

Dermatology elective for yr. 5



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How to diagnosis and manage eczema and psoriasis.



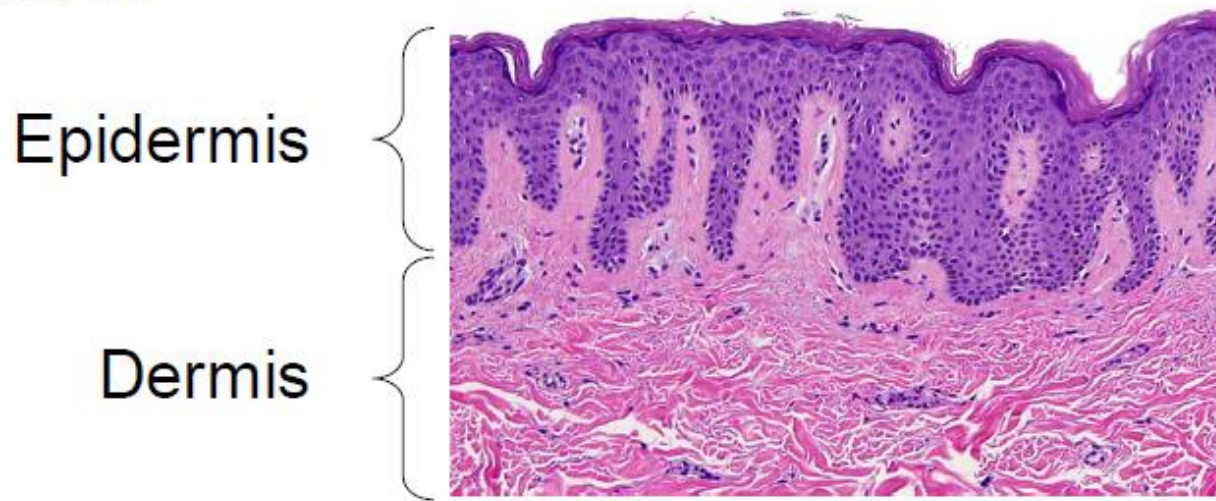
Objectives

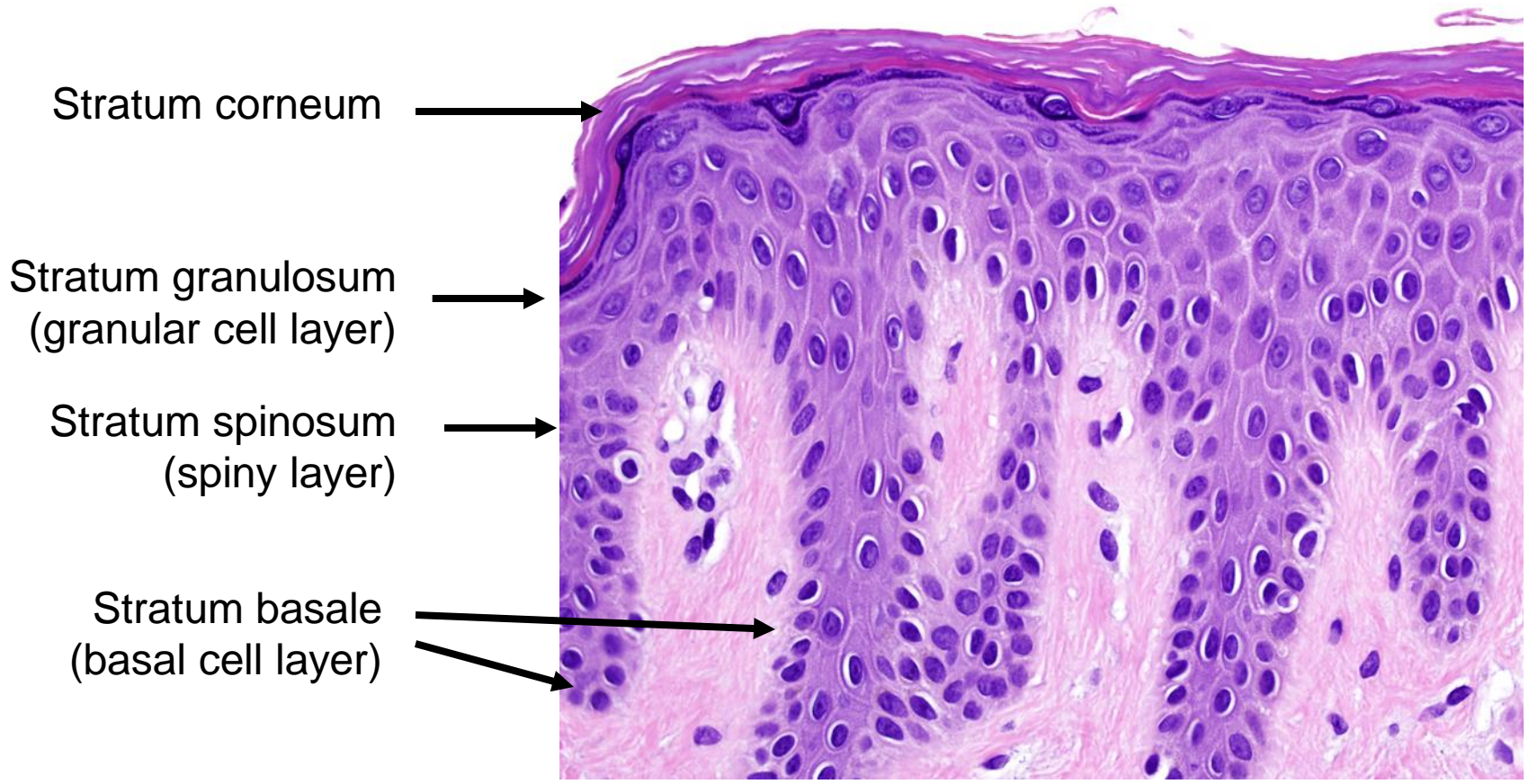
- Identify and describe the morphology of eczema and psoriasis
- Describe associated triggers or risk factors for eczema and psoriasis
- Describe the clinical features of psoriatic arthritis
- List the basic principles of treatment for eczema and psoriasis

Approach dermatologic disease
with an understanding of basic
skin structure and
microanatomy

Layers of the skin

- The epidermis is the topmost layer, and consists primarily of keratinocytes.
- The dermis lies below the epidermis, and consists primarily of fibroblasts, collagen, and elastic fibers.





Stratum corneum

Stratum granulosum
(granular cell layer)

Stratum spinosum
(spiny layer)

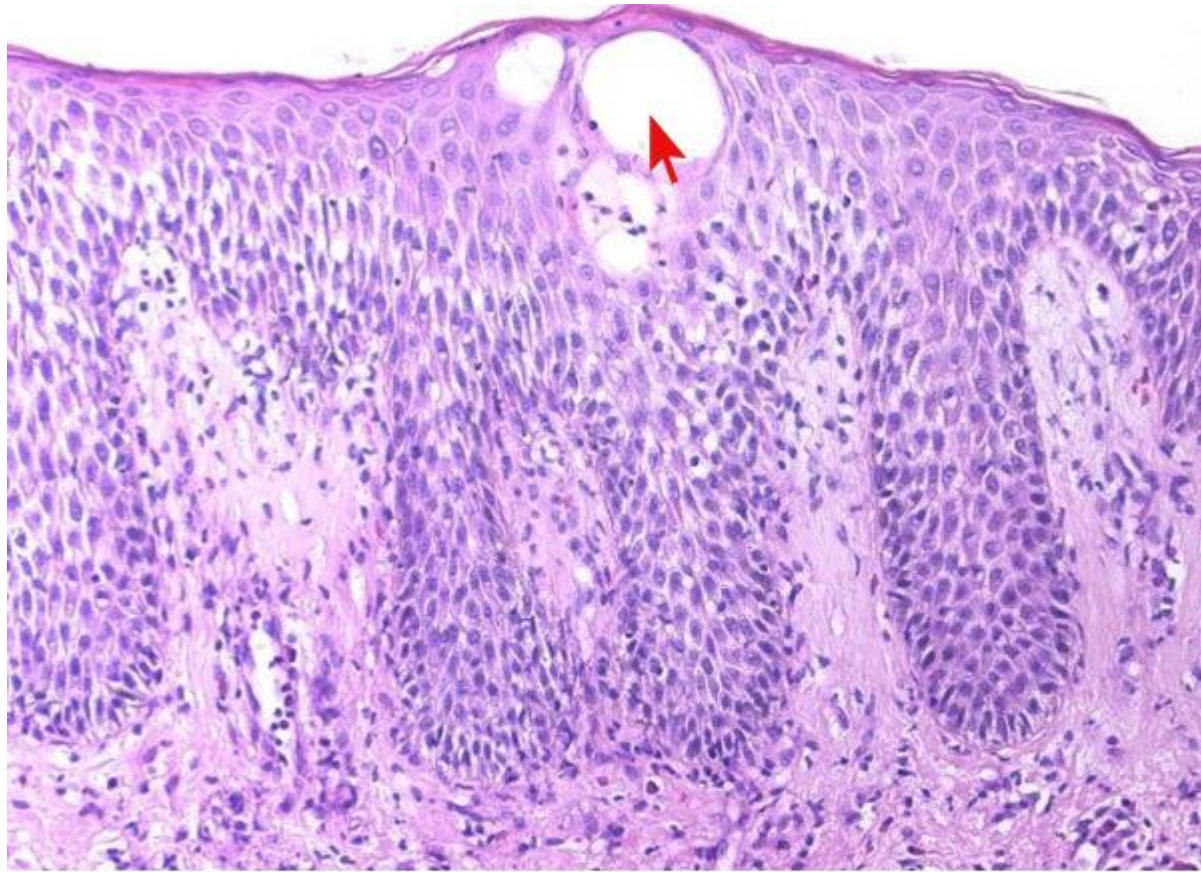
Stratum basale
(basal cell layer)

Scale/scale crust



Psoriasiform Lesions

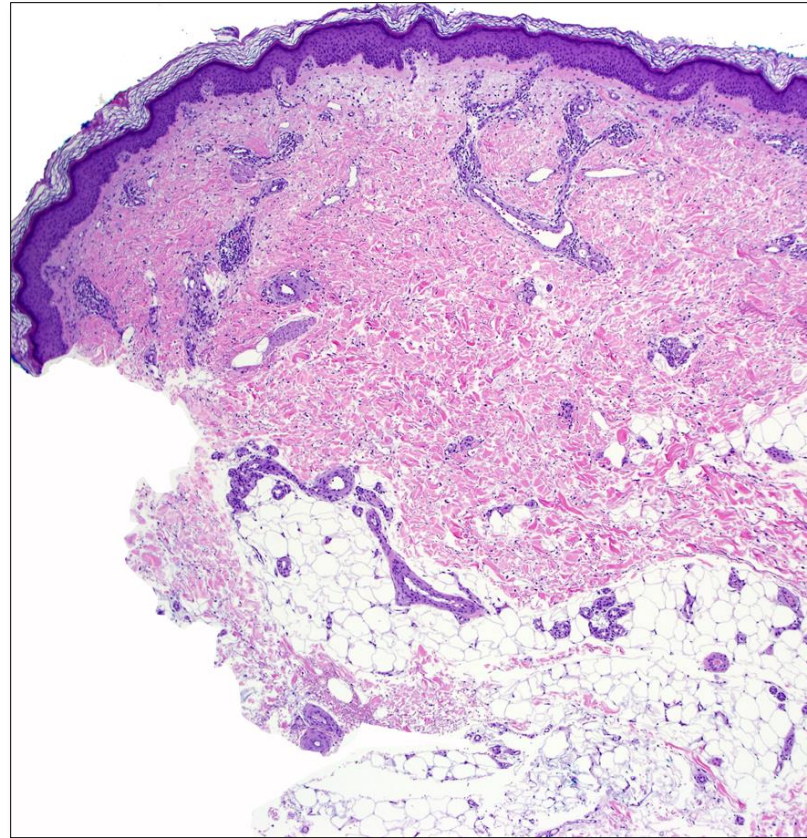




➤ Spongiotic vesicle

Eczema/dermatitis

Below the dermis lies fat, also called subcutis, panniculus, or hypodermis.



Epidermis

Dermis

Subcutis

Erythema nodosum

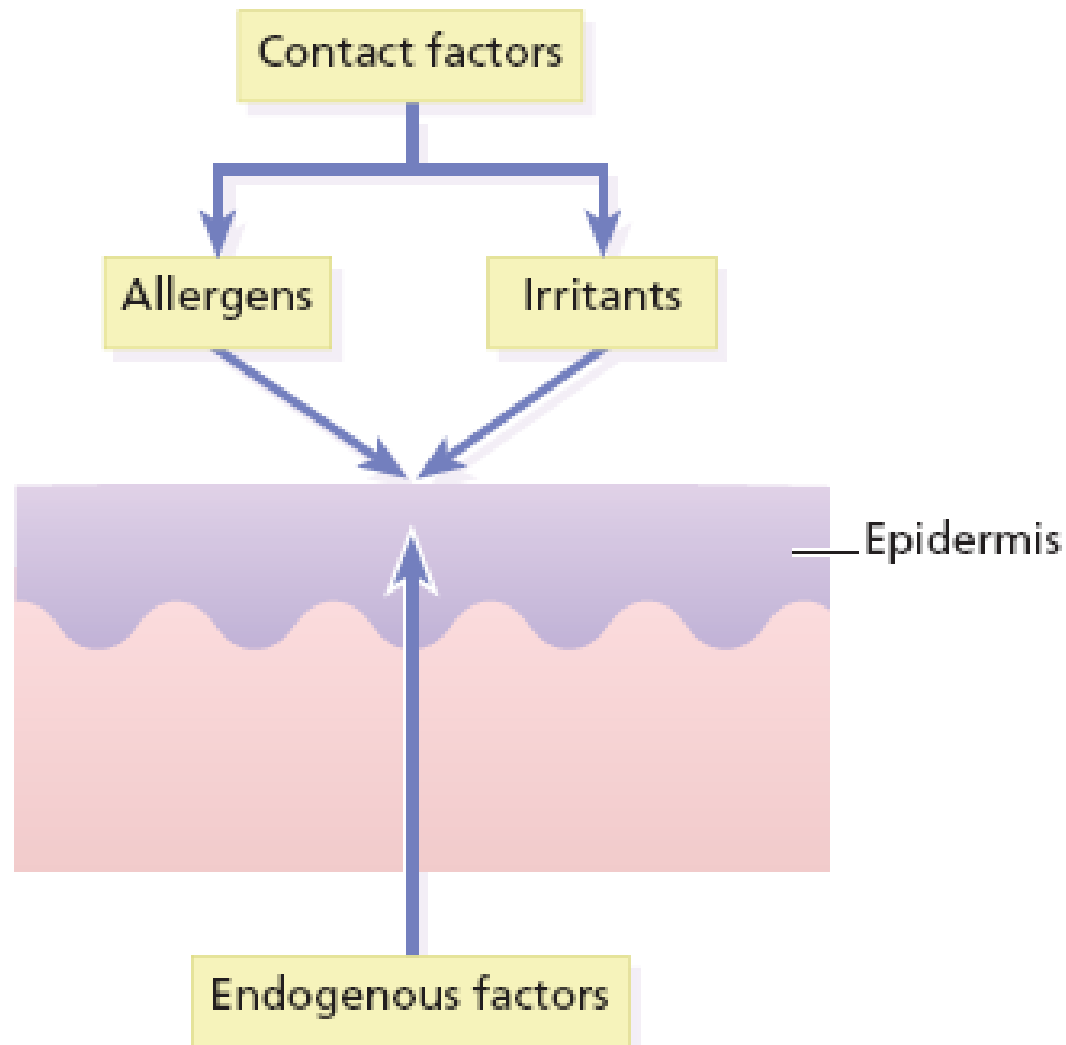


Eczema/ dermatitis

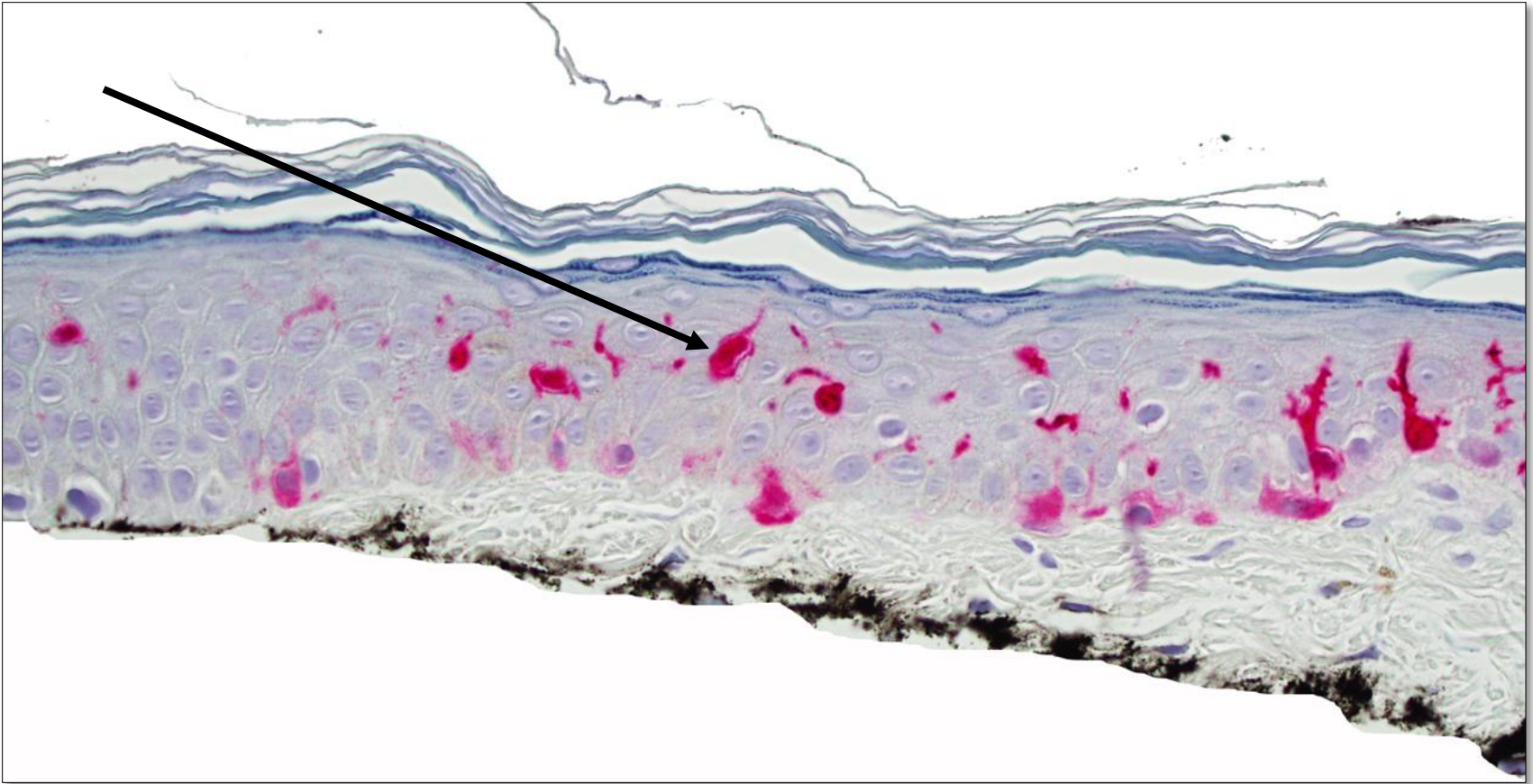
No.1 common skin problem

Most common symptom is pruritus

Eczema/dermatitis is a immunologic reaction of our skin to antigens



Langerhans Cells



important in the induction of delayed-type
hypersensitivity

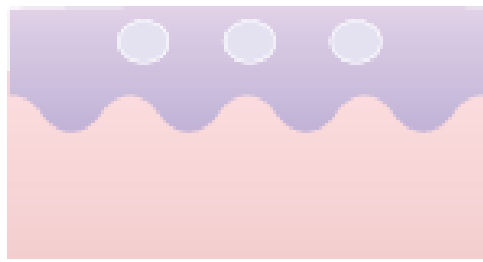
Classification of eczema

Exogenous

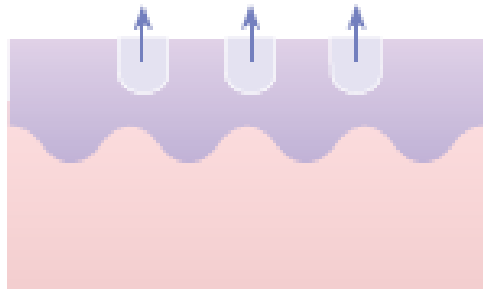
- Allergic
- Photo allergic dermatitis
- Irritant

Endogenous

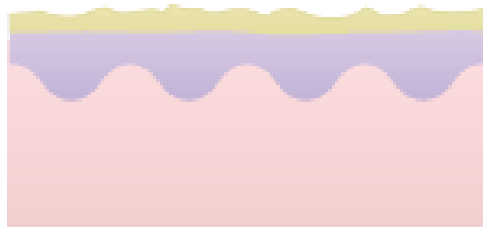
- Skin barrier defect



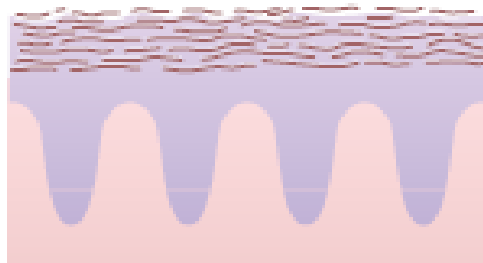
Vesication



Weeping



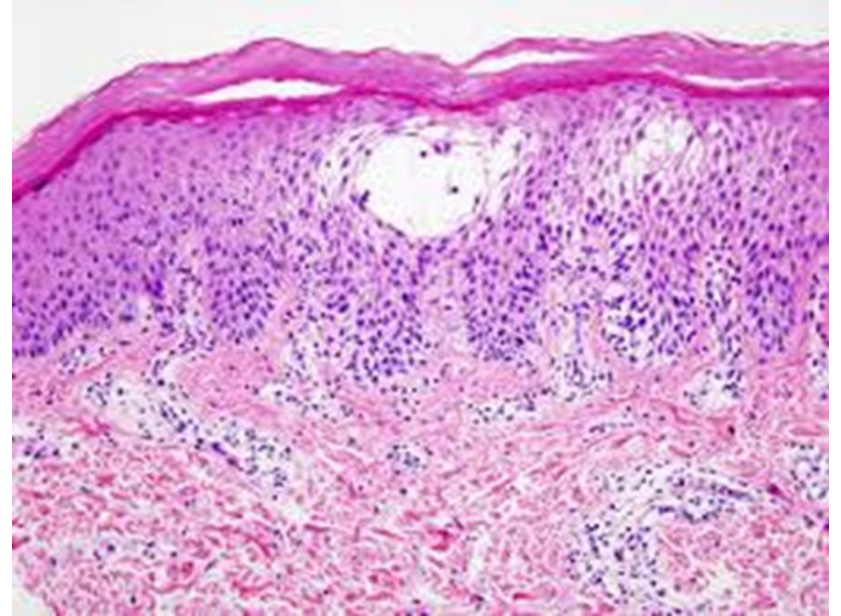
Crusting



Chronic lichenification

- sequence of histological events in eczema after contact with antigen.

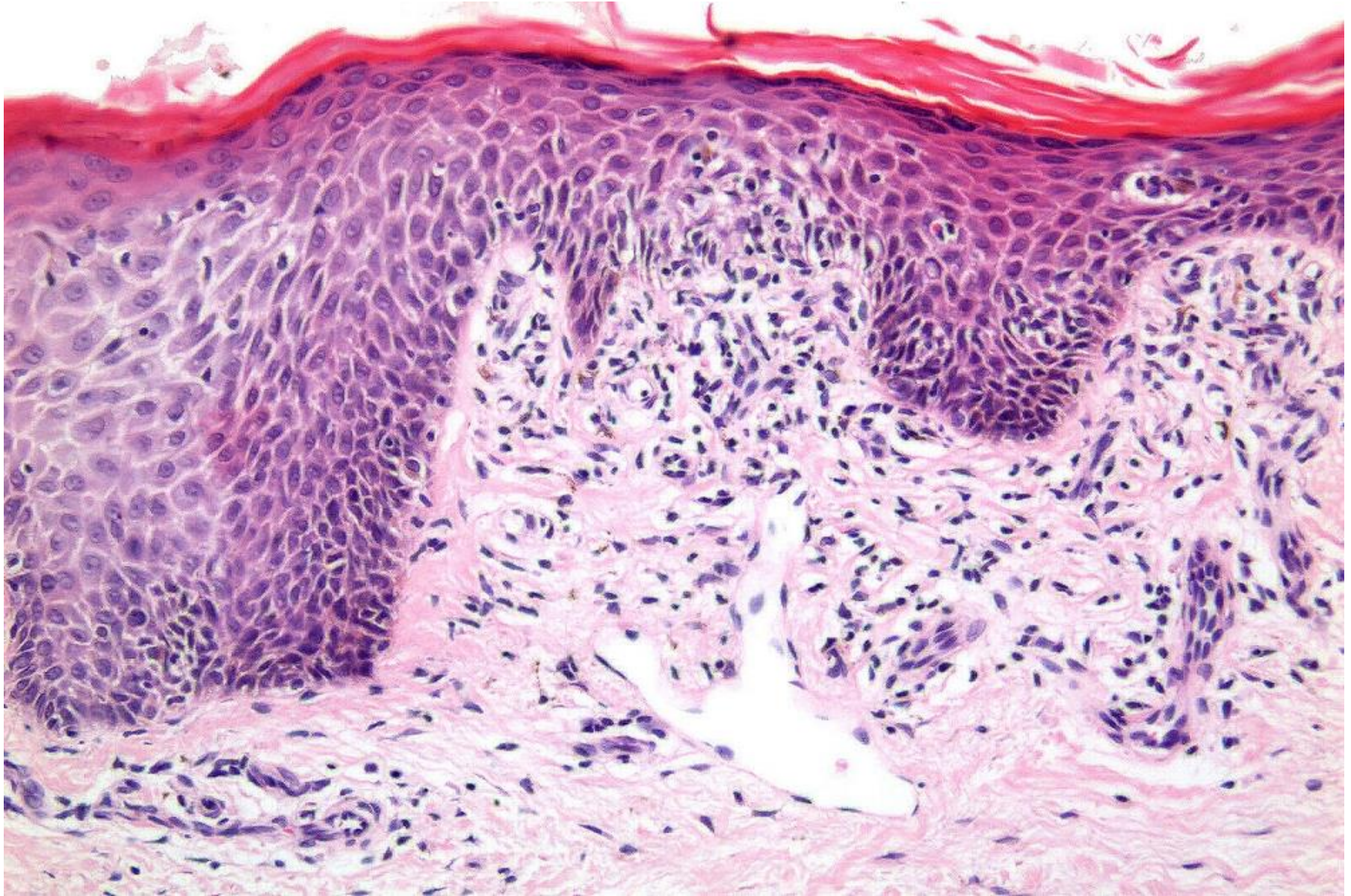
Eczema; acute, sub-acute stage



Subacute eczema



Subacute eczema histology



Eczema; chronic stage



Lichenification: lichen simplex chronicus

lichen simplex chronicus histology



Classification of *Exogenous* eczema

- **Allergic contact dermatitis**
- Photo allergic dermatitis
- Irritant

Exogenous eczema

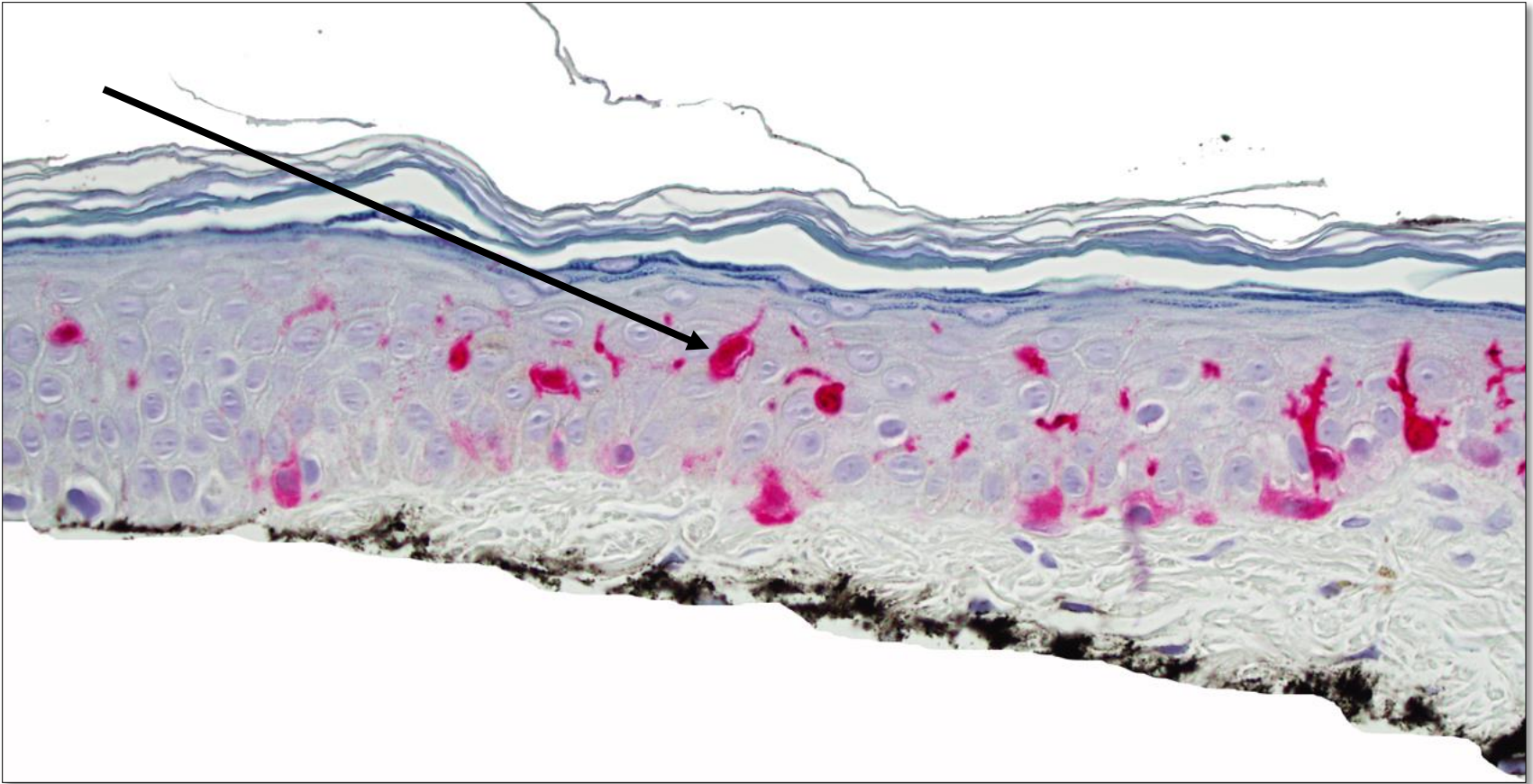
Allergic ; nickle, rubber



Photo-dermatitis



Langerhans Cells



important in the induction of delayed-type
hypersensitivity

Classification of *Exogenous* eczema

- Allergic contact dermatitis (Photo)
- Irritant contact dermatitis;
acute/chronic

Acute Irritant contact dermatitis; Paederus dermatitis

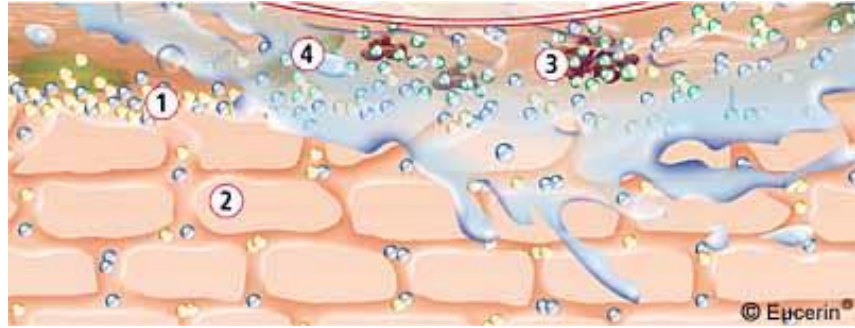


kissing lesion



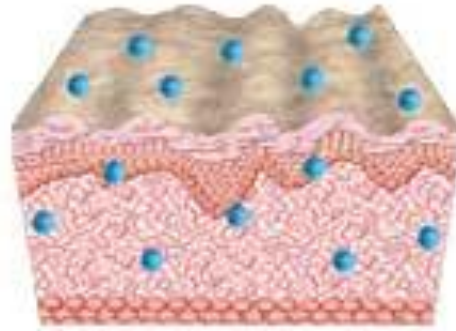
Paederus fuscipes

Chronic irritant; Hands eczema

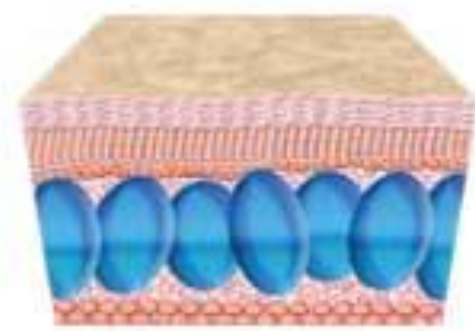


Skin hydration

- Water is absolutely essential for the normal functioning of the skin and especially its outer layer, the **stratum corneum (SC)**.
- Healthy tissue containing $>10\%$ water



[fig.1]



[fig.2]

The retention of water in the SC

1. Natural Moisturizing Factor, NMF
2. Intercellular lipids
3. Sebum lipids from sebaceous gland

Classification of endogenous eczema

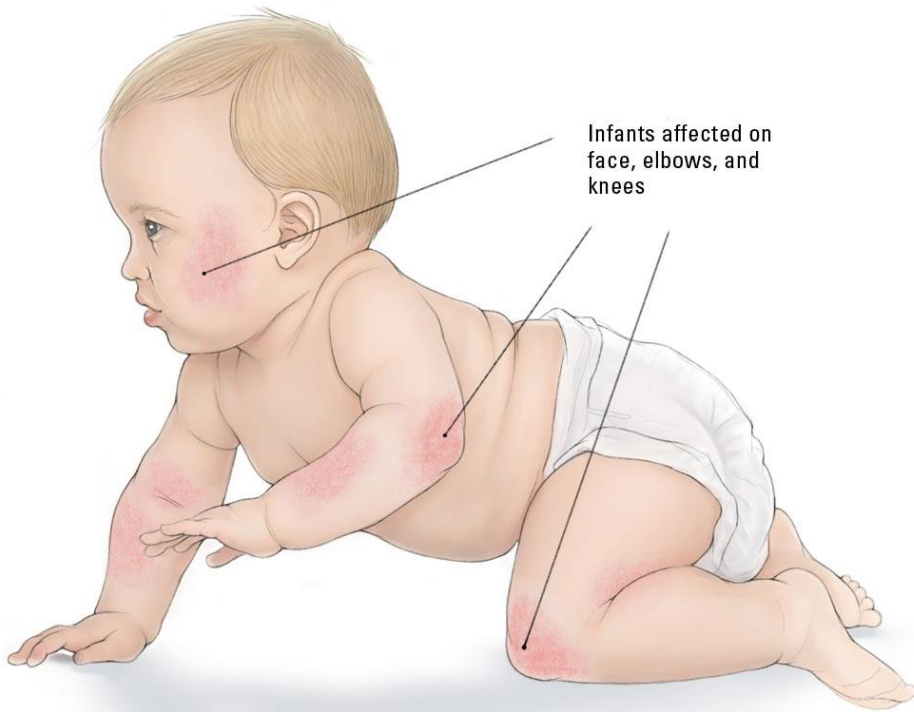
- Atopic dermatitis
10-15% of children 6-15 yrs.
- Nummular eczema
- Xerotic eczema
- Dyshidrotic eczema
- Seborrheic dermatitis

Endogenous eczema

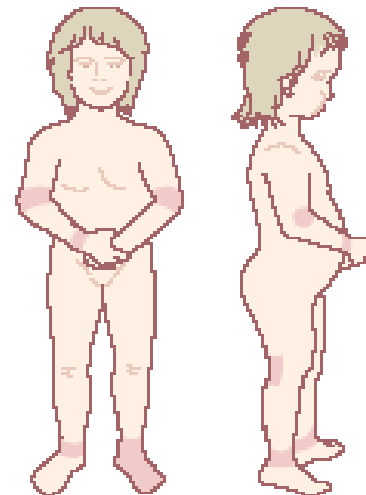
Atopic dermatitis: barrier dysfunction



Atopic Dermatitis



Infants affected on
face, elbows, and
knees

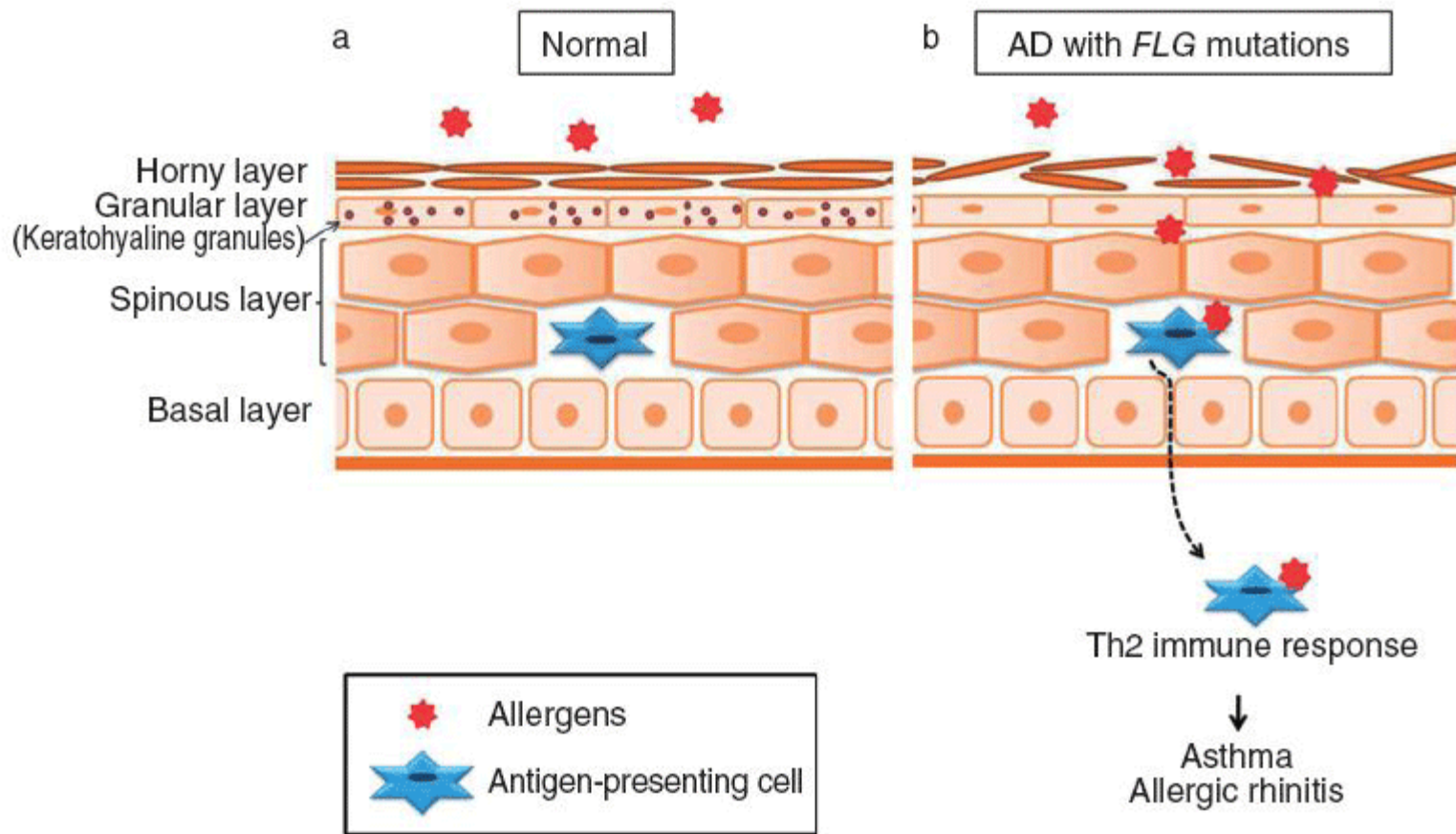


Lesions settling
into elbow and
knee flexures.
Also on wrists
and ankles

Flexor, lichenification, excoriation



Barrier dysfunction



Filaggrin gene (*FLG*) mutation



Dyshidrosis

Nummular eczema



Acquire Xerosis /Ichthyosiform



- Regular polygonal plates arranged in parallel rows or diamond patterns (fish-like)
- Genetic
- Environment
- Aging
- Chemical induced

xerotic eczema

x
e
r
o
t
i
c

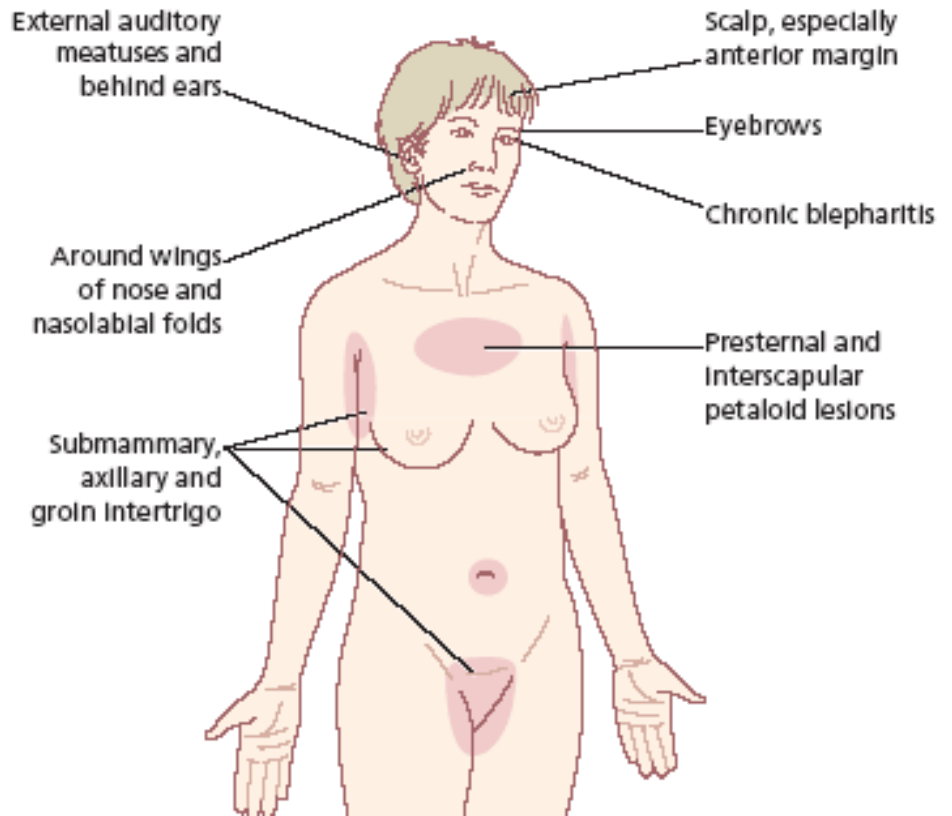
e
c
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e
m
a



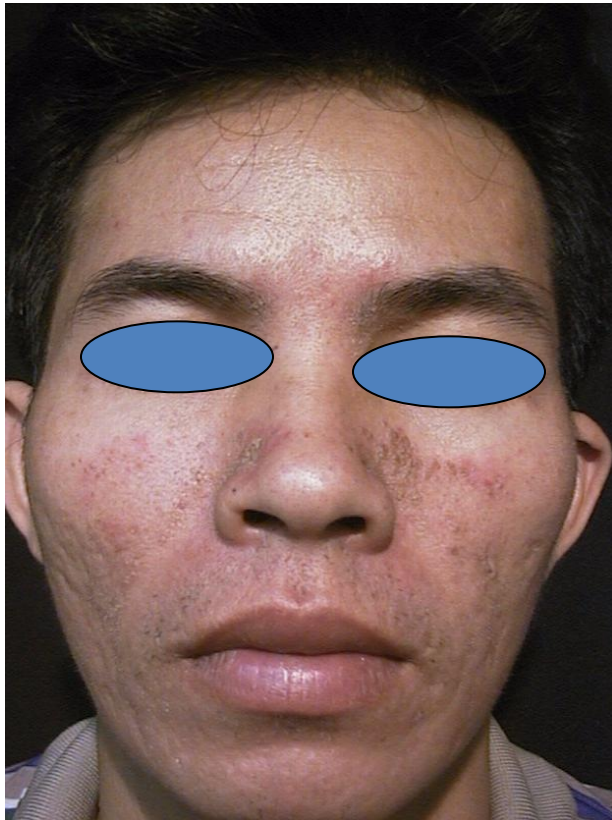


Seborrhoeic eczema

- eczema, mainly affecting hairy areas, and often showing characteristic greasy yellowish scales.



Seborrhoeic dermatitis





Eczema/dermatitis

- Exogenous
- Allergic
- Irritant
- Endogenous
- Atopic
- Xerotic
- Seborrheic
- Dyshidrosis
- Nummular

How to make diagnosis?

Hx: contact from work or life style

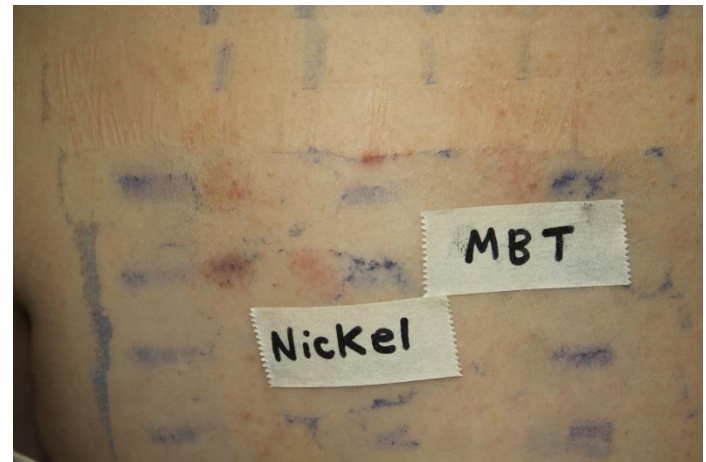
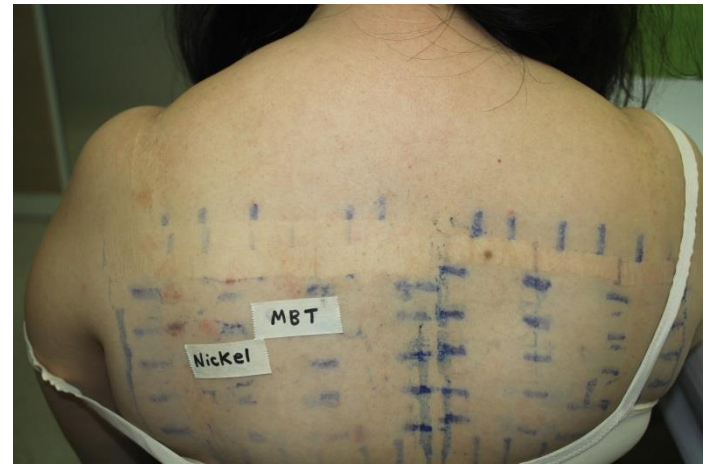
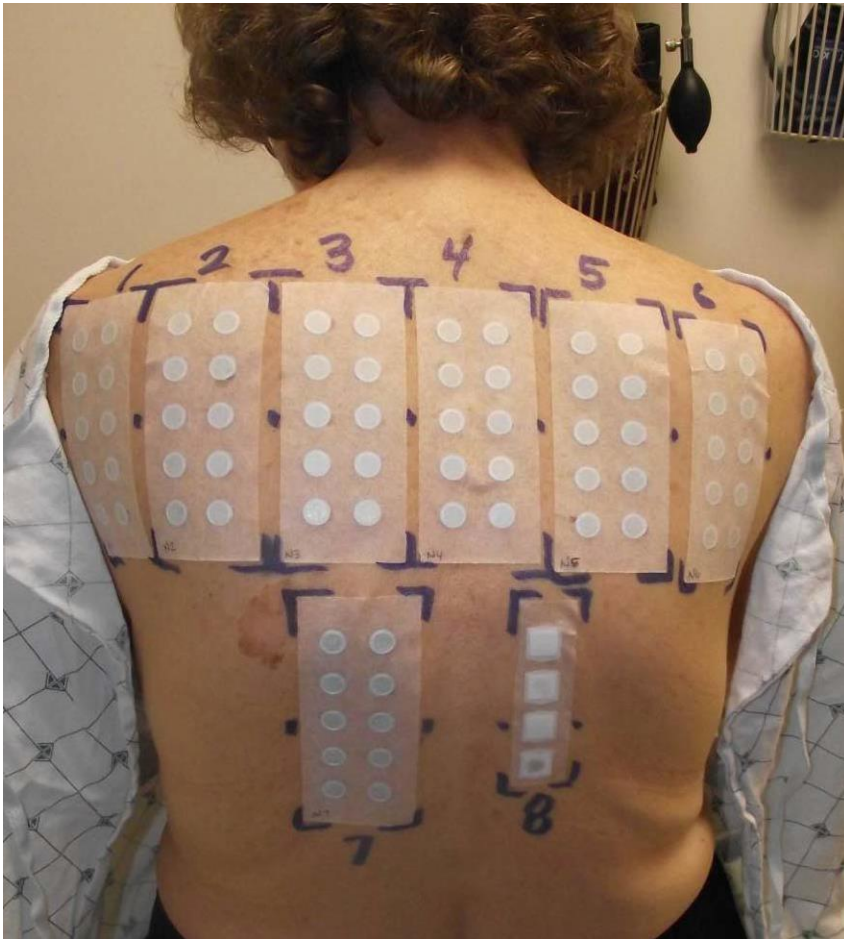
Family Hx

PE: characteristic of lesions

Investigation

- KOH preparation to exclude fungal infection
- Patch test to identified antigen
- Serum Ig E for aero or food antigen

Patch test



Patch test / Photo patch test



Rx; Exo/endogenous eczema

- Avoidance
- *Skin hydration*

The retention of water in the SC

- 1. Natural Moisturizing Factor, NMF
- 2. Intercellular lipids;
- 3. Sebum lipids from sebaceous gland

Chemical composition of NMF in corneocytes

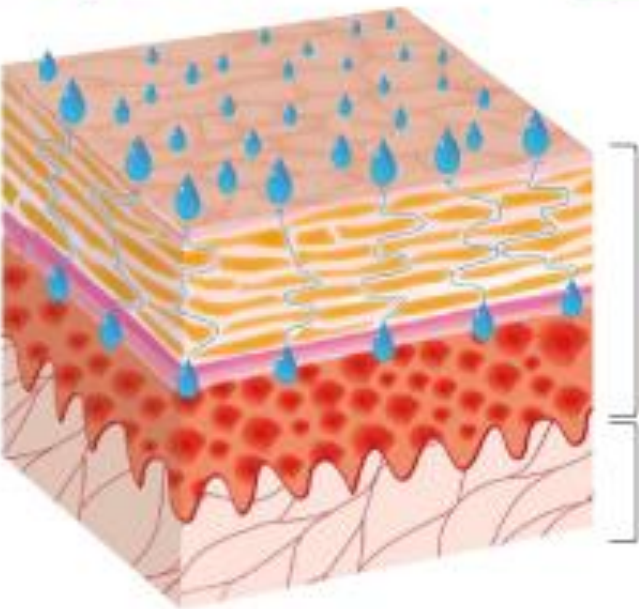
- Chemical Composition (%)
- Free amino acids 40
- Pyrrolidone carboxylic acid 12
- Lactate 12
- Sugars 8.5
- Urea 7

How to choose emollient and cleanser?

- cleanser pH=4.8, liquid VS. bar
- emollient Lotion, *cream*, ointment, oil
- Ingredients Urea, Ceramide, Anti-inflammation

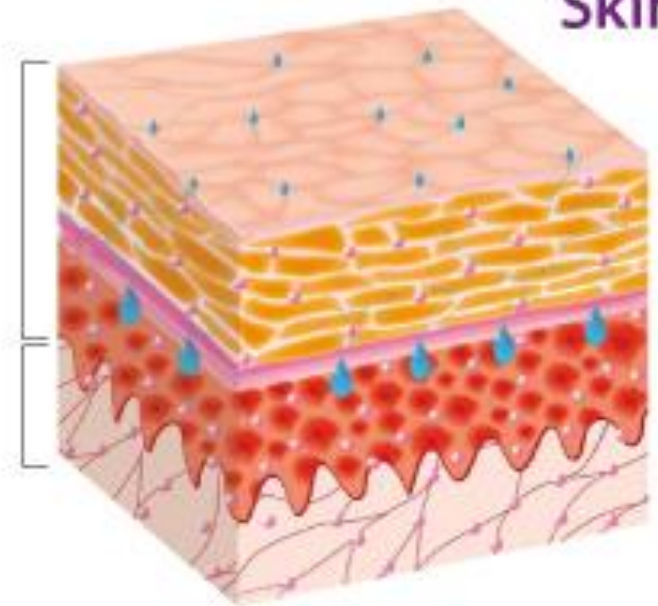
Species of mammal	Average skin pH
Man	4.8
Guinea-pig	5.5
Pig	6.3
Horse	6.3
Cat	6.4
Rat	6.5
Dog	7.4
Goat	8.1

Dry Skin



Hydration Skin Diagram

Hydrated Skin

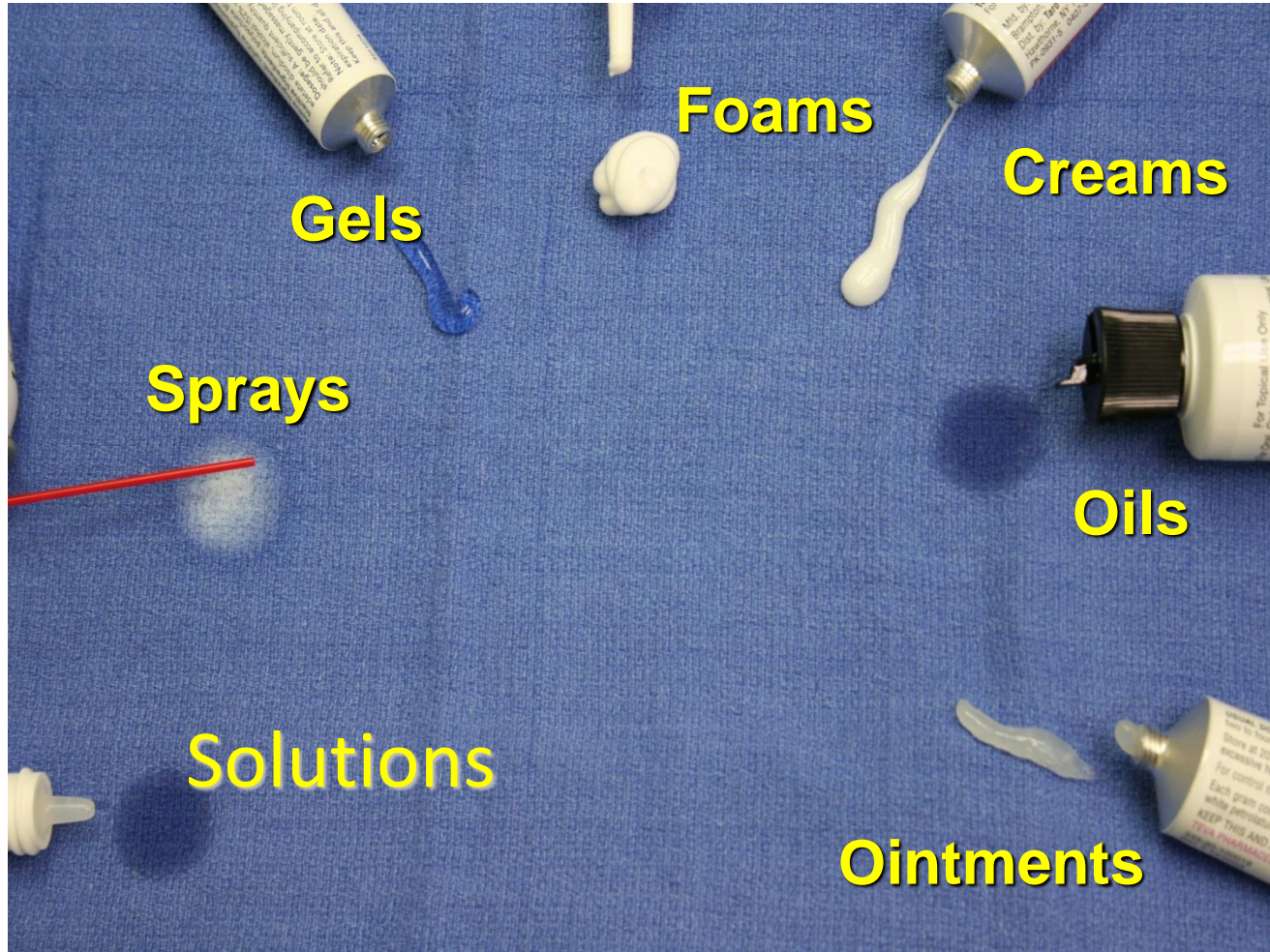


Epidermis

Dermis

 Ceramides & Glucosylceramides Intercellular cement which ensure cell cohesion
  Corneocytes
  Keratinocytes
  Water evaporation
  Blood vessels

Vehicles



Rx; Exo/endogenous eczema

- Avoidance
- *Skin hydration*
- Topical corticosteroid; eczema steroid sensitive
- Anti histamine 1st- 2nd

Topical Steroid Strength

Potency	Class	Example Agent
Super high	I	Clobetasol propionate 0.05%
High	II	Fluocinonide 0.05%
Medium	III – V	Triamcinolone acetonide ointment 0.1% Triamcinolone acetonide cream 0.1% Triamcinolone acetonide lotion 0.1%
Low	VI – VII	Fluocinolone acetonide 0.01% Desonide 0.05% Hydrocortisone 1%

Superimpose infection



Rx of mild eczema

- Identified cause
- Antigen avoidance
- Skin hydration
- Topical corticosteroid

- Appropriate antimicrobial Rx;
topical/oral/combination

Psoriasis



**MAHIDOL
UNIVERSITY**
Wisdom of the Land



Psoriasiform Lesions



Psoriasis: The Basics

- Psoriasis is a chronic multisystem disease with predominantly skin and joint manifestations.
- Affects approximately 2% of the U.S. population.
- Thailand has less prevalence, <1%
- Age of onset; 20-30 and 50-60
- About 30% of patients with psoriasis have a first-degree relative with the disease.
- Waxes and wanes during a patient's lifetime, is often modified by treatment initiation and cessation and has few spontaneous remissions.



- Most common location of psoriasis; scalp



- Plaque type



Scalp psoriasis, most common location



Plaque type = 80% of cases



Guttate ; young adult



- presents with drop lesions, 1-10mm salmon-pink papules with a fine scale
- Post strep sore throat

Acute form; Erythrodermic



- generalized erythema covering nearly the entire body surface area with varying degrees of scaling
- Associated with fever, chills, and malaise, hospitalization is sometimes required

Acute form pustular psoriasis

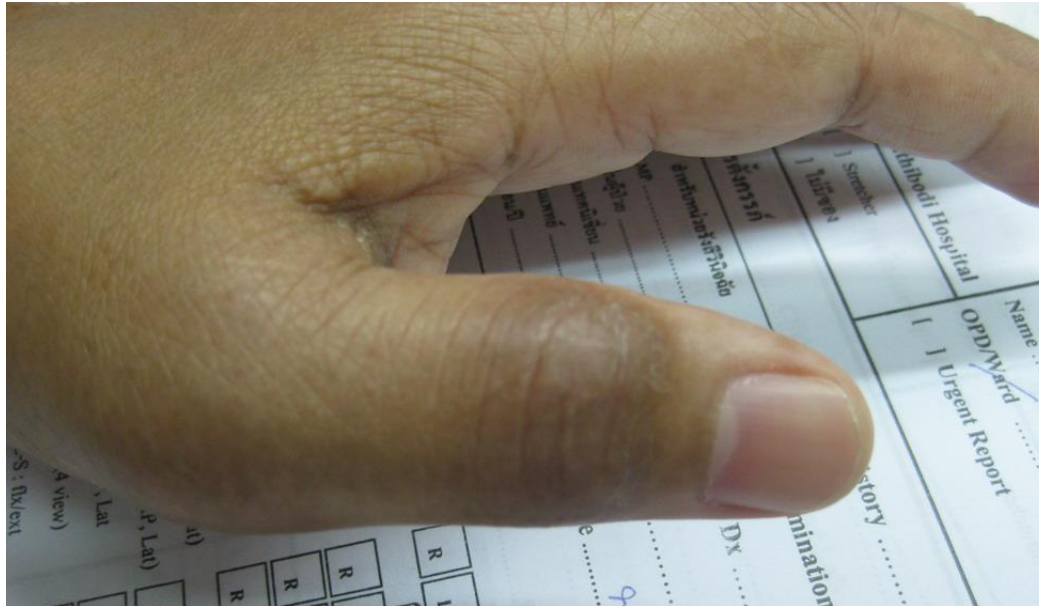
- Characterized by psoriatic lesions with pustules.
- Often triggered by corticosteroid withdrawal and contact irritation.
- When generalized, pustular psoriasis can be life-threatening.



Inverse psoriasis

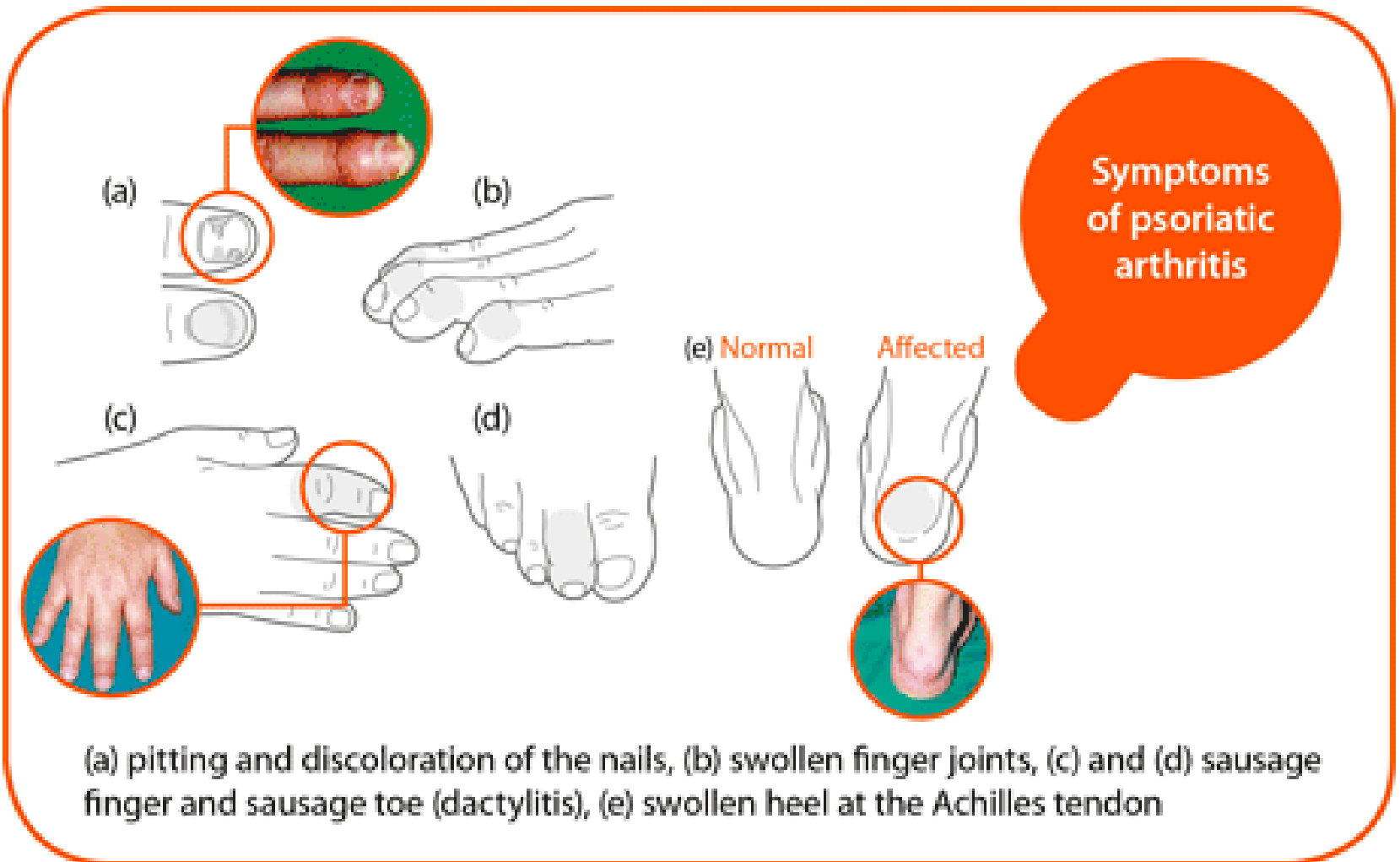


Psoriatic arthritis (PSA) dactylitis



PSA

DDx: OA ,Rheumatoid arthritis



Psoriasis: Pathogenesis

- Psoriasis is a hyperproliferative state resulting in thick skin and excess scale.
- Skin proliferation is caused by cytokines released by immune cells.
- Important cytokine is **TNF alpha**.

Psoriasis

- Is not only Skin diseases,
- Systemic diseases;
 - Psoriatic Arthritis (PSA)
 - Metabolic syndrome , CVD , Death

Treatment for mild psoriasis

PASI/BSA <3

- Emollient can improve psoriasis =20%
- Topical medication

- PASI= Psoriasis Area and Severity Index

- Topical psoriasis Rx; emollient

Steroid



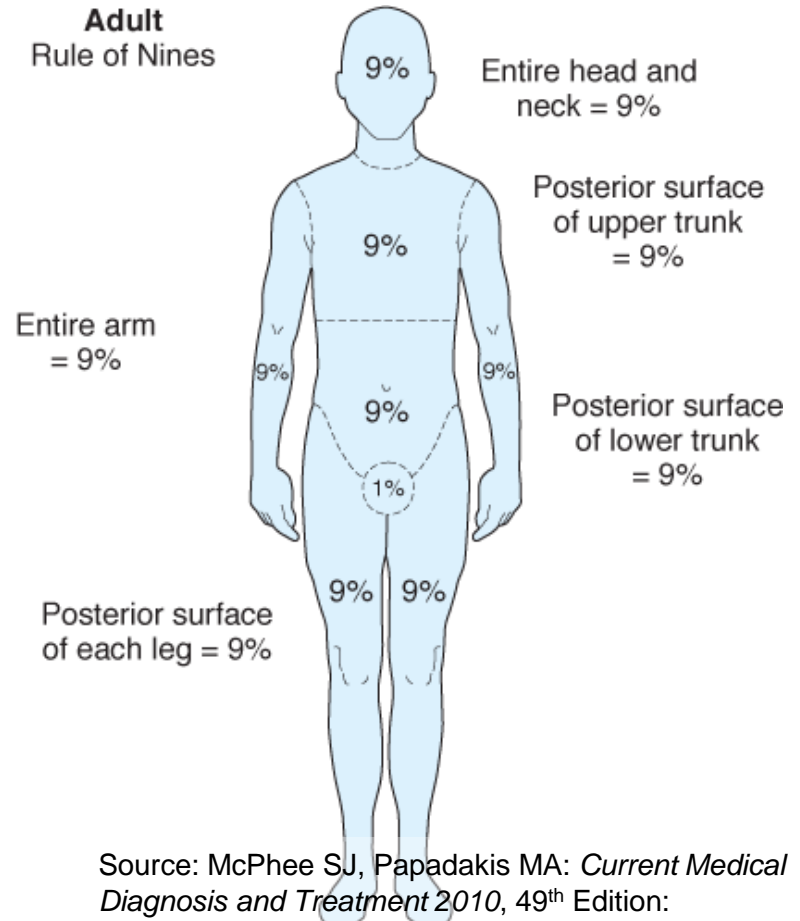
Tar



Vitamin D

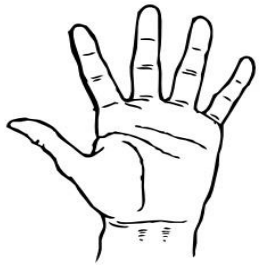
Estimating BSA: Rule of Nines

- The “rule of nines” is a good, quick way of estimating the affected BSA
- Often used when assessing burns
- The body is divided into areas of 9%
- Less accurate in children

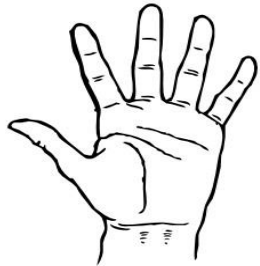


Source: McPhee SJ, Papadakis MA: *Current Medical Diagnosis and Treatment 2010*, 49th Edition: <http://www.accessmedicine.com>. Copyright © The McGraw-Hill Companies, Inc.

2 palms 2 times a day = 30 grams / mo



1 Palm = 1% BSA



1 Palm = 1% BSA

2 palms = 2% BSA
2 palms 2 times per day
= 1 gram per day

FTU = 0.5 G
Covers 2 % BSA
Covers 2 palms



**SO...GIVE 30 GRAMS
FOR EVERY 2 PALMS
OF AREA TO COVER
(FOR 1 MONTH Rx)**

Treatment for psoriasis >3% BSA

- Emollient
- Topical medication
- Systemic Rx
 - Methotrexate
 - Cyclosporin A
 - Acitretin
- Phototherapy



conclusion

- Psoriasis is a chronic dermatology problem and more than skin deep; PSA and metabolic syndrome
- Patients and their family education is very important.
- Healthy life style should be encourage.

Extra reading

The screenshot shows the homepage of the American Academy of Dermatology (AAD). The browser address bar displays www.aad.org. The website features a blue header with navigation links: About AAD, Contact us, Donate now, AAD store, and Employment. Social media icons for Facebook, Twitter, and YouTube are also present. A search bar is located in the top right corner.

The main content area includes the AAD logo (founded 1938) and the tagline "Excellence in Dermatology™". Navigation buttons for "Sign in" and "Become a member" are visible. Three primary content categories are highlighted:

- For dermatologists:** Member tools and benefits, Meetings and events, Education and quality care.
- For the public:** SPOT Skin Cancer, Skin conditions.
- For the media:** Media resources, Stories and news.

A featured section titled "Reporting on skin, hair, or nail health? Get dermatology stats and facts at your fingertips." includes a "Learn more" link and a keyboard image. Below this are three tabs: "Annual Meeting", "SPOT Skin Cancer", and "Stats and facts" (which is currently selected).

To the right, a "Find a Dermatologist" search form includes fields for ZIP code and Radius (set to 5 miles), a "Search" button, and a link to "Advanced search". Below the search form is a "Dermatology A to Z" alphabetical index: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z.

The footer section includes "News and features" with a link to "2013 Academy election call for nominations" and a "Read the latest issue of JAAD" button with the JAAD logo.

The Windows taskbar at the bottom shows the system clock at 11:34 on 2/12/2555 (Buddhist Era).



Ramalaser.mahidol.ac.th