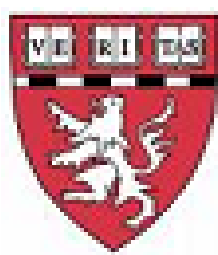


Primary Care Dermatology: A to Z



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Massachusetts General Hospital
Harvard Medical School

Overview

- Common dermatologic conditions
- Treatment options and clinical pearls*
- Updates in management and associations
- When to refer

Overview

- Papulosquamous disorders
- Reactions to medications
- Skin infections
- Melanocytic lesions, mimickers, melanoma and prevention

Atopic Dermatitis





Numular Eczema

Steroid Ranking

SUPER HIGH I		
Lotion 0.05%	1, 2 oz	clobetasol propionate
Gel, Ointment 0.05%	15, 50 gm	betamethasone dipropionate
Lotion 0.05%	30, 60 ml	<u>betamethasone dipropionate</u>
Cream, Ointment 0.05%	15, 30, 45, 60 gm	clobetasol propionate
Emollient Cream, Gel 0.05%	15, 30, 60 gm	clobetasol propionate
Solution 0.05%	25, 50 ml	clobetasol propionate
Foam 0.05%	50, 100 gm	clobetasol propionate
Ointment 0.05%	15, 30, 60 gm	diflorasone diacetate
Cream, Ointment 0.05%	15, 30, 45, 60 gm	clobetasol propionate
Emollient Cream, Gel 0.05%	15, 30, 60 gm	clobetasol propionate
Solution 0.05%	25, 50 ml	clobetasol propionate
Cream, Ointment 0.05%	15, 50 gm	halobetasol propionate
HIGH		
Ointment 0.1%	15, 30, 60 gm	amcinonide
Cream 0.05%	15, 50 gm	betamethasone dipropionate
Ointment 0.1%	15, 45 gm	mometasone furoate
II Cream, Gel, Ointment 0.05%	15, 30, 60 gm	<u>fluocinonide</u>
Cream 0.05%	15, 30, 60 gm	diflorasone diacetate
Cream, Ointment 0.05%	15, 30, 60 gm	diflorasone diacetate
Cream, Gel, Ointment 0.25%	15, 60 gm	desoximetasone
Cream, Ointment 0.1%	15, 60 gm	<u>triamcinolone acetonide</u>
Ointment 0.005%	15, 30, 60 gm	fluticasone propionate
III Cream 0.1%	15, 30, 60 gm	amcinonide
Lotion 0.1%	20, 60 ml	amcinonide
Cream 0.05%	15, 30, 60 gm	fluocinonide
Cream 0.05%	15, 60 gm	desoximetasone

MID		
Cream 0.1%	15, 45, 90 gm	<u>clocortolone pivalate</u>
Ointment 0.1%	15, 60 gm	prednicarbate
Cream 0.1%	15, 45 gm	<u>mometasone furoate</u>
IV Lotion 0.1%	30, 60 ml	mometasone furoate
Foam 0.12%	50, 100 gm	betamethasone valerate
Cream 0.1%	15, 45, 80 gm	hydrocortisone probutate
Ointment 0.025%	15, 60 gm	fluocinolone acetonide
Ointment 0.2%	15, 45, 60 gm	hydrocortisone valerate
Lotion 0.05%	15, 60 ml	flurandrenolide
Cream 0.05%	15, 30, 60 gm	fluticasone propionate
Cream 0.1%	15, 60 gm	prednicarbate
V Cream, Ointment 0.1%	15, 45 gm	hydrocortisone butyrate
Solution 0.1%	20, 60 ml	hydrocortisone butyrate
Cream 0.1%	15, 45 gm	hydrocortisone butyrate
Cream 0.025%	15, 60 gm	fluocinolone acetonide
Cream 0.2%	15, 45, 60 gm	<u>hydrocortisone valerate</u>
LO		
Cream, Ointment 0.05%	15, 45, 60 gm	aclometasone dipropionate
VI Cream, Ointment 0.05%	15, 60 gm	<u>desonide</u>
Lotion 0.05%	60, 120 ml	<u>desonide</u>
Lotion 2.5%	60 ml	<u>hydrocortisone</u>
VII Lotion 1%, 2.5%	2, 4 oz	<u>hydrocortisone</u>

Importance of Formulation

SUPER HIGH			
Lotion 0.05%	1, 2 oz	clobetasol propionate	
Gel, Ointment 0.05%	15, 50 gm	betamethasone dipropionate	
Lotion 0.05%	30, 60 ml	betamethasone dipropionate	
Cream, Ointment 0.05%	15, 30, 45, 60 gm	clobetasol propionate	
Emollient Cream, Gel 0.05%	15, 30, 60 gm	clobetasol propionate	
Solution 0.05%	25, 50 ml	clobetasol propionate	
Foam 0.05%	50, 100 gm	clobetasol propionate	
Ointment 0.05%	15, 30, 60 gm	diflorasone diacetate	
Cream, Ointment 0.05%	15, 30, 45, 60 gm	clobetasol propionate	
Emollient Cream, Gel 0.05%	15, 30, 60 gm	clobetasol propionate	
Solution 0.05%	25, 50 ml	clobetasol propionate	
Cream, Ointment 0.05%	15, 50 gm	halobetasol propionate	
HIGH			
Ointment 0.1%	15, 30, 60 gm	amcinonide	
Cream 0.05%	15, 50 gm	betamethasone dipropionate	
Ointment 0.1%	15, 45 gm	mometasone furoate	
II	Cream, Gel, Ointment 0.05%	15, 30, 60 gm	fluocinonide
	Cream 0.05%	15, 30, 60 gm	diflorasone diacetate
	Cream, Ointment 0.05%	15, 30, 60 gm	diflorasone diacetate
	Cream, Gel, Ointment 0.25%	15, 60 gm	desoximetasone
	Cream, Ointment 0.1%	15, 60 gm	triamcinolone acetonide
III	Ointment 0.005%	15, 30, 60 gm	fluticasone propionate
	Cream 0.1%	15, 30, 60 gm	amcinonide
	Lotion 0.1%	20, 60 ml	amcinonide
	Cream 0.05%	15, 30, 60 gm	fluocinonide
	Cream 0.05%	15, 60 gm	desoximetasone

MID			
	Cream 0.1%	15, 45, 90 gm	clocortolone pivalate
N	Ointment 0.1%	15, 60 gm	prednicarbate
	Cream 0.1%	15, 45 gm	mometasone furoate
	Lotion 0.1%	30, 60 ml	mometasone furoate
	Foam 0.12%	50, 100 gm	betamethasone valerate
	Cream 0.1%	15, 45, 80 gm	hydrocortisone probutate
	Ointment 0.025%	15, 60 gm	fluocinolone acetonide
	Ointment 0.2%	15, 45, 60 gm	hydrocortisone valerate
V	Lotion 0.05%	15, 60 ml	flurandrenolide
	Cream 0.05%	15, 30, 60 gm	fluticasone propionate
	Cream 0.1%	15, 60 gm	prednicarbate
	Cream, Ointment 0.1%	15, 45 gm	hydrocortisone butyrate
	Solution 0.1%	20, 60 ml	hydrocortisone butyrate
	Cream 0.1%	15, 45 gm	hydrocortisone butyrate
	Cream 0.025%	15, 60 gm	fluocinolone acetonide
	Cream 0.2%	15, 45, 60 gm	hydrocortisone valerate
	LO		
VI	Cream, Ointment 0.05%	15, 45, 60 gm	aclometasone dipropionate
	Cream, Ointment 0.05%	15, 60 gm	desonide
	Lotion 0.05%	60, 120 ml	desonide
VII	Lotion 2.5%	60 ml	hydrocortisone
	Lotion 1%, 2.5%	2, 4 oz	hydrocortisone

Application

- Layer $\sim 0.1\text{mm}$ thick
- 1g cream covers 10 cm^2 , oint 10% more
- Distal third of a finger = FTU = 0.5g
 - Covers two palms
- 70 kg man requires 20g, BID for one week = 280 g



Numular Eczema



Guttate Psoriasis





Psoriasis



Aggravating Factors

- Trauma, scratching, sunburn
- Medications: Li, beta-blockers, anti-malarials, ibuprofen, naproxen, inderal, prednisone taper
- Smoking, alcohol
- Hormonal changes: puberty, pregnancy, menopause
- Early HIV infection



Disease Associations

- Psoriatics more likely to suffer from obesity and depression, more often smoke or drink to excess
- Increased risk of CAD and MI even when controlled for obesity, smoking, diabetes, hypertension
- Risk of atherosclerotic heart disease linked to low-grade inflammation, analagous to level seen in psoriasis



Tinea Corporis



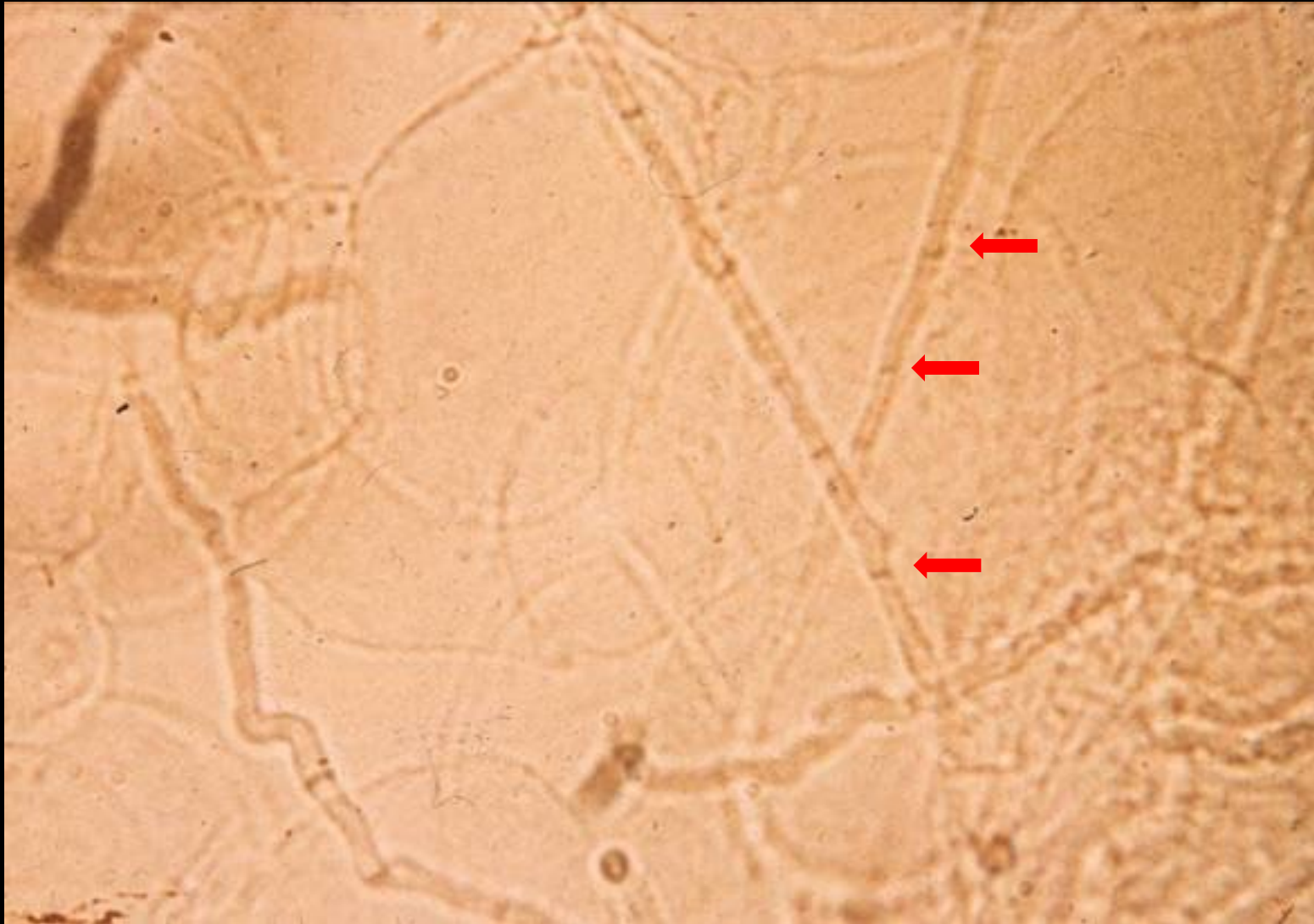
Numular Eczema



Tinea Cruris



KOH

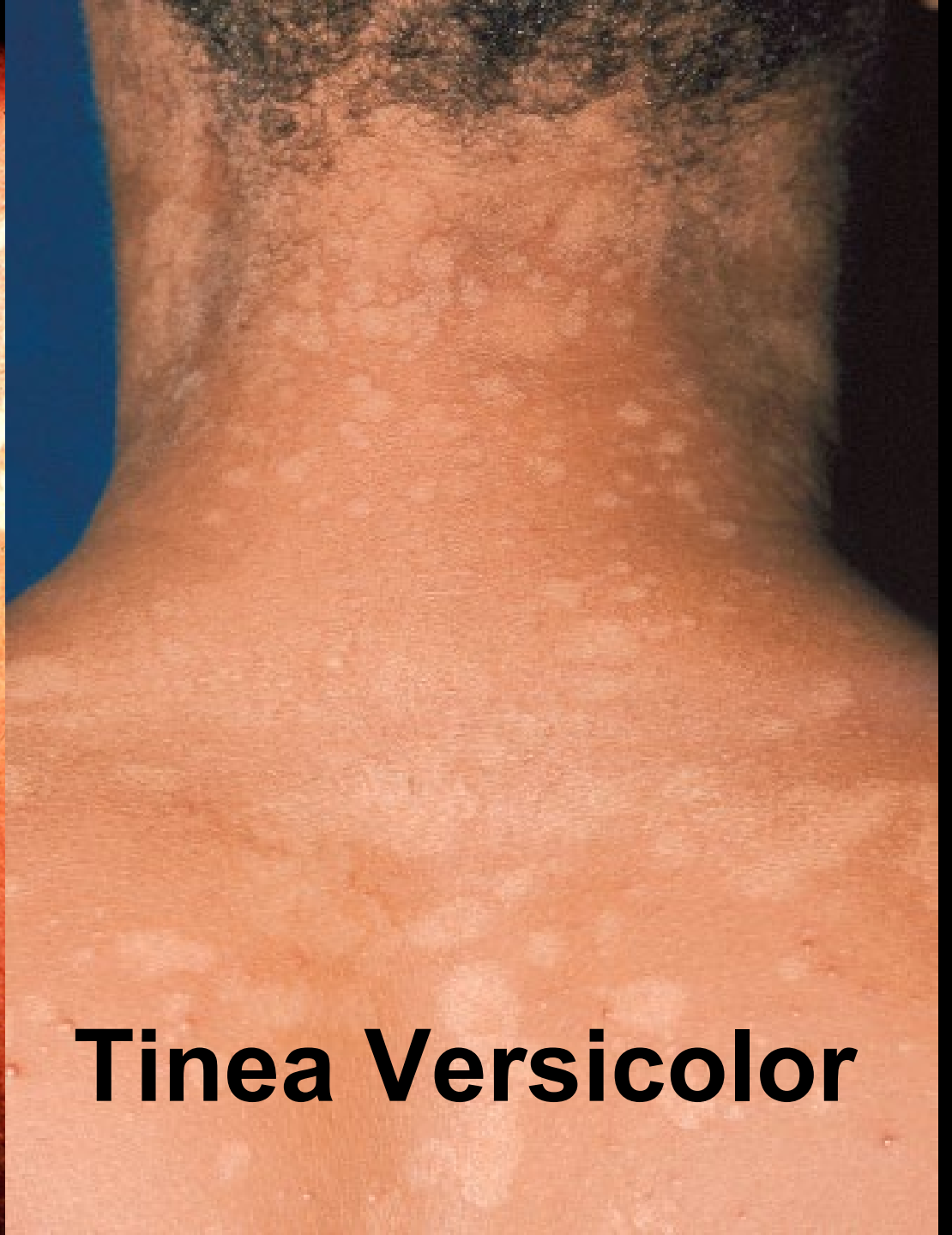


Onychomycosis

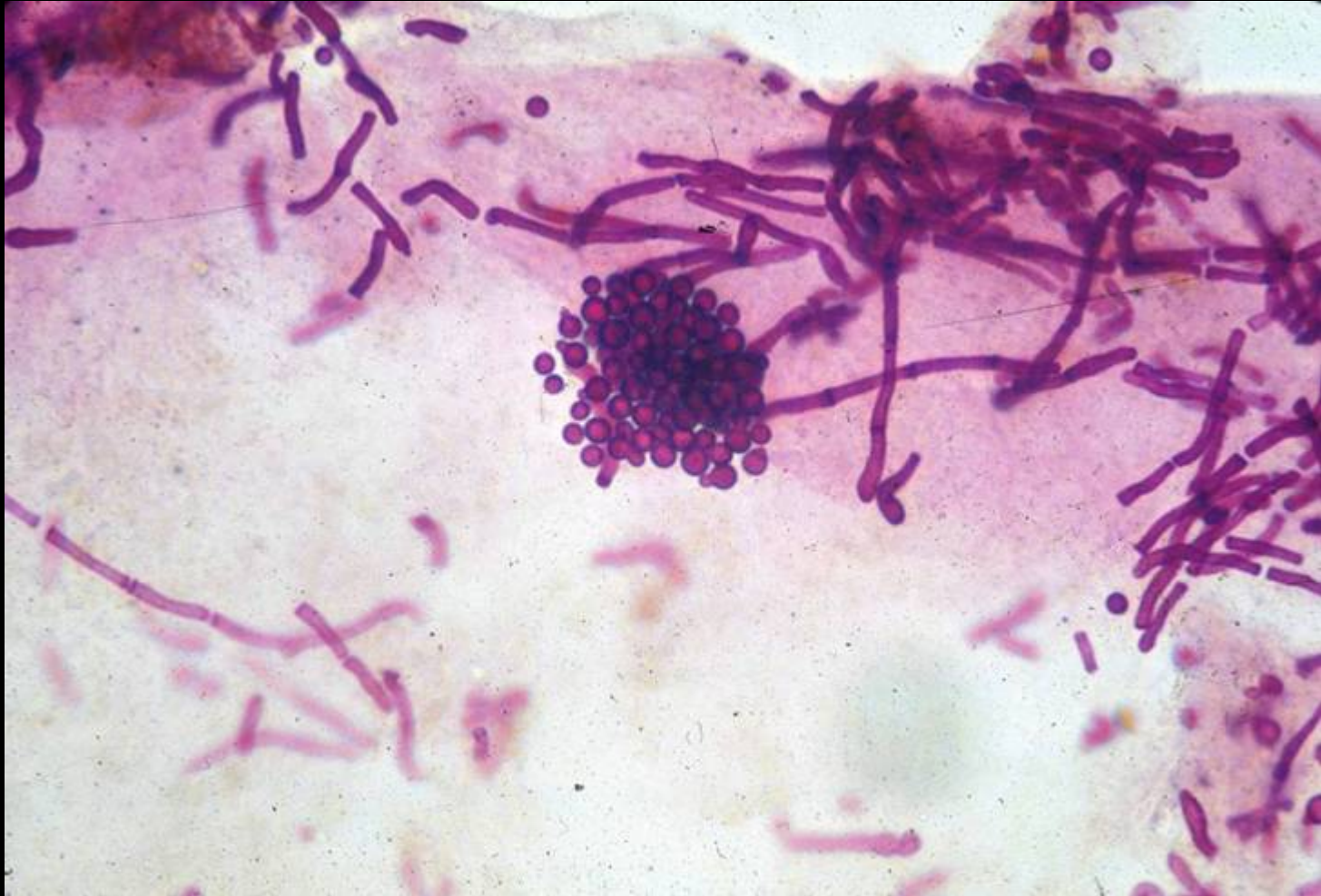


Treatment of OM

- Itraconazole :
 - 200 mg po qd for 12 weeks
 - 200 mg po bid for 1 week, then 3 weeks off, repeated twice
- Terbinafine:
 - 250 mg po qd for 12 weeks
 - 500 mg po qd for 1 week, then 3 weeks off, repeated twice



Tinea Versicolor

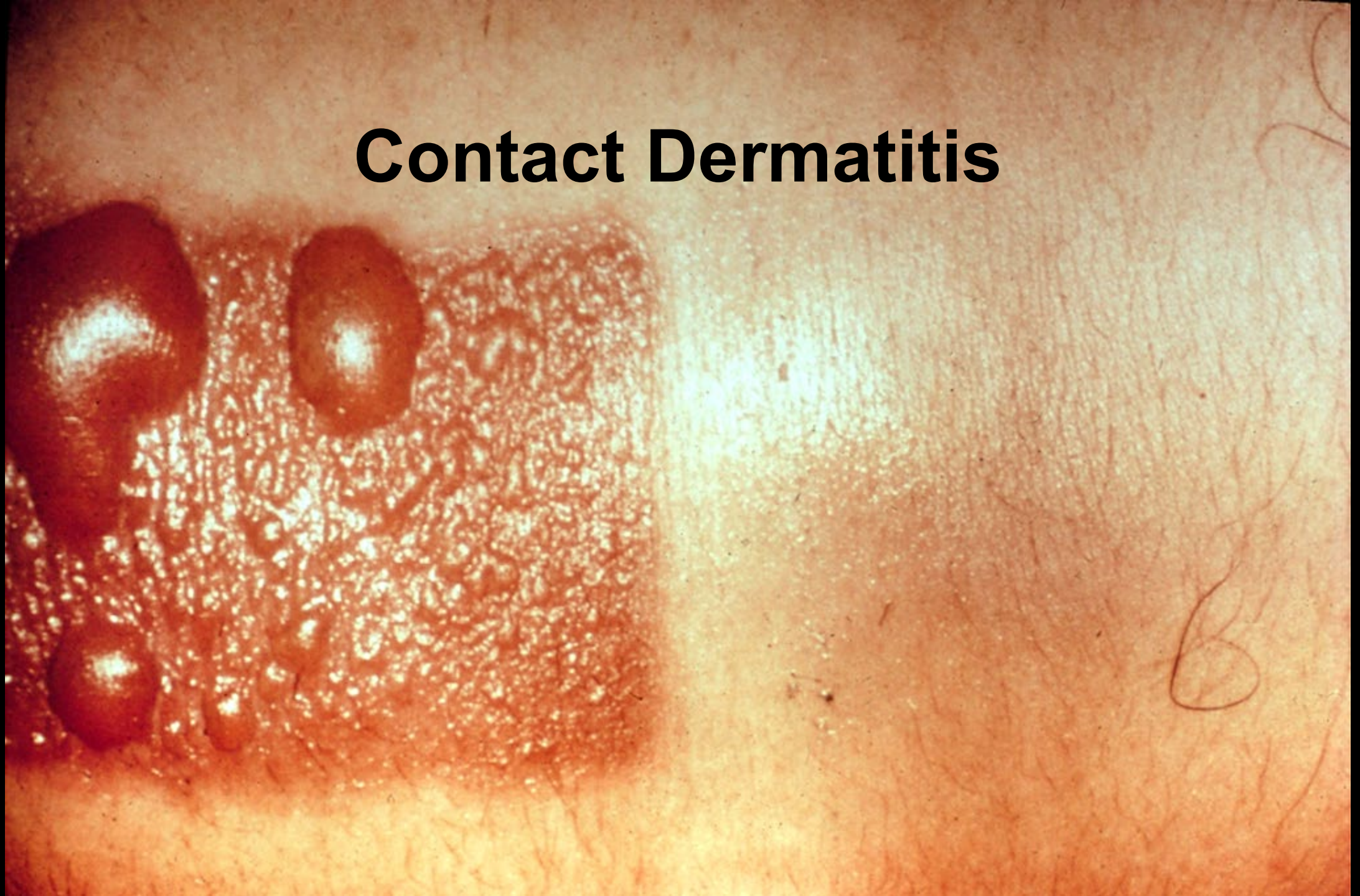




TOPICAL ANTIFUNGAL AGENTS

Generic name	Coverage	Formulation(s)	Preg	OTC/Rx
Imidazoles	Dermatophytes M.furfur Candida			
Clotrimazole		1% lotion, solution, cream, solution, troches, powder	B	OTC, Rx
Econazole		1% cream	C	Rx
<u>Ketoconazole</u>		1% and 2% cream, shampoo	C	OTC, Rx
Miconazole		2% cream, lotion, powder, solution	C	OTC
Sertaconazole		2% cream	C	Rx
Allylamines	Dermatophytes			
<u>Naftifine</u>		1% cream, gel	B	Rx
<u>Terbinafine</u>	(also candida)	1% cream, solution	B	OTC
Benzylamine	Dermatophytes			
Butenafine		1% cream	B	OTC, Rx
Polyenes	Candida			
<u>Nystatin</u>		cream, ointment, powder, oral suspension, lozenges vaginal tablets	C	Rx
Amphotericin B		3% cream, ointment, lotion	B	Rx
Others				
Ciclopirox olamine	Dermatophytes Candida	cream, gel, lotion, solution, 8% nail lacquer	B	Rx
<u>Iodoquinol</u>	Candida	1% iodoquinol with 2% hydrocortisone gel		

Contact Dermatitis



Contact Dermatitis

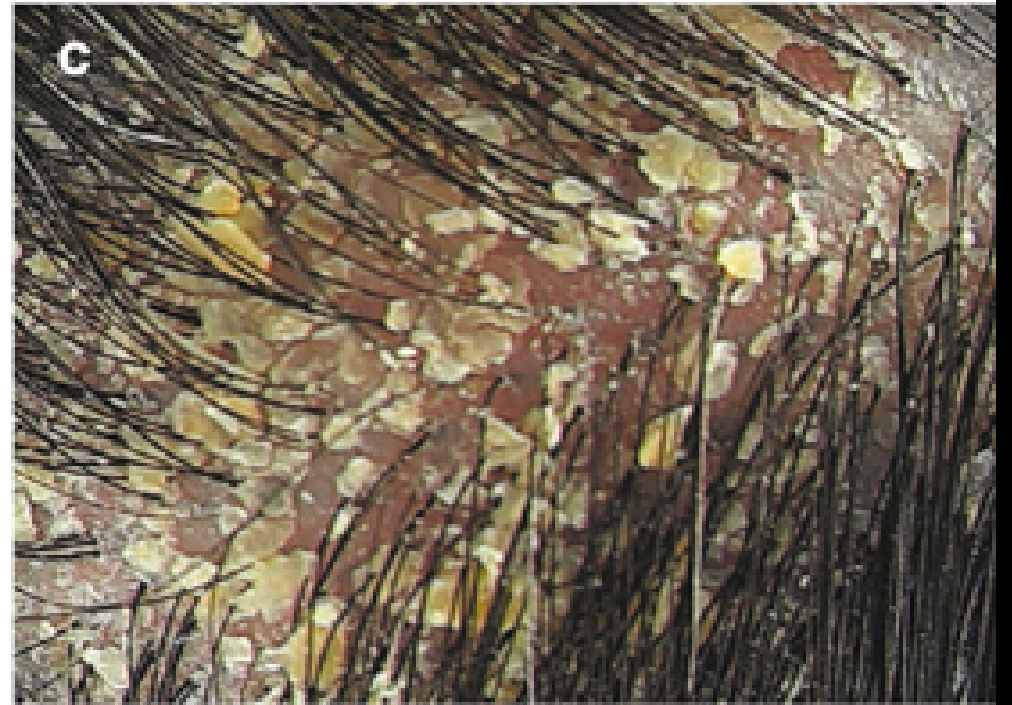
- Bacitracin/ Neomycin: up to 15% incidence of allergic contact dermatitis
 - Increased when applied to open wounds



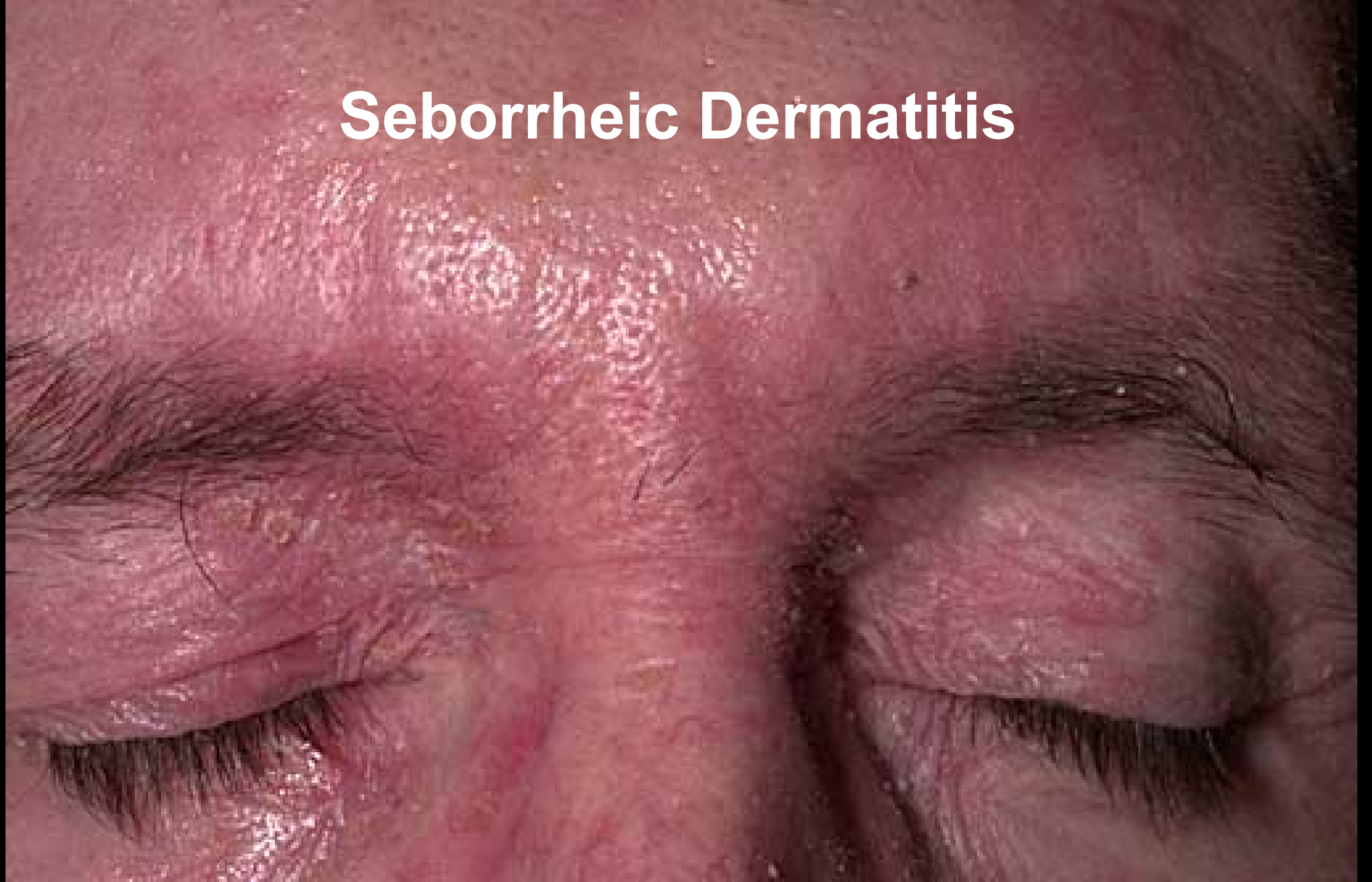
Irritant Contact Dermatitis



Seborrheic Dermatitis



Seborrheic Dermatitis



Seborrheic Dermatitis

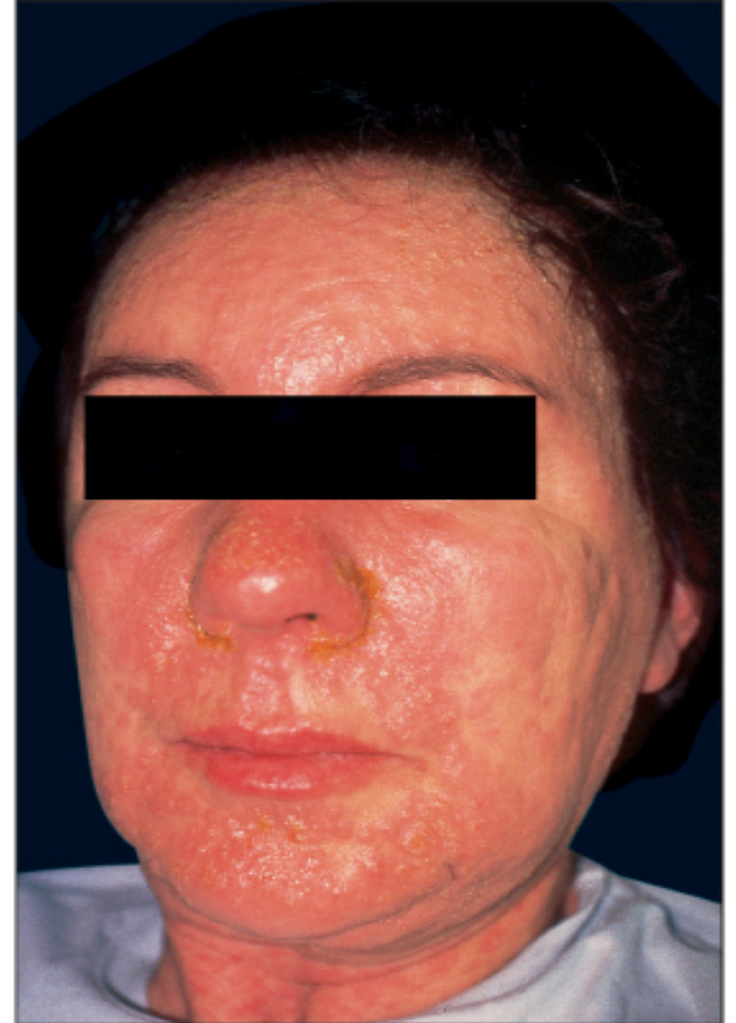
- Scalp: selenium sulfide, zinc or tar based shampoo in contact with skin for 2-3 minutes then rinsed off
 - Topical steroid solution (ie fluocinolone), oil or mousse qd prn flaking or itch for up to seven consecutive days
- Facial: ketoconazole or pimecrolimus cr bid
 - 3-4 days of hydrocortisone 2.5% cr qd if severely inflammatory
 - Antidandruff shampoo as a face wash

Drug Rash



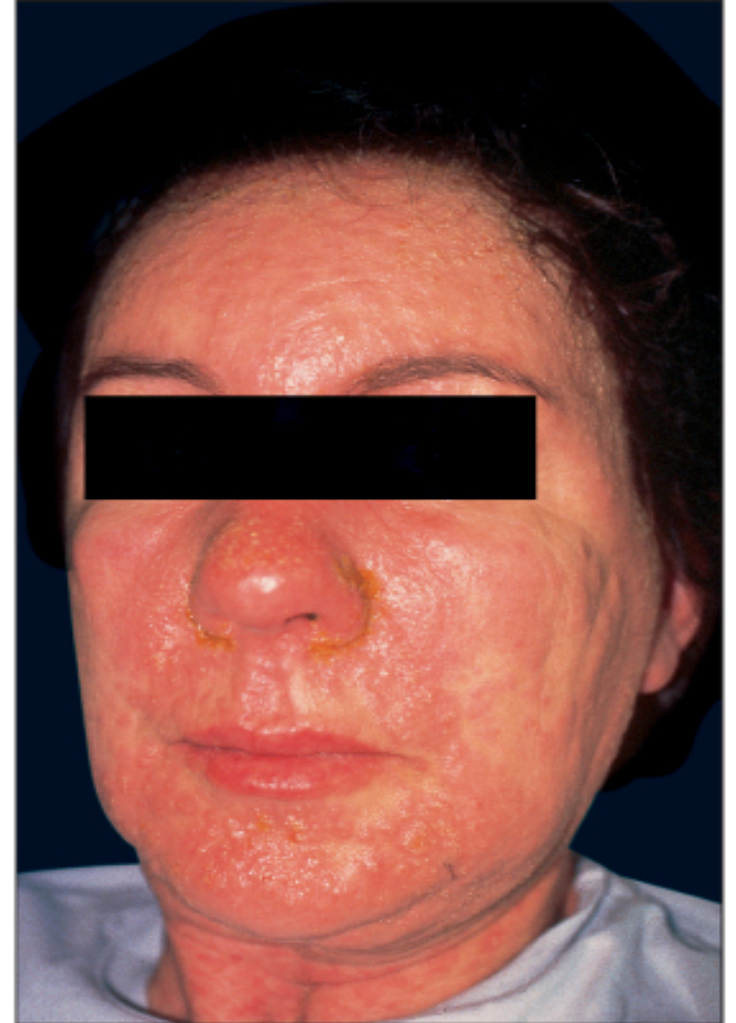
Drug rash with eosinophilia and systemic symptoms (DRESS)

- Fever, rash, facial edema
- Usually 4-6 weeks after drug initiation



Drug rash with eosinophilia and systemic symptoms (DRESS)

- Liver: most common (and usually most severe) visceral site
- Myocarditis, interstitial pneumonitis, interstitial nephritis, thyroiditis eosinophilic brain infiltration
- GI bleeding if due to allopurinol



Drug rash with eosinophilia and systemic symptoms (DRESS)

- Labs: eosinophilia, elevated LFTs, TFTs
- Tx: steroids
- Offending drugs:
 - Aromatic anticonvulsants (phenobarbital, carbamazepine, and phenytoin), lamotrigine (esp if co-administered w valproate)
 - Sulfonamides
 - Minocycline
 - Allopurinol (esp full doses in the setting of renal dysfunction)
 - Gold salts and dapsone





Acute Generalized Exanthematous Pustulosis (AGEP)

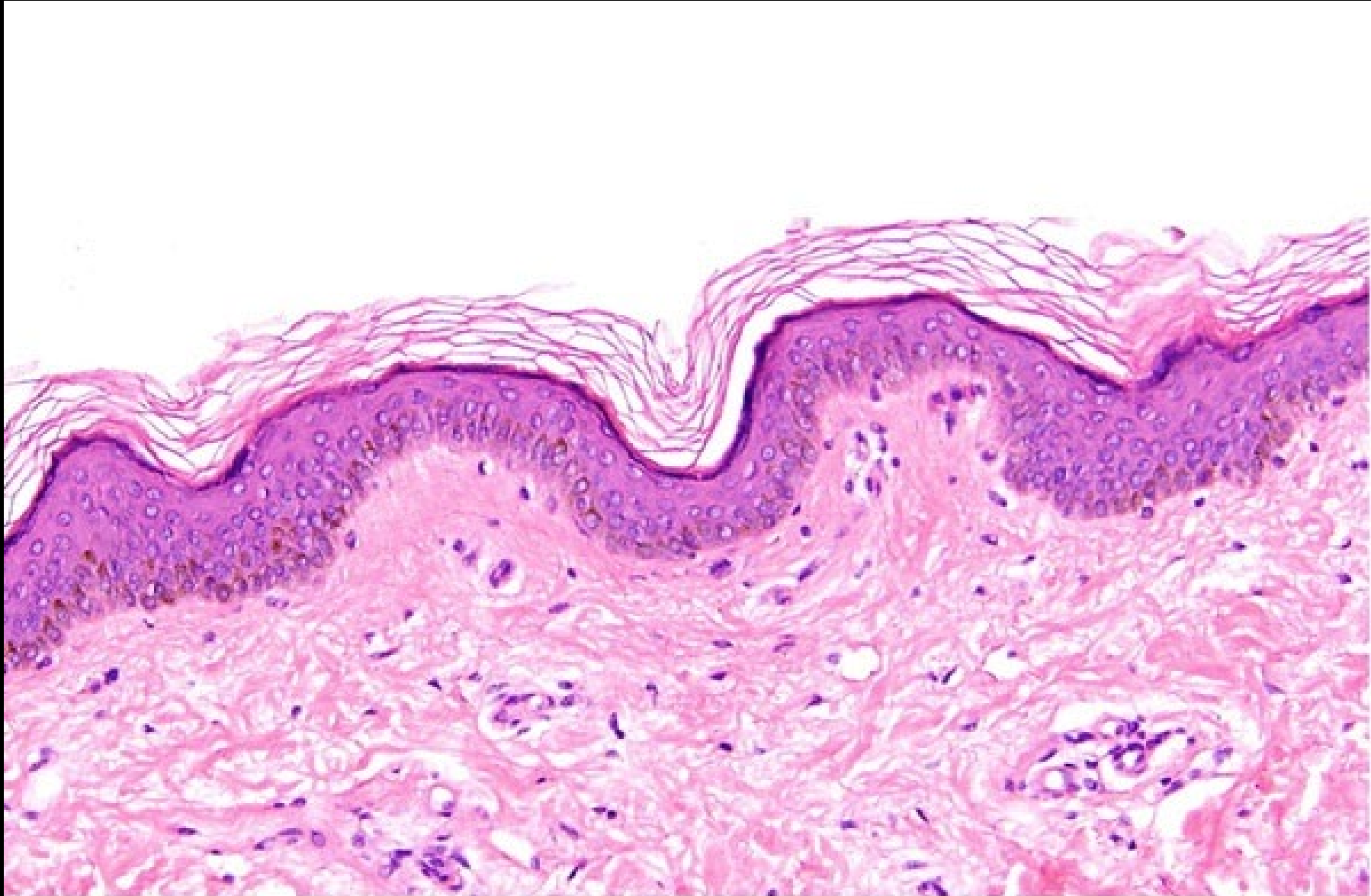
- Usually < 2 days after starting the drug (prior sensitization)
- High fever (with, preceding or just after rash)
- Numerous small, nonfollicular, superficial pustules arising on large areas of edematous erythema → confluent lakes of pus
- Last 1 to 2 weeks → superficial desquamation

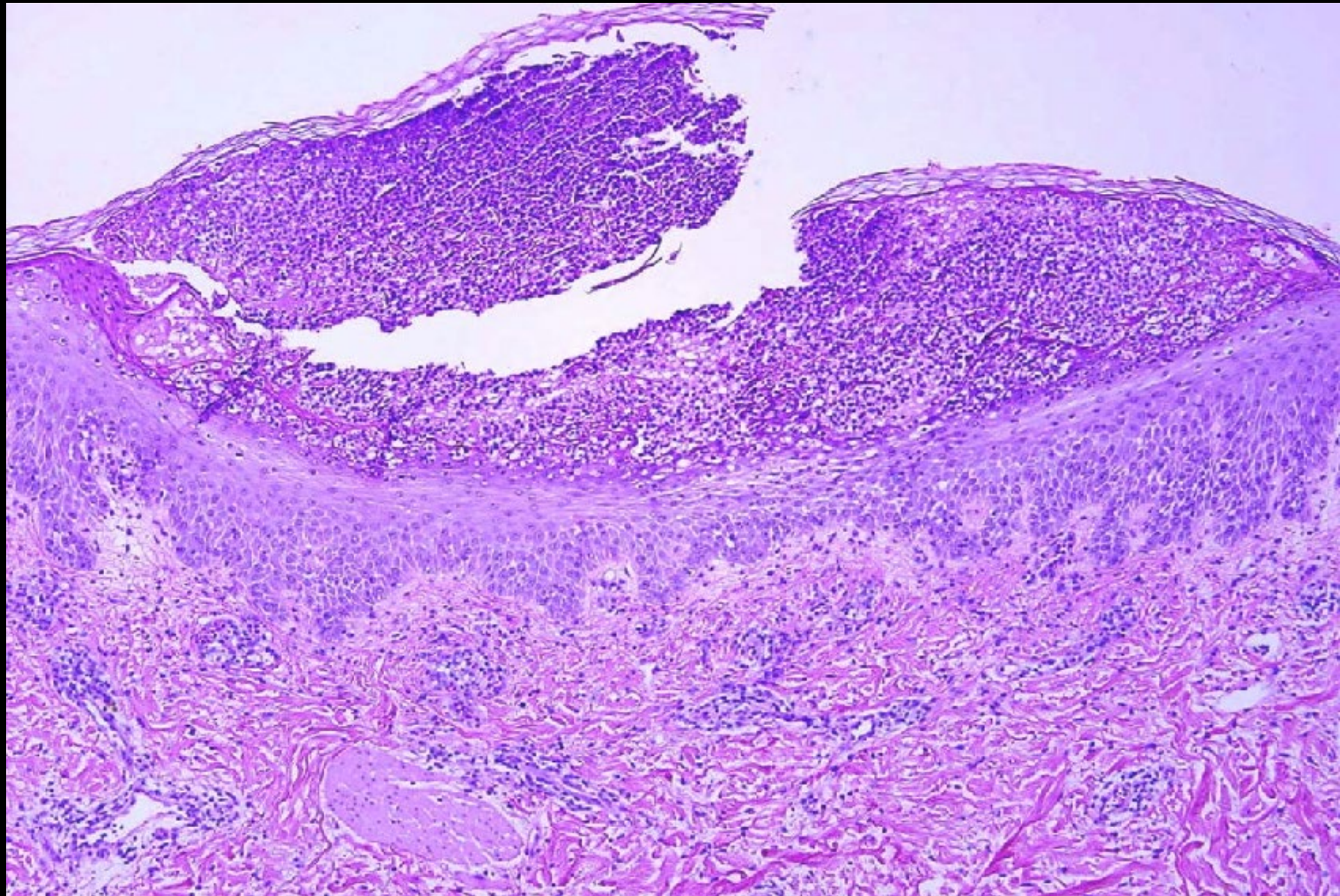
Top Offenders

- β -Lactam antibiotics
- Macrolides
- Calcium channel blockers
- Antimalarials
- Carbamazepine



Normal Skin







Treatment

- Supportive care
 - Attention to fluid and electrolytes
- Artificial ointment-based skin barrier
- Spontaneous resolution



Stevens-Johnson Syndrome/ Toxic Epidermal Necrolysis (SJS/TEN)

- Prodrome of respiratory symptoms and fever
- Necrosis of large areas of oral mucosa with hemorrhagic crusts on lips
- Involvement of two or more mucosal sites
- May have target-like cutaneous lesions
- Prolonged course lasting 3 or more weeks







Herpes Simplex



Herpetic Whitlow









Eczema Herpeticum



Eczema Herpeticum

- Severe, disseminated HSV in patients with atopic dermatitis or other chronic skin diseases
- Lesions widespread, but concentrate in areas of skin disease
- Secondary bacterial superinfection, fluid loss, viremia

Eczema Herpeticum

- Systemic antiviral therapy, hydration, electrolyte balance, antibiotics for secondary bacterial infection, and pain control
- Bland emollients to restore barrier function, addition of topical steroids once healing
- Ophthalmologic evaluation for facial involvement



Clinical Manifestations of HIV in the Immunocompromised Host

- Defective T-cell immunity → progressive mucocutaneous or visceral infection
- Chronic enlarging ulcerations or atypical verrucous, exophytic, or pustular lesions
- Disseminated disease: esophagitis, pneumonitis, hepatitis, pancreatitis, adrenal necrosis





Practical Considerations

HSV



Impetigo/Bullous Impetigo



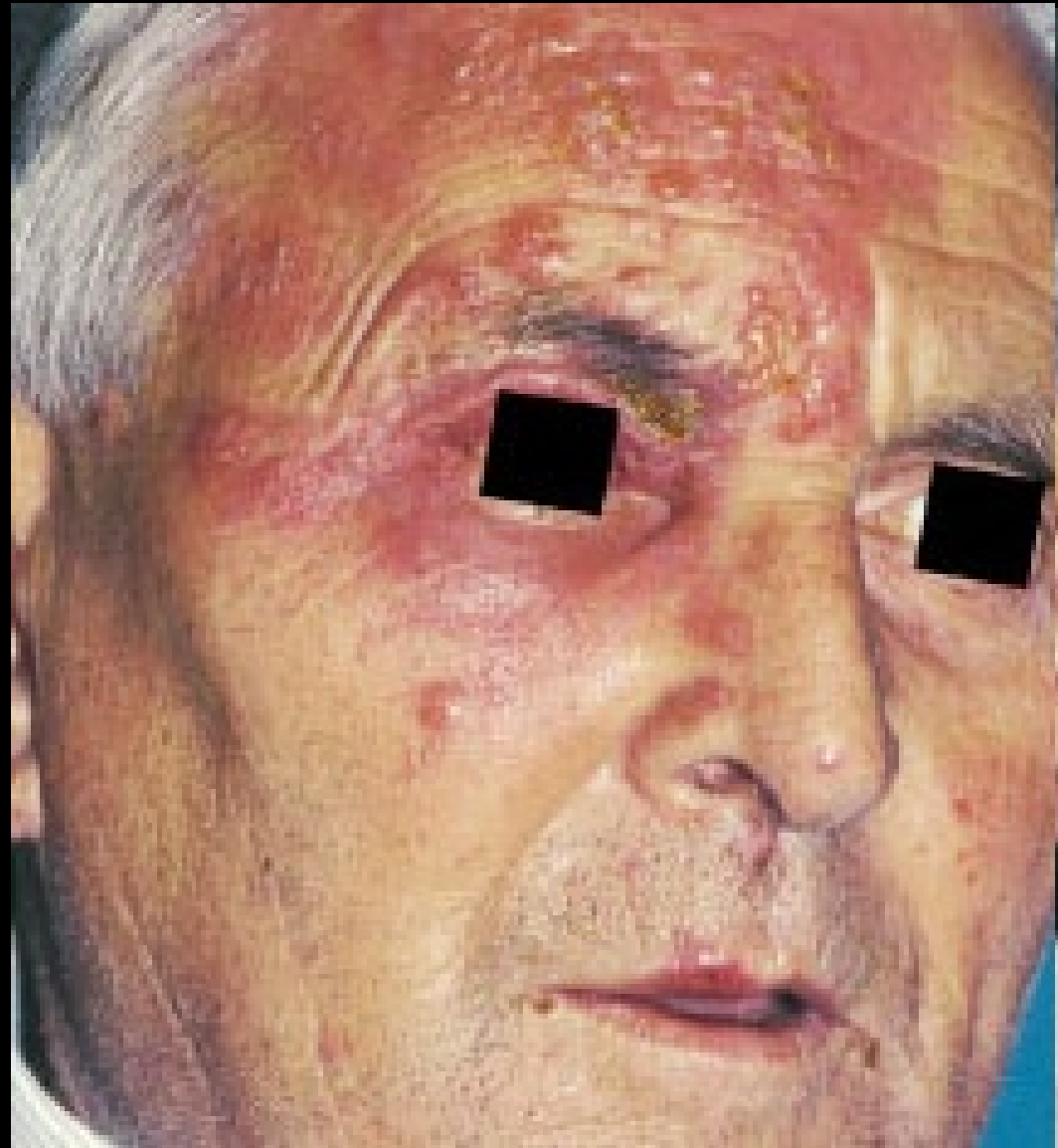
Zoster



Early Zoster







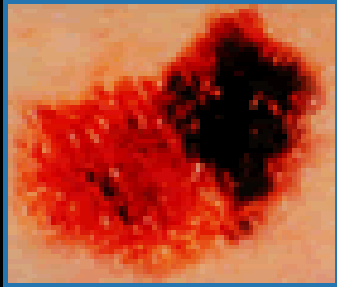


Disseminated Zoster

- >20 vesicles outside primary or 2 adjacent dermatomes and/or visceral involvement
 - 10% immunocompromised hosts
- Zoster sine herpe (“zoster without rash”)



ABCDEs of Nevi



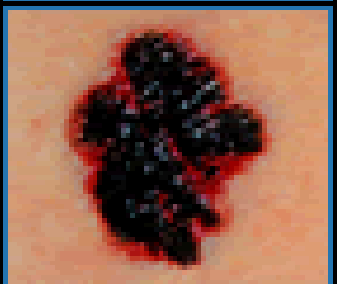
A for Asymmetry

One half is different than the other half.



B for Border Irregularity

The edges are notched, uneven, or blurred.



C for Color

The color is uneven. Shades of brown, tan, and black are present



D for Diameter

Diameter is greater than 6 millimeters.

E for Evolution

The lesion has changed in appearance or become symptomatic

Dysplastic Nevi

- Clinicopathologic diagnosis
- Mild, moderate, severe
- Signature nevus
- Dysplastic nevus syndrome

Melanocytic Nevus Phenotypes

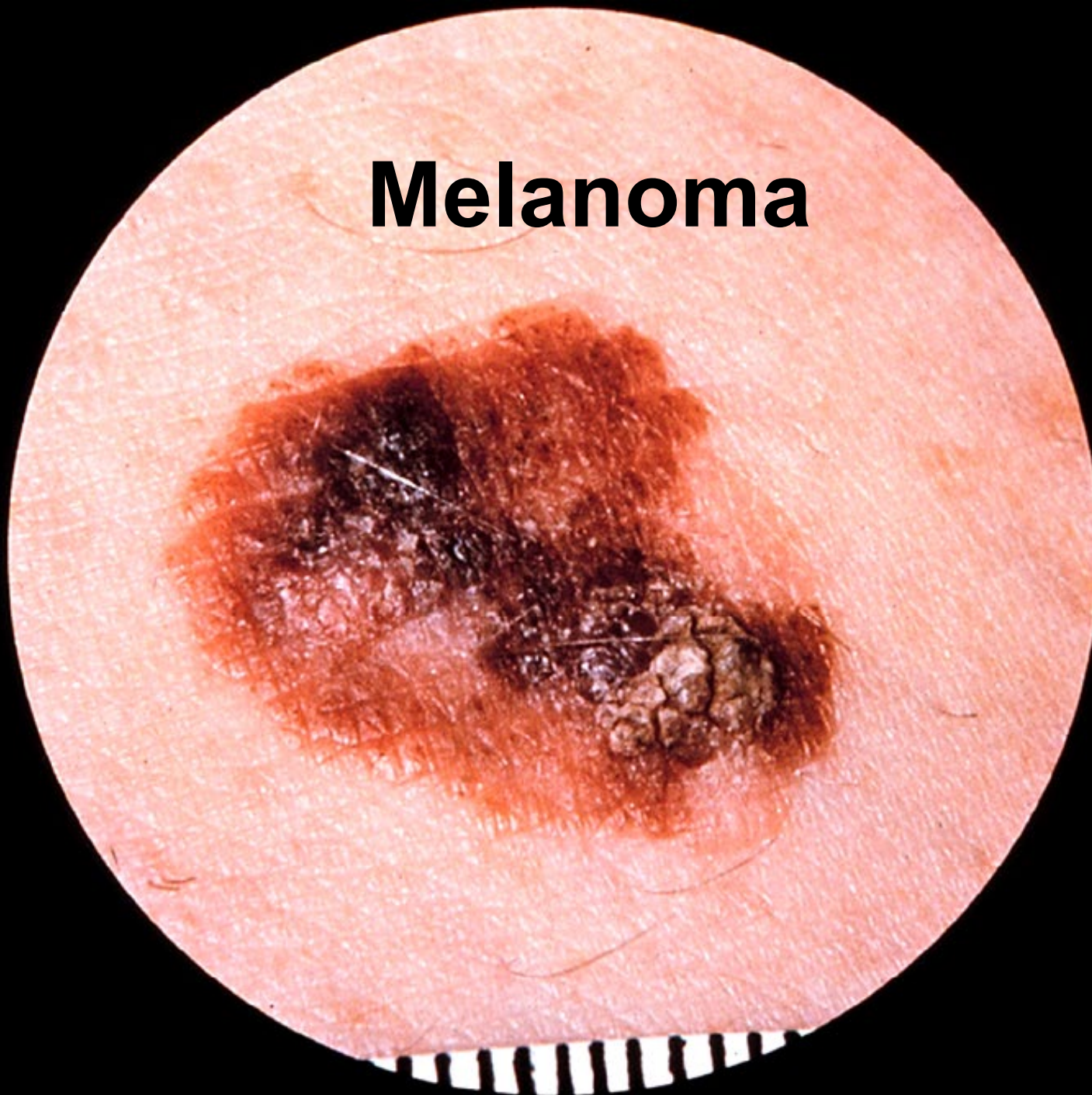
Common

- None to <25 nevi
- <5 mm
- Uniform, homogenous color
- Well-circumscribed

Atypical

- >50 nevi
- Small to lg, often several >5 mm
- Some to many nevi with irregular or haphazard color, erythema
- Irregular or ill-defined borders

Melanoma



Melanoma Risk Factors

- Total numbers of nevi on the skin surface
- Presence and number of clinically atypical melanocytic nevi
- Personal or family history of melanoma
- History and number of sunburns

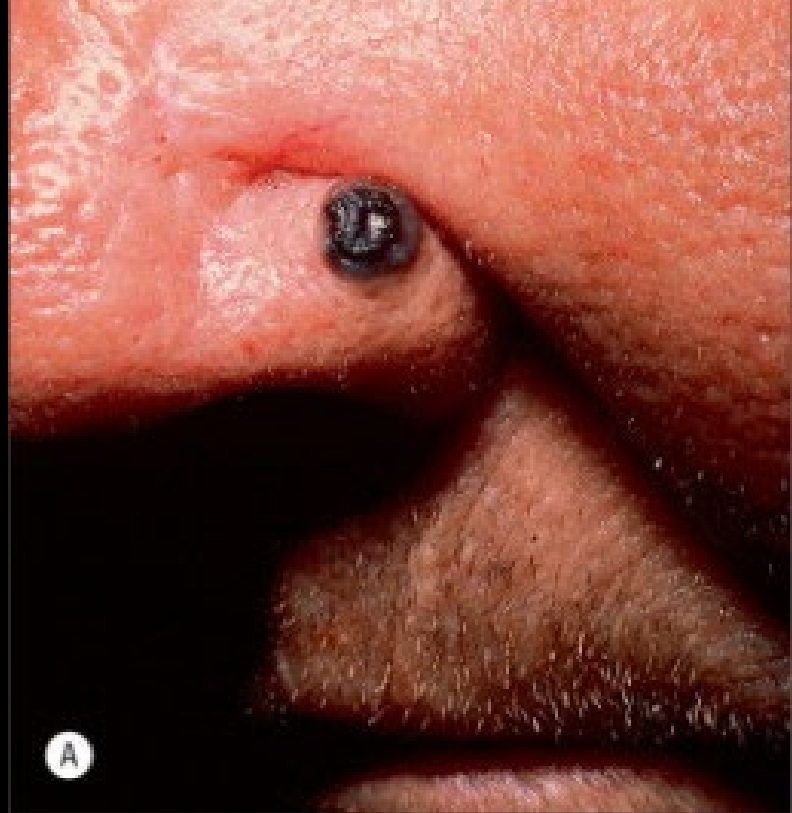
Superficial Spreading Melanoma

- Frequency: 60-70%
- Site: any
 - Prefers legs (women), trunk
- Special Features: de novo or in a pre-existing nevus



Nodular Melanoma

- Frequency: 15-30%
- Site: Any
 - Prefers trunk, head, neck
- Special Features: M>W
 - Most commonly in 6th decade
 - Blue-black or pink-red nodule
 - +/- ulceration, bleeding, rapid evolution



Thrombosed Cherry Angioma



Acral Lentiginous Melanoma

- Frequency: 5-10%
- Site: palms, soles, nail unit
- Special Features: most common type of melanoma in dark skin types

Acral Lentiginous Melanoma



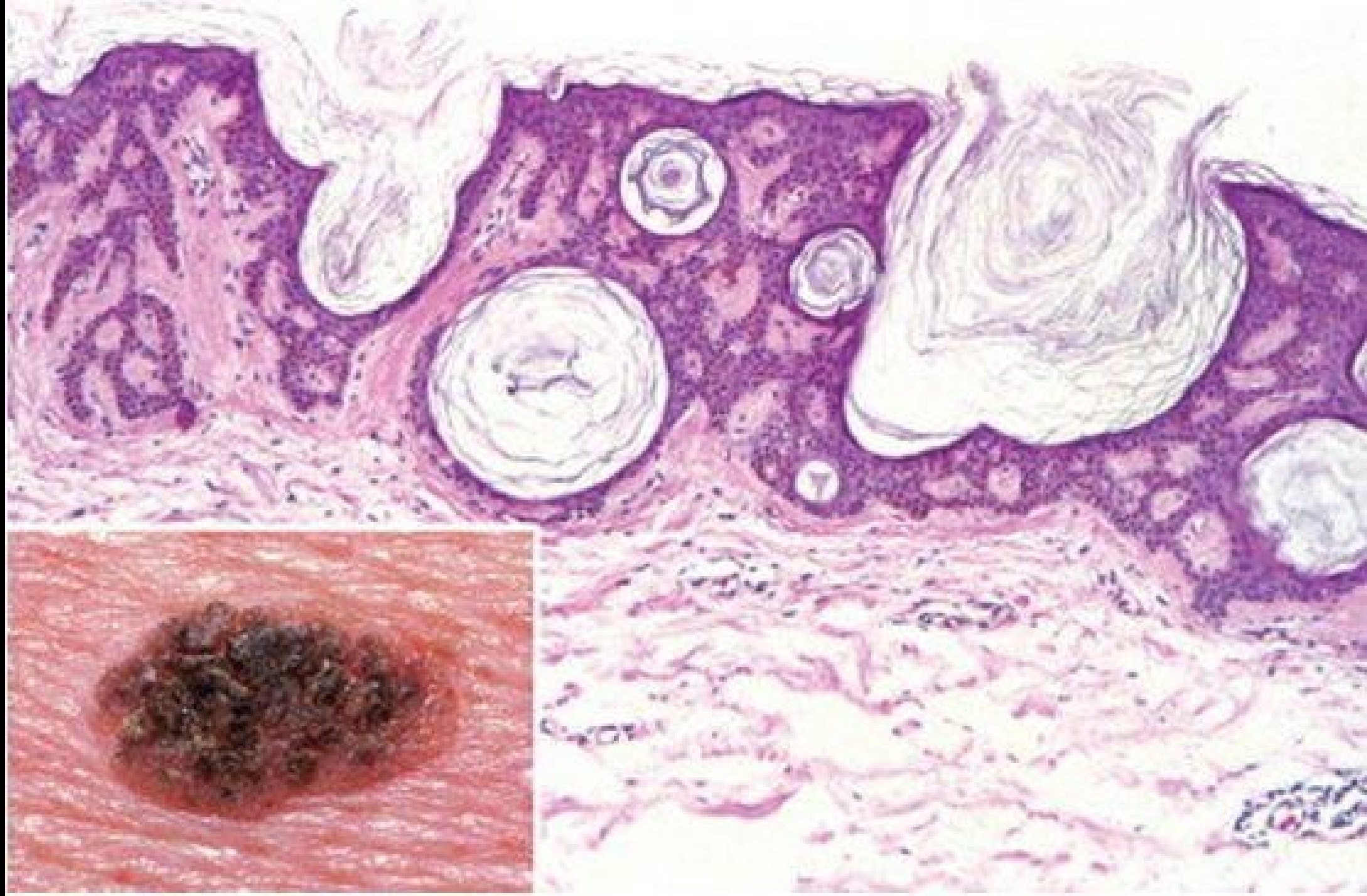
**Longitudinal
Melanonychia**



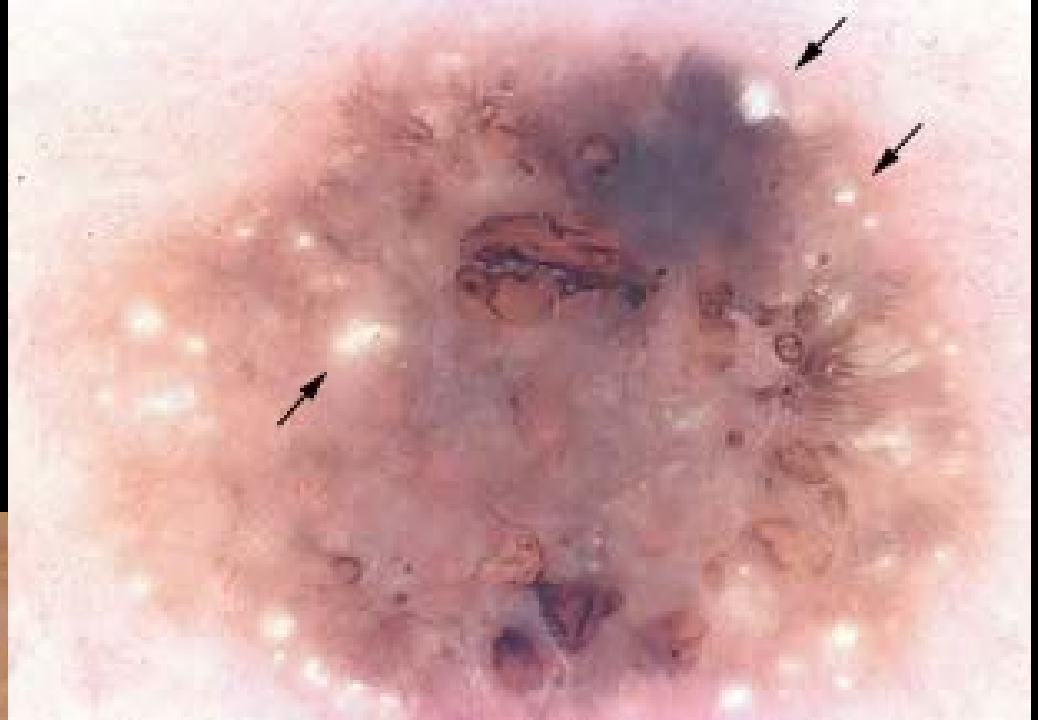
**Acral Lentiginous
Melanoma**







Seborrheic Keratoses



Sunscreen

- UVA vs. UVB
- Mechanism of action
- Pitfalls and application recommendations



UVA vs UVB coverage

- Most sunscreens combine several agents to provide broad coverage
 - “Broad-spectrum”

Effect	UVA	UVB
Sunburn	+	++++
Photoaging	++	++++
SCC	+	++++
BCC	?	+++
Melanoma	+	++
Photosensitivity	+++	+

What is the minimum recommended SPF?

- A. 15
- B. 30
- C. 45
- D. 60
- E. 75+

Sunburn Protection Factor(SPF): UVB

SPF

% UVB blockage

15

90

30

95

40

97.5

“But I still burn...”

- SPF testing uses 2mg/cm²
 - Most users apply 25-75% of test quantity, reducing spf proportionately
- Recommended: six teaspoons/adult body
- Apply 15-20 min prior, reapply q2-3 hours

“I’m allergic”

- Allergy usually to fragrance or preservatives
 - Change brands, ‘fragrance-free,’ ‘sensitive skin’
- True allergy/photoallergy is rare
 - Oxybenzone, padimate O, avobenzone
- Refer for skin patch testing

Pearls & Pitfalls



- Sunless tanners: Dihydroxyacetone
- 'Sport' products: bases remain in s.corneum longer → better retention upon activity
- Addition of antioxidants: unclear efficacy

Key Points & Next Steps

- Generate a differential for scaly erythematous rashes
 - Utilize appropriate strength, quantity, and duration of topical steroids for best results
- Recognize different drug-induced dermatoses
 - Outpatient management is reasonable for most drug rashes while AGEP, DRESS, SJS/TEN should prompt dermatology consultation
- Benign pigmented lesions and mimickers can be managed effectively by PCPs
 - A high density of dysplastic nevi, family or personal history of melanoma or new atypical lesions should prompt dermatology evaluation
- Psoriasis is associated with increased risk of cardiac disease
 - Patients with >5-6% BSA should be encouraged to seek treatment

