Integumentary System Th.

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Grade 1 Course Name : Human Anatomy

Fall Semester

Week No.5

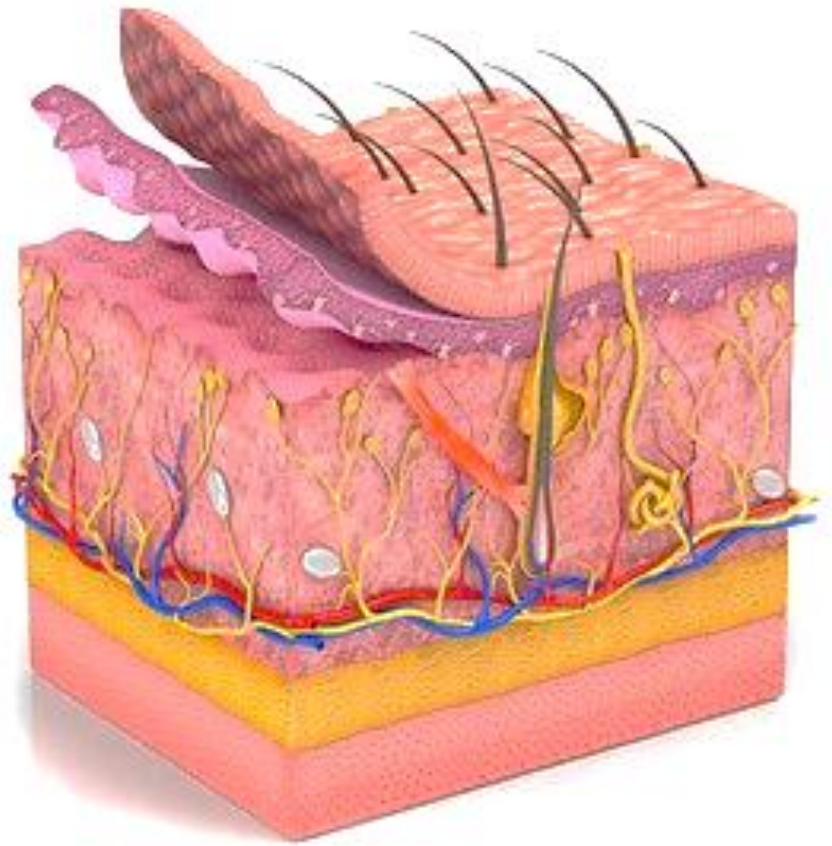
Integumentary system

The **integumentary system** is the largest organ of the body that forms a physical barrier between the external environment and the internal environment that it serves to protect and maintain.

The integumentary system is the body system that covers and protects the body.

Integumentary System Components

1. Skin
    a. Epidermis
    b. Dermis
    c. Hypodermis
2. accessory organs
    a. Hair
    b. Nails
    c. Glands



Main Functions of the Integument

- Protection
- Temperature maintenance
- Synthesis and storage of nutrients
- Sensory reception
- Excretion and secretion

Skin

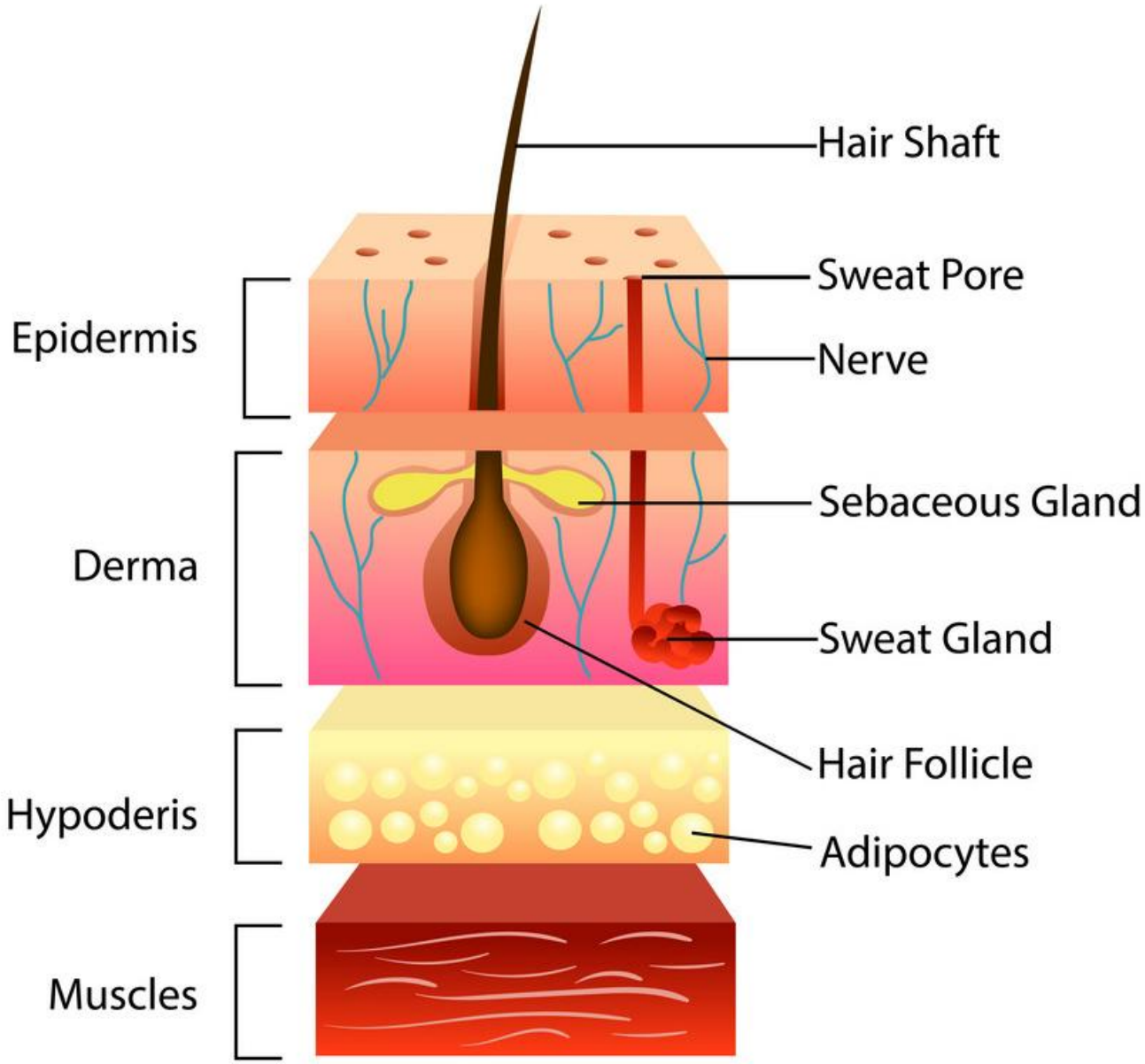
The body's outer covering, which protects against heat and light, injury, and infection.

Skin regulates **body temperature** and **stores water**, **fat**, and **vitamin D**.

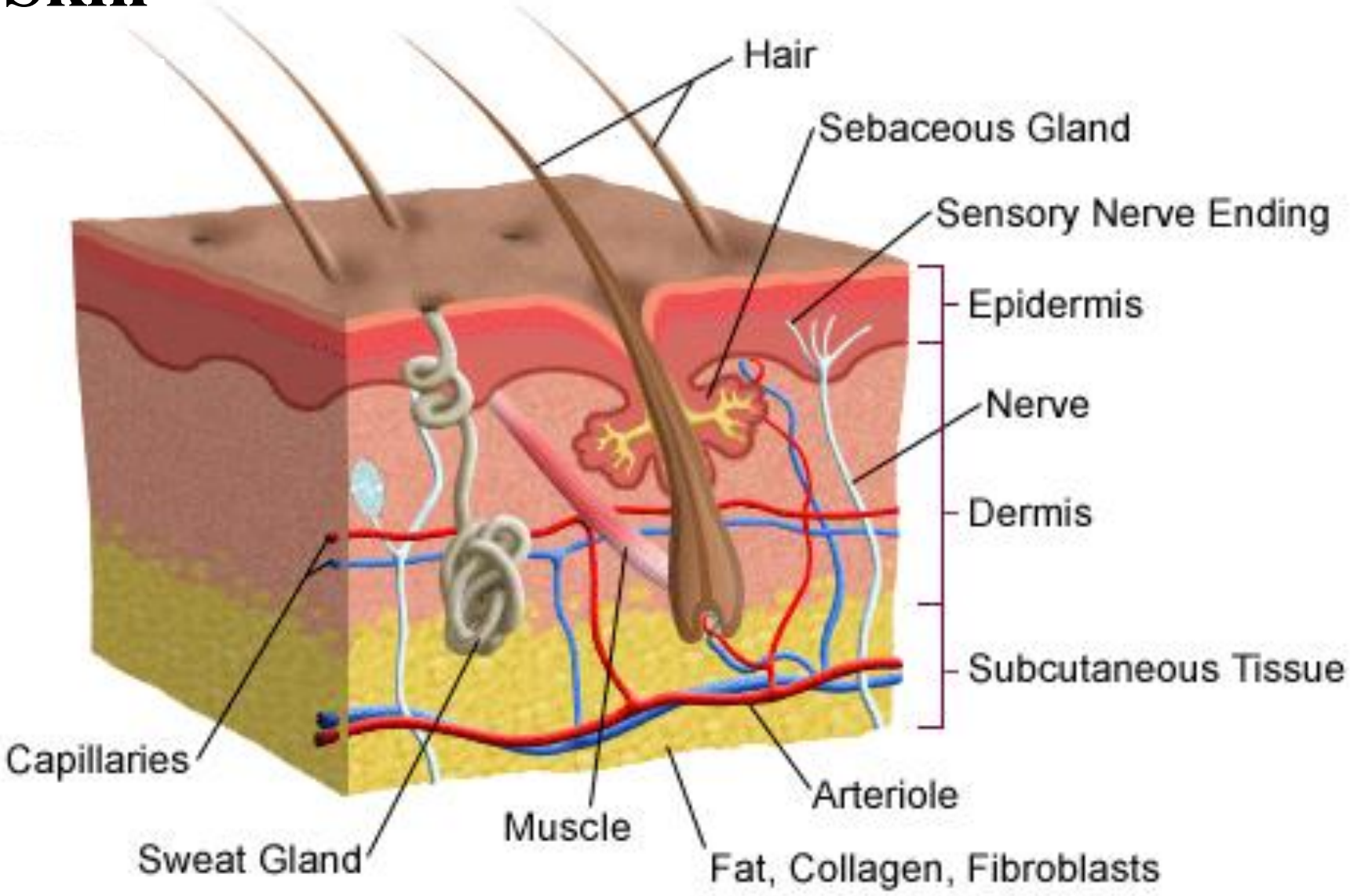
Skin structure

Skin is the largest organ in the body and covers the body's entire external surface. It is made up of three layers, the epidermis, dermis, and the hypodermis. It is supplied with blood vessels and nerves

Skin structure



Skin


Hair
Sebaceous Gland
Sensory Nerve Ending
Epidermis
Nerve
Dermis
Subcutaneous Tissue
Capillaries
Sweat Gland
Muscle
Arteriole
Fat, Collagen, Fibroblasts

Skin

The Epidermis

The epidermis is the outermost layer of the skin. Its thickness depends on where it is located on the body.

The epidermis, the outermost layer of skin, **provides a waterproof barrier and creates our skin tone**.

Skin

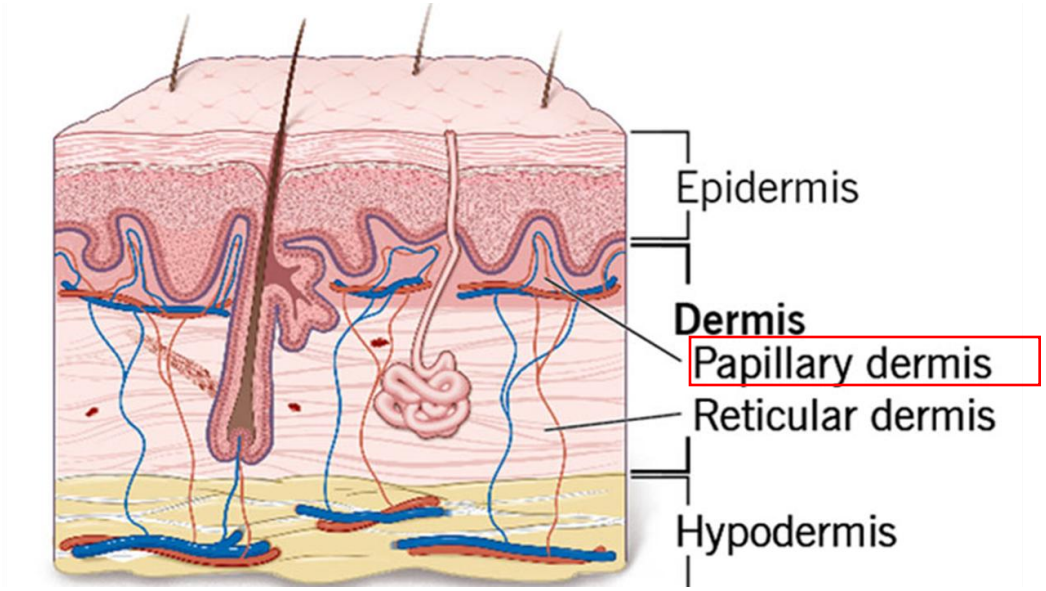
The Dermis

The dermis is the middle layer of the skin. It contains connective tissue, capillaries, nerve endings, and hair follicles. It also contains different glands, including sebaceous glands that produce sebum (a body oil) and apocrine glands that produce sweat.

Skin

The dermis is split into two parts:

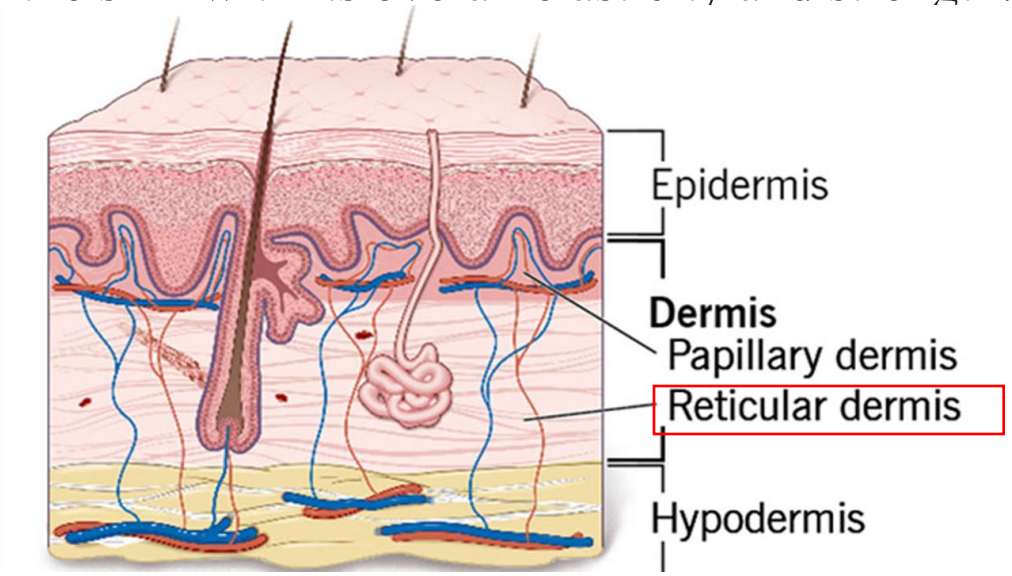
1. **Papillary dermis**: This is the thin, upper layer that contains capillaries that help regulate skin temperature and provide nutrients to the epidermis.



Skin

The dermis is split into two parts:

2. Reticular dermis: This is the thick, lower layer that contains connective tissues and dense collagen bundles that provide the skin with its overall elasticity and strength.



Skin

Hypodermis

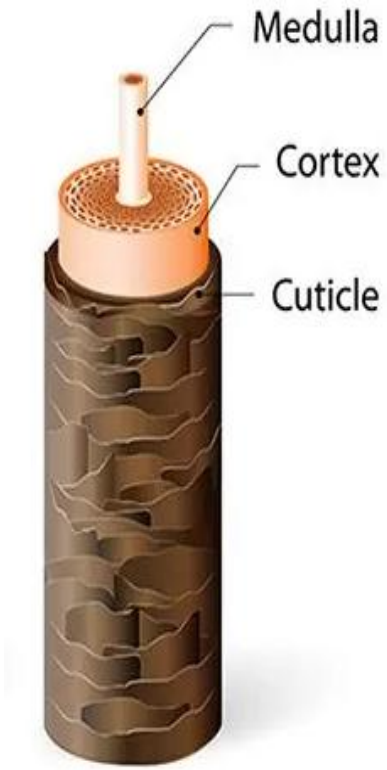
Subcutaneous tissue, which is also known as the hypodermis, is the innermost layer of skin. It's made up of fat and connective tissues that house larger blood vessels and nerves, and it acts as an insulator to help regulate body temperature

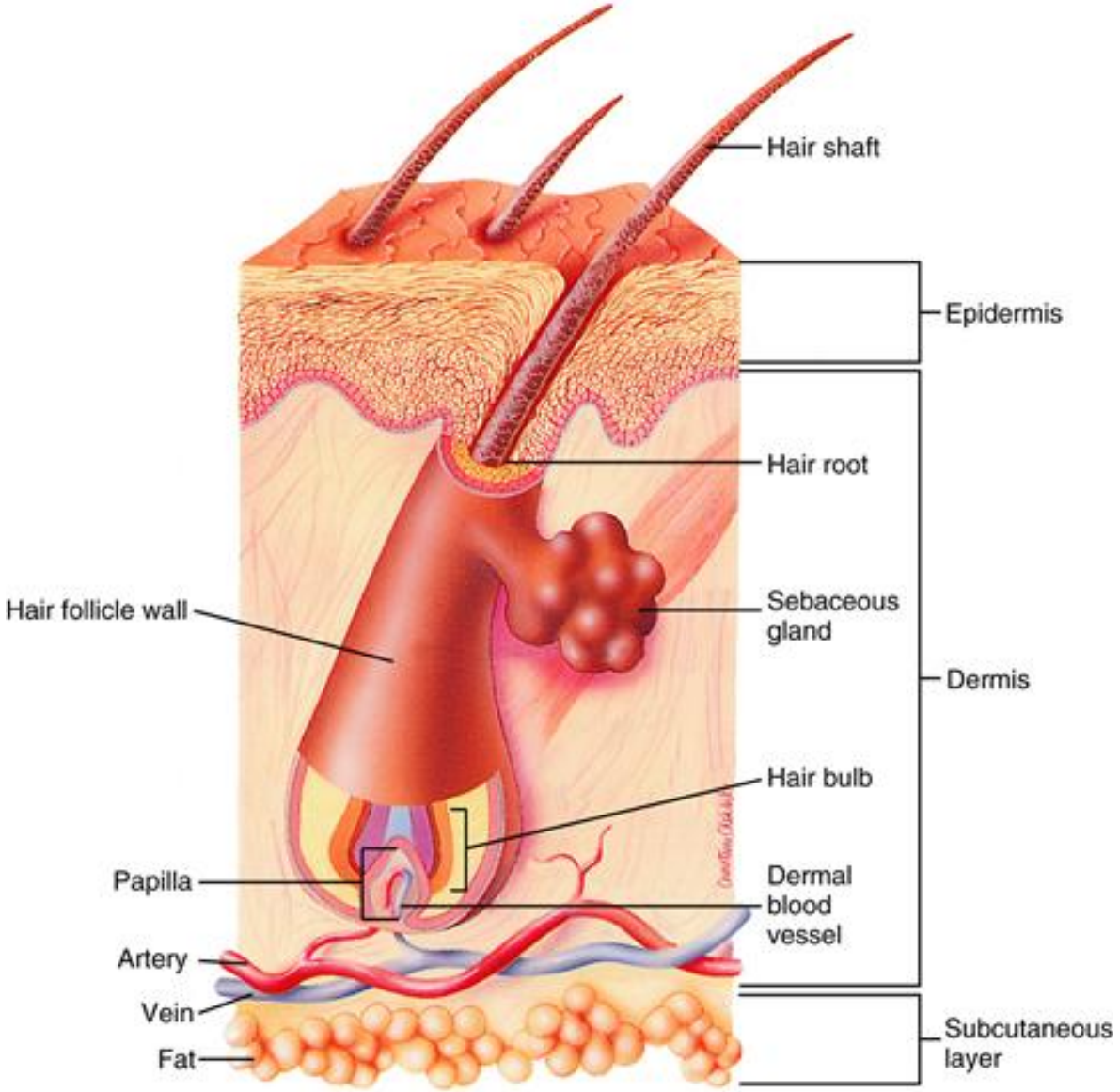
Hair

Hair is a derivative of the epidermis and consists of two distinct parts: the follicle and the hair shaft.

The **follicle** is the essential unit for the generation of hair. The **hair shaft** consists of a cortex and cuticle cells, and a medulla for some types of hairs.

Hair anatomy



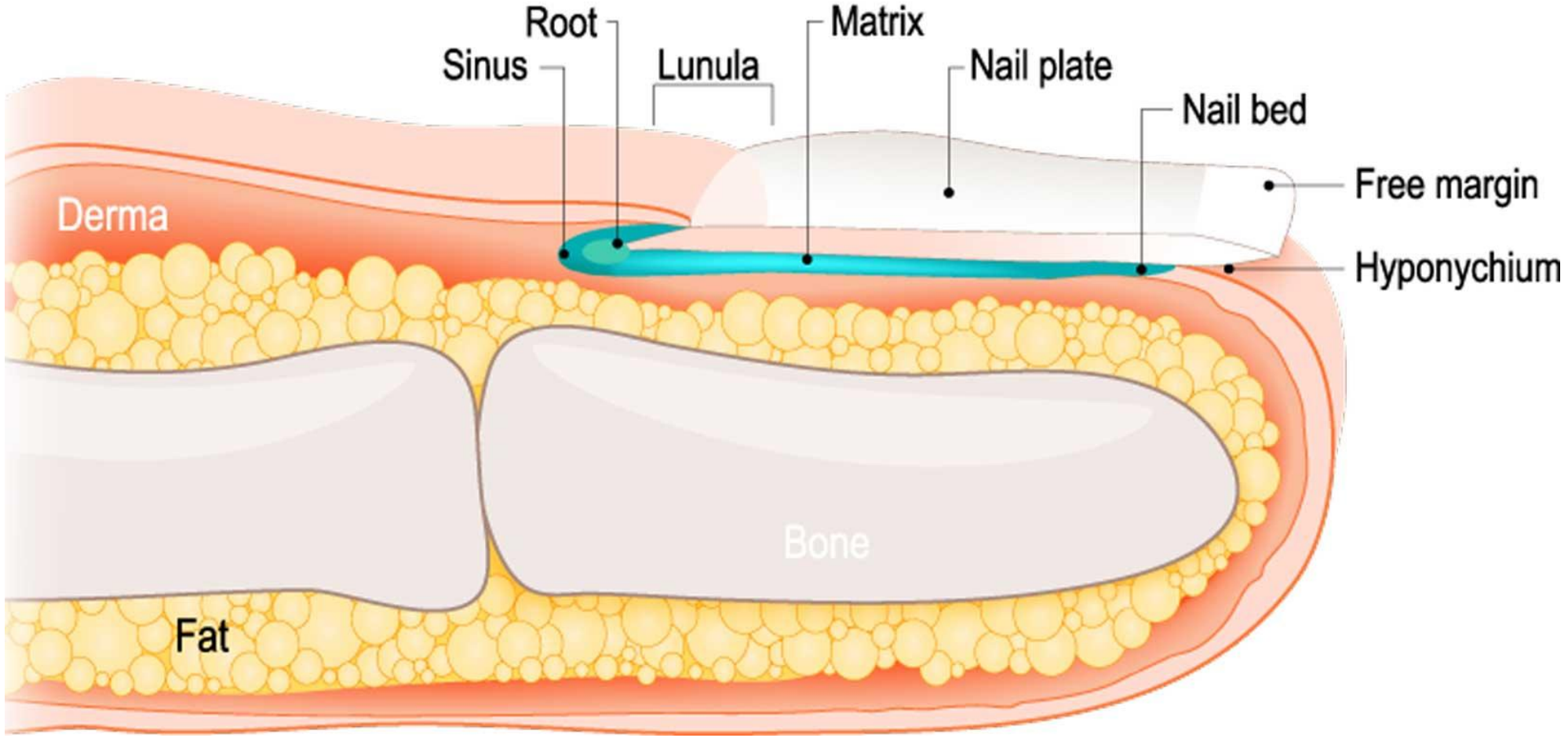


Nail

The nail structure is divided into six parts: **root, nail bed, nail plate, eponychium, paronychium, and hyponychium.**

Each of these six components has a specific function, and if a component of the nail structure is disrupted, the nail can look abnormal.

Nail


Root
Matrix
Sinus
Lunula
Nail plate
Nail bed
Free margin
Derma
Hyponychium
Bone
Fat

Associated Glands:

There are four types of exocrine glands within human skin

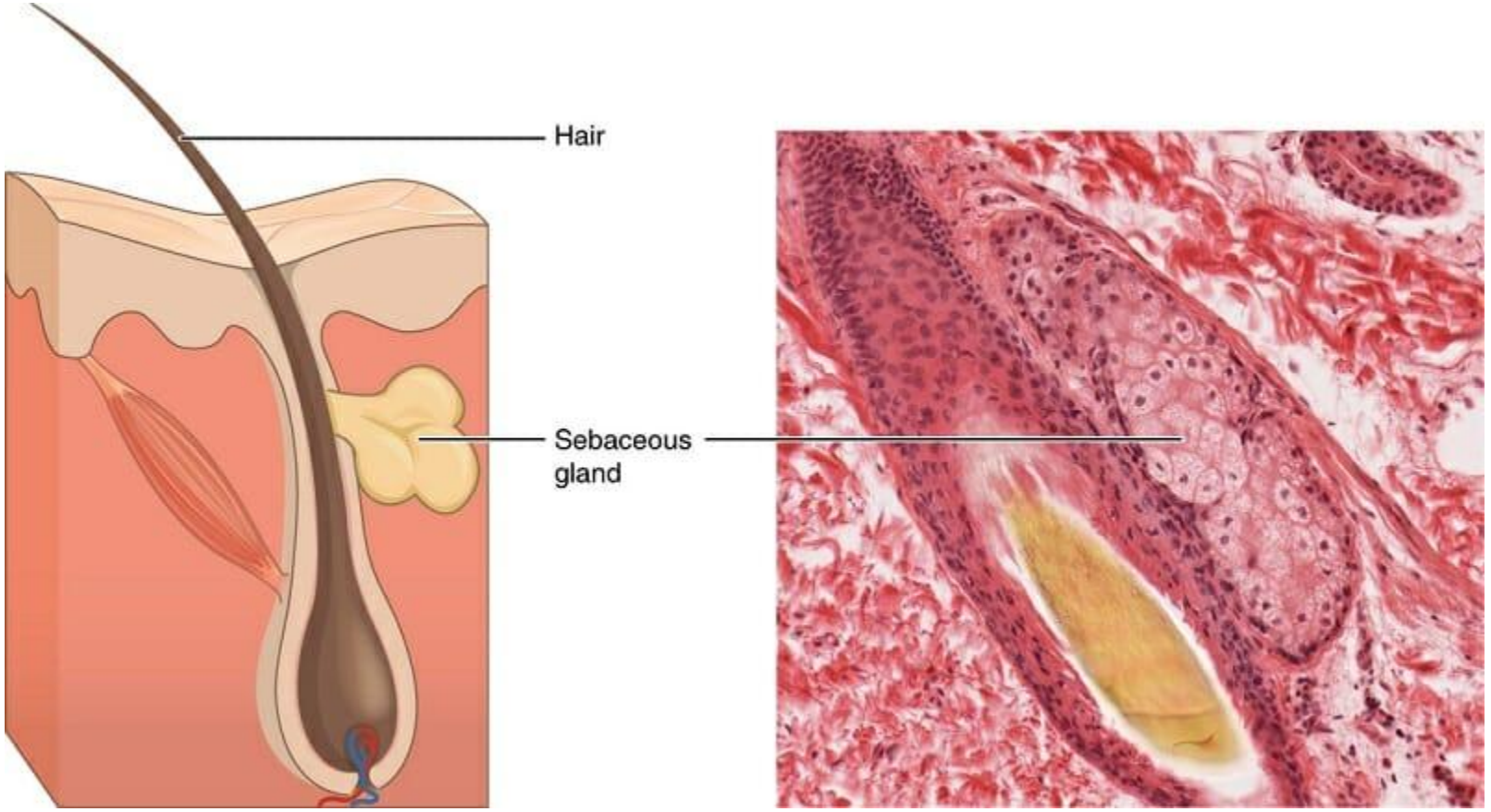
1. **Sebaceous**
2. **Sudoriferous**
3. **Ceruminous**
4. **mammary glands**

Sebaceous glands

Sebaceous glands are oil glands. They have tiny ducts that open into each hair follicle.

Sebaceous glands are usually attached to hair follicles and release a fatty substance, sebum, into the follicular duct and thence to the surface of the skin.

Sebaceous Glands

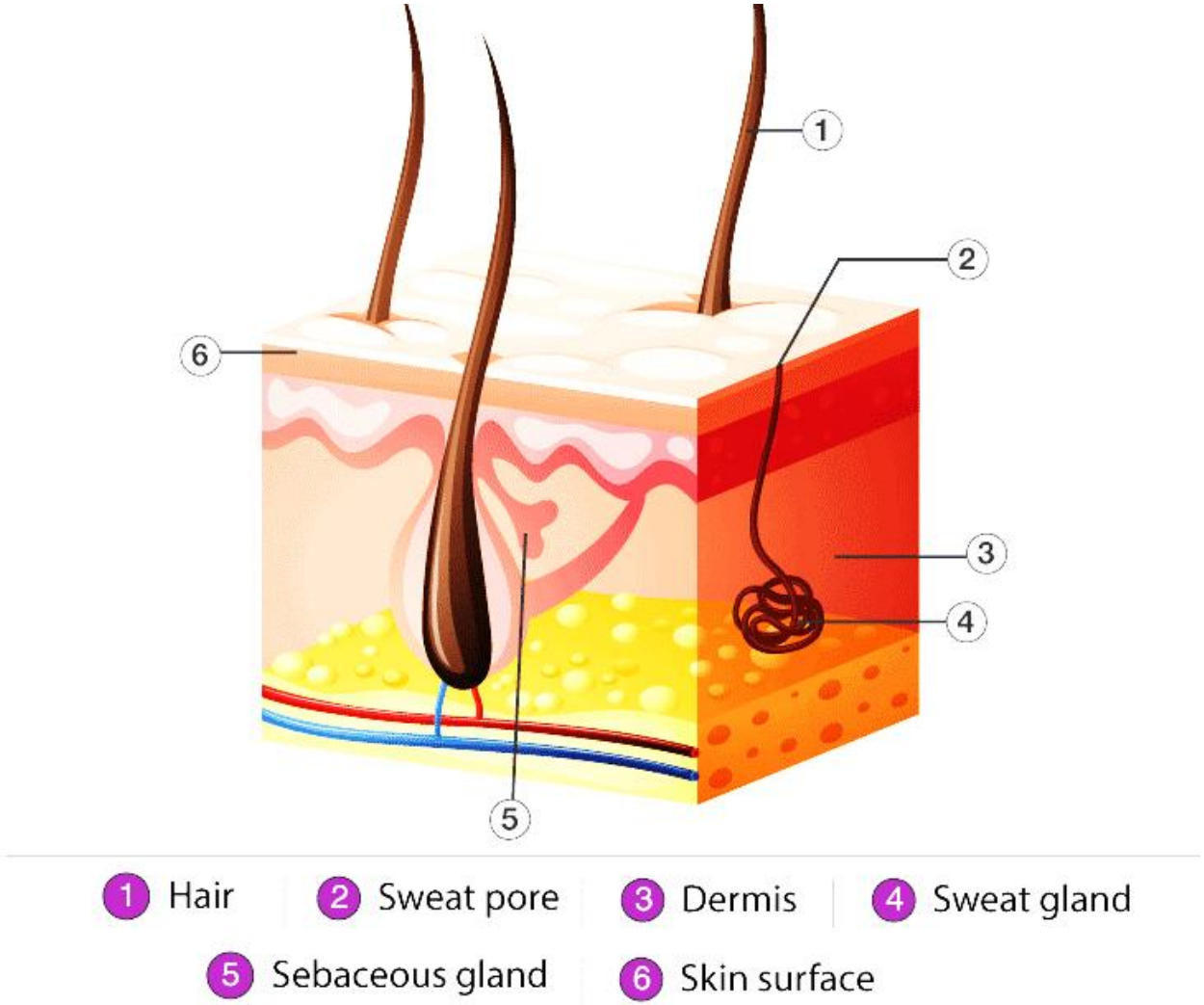


Sudoriferous(Sweat glands)

Sweat glands, are small tubular structures of the skin that produce sweat.

Sweat glands are a type of exocrine gland, which are glands that produce and secrete substances onto an epithelial surface by way of a duct.

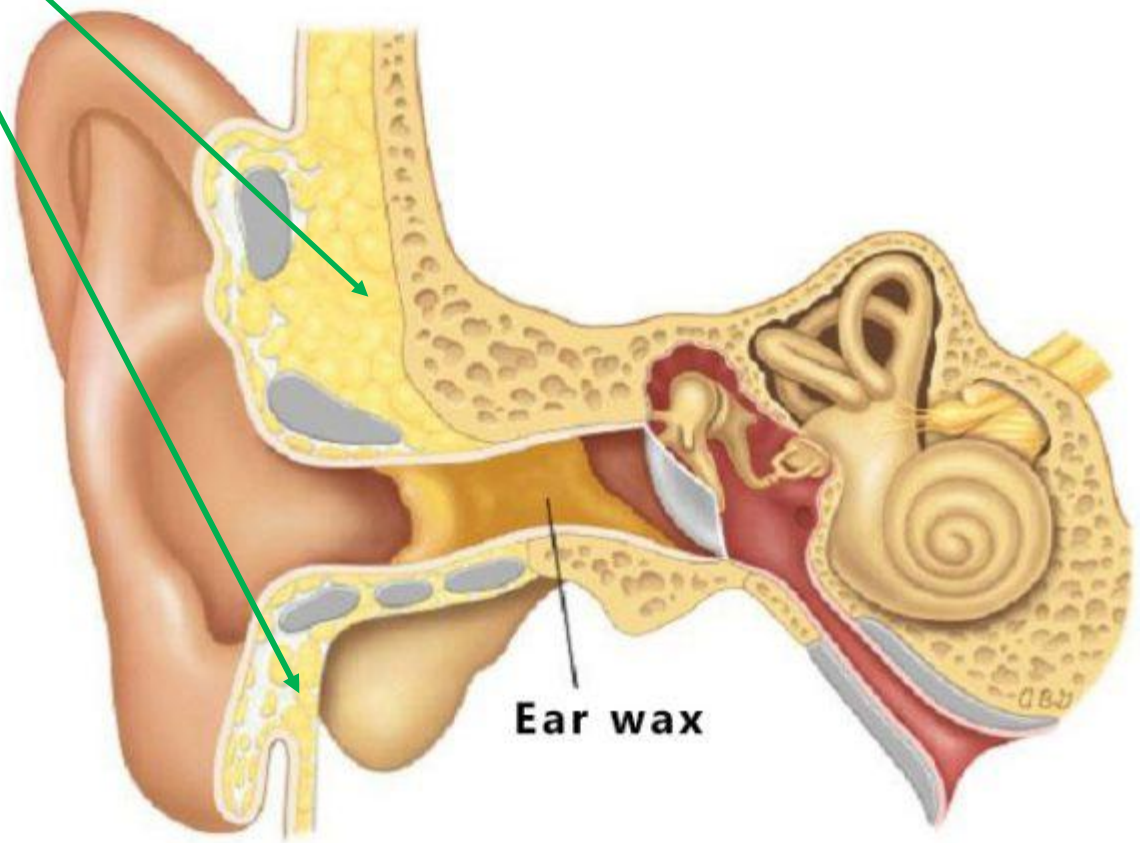
Sweat glands



Ceruminous glands

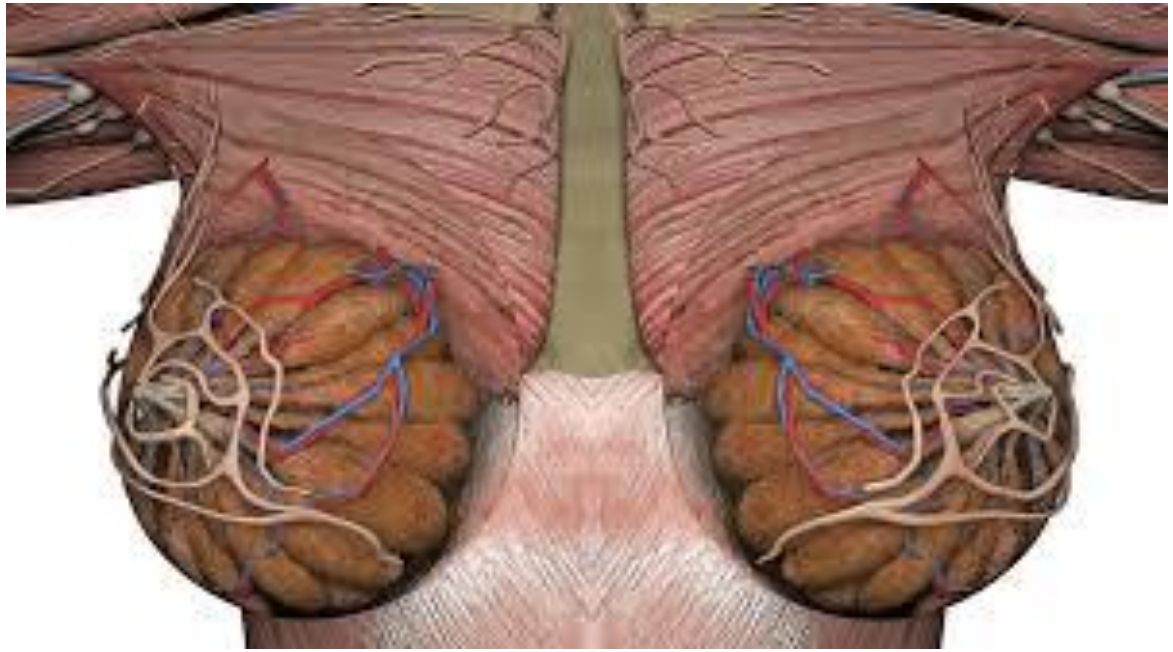
The **ceruminous glands** in the skin of the human external auditory canal are modified apocrine glands, which, together with sebaceous glands, produce the cerumen, the ear wax

Ceruminous glands



Mammary gland

The mammary gland is a gland located in the breasts of females that is responsible for lactation, or the production of milk.




QUESTIONS?
COMMENTS?
CONCERNS?