

Skin Problems in College Health: It's All About Pattern Recognition!

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**I have NO actual or potential
conflict of interest in relation to this
educational activity or
presentation.**

Objectives

- ~~1. Describe the standard nomenclature for describing rashes.~~
2. Identify five – ten itchy rashes and five that affect the palms and soles.
3. Describe the typical appearance pattern and characteristic lesions of several common rashes.
4. Describe the treatment of ten common rashes.

Objectives

1. Describe a system for identifying rashes based on historical and other characteristics.
2. Identify five – ten itchy rashes and five that affect the palms and soles.
3. Describe the typical appearance pattern and characteristic lesions of several common rashes.
4. Describe the treatment of ten common rashes.

- Introduction and skin rash association game
 - Christmas Tree pattern
 - Dew drop on a rose petal
 - The great imitator
 - Palms and soles
 - Centripetal (starting out and moving in)
 - Collaret of scales
 - ABCD
- Most prevalent skin conditions
 - All populations, "The Burden of Skin Disease: 2004"
 - HSV and zoster
 - Solar radiation damage
 - Seborrheic keratosis
 - Contact dermatitis
 - Hair and nail disorders
 - HPV and warts
 - Acne
 - Most commonly diagnosed by Family Physicians
- A system for approaching rashes, process of recognition and elimination
 - Does it itch
 - Does it hurt
 - Is it on the palms and soles
 - What is the timing, when did it start/ friends or contacts with the rash
 - Is the patient sick
 - What is the pattern
 - What does the primary lesion look like
- Dermatological emergencies-relatively few
 - Does it itch
 - Contact dermatitis including rhus
 - Eczematous dermatitis including atopic, nummular, dyshydrotic
 - Infection/infestation including fungal, viral, sarcoptic
 - Insect bites
 - Does it hurt?
 - Infection including MRSA, cellulitis, paronychia, viral
 - Inflammatory including erythema nodosum
 - Is it on the palms and soles?
 - Rocky Mountain Spotted Fever- DERMATOLOGICAL EMERGENCY
 - Secondary syphilis
 - Erythema multiforme
 - Dyshydrotic eczema
 - When did it start? Friends or contacts with the rash?
 - Over Spring Break including phytophotodermatitis, hot tub folliculitis, sea bather's eruption, scabies
 - After moving into a new apartment including bed bug bites
 - Any sick symptoms?
 - Infections including RMSF, varicella, measles, cellulitis
 - Where is it, what is the pattern?
 - Body region
 - Head
 - Trunk
 - Genital area
 - Palms and soles
 - Buttocks
 - Pattern
 - Are the borders well demarcated/"un-natural" appearing
 - Following skin lines
 - Progressing from head to toe
 - Progressing from out to in
 - Fluorescence

Association game

- Christmas tree
- Dew drop on a rose petal
- The great imitator
- Palms and soles
- Centripetal (starting outward and moving in)
- Collarette
- ABCD

So why is this important?

Table II. Prevalence and direct, indirect, and intangible costs of selected skin diseases, United States (2004)

Disease	Prevalence, ^a millions	Direct cost, ^b \$ millions	Indirect cost because of lost productivity, \$ millions	Total direct and indirect cost, ^c \$ millions	Intangible cost because of QoL impact, \$ millions
Acne (cystic and vulgaris)	50.2	2500	619	3119	12,000
Actinic keratosis	39.5	867	172	1039	2400
Atopic dermatitis	15.2	1009	619	1628	2600
Benign neoplasms/keloid	29.4	1402	281	1683	1600
Bullous diseases	0.14	197	65	262	14
Contact dermatitis	72.3	1625	566	2191	1900
Cutaneous fungal infections	29.4	1671	282	1953	450
Cutaneous lymphoma	0.02	44	242	286	9
Drug eruptions	2.6	116	41	157	12
Hair and nail disorders	70.5	783	175	958	17,000
Herpes simplex and zoster	165.0	1704	261	1965	1400
Human papillomavirus/warts	58.5	939	214	1153	2500
Lupus erythematosus	0.36	347	201	548	36
Melanoma	0.72	291	2852	3143	370
Psoriasis	3.1	1244	114	1358	2300
Rosacea	14.7	385	80	465	1600
Seborrheic dermatitis	5.9	179	51	230	1200
Seborrheic keratosis	83.8	1092	113	1205	6700
Skin cancer, nonmelanoma	1.2	1451	961	2412	130
Skin ulcers and wounds	4.8	9712	2239	11,951	970
Solar-radiation damage	123.1	434	33	467	990
Vitiligo	1.5	175	55	230	60
OTC costs, other ^d	-	935	-	935	-
Total^e	-	29,102	10,238	39,339	56,244

OTC, Over-the counter; QoL, quality of life.

^aPrevalence estimates are drawn from multiple data sources, all of which are adjusted to 2004 equivalents.

^bEstimates based on 2002 to 2003 National Ambulatory Medical Care Survey, 2002 to 2003 National Hospital Ambulatory Medical Care Survey, 2001 Medicare standard analytic file, 2003 Verispan Audit data and AC Nielsen OTC data.

^cIndirect cost estimates include only lost days of work because of consumption of health care. Estimates based on other studies in the literature are noted throughout this report.

^dOTC costs not attributable to a particular condition, with the exception of acne, psoriasis, jock itch, sunburn, and hair-growth products.

^eInflated to 2004 dollars using Medical Consumer Price Index.

*Bickers et al, The Burden of Skin Disease: 2004, Journal of the American Academy of Dermatology, Vol 55, No 3, pp 490-500.

Top of the list

- HSV and zoster
- Solar-radiation damage
- Seborrheic keratosis
- Contact dermatitis
- Hair and nail disorders
- HPV/warts
- Acne

Table 4
Most Common Dermatologic Diagnoses Made
by Family Physicians from 2002–2005

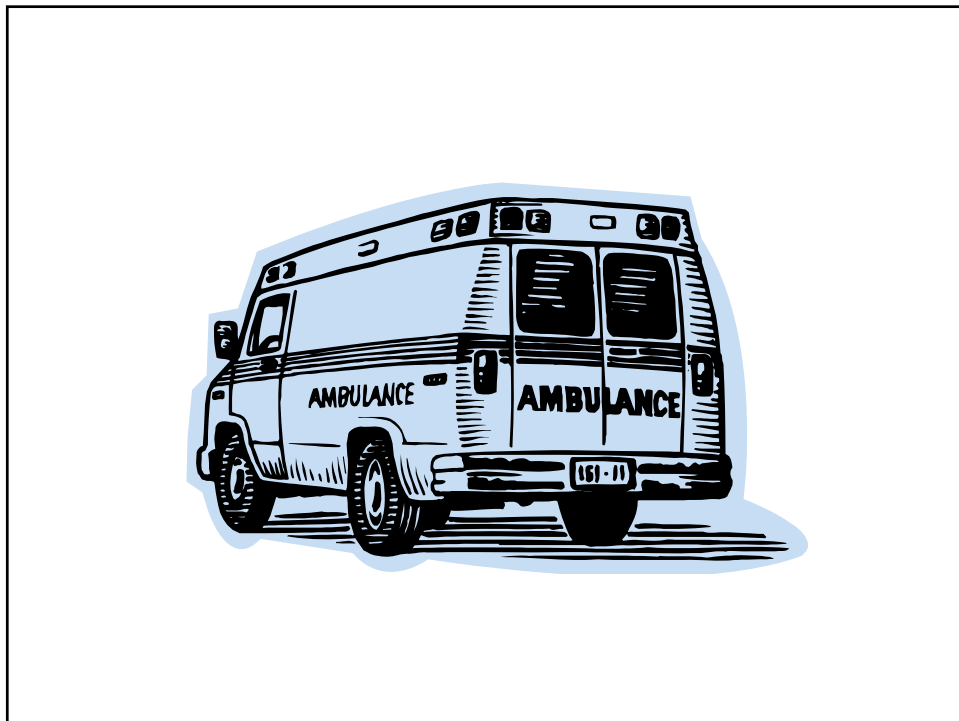
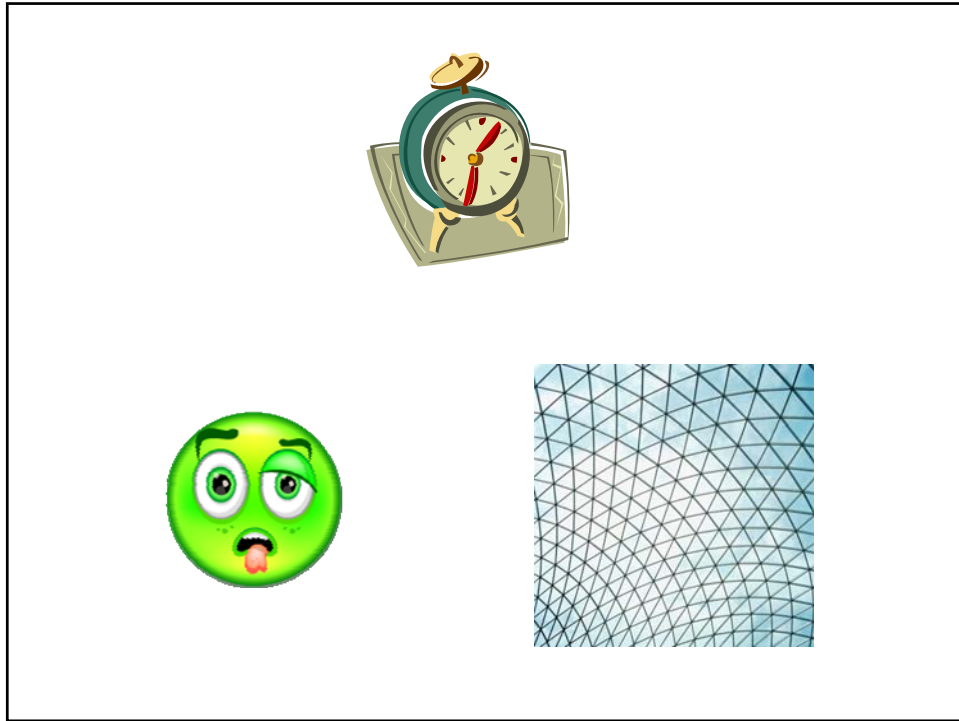
Rank	Diagnosis	Percent
1	Dermatitis	13.38
	Contact	11.82
	Atopic	1.47
	Seborrheic	0.02
	Stasis	0.16
2	Pyoderma	10.38
	Cellulitis and abscess	5.64
	Carbuncle and furuncle	0.42
	Impetigo	0.57
	Other infection: skin, subcutaneous	0.91
3	Tinea, all	7.41
4	Benign neoplasm*	4.39
5	Candida, all	3.73
6	Dermatosis, NOS	3.62
7	Warts	3.44
8	Malignant neoplasm*	3.43
9	Sebaceous cyst	3.39
10	Acne	3.03
11	Actinic keratosis	2.41
12	Seborrheic keratosis	1.60
13	Ingrowing nail	1.50
14	Folliculitis	1.46
15	Urticaria, NOS	1.38
16	Chronic ulcer	1.27
17	Rosacea	1.13
18	Psoriasis	1.12
19	Pruritis	1.09
20	Atrophoderma	0.85
Total	Top 10 diagnoses	77.42
Total	Top 20 diagnoses	91.21

* Benign neoplasm and malignant neoplasm do not include melanoma. Melanoma only constituted 0.15% of all diagnoses.
NOS—not otherwise specified

*Awadalla et al, Dermatologic Disease in Family Medicine, Family Medicine, Vol 49, No 7, pp 507-511.

A system...







Write fast...

- Contact dermatitis
 - Rhus dermatitis
- Atopic dermatitis
 - Nummular eczema
- Dysydrotic eczema
 - Yeast/tinea
 - Chicken pox
 - Herpes
 - Scabies
 - Bug bites
 - Urticaria

Erythematous, well or poorly demarcated, lichenified, pruritic patch



*DermnetNZ.org





*DermnetNZ.org

Erythematous, pruritic papules, vesicles and macules
which are contiguous and in a linear pattern



*about.com



Source: Wolff K, Johnson RA: *Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology*, 6th Edition: <http://www.accessmedicine.com>
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Erythematous, pruritic,
well demarcated
lichenified patches "coin
like"



A

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Pruritic vesicles, occasionally
with desquamation, on the
hands, particularly palms
and soles



Erythematous, pruritic, well demarcated, confluent papules and macules with satellite lesions



*DermnetNZ.org



Erythematous, pruritic, well demarcated, confluent papules and macules with satellite lesions



Vesicle on an erythematous base, typically lesions are in varied states of healing



*Dermnet.com



Medscape © <http://www.medscape.com>



*DermnetNZ.org

Erythematous, pruritic papules
with excoriations and linear
erythematous lesions (burrows)



Erythematous pruritic papules





Erythematous, polymorphous,
pruritic papules and plaques
which change/come and go

Itchy

- Contact dermatitis
 - Rhus dermatitis
- Atopic dermatitis
 - Nummular eczema
- Dysydrotic eczema
 - Yeast/tinea
 - Chicken pox
 - Herpes
 - Scabies
 - Bug bites
 - Urticaria



*web MD



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Erythematous papules and vesicles in a dermatomal distribution.



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Painful

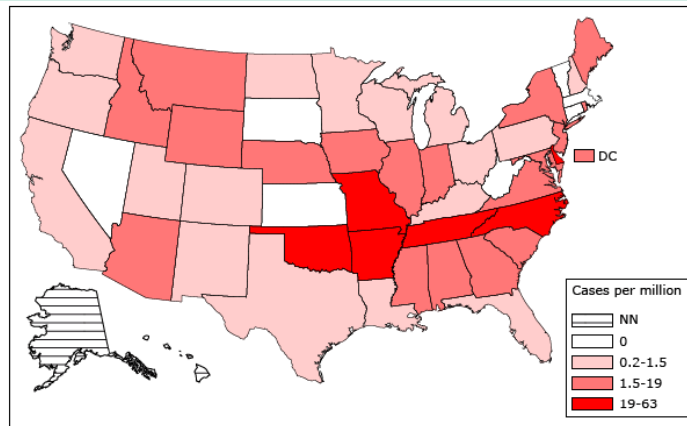
- Bacterial infection
- VZV
- Erythema nodosum
- Hydradenitis suppurativa





Source: Knoop KJ, Stack LB, Storrow AB: *Atlas of Emergency Medicine*, 2nd Edition: <http://www.accessemergencymedicine.com>
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Rocky Mountain spotted fever. Number of reported cases, by county - United States, 2010



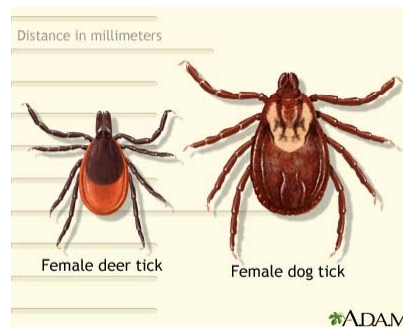
Although RMSF cases have been reported throughout most of the contiguous United States, five states (North Carolina, Oklahoma, Arkansas, Tennessee, and Missouri) account for over 60 percent of RMSF cases. The primary tick that transmits *R. rickettsii* in these states is the American dog tick (*Dermacentor variabilis* *Dermacentor andersoni*).

Reproduced from: *Rocky Mountain Spotted Fever (RMSF): Statistics and Epidemiology*. Centers for Disease Control and Prevention. <http://www.cdc.gov/rmsf/stats/> (Access on September 13, 2013).

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Shah K N et al. *Pediatrics* 2007;119:e1177-e1183

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Palms and soles

- RMFS (other infections like GC, meningococemia, TSS-toxin mediated, Coxsackie virus)
- Syphilis
- Erythema multiforme
- SJS-TEN
- Dyshydrotic eczema

When did it start?

- Over Spring break
- Soon after moving into a new apartment



Linear hyperpigmentation is seen on the thigh patient 1, who was exposed to lime spray while drinking Mexican beer on a cruise ship



Flugman, S. L. Arch Dermatol 2010;146:1194-1195.

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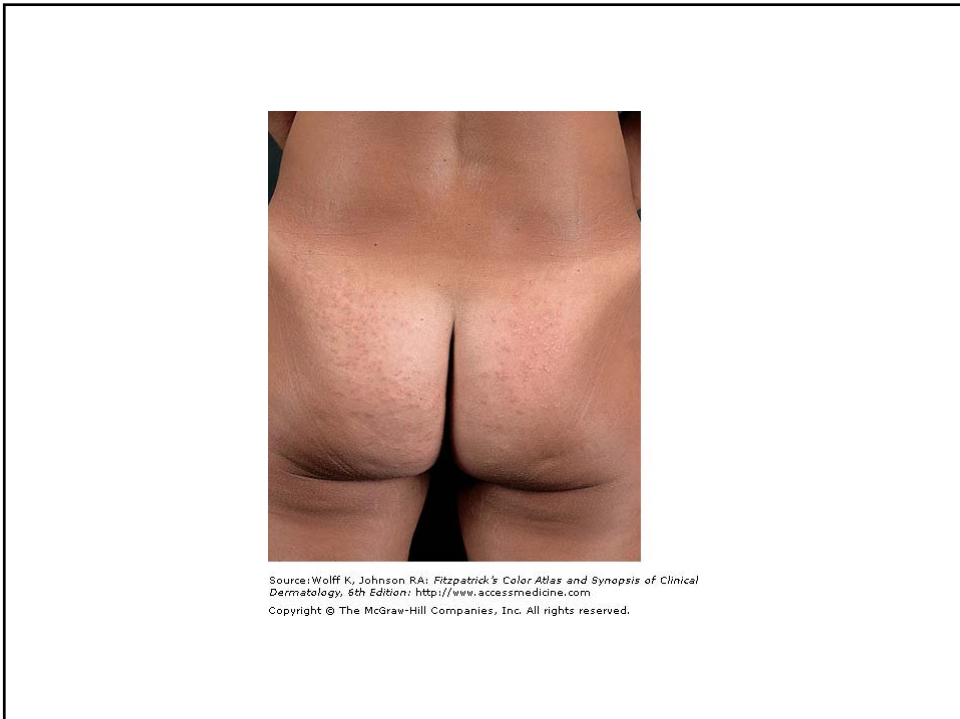
Hyperpigmentation in a linear splash pattern (A) and a finger swipe pattern (B) on the neck of patient 2, who was exposed to lime while drinking Mexican beer

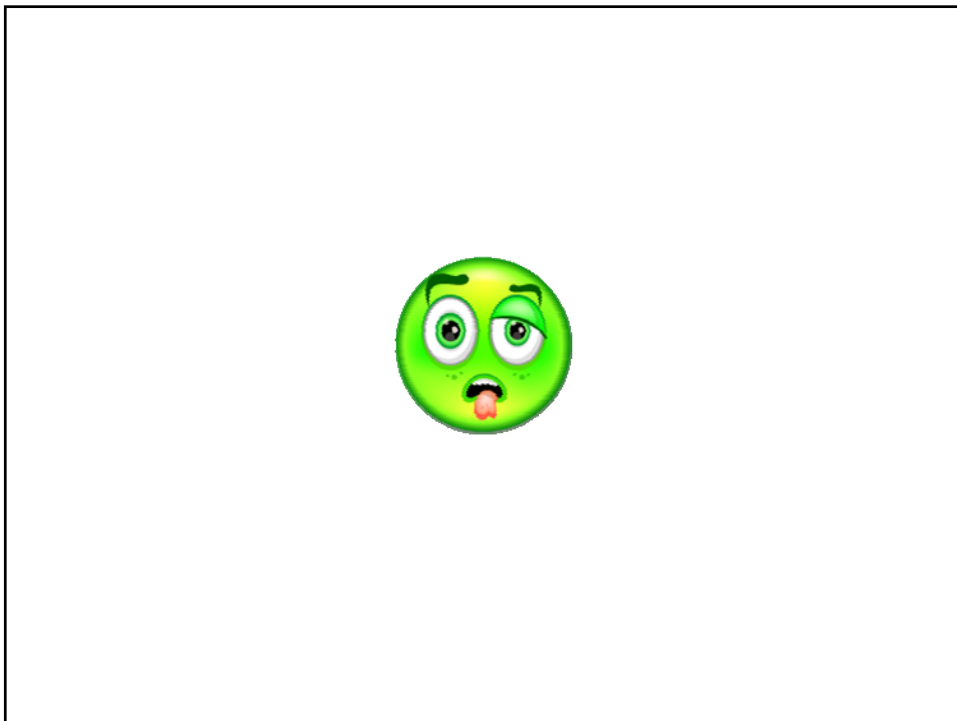


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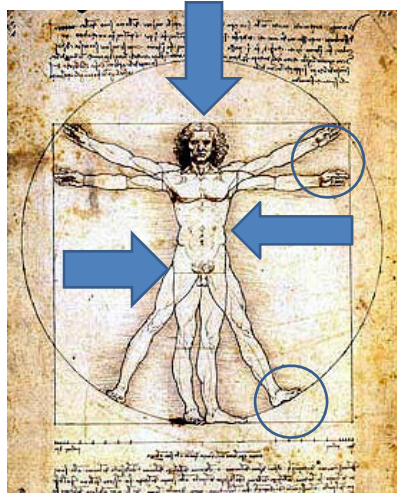




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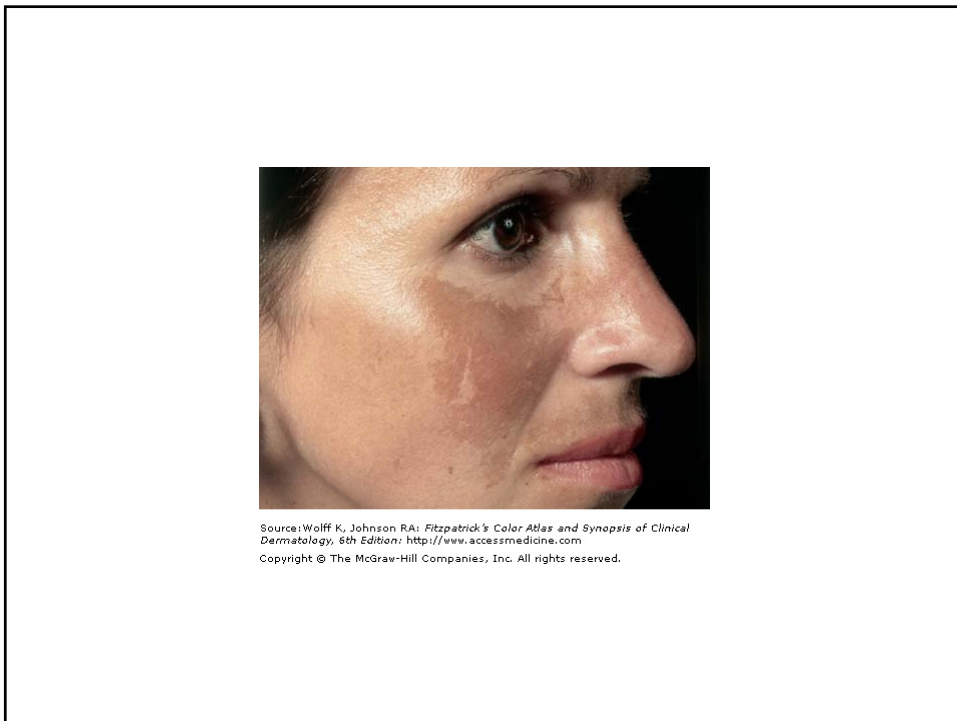


Where is it/what is the pattern?



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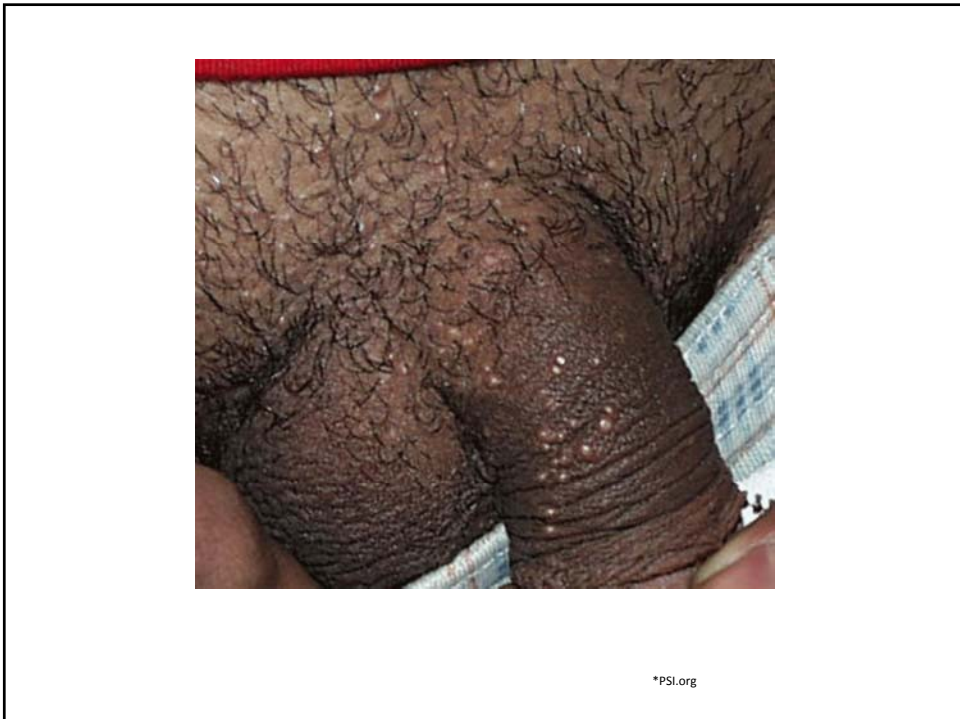


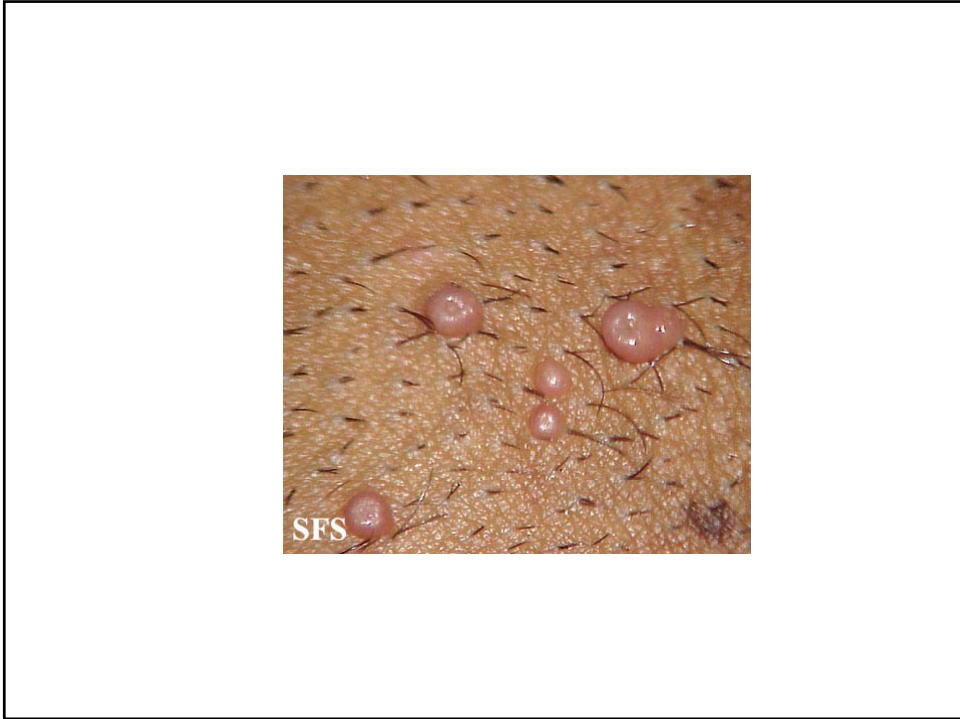




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