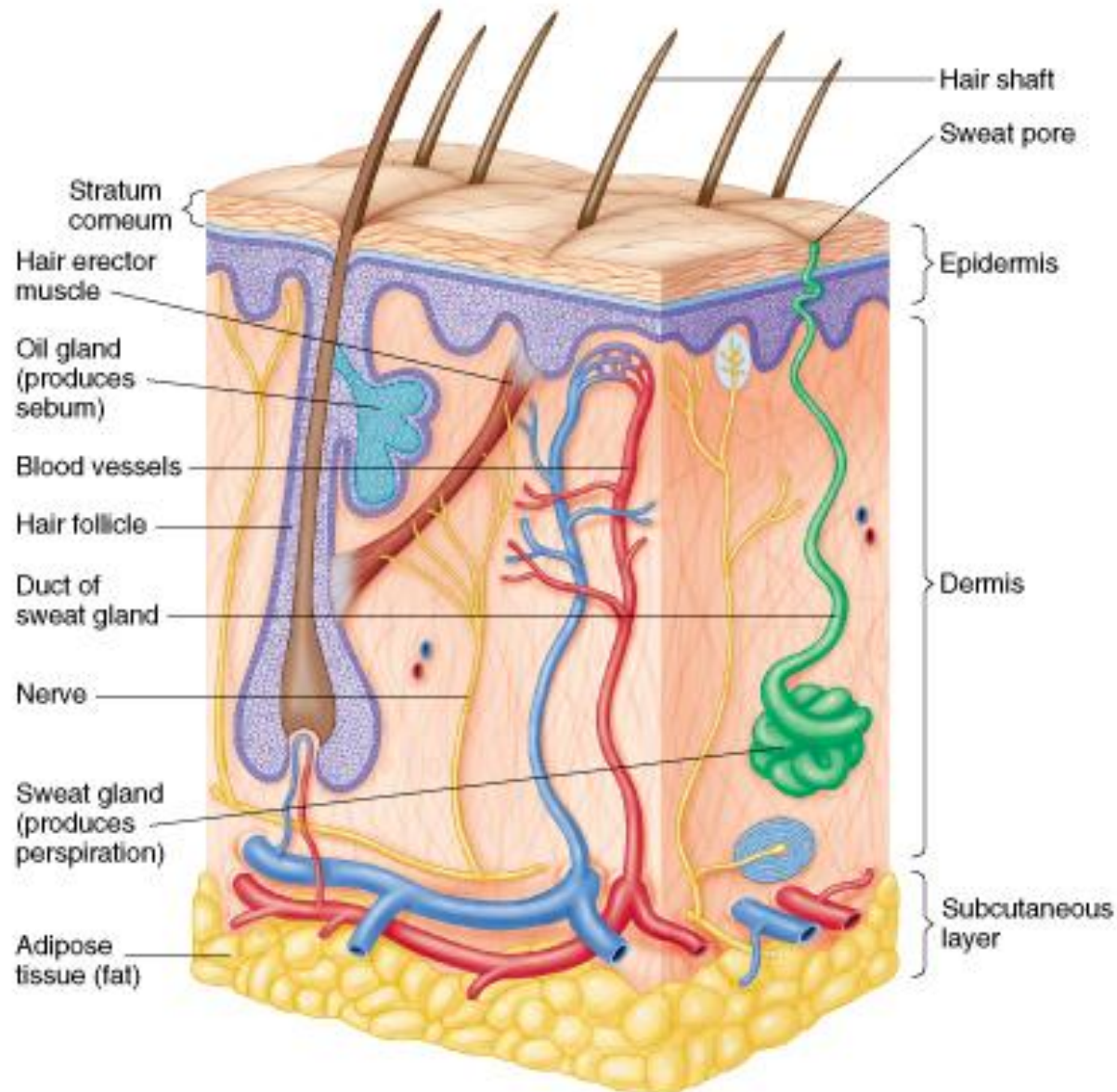


Infectious Diseases of the Skin

CLS 212: Medical Microbiology

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Anatomy of the Normal Skin



Anatomy of Normal Skin

- The skin is the largest organ covering the entire body.
- Functions of the skin is to protect the body against heat, light, and infection.
- The skin consist of 3 layers:
 1. **Epidermis:** one part is the **stratum corneum**, contains the protein Keratin and skin pigment (melanin).
 2. **Dermis:** contains blood vessels, nerves, lymph vessels, hair follicles, and sweat and oil glands.
 3. **Subcutaneous:** contain lipid tissue that keeps the heat of the body.

Infectious Diseases of the Skin

Bacteria

Staphylococcus aureus.

Streptococci pyogenes (Group A)

Propionibacterium acnes.

Clostridium spp.

Viruses

Herpes viruses (HSV-1 & HSV-2)

Varicella-zoster virus

Measles virus

Rubella virus

Fungi

Candida spp.

Tinea spp. (Dermatophytes)

Piedra hortae (Black Piedra)

Parasites

Lice

Scabies (mite)

Hook worm

Staphylococcus aureus

- **Folliculitis:** Infection of hair follicles.
 - **Pimples:** superficial infection (red area).
 - **Furuncles:** localized region of pus (white) surrounded by inflamed tissue- red area).
 - **Carbuncles:** deep tissue damage.
- **Impetigo (school sores):** a superficial skin infection It appears as small blisters or yellow honey-colored crusts.
- **Cellulitis:** redness of the skin, swelling, blistering, and abscess.
- **Ecthyma:** hard crusted sores over ulcer.
- **Staphylococcal Scalded Skin Syndrom (SSSS).**
- **Toxic Shock Syndrome (TSS).**

Carbuncles



Folliculitis



Furuncles



Pimples

Impetigo



Ecthyma



Cellulitis



Scalded Skin Syndrom



Viral Infections of the Skin

- **Warts:** caused by *Human Papilloma Virus (HPV)*

- Although warts themselves are invariably benign, papillomaviruses have been associated with increased frequency of cervical and skin cancers, so removal of warts is usually recommended.



- **Chickenpox and shingles:** caused by *Varicella-Zoster Virus (VZV)*.

- Chickenpox is transmitted by air-route, and the infection is localized in the skin. Most common in children.

- After recovery, the virus remains dormant in the nervous system.

- However, in old people it may become reactivated, causing shingles. Shingles is an infection of a nerve and the area of skin around it.



- **Measles:** caused by *Rubeola virus*, is a systemic infection characterized by a skin rash.
 - It is an endemic childhood disease, complications of measles infection can be quite serious (ear infection, respiratory tract infection).
 - There is no treatment for measles.
- **Rubella: (or German measles)** caused by *Rubella virus*.
 - Rubella infection in both children and adults is usually mild, infection starts with facial red rash then goes to the whole body. Infection will take about 3 days.
 - Infection of a woman during the first trimester of pregnancy can lead to **congenital rubella syndrome (CRS)**, with a high incidence of fetal damage.
- **Immunity to both diseases:** through MMR-Measles Mumps Rubella Vaccine. Given to 18 month babies.

Parasitic Infection of the Skin: Lice

1. Head Lice: (*Pediculus humanus capitis*)

- **Symptoms:** include itching of the scalp, neck, and behind ears.
- Most common in children.
- **Transmission:** direct head-to-head contact or sharing hair stuff.

2. Body Lice: (*Pediculus humanus corporis*)

- **Symptoms:** itching, bite marks on the body.
- Most common in communities dealing with poverty, overcrowding, and poor personal hygiene.
- **Transmission:** body lice live in clothing and affect the body.

3. Pubic Lice: (*Phthirus pubis*)

- **Symptoms:** itching of the pubic area, Bluish colored sore.
- **Transmission:** direct sexual contact. Not spread by toilet seats.

Body Louse



Head louse



Louse eggs (nits)



Pubic Louse