



Skin, Hair and Nail Examination

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Anatomic and Physiologic Overview

- ★ Heaviest single organ of the body (16% of body weight and covering an area of roughly 1.2 to 2.3 meters squared).
- ★ It contains three layers: the epidermis, the dermis, and the subcutaneous tissues.
- ★ Hair, nails, and sebaceous and sweat glands are considered appendages of the skin.





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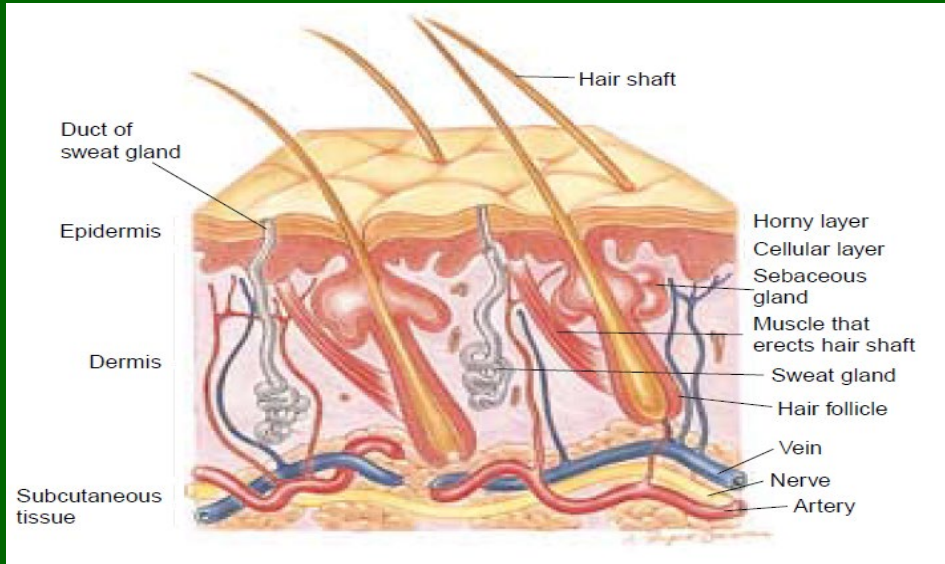
★ Hair;

- Adults have two types of hair:
 - Vellus hair (short, fine, inconspicuous, and relatively unpigmented)
 - Terminal hair (coarser, thicker, more conspicuous, and usually pigmented). Scalp hair and eyebrows are examples of terminal hair.





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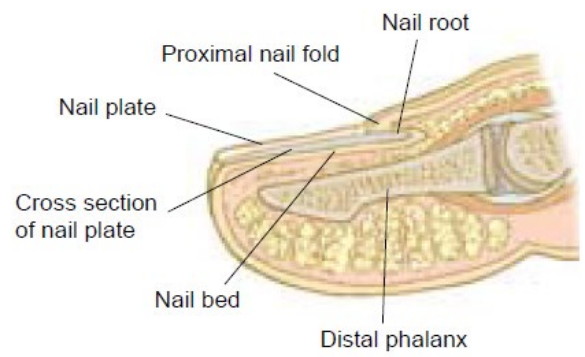
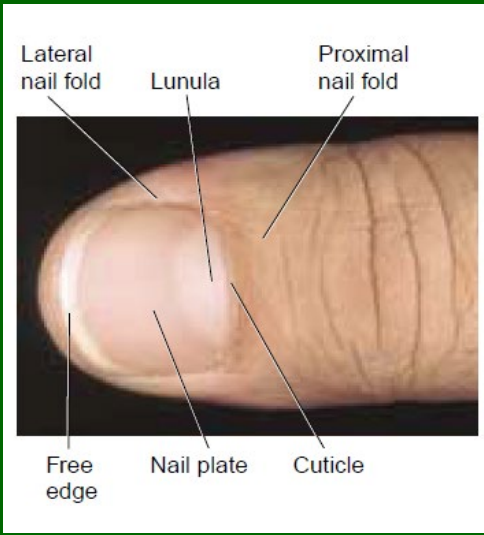
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- ★ Nail;
 - Firm, rectangular, curving nail plate, and pink color.
 - Note that the angle between the proximal nail fold and the nail plate is normally less than 180° .
 - Fingernails grow at about 0.1 mm daily; toenails grow more slowly.





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- ★ Sebaceous glands (except the palms and soles) produce a fatty substance that is secreted to the skin surface through the hair follicles.
- ★ Sweat glands are of two types: eccrine and apocrine.





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- ★ Bacterial decomposition of apocrine sweat gland is responsible for adult body odor.
- ★ The color of normal skin depends primarily on four pigments: melanin, carotene, oxyhemoglobin, and deoxyhemoglobin.





Subjective data

- Any changes in skin, hair, nails
- Rashes, sores, lumps, itching, moles





Objective data

★ Skin;

- The entire skin surface should be inspected (begin-general survey) in good light, preferably natural light or artificial light that resembles it.
- Correlate your findings with observations of the mucous membranes.
- Diseases may manifest themselves in both areas, and both are necessary for assessing skin color.





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- ★ Six observations to make in assessing the skin:
 - 1) color,
 - 2) moisture,
 - 3) temperature,
 - 4) texture,
 - 5) mobility and turgor,
 - 6) presence of lesions.





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- ★ Color (Inspect and palpate);
 - a. General pigmentation:
 - ✓ normally it is consistent with genetic background and varies from light (usually) to dark brown.
 - ✓ Dark skinned people normally have areas of lighter pigmentation on the palm, nail beds and lips.
 - ✓ An acquired condition is vitiligo, the complete absence of melanin pigment on the face, hand, neck and feet.



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- Mole (pigmented nevi);
 - A proliferation of melanocyte, tan to brown color, flat or raised.
 - Birth marks may be tan to brown color.
 - Advice any one with moles or birth marks to perform periodic skin self-examination and watch for.





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- Danger sign;
 - Sudden enlargement.
 - Change in color, sensation (itching, tenderness).
 - Change in surrounding skin (redness, swelling).
 - Ulceration or bleeding in mole (late sign).





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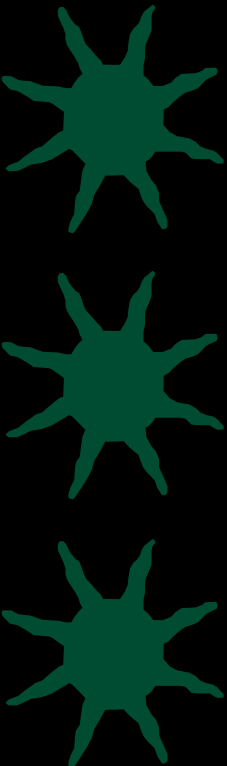


b. Wide spread color change.

- ✓ In dark skinned people, the amount of normal pigment may mask color change.
- ✓ Lips and nail beds shows some color change, but they vary with person skin color, and may not always accurate signs.
- ✓ The more reliable sites are those with the least pigmentation, such as under the tongue, the buccal mucosa, the palpebral conjunctiva and the sclera.



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- ❖ **Brown-**(excess melanin- mask of pregnancy)
- ❖ **Erythema-**This is an intense redness of the skin due to excess blood (hyperemia) in the dilated superficial capillaries. This is a sign that is to be expected with fever, local inflammation, or emotional reactions. Ecchymosis, petechiae, hematoma-CO poisoning, polycythemia, EVS RBC, venous stasis.



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❖ Blue:

- ❖ Cyanosis related to increased amount of broken down hemoglobin, decreased oxygenated blood perfusion.
- ❖ Peripheral (anxiety or cold) Vs central (heart (CHD, CHF, shock) or lung disease (chronic bronchitis)).





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- ❖ Diagnosed in lips, on the earlobes, in the nail beds and under the tongue.
- ❖ Cyanosis of the nails, hands, and feet may be central or peripheral in origin.





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❖ Yellow:

- ❖ Jaundice related to increased bilirubin usually secondary to liver disease (hepatitis, cirrhosis), Sickle Cell Disease, transfusion reaction, hemolytic disease-new born.
- ❖ In dark skinned people the amount of normal pigment may mask color changes.





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- ❖ 1st noted in junction of the hard and soft palate in the mouth and sclera.
- ❖ Jaundice may also appear in the palpebral conjunctiva, lips, hard palate, undersurface of the tongue, tympanic membrane, and skin.





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❖ Pallor:

- ❖ White discoloration related to anemia, shock, fatigue, severe emotional upset, arterial insufficiency.
- ❖ Best detected in the nail beds, lip, palpebral conjunctivae, oral mucosa, and tongue.
- ❖ In dark-skinned persons, inspecting the palms and soles may also be useful.





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- ★ Temperature;
 - Use the backs of your fingers.
 - Check bilaterally.
 - In addition, note the temperature of any red areas.
 - Normal skin has generalized warmth to the touch. Hypothermia (general-shock, local-peripheral arterial insufficiency, Raynaud's ds), hyperthermia (hyperthyroidism).





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★ Moisture;

- Skin is normally dry without excessive perspiration.
- Perspiration-face, hands, axial, and skin fold in response to warm env't, anxiety, activity.
- Abnormal-diaphoresis (thyrotoxicosis, pain, anxiety) or profuse perspiration accompanied an increased metabolic rate such as on fever, excessive dryness and oiliness.
- Dehydration is evident in the oral mucous membranes.





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★ Texture;

- Normal skin is smooth and firm to the touch with an even surface.
- Abnormal- hypothyroidism (rough, flaky, dry), hyperthyroidism (smoother and softer) generally seem to go together.





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- ★ Mobility and Turgor;
 - Pinch up the enlarged fold of skin over on the anterior chest under the clavicle.
 - Note mobility (the skins ease of raising), and turgor (its ability top return to place promptly when released, <2 sec).
 - Reflects the elasticity of skin.





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- Decreased tissue mobility is noted with edema, scleroderma.
- Poor skin turgor observed in severe dehydration and extreme weight loss, remains folded for 30 seconds or longer. Poor skin also commonly found in elderly clients.





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★ Lesion;

- Observe any lesions of the skin, noting their characteristics.
- Six areas to note when assessing lesions:
 - 1) color.
 - 2) elevation-flat, raised or pedunculated.
 - 3) pattern/shape, or configuration-grouping or distinctness of each lesion. E.g. as follows:





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- Nummular/discoid-Round or coin like
- Circinate-Circular lesion
- Arcuate-Curved lesion
- Reticulate-Net-like lesion
- Annular- circular ring like begins in center and spreads to periphery
- Confluent- lesions run together (hives)
- Iris- concentric rings of lesions.



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- Discrete - individual lesions remain separate
- Grouped - clusters of lesions
- Gyrate - twisted, coiled, spiral, snakelike, wave like.
- Linear-scratch, streak, line or stripe
- Zoster form- linear arrangement along a nerve route.



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- 4) size in centimeters, use ruler.
- 5) location and distribution on the body (generalized vs. localized to one area).
E.g. around eyes, watch wrist, interdigital areas, elbow, popliteal area (scabies)
- 6) any exudates-note color, odor.



Cont...d

- Types of skin lesion;
 - Primary
 - Secondary





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Primary skin lesion;

Name	Size (diameter)	Description
Macule	<1cm	Flat, circumscribed, alteration of skin color (freckle)
Patch	>1cm	Flat, discolored area, vitiligo
Papule	<1cm	Solid, raised area (wart or raised mole)
Nodule	>1cm	Solid mass in dermal or sub cut. Layer often deeper and firmer than a papule





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Tumor	2-5cm.	Solid mass may extend through sub cut. Layer
Cyst	Varies	Encapsulated, fluid filled mass, may extend into epidermis and dermis.
Wheal	Varies	Erythematous, smooth, irregular localized area of fluid held under the skin (mosquito bite)
Vesicle	< 1cm	Fluid filled area under the skin (herpes simplex)



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Bulla	>1cm	Like vesicle, but larger (2 nd degree burn blister)
Pustule	Varies	Pus filled area under skin
Plaque	>1cm.	Papules coalesce to form surface elevation

Note: it arises from previously normal skin.



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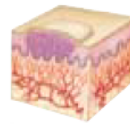


Circumscribed, Flat, Nonpalpable Changes in Skin Color



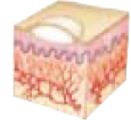
Macule—Small flat spot, up to 1.0 cm
Examples: freckle, petechia
Patch—Flat spot, 1.0 cm or larger

Palpable Elevated Solid Masses



Papule—Up to 1.0 cm.
Example: an elevated nevus
Plaque—Elevated superficial lesion 1.0 cm or larger, often formed by coalescence of papules
Nodule—Marble-like lesion larger than 0.5 cm, often deeper and firmer than a papule
Wheal—A somewhat irregular, relatively transient, superficial area of localized skin edema. Examples: mosquito bite, hive

Circumscribed Superficial Elevations of the Skin Formed by Free Fluid in a Cavity Within the Skin Layers



Vesicle—Up to 1.0 cm; filled with serous fluid. Example: herpes simplex
Bulla—1.0 cm or larger; filled with serous fluid. Example: 2nd-degree burn
Pustule—Filled with pus. Examples: acne, impetigo



Cont...d



Secondary skin lesion;

Name	Size	Descriptions
Erosion (loss of skin surface)	Varies	Rubbing away of epidermis, surface moist, but doesn't bleed
Ulcer (loss of skin surface)	Varies	Deeper loss of skin surface, may bleed and scar (stasis ulcer of venous insuff.)
Fissure (loss of surf.)	Varies	Linear crack in skin (athlete's foot)
Crust (material on surface)	Varies	Dried residue of serum, pus, blood



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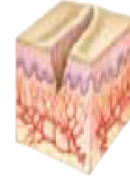
Loss of Skin Surface



Erosion—Loss of the superficial epidermis; surface is moist but does not bleed. Example: moist area after the rupture of a vesicle, as in chickenpox



Ulcer—A deeper loss of epidermis and dermis; may bleed and scar. Examples: stasis ulcer of venous insufficiency, syphilitic chancre



Fissure—A linear crack in the skin. Example: athlete's foot

Material on the Skin Surface



Crust—The dried residue of serum, pus, or blood. Example: impetigo



Scale—A thin flake of exfoliated epidermis. Examples: dandruff, dry skin, psoriasis



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Scale (material on surface)	Varies	Thin flakes of dried epidermis (dandruff, psoriasis, dry skin)
Scar	Varies	Replaces destroyed tissue with fibrous tissue
Keloid	Varies	Overgrowth of scar that extends at least into dermis
Excoriation	Varies	A scratch or abrasion of the skin (scratch marks from intense itching).



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Lichenification	Varies	Thickening and roughening of the skin with increased visibility of normal skin furrows (usually areas of repeated trauma)
Atrophy	Varies	Thinning of the skin with loss of normal skin furrows, skin looks shiner and more translucent.

Note: Result from changes in primary lesions.



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Lichenification
Atrophy
Excoriation
Scar



Cont...d

★ Hair;

- Hair comes from melanin production and varies from pale blonde to total black.
- Graying begins as early as the 3rd decade of life due to reduced melanin production in the follicles.
- Inspect and palpate the hair. Note its quantity, distribution, and texture.





Cont...d

★ texture;

- Scalp hair may be fine or thick and may look like straight, curly, or kinky.

★ Distribution;

- Equally at scalp, eye brows, eyelashes.
- Equally distributed at time of puberty in the pubic, axilla, face.
- Hair area should be clean and free of any lesion or pests.





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- ★ Abnormal;
 - Alopecia, sparse and brittle (hypothyroidism, Kwashiorkor), fine silky (hyperthyroidism), hirsutism, hypertrichosis, hypotrichosis.





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★ Nail;

- The nail surface is slightly curved or flat.
- Nail edges are smooth, rounded, and clean suggesting adequate self care.
- Nail thickness-is uniform.
- Consistency-the surface is smooth, regular,, not brittle.





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★ Nail abnormalities;

- The normal angle between the nail and nail bed is 160 degrees.
- Spoon nails: hypochromic anemia- this depressed nails with lateral edges tilted up concave.





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- Clubbing of fingers (Emphysema, chronic bronchitis, COPD, CHD)- angle is $>180^\circ$ with swollen base of the nail.
- Paronychia-red, swollen, tender inflammation of the nail beds. Acute bacterial, chronic fungal infection.





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★ Nursing diagnosis

- Fluid volume deficit related to diarrhea as manifested by dry skin.
- Self care deficit related to pain as manifested by offensive odor.
- Impaired skin integrity related to immobility/edema as manifested by blister.

