# PSORIASIS

## Background

1. Definition: Chronic relapsing dermatitis of unknown etiology typically characterized by erythematous, sharply demarcated papules and plaques with silvery white scales (plaque psoriasis) although other forms exist (see below).
2. General Information:[1,2]
    - Common form: Plaque Psoriasis
        - 80-90% of Psoriasis cases. Fig. 1
        - Occurs at any age. Most common between ages 20-30 and 50-60
        - Classic erythematous oval plaques with silvery scale on extensor surfaces
        - Chronic once develops; follows waxing and waning course
    - Less common forms:
        - Eruptive (aka Guttate Psoriasis)
            - ~ 10% of psoriasis cases. Fig. 2
            - Occurs alone or in combination with Plaque Psoriasis
            - Acute onset, association with stress/trauma/infection (Streptococcus infection most common)
            - 100s of plaques all over body with torso most common.
        - Pustular Psoriasis
            - Rare
            - Localized (Palmoplantar & Acropustulosis)
            - Generalized (Von Zumbusch)
        - Inverse Psoriasis
            - Rare; usually in obese patients with other psoriasis types
            - Shiny erythematous well defined plaque typically with macerated surface
            - Intertriginous areas (armpits, groin, under breasts)
        - Erythrodermic Psoriasis
            - Least common, 1-2% of psoriasis patients. Fig. 3
            - Seen in poorly controlled plaque psoriasis patients
            - Medical Emergency, treat like a burn
            - Severely painful and pruritic

## Pathophysiology & Epidemiology

1. Pathology of Disease:[1,3]
    - Not completely known, multifactorial
    - Abnormal T Lymphocyte function
    - Accelerated epidermopoiesis
2. Incidence, Prevalence:[4]
    - Incidence = 200,000 (+/- 50,000) new cases in US yearly
    - United States Prevalence = Adults 2.2% (4.5million)
3. Risk Factors
    - No gender preference
    - Family History. 1/3 patients have affected family members
    - Caucasians 2x risk than African Americans

4. Morbidity / Mortality:
    - Rare mortality w/ Plaque Psoriasis; typically from systemic therapy effects[5]
        - Psoriasis independent cardiovascular risk factor[6,7]
        - With exception of severe psoriasis and psoriatic arthritis, no affect on life expectancy or general health.[8]
    - Varying morbidity:
        - Pruritis, psoriatic flares vary per patient
        - Psychosocial impact can be severe
            - Increased depression & suicidal ideation[9,10]
        - Psoriatic arthritis

**Diagnostics**[1,2]

1. History:
    - Typically, young adult with symmetric, asymptomatic (pruritis may be present) erythematous oval plaques (1-10cm) on scalp, bilateral extensor surfaces and back.
2. Physical Examination:
    - Skin Findings
        - Erythematous, well defined papules that group to form stable plaques. Fig. 1
        - Extensor (elbows, knees) and back most common. Also check intertriginous areas and external ear canals. Palms/Soles/Face *typically* spared.
        - Silvery white scale yields bleeding spots when removed (Auspitz sign)
    - Nail Findings
        - Diagnostic support of psoriasis if nail findings also noted
        - Pitting nail plates most common. Fig. 4
        - Also see Onycholysis, Beau lines, leukonychia, splinter hemorrhages
        - Oil drop sign specific for Psoriasis[11]
    - Joint Disease
        - Sausage Finger and nail findings. Fig. 4
        - Varying prevalence; ranges from 5-30% of psoriasis patients[1,12,13]
        - Rheumatoid factor negative
        - Typically skin involvement precedes joint involvement.
        - Several types:
            - Asymmetric oligoarticular. Most common at 70%
            - Spinal Type. Debilitating. Approximately 20%
            - Others: Mutilating type, Distal Interphalangeal, Symmetric Polyarthritis
3. Diagnostic Testing
    - Typically clinical diagnosis
    - Rarely skin biopsy needed
        - Uncertain clinical diagnosis
        - Small punch biopsy adequate
4. Laboratory evaluation:
    - Rarely Indicated
    - Severe cases, check uric acid (elevated) and folate (decreased)

5. Diagnostic imaging
    - Plain films only if joint involvement
6. Diagnostic Criteria:
    - No formal diagnostic criteria
    - Clinical diagnosis based on exam or, if uncertainty exists, skin biopsy
    - Consider Dermatology consult if diagnosis in doubt
    - Psoriasis Area and Severity Index (PASI)
        - Quantifies subjective severity typically for research purposes
        - Clinical utility limited

**Differential Diagnosis**

1. Key Differential Diagnoses:[1,2]
    - Seborrheic dermatitis (typically more face involvement)
    - Eczema
    - Tinea infection (KOH to rule out)
    - Pityriasis rosea (Herald patch / Christmas tree pattern)
    - Candidiasis (KOH to rule out)
    - Lichen planus
    - Drug eruption
2. Extensive Differential Diagnoses
    - Paget's disease
    - Cutaneous lupus erythematosus
    - Bowen disease (Squamous Cell Carcinoma in situ)

**Therapeutics**[14,15,16]

1. Three categories (Topical, Phototherapy, Systemic) typically tried in succession but can be combined
    - Topical Therapy
        - Emollients
            - Critical therapy for skin hydration and protection
            - Normalizes hyperproliferation and apoptosis
            - Used for mild to moderate plaque psoriasis
            - BID dosing, best after bathing. Allow 10-15 minutes to penetrate prior to other topical applications.
            - Excellent safety profile
            - Examples include lotions, creams, ointments (each with increasing lipid:$H_2O$ ratio and thus viscosity). Compliance is key; therefore, tailor to patient preference.
        - Keratinolytic Agents
            - Adjunctive therapy; limited data as monotherapy
            - Softens / removes scales
            - Increases absorption of other topical agents
            - Especially useful on thick scalp lesions
            - Representative example: Salicylic Acid

- Cautions: Do not use with other salicylate drugs or prior to UVB phototherapy.
    - Potential for systemic absorption and side effects if >20% body surface application &/or abnormal hepatic or renal function.
    - Not for children.

- Steroids
    - Mainstay of therapy. Monotherapy or combined with other topical, UV light or systemic agents
    - Class II-VII steroids typically BID, duration of therapy unknown
    - Class I (super potent) steroids 2-4 weeks of treatment (50g or less per week for Class I). (SOR:A)[16]
    - Gradually reduce use based on clinical response
    - Clinical trials typically of short duration; therefore, long-term efficacy and risks largely unknown.
    - Tachyphylaxis to topical steroids well documented, so pulse steroids often utilized[17]
    - Side effects:
        - Local: Skin atrophy, telangiectasias, striae, rosacea
        - Systemic: Hypothalamic-Pituitary Axis (HPA) suppression (medium to high potency topical steroids).
- Vitamin D Analogues
    - Examples: calcipotriene (Calcitrene®, Dovonex®), calcitriol (Vectical®)
    - Monotherapy more effective than placebo (SOR:A)
    - Combine with topical steroids for added benefit (SOR:A)
    - No corticosteroid side effects.
    - Transient skin irritation can occur.
    - Rarely, elevated serum calcium at higher dosing.
    - BID dosing to affected areas. Custom combinations with steroids and once daily also used.
    - Calcitriol less irritating to skin than calcipotriene, especially intertriginous areas. Safe to use on face and genitals.
    - Inactivated by acids; avoid use with salicylic acid and some steroid preparations with acids
    - Use after phototherapy.
        - Ultraviolet (UV) A inactivates calcipotriene,
        - UVA and UVB inactivates calcitriol[18]
- Retinoids
    - Adjunct to topical steroids or phototherapy for stable plaque psoriasis up to 20% body surface area (BSA)
    - Apply once daily, typically evenings
    - Causes photosensitivity and skin irritation
    - If combining with phototherapy, reduce UV dose by >1/3
    - Pregnancy category X

        - Tar
            - Confine tar to plaques only
            - Tar irritates locally, stains clothes, malodorous
            - Falling out of favor due to compliance issues
    - Phototherapy
        - Dermatologist guided therapy
        - Typically used for extensive psoriasis
        - Broad-band UVB (bbUVB) (SOR:C)
            - 290-320 nm. Causes skin burning
            - Typically combined with topical or systemic agents (SOR:B)
            - Frequency 3-5 times per week typically for 20-25 treatments
            - Improvement seen within one month; maintenance therapy needed by some
        - Narrow-band UVB (nbUVB) (SOR:B
            - 311 nm. Burns greater than bbUVB
            - Superior to broad-band UVB, safer than PUVA
            - Expense limits use
        - Photochemotherapy (PUVA)
            - Methoxsalen or psoralen (either orally or via bath) + UVA = PUVA
            - 2-3 times per week for 20-30 treatments
            - One of the most effective treatments for plaque psoriasis
            - Reports of cutaneous malignancy in Caucasians has limited use
    - Systemic Therapy
        - Best managed by Dermatologist
        - Consider for >20% body surface involvement &/or pt very uncomfortable
        - Useful guide on systemic therapy including biologics, their use, monitoring and side effects: Psoriasis.org Pocket Guide
        - Biologics:
            - TNF alpha inhibitors (Adalimumab, Etanercept, Golimumab, Infliximab)
            - T Cell modulators (Alefacept)
            - Cytokine modulators (Ustekinumab)
        - Systemics:
            - Synthetic retinoids - Acitretin (*Soriatane®)*
            - Immunosuppresives - Cyclosporine, Methotrexate
2. Further Management (within 24 hrs)
    - Rarely indicated
    - Most treatments are chronic in nature
    - Initial high dose therapies for psoriasis flare warrant office follow up to monitor response and adjust dosing.
3. Long-Term Care
    - Dependent on therapy[14,16]
    - Remission is goal, adjust therapy accordingly

**Follow-Up**

1. Return to Office
    - Interval of "regular" or "periodic" in-office follow-up poorly defined in guidelines.
    - Therapy dictates follow-up in office
    - Therapy side effects warrant sooner follow-up
2. Refer to Specialist
    - Rheumatologist if Psoriatic arthritis
    - Consider cardiology consult if cardiovascular co-morbidities
    - Dermatology once phototherapy, biologics or systemic therapy considered, or if patient not responding to therapies.
3. Admit to Hospital
    - Rarely indicated
    - Generalized pustular psoriasis & Erythrodermic Psoriasis immediate medical attention

**Prognosis**

1. No cure available
2. Relapse, response to therapy, severity individualized.
3. No consensus prognostic tools.
4. Early onset and family history are poorer prognostic factors.
5. Treatment aimed at reducing or eliminating symptoms for as long as possible[2]

**Prevention/Exacerbation**

1. No known primary prevention
2. Exacerbating factors[1,2,3]
    - Human Immunodeficiency Virus (HIV)
    - Physical Trauma
        - Koebner phenomenon: Psoriasis plaques forming at site of physical trauma.
    - Infection (Streptococcus and Candida)
    - Drugs (Lithium, beta blockers, chloroquine, ACE inhibitors, Corticosteroid withdrawal, terbinafine)
    - Winter season (cold/dry environment)
    - Sunburn
    - Alcohol consumption
    - Emotional Stress

**Patient Education**

1. Psoriasis Patient handout from familydoctor.org:
    - http://familydoctor.org/familydoctor/en/diseases-conditions/psoriasis.printerview.all.html
2. National Psoriasis Foundation:
    - http://www.psoriasis.org

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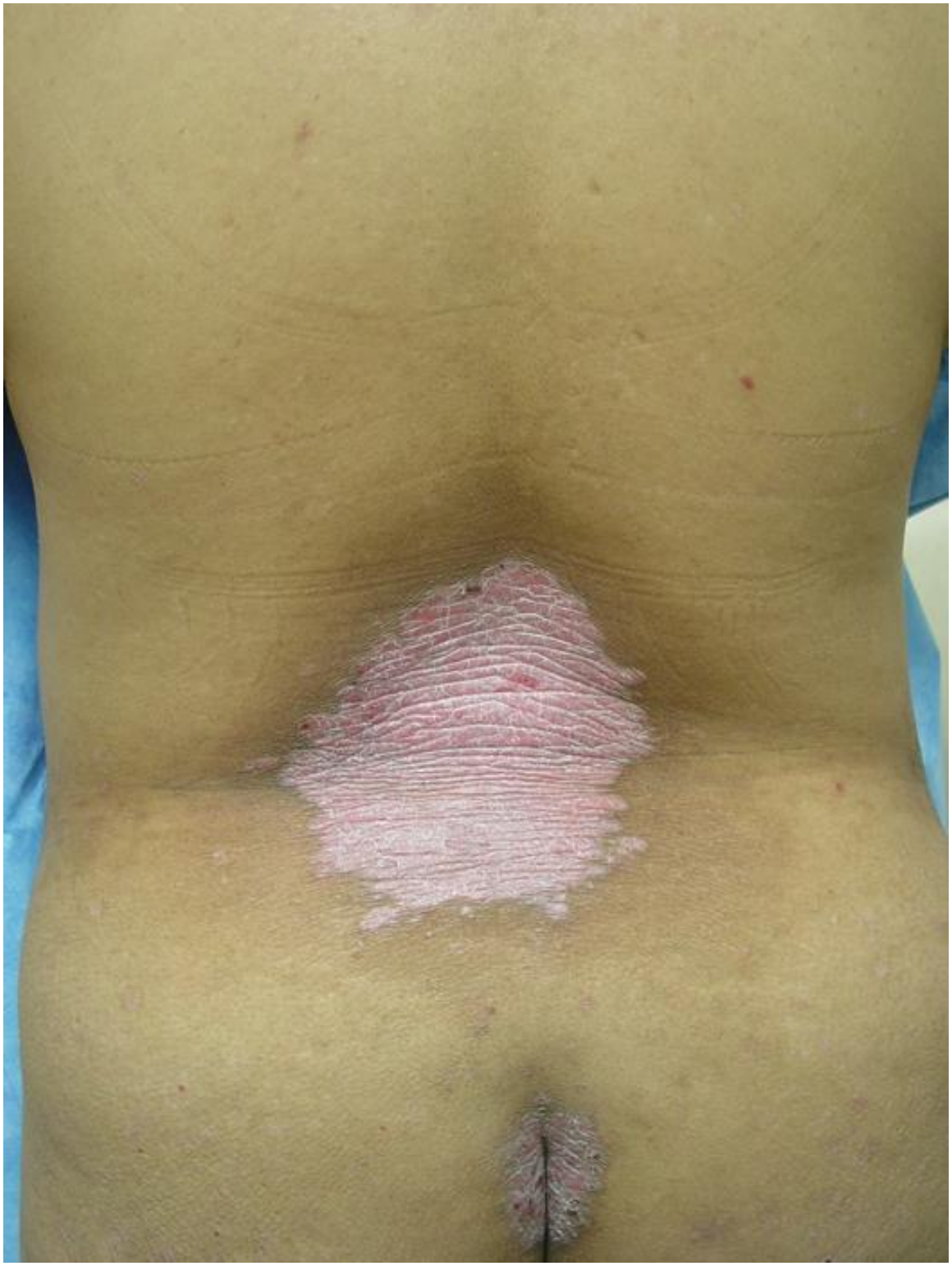

Fig. 1: Plaque Psoriasis. Used with permission. LTC Kimberly Wenner MD, Madigan Army Medical Center Dermatology. 2012.

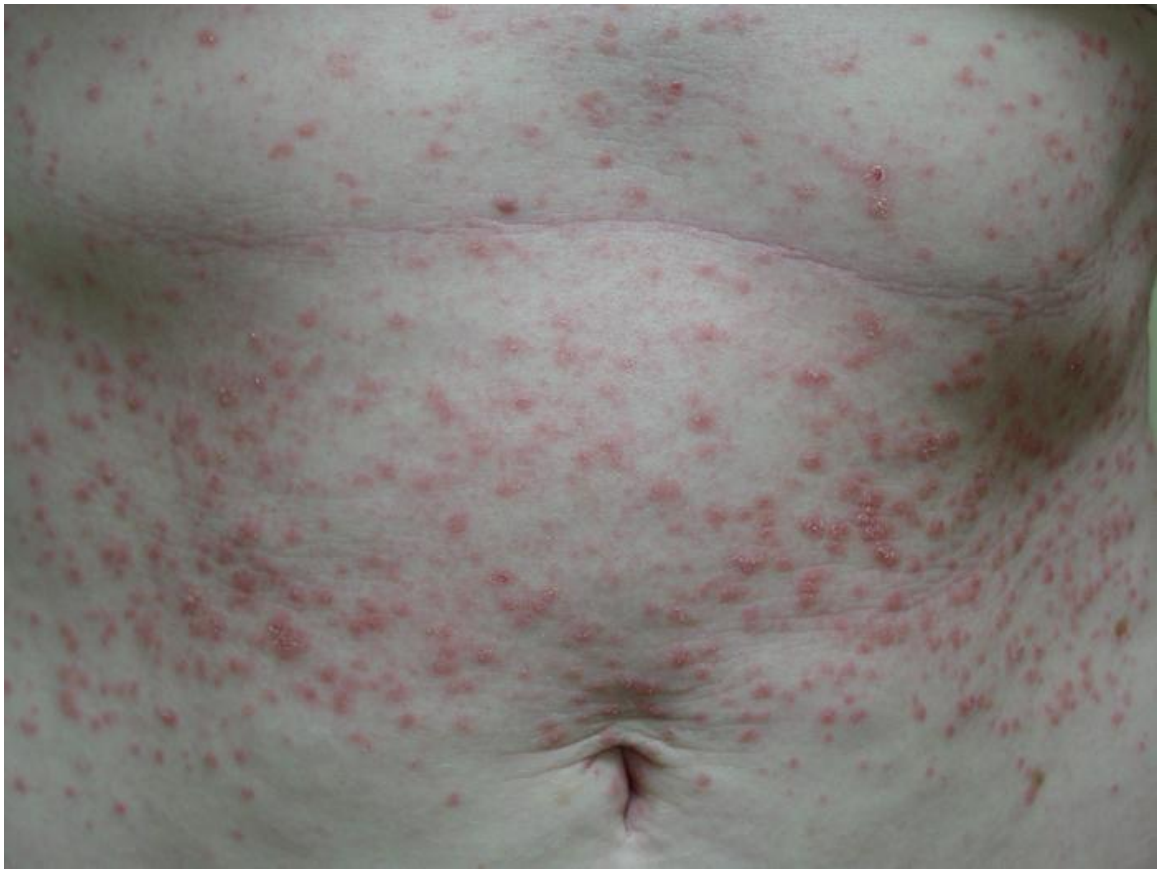

Fig. 2: Guttate Psoriasis. Used with permission. LTC Kimberly Wenner MD, Madigan Army Medical Center Dermatology. 2012.

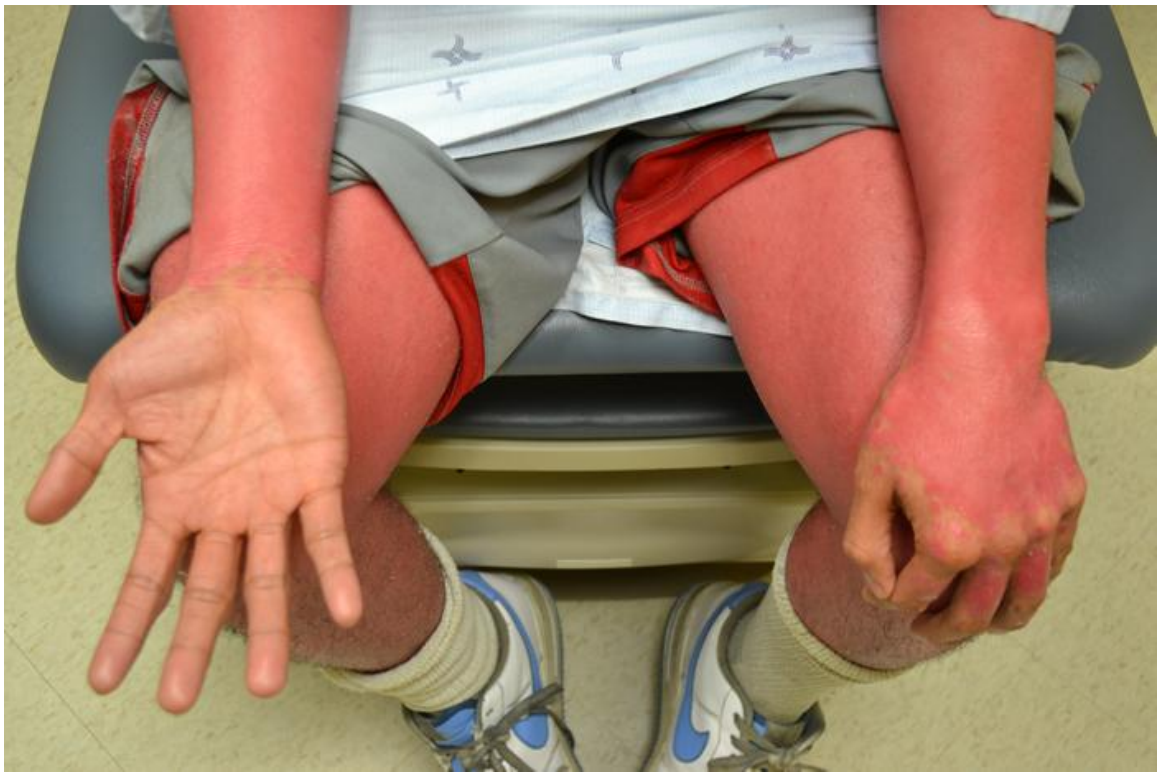

Fig. 3: Erythrodermic Psoriasis. Used with permission. MAJ Drew Reese MD, Madigan Army Medical Center Dermatology. 2012.

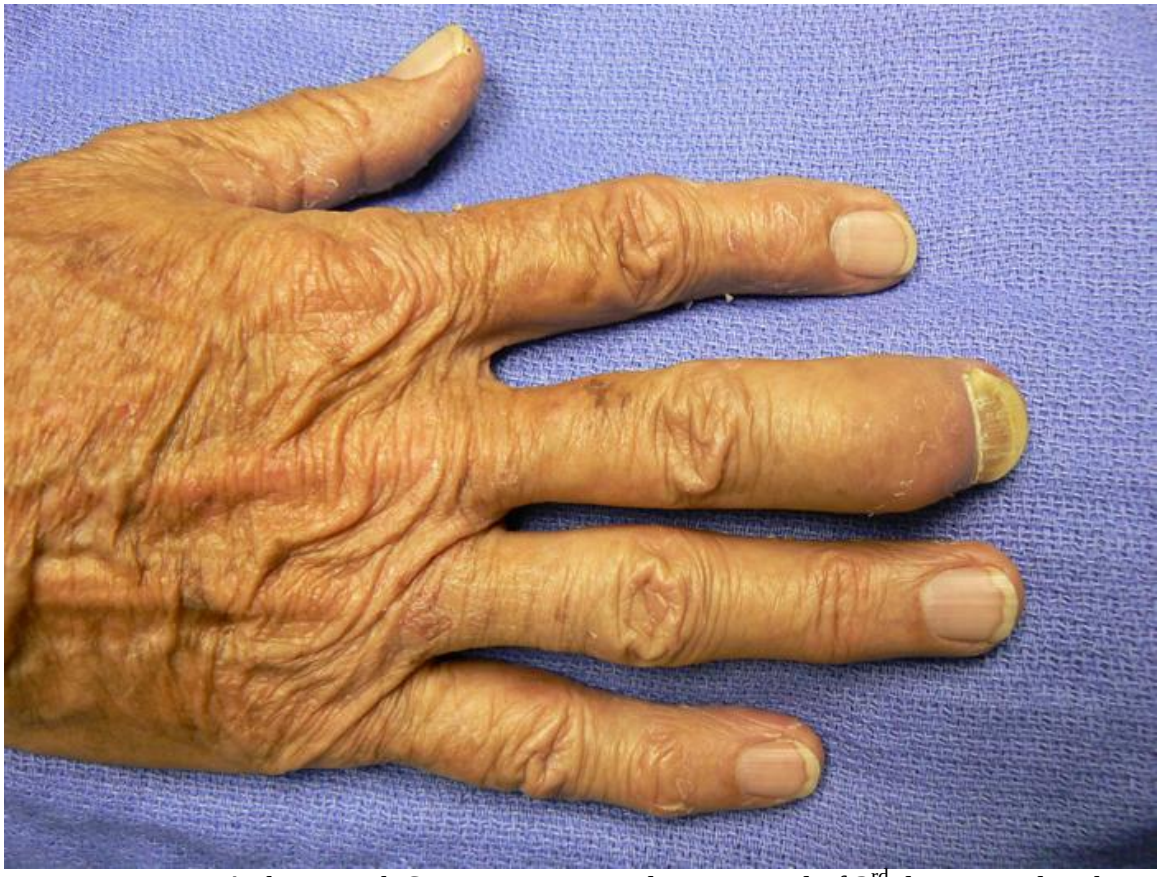

Fig. 4: Psoriatic Arthritis with Sausage Finger and Pitting Nail of 3rd digit. Used with permission. LTC Kimberly Wenner MD, Madigan Army Medical Center Dermatology. 2012.

Psoriasis.org Pocket Guide http://www.psoriasis.org/document.doc?id=354

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