Histology lab
Skin layers

- **Stratum Corneum**: either dark or light staining, large color contrast.
- **Stratum Lucidum**: cells appear grainy on inside.
- **Stratum Granulosum**: cells along basal layer.
- **Stratum Germinativum/Basale**: (cells along basal layer)
- **LGT**: Meissner’s Corpuscle
- **Mitosis**: Dermis
- **Epidermis**:
Epidermal layers
Stratum spinosum
Stratum granulosum

keratohyalin granules.
Stratum Lucidum
Stratum corneum
Types of skin

Thick skin
- layers 5
  - Prominent stratum corneum
  - Well developed stratum granulosum
  - Palms of the hands and soles of the feet
  - Thinner dermis
  - No hair and sebaceous glands

Thin skin
- 4 layers
  - Less prominent stratum corneum
  - Less developed stratum granulosum
  - Dominant and lines most of the body surface
  - Thicker dermis
  - Hair and sebaceous glands
Epidermal cell types

- Keratinocytes *(structure)*
- Melanocytes *(pigment)*
- Merkel cells *(sensation)*
- Langerhans’ cells *(immune defense)*
Keratinocytes

Most numerous all layers of the epidermis. production of keratin.
Melanocytes-

- cells of the stratum basale & in the hair follicles.
- Derived from neural crest cells.
- rounded cell body
- Long irregular dendritic extensions.
Langerhans cells

• star shaped bone marrow derived cells.
• Present in the S. spinosum
• These cells are antigen presenting cells.
Merkel’s cell

- mechanoreceptors resemble pale-staining keratinocytes with keratin filaments in their cytoplasm but few if any melanosomes
TYPES OF EPIDERMAL CELLS

- Keratinocytes
- Pigmented basal cells
- Melanocytes
- Langerhans cells
- Granulosa cells

Merkel cells and melanocytes
Dermis

- Papillary layer of dermis
- Reticular layer of dermis
- Keratin layer
- Cellular layers of epidermis
- Epithelial peg
- Dermal papilla
- Eccrine sweat glands
- Hypodermis
Dermis

- Contains 2 layers:
  - Papillary layer
  - Reticular layer
Papillary layer

- the major part of the dermal papillae
- 1/5 of the dermis
- loose connective tissue, anchoring fibrils of type VII collagen.
Reticular layer

• irregular dense connective tissue (type I collagen).
• Reticular dermis is the lower 4/5
• more fibers and fewer cells than the papillary layer.
• A network of elastic fibers.
Skin Appendages

1 Hair Follicles and hair

2 Sweat Glands
   Eccrine or merocrine sweat glands
   Apocrine sweat glands

3 Sebaceous glands

4 Nails
Hair and hair Follicles

- Hair follicle
- Dermal sheath
- Epidermal sheath
- Matrix (growth zone) in hair bulb
- Melanocyte
- Connective tissue papilla containing blood vessels
Hair
Sebaceous gland

- embedded in the dermis except skin of the palms and soles.
- branched acinar glands
Sebaceous glands
Sebaceous gland
Sweat Glands

**Merocrine sweat gland**
- Empty directly onto skin surface
- Location: most all over body (esp. abundant on palms & soles: ~500/cm²)
- Clear, watery secretion (99% H₂O; rest NaCl + some waste products)

**Apocrine sweat gland**
- Empty into hair follicle
- Location: armpits, groin, nipples
- Viscous, cloudy secretion → good nutrient source for bacteria (odor !!)
- Secretion begins at puberty and is stimulated during emotional distress
Eccrine sweat gland

- are **widely** distributed in the **skin**
- most numerous on the **soles of the feet**
- the secretory portions and ducts are **coiled** and have small lumens
- secretory part is generally more pale-staining than the ducts and has **stratified cuboidal epithelium**
Apocrine gland

- skin of the axillary and perineal regions
- large lumen.
- The secretory portions of apocrine sweat glands consist of simple cuboidal, eosinophilic cells with numerous apical secretory granules that undergo exocytosis.
  - their cells show merocrine.
Bone
Osteocytes:
Slide 69 Bone, Femur

- Osteoclasts
- Howship’s lacuna

Bone
Types of Bone

1) compact bone.
2) cancellous (spongy) bone.
Muscle
Skeletal muscle

- Longitudinally cut muscle fibre
- Striations
- Muscle fibre nuclei
- Transversely cut muscle fibres
- Osmium capture
- Peripheral placed nuclei
- Endomysium
- Capillaries
- Myofibrils
Perimysium surrounding a bundle of muscle fibres

Epimysium surrounding entire muscle

Endomysium around individual muscle fibres
Colon H&E

- Transversely cut smooth muscle cells
- Myenteric plexus ganglion cells
- Longitudinally cut smooth muscle cells
- Nuclei
thank you