

# INTEGUMENTARY ASSESSMENT (SKIN)

- The [skin](#) is the body's largest organ, made of water, protein, fats and minerals. Your skin protects your body from germs and regulates body temperature. Nerves in the skin help you feel sensations like hot and cold.

- **ANATOMY**

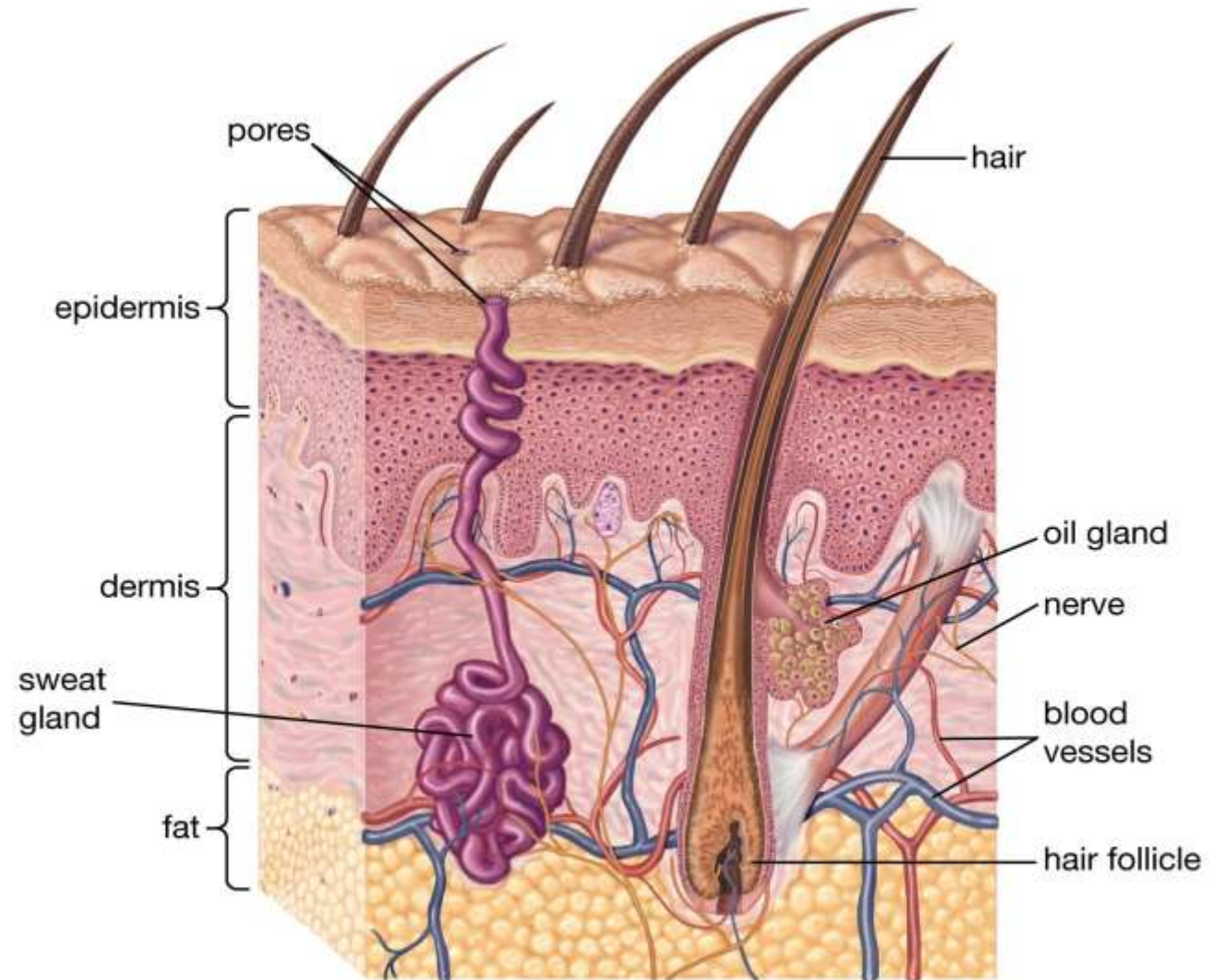
- **What are the layers of the skin?**

- Three layers of tissue make up the skin:

- **Epidermis**, the top layer.

- **Dermis**, the middle layer.

- **Hypodermis**, the bottom or fatty layer.



## What does the epidermis (top layer of skin) do?

Your epidermis is the top layer of the skin that you can see and touch. Keratin, a protein inside skin cells, makes up the skin cells and, along with other proteins, sticks together to form this layer. The epidermis:

- **Acts as a protective barrier:** The epidermis keeps bacteria and germs from entering your body and bloodstream and causing infections. It also protects against rain, sun and other elements.
- **Makes new skin:** The epidermis continually makes new skin cells. These new cells replace the approximately 40,000 old skin cells that your body sheds every day. You have new skin every 30 days.
- **Protects your body:** Langerhans cells in the epidermis are part of the body's [immune system](#). They help fight off germs and infections.
- **Provides skin color:** The epidermis contains melanin, the pigment that gives skin its color. The amount of melanin you have determines the color of your skin, hair and eyes. People who make more melanin have darker skin and may tan more quickly.

## What does the dermis (middle layer of skin) do?

The dermis makes up 90% of skin's thickness. This middle layer of skin:

- **Has collagen and elastin:** Collagen is a protein that makes skin cells strong and resilient. Another protein found in the dermis, elastin, keeps skin flexible. It also helps stretched skin regain its shape.
- **Grows hair:** The roots of [hair follicles](#) attach to the dermis.
- **Keeps you in touch:** Nerves in the dermis tell you when something is too hot to touch, itchy or super soft. These nerve receptors also help you feel pain.
- **Makes oil:** Oil glands in the dermis help keep the skin soft and smooth. Oil also prevents your skin from absorbing too much water when you swim or get caught in a rainstorm.
- **Produces sweat:** Sweat glands in the dermis release [sweat](#) through skin pores. Sweat helps regulate your body temperature.
- **Supplies blood:** Blood vessels in the dermis provide nutrients to the epidermis, keeping the skin layers healthy.

## What does the hypodermis (bottom layer of skin) do?

The bottom layer of skin, or hypodermis, is the fatty layer. The hypodermis:

- **Cushions muscles and bones:** Fat in the hypodermis protects muscles and bones from injuries when you fall or are in an accident.

- **Has connective tissue:** This tissue connects layers of skin to muscles and bones.
- **Helps the nerves and blood vessels:** Nerves and blood vessels in the dermis (middle layer) get larger in the hypodermis. These nerves and blood vessels branch out to connect the hypodermis to the rest of the body.
- **Regulates body temperature:** Fat in the hypodermis keeps you from getting too cold or hot.

## CONDITIONS AND DISORDERS

### What conditions and disorders affect the skin?

As the body's external protection system, your skin is at risk for various problems. These include:

- Allergies like [contact dermatitis](#) and [poison ivy](#) rashes.
- [Blisters](#).
- Bug bites, such as [spider bites](#), [tick bites](#) and [mosquito bites](#).
- [Skin cancer](#), including [melanoma](#).
- Skin infections like [cellulitis](#).
- Skin rashes and [dry skin](#).
- Skin disorders like [acne](#), [eczema](#), [psoriasis](#) and [vitiligo](#).
- Skin lesions, such as moles, freckles [نمش](#) and skin tags.
- Wounds, [burns](#) (including sunburns) and [scars](#)

**Alopecia is loss of hair and should be treated like any other symptom, noting the following :-**

- **Mode of onset (sudden/gradual)**
- **Associated symptoms (pain , rash.....etc.)**
- **Family history.**
- **Region of hair loss (scalp, body, face)**
- **Male pattern baldness is at frontal and temporal areas of the scalp and the crown.**
- **Hair loss at the very front of the scalp can be caused by pulling of hair when styling particularly in women.**

**Abnormal hair growth**

**Facial hair growth is common in post pubertal women, finding this distressing so may need treatment.**

**Ask about:-**

- **Family history.**
- **Menstrual cycle, regular or erratic.**
- **Symptoms of virilization i.e. voice change, masculinization, clitoromegaly.**

**Nail disorders**

- Splinter hemorrhage.
- Pitting.
- Oncolysis ,premature lifting of the nail.
- Leukonychia, white discoloration of the nail.
- Beau's lines, transvers depressions of the nail.
- Paronychia, infection of the nail.
- Koilonychia , spooning of the nail.
- Clubbing.

\* Onychomycosis, fungal infection of the nail

## Subjective Assessment

Begin the assessment by asking focused interview questions regarding the integumentary system. Itching is the most frequent complaint related to the integumentary system.

Questions	Follow-up
Are you currently experiencing any skin symptoms such as itching, rashes, or an unusual mole, lump, bump, or nodule? <sup>[3]</sup>	Use the PQRSTU method to gain additional information about current symptoms.
Have you ever been diagnosed with a condition such as acne, eczema, skin cancer, pressure injuries, jaundice, edema, or lymphedema?	Please describe.
Are you currently using any prescription or over-the-counter medications, creams, vitamins, or supplements to treat a skin, hair, or nail condition?	Please describe.

## Objective Assessment

There are five key areas to note during a focused integumentary assessment: **color**, **skin temperature**, **moisture level**, **skin turgor**, and **any lesions or skin breakdown**. Certain body areas require particular observation because they are more prone to pressure injuries, such as bony prominences, skin folds, perineum, between digits of the hands and feet, and under any medical device that can be removed during routine daily care

## Inspection

### COLOR

Inspect the color of the patient's skin and compare findings to what is expected for their skin tone. Note a change in color such as **pallor** (paleness), **cyanosis** (blueness), **jaundice** (yellowness), or **erythema** (redness). Note if there is any bruising (**ecchymosis**) present.

### SCALP

If the patient reports itching of the scalp, inspect the scalp for lice and/or nits.

### LESIONS AND SKIN BREAKDOWN

Note any lesions, skin breakdown, or unusual findings, such as rashes, petechiae, unusual moles, or burns. Be aware that unusual patterns of bruising or burns can be signs of abuse that warrant further investigation and reporting according to agency policy and state regulations.

Auscultation : Auscultation does not occur during a focused integumentary exam.

Palpation: Palpation of the skin includes assessing temperature, moisture, texture, skin turgor, capillary refill, and edema. If erythema or rashes are present, it is helpful to apply pressure with a gloved finger to further assess for **blanching** (whitening with pressure).

## **TEMPERATURE, MOISTURE, AND TEXTURE**

Fever, decreased perfusion of the extremities, and local inflammation in tissues can cause changes in skin temperature.

For example, a fever can cause a patient's skin to feel warm and sweaty (diaphoretic).

Decreased perfusion of the extremities can cause the patient's hands and feet to feel cool, whereas local tissue infection or inflammation can make the localized area feel warmer than the surrounding skin.

For accurate palpation of skin temperature, do not hold anything warm or cold in your hands for several minutes prior to palpation.

## **CAPILLARY REFILL**

The capillary refill test is a test done on the nail beds to monitor perfusion, the amount of blood flow to tissue.

Pressure is applied to a fingernail or toenail until it turns white, indicating that the blood has been forced from the tissue under the nail. This whiteness is called blanching. Once the tissue has blanched, remove pressure. Capillary refill is defined as the time it takes for color to return to the tissue after pressure has been removed that caused blanching. If there is sufficient blood flow to the area, a pink color should return within 2 seconds after the pressure is removed.



## SKIN TURGOR

**Skin turgor** is the skin's elasticity. Its ability to change shape and return to normal may be decreased when the patient is dehydrated.

To check for skin turgor, gently grasp skin on the patient's lower arm between two fingers so that it is tented upwards, and then release. Skin with normal turgor snaps rapidly back to its normal position, but skin with poor turgor takes additional time to return to its normal position.

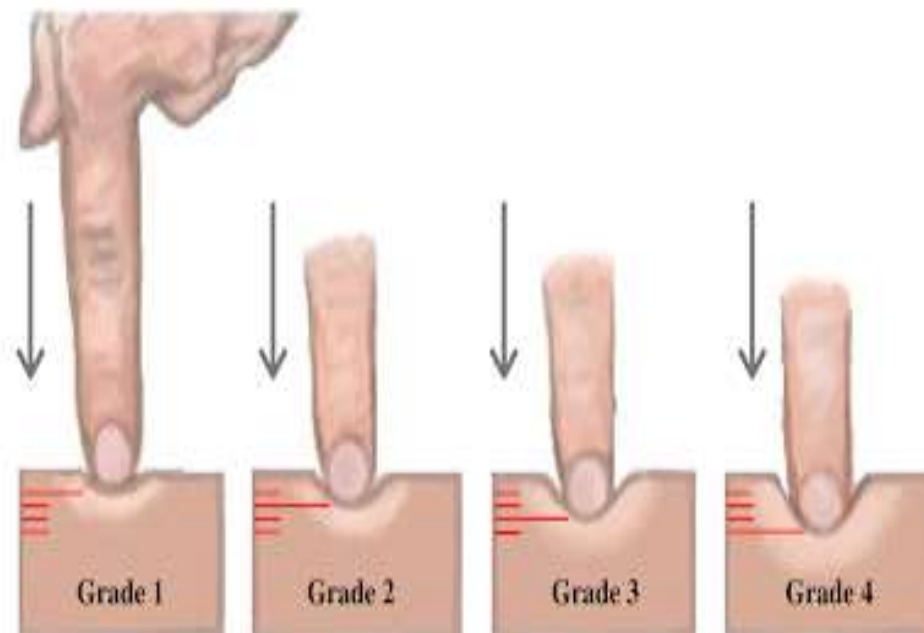
Skin turgor is not a reliable method to assess for dehydration in older adults because they have decreased skin elasticity, so other assessments for dehydration should be included.

## EDEMA

If edema is present on inspection, palpate the area to determine if the edema is pitting or nonpitting. Press on the skin to assess for indentation, ideally over a bony structure, such as the tibia. If no indentation occurs, it is referred to as nonpitting edema. If indentation occurs, it is referred to as pitting edema. If pitting edema is present, document the **depth** of the indentation and **how long it takes** for the skin to rebound back to its original position. The indentation and time required to rebound to the original position are graded on a scale from 1 to 4, where 1+ indicates a barely detectable depression with immediate rebound and 4+ indicates a



Grade 1	0-2 mm indentation; rebounds immediately.
Grade 2	3-4 mm indentation; rebounds in < 15 seconds.
Grade 3	5-6 mm indentation; up to 30 seconds to rebound.
Grade 4	8 mm indentation; > 20 seconds to rebound.



# Life Span Considerations

## Older Adults

Older adults have several changes associated with aging that are apparent during assessment of the integumentary system.

They often have cardiac and circulatory system conditions that cause decreased perfusion, resulting in cool hands and feet. They have decreased elasticity and fragile skin that often tears more easily.

The blood vessels of the dermis become more fragile, leading to bruising and bleeding under the skin.

The subcutaneous fat layer thins, so it has less insulation and padding and reduced ability to maintain body temperature.

Growths such as skin tags, rough patches (keratoses), skin cancers, and other lesions are more common. Older adults may also be less able to sense touch, pressure, vibration, heat, and cold.

When completing an integumentary assessment, it is important to distinguish between expected and unexpected assessment findings.

Assessment	Expected Findings	Unexpected Findings (Document and notify provider if it is a new finding*)
<b>Inspection</b>	Skin is expected color for ethnicity without lesions or rashes.	Jaundice Erythema Pallor Cyanosis Irregular-looking mole Bruising (ecchymosis) Rashes Petechiae Skin breakdown Burns
<b>Auscultation</b>	Not applicable	

<b>Palpation</b>	<b>Skin is warm and dry with no edema. Capillary refill is less than 3 seconds. Skin has normal turgor with no tenting.</b>	<b>Diaphoretic or clammy</b> <b>Cool extremity</b> <b>Edema</b> <b>Lymphedema</b> <b>Capillary refill greater than 3 seconds</b> <b>Tenting</b>
<b>*CRITICAL CONDITIONS to report immediately</b>		Cool and clammy Diaphoretic Petechiae Jaundice Cyanosis Redness, warmth, and tenderness indicate possible infection