Dermatology Board Review for Internists

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Eisenhower Medical Center
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DISCLOSURES

Investigator (atopic dermatitis) – AbbVie, Dermavant

ACKNOWLEDGEMENTS

Questions inspired by MKSAP19 question bank

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Routine Rashes

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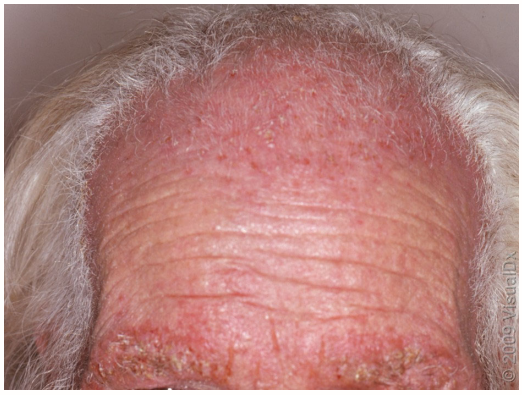
An 81-year-old man is evaluated for a 3-year history of erythema and flaking on the scalp and face.

On physical examination, ill-defined greasy, yellow to erythematous patches with slight scale are noted on the eyebrows, nose, and medial aspects of the cheeks.

Which of the following is the most appropriate treatment?

a. Clobetasol ointment
b. 5-Fluorouracil cream
c. Oral ketoconazole
d. Zinc pyrithione shampoo



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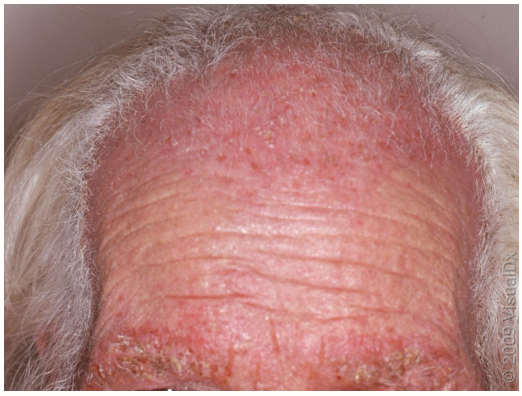

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Correct Answer

Zinc pyrithione shampoo

Why choose this one?

1) Recognize classic presentation of **seborrheic dermatitis**

- Greasy, scaly, yellow to erythematous patches in seborrheic areas (scalp, face [eyebrows, medial cheeks, nasal alae], ears, upper chest, axillae, inguinal folds)
- Thought to occur due to sensitivity to yeasts (*Malassezia* spp)
- More common in patients with neurologic disorders, HIV

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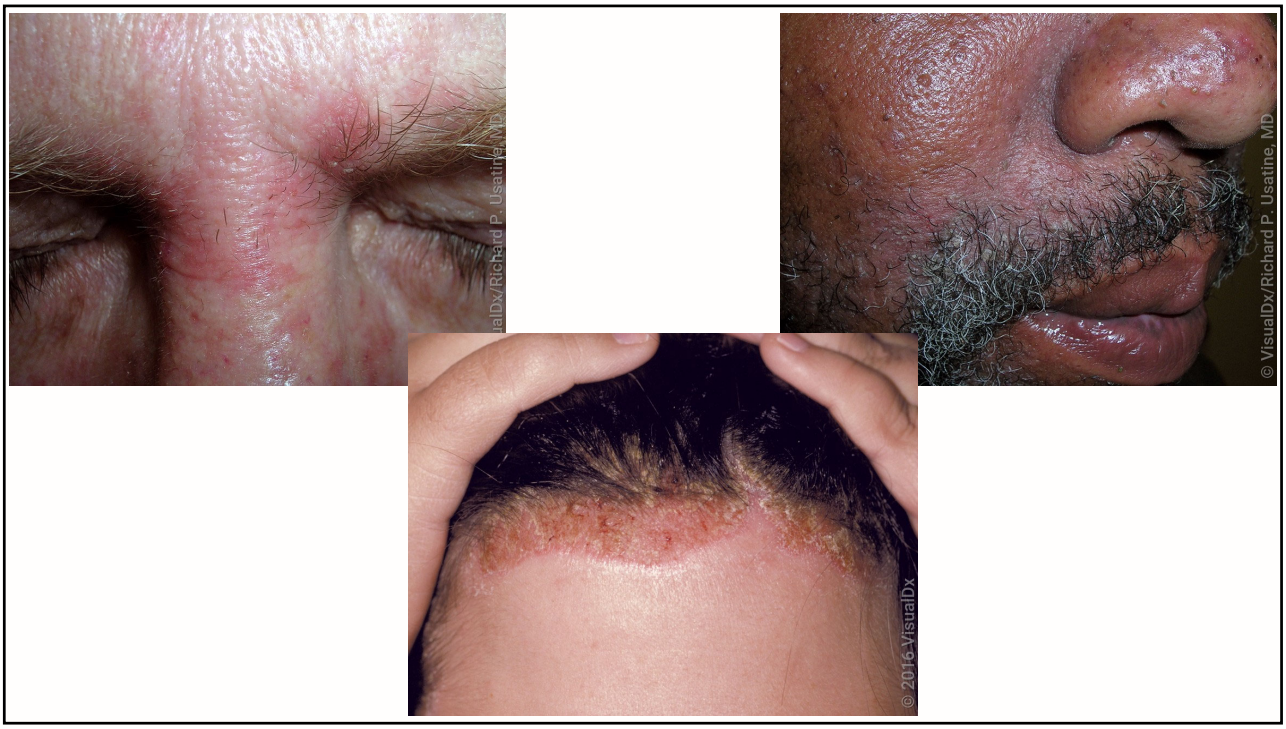

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Correct Answer

Zinc pyrithione shampoo

Why choose this one?

2) Know **first-line treatment = topical antifungals**

- OTCs: zinc pyrithione, selenium sulfide shampoos
- Rx: ketoconazole shampoo/cream
- **Low-potency** topical steroids can also be used in combination with topical antifungals

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Incorrect Answer 1

Clobetasol ointment

Why not choose this one?

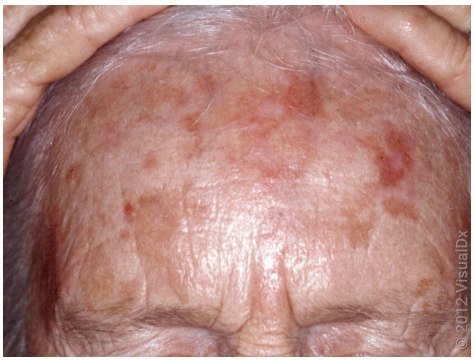
- **Low-potency** topical steroids (e.g., hydrocortisone, desonide) are often used in combination with topical antifungals for seborrheic dermatitis
- But clobetasol = an ultrahigh-potency topical steroid with risk of skin atrophy – not used for facial seborrheic dermatitis

Incorrect Answer 2

5-Fluorouracil cream

Why not choose this one?

- Not effective for seborrheic dermatitis
- 5-FU cream is used to treat actinic keratoses (precancerous lesions that may progress to squamous cell carcinoma; present as discrete gritty/rough erythematous macules and papules in sun exposed sites)



Incorrect Answer 3

Oral ketoconazole

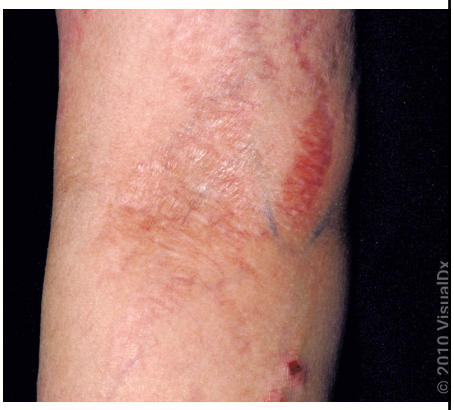
Why not choose this one?

- **Topical** antifungals: first-line treatment for seborrheic dermatitis
- Systemic ketoconazole: use limited to systemic fungal infections, often when safer antifungals have failed
- 2016 FDA box warning for ketoconazole (hepatotoxicity, adrenal toxicity, drug interactions)
- Rarely for refractory seborrheic dermatitis oral antifungals may be considered – but not ketoconazole

A 30-year-old woman is evaluated for a 7-year history of atopic dermatitis. She continues to have mild flares every few weeks on her arms. Her only medication is topical clobetasol cream.

Which of the following is the most appropriate treatment?

a. Add calcipotriene cream
b. Replace clobetasol cream with ketoconazole cream
c. Replace clobetasol cream with tacrolimus ointment
d. Replace clobetasol cream with triamcinolone cream



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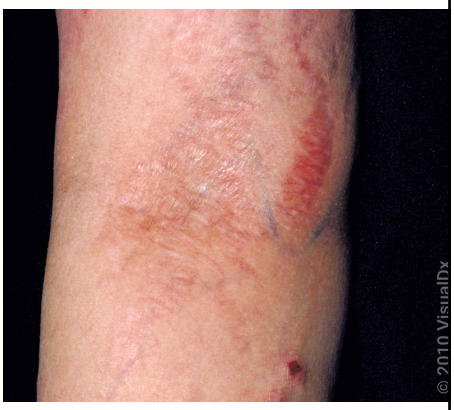

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Correct Answer

Replace clobetasol cream with tacrolimus ointment

Why choose this one?

1) Recognize signs of overuse of topical steroids

- Skin atrophy, telangiectasias, striae, easy bruising
- Atrophy more likely in intertriginous areas, face
- Clobetasol = ultrahigh-potency topical steroid

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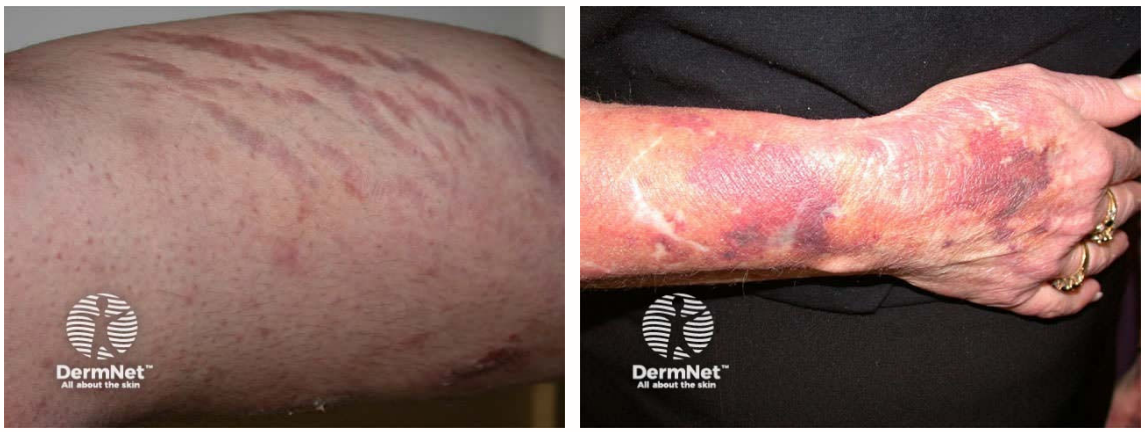

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Correct Answer

Replace clobetasol cream with tacrolimus ointment

Why choose this one?

2) Understand appropriate non-steroidal treatment of atopic dermatitis

- Patient still needs treatment of her AD
- Topical calcineurin inhibitors (tacrolimus, pimecrolimus) have similar efficacy to low-medium potency topical steroids, but do not cause atrophy

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Incorrect Answer 1

Add calcipotriene cream

Why not choose this one?

- Vitamin D analog used to treat **psoriasis**
- Would not worsen patient's atrophy, but would not be effective in treating their atopic dermatitis

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Incorrect Answer 2

Replace clobetasol cream with ketoconazole cream

Why not choose this one?

- Antifungal used for treating superficial fungal infections
- Would not worsen patient's atrophy, but would not be effective in treating their atopic dermatitis

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Incorrect Answer 3

Replace clobetasol cream with triamcinolone cream

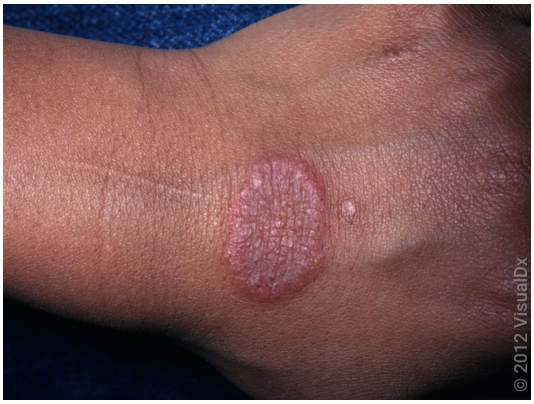
Why not choose this one?

- Mid-potency topical steroid
- Less potent than clobetasol, but would still contribute to steroid side effects in this patient

A 44-year-old woman is evaluated for a 4-week history of worsening rash. She used clobetasol cream for 1 week, but the rash worsened.

Which of the following is the most appropriate test?

a. Mineral oil preparation of skin scraping
b. Potassium hydroxide preparation of skin scraping
c. Shave biopsy
d. Wood lamp examination



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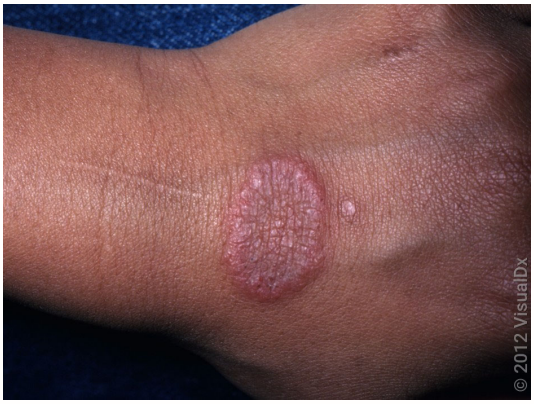


Correct Answer

Potassium hydroxide preparation of skin scraping

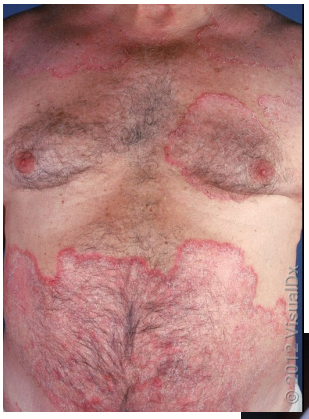
Why choose this one?

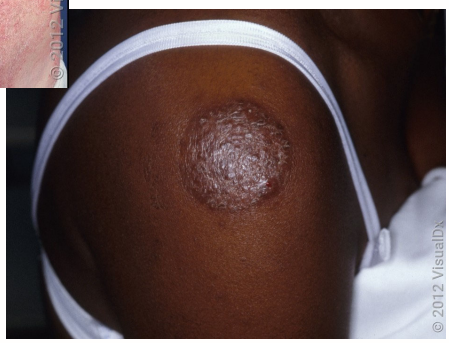
1) Recognize classic presentation of **tinea corporis** (superficial fungal infection)

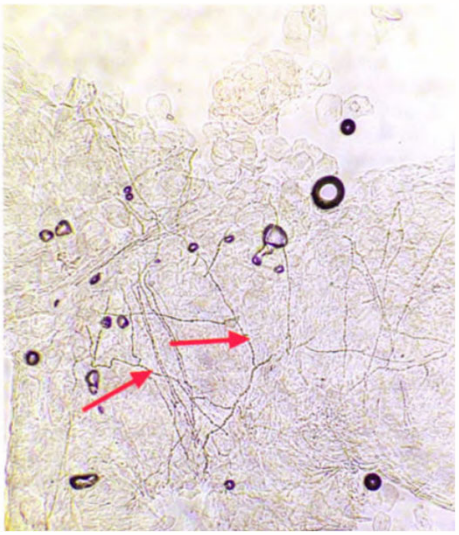
- Annular erythematous plaque with scaly border
- Worsens with use of topical steroids

2) Know most appropriate diagnostic step

- Microscopic exam of skin scrapings with KOH prep: inexpensive, quick
- Scrape scale onto glass slide, add 2-3 drops KOH and coverslip
- Dx confirmed by presence of branching hyphae







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Incorrect Answer 1

Mineral oil preparation of skin scraping

Why <u>not</u> choose this one?

- Used to diagnose **scabies** (visualization of mites, eggs, feces)
- Classic presentation: extremely pruritic rash with erythematous papules and burrows involving the wrists, finger webs, axillae, waistline
- Does not present with annular plaques with scale

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Incorrect Answer 2

Shave biopsy

Why not choose this one?

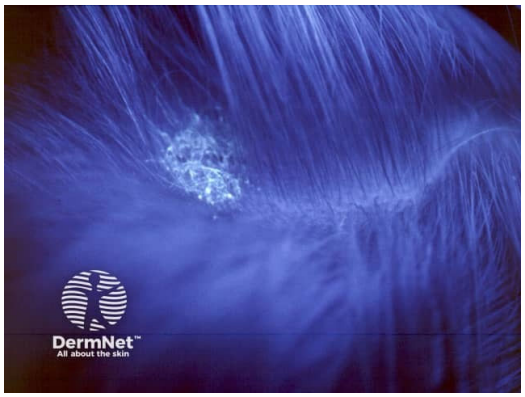
- Used to diagnose a variety of skin conditions
- **Could** be used to diagnose tinea, but more expensive and time consuming than KOH prep, and leaves scar as well as risk of infection → NOT most appropriate initial test
- If KOH prep negative, and diagnosis uncertain (e.g., lack of response to empiric treatment), biopsy could be considered

Incorrect Answer 3

Wood lamp examination

Why not choose this one?

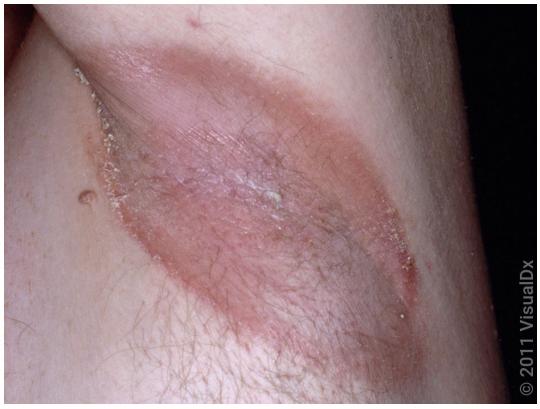
- Handheld UV light source used to diagnose pigmentary disorders (vitiligo) and produces skin fluorescence in erythrasma and tinea capitis, but not tinea corporis



A 49-year-old man is evaluated for an 8-week history of a mildly itchy rash in his armpits. The rash is confined to the axillae. There is some fine scale.

Which of the following is the most appropriate diagnostic test?

a. Hemoglobin A1c
b. Mineral oil preparation of skin scraping
c. Potassium hydroxide preparation of skin scraping
d. Wood lamp examination



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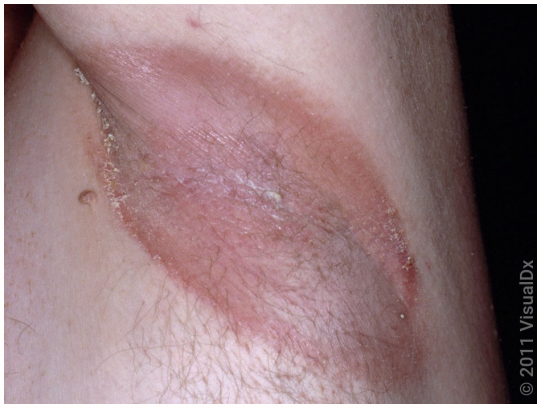

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Correct Answer

Wood lamp examination

Why choose this one?

- Recognize classic presentation of **erythrasma** (superficial bacterial infection due to *Corynebacterium minutissimum*)
- Thin, atrophic, finely wrinkled pink-brown plaques in intertriginous areas (esp. axillae)
- Minimal symptoms (+/- pruritus)
- Wood lamp: **coral-red fluorescence** (pathognomonic)
- Treatment: topical erythromycin/clindamycin or topical antifungal

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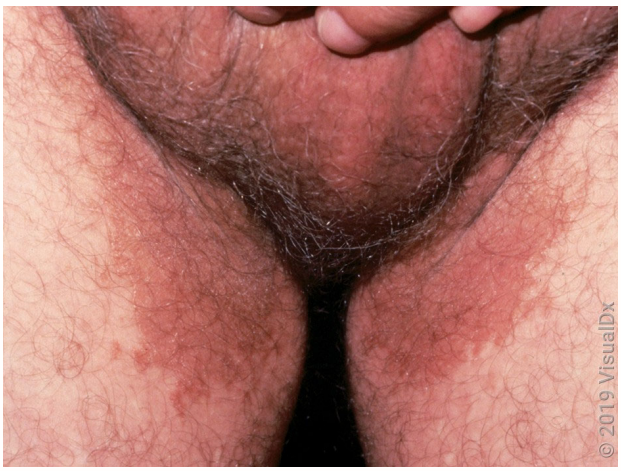

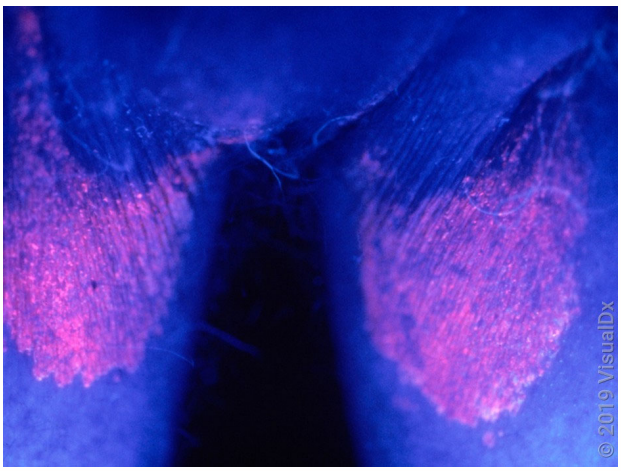

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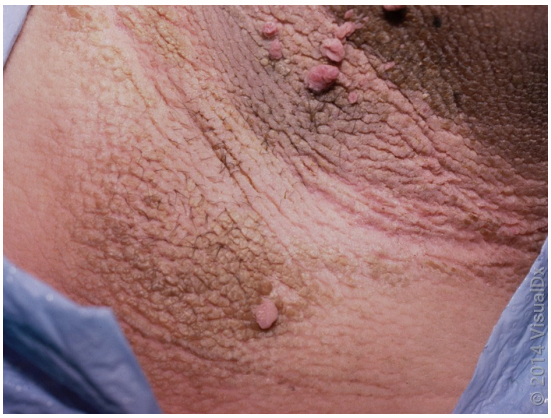
Incorrect Answer 1

Hemoglobin A1c

Why not choose this one?

- Important to obtain in patient with acanthosis nigricans
- Velvety, thickened, hyperpigmented plaques in axillae
- In erythrasma, plaques are thin and minimally scaly or even atrophic appearing



Incorrect Answer 2

Mineral oil preparation of skin scraping

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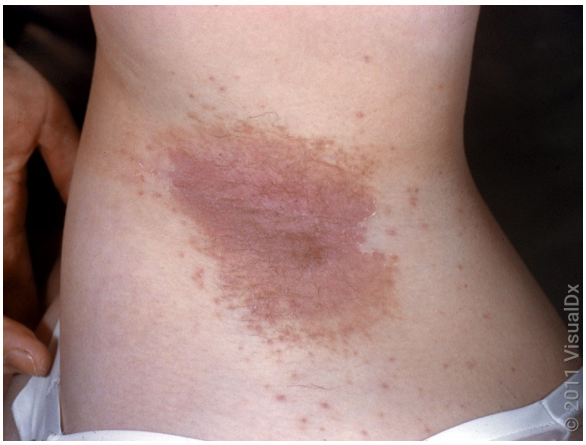
- Classic presentation: extremely pruritic rash with erythematous papules and burrows involving the wrists, finger webs, axillae, waistline
- Does not present with annular plaques with scale

Incorrect Answer 3

Potassium hydroxide preparation of skin scraping

Why not choose this one?

- Used to diagnose fungal infections
  - Tinea corporis → annular erythematous plaque with scaly border
  - Candidiasis → erythematous patches with maceration and **satellite pustules**



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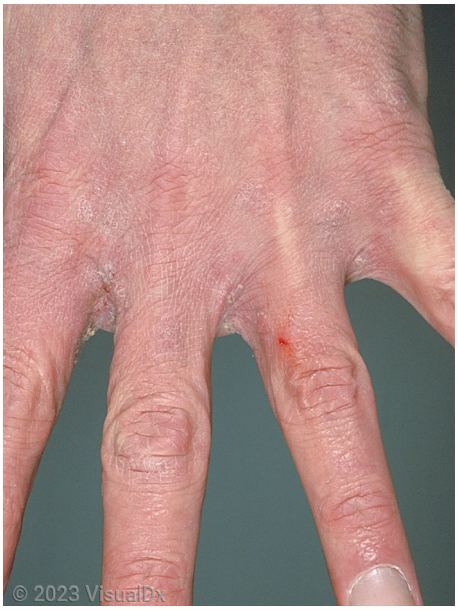
A 35-year-old woman is evaluated for a 4-week history of pruritic rash on several areas, including the hands. There is no facial involvement.

Which of the following is the most likely diagnosis?

a. Bed bug bites
b. Dyshidrosis
c. Impetigo
d. Scabies



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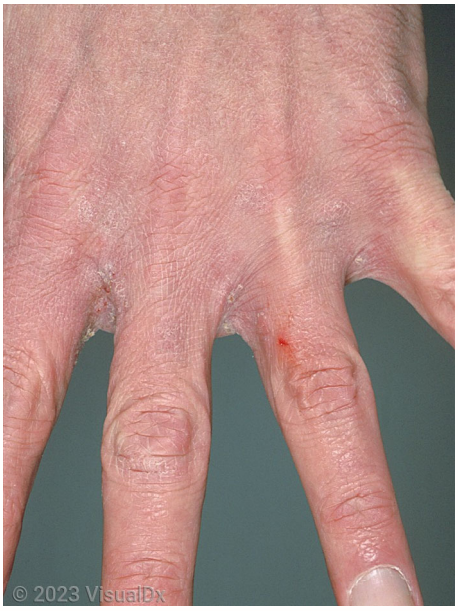

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Correct Answer

Scabies

Why choose this one?

- Recognize classic presentation of **scabies** (caused by microscopic mite, *Sarcoptes scabiei)*
- Extremely pruritic rash with erythematous papules and burrows involving the wrists, finger webs, axillae, waistline
- Typically **spares face** and scalp in adults
- Skin/skin & sexual transmission; institutional settings, unhoused individuals
- Dx: mineral oil prep visualizes mites, eggs, feces; but may be negative (low mite burden in most cases) → treat empirically (topical permethrin, oral ivermectin)

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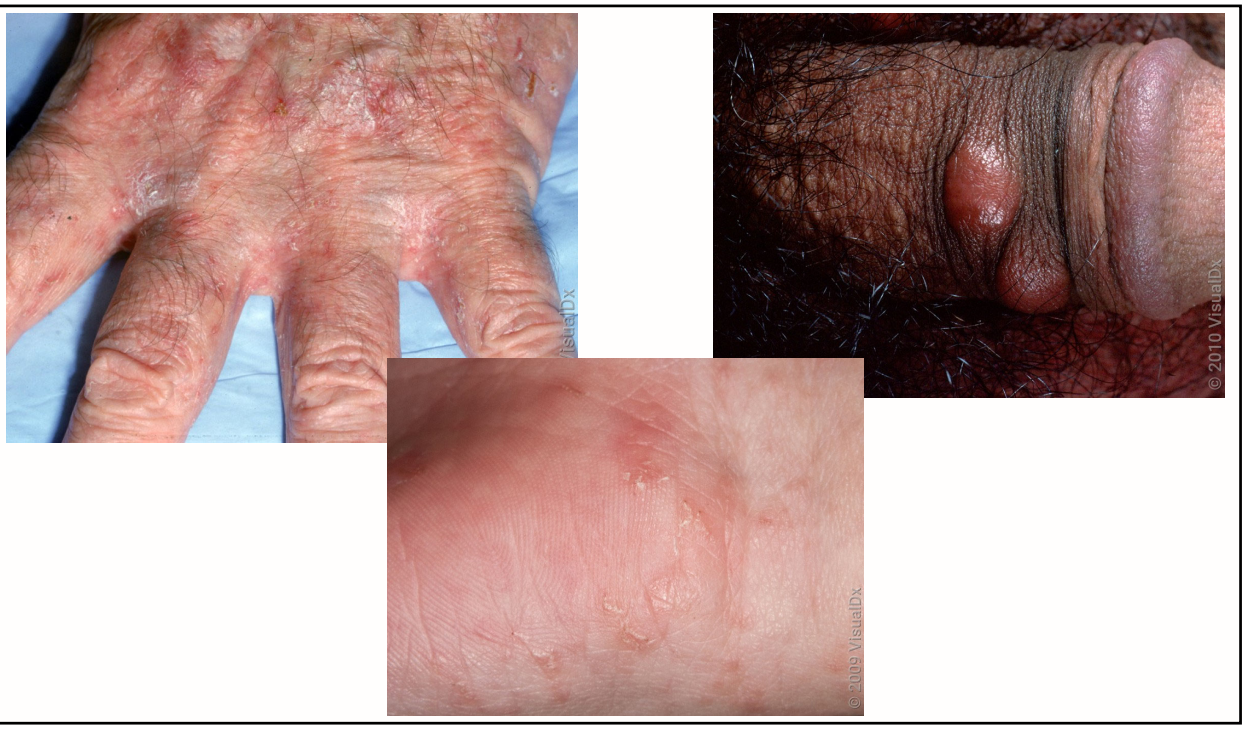

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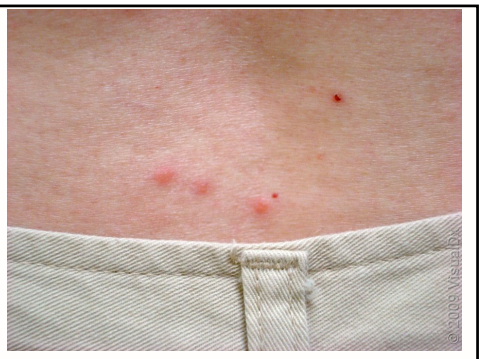
Incorrect Answer 1

Bed bug bites

Why not choose this one?

- Bites of *Cimex lectularius* (insect visible to naked eye)
- Present as erythematous papules, often in a **linear pattern** ("breakfast, lunch, and dinner" sign)
- Affects areas of **exposed skin**



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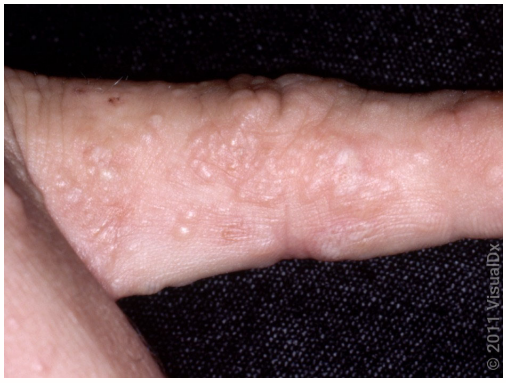
Incorrect Answer 2

Dyshidrosis

Why not choose this one?

- AKA dyshidrotic eczema
- Form of hand dermatitis with **vesicles** on hands and fingers (less commonly feet)
- Exacerbated by irritants (handwashing, detergents)
- More common in pt with atopic dermatitis
- **No burrows**



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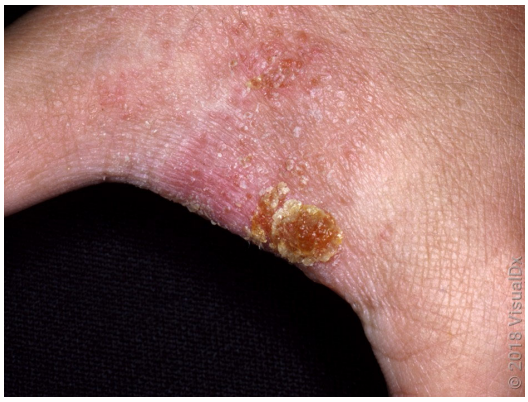
Incorrect Answer 3

Impetigo

Why not choose this one?

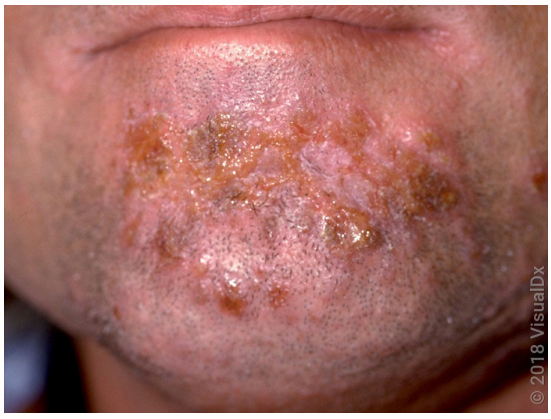
- Bacterial skin infection most commonly caused by *Staphylococcus aureus* > group A streptococcus
- Presents with **honey-colored** crusted erosions or bullae, commonly on face



A 36-year-old man is evaluated for a 1-week history of a pruritic rash on the chin. He has no other medical problems and takes no medications.

Which of the following is the most appropriate treatment?

a. Mupirocin ointment
b. Oral cephalexin
c. Oral valacyclovir
d. Triamcinolone cream



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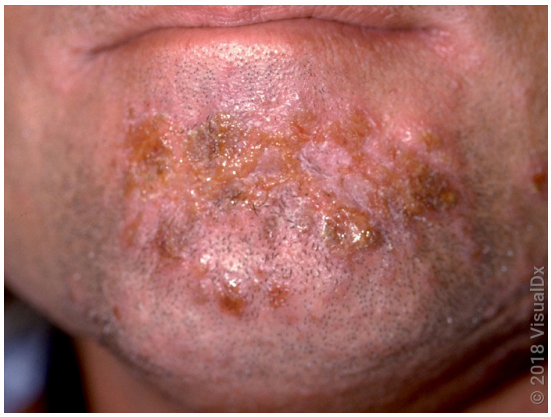

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Correct Answer

Mupirocin ointment

Why choose this one?

Recognize classic presentation and treatment of **impetigo**

- Superficial epidermal infection due to *Staphylococcus aureus* > group A streptococcus
- Eroded erythematous papules/plaques with **honey-colored crust**
- Most commonly seen in children
- Typically minimally symptomatic; cosmetically distressing; easily spread
- Treatment: wash with soap & water, remove crust, and topical mupirocin

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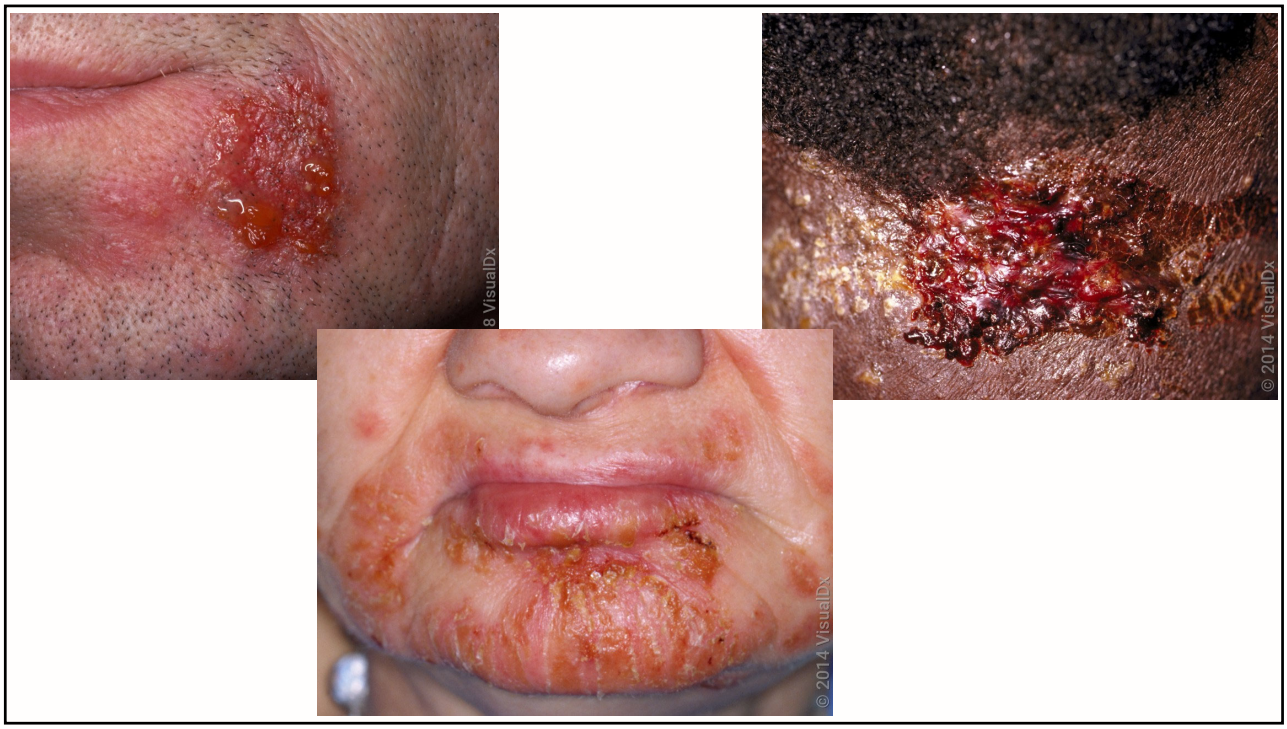

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Incorrect Answers 1

Oral cephalexin

Why not choose these ones?

- **For localized impetigo, topical antibiotics are as effective as oral antibiotics**
- Oral abx useful in cases of widespread bullous impetigo or when methicillin-resistant *S. aureus* is suspected/confirmed

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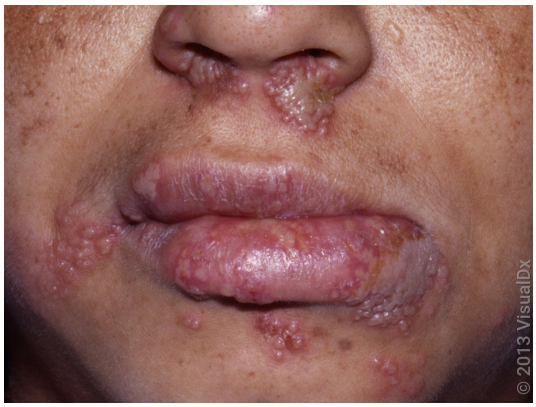
Incorrect Answer 2

Oral valacyclovir

Why not choose this one?

- Used to treat **herpes simplex infections**
- **Painful clustered vesicles** on erythematous base



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Incorrect Answer 3

Triamcinolone cream

Why not choose this one?

- Not used to treat bacterial skin infections – may lead to worsening

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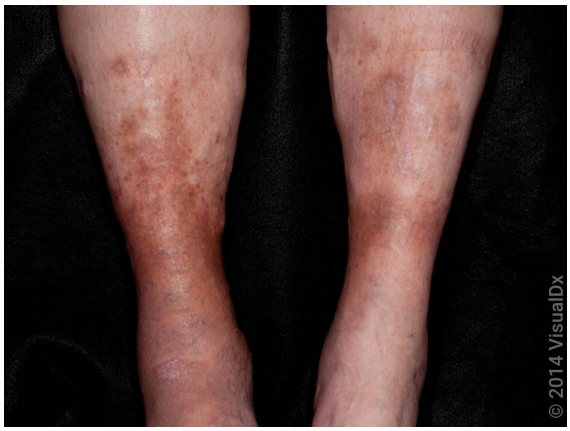
A 70-year-old man is evaluated for a several-year history of bilateral lower extremity edema and hyperpigmentation. His other medical history includes hypertension and obesity. His only medication is lisinopril.

Which of the following is the most appropriate management?

a. Cefadroxil
b. Compression duplex ultrasonography
c. Compression stockings
d. Furosemide



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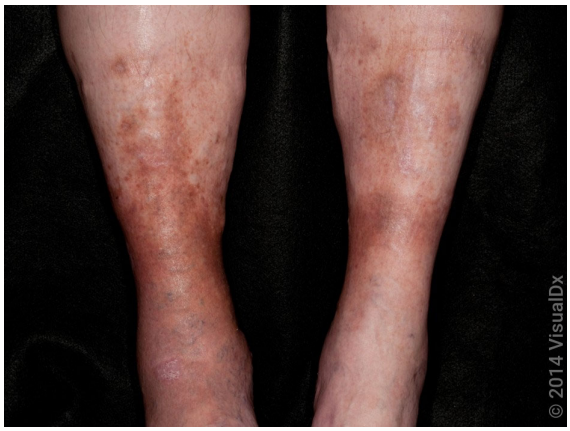

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Correct Answer

Compression stockings

Why choose this one?

- Recognize classic presentation of **chronic venous insufficiency / venous stasis**
- Caused by venous hypertension due to dysfunction of venous valves > obstruction (e.g., thrombus)
- Symptoms: aching, itching, heaviness, swelling, pain
- Skin discoloration due to hemosiderin deposition from extravasated erythrocytes
- First-line treatment: compression stockings, exercise, leg elevation, topical steroids for pruritus

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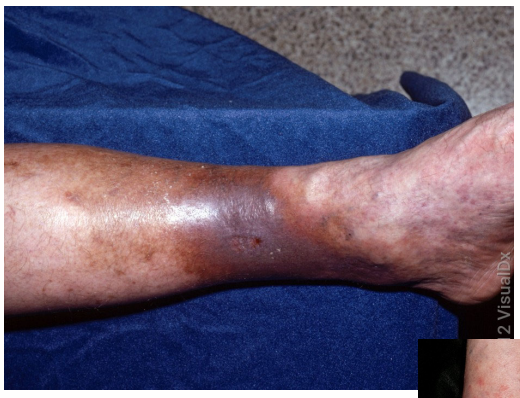
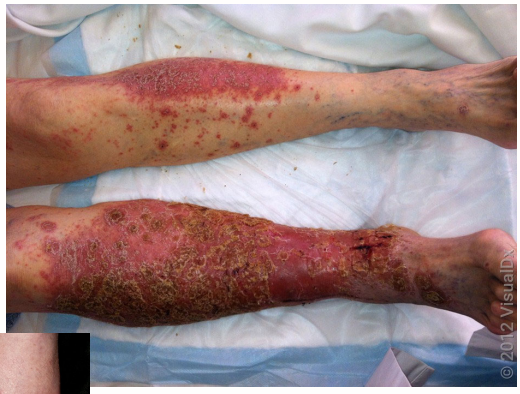
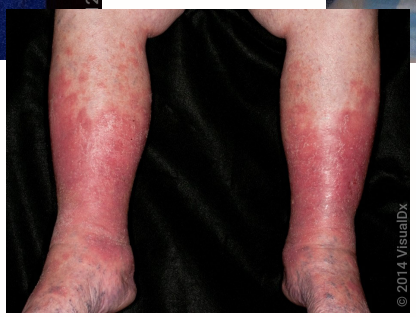
THE MYTH OF "BILATERAL CELLULITIS" IS ALIVE AND WELL…







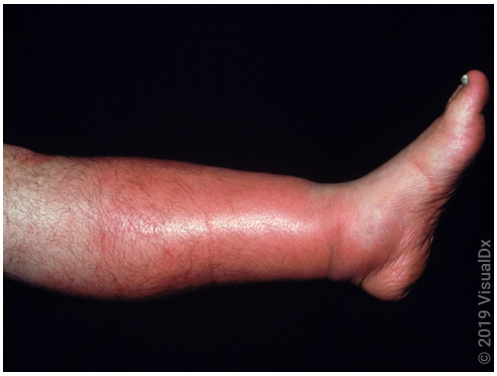
52

Incorrect Answer 1

Cefadroxil

Why not choose this one?

- There is no evidence of cellulitis in this case
- Cellulitis is almost always unilateral
- **"Bilateral cellulitis" is almost always an inflammatory process** (stasis dermatitis, contact dermatitis, others)
- **Systemic signs of infection**: fever, pain, leukocytosis



Incorrect Answer 2

Compression duplex ultrasonography

Why not choose this one?

- While deep venous thrombosis is in the differential diagnosis of unilateral lower extremity swelling, this patient has chronic bilateral swelling and ultrasonography is not indicated

Incorrect Answer 3

Furosemide

Why not choose this one?

- Patients with chronic venous insufficiency in absence of heart failure or chronic kidney disease have normal intravascular volume
- Diuretics do not decrease the excess extravascular fluid/edema and are not useful in this case

55

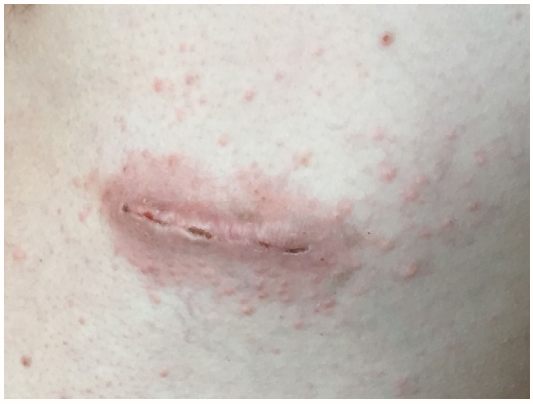
Blisters and Scary Rashes

56

A 61-year-old man is evaluated for worsening erythema and pruritus that began 3 days ago. Ten days ago, bacitracin ointment was used following excision of a dysplastic nevus on his upper back. Two weeks ago, he was treated with amoxicillin for community-acquired pneumonia. Medical history is otherwise unremarkable, and he takes no medications.

Which of the following is the most appropriate treatment?

a. Ketoconazole cream
b. Mupirocin ointment
c. Prednisone
d. Triamcinolone cream



Cutis. 2020 March;105(03):E11-E13

57

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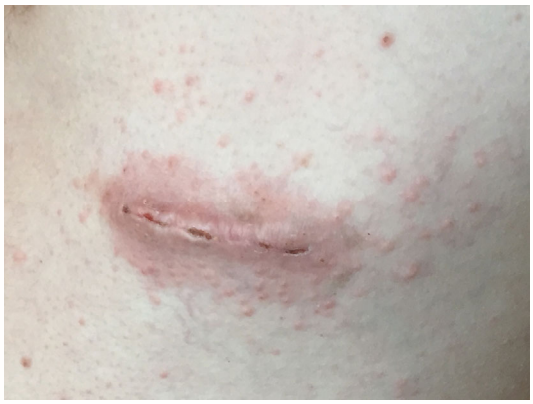

Cutis. 2020 March;105(03):E11-E13

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Correct Answer

Triamcinolone cream

Why choose this one?

- Recognize classic presentation of **allergic contact dermatitis** to bacitracin
- Type IV delayed hypersensitivity reaction
- Pruritic, erythematous patches or plaques at site of allergen contact, that may spread
- Acute lesions: vesicles, weeping; chronic: scaling, lichenification
- Treatment of mild localized ACD: avoid further allergen exposure, topical steroids (mid-high potency)
- Gold standard for diagnosis: patch test

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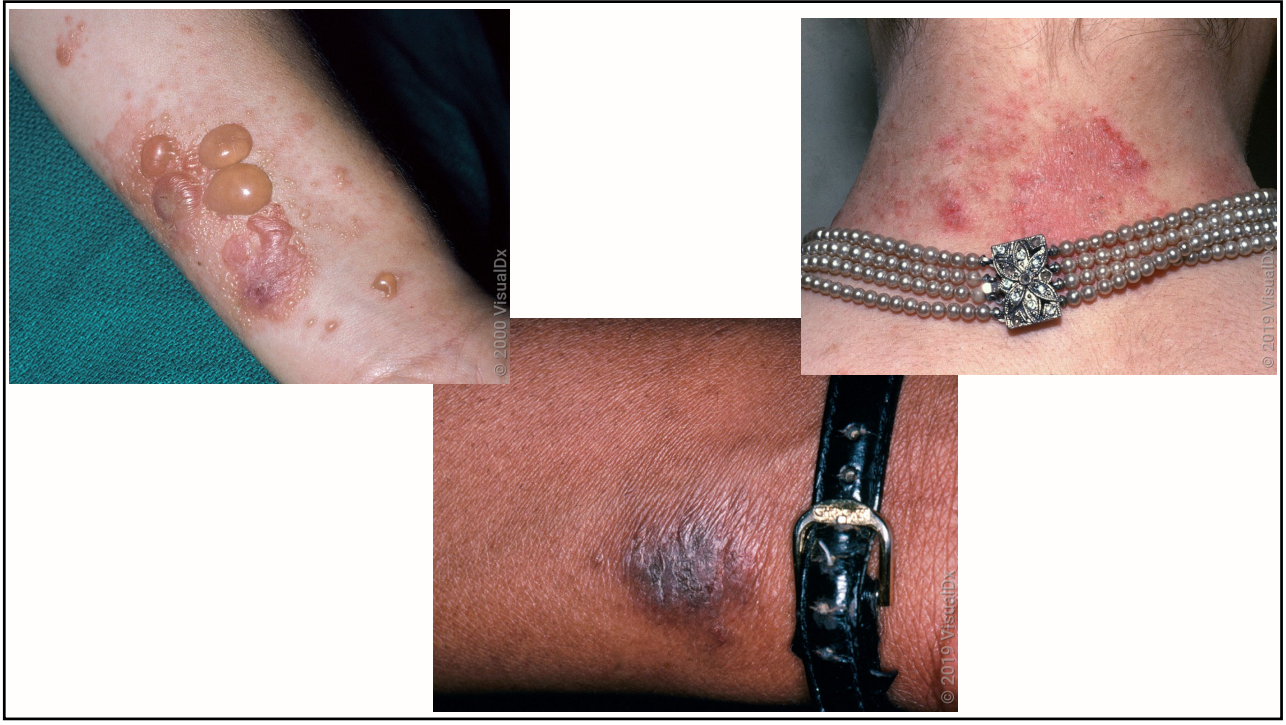


60

Incorrect Answer 1

Ketoconazole cream

Why not choose this one?

- Fungal infections are rare in clean surgical wounds
- *Candida* infection presents with satellite papules/pustules

61

Incorrect Answer 2

Mupirocin ointment

Why not choose this one?

- No indication of wound infection in this patient
- Signs of infection: erythema, tenderness, exudative drainage
- Whereas this patient has pruritus and a classic presentation of allergic contact dermatitis
- Clean wounds: plain petrolatum recommended over topical antibiotics
  - Mupirocin is infinitely less allergenic than neomycin/bacitracin/polymyxin B

62

Incorrect Answer 3

Prednisone

Why not choose this one?

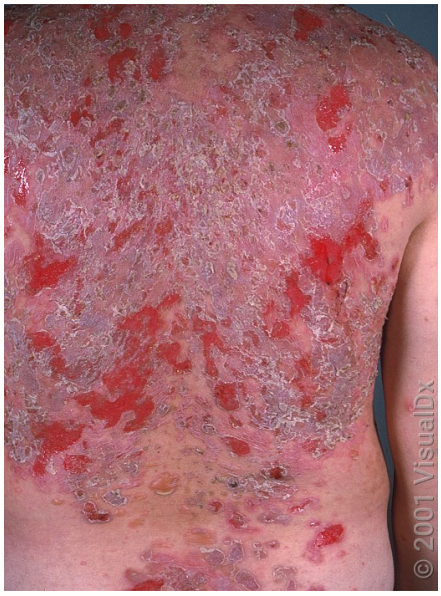
- Systemic steroids indicated for severe cases of allergic contact dermatitis (e.g., widespread poison oak) but not localized milder cases

A 50-year-old man is evaluated in the emergency department for a 6-day history of sloughing skin in his mouth and on his face, trunk, and arms. His eyes are unaffected, and he reports no dysuria. Medical history is significant for rosacea treated with doxycycline for the past 6 months.

On physical examination, the patient is non-toxic appearing. Vital signs are normal.

Which of the following is the most likely diagnosis?

a. Bullous pemphigoid
b. Dermatitis herpetiformis
c. Pemphigus vulgaris
d. Stevens-Johnson syndrome



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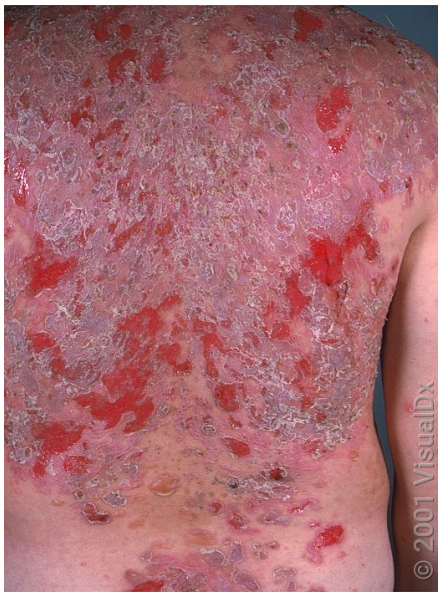

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Correct Answer

Pemphigus vulgaris

Why choose this one?

- Recognize classic presentation of **pemphigus vulgaris (PV)**
- Autoimmune bullous disease (ABD) – antibodies interfere with cohesion between keratinocytes in epidermis (desmosomes) or between epidermis + dermis (basement membrane zone)
  - I.e., intraepidermal vs subepidermal
- PV = most common intraepidermal ABD; older individuals
- **Painful, flaccid** oral (all patients) and sometimes cutaneous bullae (easily rupture) and erosions

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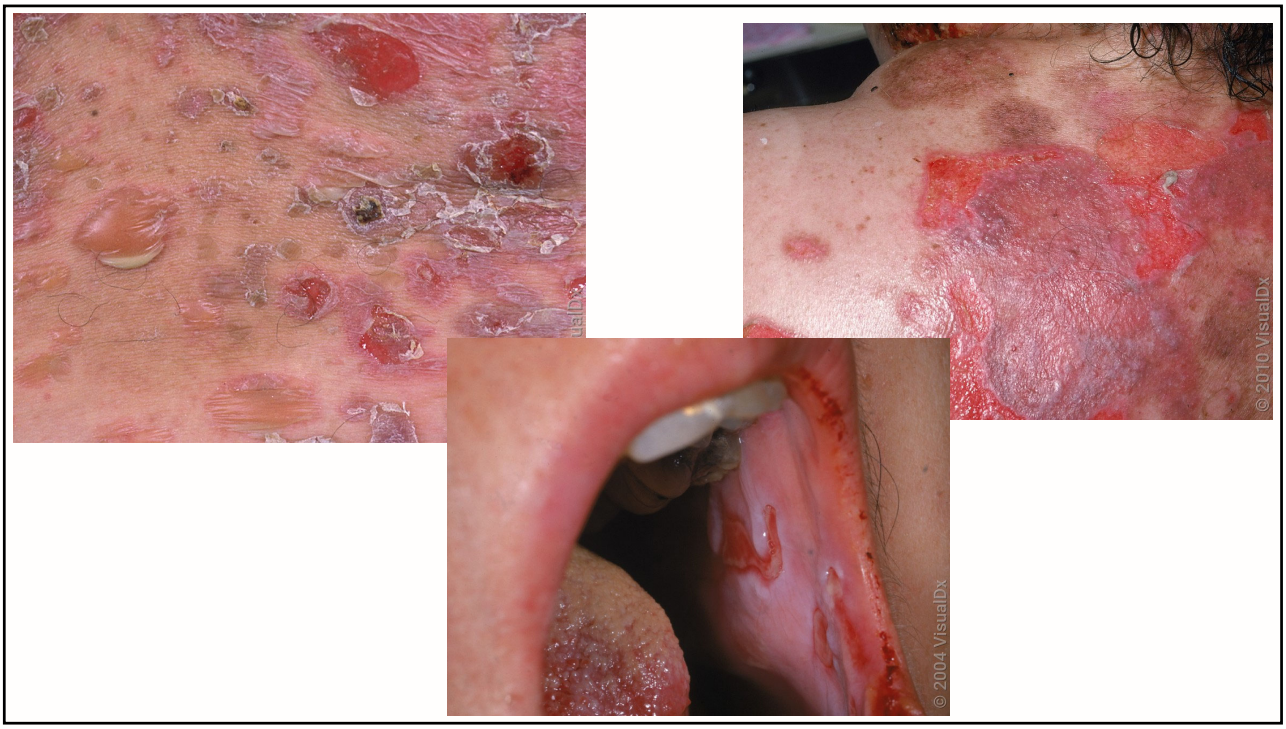


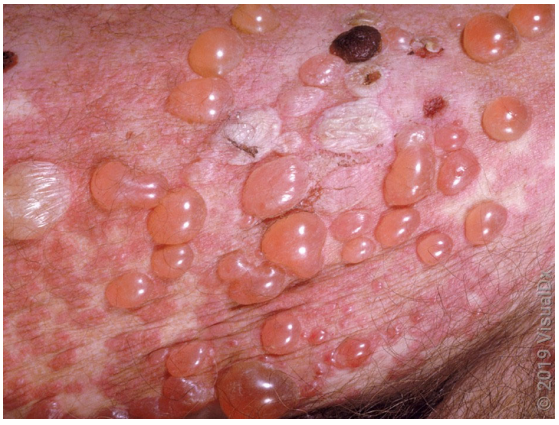
67

Incorrect Answer 1

Bullous pemphigoid

Why <u>not</u> choose this one?

- Most common subepidermal autoimmune bullous disease
- Features **tense bullae**
- Hallmark symptom = **pruritus**
- **Much less frequent mucosal involvement** than pemphigus



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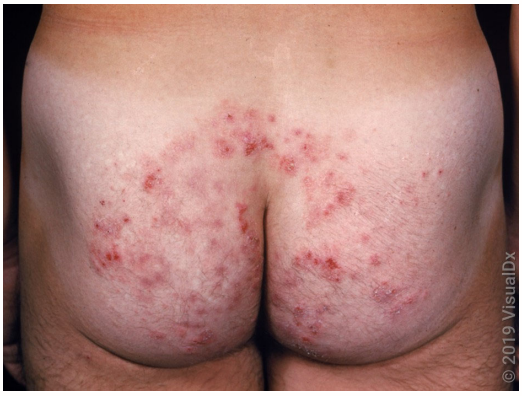
Incorrect Answer 2

Dermatitis herpetiformis

Why not choose this one?

- Cutaneous manifestation of gluten-sensitive enteropathy/celiac disease
- Autoantibodies to epidermal transglutaminase → clustered fragile vesicles that break down quickly, leaving behind erosions on **elbows, knees, buttocks**
- Intensely **pruritic**
- **No mucosal involvement**

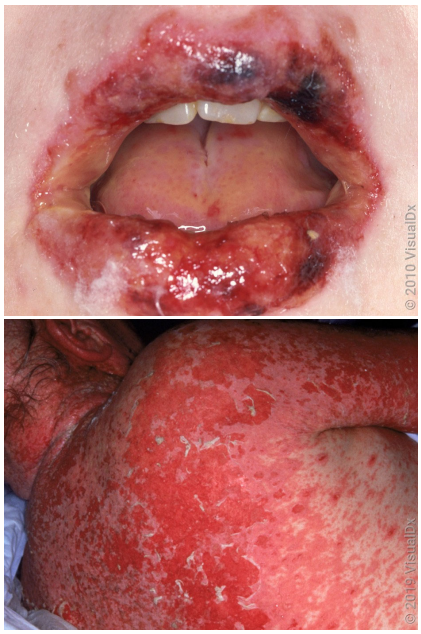


Incorrect Answers 3 & 4

Stevens-Johnson syndrome

Why not choose these ones?

- Severe mucocutaneous drug reactions on a spectrum with toxic epidermal necrolysis (based on body surface area involved)
- Begins **with 2 wks of new med**
- Skin pain, **malaise, fever, toxic appearance** → dusky lesions → desquamation
- Mucosal involvement – **usually 2+ mucosal surfaces**

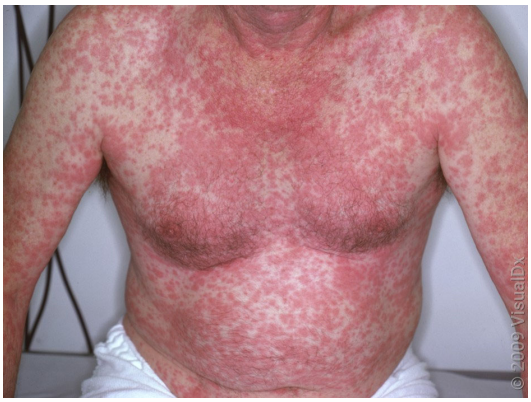


A 28-year-old man is evaluated for a 2-day history of a rapidly spreading pruritic rash on his trunk, arms, and legs. He started sulfamethoxazole-trimethoprim for an upper respiratory infection 10 days ago.

Conjunctivae, oral mucosa, and urethral meatus are normal. Vital signs are within normal limits.

Which of the following is the most likely diagnosis?

a. Drug-induced hypersensitivity syndrome
b. Exanthematous drug eruption
c. Fixed drug eruption
d. Hypersensitivity vasculitis



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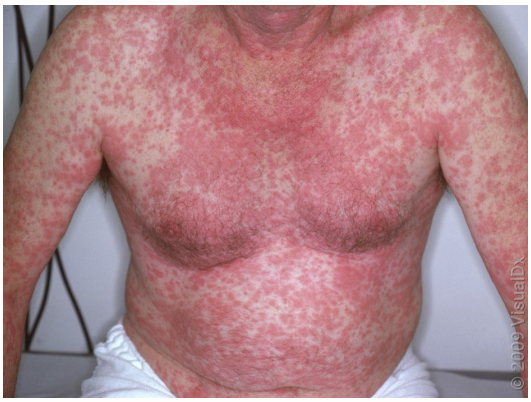

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Correct Answer

Exanthematous drug eruption

Why choose this one?

- Recognize classic presentation of **exanthematous drug eruption**
- AKA morbilliform drug rash
- Most common cutaneous drug eruption, most likely a type IV delayed hypersensitivity reaction
- 1-2 weeks after starting drug: erythematous macules/papules coalescing to form plaques, involving trunk and extremities
- +/- lymphadenopathy, +/- pruritus
- Benign rash; if drug is essential, may "treat through" rash with topical/systemic steroids, antihistamines

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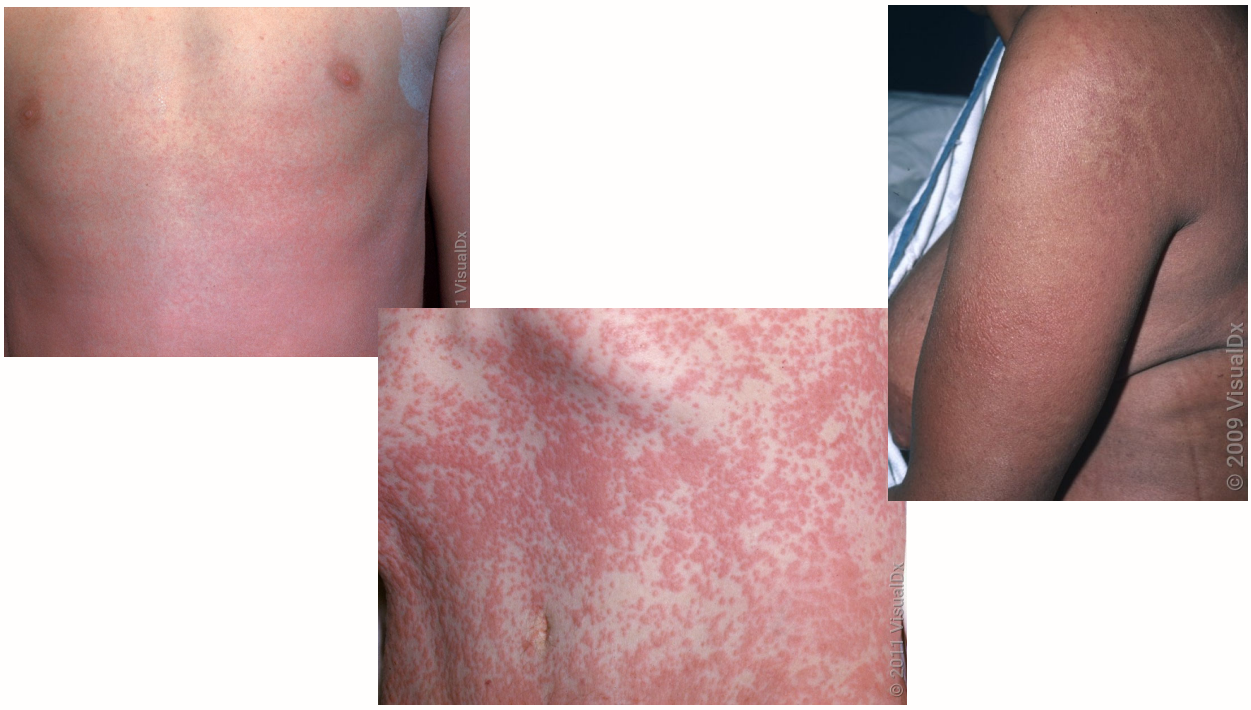

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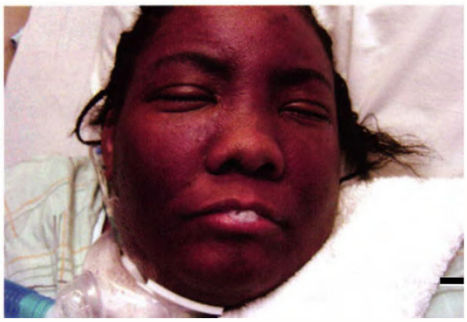
Incorrect Answer 1

Drug-induced hypersensitivity syndrome

Why not choose this one?

- AKA DRESS syndrome (drug reaction with eosinophilia and systemic symptoms)
- **Severe, life-threatening** drug reaction
- **Delayed onset: 2-6 wks after starting drug**
- Fever, flu-like symptoms, morbilliform rash, **facial edema**, lymphadenopathy
- Must stop drug immediately
- Treat with systemic steroids, other immunosuppressants

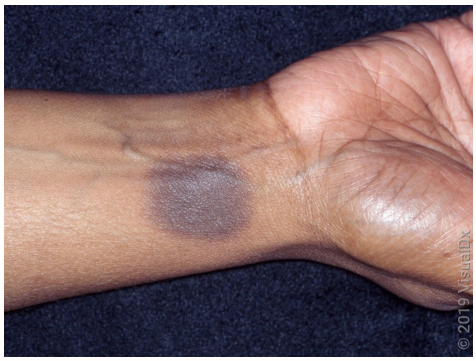


Incorrect Answer 2

Fixed drug eruption

Why not choose this one?

- 1+ dusky, purplish macules/plaques preferentially involving face, lips, hands, genitals
- Starts within 2 wks of new medication
- Recurrence in same location upon re-exposure

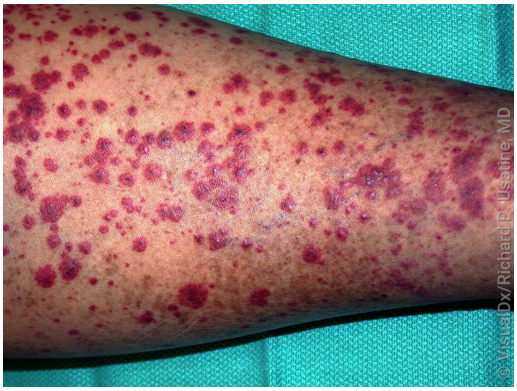


Incorrect Answer 3

Hypersensitivity vasculitis

Why not choose this one?

- Palpable purpura (cutaneous small vessel vasculitis) developing within 2 wks of drug exposure
- Preferentially involves legs
- Would not see diffuse rash of exanthematous drug eruption

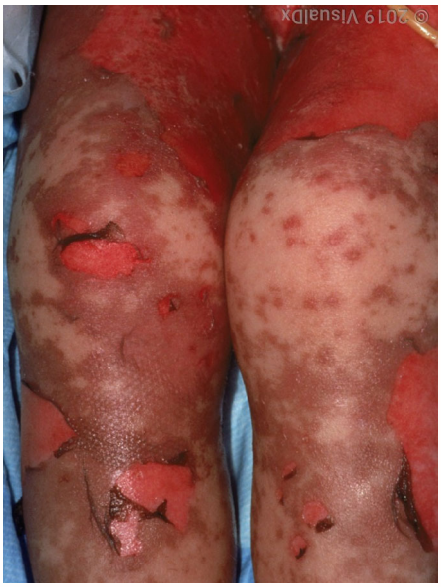


A 30-year-old woman is evaluated in the emergency department for fever and a painful rash that began 3 days ago. The rash involves her face, neck, trunk, and extremities. She is on day 6 of a 7-day course of trimethoprim-sulfamethoxazole for cellulitis.

On physical examination, the patient appears ill and in pain. Temperature is 40 °C (104 °F), blood pressure is 117/62 mm Hg, pulse rate is 122/min, and respiration rate is 16/min.

Which of the following is the most appropriate management?

a. Begin high-dose intravenous glucocorticoids
b. Begin intravenous immunoglobulin
c. Discontinue trimethoprim-sulfamethoxazole
d. Obtain skin biopsy



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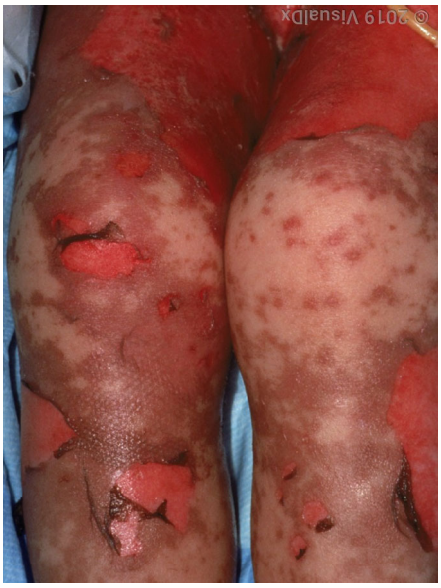

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Correct Answer

Discontinue trimethoprim-sulfamethoxazole

Why choose this one?

1) Recognize classic presentation of **Stevens-Johnson syndrome (SJS)/toxic epidermal necrolysis (TEN)**

- Severe mucocutaneous drug reactions on a spectrum (based on body surface area involved)
  - SJS: <10% BSA; SJS/TEN overlap: 10-30% BSA; TEN: >30% BSA
- Begins **with 2 wks of new med** (sulfas, allopurinol, antiepileptics, NSAIDs)
- Skin pain, **malaise, fever, toxic appearance** → dusky lesions → desquamation
- Mucosal involvement – **usually 2+ mucosal surfaces**

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Correct Answer

Discontinue trimethoprim-sulfamethoxazole

Why choose this one?

2) Understand most important step in treatment of **SJS/TEN**

- **Immediate discontinuation of causative drug**
- **Stop all non-essential medications**
- **Ongoing drug exposure directly correlates with mortality risk**

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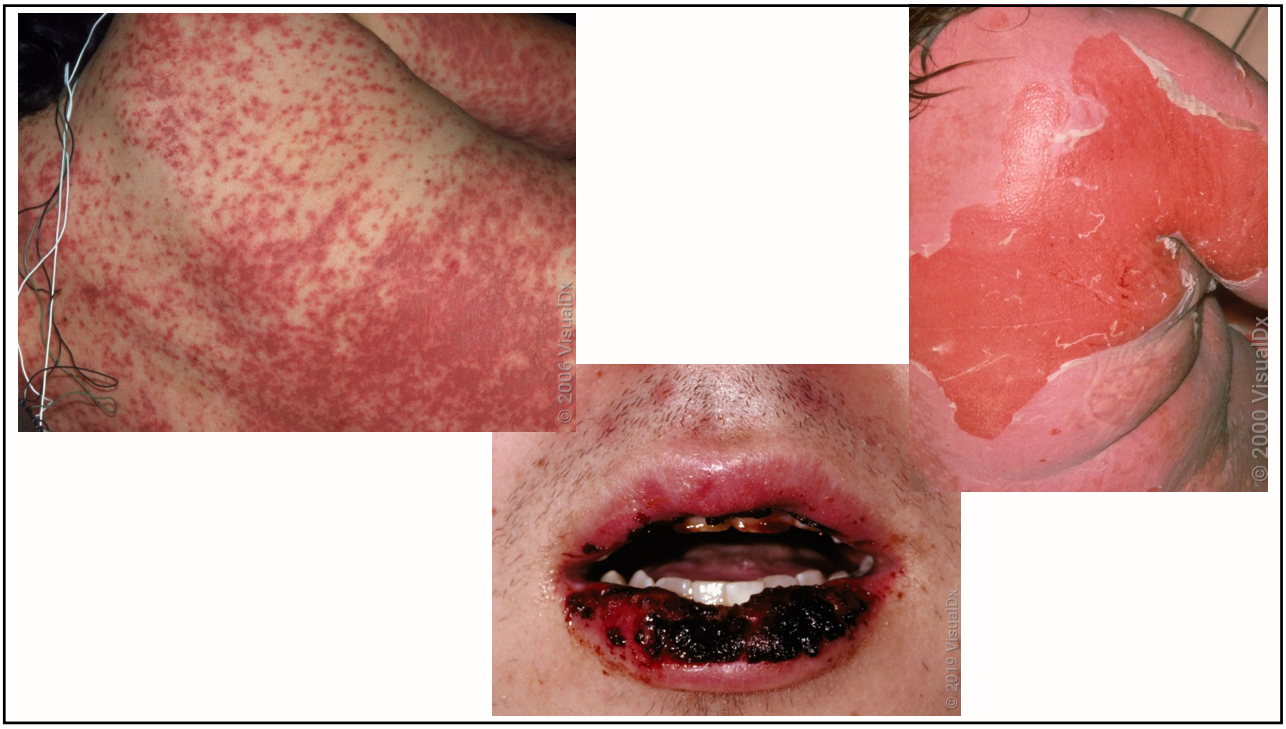


82

Incorrect Answers 1 & 2

Begin high-dose intravenous glucocorticoids

Begin intravenous immunoglobulin

Why not choose these ones?

- Beyond discontinuation of causative drug and supportive care (ideally in a burn unit), medical treatment of SJS/TEN lacks high quality evidence
- Systemic steroids have fallen out of favor
- Cyclosporine, tumor necrosis factor inhibitors, IVIg are all used

Incorrect Answer 3

Obtain skin biopsy

Why not choose this one?

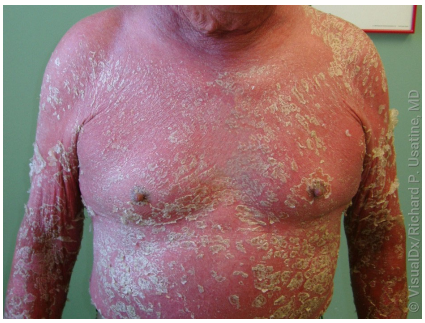
- Not the most important first step, which is discontinuation of causative drug
- Skin biopsy may be necessary to confirm the diagnosis

A 66-year-old man is evaluated for a rash that developed over his entire body during the past week. For a COPD exacerbation, he recently received 7 days of prednisone and levofloxacin. Medical history is significant for plaque psoriasis that he does not treat.

On physical examination. the patient appears ill and is shivering. Vital signs are normal. Oral mucosa is normal.

Which of the following is the most likely diagnosis?

a. Drug-induced hypersensitivity syndrome
b. Erythroderma
c. Pemphigus vulgaris
d. Stevens-Johnson syndrome



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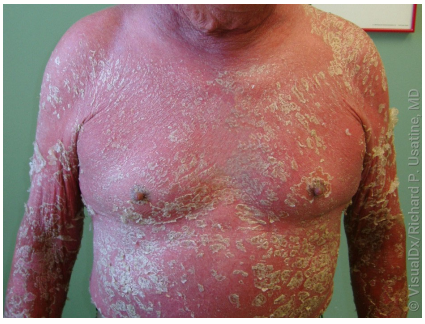

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Correct Answer

Erythroderma

Why choose this one?

- Recognize classic presentation of **erythroderma**
- Defined as erythema covering >80% body surface area
  - Associated with fluid loss, high-output heart failure, superinfection, thermoregulatory imbalance, hypocalcemia
- Most common causes: psoriasis, atopic dermatitis, drug reaction, idiopathic
- **Likely due to preexisting psoriasis in this patient**
  - Systemic steroids are known to trigger erythroderma in psoriasis – this is why they are not recommended for treatment

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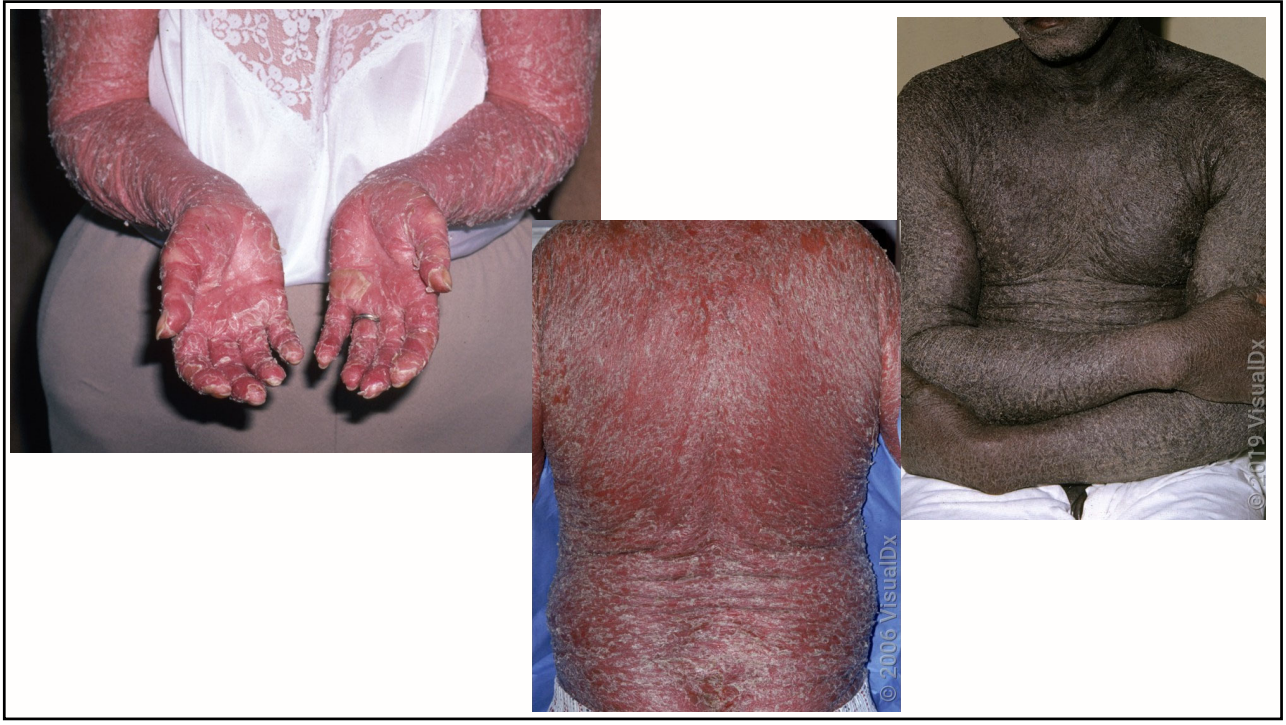

88

Incorrect Answer 1

Drug-induced hypersensitivity syndrome

Why not choose this one?

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- **Severe, life-threatening** drug reaction
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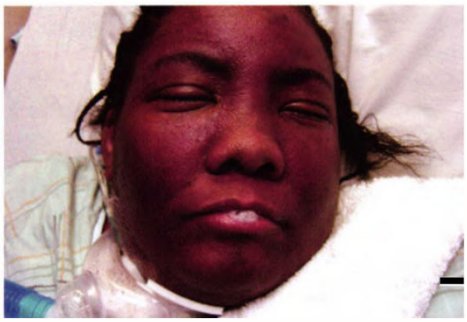


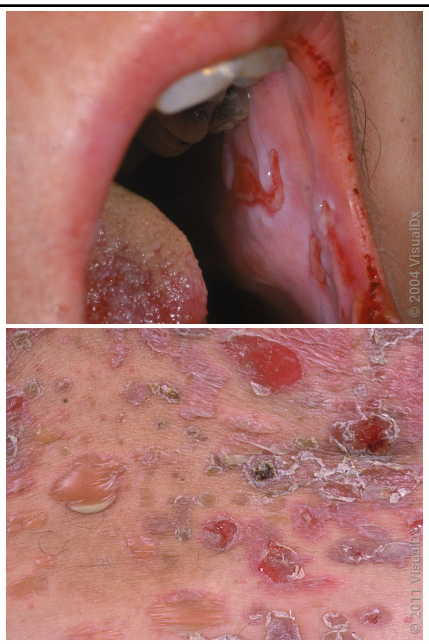
89

Incorrect Answer 2

Pemphigus vulgaris

Why not choose this one?

- Most common intraepidermal autoimmune bullous disease; older individuals
- **Painful, flaccid** oral (all patients) and sometimes cutaneous bullae (easily rupture) and **erosions**



90

Incorrect Answer 3

Stevens-Johnson syndrome

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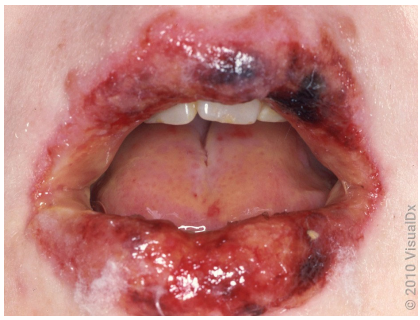

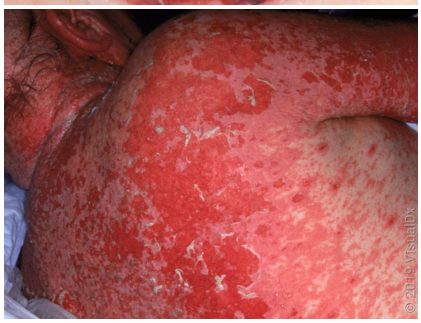

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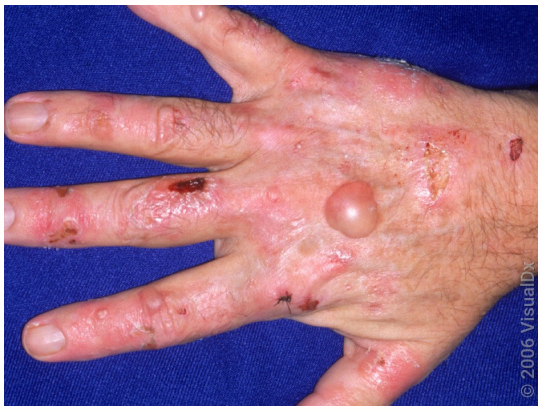
A 58-year-old man is evaluated for a 5-month history of intermittent, painful sores on the back of his hands that worsen with sun exposure. He has no other medical problems and takes no medications.

Which of the following is the most appropriate diagnostic test?

a. Antinuclear antibody
b. Anti-tissue transglutaminase antibody
c. Bullous pemphigoid antibodies
d. Porphyrin levels



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92

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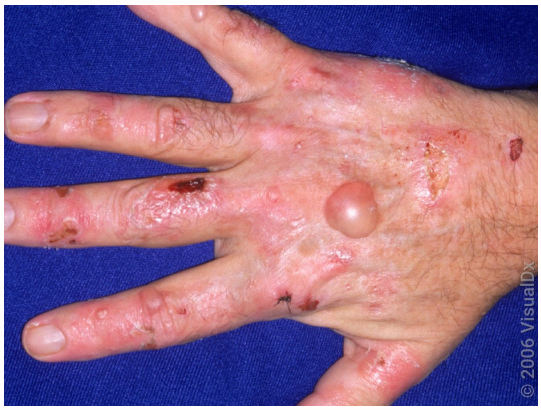
c. Bullous pemphigoid antibodies
d. Porphyrin levels



93

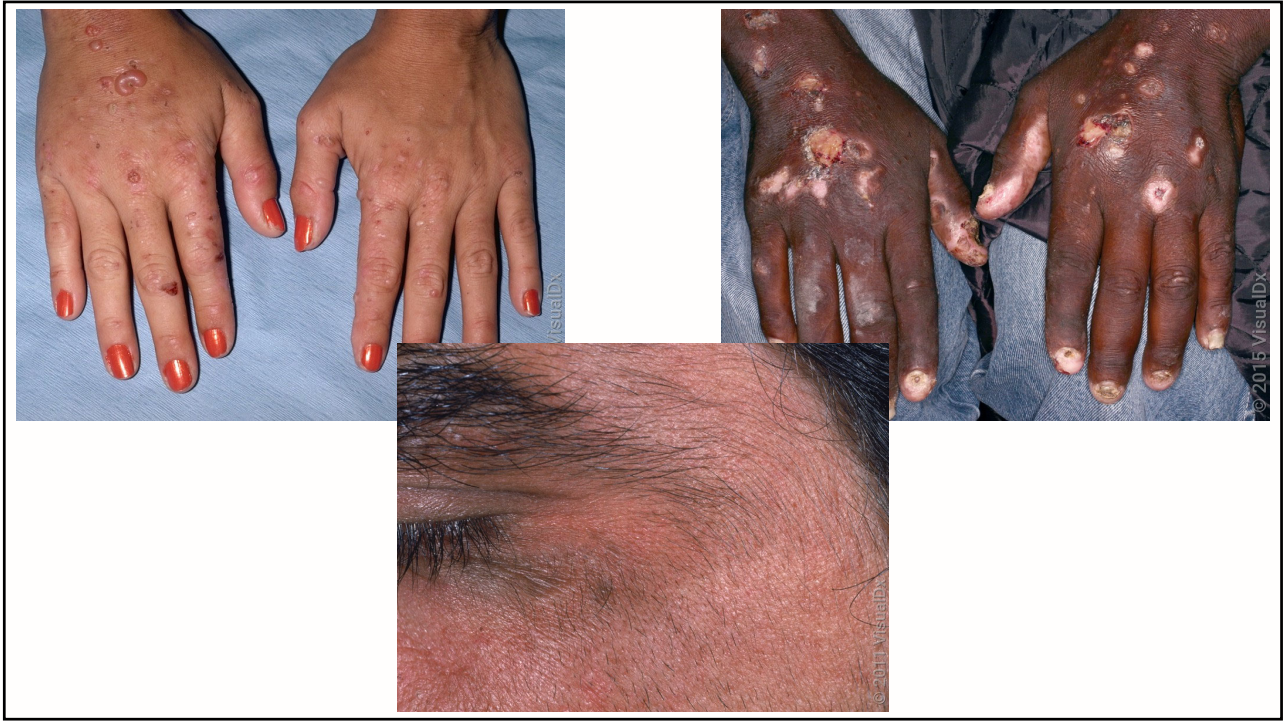
Correct Answer

Plasma and urine porphyrin levels

Why choose this one?

- Recognize classic presentation of **porphyria cutanea tarda**
- Most common porphyria; usually 40+ yo; commonly associated with hepatitis C virus infection, alcoholic liver disease, and hemochromatosis
- Excess porphyrins deposit in skin → photosensitivity → **scarring and blistering on sun-exposed skin** (most often **dorsal hands**)
- Hyperpigmentation, hypertrichosis of cheeks
- Check plasma and urine porphyrins
- Histology may be nonspecific

94



95

Incorrect Answer 1

Antinuclear antibody

Why <u>not</u> choose this one?

- Unlikely to help in evaluation of bullous conditions, apart from bullous lupus erythematosus – an uncommon presentation of SLE in patients with other clinical signs/symptoms of systemic connective tissue disease

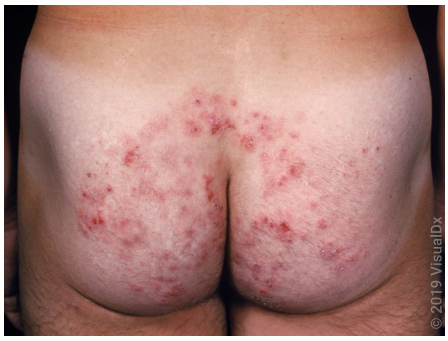
96

Incorrect Answer 2

Anti-tissue transglutaminase antibody

Why not choose this one?

- Used to diagnose dermatitis herpetiformis
- Cutaneous manifestation of gluten-sensitive enteropathy/celiac disease
- Autoantibodies to epidermal transglutaminase → clustered fragile vesicles that break down quickly, leaving behind erosions on **elbows, knees, buttocks**
- Intensely **pruritic**

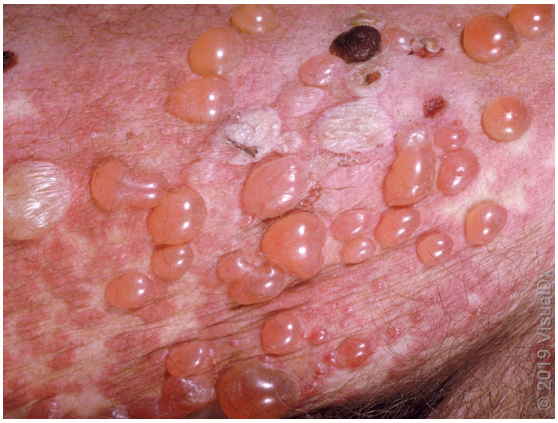


Incorrect Answer 3

Bullous pemphigoid antibodies

Why not choose this one?

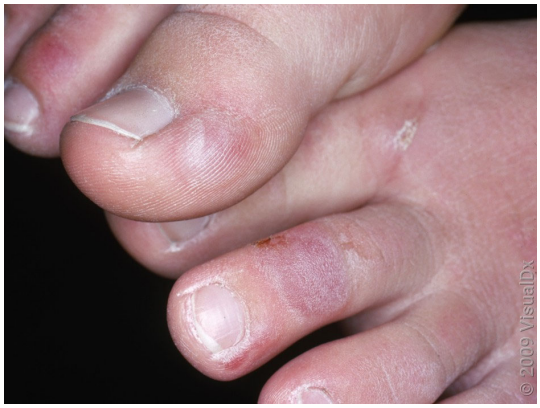
- Most common subepidermal autoimmune bullous disease
- Features **tense bullae involving trunk and extremities (would not be limited to dorsal hands)**
- Hallmark symptom = **pruritus**



A 19-year-old woman is evaluated for sunburn of the dorsal hands and feet that began 6 hours after walking on the beach. Medical history is significant for acne. Medications are drospirenone-ethinyl estradiol oral contraceptive, doxycycline, and tretinoin cream.

Which of the following is the most likely diagnosis?

a. Bullous pemphigoid
b. Photoallergic drug reaction
c. Phototoxic drug reaction
d. Porphyria cutanea tarda



99

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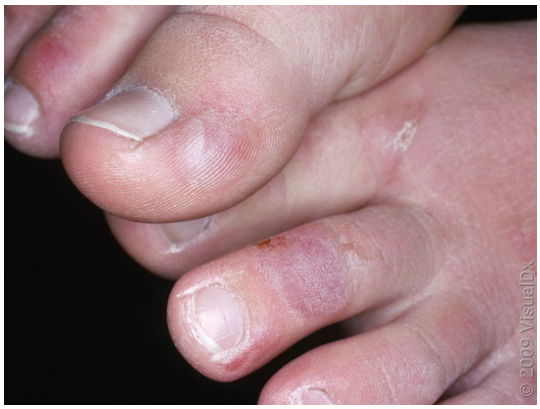

100

Correct Answer

Phototoxic drug reaction

Why choose this one?

- Recognize classic drug culprit of **phototoxic drug reaction**
- Presents as **exaggerated sunburn** due to direct cellular injury (no allergic sensitization)
- Limited to **sun-exposed areas** of body
- Occurs within **minutes-hours after sun**
- Common triggers: tetracyclines, sulfonamides, hydrochlorothiazide, fluoroquinolones, amiodarone, voriconazole
- Treatment = stop drug, sun protection, topical steroids as needed

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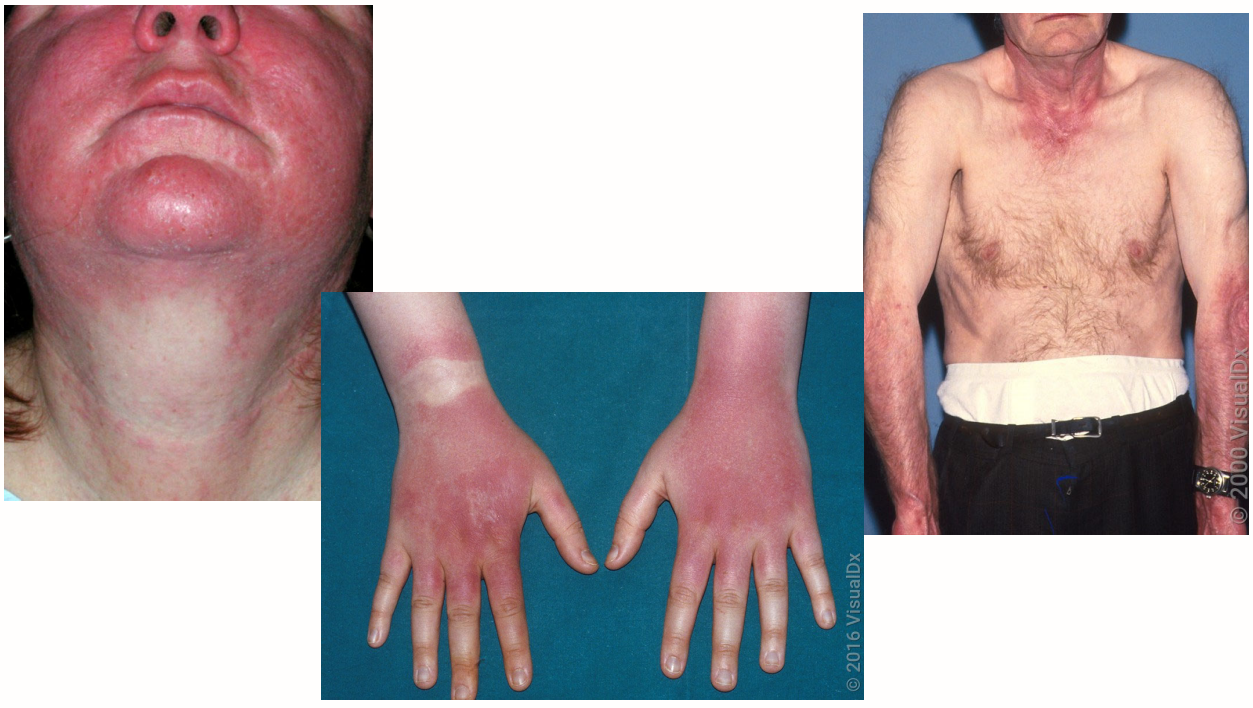


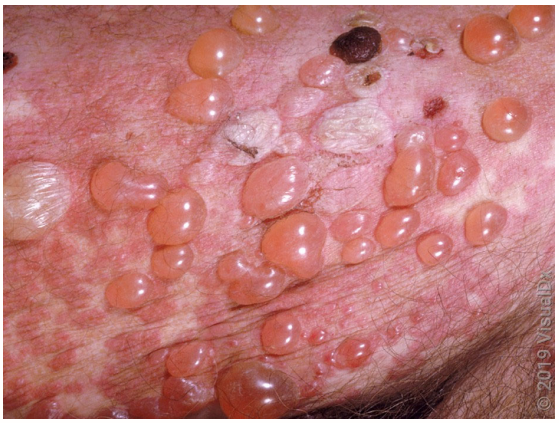
102

Incorrect Answer 1

Bullous pemphigoid

Why not choose this one?

- Most common subepidermal autoimmune bullous disease
- Features **tense bullae widespread throughout body (not limited to sun-exposed areas)**
- Hallmark symptom = **pruritus**



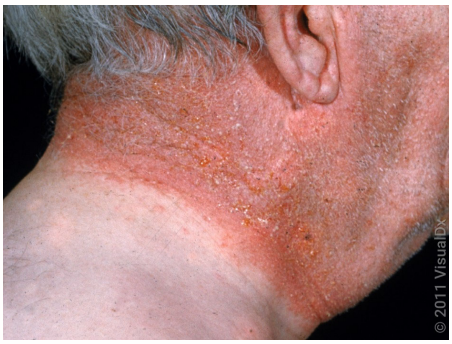
103

Incorrect Answer 2

Photoallergic drug reaction

Why not choose this one?

- Type IV delayed hypersensitivity reaction to a medication
- Less common than phototoxic drug reactions
- Delayed onset (**hours-days after sun**)
- Morphology: eczema rather than exaggerated sunburn
- **Tetracyclines: phototoxic**, not photoallergic



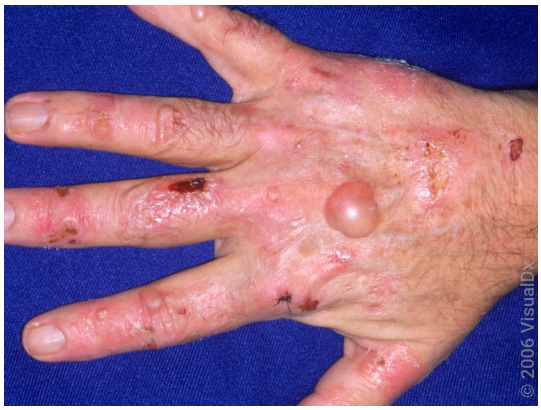
104

Incorrect Answer 3

Porphyria cutanea tarda

Why not choose this one?

- Most common porphyria; usually **40+ yo**; commonly associated with **hepatitis C virus infection, alcoholic liver disease, and hemochromatosis**
- Excess porphyrins deposit in skin → photosensitivity → **scarring and blistering on sun-exposed skin** (most often **dorsal hands**)



105

More Routine Rashes

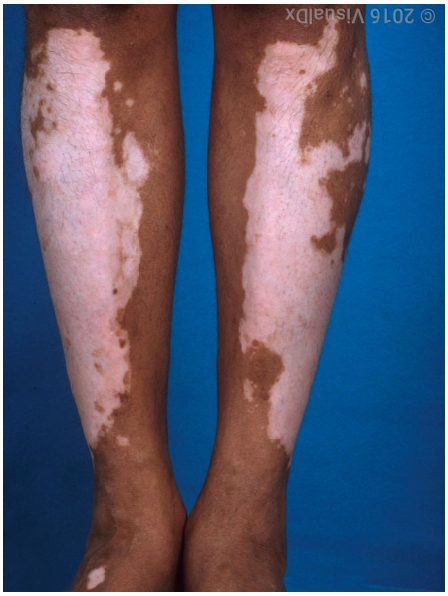
106

A 33-year-old woman is evaluated for a 6-month history of white patches around the eyes, legs, and feet. Medical history is otherwise unremarkable, and she takes no medications.

On physical examination, vital signs are normal.

Which of the following tests should be obtained?

a. Antinuclear antibody
b. Hepatitis C antibody
c. HIV testing
d. Thyroid-stimulating hormone



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107

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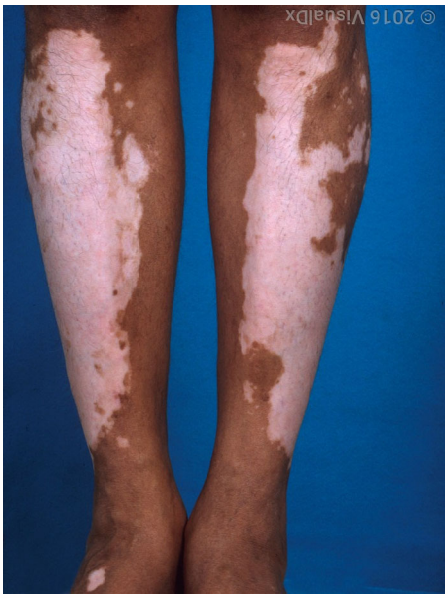

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Correct Answer

Thyroid-stimulating hormone

Why choose this one?

- Recognize classic presentation of **vitiligo**
- Autoimmune skin condition targeting melanocytes → depigmented patches
- More visible in people with darker skin
- Clinical diagnosis: well-defined depigmented macules or patches without scale, predilection for hands, extensor surfaces, periorificial areas
- Associated with other autoimmune diseases most commonly **thyroid disease (~20% of pts)**

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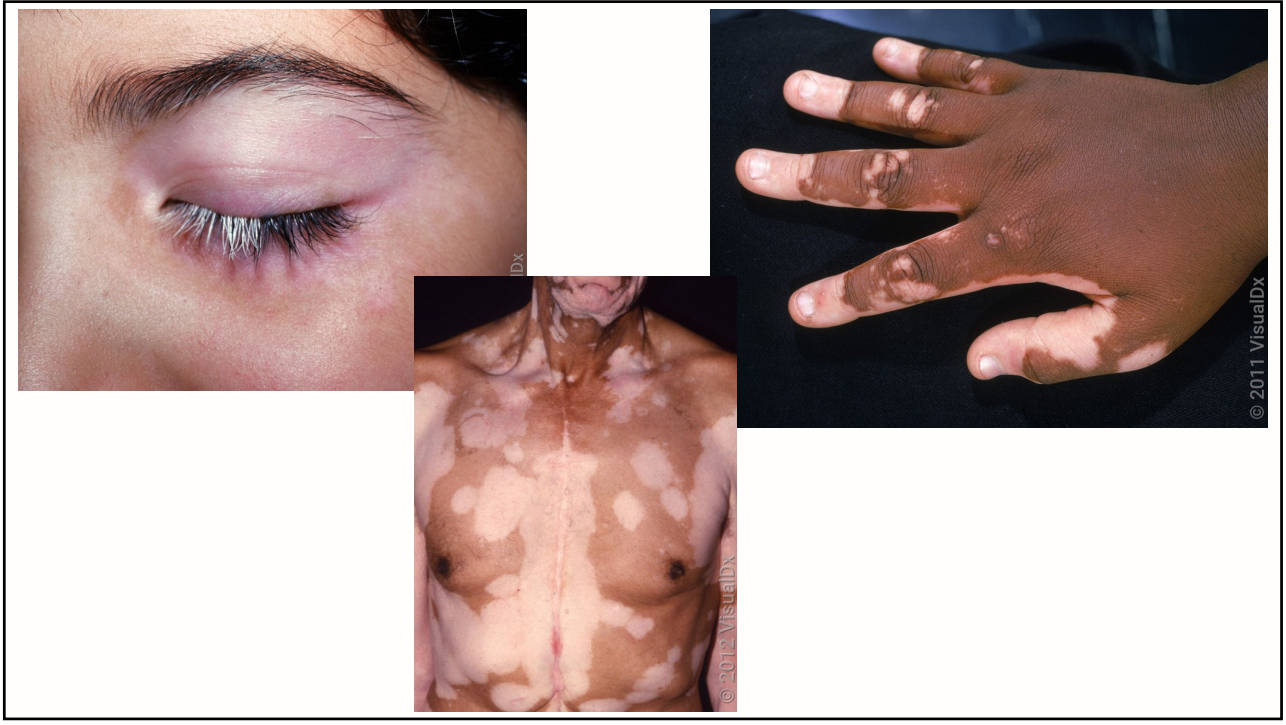


110

Incorrect Answer 1

Antinuclear antibody

Why not choose this one?

- While often positive in pts with vitiligo, only should be checked if there are clinical signs/symptoms suggestive of systemic lupus erythematosus or other systemic connective tissue disease

111

Incorrect Answer 2

Hepatitis C antibody

Why not choose this one?

- Associated with other skin diseases (lichen planus, porphyria cutanea tarda), but not vitiligo

112

Incorrect Answer 3

HIV testing

Why not choose this one?

- Associated with cutaneous infections, seborrheic dermatitis, pruritus, but not vitiligo

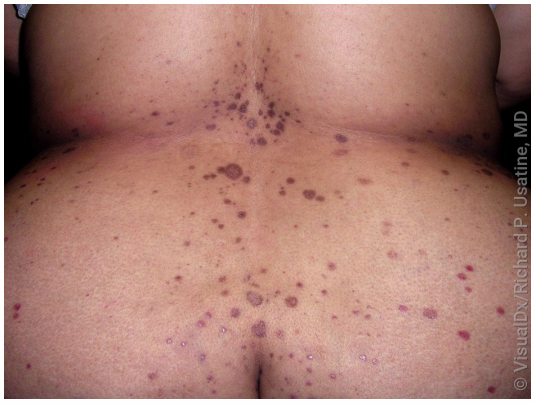
113

A 60-year-old woman is evaluated for a 7-week history of an itchy rash on the low back. She was recently diagnosed with hepatitis C virus infection. Her medical history is otherwise unremarkable, and she takes no other medications.

The volar wrists have lesions similar to those on the back. There is no involvement of the palms or soles.

Which of the following is the most likely diagnosis?

a. Lichen planus
b. Pityriasis rosea
c. Psoriasis
d. Secondary syphilis



114

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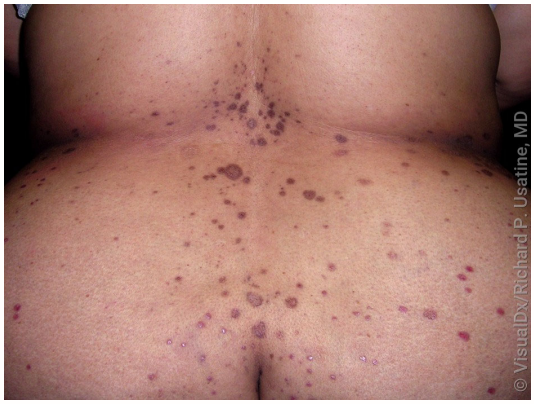

Which of the following is the most likely diagnosis?

a. **Lichen planus**
b. Pityriasis rosea
c. Psoriasis
d. Secondary syphilis

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Correct Answer

Lichen planus

Why choose this one?

- Recognize classic presentation of **lichen planus**
- Pruritic, purple, polygonal flat-topped papules (idiopathic/ ?T-cell mediated)
- Commonly involves low back, volar wrists, elbows, knees, ankles
- May also affect nails, genitals, mucosa (lacy white streaks – Wickham striae)
- **Some studies have shown increased prevalence of hepatitis C infection in pts with LP**
- May spontaneously resolve after 1-2 yrs or become chronic

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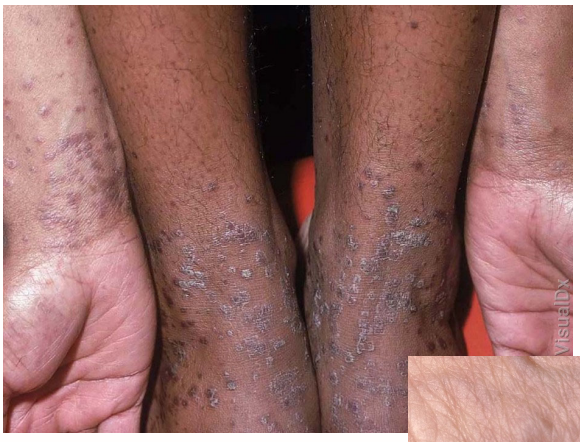
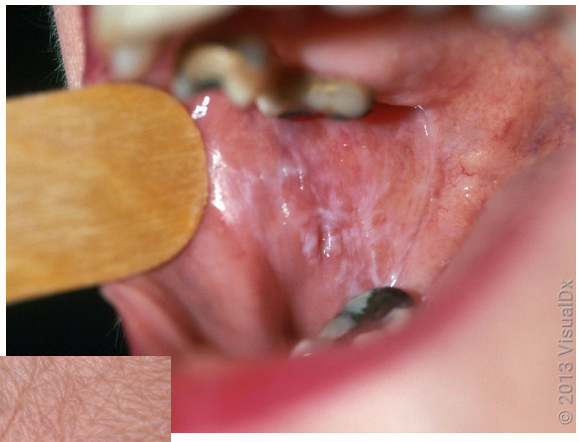
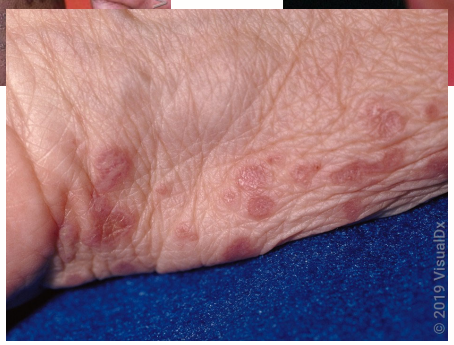






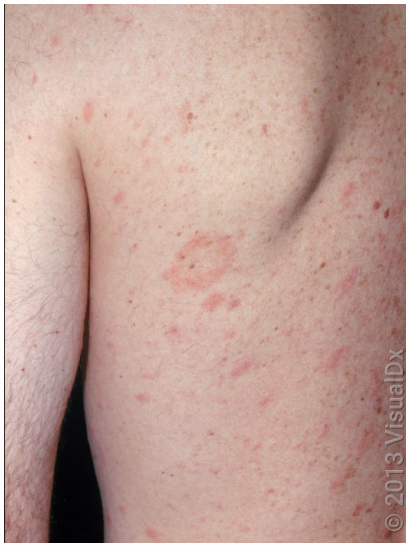
117

Incorrect Answer 1

Pityriasis rosea

Why not choose this one?

- Annular patch/plaque on trunk ("herald patch") → numerous smaller skin-colored to pink papules/plaques erupt along skin cleavage lines
- Often postviral; self-limited (resolves w/in 12 wks)
- Less purple, less itchy than lichen planus (often asymptomatic)



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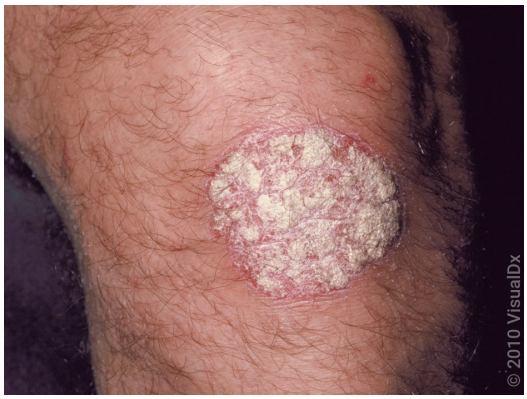
118

Incorrect Answer 2

Psoriasis

Why not choose this one?

- Most commonly presents with well-demarcated erythematous plaques with silvery scale
- Purple papules of lichen planus are clinically distinct from thicky scaly red plaques of psoriasis



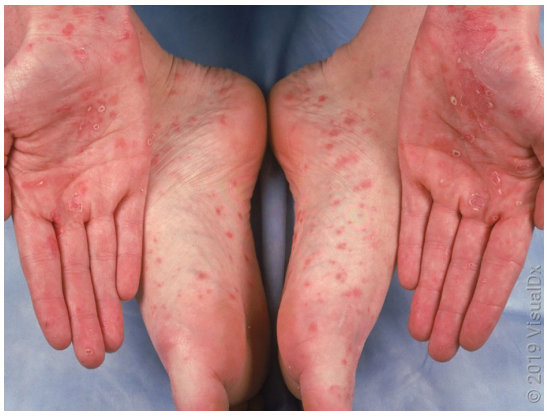
119

Incorrect Answer 3

Secondary syphilis

Why not choose this one?

- Usually more brownish-red and less purple than lichen planus
- Classically involves palms/soles
- Generalized lymphadenopathy common
- In real life, syphilis is a “great mimicker” that can resemble many other skin diseases



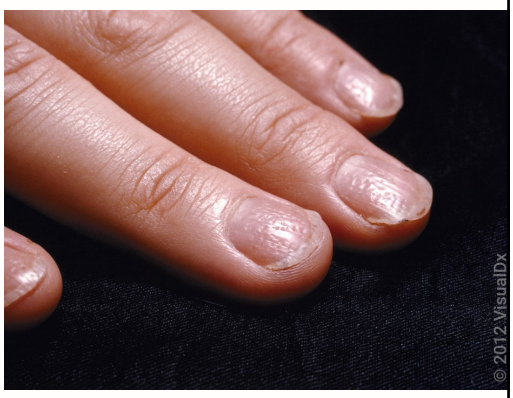
120

A 38-year-old man is evaluated for a 2-year history of nail changes. Medical history is otherwise unremarkable. Family history is significant for plaque psoriasis in his brother. He takes no medications.

Multiple fingernails are dystrophic. Toenails are not involved. The remainder of the skin and hair examination is normal.

Which of the following is the most likely diagnosis?

a. Chronic paronychia
b. Lichen planus
c. Psoriasis
d. Onychomycosis



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121

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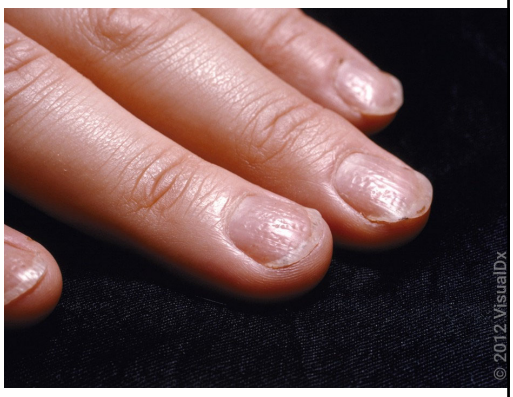

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Correct Answer

Nail psoriasis

Why choose this one?

- Recognize classic presentation of **nail psoriasis** in pt with family history
- Common site of involvement (as many as half of cases); may be isolated
- Nail involvement strongly associated with psoriatic arthritis and warrants screening for joint involvement
- Clinical manifestations
  - Distal onycholysis (separation of nail plate from nail bed)
  - "Oil spots" due to inflammation of nail bed
  - Pitting due to inflammation of nail matrix
  - Also nail plate thickening, crumbling, splinter hemorrhages

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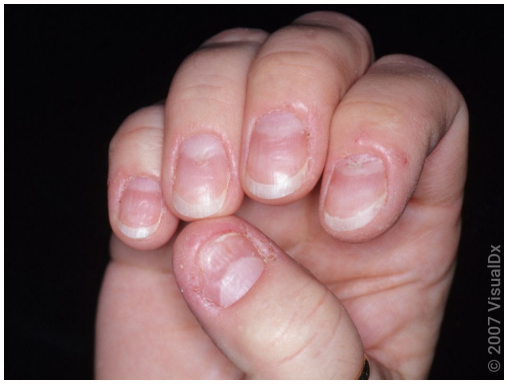
124

Incorrect Answer 1

Chronic paronychia

Why not choose this one?

- Acute paronychia = infection of nail fold producing painful swelling, most commonly due to *S. aureus;* typically affects only 1 nail
- Chronic paronychia: multiple fingers, inflammatory process related to contact dermatitis and wet work
  - Often affects multiple fingers with tenderness, swelling, damage to cuticle, and potentially nail dystrophy

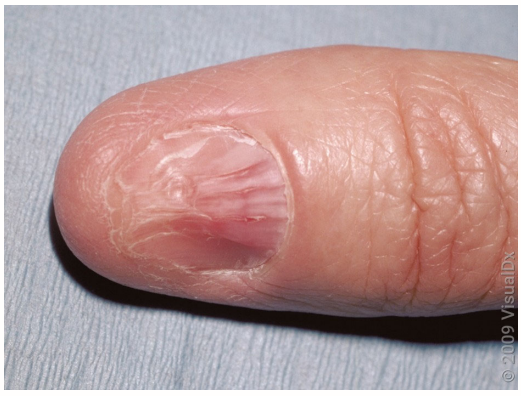


Incorrect Answer 2

Lichen planus

Why not choose this one?

- Nails involved in ~10% of cases of LP but manifest differently than this case
- Nail plate dystrophy, longitudinal ridging, thinning, red-streaking, scarring (pterygium)

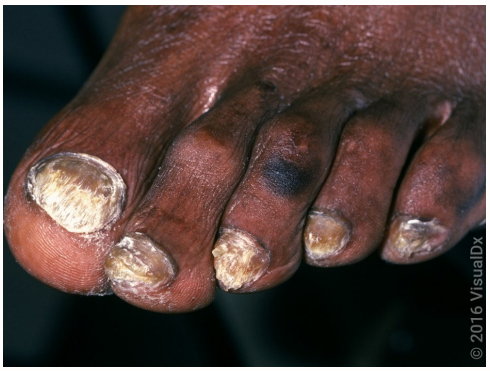


Incorrect Answer 3

Onychomycosis

Why not choose this one?

- Toenails >>> fingernails
- Nail dystrophy, thickening
- Don't see pitting
- May be difficult to distinguish nail psoriasis from onychomycosis → nail clipping for fungal staining/culture may be required



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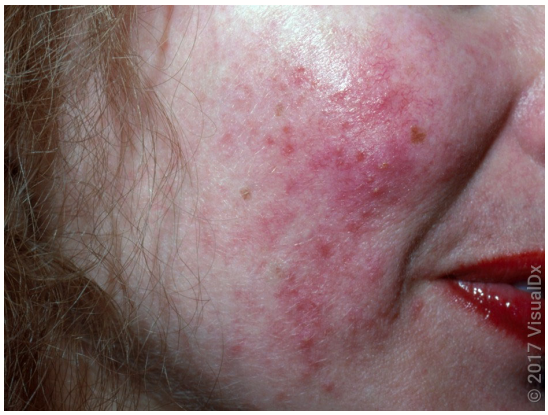
127

A 45-year-old woman is evaluated for a 3-month history of a persistent facial rash that becomes more prominent and stings, burns, and itches within a few minutes of sunlight exposure, exercise, drinking alcohol, or eating spicy foods.

Which of the following is the most appropriate treatment?

a. Oral hydroxychloroquine
b. Clobetasol cream
c. Metronidazole cream
d. Tacrolimus ointment



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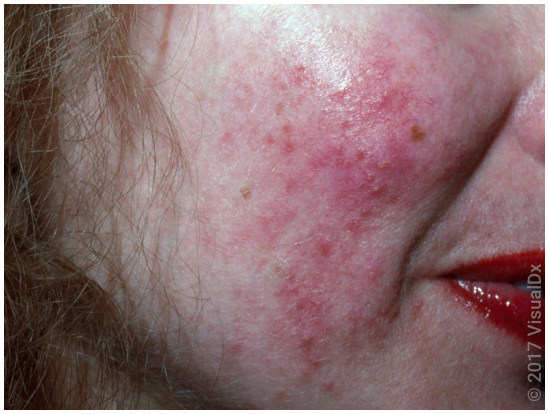

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Correct Answer

Metronidazole cream

Why choose this one?

- Recognize classic presentation of **rosacea**
- Caused by chronic inflammation of pilosebaceous units with increased vascular reactivity
- More common in fair-skinned individuals, 3rd-6th decades of life
- Variants: erythrotelangiectatic, papulopustular, phymatous, ocular
- Common triggers: sun, heat, alcohol, spicy food
- Topical metronidazole is good first-line treatment for papulopustular rosacea
  - Others: topical sulfur preparations, azelaic acid, ivermectin
  - Oral antibiotics for more severe cases; sun protection for all

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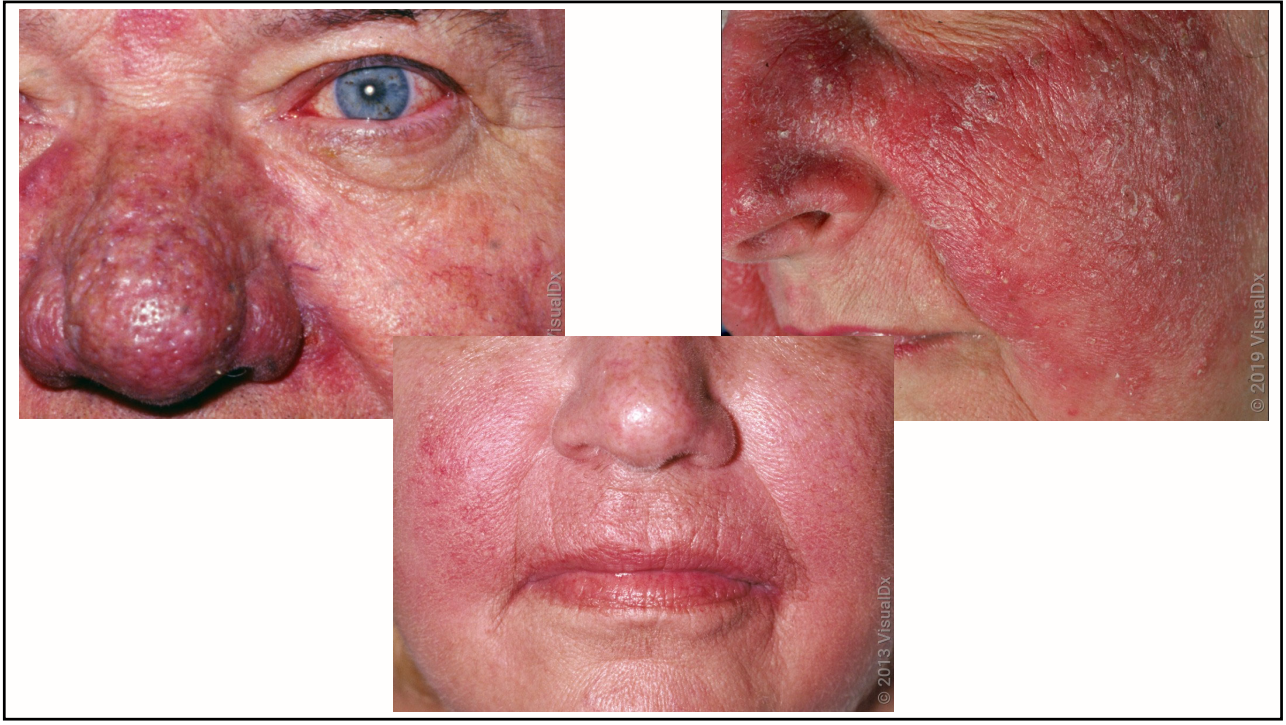


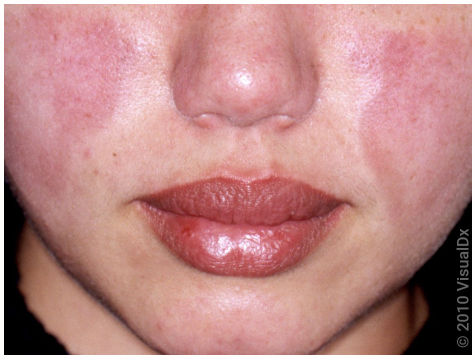
131

Incorrect Answer 1

Oral hydroxychloroquine

Why not choose this one?

- This is not the malar rash of systemic lupus erythematosus
- Malar rash = acute cutaneous lupus
  - Patients have clinical signs/symptoms of SLE
- **Malar rash of lupus spares the nasolabial folds**



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132

Incorrect Answer 2

Clobetasol cream

Why not choose this one?

- Topical steroids exacerbate or precipitate rosacea and should be avoided

133

Incorrect Answer 3

Tacrolimus ointment

Why not choose this one?

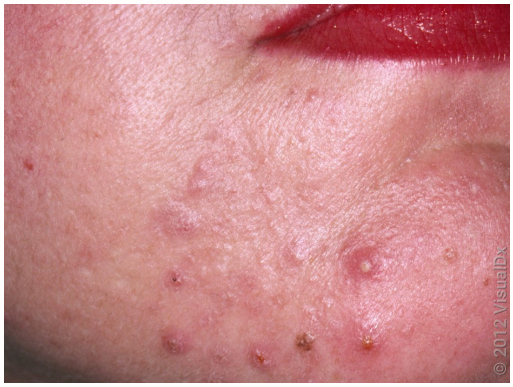
- May be useful in some variants of rosacea, but not first-line agent like topical metronidazole

134

A 32-year-old woman is evaluated for a 6-month history of acne that worsens during menses. She has been using topical benzoyl peroxide wash and topical tretinoin cream without improvement. She denies hirsutism or virilization symptoms. Menses are regular. She has no other medical problems and takes no additional medications.

Which of the following is the most appropriate management?

a. Hormone measurements
b. Pelvic ultrasonography
c. Spironolactone
d. Topical metronidazole



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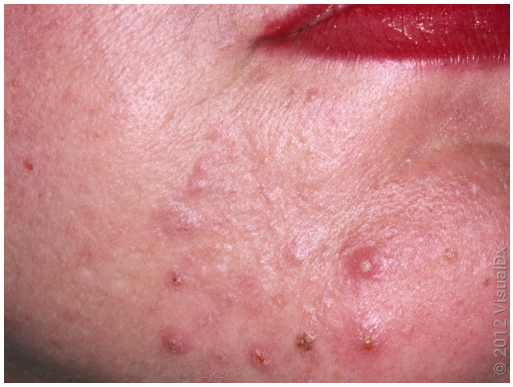

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Correct Answer

Spironolactone

Why choose this one?

- Recognize classic presentation of **adult female-type acne (hormonal acne)**
- Papules and nodules on lower half of face/neck, esp. **jawline**
- Abnormal response to physiologic levels of androgens
- Often flares with menses
- Oral contraceptives +/- spironolactone can be added to other treatments in women with moderate to severe acne
- Due to teratogenicity, contraception recommended when premenopausal women treated with spironolactone

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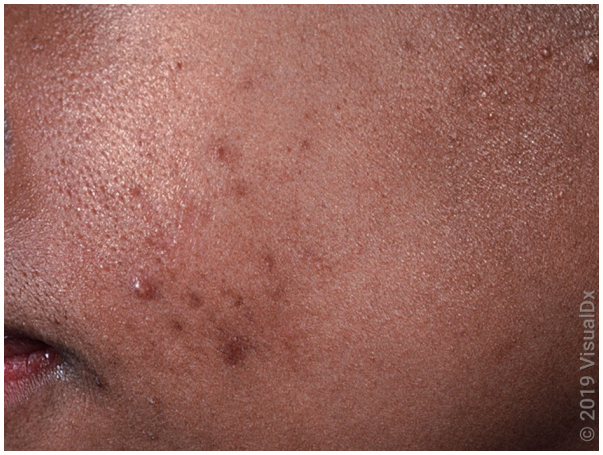

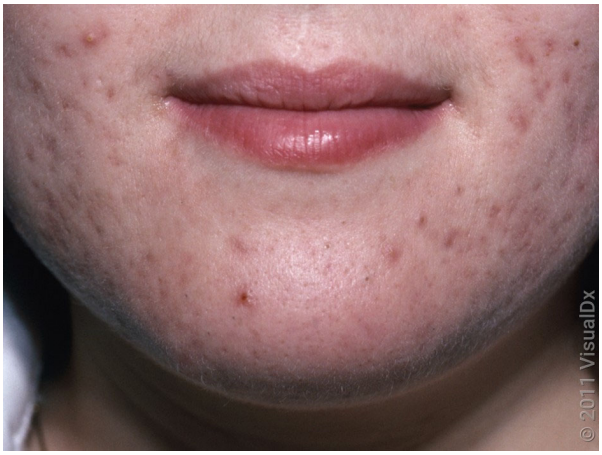

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Incorrect Answers 1 & 2

Hormone measurements

Pelvic ultrasonography

Why not choose these ones?

- Neither is indicated in a women without acne + signs/symptoms of hyperandrogenism (hirsutism, voice deepening, clitoromegaly) or irregular menses

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Incorrect Answer 3

Topical metronidazole

Why not choose this one?

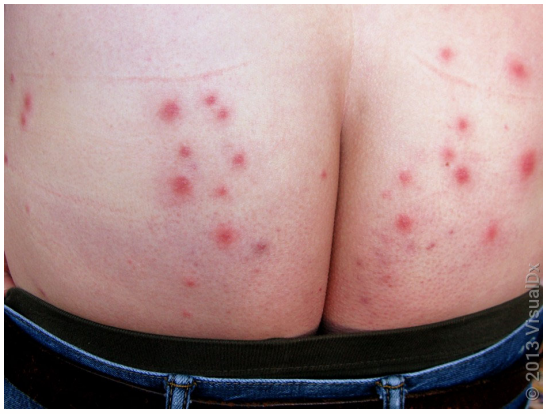
- First-line treatment for rosacea, but not used for acne

140

A 27-year-old man is evaluated for a 2-day history of pruritic rash on the buttocks. He sits nightly in his hot tub. He has not had a rash like this before. Medical history is unremarkable, and he takes no medications.

Which of the following is the most appropriate management for this patient?

a. Cephalexin
b. Ciprofloxacin
c. Doxycycline
d. Observation



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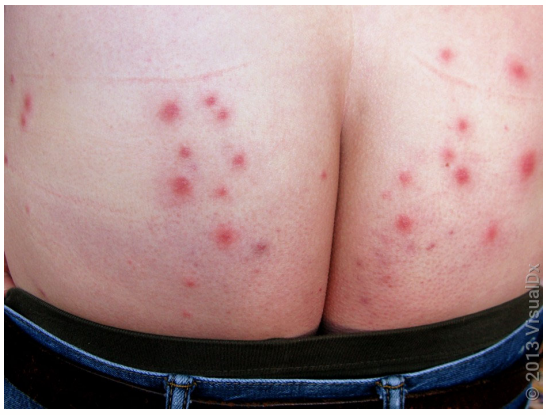

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Correct Answer

Observation

Why choose this one?

- Recognize classic presentation of **hot tub folliculitis**
- Perifollicular erythematous papules and pustules
- Clinical diagnosis
- **Hot tubs associated with *Pseudomonas aeruginosa* folliculitis**
- **Typically self-limited with resolution in 7-10 days**
- Appropriate hot tub/swimming pool cleaning can decrease risk

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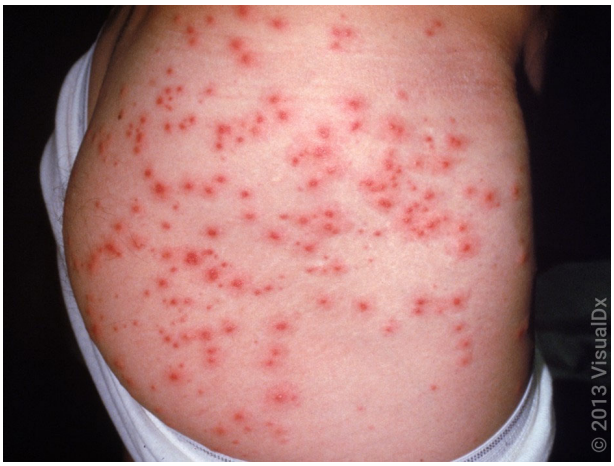

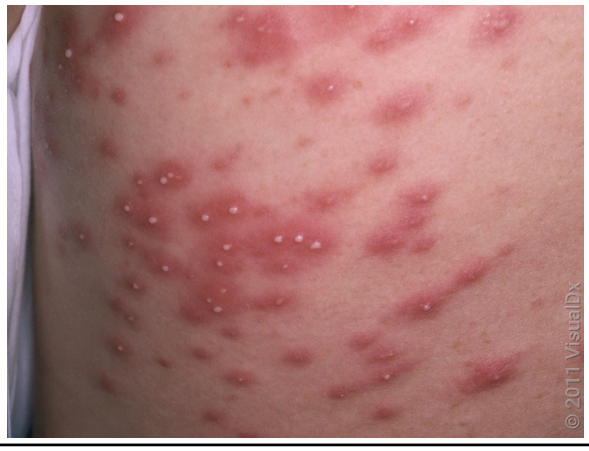

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Incorrect Answers 1-3

Cephalexin

Ciprofloxacin

Doxycycline

Why not choose thes ones?

- If hot tub folliculitis is persistent, severe, or occurs in an immunocompromised patient, a fluoroquinolone such as ciprofloxacin may be prescribed
- **The case in this vignette does not require systemic antibiotics**
- The other 2 options do not treat *Pseudomonas* infections

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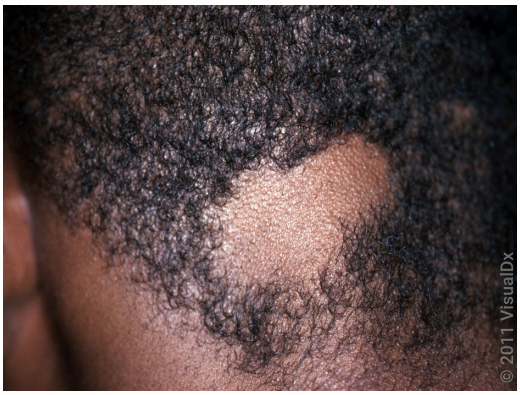
A 28-year-old man is evaluated for a 4-month history of hair loss with no erythema, scaling, or pruritus. Medical history is unremarkable, and he takes no medication.

Which of the following is the most likely diagnosis?

a. Alopecia areata
b. Androgenetic alopecia
c. Discoid lupus erythematosus
d. Tinea capitis



146

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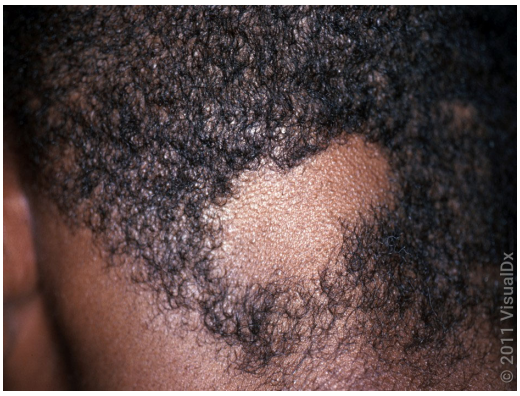

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Correct Answer

Alopecia areata

Why choose this one?

- Recognize classic presentation of **alopecia areata**
- Asymptomatic, well-circumscribed patches of **non-scarring** hair loss (intact follicles)
- Etiology unknown – autoimmune process?
- Most commonly presents before age 30
- Mild presentations often have spontaneous hair regrowth, but can progress to complete loss of all scalp hair (alopecia totalis) or all body hair (alopecia universalis)

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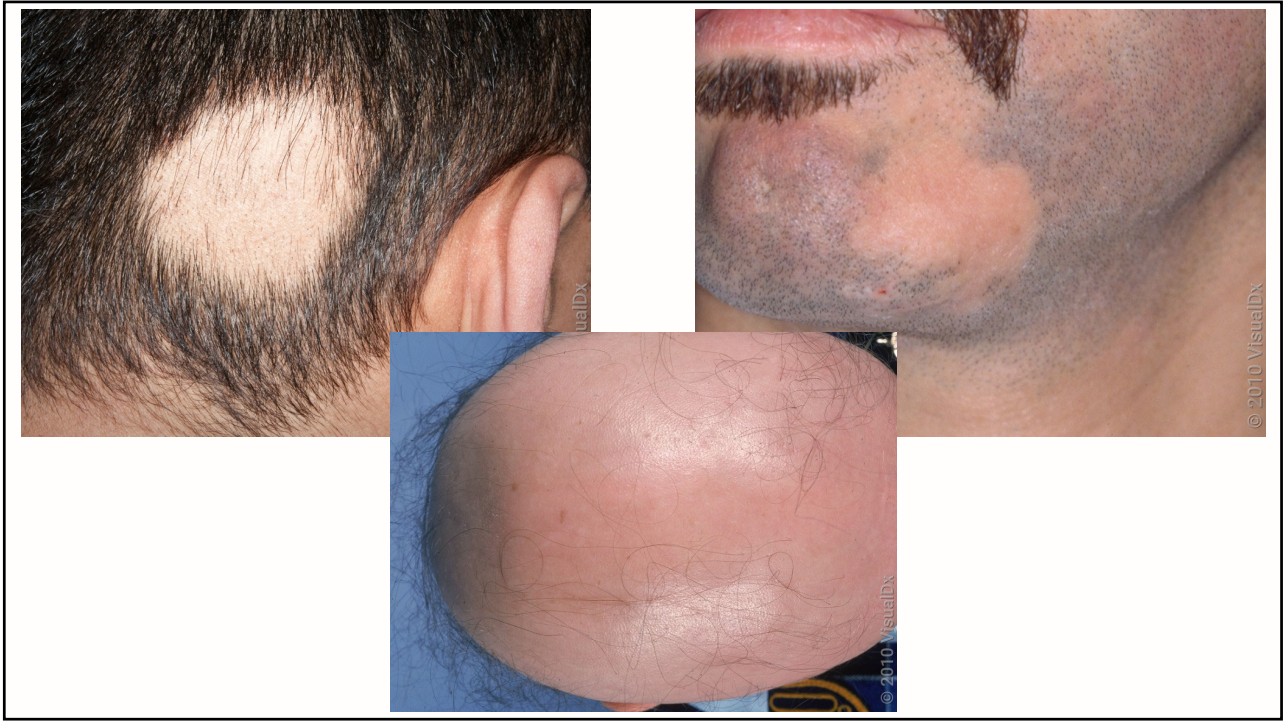

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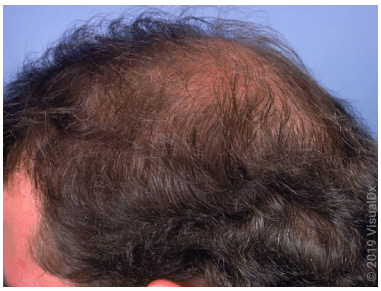
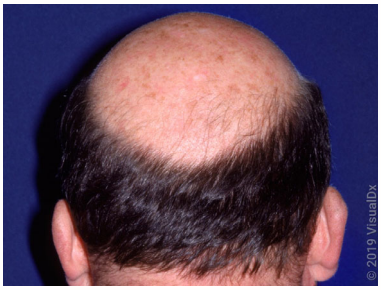
Incorrect Answer 1

Androgenetic alopecia

Why not choose this one?

- AKA patterned hair loss (male & female)
- Caused by postpubertal terminal hair replacement
- Men – bitemporal hairline recession → vertex thinning → baldness





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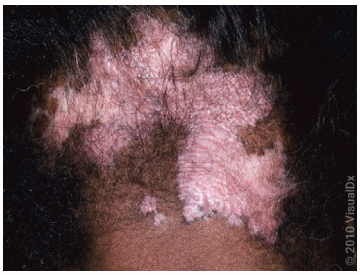
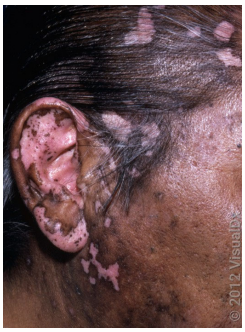
Incorrect Answer 2

Discoid lupus erythematosus

Why not choose this one?

- **Scarring** alopecia (i.e., permanent hair loss)
- May or may not present in the setting of systemic lupus erythematosus
- Erythematous plaques with **scarring and dyspigmentation**
- Often involves conchal bowls of ears, other parts of face





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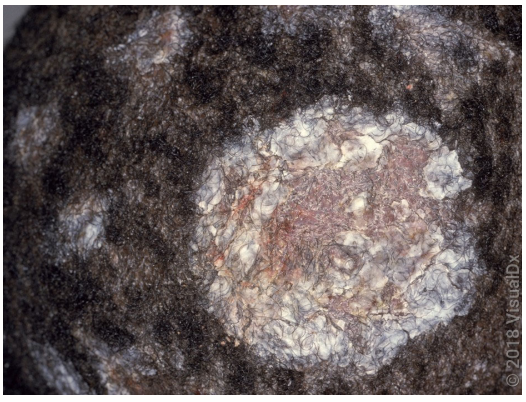
Incorrect Answer 3

Tinea capitis

Why not choose this one?

- Superficial fungal infection of scalp/hair follicles most commonly caused by *Trichophyton* species
- **Pruritic**, single or multiple **scaly patches**
- **Children >>> adults**
- When severe: kerion (inflammatory plaque with pustules, drainage, commonly cervical lymphadenopathy)



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Dermatology Board Review for Internists

Questions?
Thank you!

brandon.adler@med.usc.edu

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