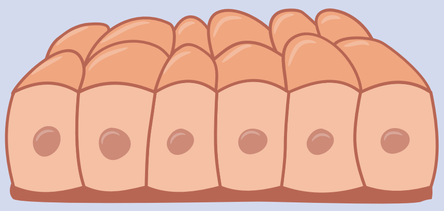
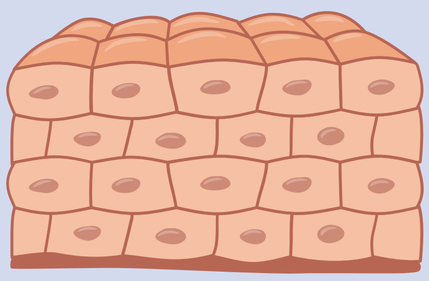
Integumentary System

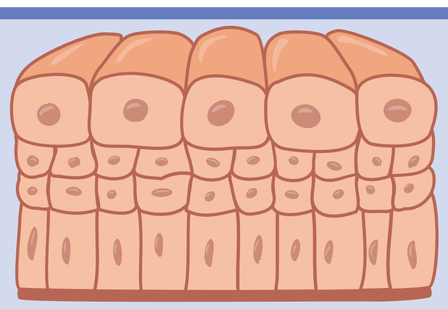
Know the types/locations of epithelium



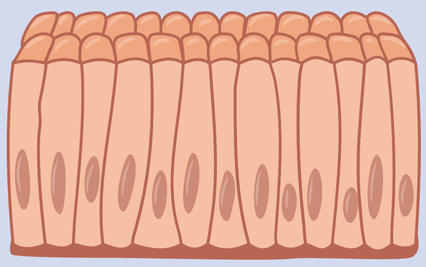
Simple cuboidal - found in glands and ducts and is involved in secretion and absorption



Stratified squamous - protects against physical and chemical stresses and prevents water loss



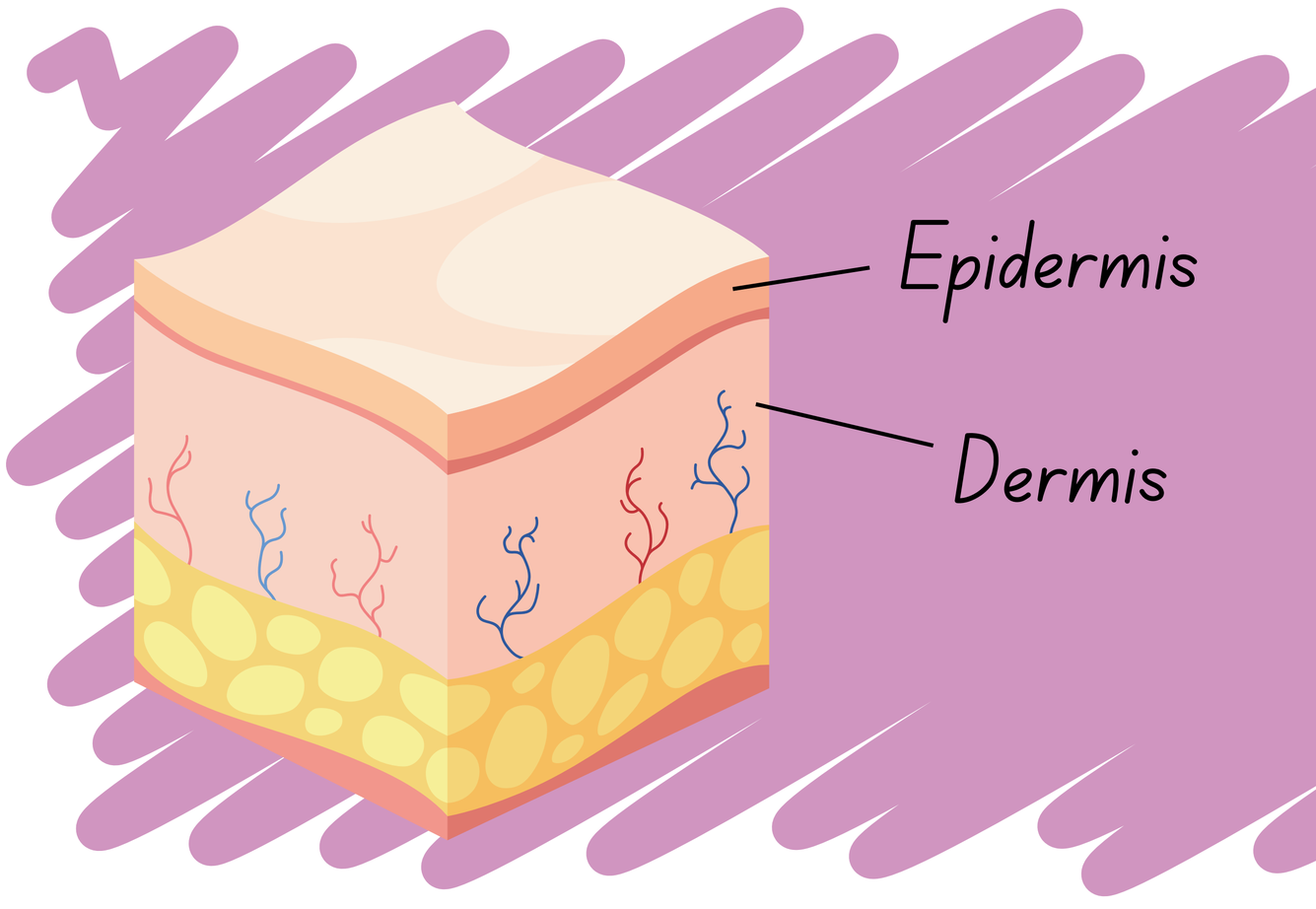
Transitional - ability to change shape without damaging the cell (located in the urinary tract)



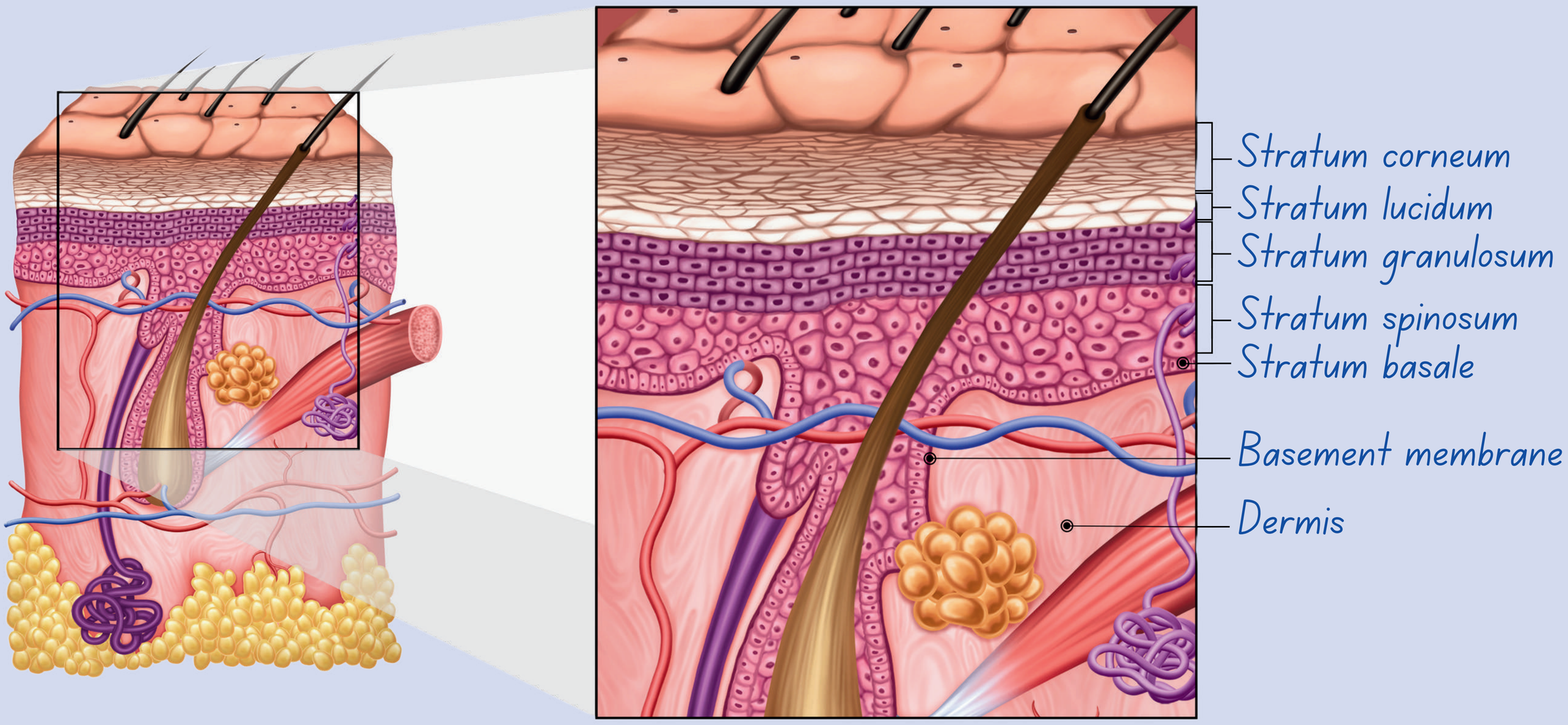
Columnar - responsible for secretion, excretion, and absorption (located in stomach and intestines)

Cutaneous membrane - top layer of skin

- Epidermis
  - Stratified squamous epithelium
    - Function of protection
- Dermis
  - Papillary layer (reticular layer)



Integumentary System



Know the layers of epidermis in order and thickness

- Stratum corneum - 15 to 30 layers of keratinized cells, outermost layer, waterproof
- Stratum lucidum - found only in thick skin, densely packed dead cells
- Stratum granulosum - grainy, starting to produce keratin, cells are thinner and flatter
- Stratum spinosum - spiny layer, 8 to 10 layers of keretinocytes and contains Langerhans dendritic cells
- Stratum basale - bottom layer attached to basement membrane, basale cells are found here

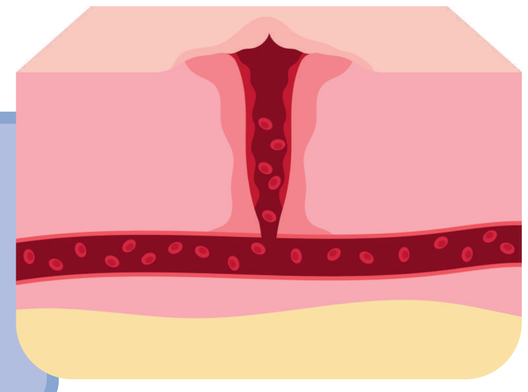
Come Look, Grandma—SpongeBob!

(Corneum, Lucidum, Grandulosum, Spinosum, Basale)

Integumentary System

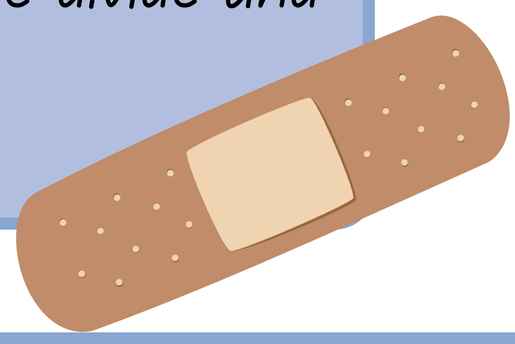
Four main stages of wound healing

Hemostasis phase - This stops the bleeding at the wound site to prevent further loss of blood.



Inflammation phase - This happens at the same time as the hemostasis phase, and it involves the activation of the immune system to remove damaged cells and bacteria from the wound. Cells of stratum basale divide and migrate along wound edges during this phase.

Proliferation phase - The wound is 'rebuilt' with new granulation tissue, and cells of stratum basale divide and migrate along wound edges.

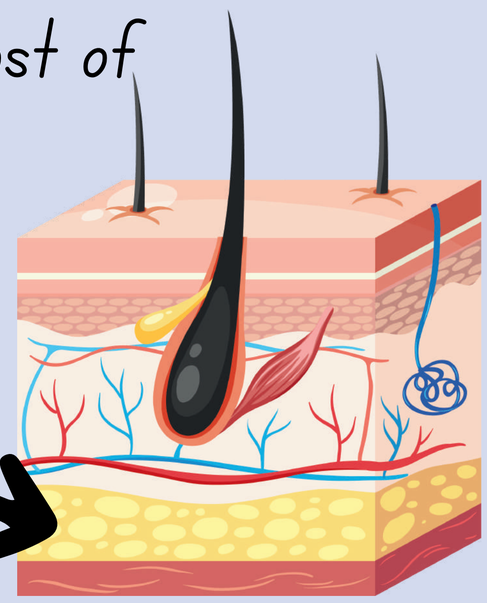


Maturation phase - The wound area is strengthened and repaired, and the skin begins to become stronger and more flexible again.

Integumentary System

Other things to remember

- Melanin - makes skin different colors
- Melanocytes - produce melanin and are located in the stratum basale
- Melanosomes - vesicles that produce, store, and transport melanin
- Keratin - the most abundant protein in the skin, making up most of the outermost skin layer
- Subcutaneous - the bottom layer of the skin and not part of the integumentary system
- Arrector pili - muscle that raises hair follicles (goosebumps)
- Cholecalciferol - created in response to the sun (vitamin D3)
- Calcitriol - allows calcium and phosphate absorption in small intestine



- The skin can excrete salt, sweat, etc. and protects against a lot of things. It also helps control temperature.

- The fingerprint is defined by the skin ridges on the pads of the fingers.