Terminology of Skin Disorders and the Use of Topical and Injectable Steroids

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Disclosure

I have no financial interests or relationships to disclose.

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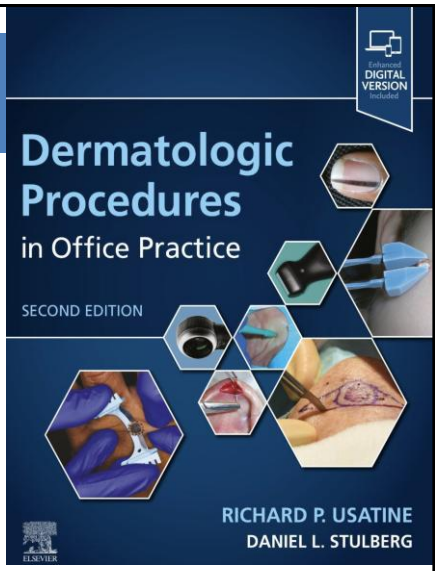
Additional Disclosure:

- Family Medicine Editor, VisualDx
- Author, 12 medical books including:
  - The Color Atlas and Synopsis of Family Medicine. 3nd Edition. McGraw-Hill, New York, 2019
  - The Color Atlas of Internal Medicine, McGraw-Hill, New York, 2015
  - The Color Atlas of Pediatrics, McGraw-Hill, New York, 2014
  - Cutaneous Cryosurgery. 4th Edition. Taylor and Francis, London, 2014
  - Dermatologic Procedures in Office Practice. 2nd Edition. Elsevier, Inc., Philadelphia. 2024.
- Co-President, Usatine Media
  - medical app development company



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Learning Objectives

1. Describe common patterns of skin lesions.
2. Explain how to choose the appropriate potency of a topical steroid based on the diagnosis and location of the skin condition.
3. Discuss how to perform an intralesional steroid injection.

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People only see what they are prepared to see.
—Ralph Waldo Emerson

People who know dermatology terminology are prepared to see the diagnoses.

—Richard Philip Usatine

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ARS Question #1

All of the Following Terms Are Considered Morphology Terms Except:

A. Nodule
B. Intertriginous
C. Vesicle
D. Scale
E. Bulla

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Terminology

- Primary morphology
- Secondary morphology
- Pigmentation
- Shapes
- Distribution

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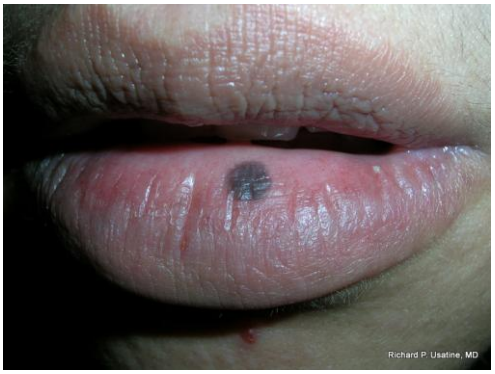
Primary Morphology

- Macule
- Patch
- Papule
- Plaque
- Wheal
- Nodule
- Tumor
- Vesicle
- Bulla
- Pustule

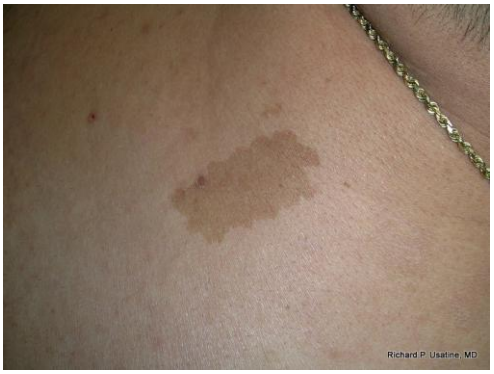
9

Non-Palpable

Macule < 1cm (10mm)



Patch > 1cm (10mm)



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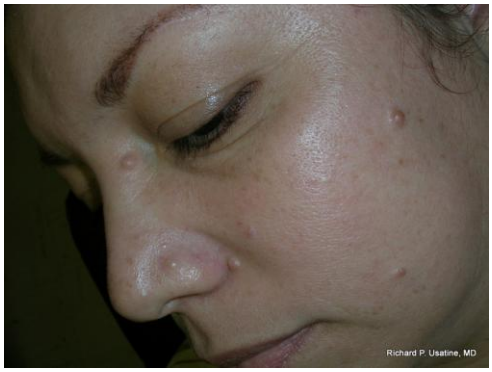
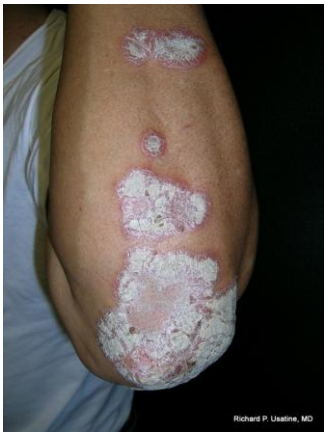
Palpable

Papules < 1cm



Plaque >1cm



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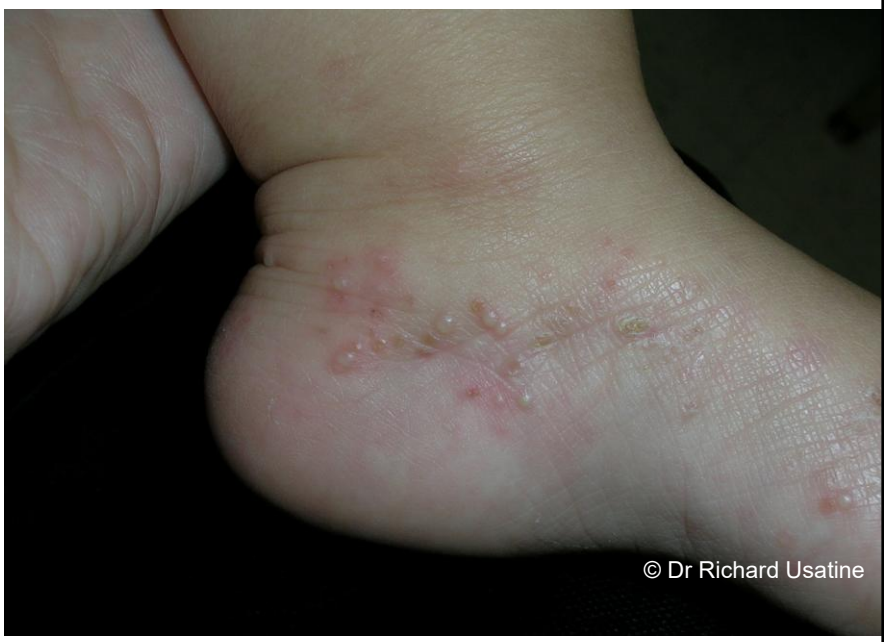
Fluid Filled – Vesicles <1cm



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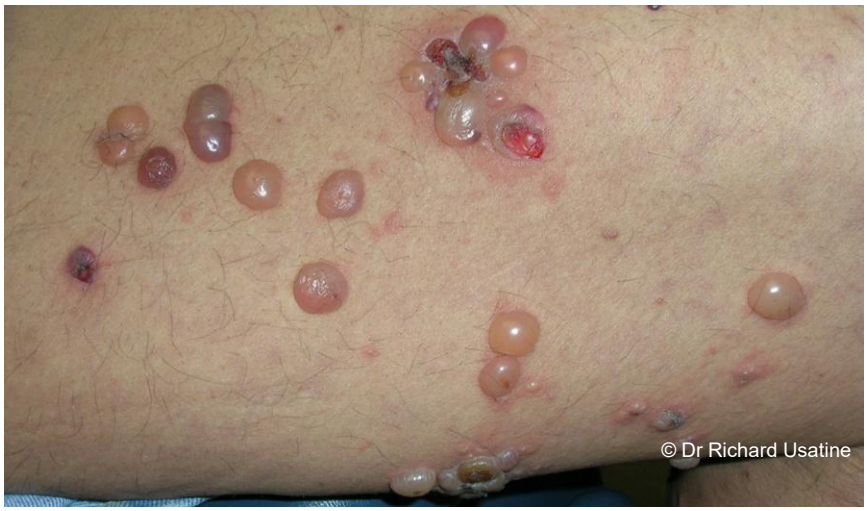
Bulla >1cm



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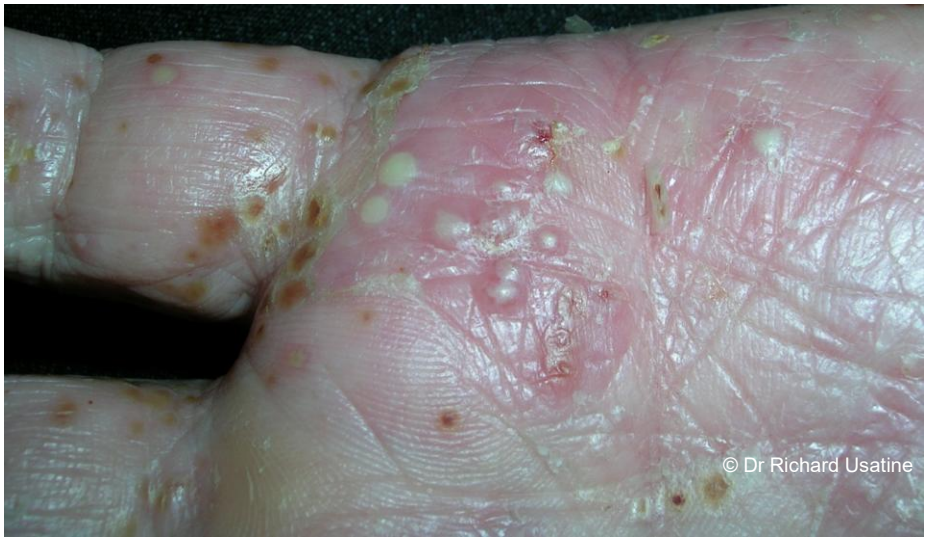
Pustules



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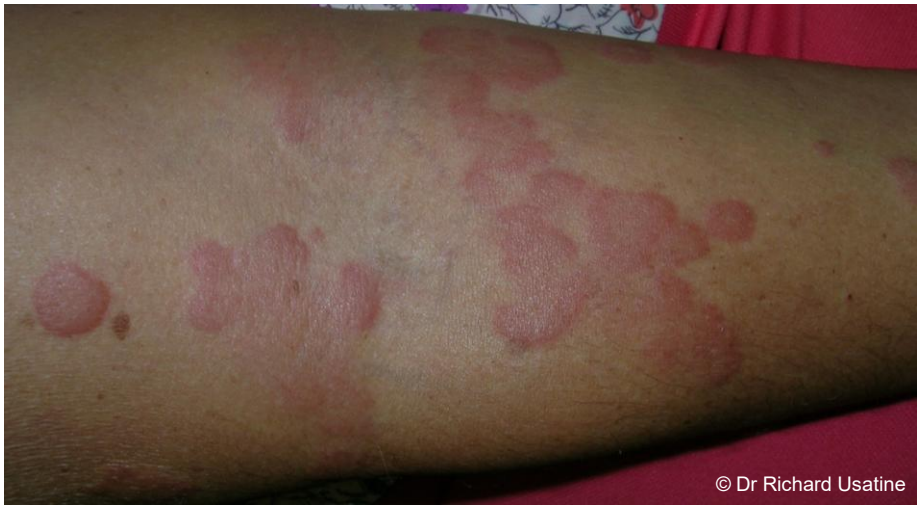
Wheal



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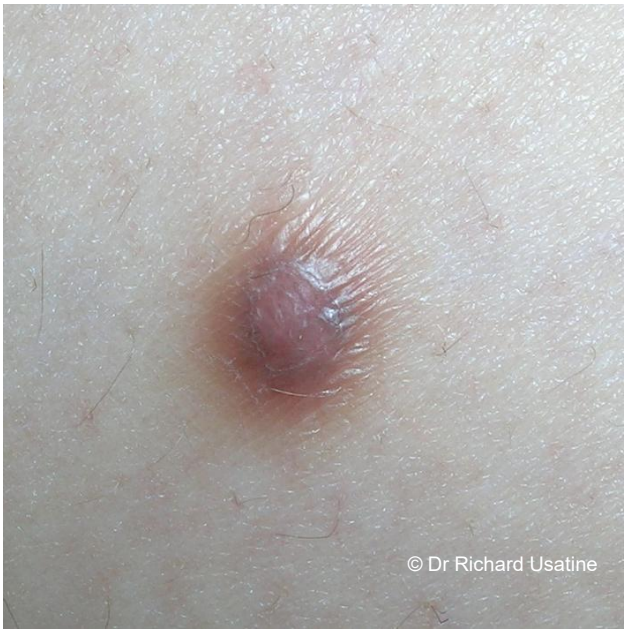
Nodule (Between 1 and 2cm)



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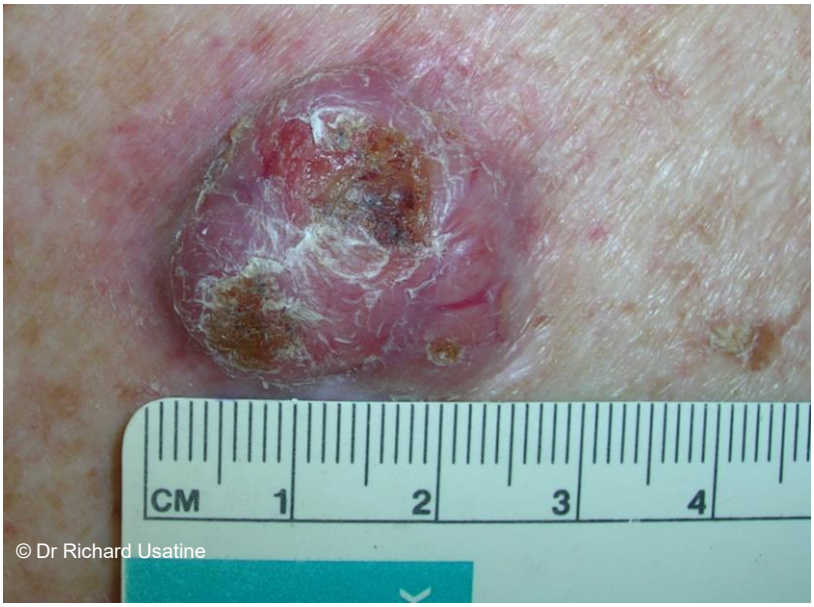

Tumor > 2cm

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Secondary Morphology

- What has happened to the lesions over time?
- Scale (desquamation)
- Crusts (dried exudate)
- Excoriation (scratching, picking)
- Lichenification (thickening)
- Erosions, ulcers, fissures
- Atrophy

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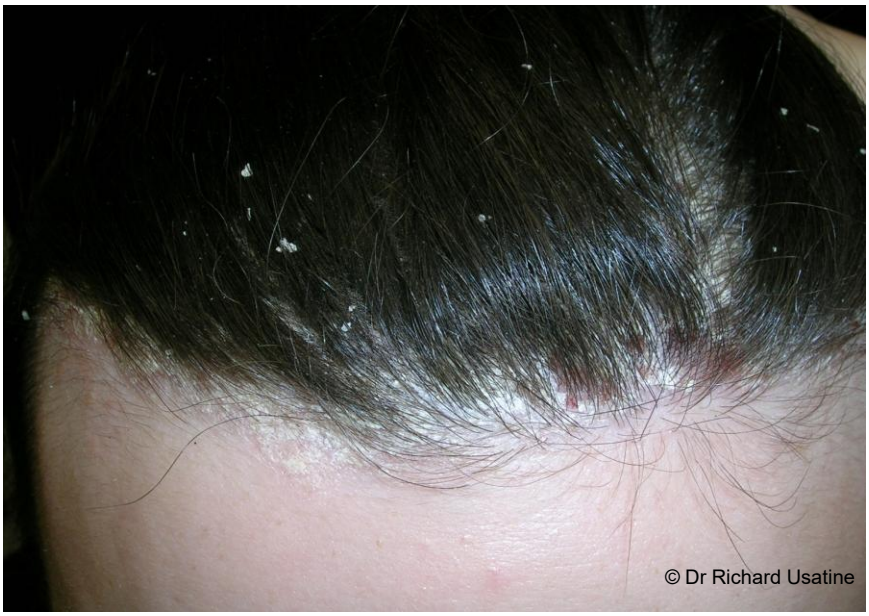
Scale



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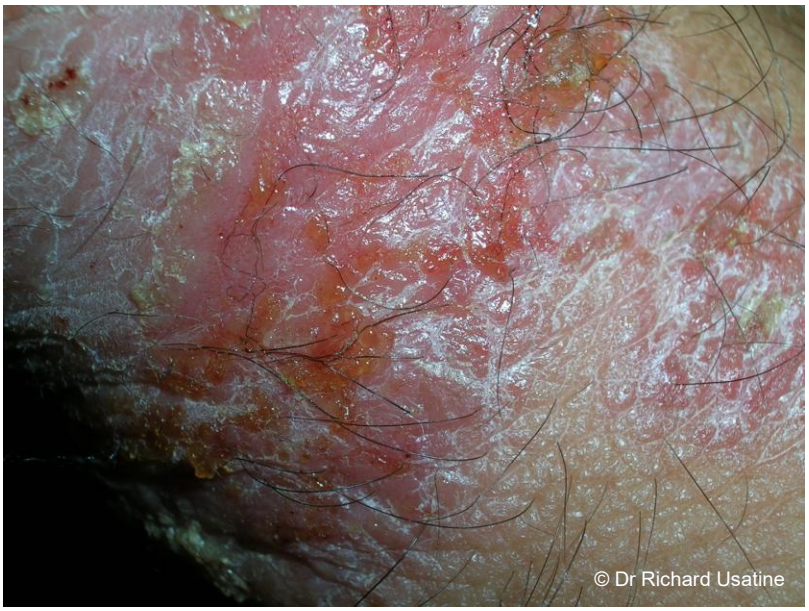

Crusts

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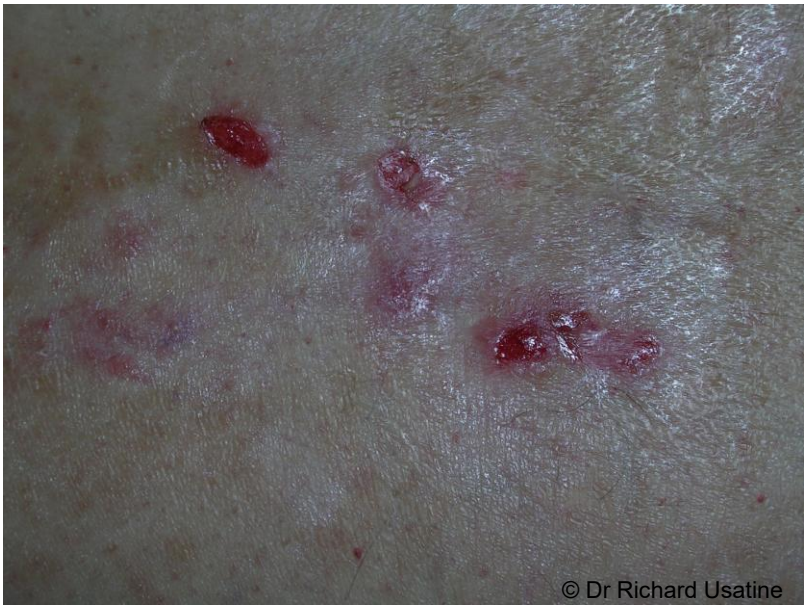
Erosions



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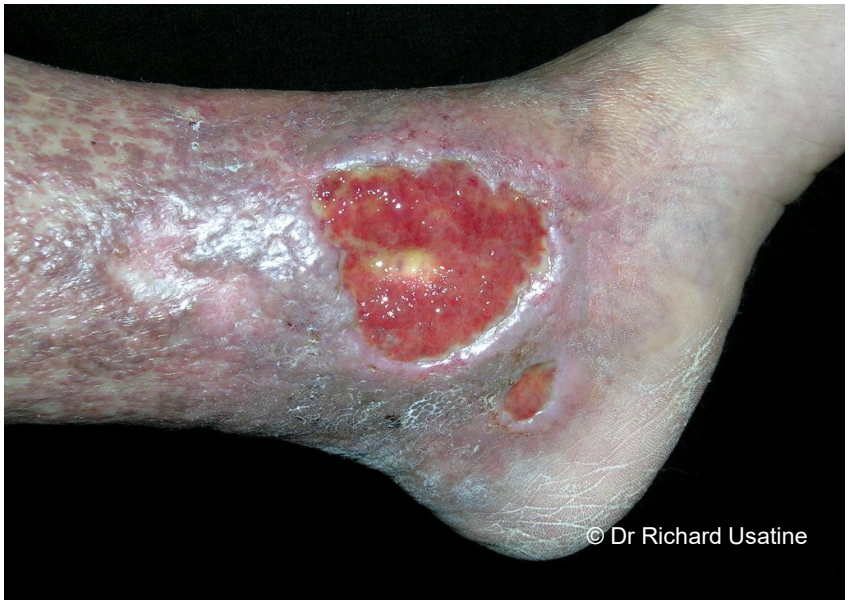

Ulcer

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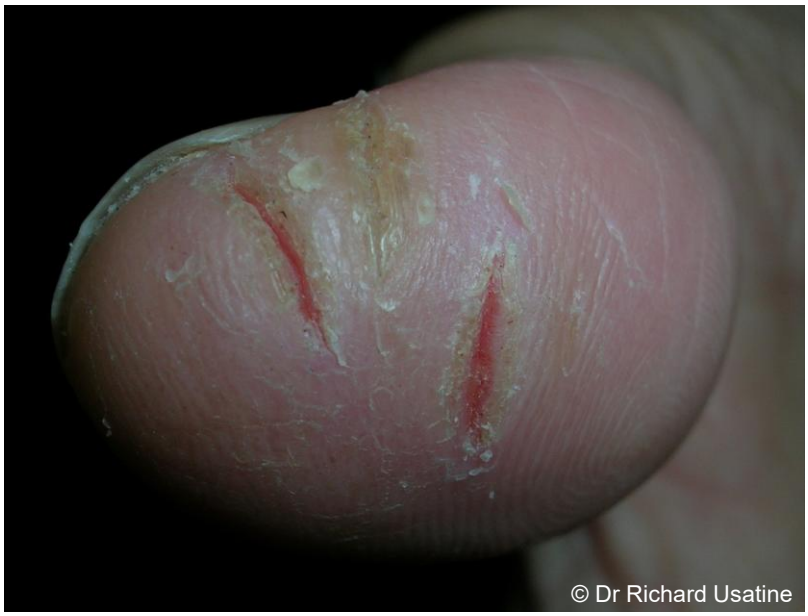
Fissure



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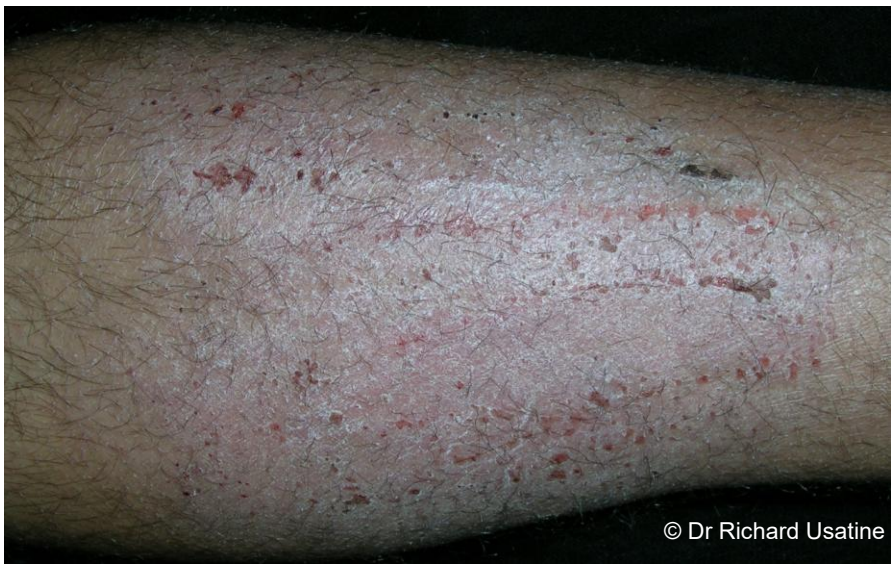

Excoriations

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Excoriations

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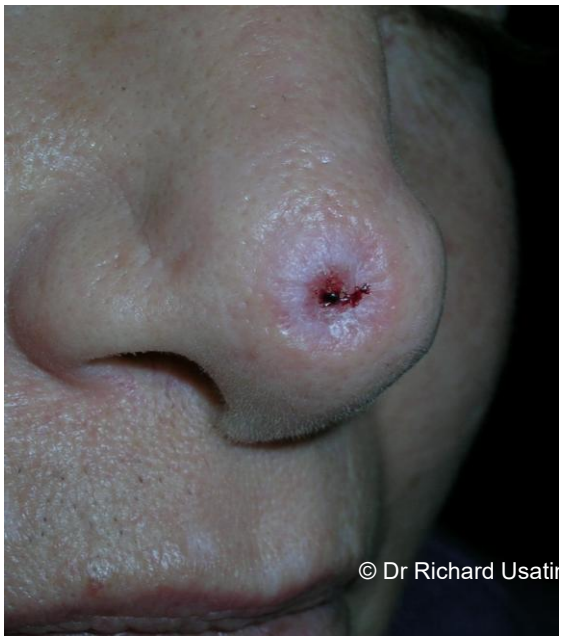

Atrophy

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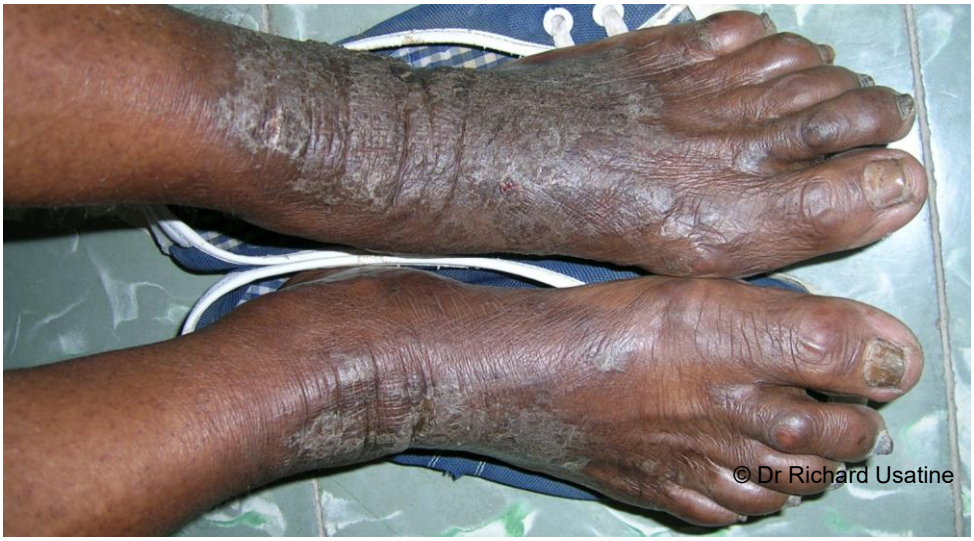
Lichenified



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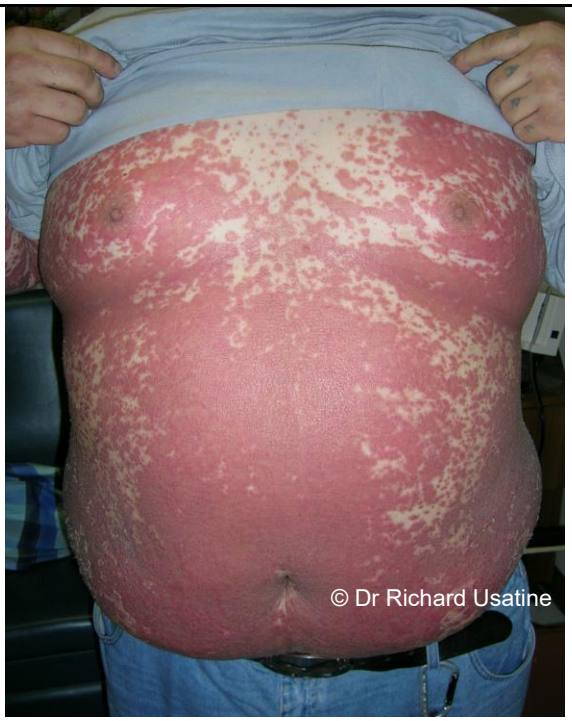
Color/Pigmentary Changes

Erythematous



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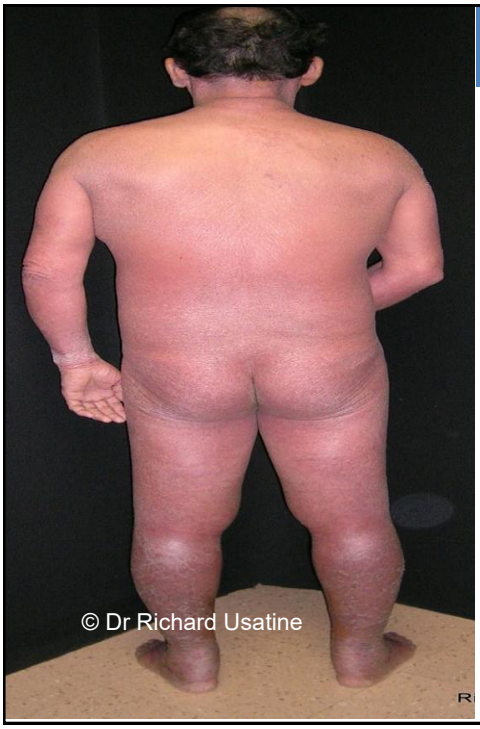
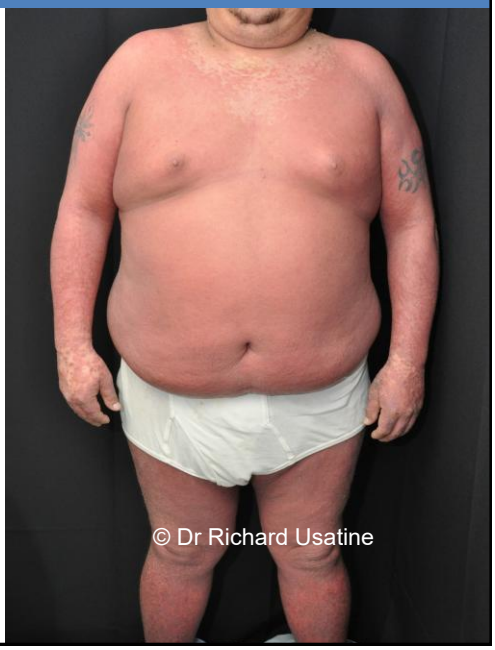
Erythrodermic





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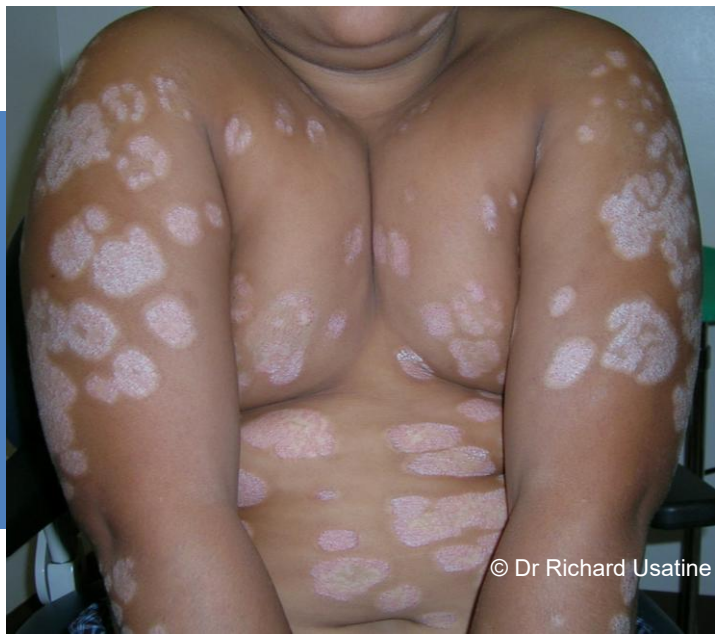
Hypopigmented



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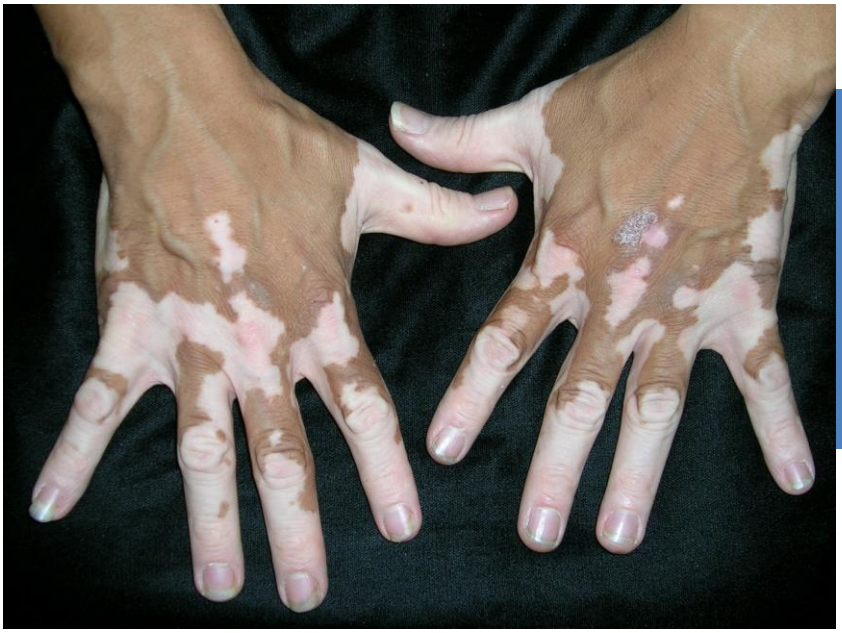

Depigmented (Severe Hypopigmentation)

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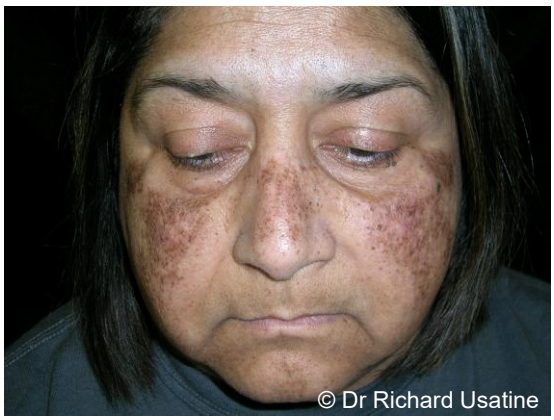
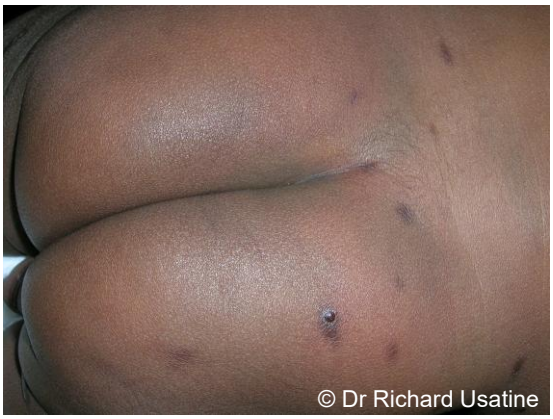
Hyperpigmented





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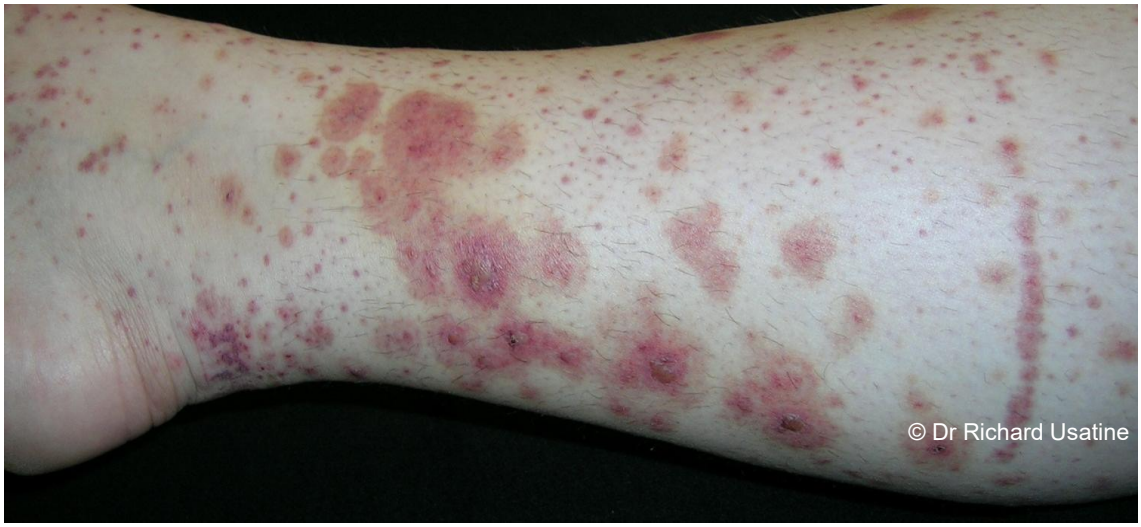
Vascular Terms: Petechial < 1cm and Purpuric > 1cm



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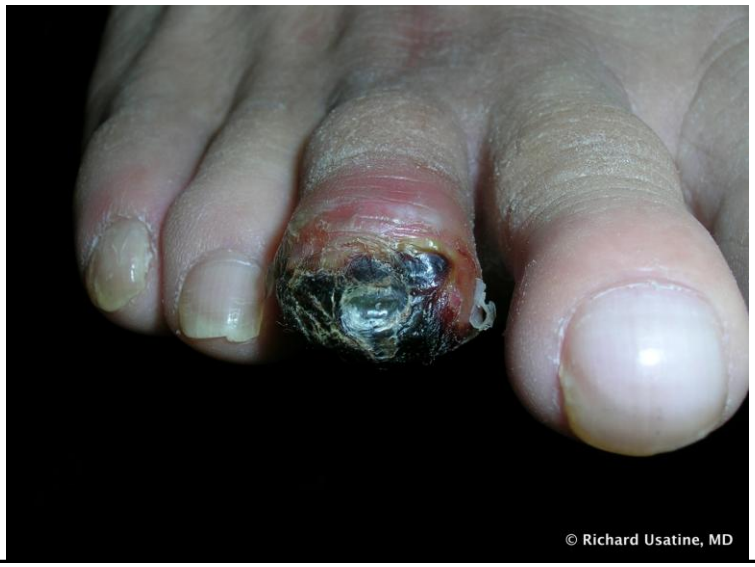
Gangrene



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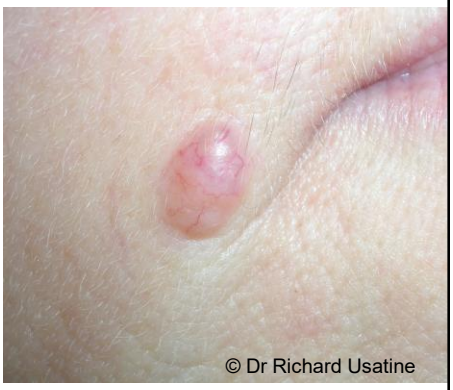
Surface Characteristics

- Verrucous
- Smooth
- Pearly



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Shape

- Nummular – Coin shaped
- Serpiginous – Snakelike
- Annular – Bordered by a raised ring
- Reticular – Net like
- Umbilicated

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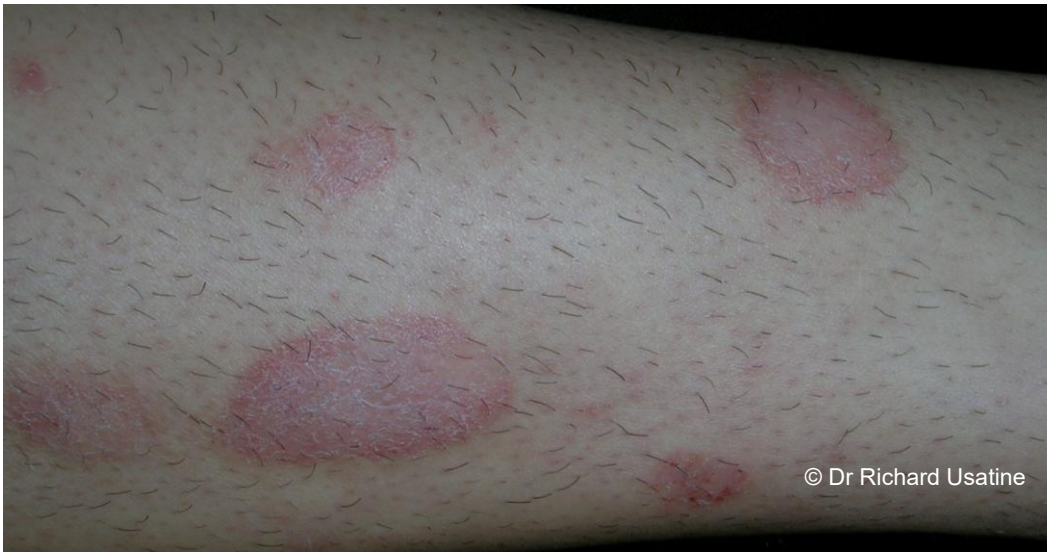
Nummular



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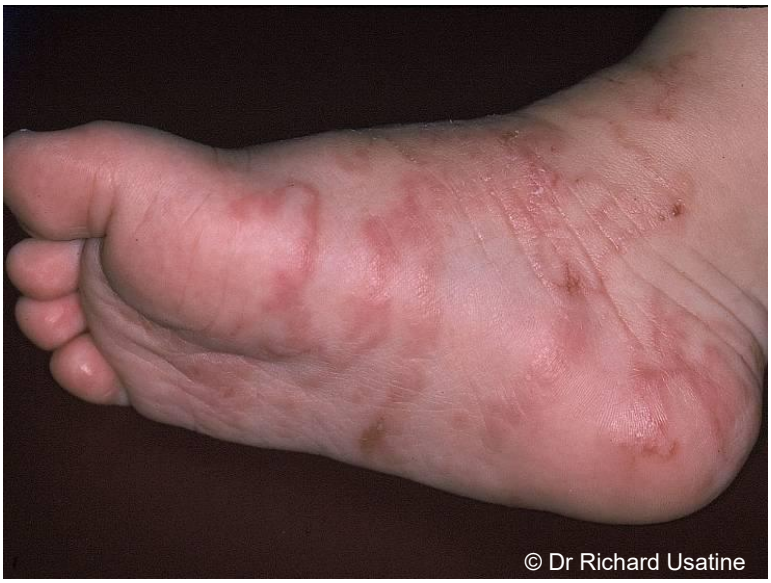

Serpiginous – Snakelike

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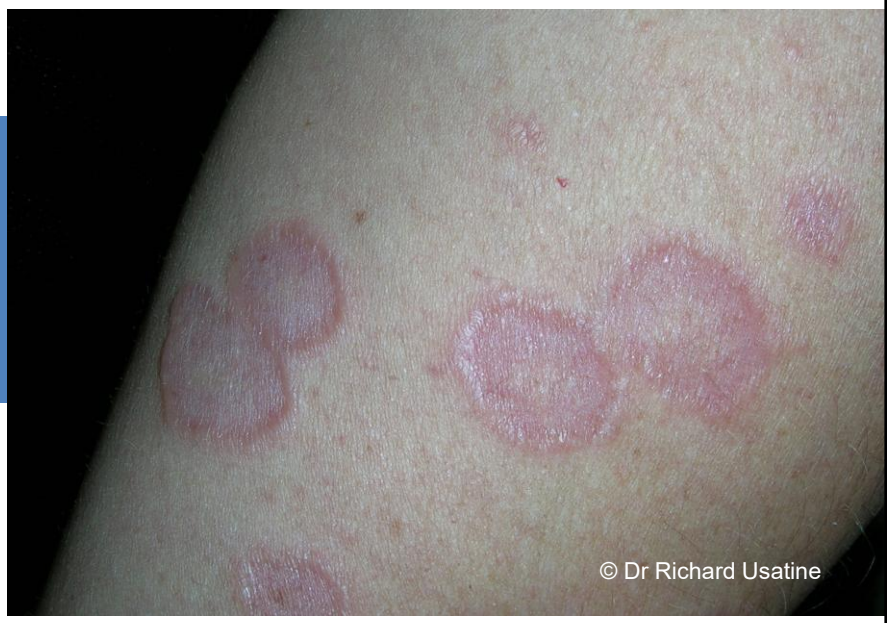
Annular



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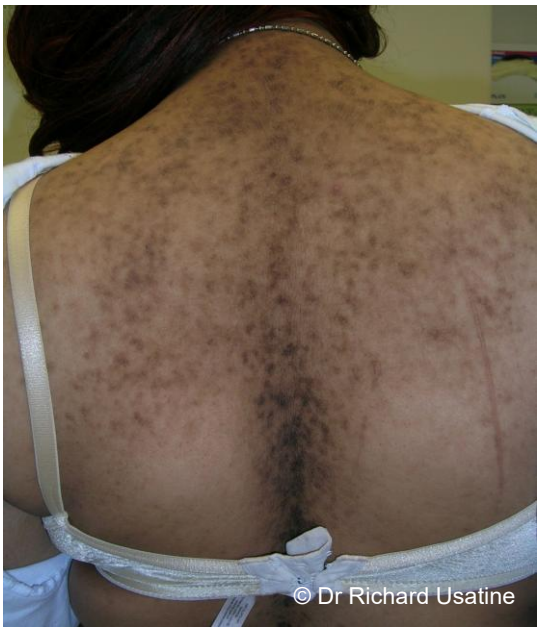

Reticular – Net Like

CARP

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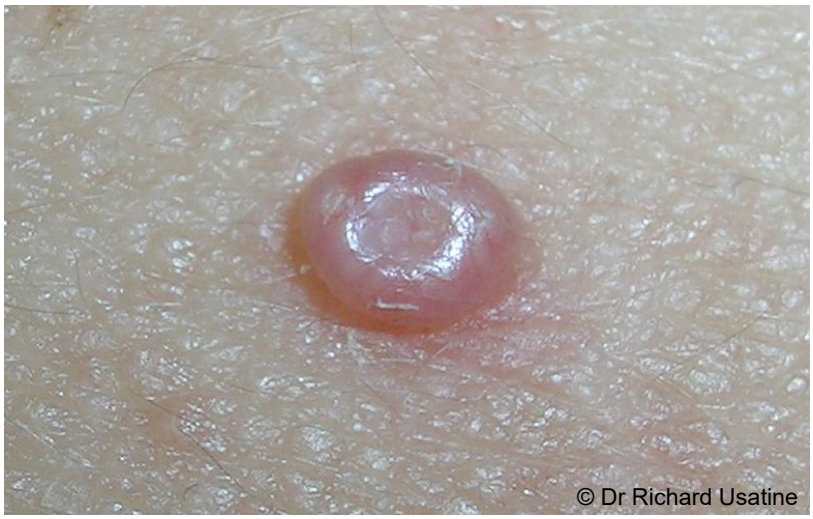
Umbilicated



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Distribution

- Limited / Localized
- Diffuse
- Flexural
- Extensor
- Palmar
- Axillary
- Truncal
- Acral
- Unilateral, Bilateral / Symmetric
- Crural / Intertriginous
- Dermatomal
- Photo-distributed
- Clothing related

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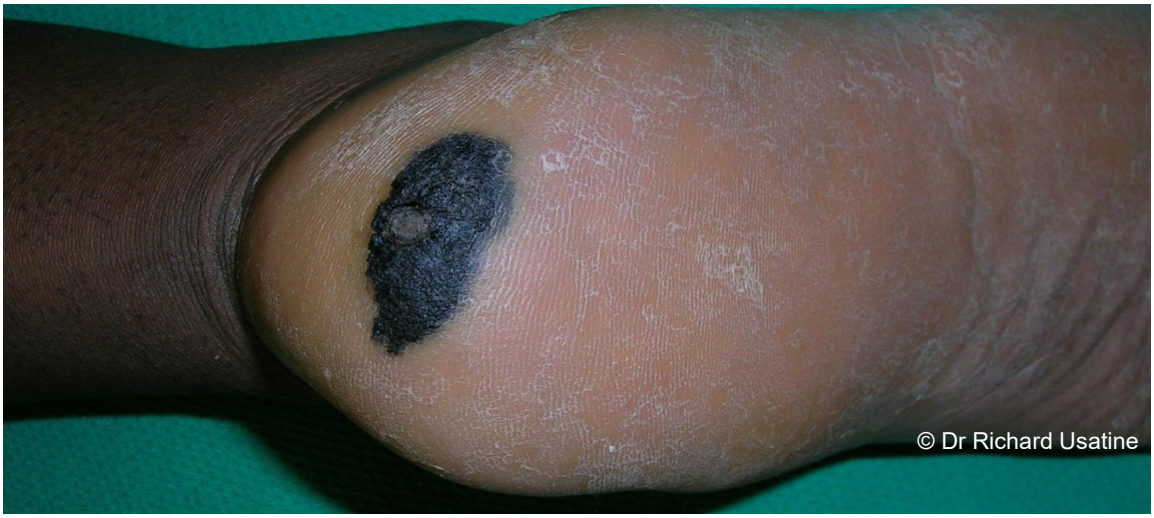
Acral – Hands and Feet



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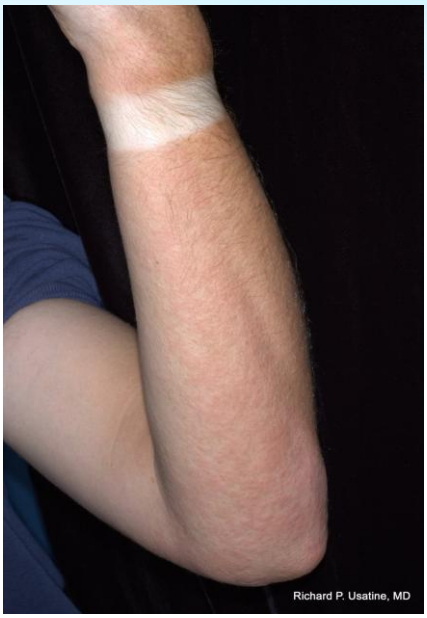
ARS Question #2

The Distribution of This Eruption Is:

A. Acral
B. Photo-distributed
C. Dermatomal
D. Clothing related
E. Silly



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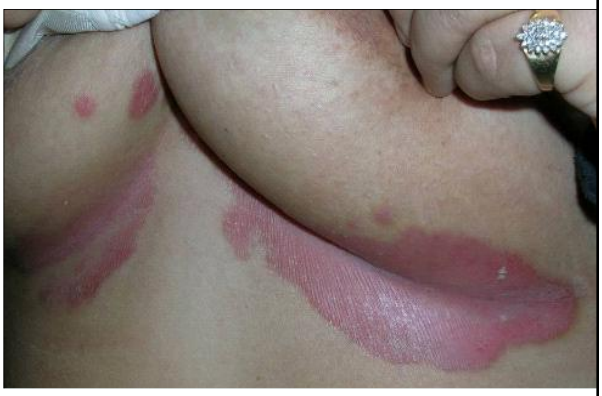
ARS Question #3

The Distribution of This Eruption Is:

A. Crural
B. Clothing related
C. Dermatomal
D. Intertriginous
E. Mamillary



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Now…Close Your Eyes

- Let's see what your mind can picture as I describe this next photo.

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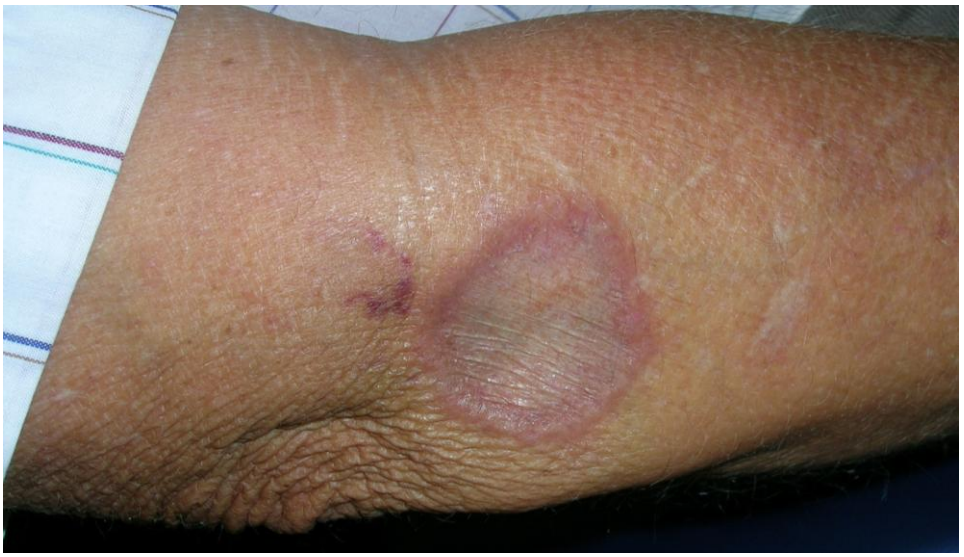
Unknown 1



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Now…Close Your Eyes

- Let's see what your mind can picture as I describe this next photo.

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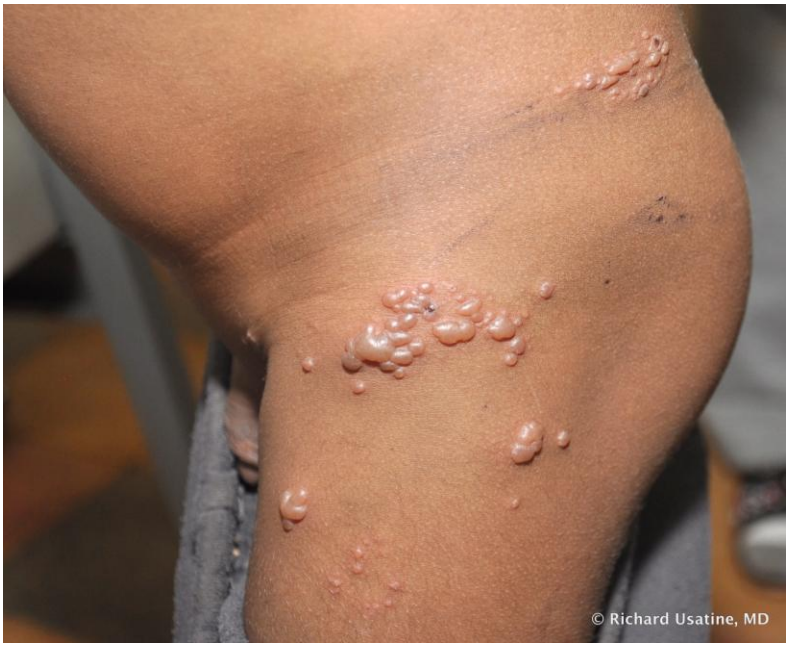
Unknown 2



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Now…Close Your Eyes

- Let's see what your mind can picture as I describe this next photo.

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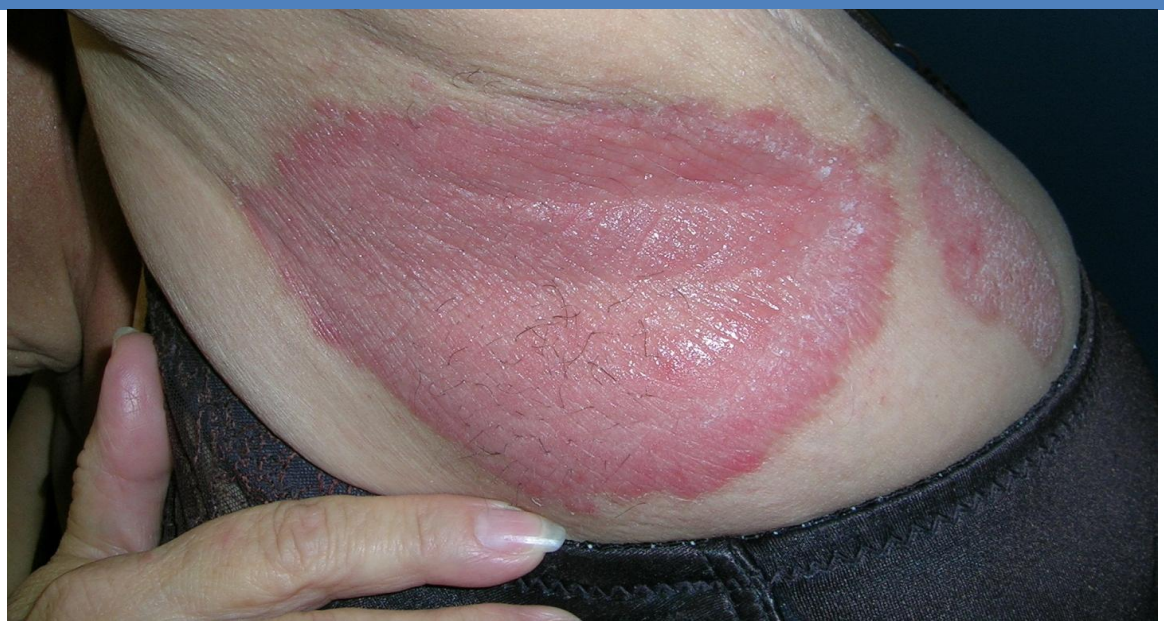
Unknown 3



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Online Resources

- You can search by terms or upload photo
- Google and AI search engines
- Visual Dx – website and app
- ChatGPT

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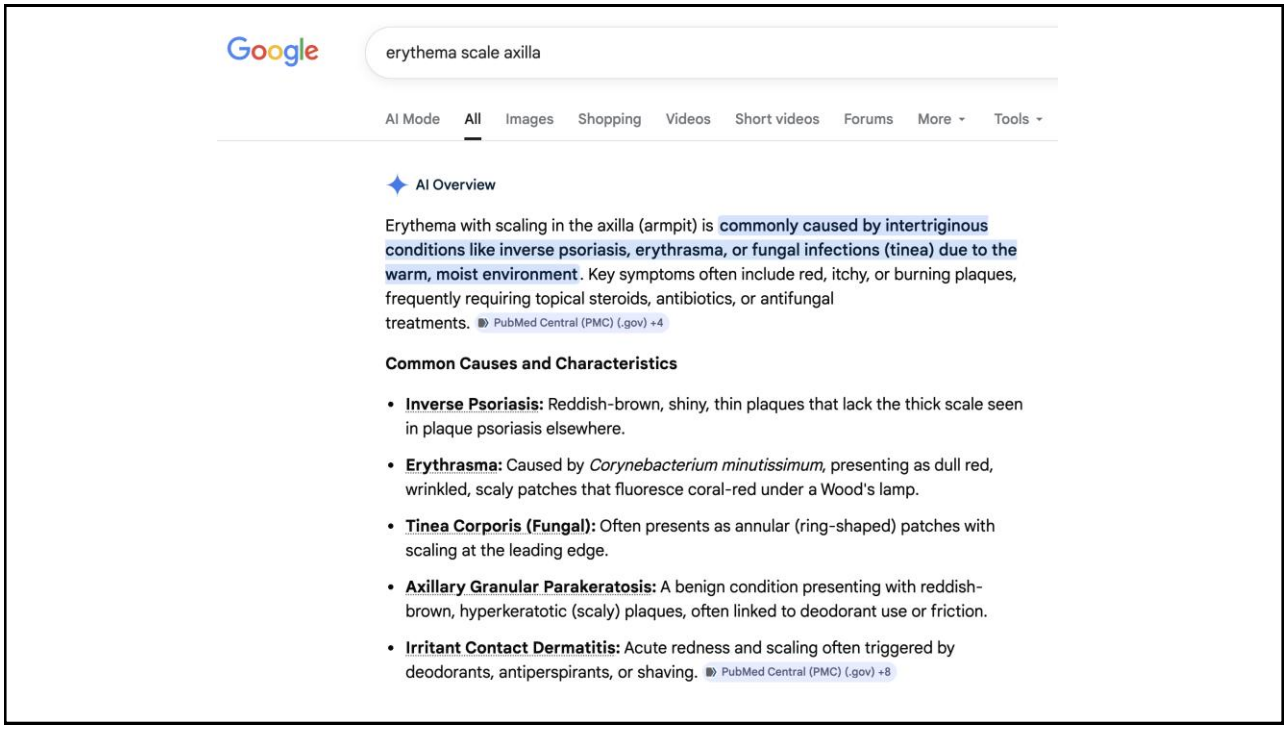
Google
erythema scale axilla
AI Mode All Images Shopping Videos Short videos Forums More Tools
AI Overview
Erythema with scaling in the axilla (armpit) is commonly caused by intertriginous conditions like inverse psoriasis, erythrasma, or fungal infections (tinea) due to the warm, moist environment. Key symptoms often include red, itchy, or burning plaques, frequently requiring topical steroids, antibiotics, or antifungal treatments. PubMed Central (PMC) (.gov) +4
Common Causes and Characteristics
Inverse Psoriasis: Reddish-brown, shiny, thin plaques that lack the thick scale seen in plaque psoriasis elsewhere.
Erythrasma: Caused by Corynebacterium minutissimum, presenting as dull red, wrinkled, scaly patches that fluoresce coral-red under a Wood's lamp.
Tinea Corporis (Fungal): Often presents as annular (ring-shaped) patches with scaling at the leading edge.
Axillary Granular Parakeratosis: A benign condition presenting with reddish-brown, hyperkeratotic (scaly) plaques, often linked to deodorant use or friction.
Irritant Contact Dermatitis: Acute redness and scaling often triggered by deodorants, antiperspirants, or shaving. PubMed Central (PMC) (.gov) +8

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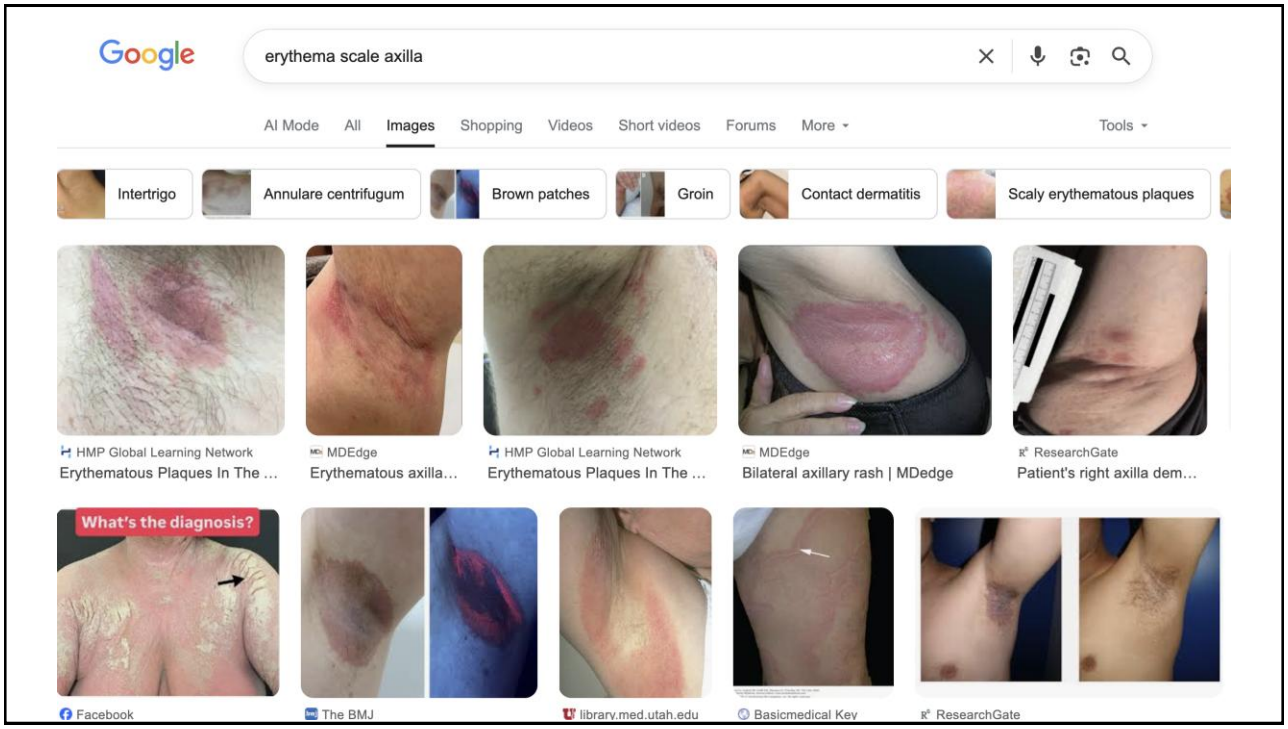
Google
erythema scale axilla
AI Mode All Images Shopping Videos Short videos Forums More Tools
Intertrigo
Annulare centrifugum
Brown patches
Groin
Contact dermatitis
Scaly erythematous plaques
HMP Global Learning Network
Erythematous Plaques In The ...
MDEdge
Erythematous axilla...
HMP Global Learning Network
Erythematous Plaques In The ...
MDEdge
Bilateral axillary rash | MDedge
ResearchGate
Patient's right axilla dem...
What's the diagnosis?
Facebook
The BMJ
library.med.utah.edu
Basicmedical Key
ResearchGate

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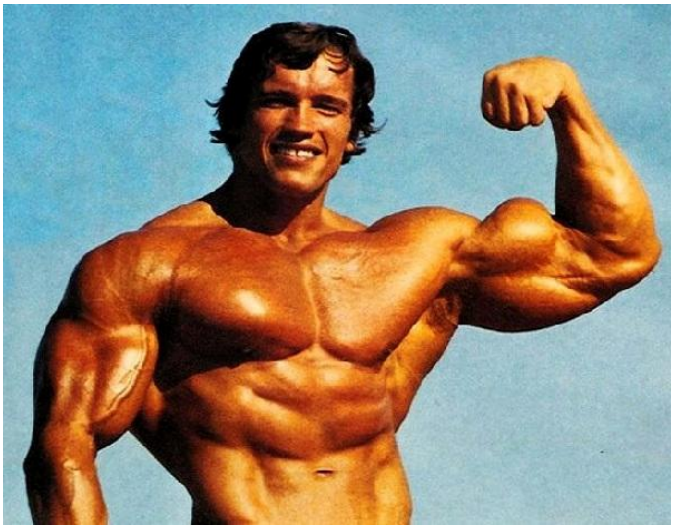
Steroids



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Risks of Topical Steroid Use

- Skin atrophy
- Striae
- Pigmentary changes
- Steroid-induced acne
- Suppression of the hypothalamic pituitary axis is rare

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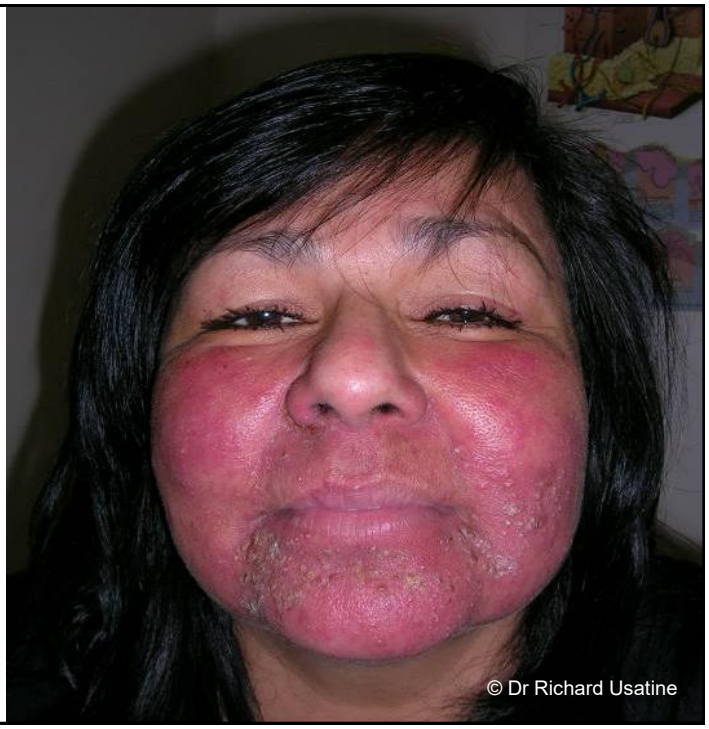
Rosacea Exacerbated from Years of High-Potency Topical Steroids



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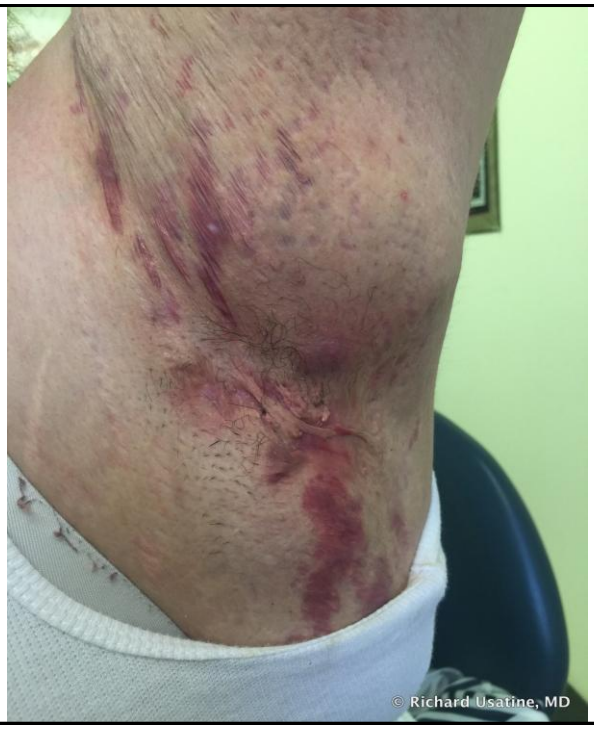
Striae from Topical Steroid (Clobetasol)



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Diseases in Which Topical Steroids Are Effective

- Allergic skin diseases including atopic dermatitis, contact dermatitis and hand eczema
- Papulosquamous conditions including psoriasis, lichen planus and seborrheic dermatitis
- Connective tissue diseases of skin
- Bullous disease
- Infiltrative and immunologic diseases such as sarcoidosis and granuloma annulare

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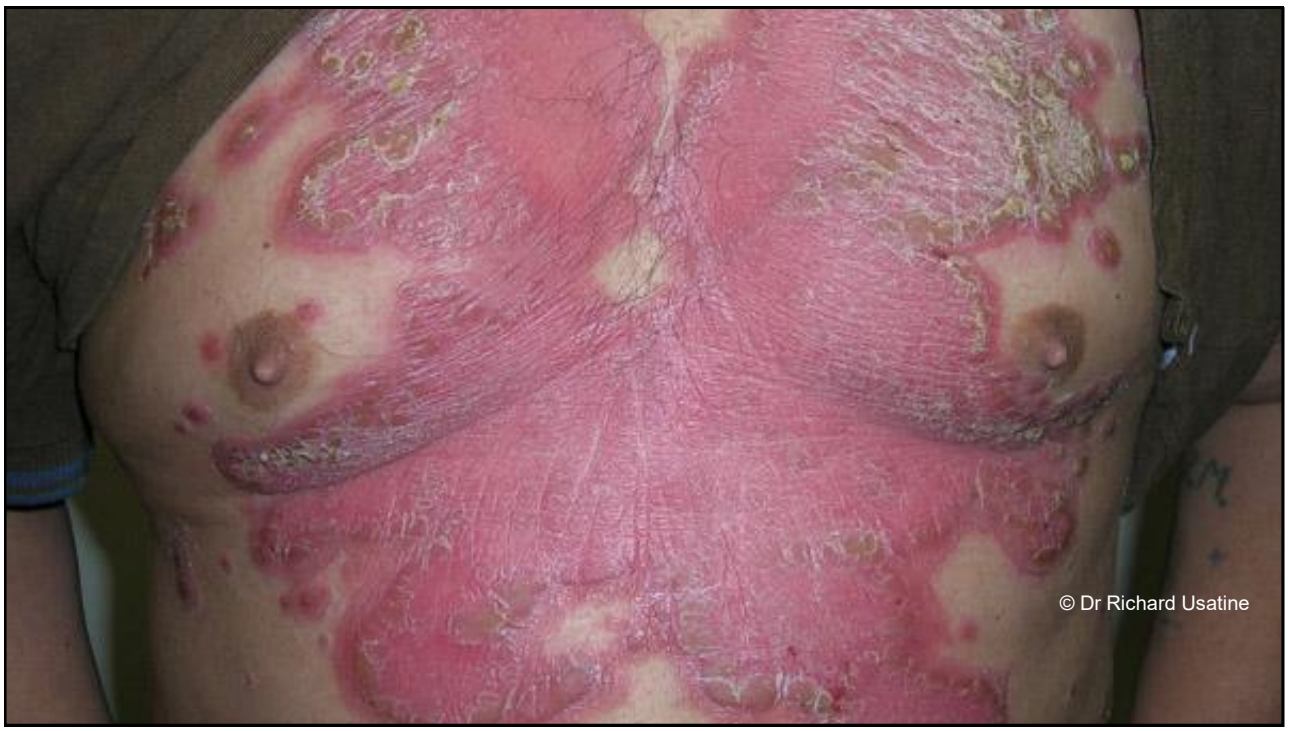

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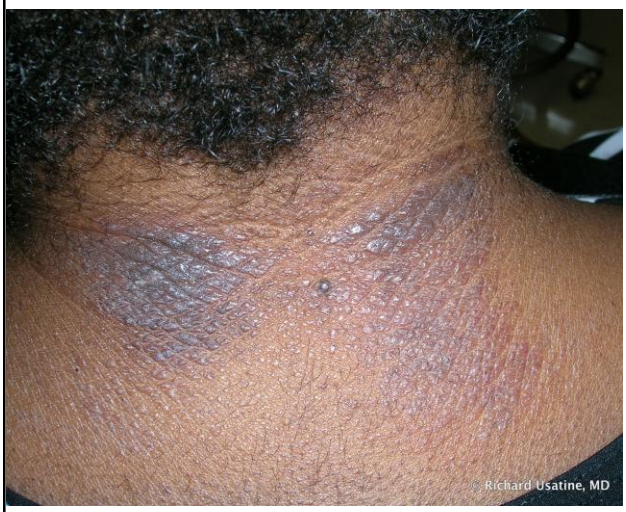
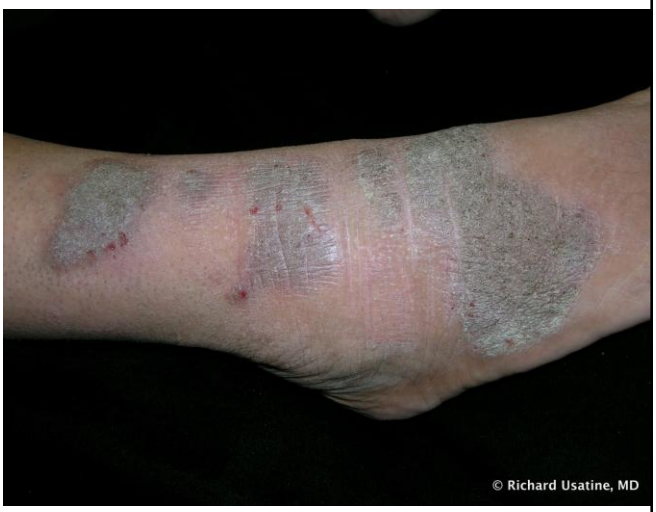
Lichen Simplex Chronicus





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Vehicles

- Creams – easy to apply but may sting opened or cracked areas
- Ointments – best vehicle for lesions that are dry, scaling and cracking
- Lotions – easy to rub into areas with hair
- Solutions – very easy to apply to the scalp
- Foams – newer vehicles with high patient acceptance and high penetration – these can be very expensive

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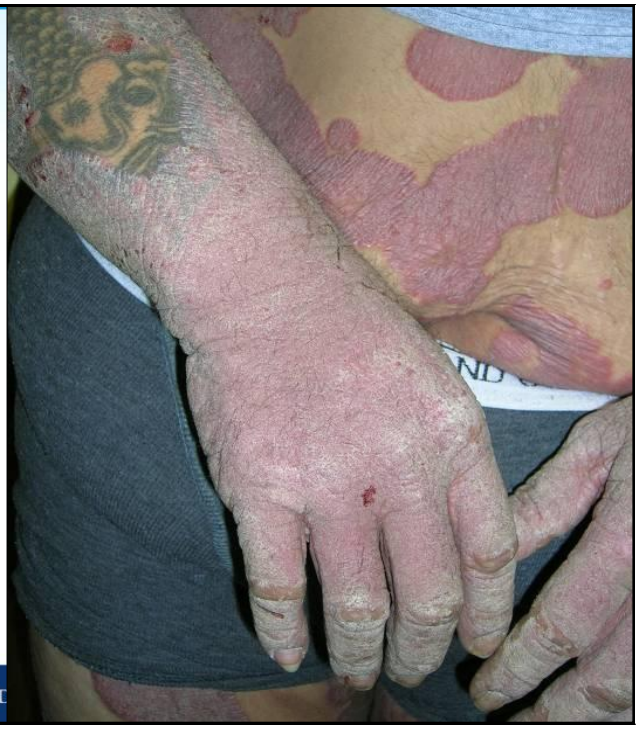
ARS Question #4

What Is the Preferred Vehicle to Use for This Patient?

A. Cream
B. Lotion
C. Ointment
D. Gel



CONTINUING ED

63

Best Vehicle

- Is the vehicle that the patient will use
- Ask patient preference

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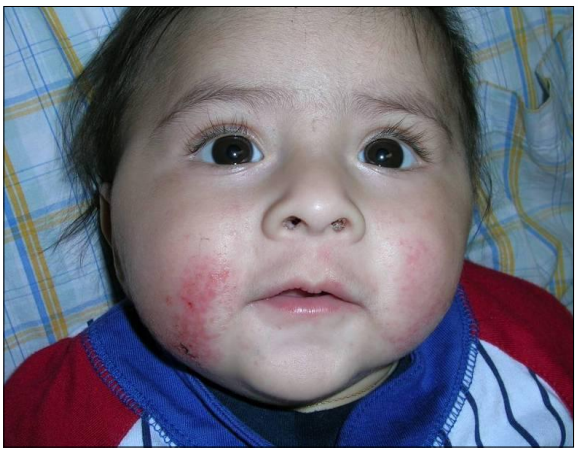
ARS Question #5

Which Topical Steroid Is Most Appropriate for This Child's Atopic Dermatitis on the Face?

A. Hydrocortisone
B. Clobetasol
C. Triamcinolone
D. Fluocinonide
E. Arnold's cream



CONTINUING EDUCATION COMPANY

65

Steroid Use by Location

- The skin is thinnest in the following areas: Face, genitalia, intertriginous areas
- Areas at higher risk for skin atrophy are the areas in which the skin is thinnest.
- Therefore, avoid high-potency steroids in these areas – especially the face

One exception:

- Lichen sclerosus (LSEA) in genital area
  - Clobetasol ointment is the treatment of choice

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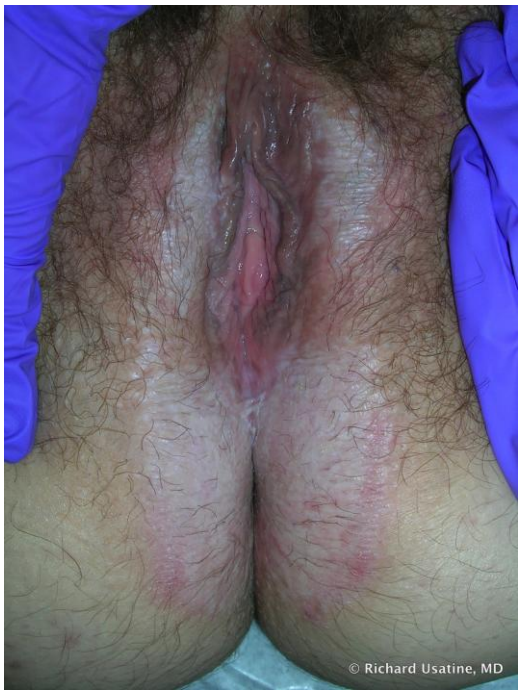
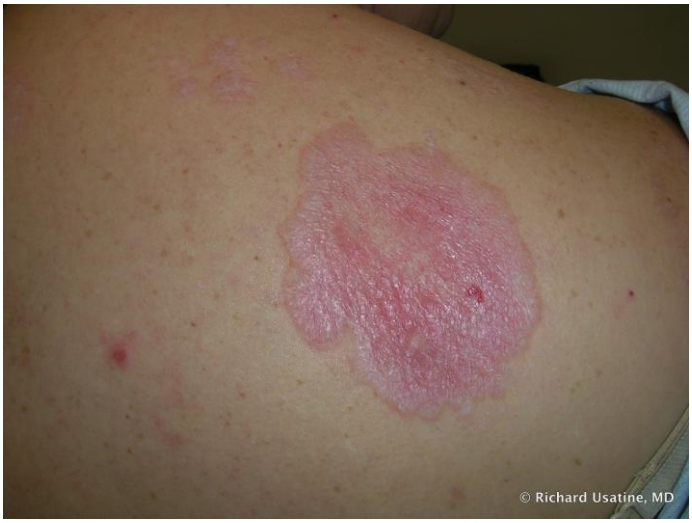


Lichen Sclerosus (LSEA)



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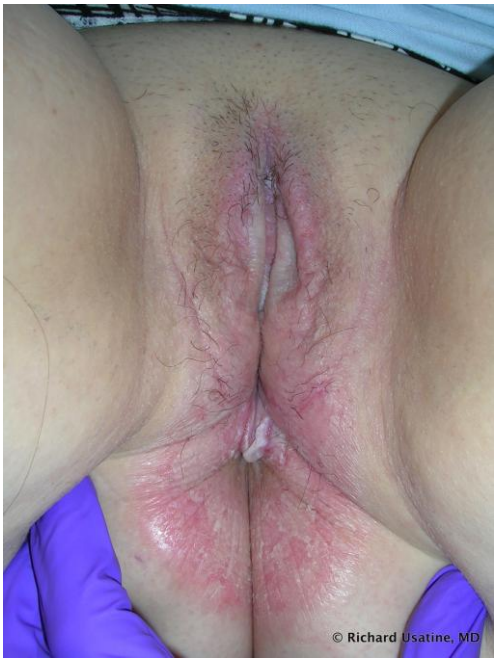
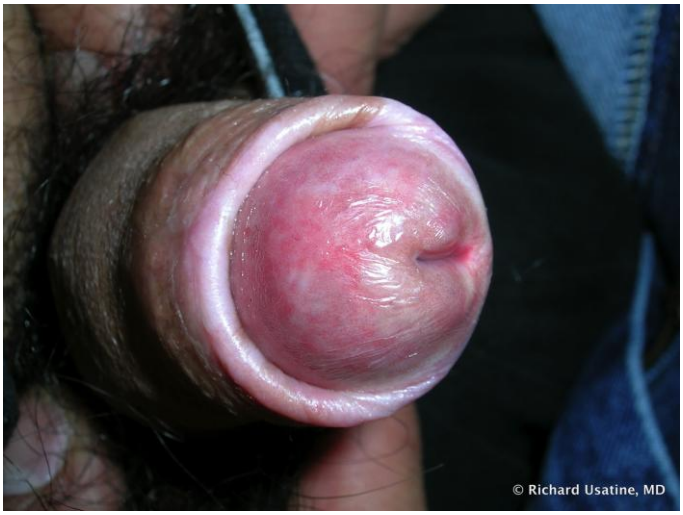


Strong Topical Steroids Are Indicated Such as Clobetasol for Lichen Sclerosus in Women and Men



68

Some Data for Vulvar Lichen Sclerosus

Clobetasol was the most effective topical steroid for children and adults with vulvar lichen sclerosus:

1: Casey GA, Cooper SM, Powell JJ. Treatment of vulvar lichen sclerosus with topical corticosteroids in children: a study of 72 children. Clin Exp Dermatol. 2015 Apr;40(3):289-92.

2: Funaro D, Lovett A, Leroux N, Powell J. A double-blind, randomized prospective study evaluating topical clobetasol propionate 0.05% versus topical tacrolimus 0.1% in patients with vulvar lichen sclerosus. J Am Acad Dermatol. 2014 Jul;71(1):84-91.

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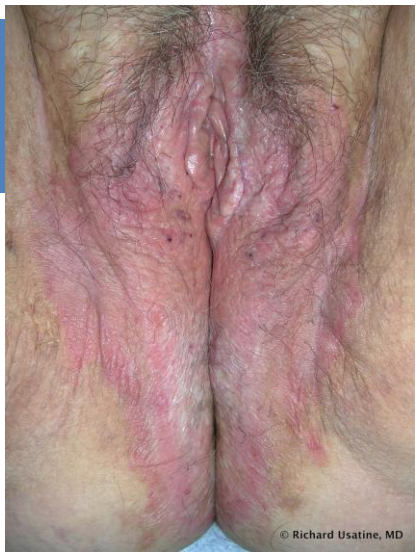
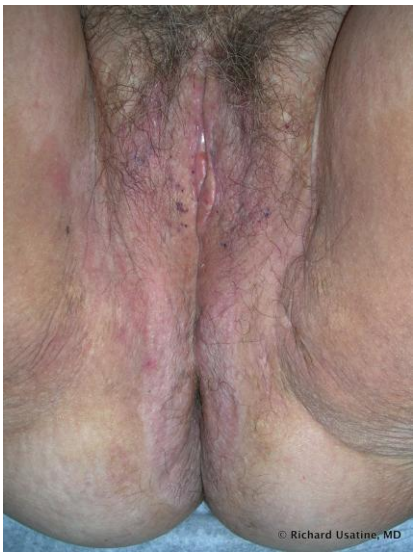
Lichen Sclerosus

Before and After Clobetasol





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Topical Steroid Use by Age

- Young children have the thinnest skin and are at greatest risk for skin atrophy
- Start with hydrocortisone and/or desonide
- 0.1% triamcinolone for challenging lesions on the body

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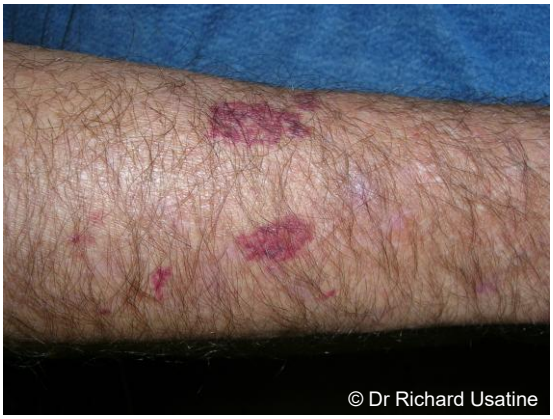
Steroid Use in the Elderly

- The skin and connective tissues atrophy with age.
- Bruising on their forearms is more frequent due to the thinning of the skin and increased capillary fragility (senile purpura?)
- Avoid high-potency steroids on areas in which the skin is thinned due to aging and/or sun exposure



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Factors in the Choice of Steroid Potency

- Thickness of lesions
- Disease – seborrhea does well with low-potency steroids and psoriasis often needs higher potency
- Age
- Distribution
- Previous steroids used and degree of response

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Topical Steroid Classes

BRAND NAME	GENERIC NAME
CLASS 1 - Superpotent	
Clobex Lotion/Spray/Shampoo, 0.05%	Clobetasol propionate
CLASS 2 - Potent	
Lidex Cream/Gel/Ointment, 0.05%	Fluocinonide
CLASS 3 - Upper Mid-Strength	
Cutivate Ointment, 0.005%	Fluticasone propionate
Lidex-E Cream, 0.05%	Fluocinonide
CLASS 4 - Mid-Strength	
Elocon Cream, 0.1%	Mometasone furoate
Kenalog Cream/Spray, 0.1%	Triamcinolone acetonide
CLASS 5 - Lower Mid-Strength	
Desowen Lotion, 0.05%	Desonide
Locoid Cream/Lotion/Ointment/Solution, 0.1%	Hydrocortisone
CLASS 6 - Mild	
Desonate gel, 0.05%	Desonide
Verdeso Foam, 0.05%	Desonide
CLASS 7 - Least Potent	
Hytone Cream/Lotion, 1%/2.5%	Hydrocortisone

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Keep It Simple

Become familiar with generic topical steroids from the full spectrum

- Least potent – 1% hydrocortisone
  - 2.5% hydrocortisone (or desonide)
- Mid-potency – triamcinolone 0.1%
  - Fluocinonide 0.05%
- Highest potency – clobetasol 0.05% (augmented betamethasone 0.05%)

75

How Often to Apply

- Most topical steroids are approved for twice daily application and are prescribed that way.
- One systematic review revealed that using twice-daily applications of topical corticosteroids may be no more effective than once-daily application.

Hoare C, et al. Systematic review of treatments for atopic eczema. Health Technol Assess. 2000;4(37):1-191.

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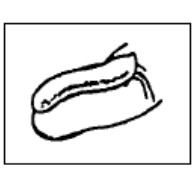
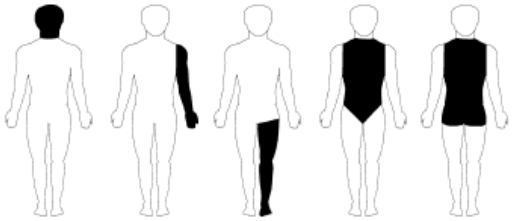


ONE adult fingertip unit (FTU)*



Number of finger tip units (FTUs)

Age	Face & neck	Arm & hand	Leg & foot	Trunk (front)	Trunk (back) inc. buttocks
Adult	2½	4	8	7	7
Children:					
3-6 months	1	1	1½	1	1½
1-2 years	1½	1½	2	2	3
3-5 years	1½	2	3	3	3½
6-10 years	2	2½	4½	3½	5

* One adult fingertip unit (FTU) is the amount of ointment or cream expressed from a tube with a standard 5mm diameter nozzle, applied from the distal crease to the tip of the index finger.

Table 3. 'Finger tip units' (FTUs) of steroid preparation to apply to specific areas.[13,14]

MeReC Bulletin Volume 10, Number 6, 1999

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Fingertip Unit (FTU)

Amount of cream squeezed out of its tube onto the end of the finger:

Adult male: 1 fingertip unit = 0.5 g
Adult female: 1 fingertip unit = 0.4 g
Child aged 4 years – approximately 1/3 of adult amount
Infant 6 months to 1 year – approximately 1/4 of adult amount

One hand: apply 1 FTU
One arm: apply 3
One foot: apply 2
One leg: apply 6
Face and neck: apply 2.5
Trunk, front and back: 14
Entire body: 40 FTU

Sample Calculation:

(Fraction of body part a involved x FTU/body part a +
Fraction of body part b involved x FTU/body part b +
Fraction of body part c involved x FTU/body part c…)
X
g/FTU per age and gender x number of times per day x number of days in course of therapy

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Amounts to Prescribe

- 1 ounce is 30 gm or 30 mL
- 1 ounce may be adequate for a small area and a short course of therapy for an acute skin condition
- Larger tubes or tubs are needed for chronic and extensive skin conditions
- Learn the largest sizes available for the generic steroids most often used (or look up size in EMR, phone app or Internet site)

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Large Amounts

- Triamcinolone – 80 gm tube or 454 gm tub (1 lb)
- Fluocinonide – 120 gm or 60 mL
- Clobetasol – 60 gm
- Give multiple tubes at once if needed and give refills

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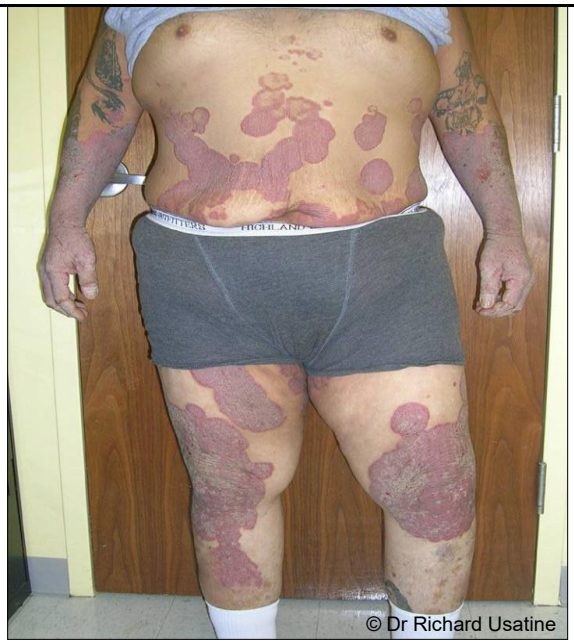
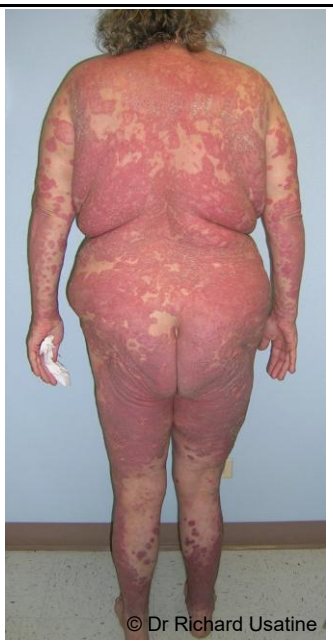

© Dr Richard Usatine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Triamcinolone Acetonide
Ointment USP, 0.1%
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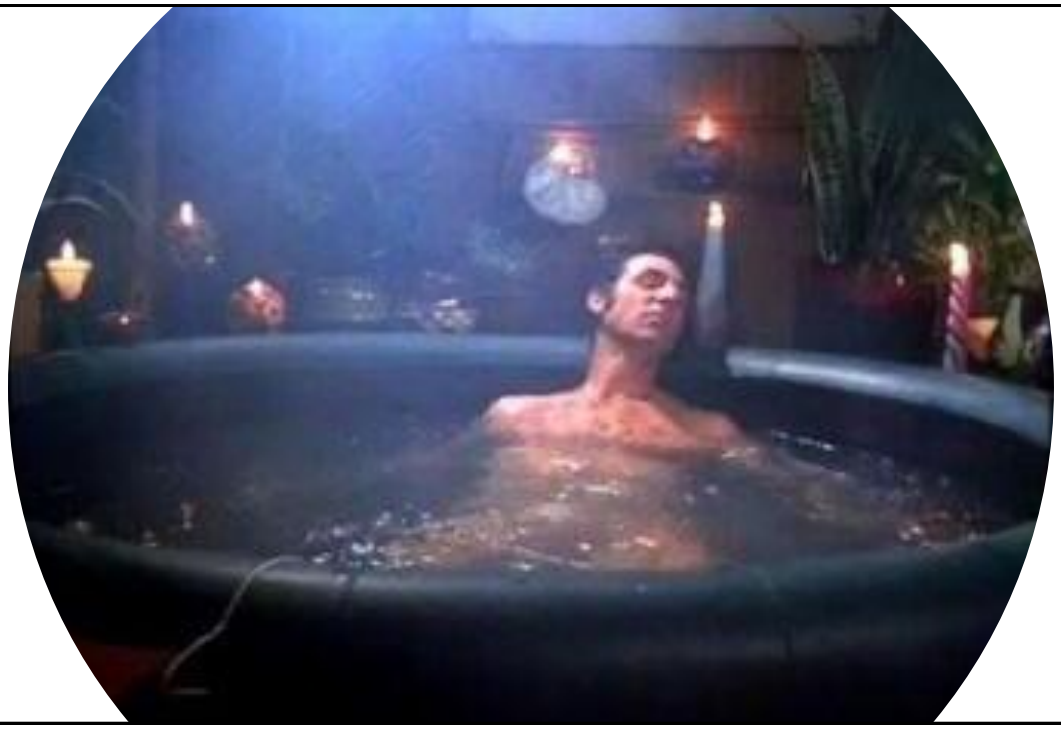

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Steroids for Long-Term Use

- Short bursts followed by ‘holiday’ periods of emollients only
- Step-down approach: start with a potent preparation and then decrease to a lower potency preparation as the condition improves
- Pulse therapy

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Pulse Therapy

- Patients with eczema and psoriasis often want high-potency steroids on a continuous basis because they work better
- Patients with psoriasis rarely get skin atrophy
- Patients with eczema may get skin atrophy
- Pulse therapy consists of using a high-potency steroid on the weekend only and some other medicine or no medicine at all during the weekdays.

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Pulse Therapy in Eczema (Atopic Dermatitis)

- Mid- to high-potency steroid on the weekend
- Choices for during the week therapy include:
  - Emollients only
  - Calcineurin inhibitors
  - Crisaborole
  - Lower-potency steroid
- Or mix these all up at different times and locations so less high-potency steroid is used

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Combination Therapy

- Patients generally prefer this to pulse therapy
- Use steroids less often and steroid-sparing agents to fill in for steroids
- If atopic patient is using emollients daily, then less steroid should be needed

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Combination Therapy in Psoriasis

- Clobetasol is used for worst plaques
- Triamcinolone for less severe areas
- Topical vitamin D is used in combination with steroid or alternating with a steroid

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Avoid Tortured Tubes

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Occlusion

- Topical steroids can become more potent when occluded
  - Plastic wrap
  - Wet wrap (pajamas)
- Do this with mid-potency steroids in severe cases
- Wet pajamas for erythroderma
- Plastic wrap over lichen simplex

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Wet Wrap Therapy

- Apply steroid ointment or cream to the inflamed skin.
- Use pajamas or other cloth made wet with warm water.
- Wring out excess water.
- Put the “dry layer” such as a blanket over the “wet layer.”
- Leave in place overnight or 3 hours during the day but stop if patient becomes chilled
- Perform daily for up to 2 weeks but do not use as long-term therapy

Devillers AC, Oranje AP. Efficacy and safety of 'wet-wrap' dressings as an intervention treatment in children with severe and/or refractory atopic dermatitis: a critical review of the literature. Br J Dermatol. 2006 Apr;154(4):579-85.

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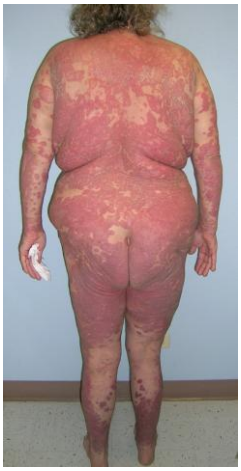
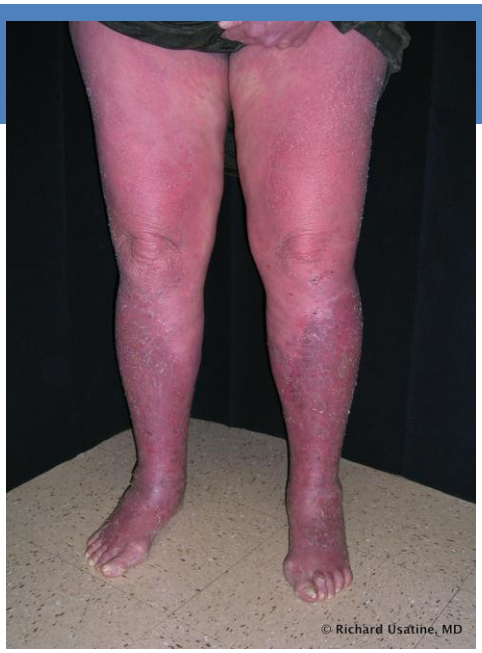
Erythroderma for Wet Wrap





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Intralesional Steroids

Concentration of triamcinolone acetonide suspension to use when injecting intralesionally:

- Acne – 2 mg/mL
- Alopecia areata – 5 mg/mL
- Granuloma annulare – 5 mg/mL
- Psoriasis – 5 to 10 mg/mL
- Hypertrophic lichen planus – 5 to 10 mg/mL
- Prurigo nodularis – 5 to 10 mg/mL
- Hidradenitis suppurativa – 10 mg/mL
- Keloids – 10 to 40 mg/mL

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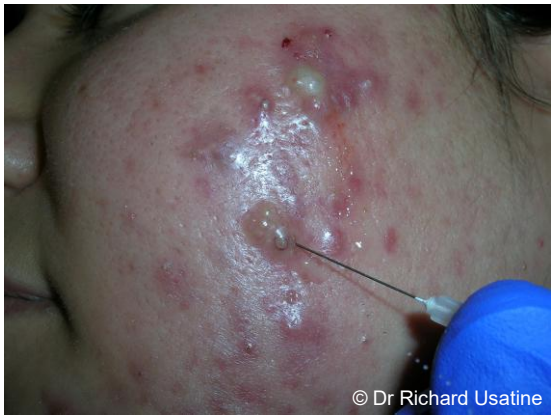
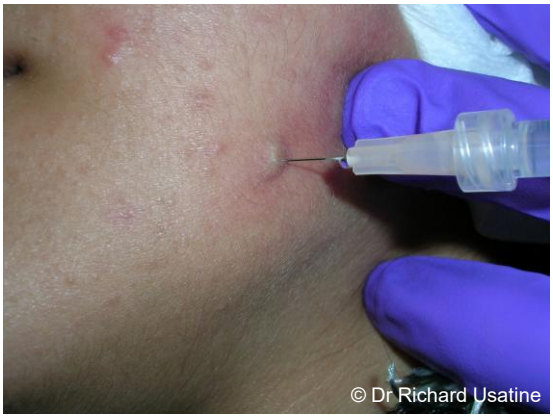
Acne 2 mg/mL





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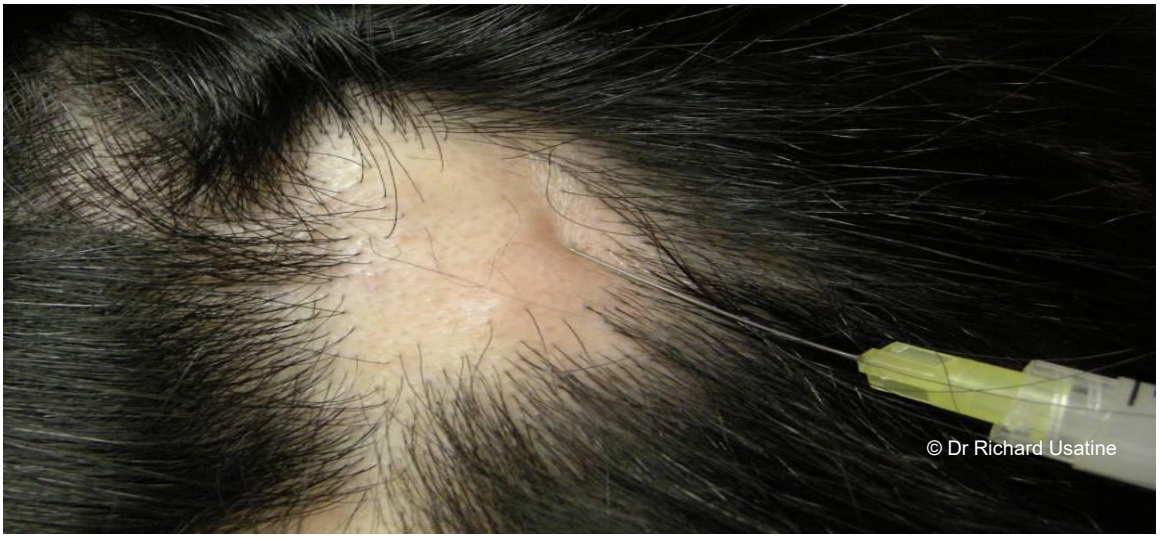
Alopecia Areata Injection – 5 mg/mL



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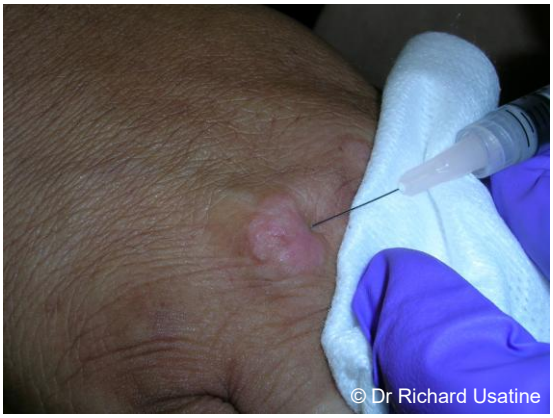
Psoriasis 5 mg/mL



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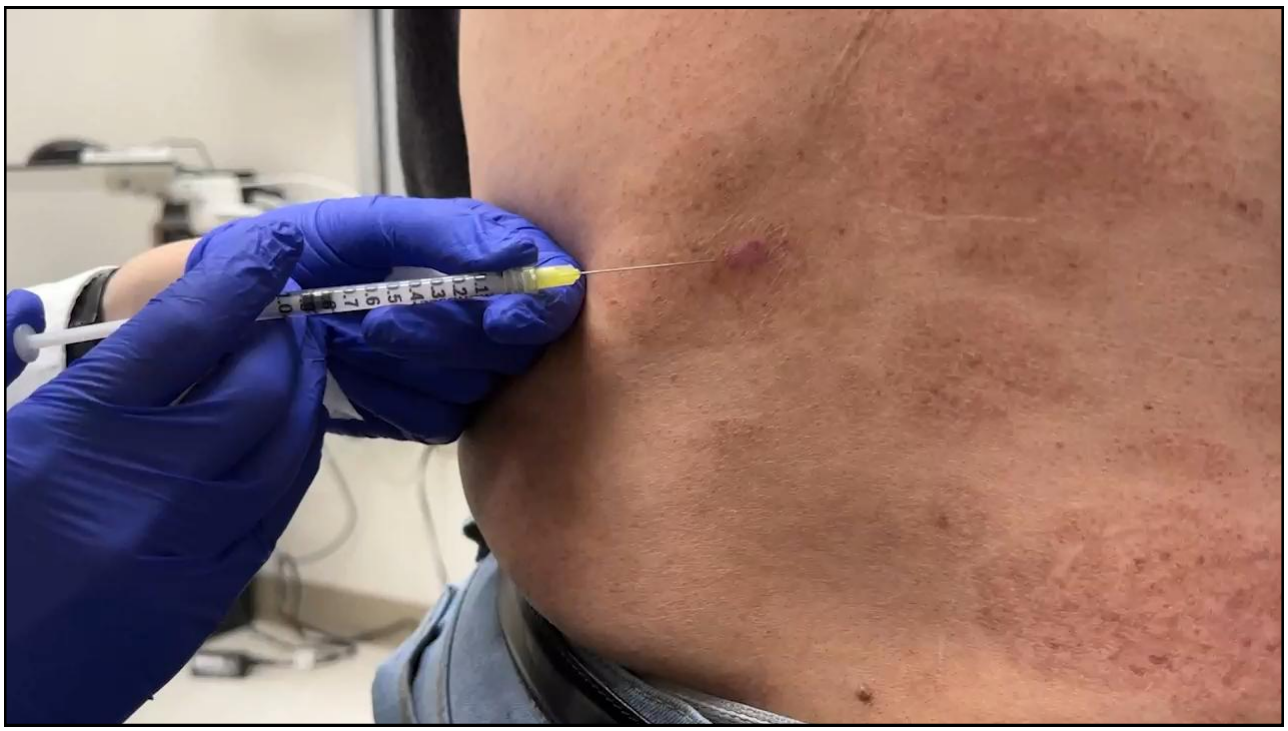

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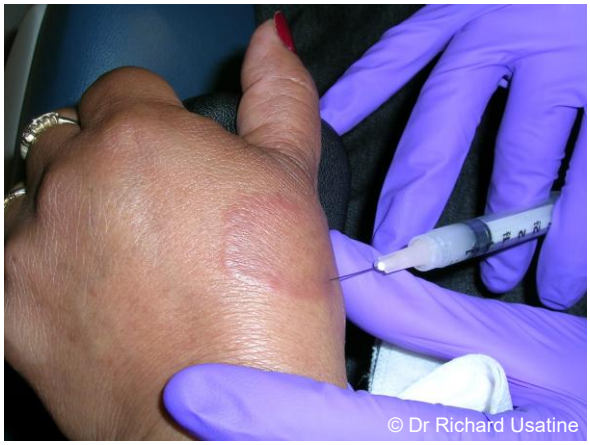
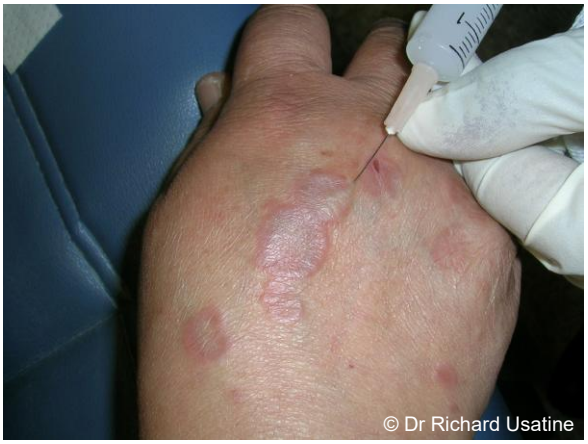
Granuloma Annulare 5 mg/mL





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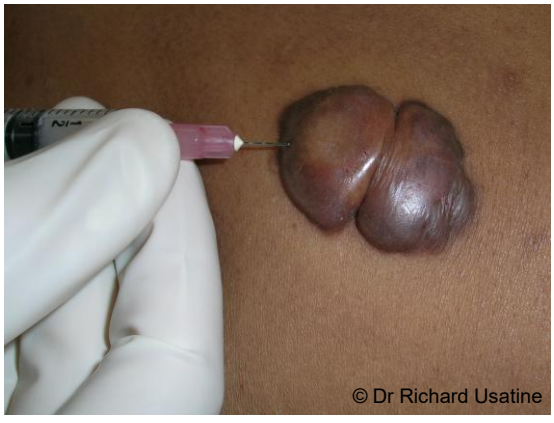
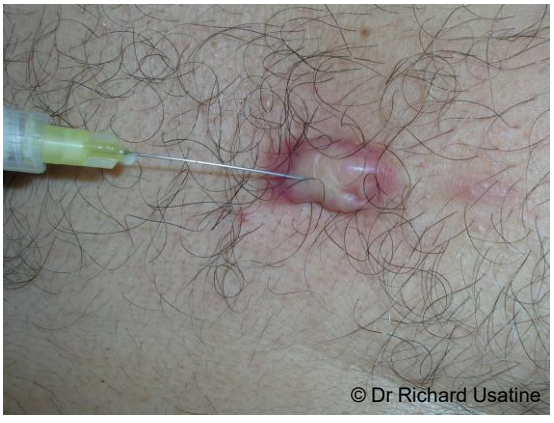
Keloid 10-40 mg/mL





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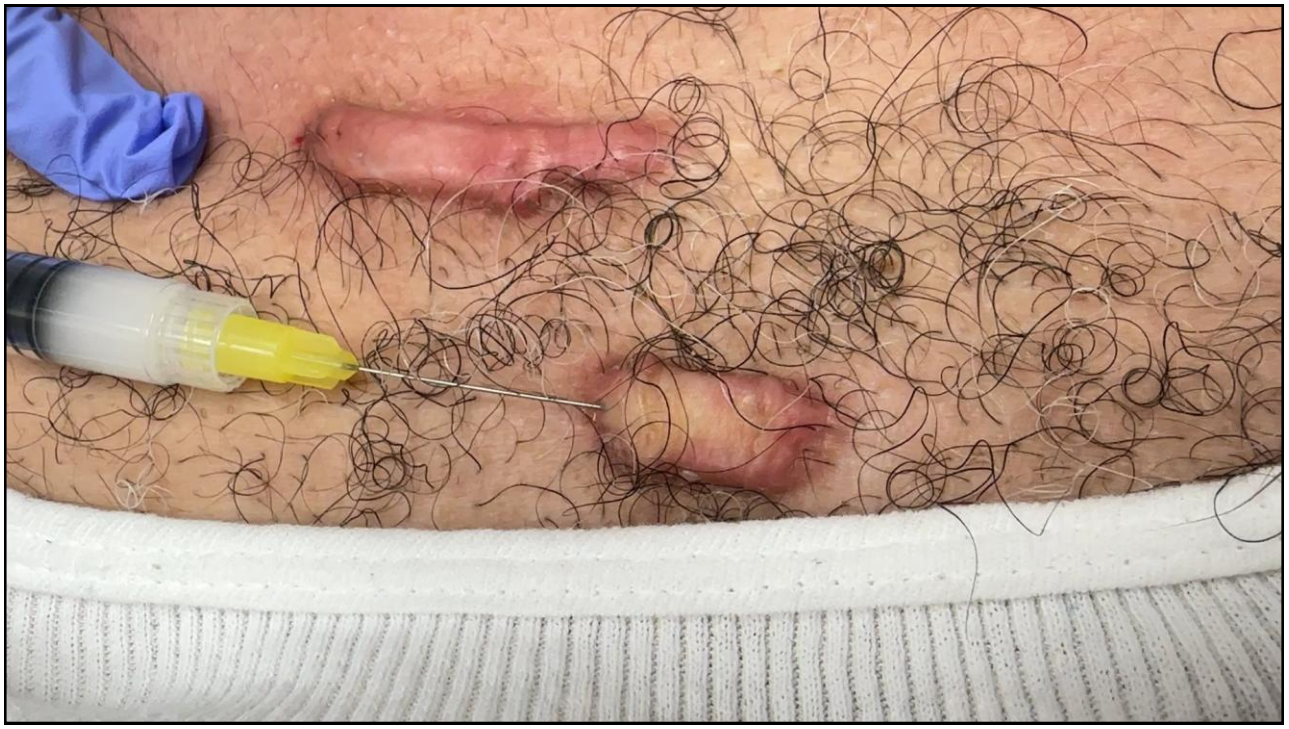

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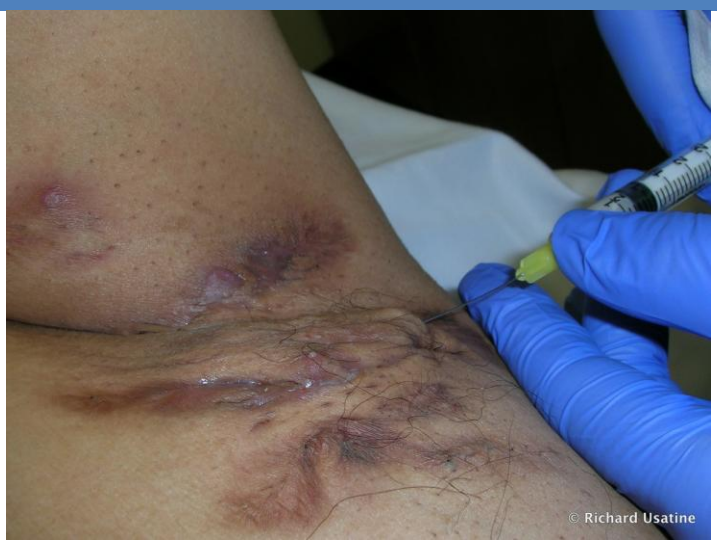
Hidradenitis 10 mg/mL



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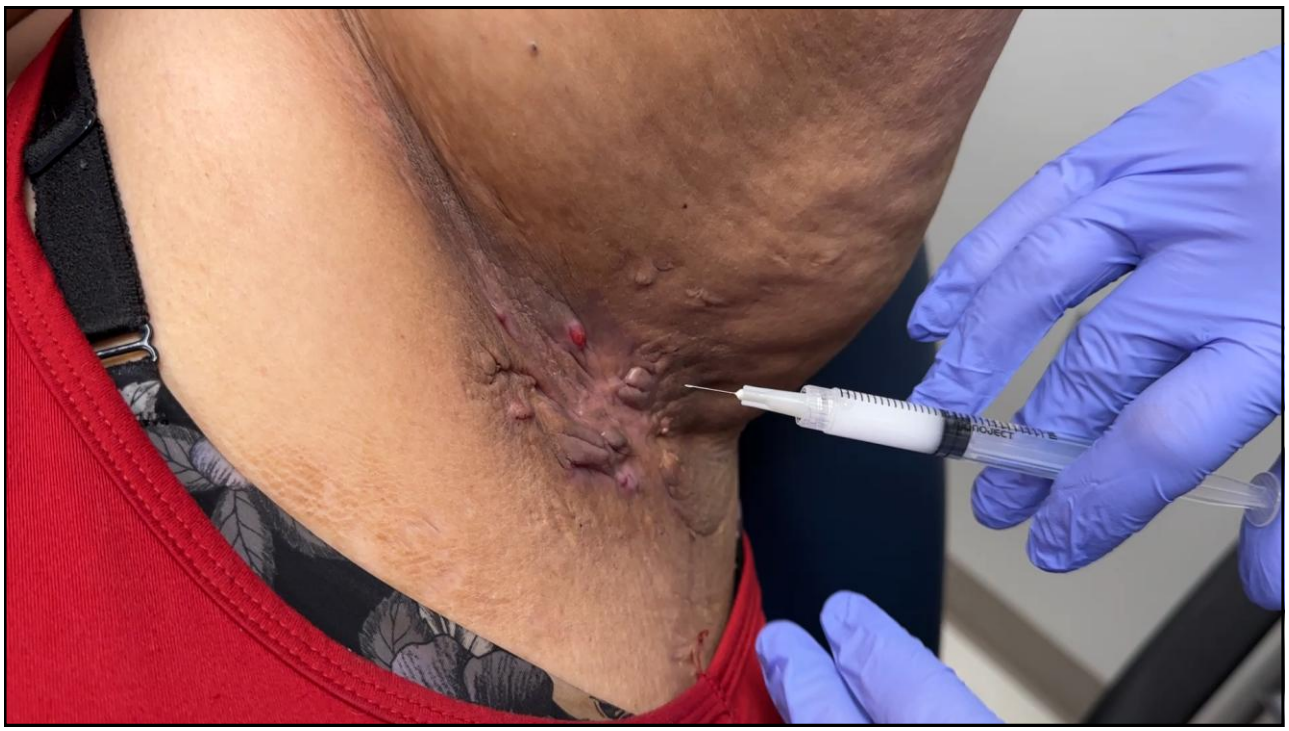
Hidradenitis

- 10 mg/mL
- About 0.5 mL per lesion
- 27-gauge needle
- Up to 4 ml in one visit
- Works fast
- Better than I and D in most cases

103



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How to Use Intralesional Steroids

- 2 – 40 mg/mL triamcinolone
- 27- to 30-gauge needle
- Start with 10 or 40 mg/mL triamcinolone
- Dilute with sterile normal saline for injection
- Inject appropriate amount

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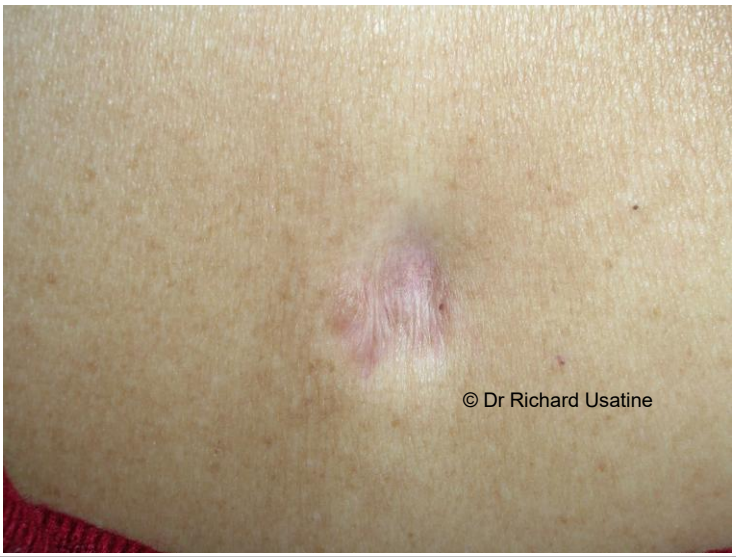
Risks of Intralesional Injections

- Atrophy
- Hypopigmentation



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Best Practice Recommendations

- Become conversant in skin terminology
- Choose steroid potency by age, location, and disease
- Give patients adequate amounts of topical steroids
- Use intralesional steroids when indicated for rapid results