Integumentary System

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Skin is the largest organ of the body comprising 15 % of total body weight.

Layers of the skin:

A. Epidermis

B. Dermis

C. Subcutaneous tissue

Epidermal appendages:

- Hair
- Nails
- Glands: two types of skin glands:

1. Sweat Gland

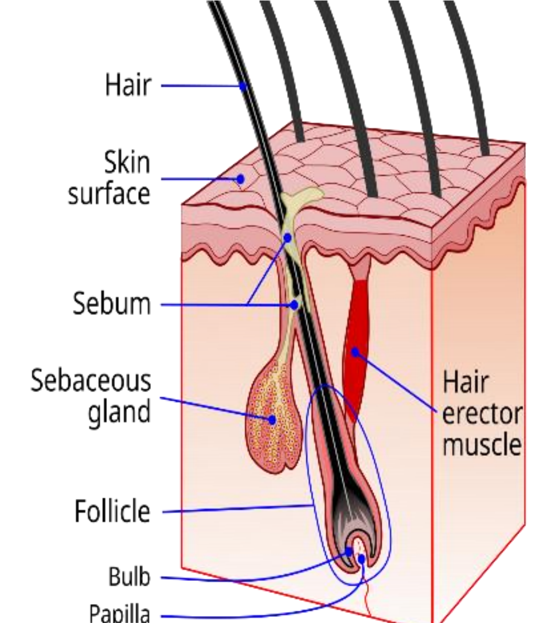
Eccrine sweat glands: are widely distributed and open directly onto the skin surface

Apocrine sweat glands: open into hair follicle in axillary and genital areas

2. Sebaceous glands: Produce sebum (oily secretion)

Skin Function:

1. Protective function
2. Identification color, fingertips
3. Sensory preceptor
4. Thermoregulation function
5. Stores water, fat and vitamin D
6. Promoting wound repair
7. Facilitate Joint movement
8. Excretory function



Skin: check for the following

Inspection:

Area of Assessment	Normal Findings	Abnormal Findings
Color	Evenly colored Pink ,Brown , black Sun exposed areas are darker	• **Pallor** (yellowish \white e.g. arterial insufficiency ,decreased blood supply and anemia) • **Cyanosis**: white skin (dusky blue in perioral, nail bed) - Central cyanosis: Cardiopulmonary problems Appears in the oral mucosa - Peripheral cyanosis: local vasoconstriction • **Jaundice** (yellow to green mostly seen in sclera mucosa membranes thin skin • **Rashes**: as the reddish in the light skinned people or dark skinned people E.g. Butter fly rash across the bridge of the nose and cheeks characteristics of discoid lupus erythematous (DLS) • **Erythematic** (intense redness and warmth) E.g. inflammation ,allergic reaction or trauma (dark people purplish) • **Vitiligo** (patchy depigmentation) • **Albinism** (total loss of pigmentation) • **Ecchymosis** (Bruise): A large patch of capillary bleeding into tissues
Hygiene	Clean Odorless	Dirty Smelly
Integrity	Intact :No redness areas	Breakdown is initially noted as reddened area may progress to pressure ulcers.
Lesions	Smooth without lesions ,Stretch marks (striae)	Lesion may indicate local or systemic problems **Primary lesions** : arise from normal skin due to irritation or disease **Secondary lesions** :areas from change in primary lesion **Vascular lesions** :radish bluish lesions are seen with bleeding ,venous pressure aging liver disease or pregnancy.

Palpation:

Area of Assessment	Normal Findings	Abnormal Findings
Texture :use fingers tips	Smooth , Firm and intact	Rough ,dry and flaky is seen hypothyroidism, psoriasis Velvet (very soft and very smooth) as the hyperthyroidism
Thickness	Uniformly thin calluses, rough thickened over growth of epidermis due to constant pressure	Very thin :E.g. Clients with arterial insufficiency or those steroid therapy
Moisture	Dry .Moderate amount of perspiration In face hands axillae skin fold	- Increased moisture or diaphoresis (profuse sweating) E.g. anxiety fever or hyperthyroidism - Decreased moisture (overly dry) as dehydration or hypothyroidism Clammy skin is typical in shock or hypotension
Temperature: used the dorsal surface of the hand	Warm and equal bilaterally Hand and feet may be slightly cooler in a cool environment	• **Hyperthermia (hot)** a. Generalized may indicate a febrile state hyperthyroidism or after heavy exercise b. Localized Hyperthermia with inflammation infection trauma or sun burn • **Hypothermia (cold)** a. Generalized accompanies central circulatory disturbances as in shock hypotension b. Localized occurs in peripheral arterial insufficiency and Raynaued's disease
Mobility: how easily the skin can be pinch or raised turgor (skin's elasticity, how quickly the skin return to its original shape)	Moderately mobile, Normal turgor (smooth and elastic) Return to place and original shape in less than 30 second	Decreased mobility when edema is present Poor turgor (return to place in more than 30 second tent and stands by itself) is seen in dehydration or extreme weight loss
Edemas: thumbs to press down on the skin feet or ankle	Skin is rebound and does not remain indented when pressure is released	**Unilateral edema** consider a local or peripheral cause **Bilateral edema** or edema that is generalized over the whole body considers a center

		problem as heart failure or kidney failure

7. Palpate Skin Turgor

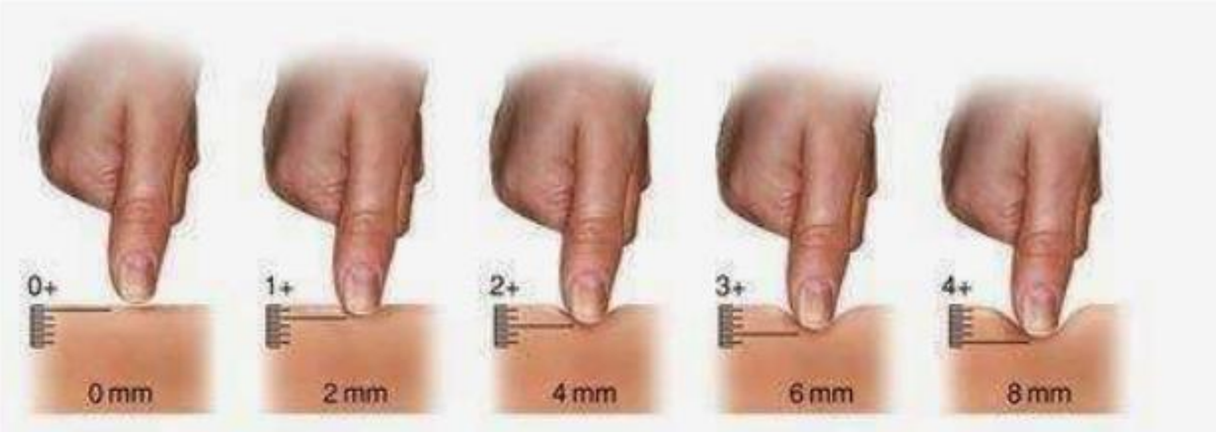
- Refers to fullness or elasticity
- Indicative of status of hydration of the body.
- Assessed by pinching the skin on an extremity.

Normal

- When pinched, skin springs back to previous state in less than **3 seconds**

Deviations

- Skins stays pinched or indented or moves back slowly.



0+ No pitting edema
1+ Mild pitting edema. 2 mm depression that disappears rapidly.
2+ Moderate pitting edema. 4 mm depression that disappears in 10–15 seconds.
3+ Moderately severe pitting edema. 6 mm depression that may last more than 1 minute.
4+ Severe pitting edema. 8 mm depression that can last more than 2 minutes.

Hair: check for the following

Assessment of the Hair

Area of Assessment	Normal Findings	Abnormal Findings and
Inspect and palpate scalp to determine quality, distribution, and pattern of hair loss.	Thick and even distribution	• Thin and brittle (hypothyroidism) • Alopecia (aging, chemotherapeutic drugs, hair grooming products) • Hirsutism (genetic, some medications)
Inspect for parasitic infestation.	Free of infestation	White ovoid nits (Pediculus capitis, P. corporis, and P. pubis)
Inspect for scales and scars.	Shiny and smooth without lesions, lumps, or masses	Masses or lumps (sebaceous cysts, trauma, tumors)

Note any tenderness, pain, lesions, lumps, or masses. Beginning at front of scalp, palpate down midline and each side.	Absence of pain, redness, or scales	• Dry flaking scales (seborrhea) • Red patches covered by thick, dry, silvery, adherent scales (psoriasis)

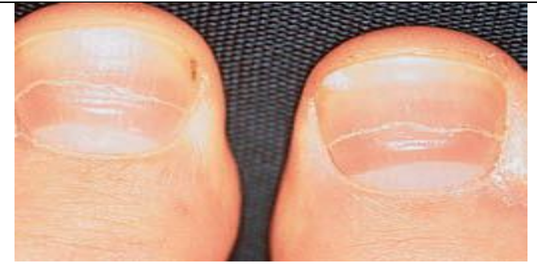
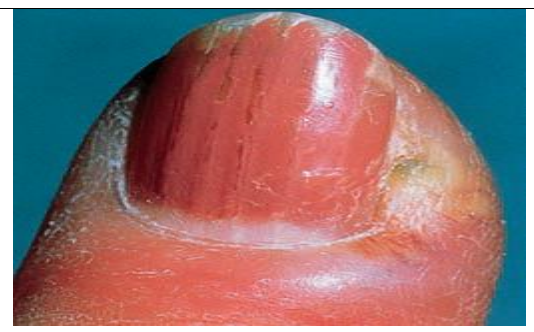
Nail : check for the following:

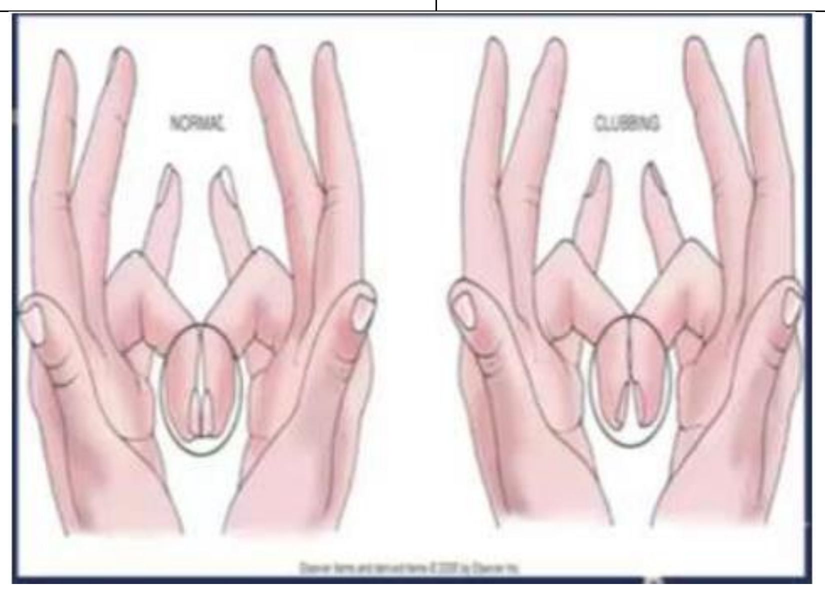
Assessment of the Nail

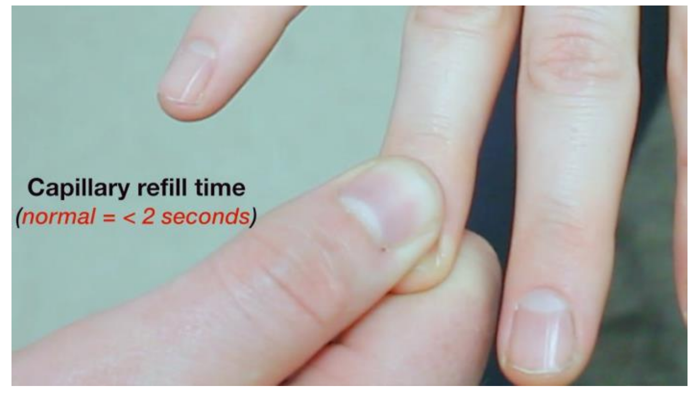
Area Of Assessment	Normal Findings	Abnormal Findings
Inspect and palpate nails and nail beds, noting color, shape, and texture.	• Firm when palpated. • Pinkish color in light-skinned people. • Longitudinal streaks of brown or black pigmentation in dark-skinned people. • Angle between nail and base of finger is 160°	• variations and abnormalities of nail bed.
<u>Test for capillary refill:</u> Press nail between your thumb and index finger. Note degree of blanching and return of normal color.	Nail promptly returns to its normal color when pressure is released.	• Delayed return of color to nail bed (circulatory impairment).
Inspect tissue-surrounding nails. Note any lesions.	Tissue is intact.	• Paronychia (inflammation of skin around the nails).

Variations of the Nail Bed

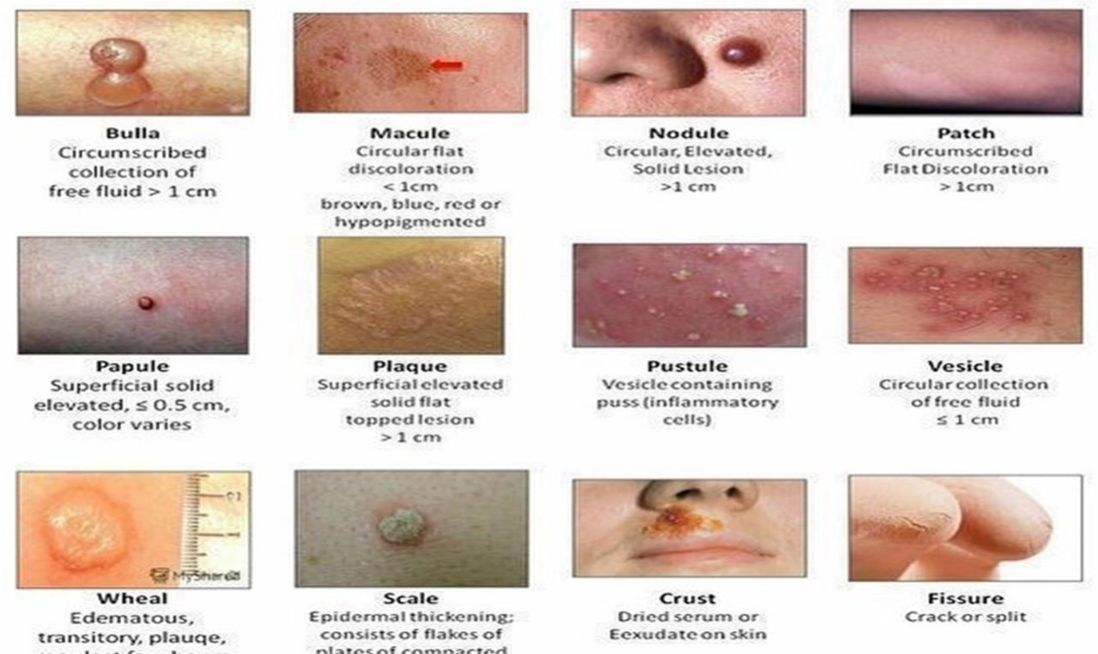
Normal nail angle	Should be about 160 degrees.
	Clubbing: Hypoxia causes an angle greater than 180_ between the fingernail and nail base; nail feels springy when palpated. <u>Early clubbing</u> 180 degree angle with sponge sensation <u>Late clubbing</u> greater than 180 can occur from hypoxia

	**Beau’s line**: Characterized by transverse depression in the nails; associated with injury and severe systemic infections.
	**Paronychia**: Characterized by an inflammation at the nail base (may be swollen, red, or tender); associated with trauma and local infection.



Capillary refill Test 	Pink tone returns immediately to blanched nail bed when pressure is released	Cyanotic nail bed return of pink tone in greater than 2 second with respiratory or cardiovascular disease that cause hypoxia

Type of Lesion	Description	Example
Primary lesion:		
Macule	A flat circumscribed area of colorwith no elevation of its surface 1mm to 1 cm	Freckles brown melanin pigment that occurs on sun exposed skin flat nevi
Patch	Larger than Macule	Vitiligo
Papule	Circumscribed solid elevation of skin less than 1 cm	
Nodule	A solid mass extending deeper into dermis and firmer than papule	Pigmented nevi
Tumor	A solid mass larger than nodule	Epitheliomas
Wheal	A relatively reddened flat localized collection of	Mosquito bites hives
Vesicle	Circumscribed elevation (up to 0.5 cm) containing serous fluid or blood Elevated cavity containing free fluid, up to 1 cm. "blister"	Herpes Chicken pox, herpes zoster
cyst	An encapsulated fluid filled mass in dermis or subcutaneous tissue	Epidermoid cyst
Bulla	A large serous fluid filled vesicle	Second degree burns
Pustula	A vesicle or bulla filled with pus	Acne vulgaris
secondary lesion:		
Erosion	Loss of epidermis that does not extent deeper surface is moist but does not bleed	Moist area after the rupture of a vesicle
Ulcer	A deeper loss of skin surface extending into the dermis or below may bleed and scar	Stasis ulcer
Fissure	A linear crack in the skin	A thletes; foot
Scale	Thickened epidermal cells that flake off Compact ,desiccated flaked of skin	Dandruff Psoriasis
Crust	The dried residue of serum pus or blood	Impetigo herps
Scar	A formation of connective tissue replacing destroyed	Keloid



Examination of skin Lesion:

A- Inspect lesions for (use penlight or magnifying glass):

- Color
- Elevation
- Size (in centimeters) use a ruler to measure dimensions
- Content: Solid mass or fluid exudates (note its' color or odor) Border regular or irregular
- Location and distribution on body :generalized or localized to area of a specific irritant around jewelers, watchband, around eyes
- Configuration
- Note the type of skin lesion

B- Palpate skin lesion

- Wear gloves if anticipate contact with blood , mucosa ,any body fluid of skin lesion
- Test the palpability of lesion
- Roll a nodule between the thumb and index finger to assess depth base or if it bleed when the scale comes off
- Note the surrounding skin temperature
- Red macules from dilated blood vessels will blanch momentarily (positive result

Head and Neck

Head

Note the general size and shape ,norm cephalic, is the term that denote a round symmetric skull that is appropriately to body size.

The cranial bones that normally protruded are the forehead, the lateral edge of each parietal bone, the occipital bone, and mastoid process behind each ear.

Note the facial expression and its appropriateness to behavior or reported mood .

Anxiety is c common in hospitalized or ill person

Assessment of Neck

Area of Assessment	Normal Findings	Abnormal Findings
Inspect for symmetry and musculature. Instruct client to flex chin to chest and to each side and shoulder. Instruct client to hyperextend neck backward.	- Movement through full range of motion (ROM) with - no limitation or discomfort.	• Pain upon flexion or rotation of head (muscle spasm, inflammation of muscles or meninges, vertebral diseases). • Torticollis, i.e. prominent lateral deviation of sternocleidomastoid muscle (inflammation, trauma, sleeping with head in one position).
Palpate lymph nodes: • Instruct client to relax and flex neck slightly forward. • Stand in front of client and systematically palpate anterior cervical nodes and posterior cervical nodes • Note size, shape, mobility, consistency, and tenderness.	Palpable lymph nodes. Small, movable nodes are insignificant.	Palpable nodes (infection, malignancy).
Palpate thyroid gland: • Stand behind or in front of client • Instruct client to slightly extend neck.	• Thyroid cannot be visualized. • Smooth, soft, non-tender, and not enlarged.	• Masses or enlargements during swallowing (goiter, thyroid disease). • Bruits heard on auscultation (enlarged

• Rest thumbs on nape of neck, and place index and middle fingers of both hands on thyroid isthmus and anterior surfaces of lateral lobes. • Ask client to swallow and to flex neck forward and to left. • Gently move thyroid cartilage to the right. Note any bulging of gland. • Place your thumb deep into and behind sternocleidomastoid • muscle with index and middle fingers in front. Ask client to swallow. • Note any enlargement of glands. • If gland is enlarged, place stethoscope diaphragm over gland. • Note on auscultation presence of bruit (soft vibration or rushing sound).	• Isthmus is palpable when swallowing occurs. • No bruit.	toxic goiter).