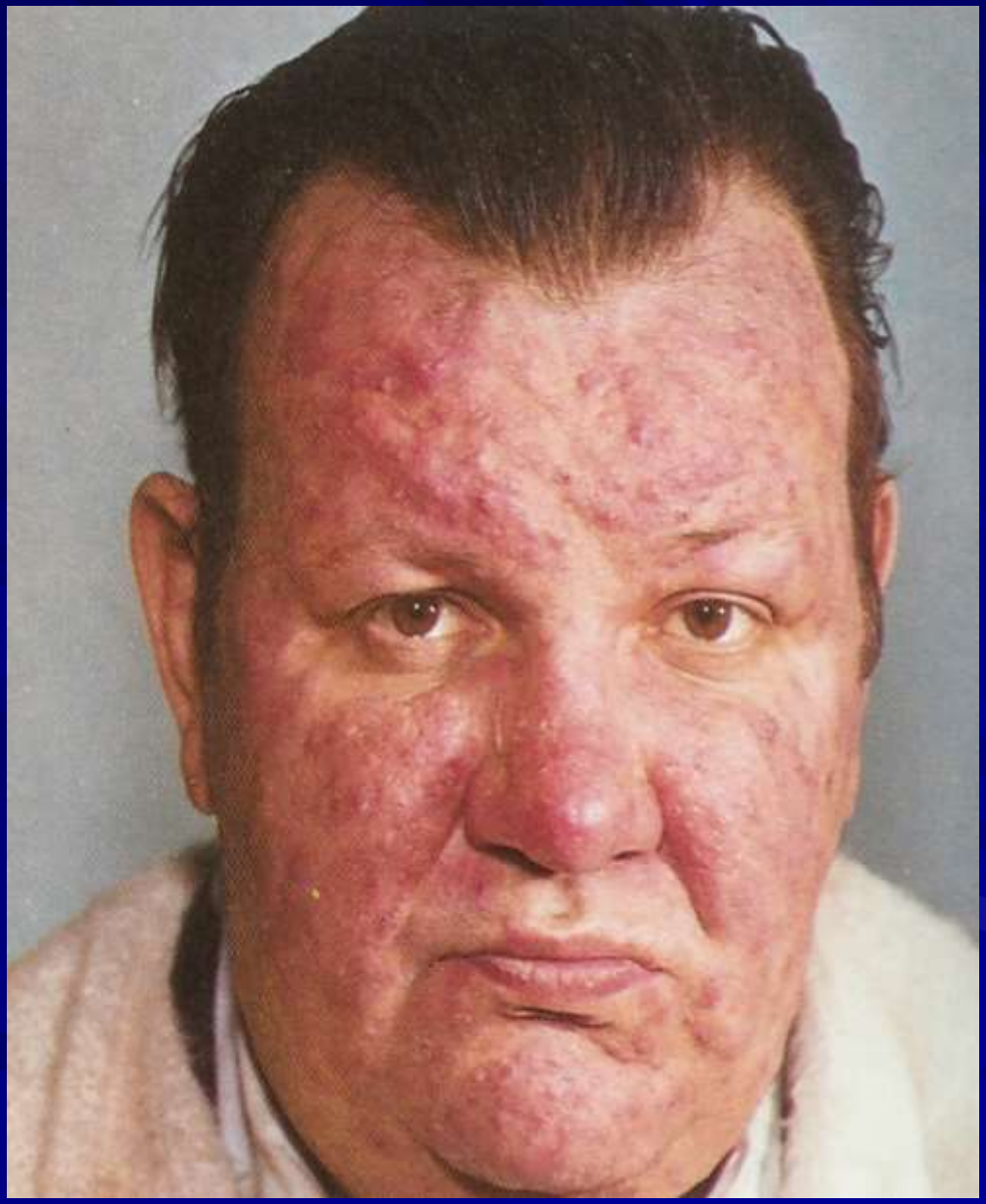


Acne Vulgaris Therapy Papulopustular/Nodulocystic Acne

- As per Papular Acne
- If severe consider Isotretinoin
  * Recommend Dermatology referral.
  * All other acne treatment is stopped.
  * Contraceptive counseling important. Oral contraceptives are safe with isotretinoin.

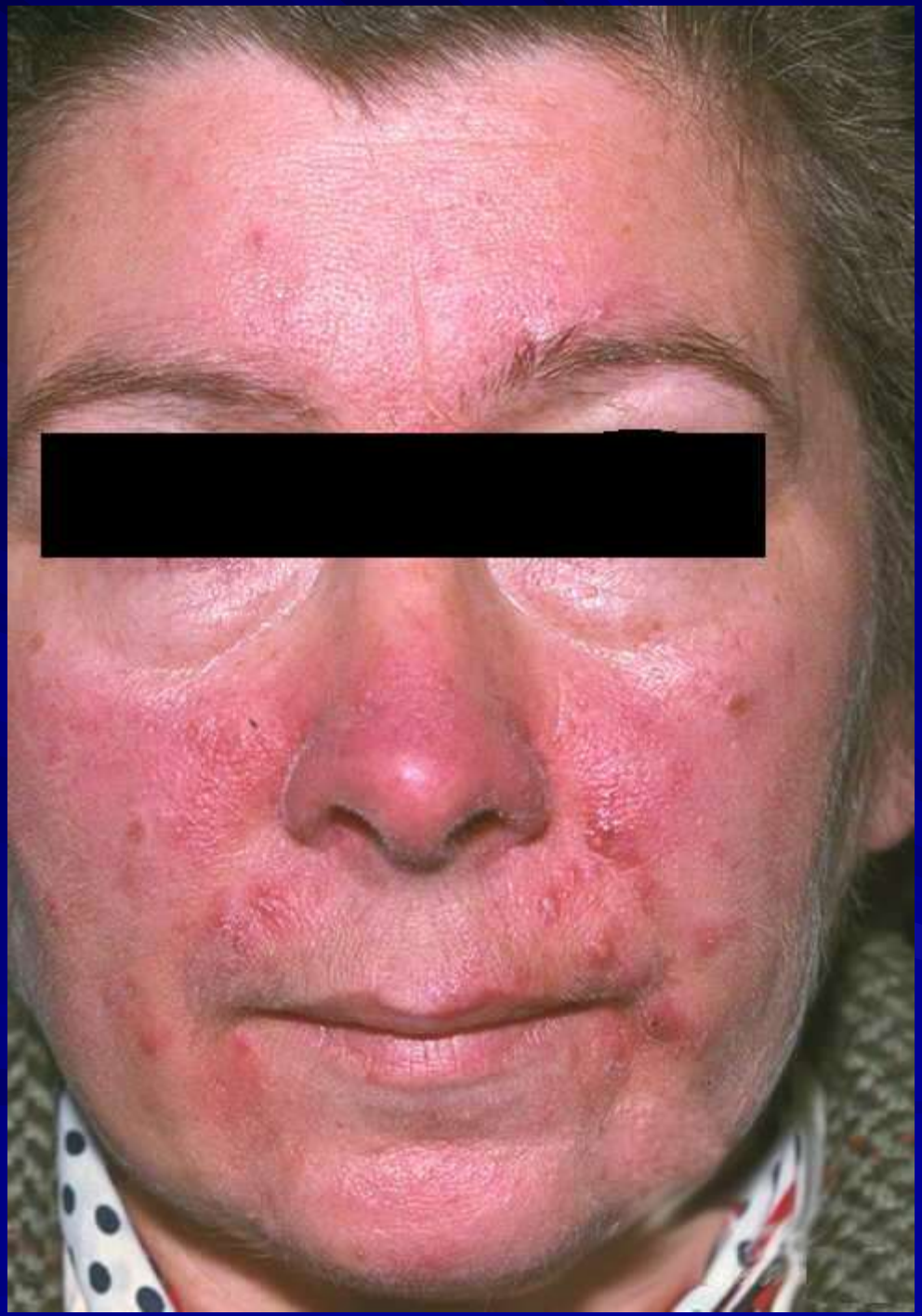
Pitfalls of Therapy for Acne Vulgaris

- Not waiting 6-8 weeks to establish a response to starting therapy.
- Ignoring the impact of cosmetics, skin cleansers, hair lubricants, picking, OCPs, occupational exposures, stress, and hormones on a patient's acne.
- Poor patient education on how to counteract the drying effects of topical therapy.



Acne Rosacea
Therapeutic Considerations

- NO COMEDONES: No place for topical comedolytics (tretinoin, benzoyl peroxide).
- *P. acnes* bacteria not important: Topical erythromycin and clindamycin not helpful.
- Vascular instability leads to flushing.



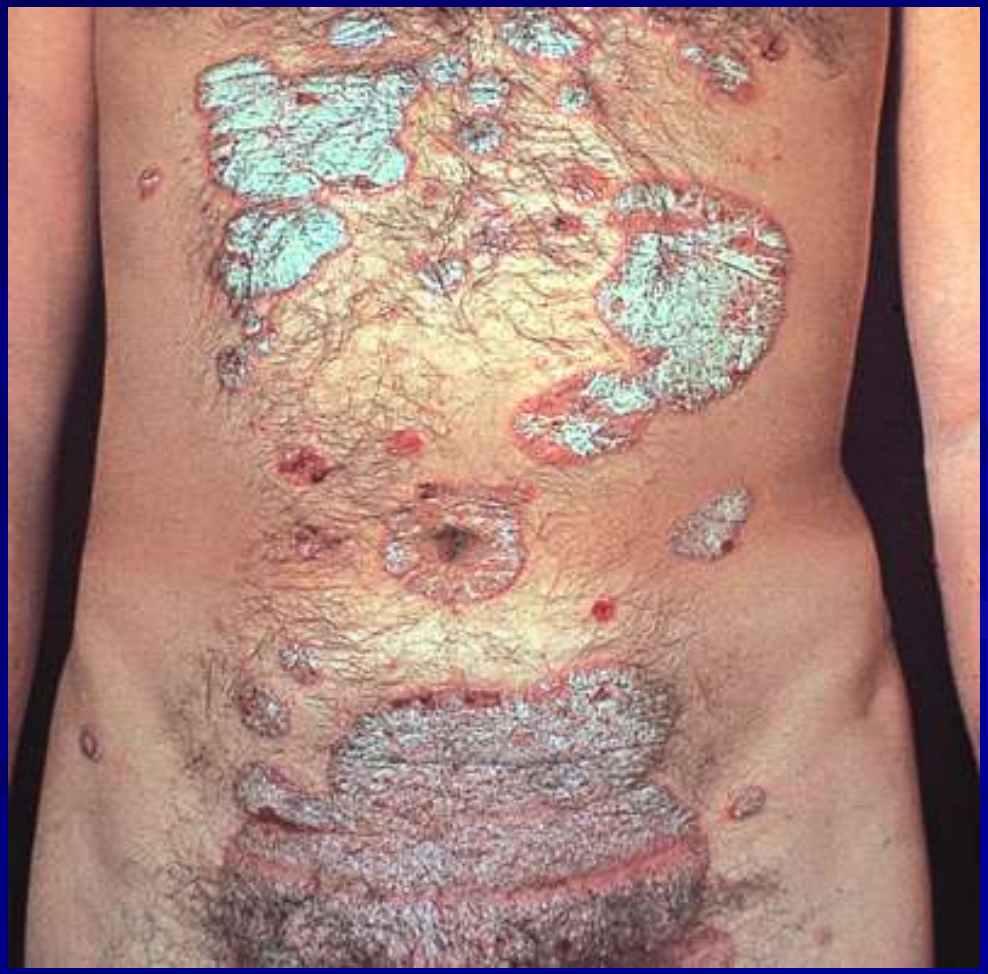
Pitfalls of Acne Rosacea Therapy

- Not waiting 6-8 weeks to establish a response to starting therapy.
- Ignoring the impact of cosmetics, skin cleansers, skin care products, topical steroids, stress, and other triggers on a patient's rosacea.

Therapy of Acne Rosacea

- Topical metronidazole cream or gel bid
- If moderately severe add oral antibiotics
  * Tetracycline , Doxycyline, Minocycline
  * Erythromycin
- Topical sulfur containing lotions/creams are occasionally helpful.

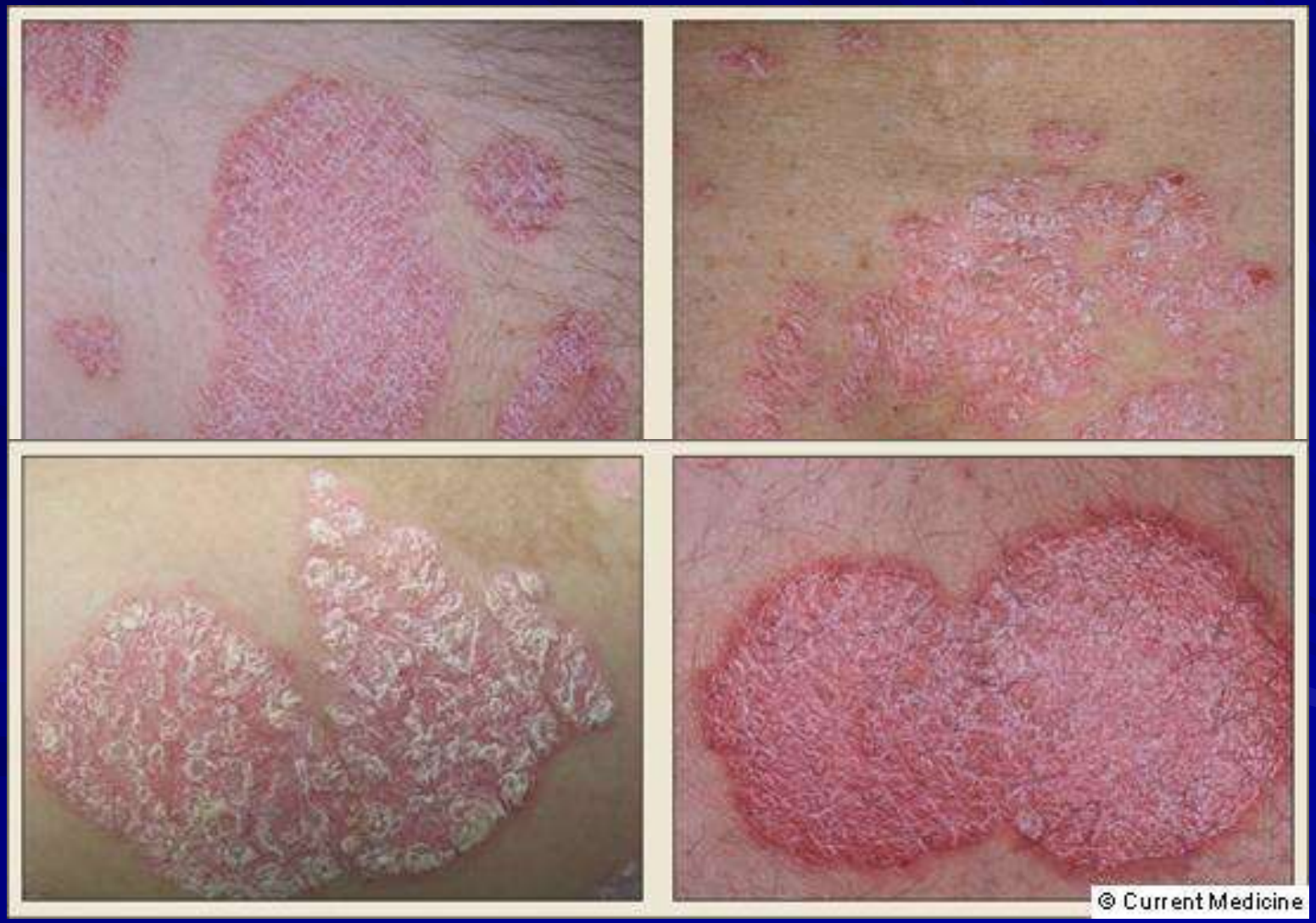
Psoriasis



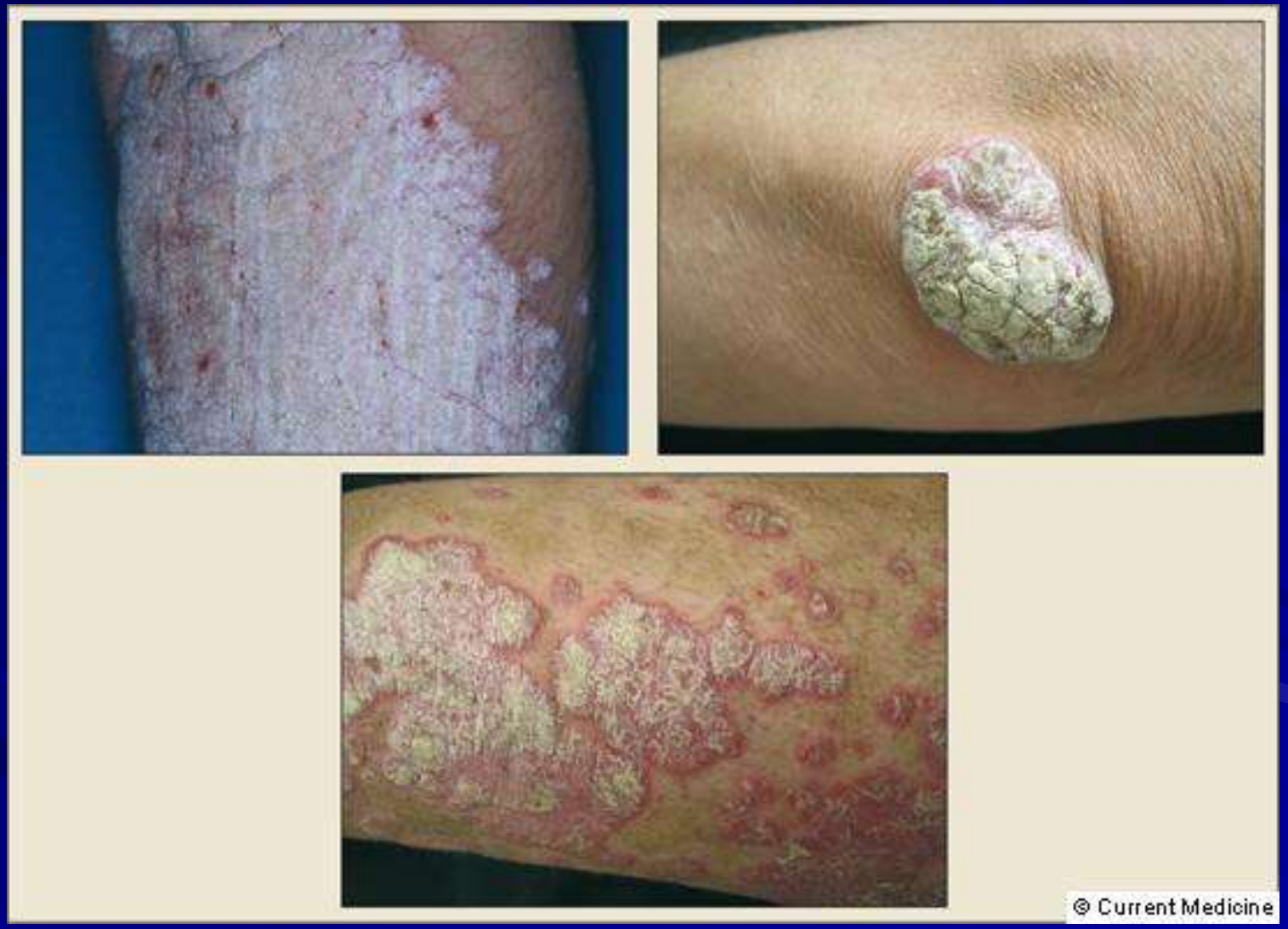
Psoriasis

- Defined: A chronic eruption of scaly plaques on the extensor surfaces that may involve the scalp and nails.
- Types: Vulgaris, Guttate, Pustular, Erythrodermic, Scalp, Palmoplantar, Nail.
- Primary Lesion: well-defined plaque with thick silvery scale.
- Keys to Dx: Distribution; Pitting of nails.

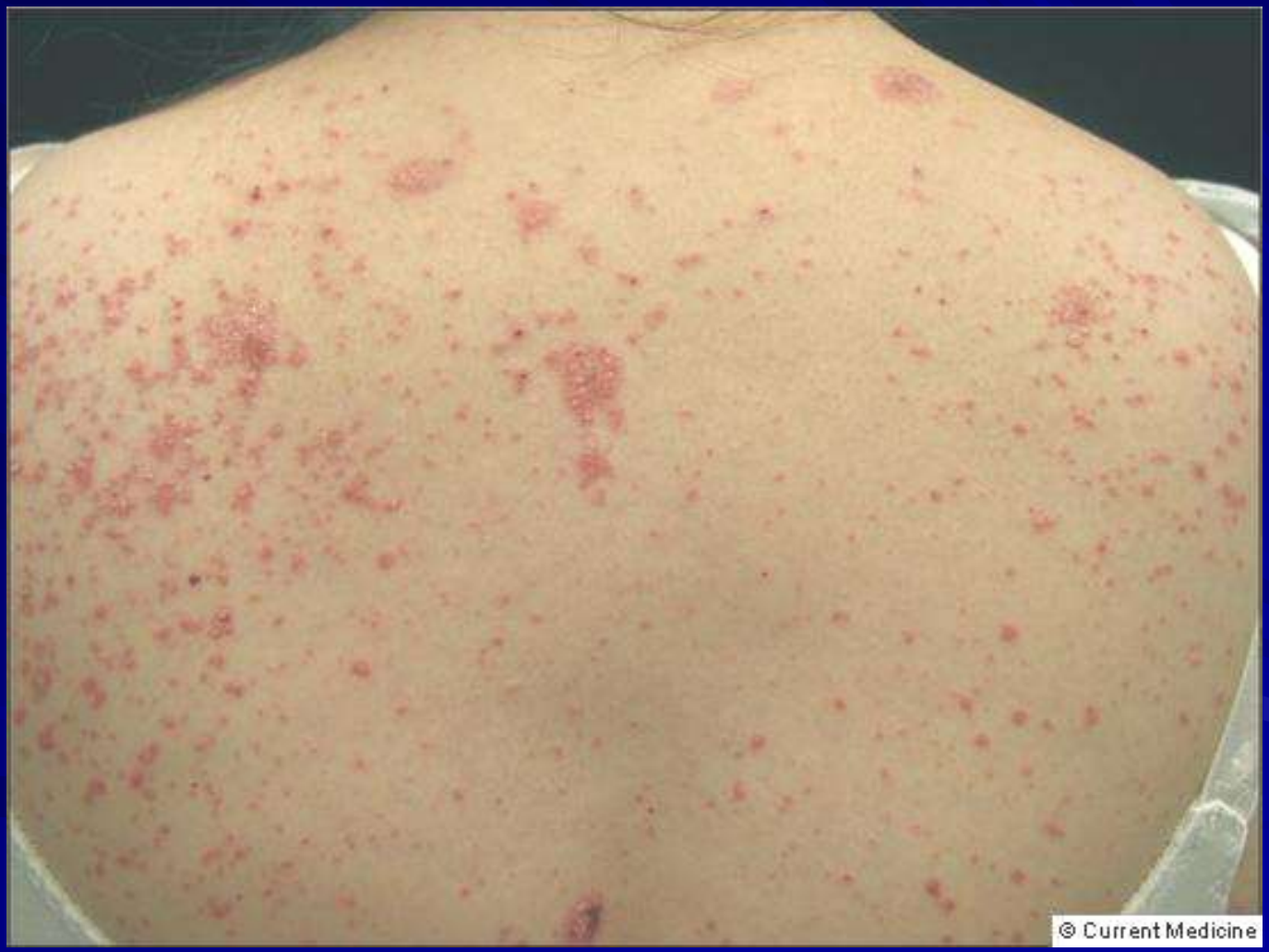
Plaque-type Psoriasis Vulgaris



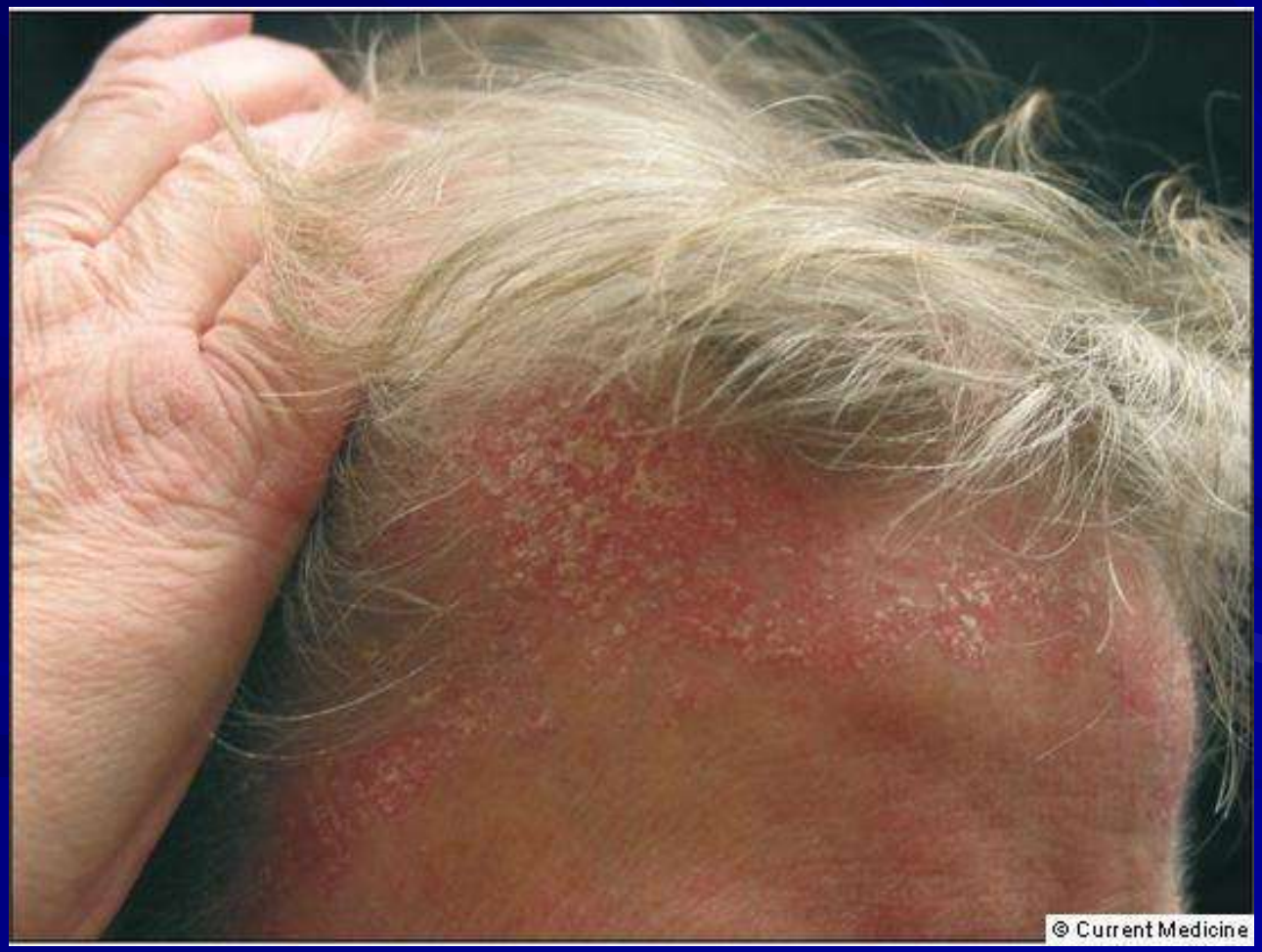
Plaque-type Psoriasis Vulgaris



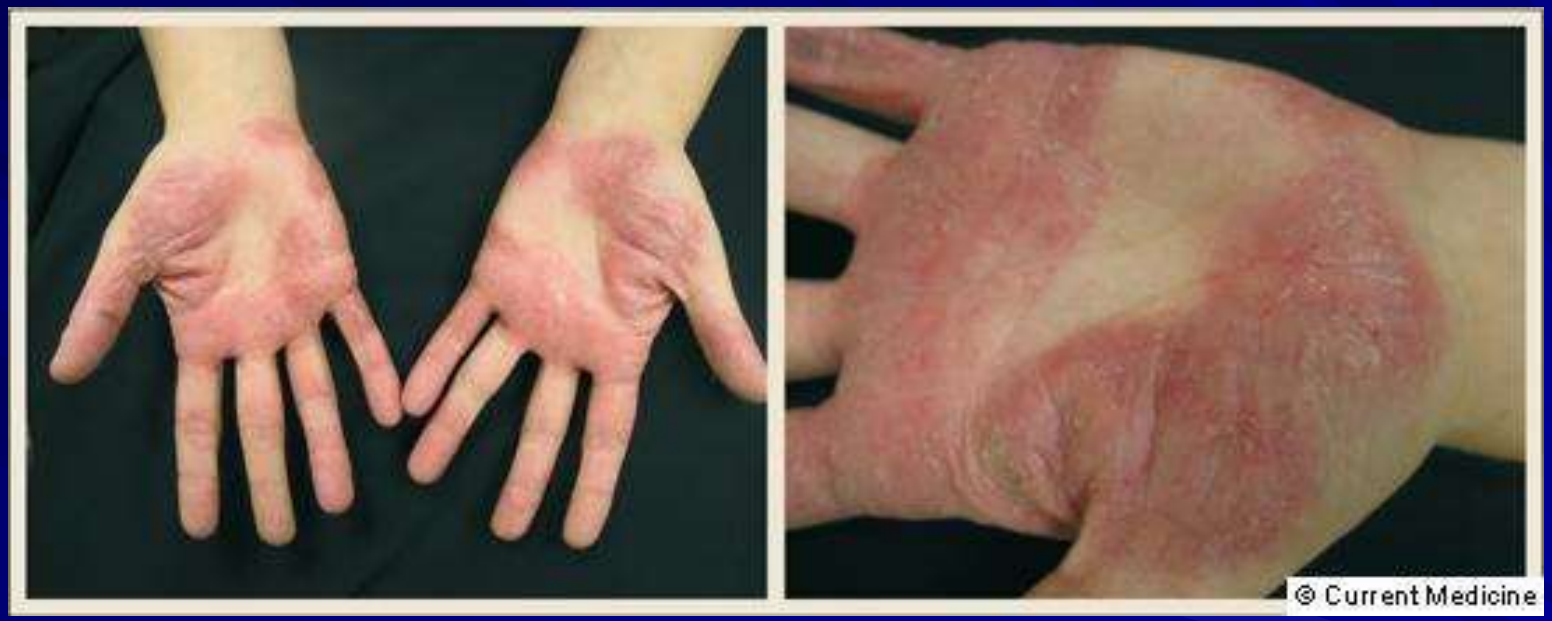
Guttate Psoriasis



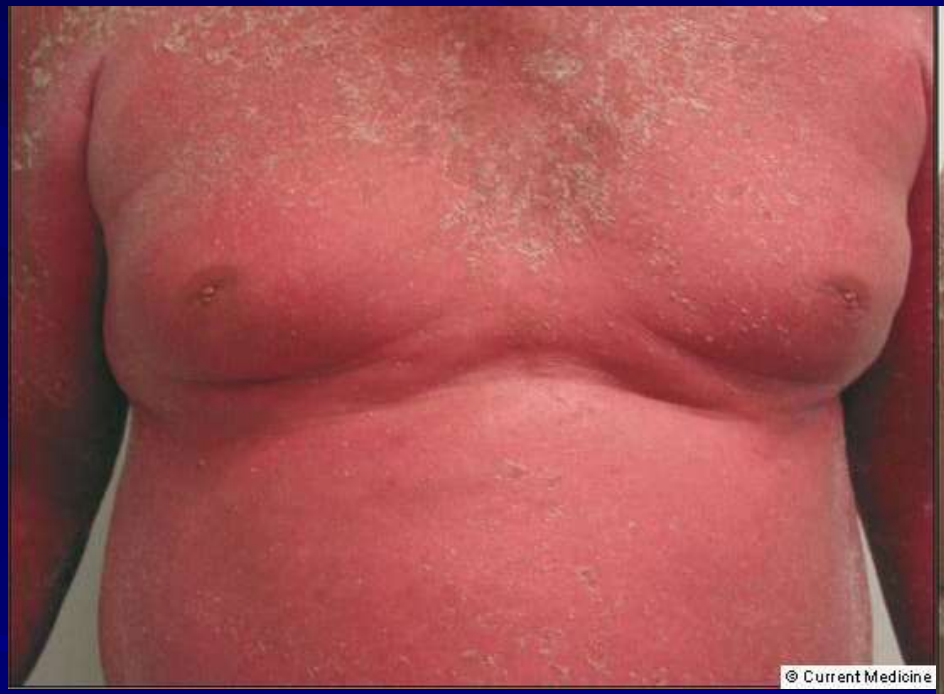
Scalp Psoriasis

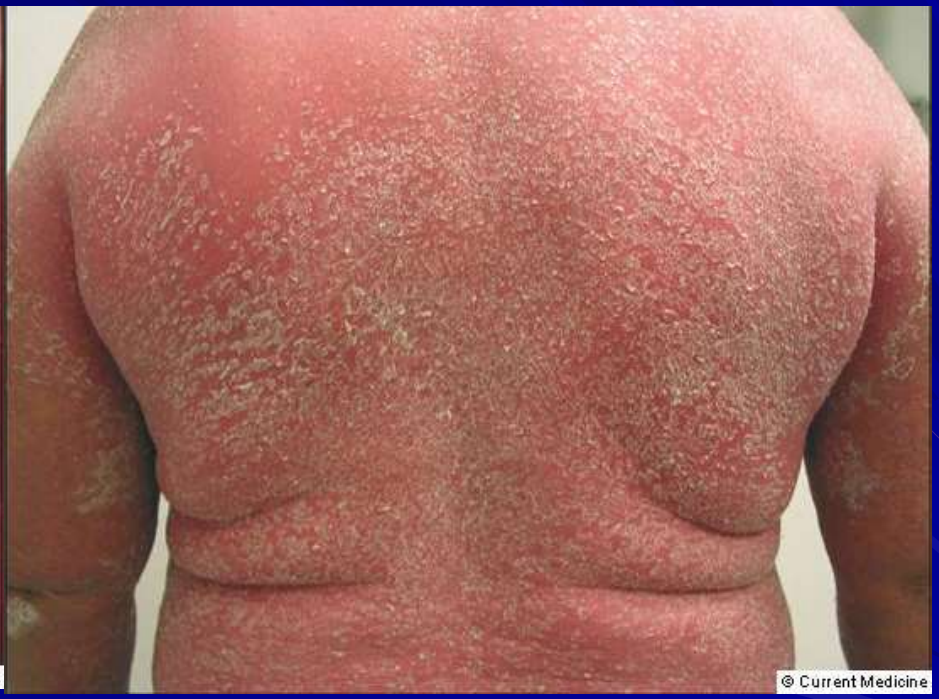


Palmoplantar Psoriasis

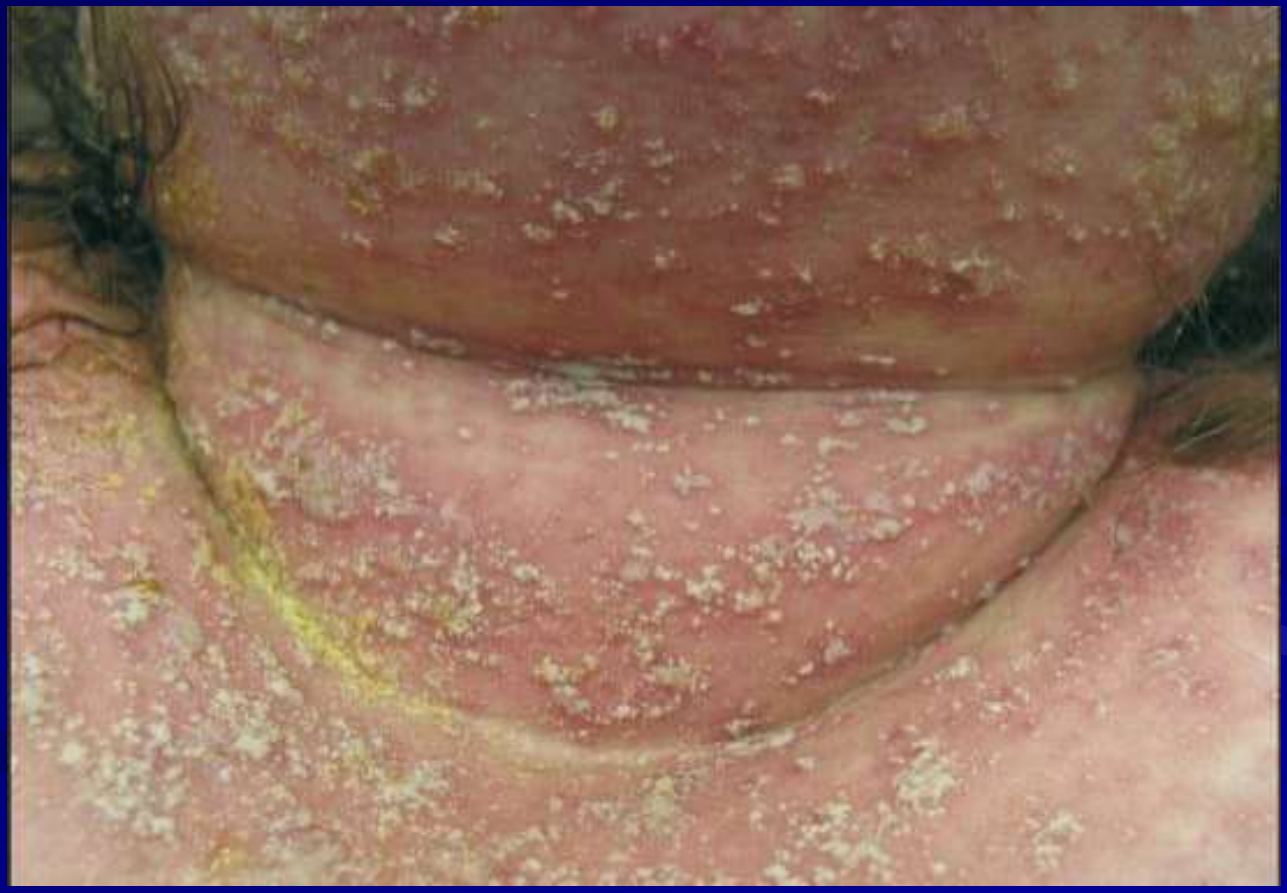


Erythrodermic Psoriasis

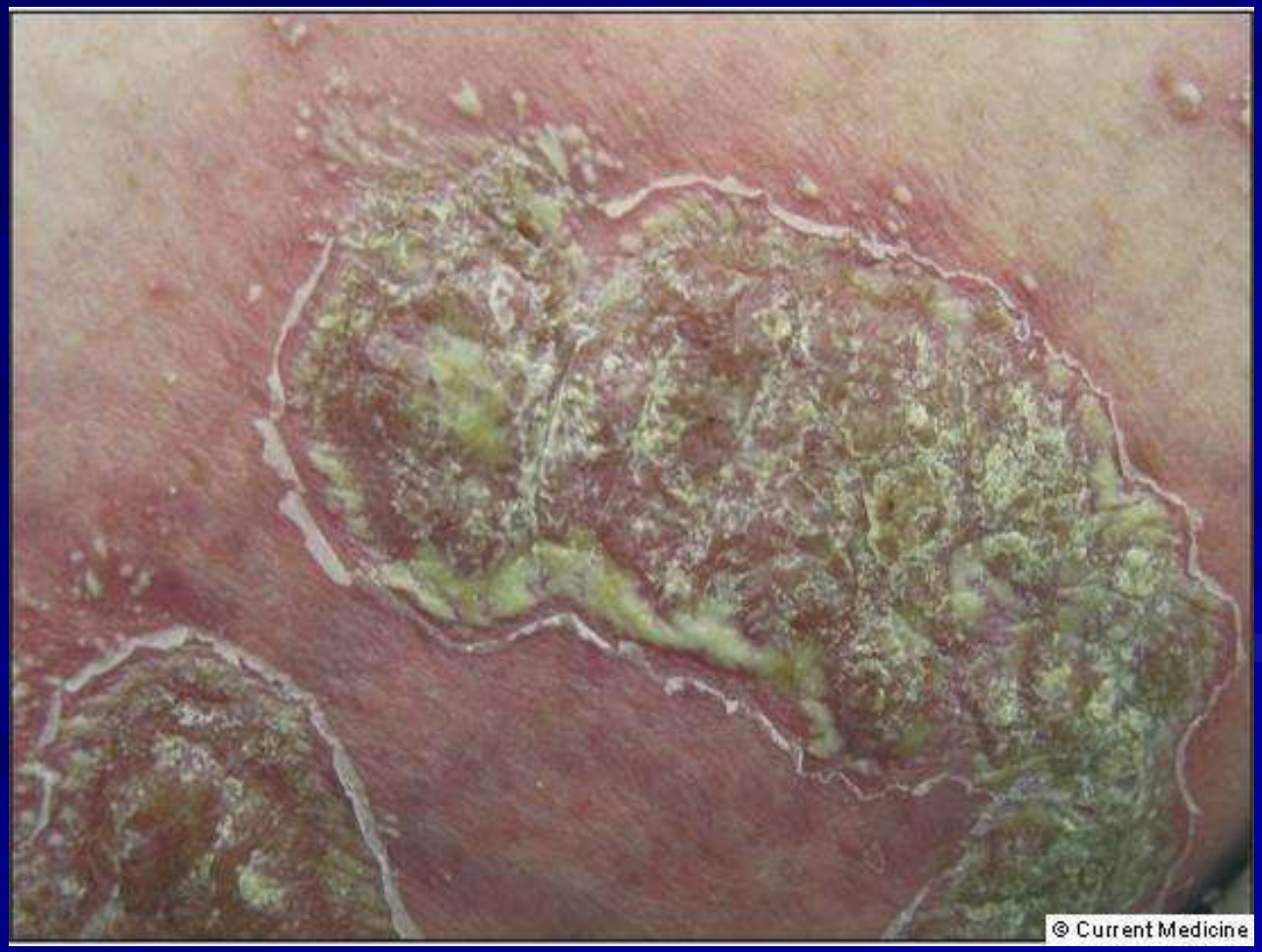




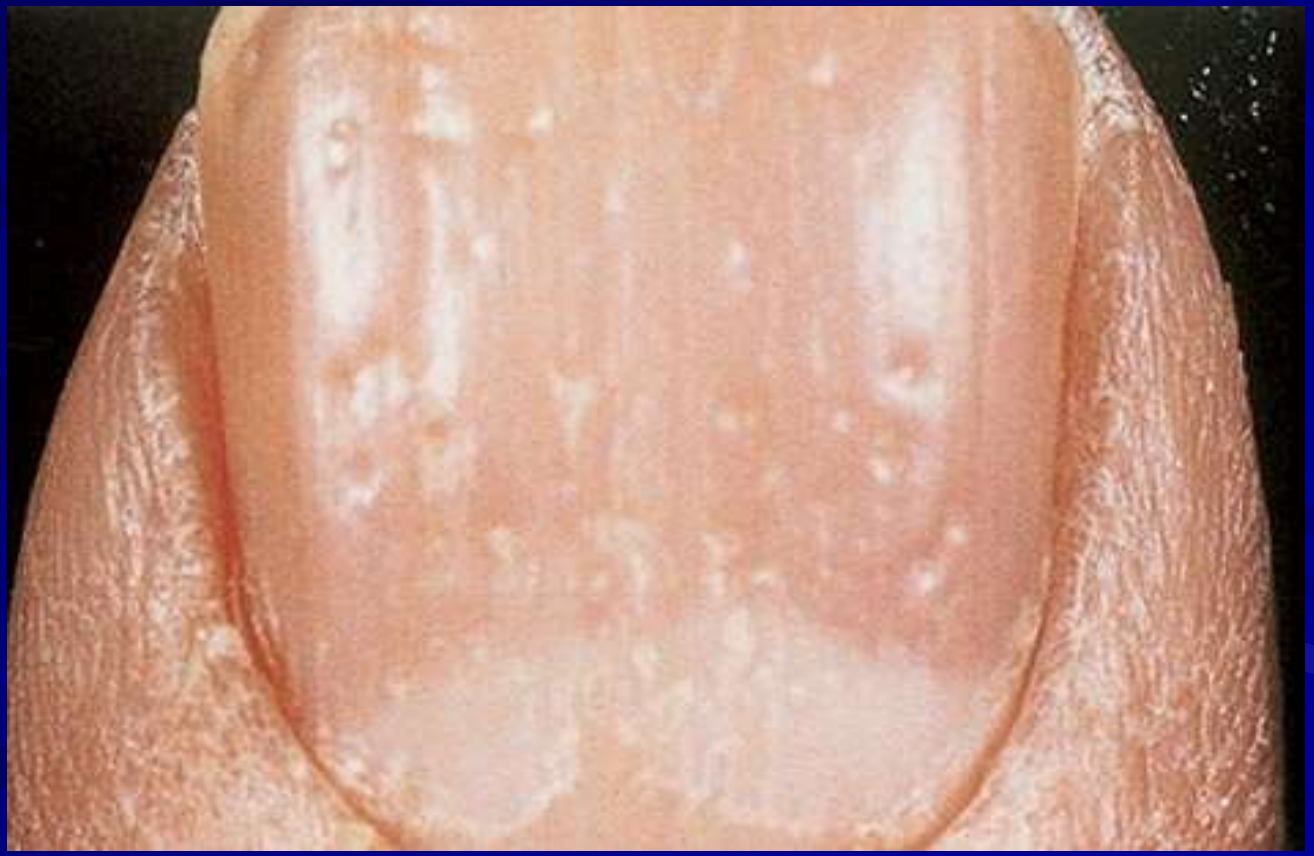
Pustular Psoriasis



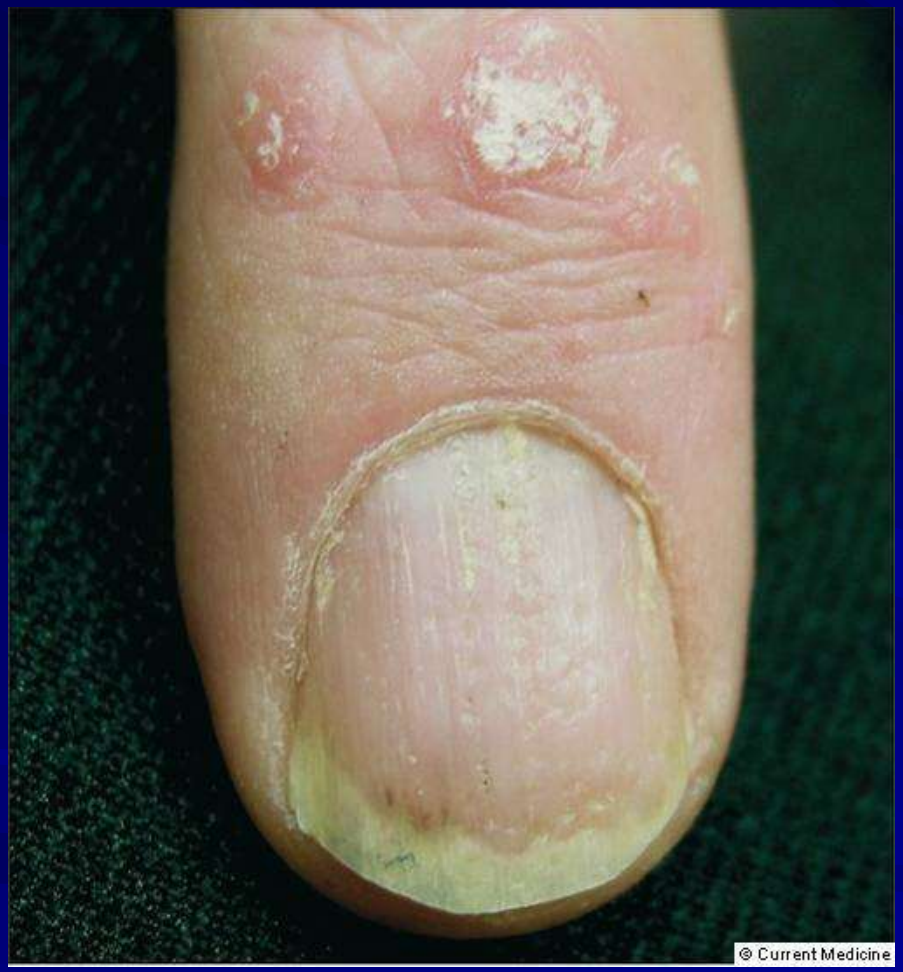
Pustular Psoriasis



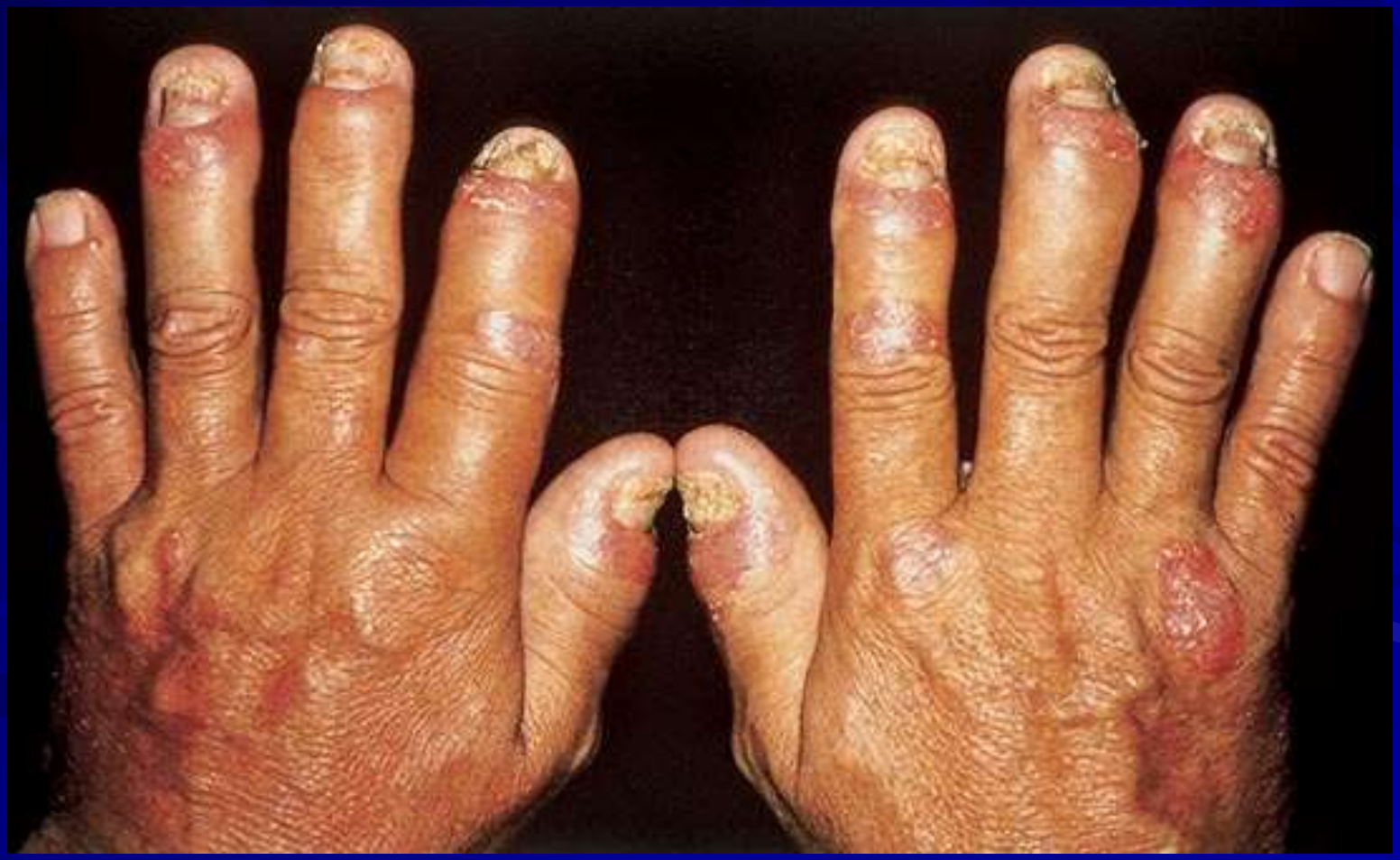
Pitted Nails of Psoriasis



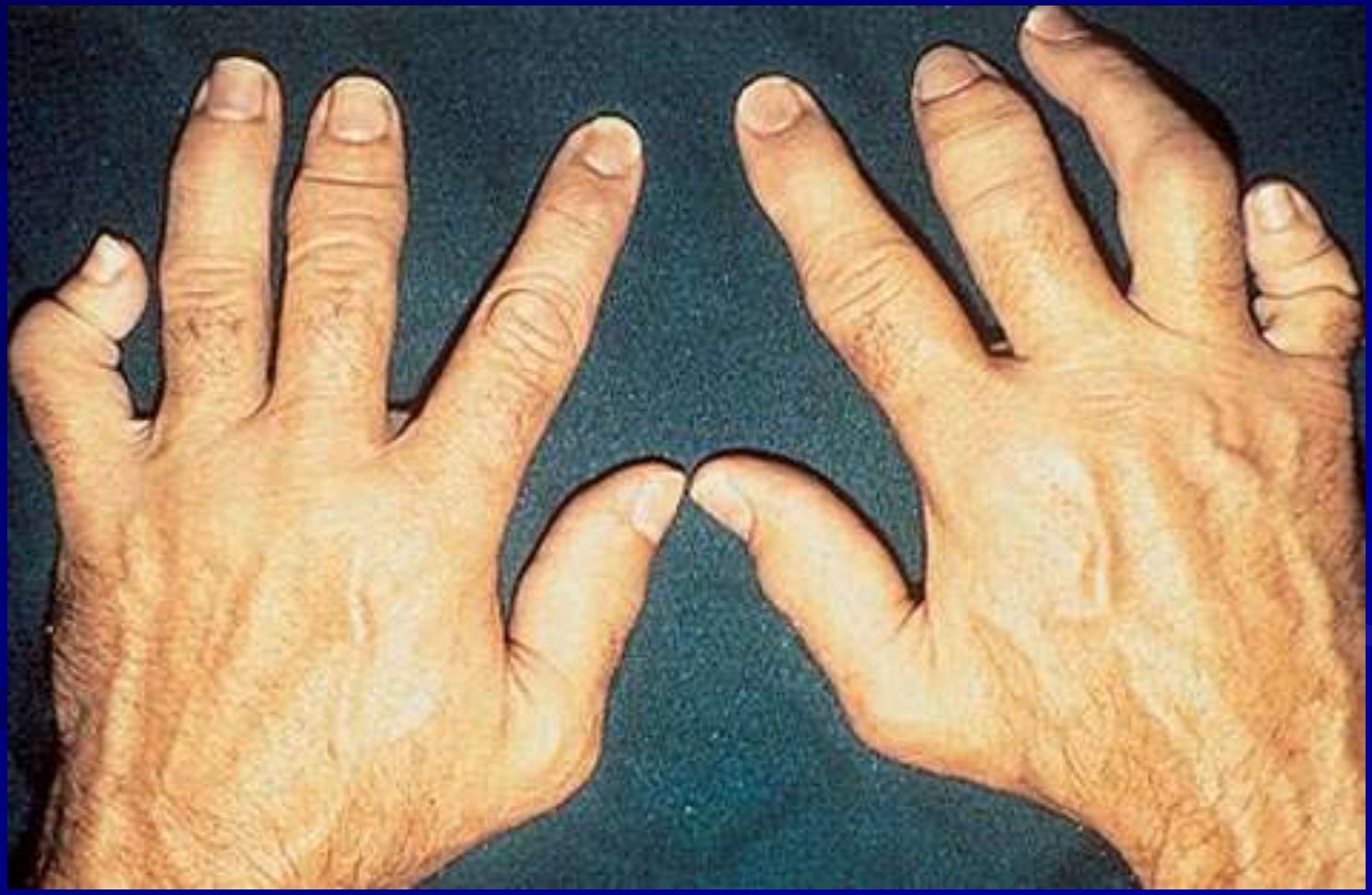
Psoriatic Nail Disease



Clinical features of psoriatic arthritis



Clinical features of psoriatic arthritis



Psoriasis: Pathophysiology

- Etiology unknown: possible genetic, environmental, physical factors?
- Main defect: rapid turnover of epidermal maturation (differentiation).
  ***Normal epidermal transit time = 30 days
  ***Psoriasis epidermal transit time = 7-14 days
- T cell mediated cytokine release (eg. TNFa)

Psoriasis: Therapeutic Modalities

- Topical steroid creams and ointments
- Topical calcipotriene cream and ointment
- Topical tazarotene (retinoid) gel
- Topical tar containing ointments
- Phototherapy (UVB & PUVA)
- Oral methotrexate, acitretin (retinoid), or cyclosporine
- Injectable biologic response modifiers
  - etanercept, efalizumab, adalimumab, infliximab,

Topical Steroid Potency Rankings I= Strongest, VII= Weakest

- Class I*
  -Betamethasone diproprionate 0.05 % oint (Diprolene)
  -Clobetasol propionate 0.05% oint & cream (Temovate)
- Class II*
  -Flucinonide 0.05% oint (Lidex)
  -Amcinonide 0.1% oint (Cyclocort)

***NEVER ON FACE OR SKIN FOLDS**

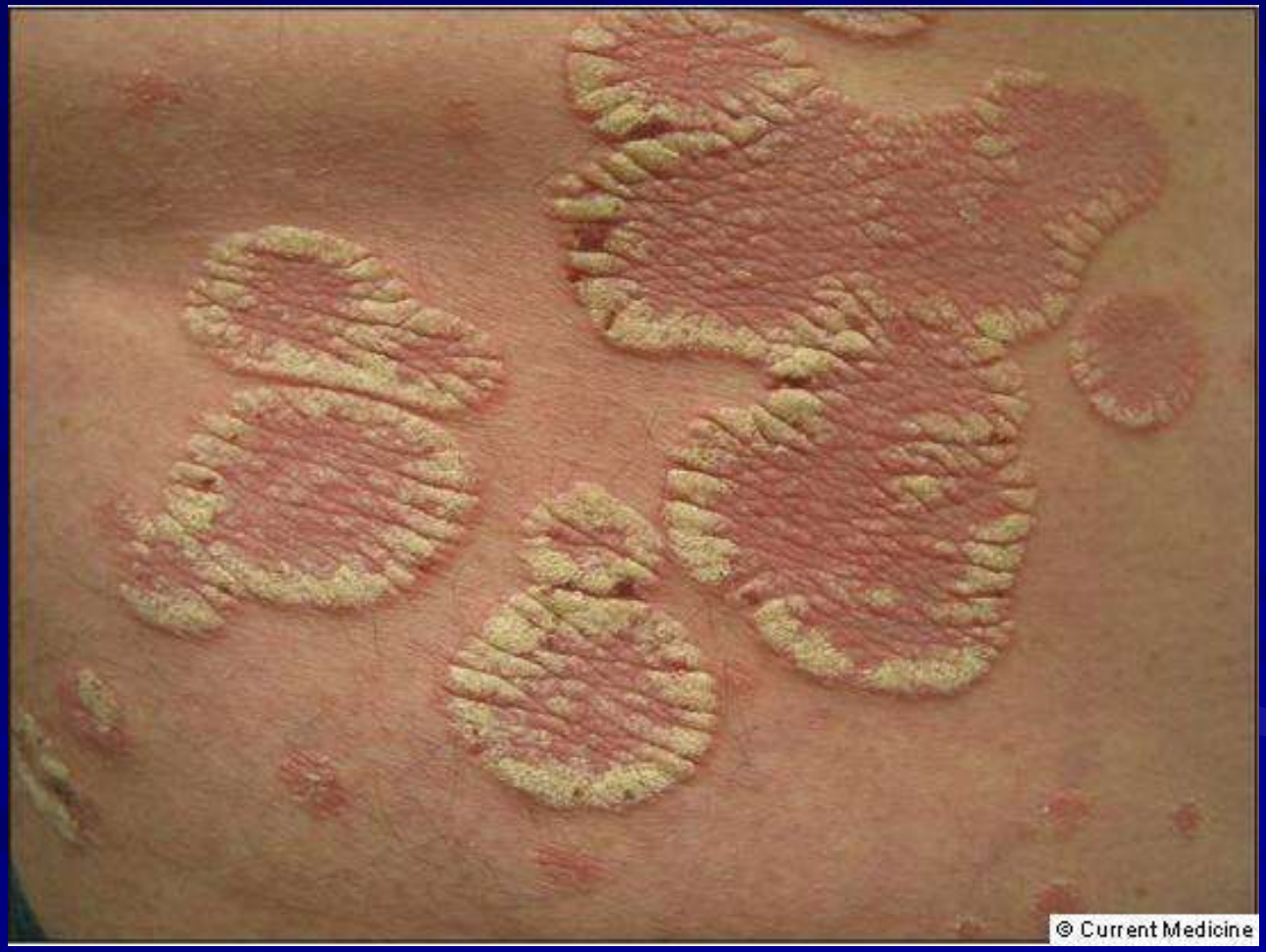
- Class III
  -Triamcinolone acetonide 0.1% oint (Aristocort)
  -Amcinonide 0.1% cream (Cyclocort)
  -Halcinonide 0.1% oint (Halog)

Topical Steroid Potency Rankings I= Strongest, VII= Weakest

- Class IV
  - -Hydrocortisone valerate 0.2% oint (Westcort)
  - -Halcinonide 0.1% cream (Halog)
- Class V
  - -Triamcinolone acetonide 0.025% oint (Aristocort)
  - -Betamethasone valerate 0.1% cream (Valisone)
- Class VI
  - -Desonide 0.05% oint & cream (Desowen)
  - -Triamcinolone acetonide 0.025% cream (Aristocort)
- Class VII*
  - -Hydrocortisone 0.5%, 1%, 2.5% oint and cream

*** Safe for the face and skin folds**

Partially cleared psoriasis



Limited Plaque Psoriasis Therapy

- Topical Steroids
  * Class I or II for short term (14 days) control.
  * Class III-IV for daily maintenance therapy.

- Topical calcipotriene 0.005% cream/ointment (Dovonex)
  * Apply twice daily +/- topical steroids

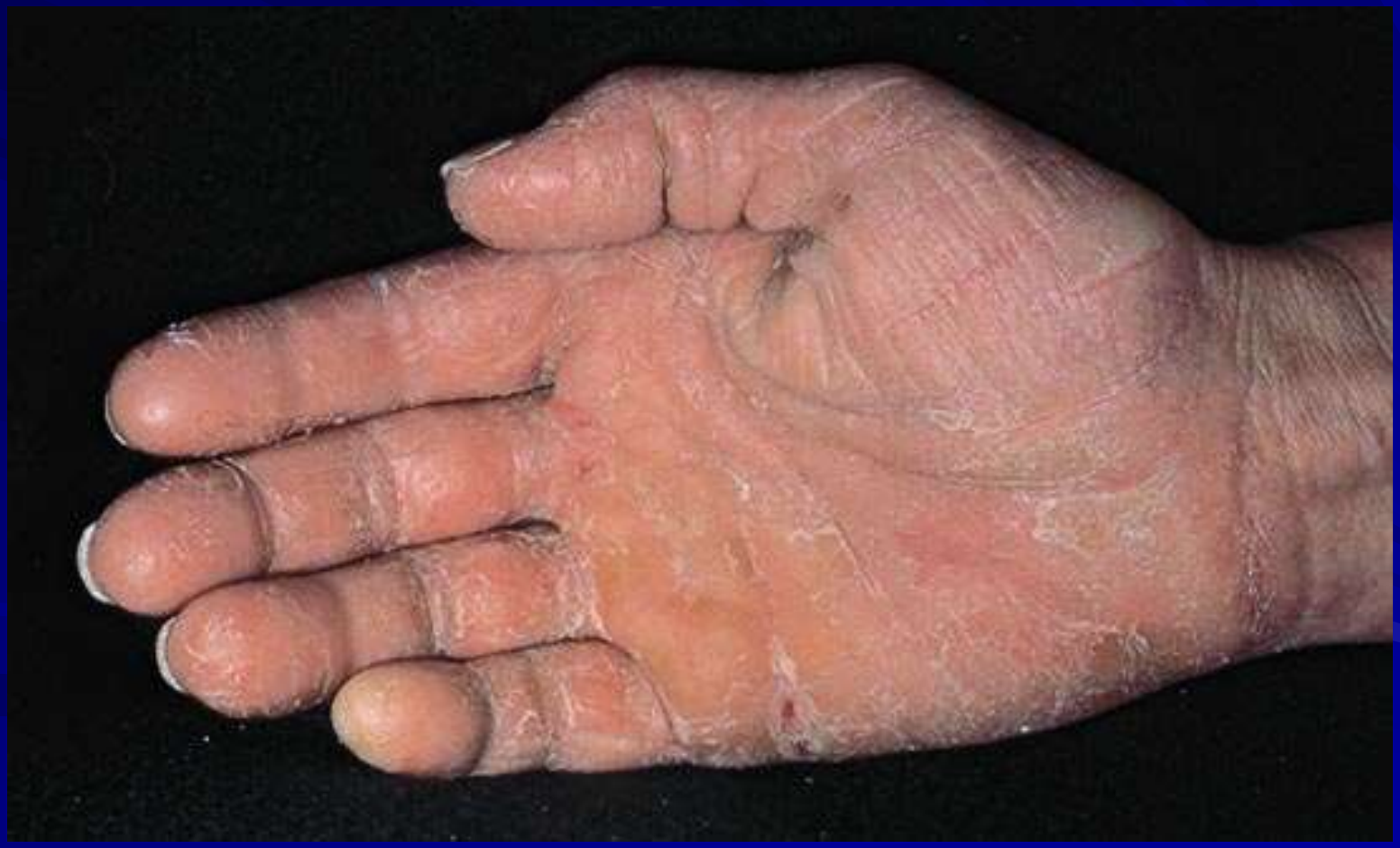
- Topical tazarotene 0.1%, 0.05% gel (Tazorac): **Should not be used in pregnant women.**
  * Apply once daily +/- topical steroids

- Topical tar containing ointments
  * short contact therapy to bid applications

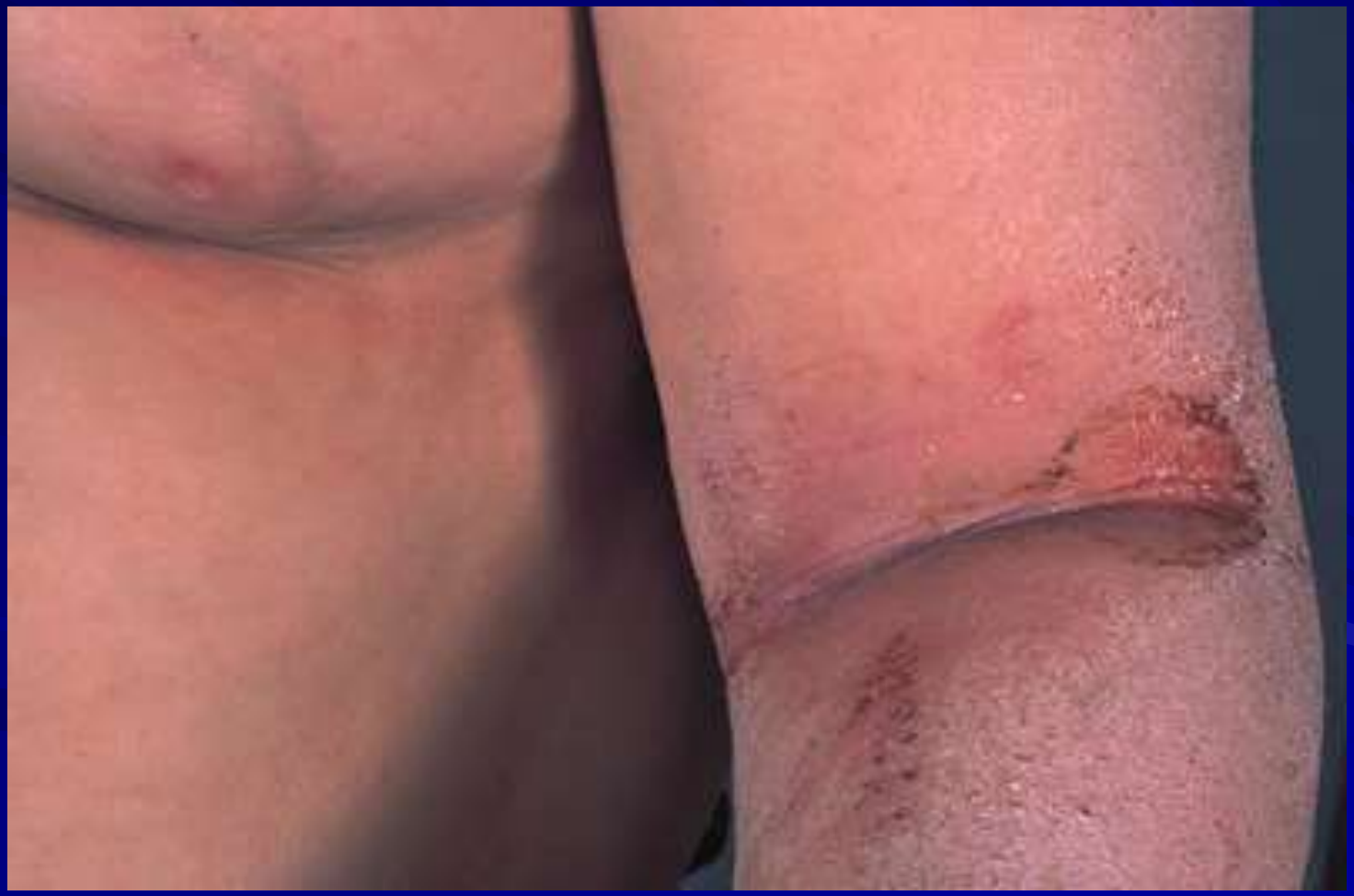
Eczema

- Defined: Inflamed, pruritic skin (dermatitis) not due, exclusively, to external factors (allergens, sunlight, cold, heat, fungus, etc.).
- Types: Atopic, Asteatotic, Hand, Nummular, Stasis (Dermatitis).
- Primary Lesion: ill-defined scaly red patch.
- Keys to Dx: Rule out external factors as the sole cause of the eruption.

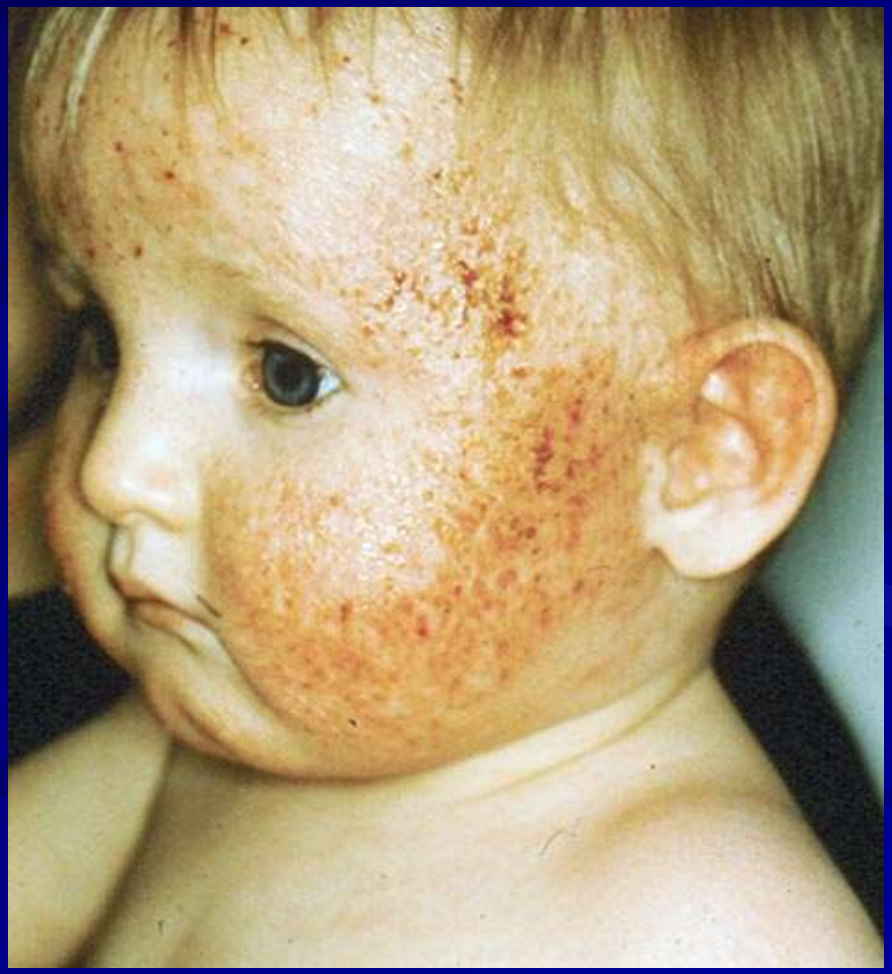
Hand eczema



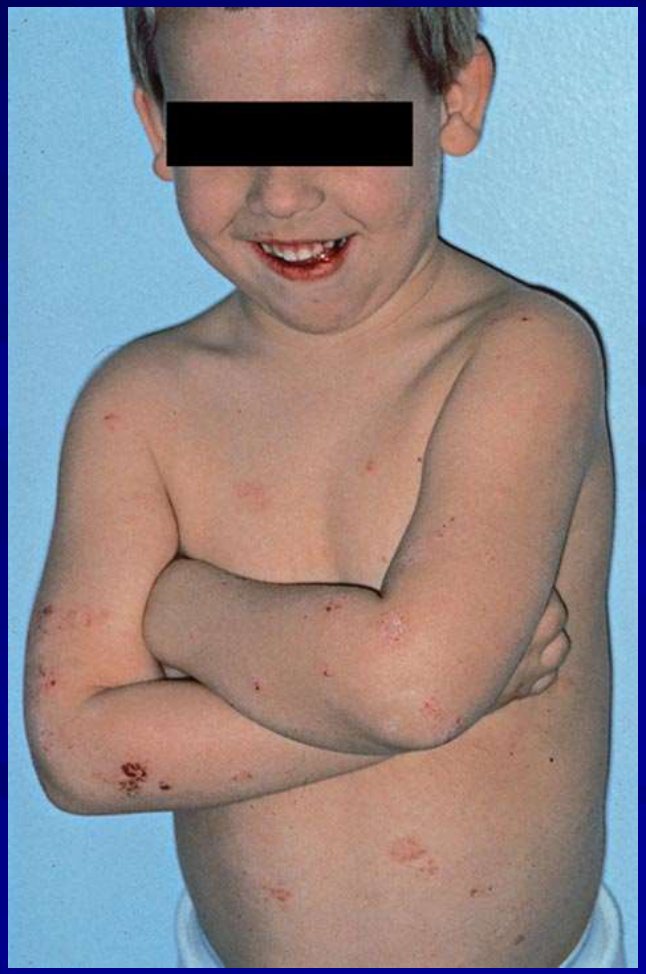
Atopic dermatitis



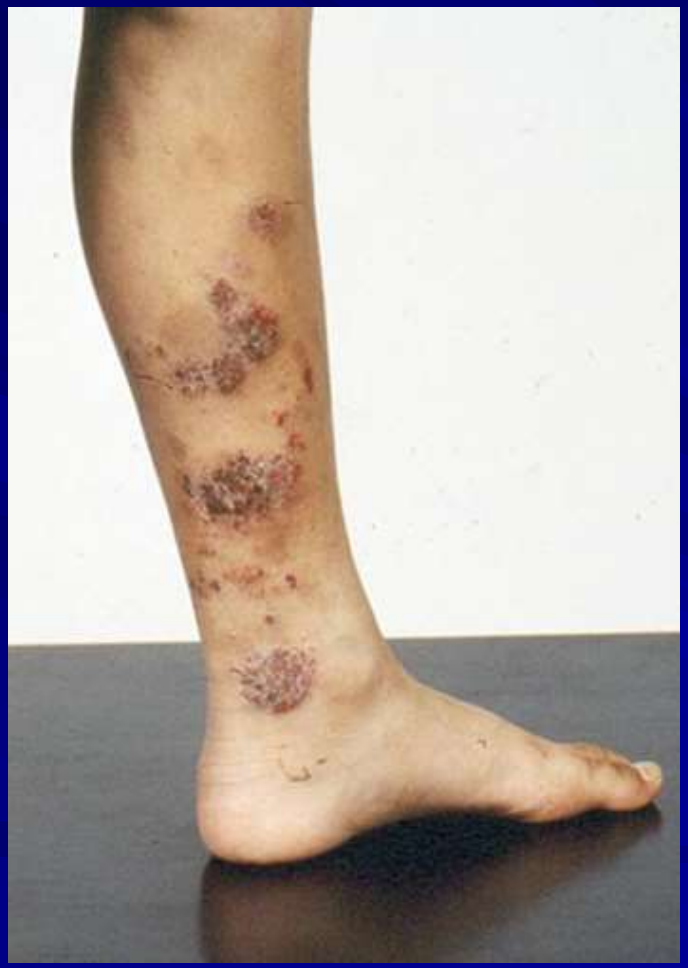
Face involvement in atopic dermatitis



Nummular eczema



Nummular eczema



Eczema: Pathophysiology

- Etiology unknown: genetic and environmental factors play a strong role.

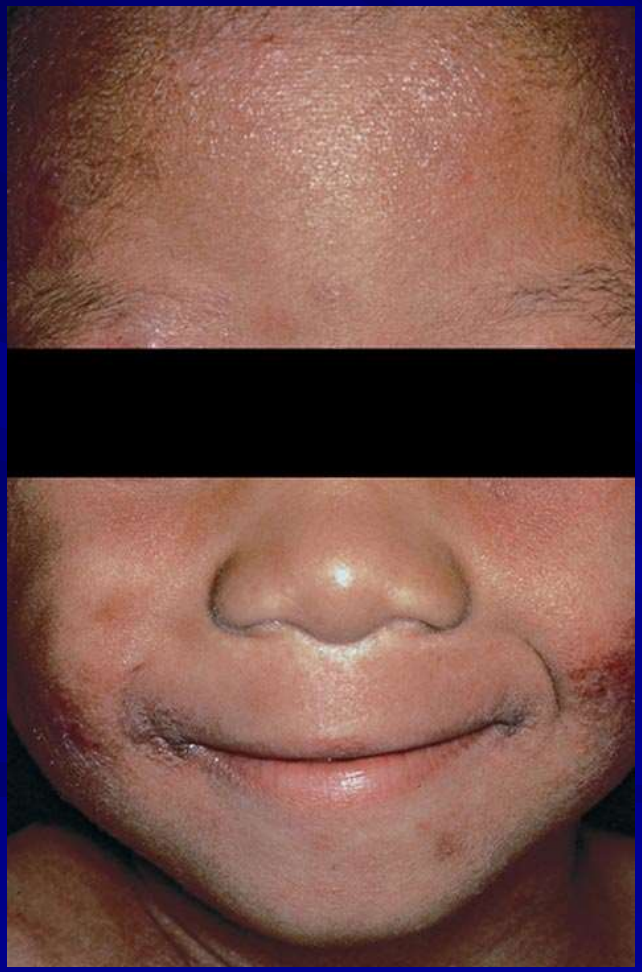
Therapy of Mild to Moderate Eczema

- Correct diagnosis! Rule out allergic or irritant contact dermatitis, dermatophyte infections, drug reactions, etc.
- Good skin care: Mild superfatted skin cleanser (unscented Dove, Basis, etc.), lukewarm not hot showers, lubricate skin frequently with unscented lotions/creams.

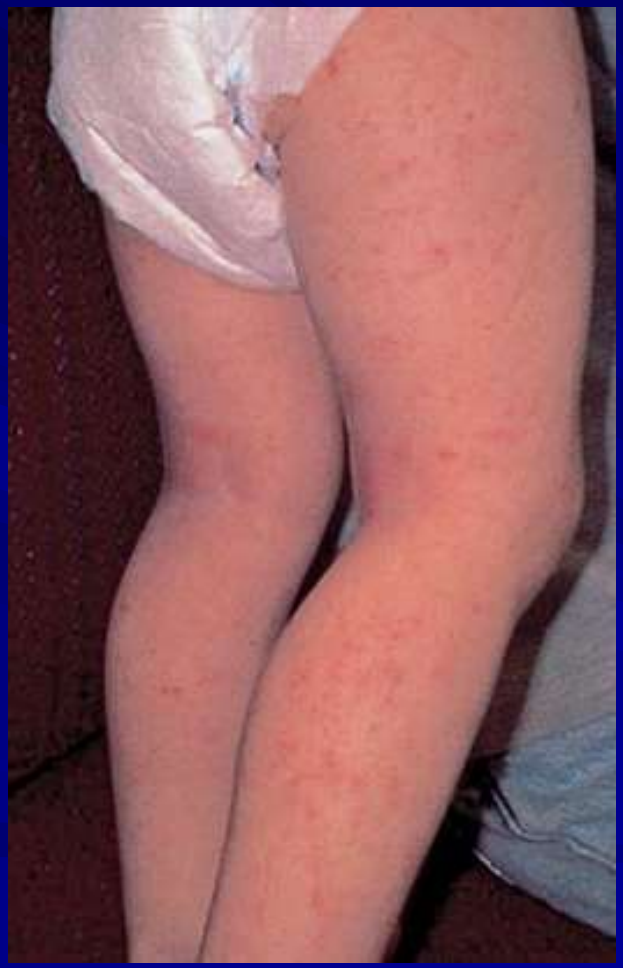
Therapy of Mild to Moderate Eczema

- Topical steroids only for flares
  - Class I or II for short term (14 days) control of severe flares in adults. Class III or IV for children.
  - Class IV - VII for mild flares in adults. Class VI or VII in children.
- Consider topical or oral antibiotics if crusted
- Consider topical tacrolimus or topical pimecrolimus ($$$) for refractory disease.
  - Both are calcineurin inhibitors that inhibit T cell proliferation
  - NO SKIN ATROPHY
  - FDA is concerned about long term use (Skin cancers, lymphomas ???)
  - Dermatologists are not concerned

Atopic eczema



Intense pruritus in atopic dermatitis



Therapy of Severe and Widespread Eczema

- Dermatology referral
- Oral or intramuscular steroids
- Phototherapy
- Oral methotrexate