

- Spinousum: **desmoglein-1 and 3** is a protein that make cells to adhere to each other. (Prevent scalding)
- Dermis: contain **hyaluronic acid** that prevents spreading of bacteria across the skin

Staphylococcal aureus:

virulence factor

- **protein A** (protection against antibodies) (Cloaking)
- Enzymes: **Hyaluronidase** (invade skin), **lipase**, **penicillinase**, **coagulase**, **kinase**
- Toxins that destroy blood cells: **hemolysin**, **leucocidin**
- **Exfoliative** toxin: toxin that **destroys desmogliadin-1 and 3** (skin scalding)
- **Toxic shock syndrome toxin (TSST)**: Superantigen (cytokine storm) > Shock
- can withstand **high salt**, **extremes in pH** and **temperatures**.
- The most common cause of the pyodermal infections (**pus producing lesions**)
- **Facultative** anaerobe
- Coagulase enzyme protect the bacteria by prevent phagocytosis by WBC **make the infection localized**
- The **anterior nares** and **throat** of normal healthy adults are colonized (more than 30%)

Folliculitis:

- Superficial or deep infection in the hair follicle
- On the face , neck, axillae, and buttocks

Causative agents:

- Staphylococcus aureus
- Occasionally Pseudomonas aeruginosa
- Candida-albicans (immunocompromised patients)

Furuncle:

a boil: pus

only one draining point

develop also in a sebaceous or sweat gland Localized

Carbuncles

- A cluster of boils
- red gem, little coal
- Pus discharge from multiple openings
- Leave a scar when it heals.
- Avoid squeezing or irritating a carbuncle

Septic arthritis:

- **S. aureus, Streptococcus spp, Gram-negative bacilli**
- Treated with **antibiotics** and **drainage** of the infected joint fluid from the joint

Bone infections:

- Osteomyelitis caused by **bacterial infections** are more destructive and move rapid
- Sub-acute: Fever/ mild swelling
- Early Acute: Febrile illness Limping to walk / Avoidance of using the extremity
- Late Acute: Swelling / pain
- Chronic: purulent drainage

Toxigenic disease:**1- Staphylococcal scalded skin syndrome (SSSS)**

- In Infants called Ritter's disease in.
- older children Lyell's syndrome
- The disease is most common in neonates and children less than 5 years of age
- Treatment include rehydration, antipyretics, and antibiotics that cover S. aureus.

2- Toxic shock syndrome toxin-1 (TSST-1)