



Assessing Skin, Hair and Nails

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Introduction

Structure and Function

- ▶ The integumentary system consists of the skin, hair, and nails, which are external structures that serve a variety of specialized functions. The sebaceous and sweat glands originating within the skin also have many vital functions.
- ▶ The Integumentary system considered the first line of defense against the external environmental hazard. It is the mirror of the body health.

Skin

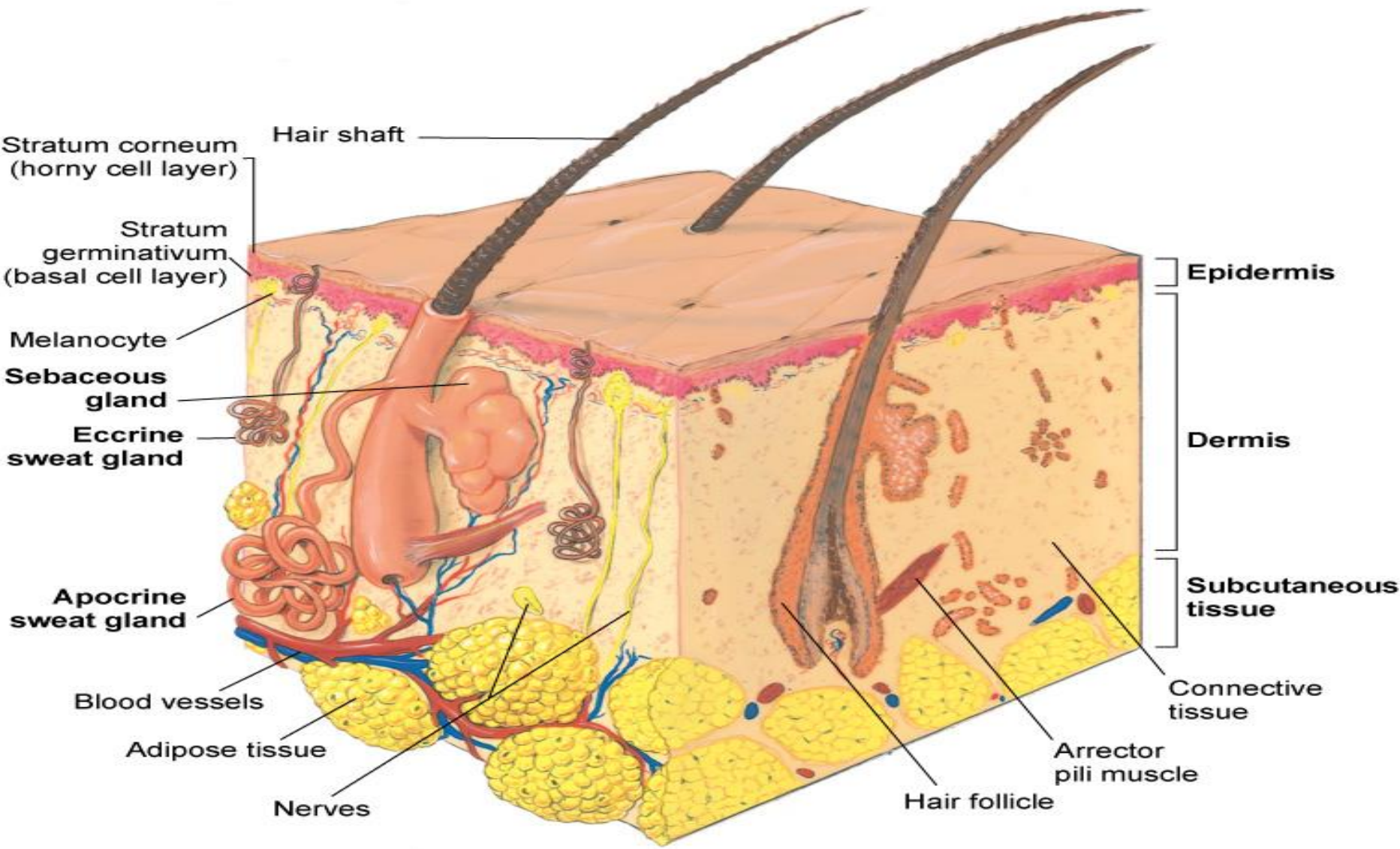


- The skin is the largest organ of the body. It is a physical barrier that protects the underlying tissues and organs from microorganisms, physical trauma, ultraviolet radiation, and dehydration.
- It weighing approximately 15 percent of total body weight.
- It composed of three basic layers (Epidermis, dermis, subcutaneous tissues).

Skin three layers

- ▶ Epidermis
 - ▶ Stratum germinativum or basal cell layer
 - ▶ Stratum corneum or horny cell layer
 - ▶ Derivation of skin color
- ▶ Dermis
 - ▶ Connective tissue or collagen
 - ▶ Elastic tissue
- ▶ Subcutaneous layer

Structure of Skin

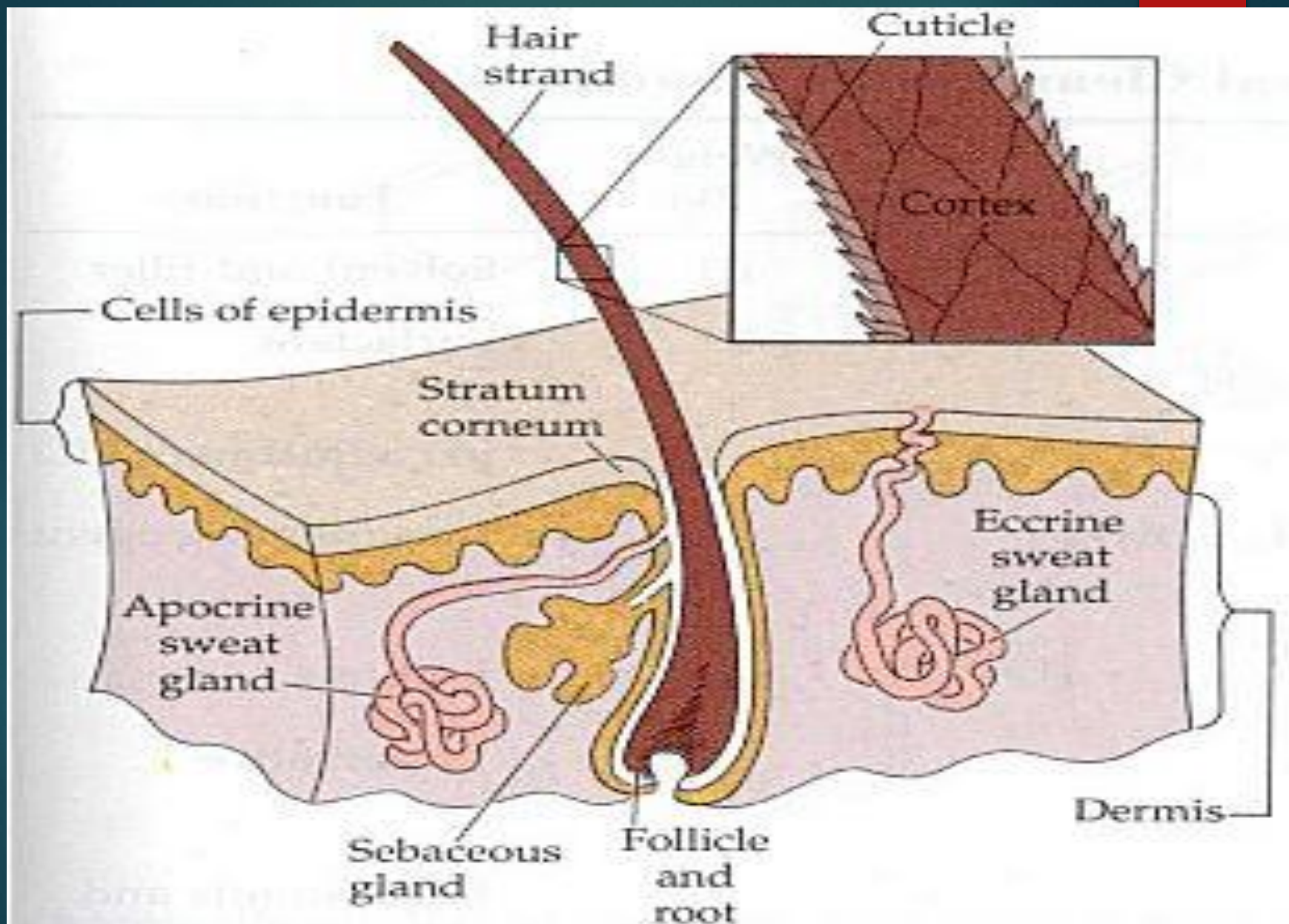


Function of the Skin

- ▶ Protection
 - ▶ Minimizes injury
- ▶ Prevents penetration
 - ▶ Barrier stops invasion of microorganisms
 - ▶ Prevents loss of water and electrolytes
- ▶ Perception
 - ▶ Sensory organ for touch, pain, temperature and pressure
- ▶ Temperature regulation
 - ▶ Dissipation of heat through the sweat glands
- ▶ Identification
- ▶ Wound repair
- ▶ Absorption and excretion
- ▶ Production of vitamin D

Epidermal appendages

- ▶ Hair
- ▶ Sebaceous glands
- ▶ Sweat gland
 - ▶ Eccrine gland
 - ▶ Apocrine glands
- ▶ Nails



Focus of Health Assessment

- Skin: color and pigmentation, moisture, temperature, texture and thickness, turgor and mobility, hygiene, lesions
- Hair: color and pigmentation, quantity, texture, distribution, hygiene
- Nails: shape and configuration, color, lesions

Subjective Data

- ▶ Previous history of skin disease (allergies, rashes, psoriasis الصدفية, or eczema)
- ▶ Change in mole
- ▶ Change in pigmentation (size or color)
- ▶ Excessive dryness or moisture
- ▶ Pruritus (itching)
- ▶ Excessive bruising
- ▶ lesion
- ▶ Medications
- ▶ Hair loss
- ▶ Change in nails
- ▶ Environmental or occupational hazards
- ▶ Self-care behaviors

Objective Data—The Physical Exam

- ▶ Preparation
 - ▶ Control variables that influence skin color
- ▶ Equipment needed
 - ▶ Strong direct lighting
 - ▶ Metric ruler for measuring skin lesions
 - ▶ Penlight
 - ▶ Clean gloves when assessing lesions
 - ▶ Magnifying glass
 - ▶ Materials for laboratory tests

General Principles of Physical Examination of the Skin, Hair, and Nails

- Physical examination Technique:
 - Inspection and palpation and elicit subjective data
- Uncover wounds
- Ensure adequate lighting
- Comprehensive skin and hair exam “head-to-toe” involving bony prominences, contact points (something that creates friction), skin folds, etc
- Make comparisons of both sides of the body

Physical Examination of the Skin: Procedure

1. Inspect the skin to evaluate color and pigmentation
 - Normal findings:
 - ▶ lighter-pigmented races versus darker-pigmented races. Hyperpigmentation is a common finding to light-skinned people
 - Deviations from normal:
 - ▶ suggest compromises in metabolism, circulation, or oxygenation
 - Pallor, jaundice, cyanosis, erythema

Cyanosis



Jaundice



Physical Examination of the Skin: Procedure

2. Inspect and palpate the skin to evaluate moisture

- Normal findings:

- ▶ dry, moisture in skin folds, slightly warm.
- ▶ Anxiety may cause sweaty palms and perspirations in the axillae, and on the forehead and scalp

- Deviations from normal:

- ▶ dryness, sweating, or oiliness (not clinically significant)
 - Diaphoresis
 - Cold and clammy
 - Abnormally dry skin

Physical Examination of the Skin: Procedure

3. Palpate the skin to determine temperature

- Normal findings:

- ▶ warm, some people have cool skin due to skin dryness

- Deviations from normal:

- ▶ extreme: warm skin (local or systemic), or cold skin, i.e. hyper or hypothermia.

Physical Examination of the Skin: Procedure

4. Inspect and palpate the skin to evaluate texture and thickness

- Normal findings:

- ▶ smooth (unexposed areas), rough (exposed), layers of skin varies.

- Deviations from normal:

- ▶ rough skin, friable and easily broken or disrupted in integrity (common in very thin skin)

Physical Examination of the Skin: Procedure

5. Evaluate skin turgor by lifting a fold of skin between your thumb and forefinger

- Normal findings:

- ▶ elastic, and rapidly returns to original shape when grasp between thumb and forefinger

- Deviations from normal:

- ▶ poor skin turgor – slow to resume its original shape when pinched. Loss of turgor (dehydration or as a normal aging process)

Skin Turgor



Skin with decreased turgor remains elevated after being pulled up and released

Physical Examination of the Skin: Procedure

- ▶ 6. Inspect/Survey general hygiene of skin
 - ▶ Normal findings:
 - ▶ clean skin (consider cultural and social practices)
- ▶ 7. Examine the skin for the presence of edema
 1. The survey dependent's on body parts
 - ▶ bedridden: lower extremities and sacrum, scrotal, or vulvar areas)
 2. Quantify the extent of edema (grading edema)
 - ▶ Gently press the edematous area with your thumb or your fingers for up to 5 seconds

Edema

Edema (if present, grade)

- ▶ 0 Absent edema
- ▶ 1+ Trace edema. Pitting disappears within one minute
- ▶ 2+ Mild edema. Pitting disappears within 2-3 minutes.
- ▶ 3+ Moderate edema. Pitting disappears within 5 minutes.
- ▶ 4+ Severe edema. Pitting present longer than 5 minutes



Pitting Edema

Applying pressure to the swollen area causes an indentation that persists for some time



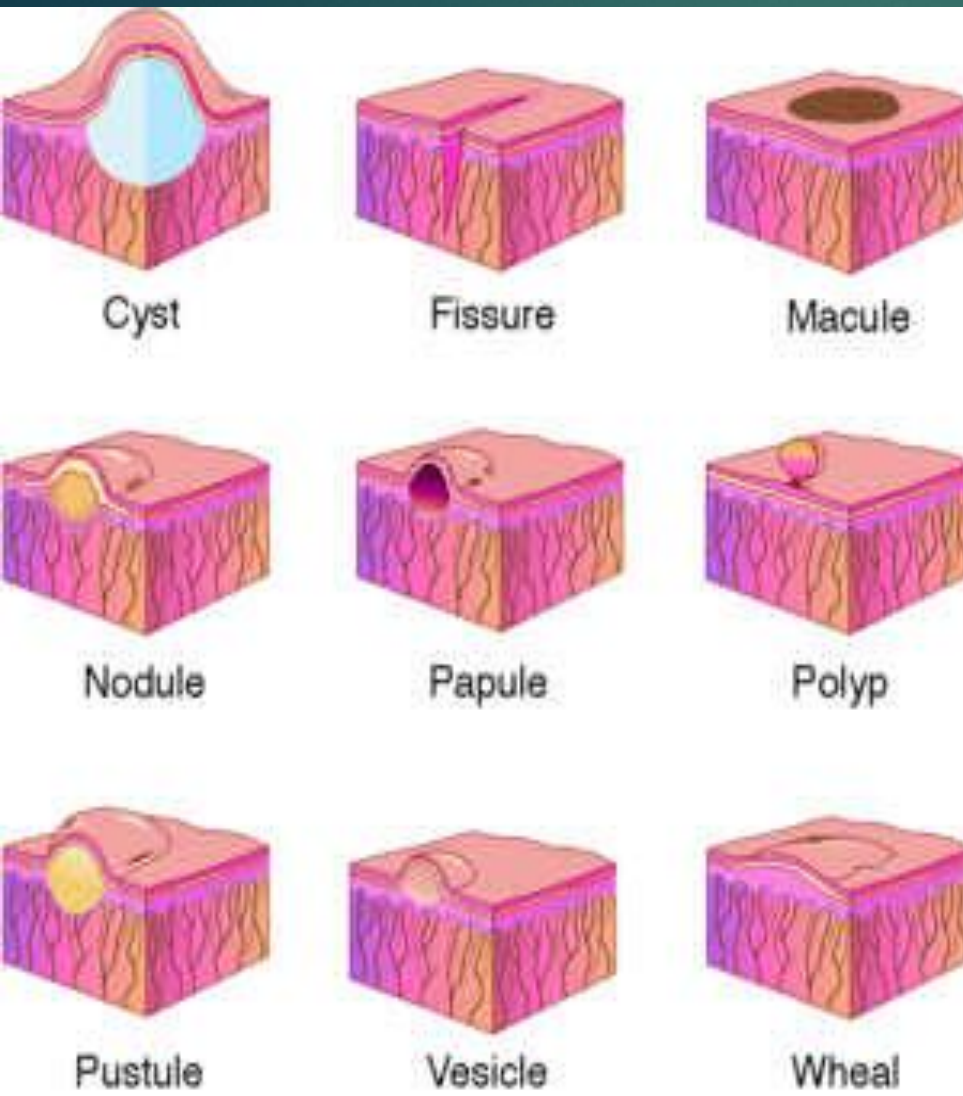
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Physical Examination of the Skin: Procedure

- ▶ Skin- *Inspect & palpate*, cont.
 - ▶ Lesions (if present)
 - ▶ Color
 - ▶ Elevation
 - ▶ Pattern or shape
 - ▶ Size
 - ▶ Location & distribution on body
 - ▶ Exudate



Example of primary skin lesions



- These lesions are original lesions arising from previously normal skin

Physical Examination of the Skin: Procedure

8. Examine the skin for presence of lesions

- Note any distinguishing characteristic of the lesion: color, texture, and general appearance
- Note size of lesion(s); measure the diameter with a metric ruler
- Note patterns of distribution for lesions
- Types of skin lesions: primary, secondary, vascular skin lesions





Example of secondary skin lesions

Erosion (vesicles)



Crust
(scab)

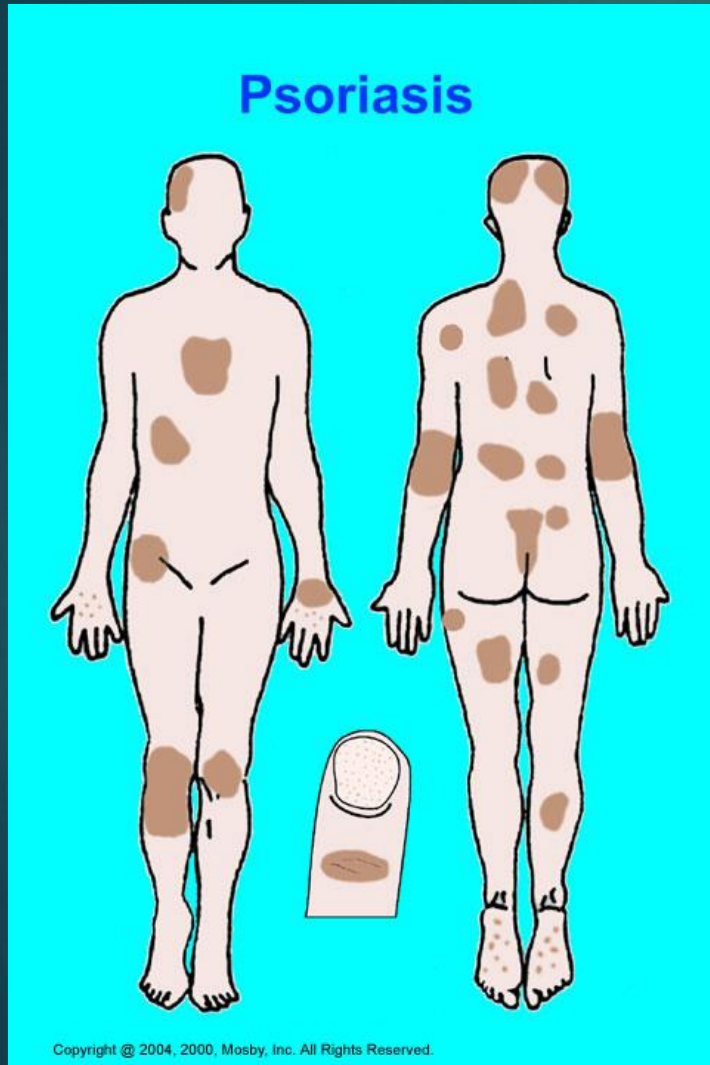
Secondary skin lesions result from changes in primary lesions

Example of vascular skin lesions



Vascular skin lesions

Example of distribution patterns for skin disorders



Atrophic changes with Age

- ▶ decrease elasticity & increase wrinkling
- ▶ delicate & thinner
- ▶ increase dryness
- ▶ more sensitive to sun

Common lesions:

- ▶ Senile lentigines
- ▶ Cherry angiomas
- ▶ Skin tags

More atrophic changes...

- ▶ hair thins & grays
- ▶ nails thicken & yellow



Abnormal Findings Common in Skin Lesions



Psoriasis



Primary contact dermatitis



Erythema migrans of Lyme disease



Allergic drug reaction



Tinea pedis (ringworm
of the foot)



Tinea corporis
(ringworm of the body)



Tinea versicolor



herpes simplex



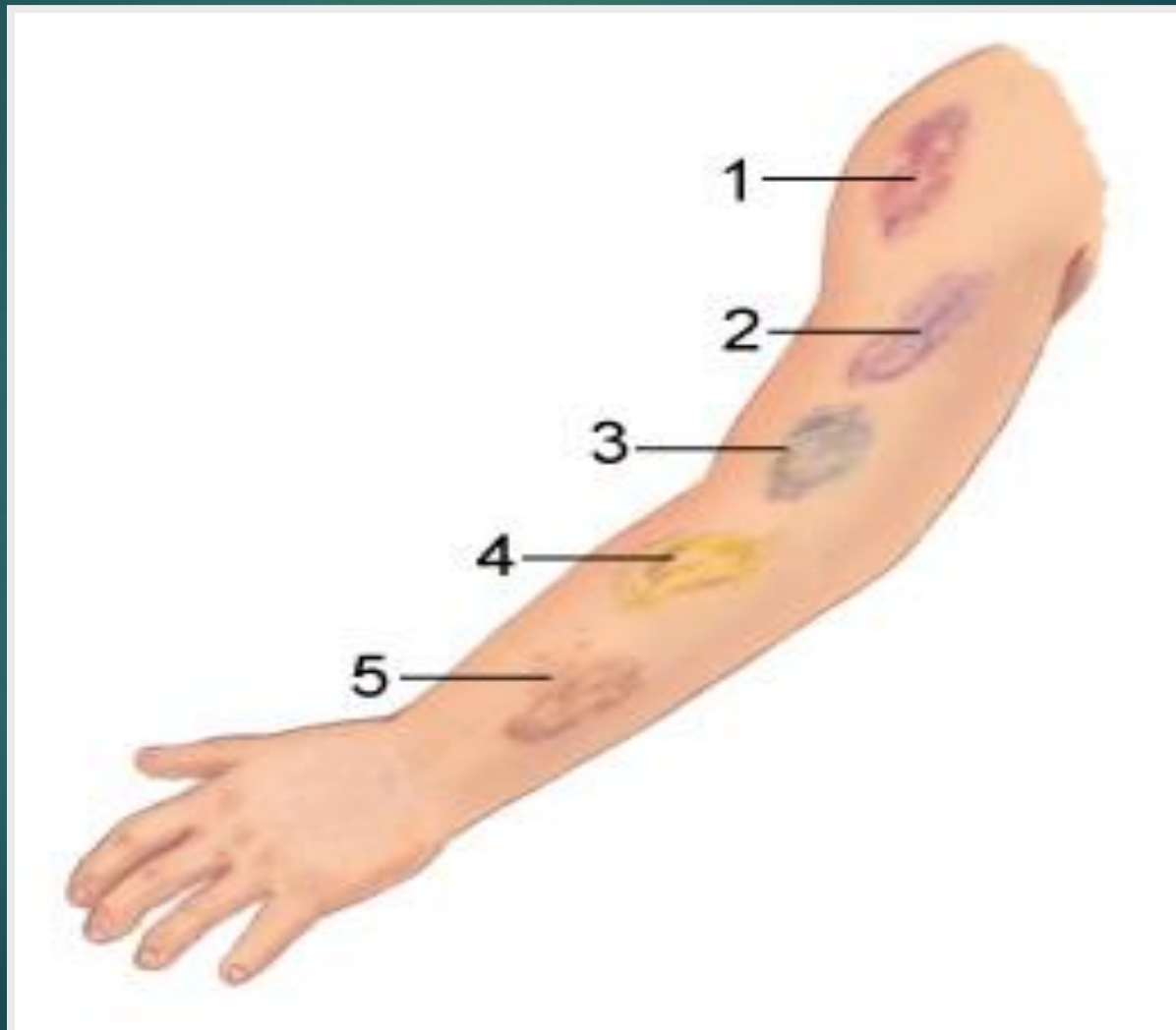
Herpes zoster (shingles)

Lesions caused by trauma or abuse:

Pattern injury



Lesions caused by trauma or abuse: Ecchymosis



Physical Examination of the Hair: Procedure

1. Inspect the hair to evaluate color and pigmentation

- Normal findings:
 - ▶ hair color influenced by genetic makeup. Pigment distribution is uniform in hair shaft.
 - ▶ Gray hair represents normal aging
- Deviations from normal:
 - ▶ alteration in color pigmentation may indicate nutrition alterations
 - ▶ Transverse depigmentation of the hair indicating nutrient deficiency, especially copper and protein

Physical Examination of the Hair:

Procedure

2. Inspect the quantity of hair. Pull gently a few strands whether it comes out easily.
 - Normal findings:
 - ▶ hair quantity varies among healthy persons on both sexes.
 - ▶ Male balding occurs as anterior regression is considered normal (genetics)
 - Deviations from normal:
 - ▶ easy pluckability and sparse hair may indicate protein deficiency.
 - ▶ Alopecia may occur with anemia, heavy metal poisoning, and hypopituitarism

Physical Examination of the Hair: Procedure

3. Move a few strands of hair between your thumb and forefinger to evaluate texture
 - Normal findings:
 - ▶ coarse or silky (varies in race)
 - Deviations from normal:
 - ▶ very coarse hair – hypothyroidism
 - ▶ Very fine hair – hyperthyroidism

Physical Examination of the Hair: Procedure

4. Survey general hygiene of the hair and scalp (also, inspect the back of the head and neck)
 - Normal findings: free of lice infestations and nits
 - Deviations from normal:
 - ▶ Flakiness (flakes or crisps)
 - ▶ sores
 - ▶ Infestations (invasion by lice...)

Abnormal Findings Conditions of Hair



Furuncle and abscess



Trichotillomania



Folliculitis



Pediculosis capitis
(head lice)



Hirsutism



Toxic alopecia



Tinea capitis
(scalp ringworm)



Seborrheic dermatitis
(cradle cap)



Alopecia areata

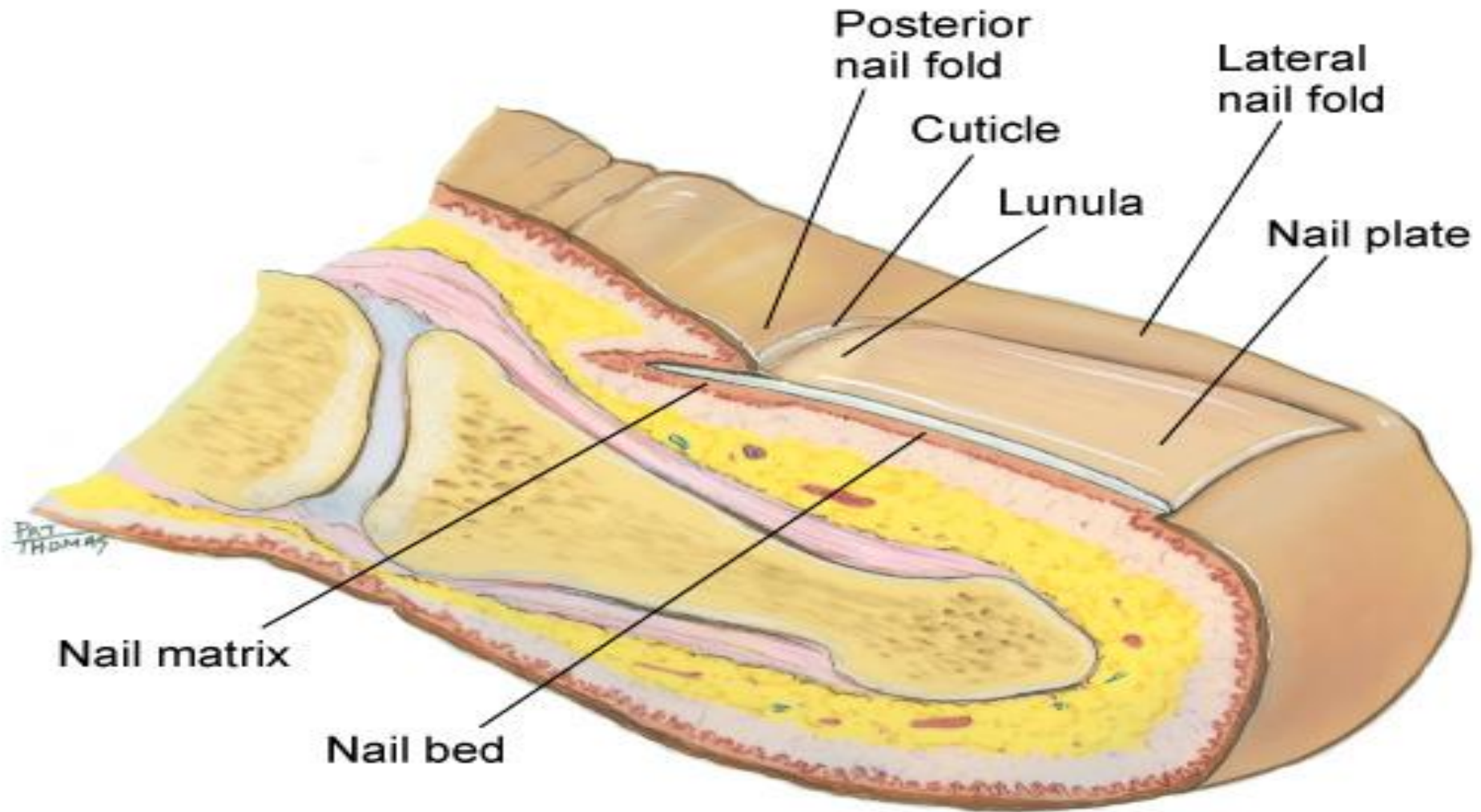


Traumatic alopecia



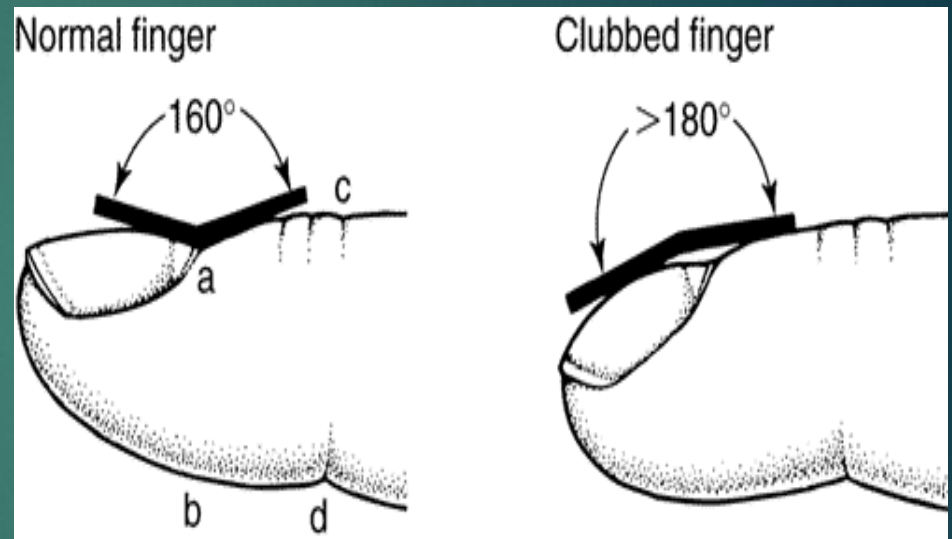
Traction alopecia

Structure of Nails



Nails—Inspect and palpate

- ▶ Shape and contour
 - ▶ Slightly curved surface
- ▶ Consistency
 - ▶ Smooth and regular
- ▶ Color
 - ▶ Capillary refill



(profile sign)

ABCDE

Promoting health and self-care

Teach skin self-examination, using the ABCDE rule

- ▶ **A** asymmetry
- ▶ **B** border
- ▶ **C** color
- ▶ **D** diameter
- ▶ **E** elevation and enlargement

Physical Examination of the Nails: Procedure

1. Observe the shape and configuration of the nail

Normal findings:

- Dorsal nail surface: slightly convex
- Nail thickness: 0.3-0.65 mm
- Angle at nail base: 160 degrees (skin-nail interface)

Deviations from normal:

- Abnormal shape may indicate malnutrition
- Spooning: concave nail plates; associated with iron deficiency anemia
- Clubbing



Physical Examination of the Nails: Procedure

2. Note the color of the nails

Normal findings:

- Pinkish
- Bluish in dark-skinned people

Deviations from normal:

- Nail lesions may alter the color of nail plate
- Cyanosis



Physical Examination of the Nails: Procedure

3. Squeeze the nail between the thumb and the forefinger to determine capillary refill time

4. Examine the nails for presence of lesions or other abnormalities

Normal findings:

- Capillary refill < 3 sec

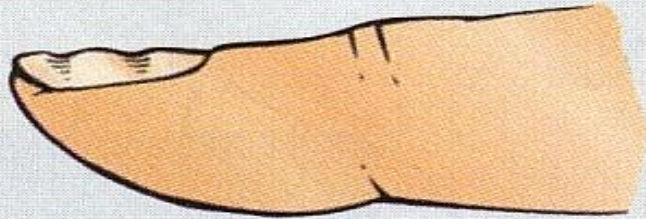
Deviations from normal:

- Capillary refill > 3 sec indicates poor tissue perfusion

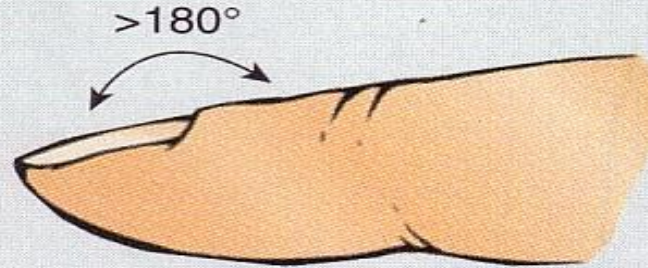
Nail Abnormalities



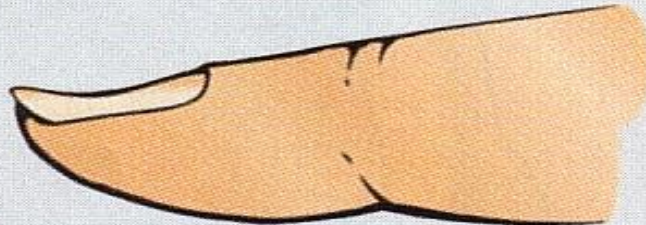
■ Paronychia



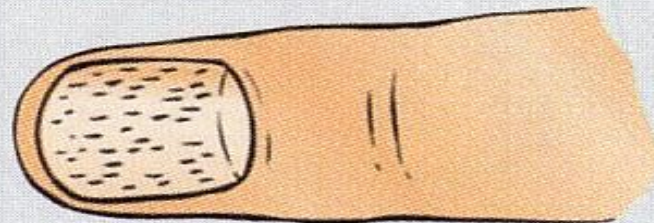
A Beau's lines (acute illness)



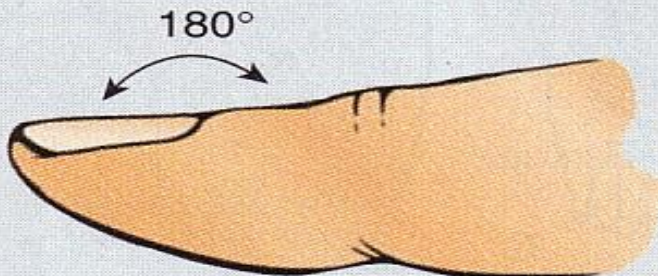
D Late clubbing (oxygen deficiency)



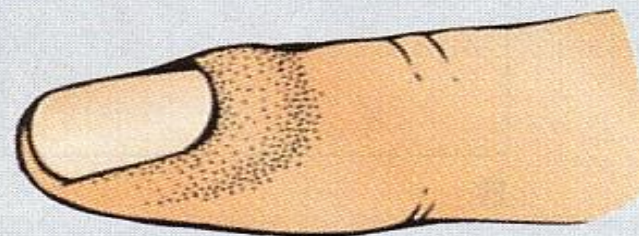
B Spoon nails (iron deficiency anemia)



E Pitting (psoriasis)



C Early clubbing (oxygen deficiency)



F Paronychia (local infection)

Sample Charting

▶ SD:

- ▶ No history of skin disease; no present change in pigmentation, no bruising, no rash or lesions. On no medications. No work related skin hazards. Uses sun block cream.

▶ OD:

- ▶ Skin: color pink, even pigmentation. Warm to touch, dry, smooth and even. Turgor good, no lesions.
- ▶ Hair: even distribution, thick texture, no lesions.
- ▶ Nails: no clubbing or deformities. Nail beds pink with prompt capillary refill.

Nursing Care plan

- ▶ Impaired skin integrity RT altered O₂ transport AMB cyanosis
- ▶ Self-care deficit: bathing/ hygiene RT effect of aging AMB dirt or stains on body

The End

