

INTEGUMENTARY SYSTEM

- I. Skin (Integument)
- Slide 181 Thick skin, Homo, H&E.
Virtual Slide ID 324
- Slide 182 Thick skin, Monkey, H&E.
Virtual Slide ID 327
- Slide 183 Thin skin, Homo, H&E.
Virtual Slide ID 594
- Slide 183.1 (183a) Thin skin, Homo, H&E.
Virtual Slide ID 282

Slides 181 and 182. Examine epidermis, dermis, and hypodermis of **thick skin**.

- A. The epidermis is a **stratified epithelium** whose function is the production of a protective layer of keratin. Cells are arranged in cytomorphogenetic progressions, the youngest cells being next to the dermis and the oldest (dead) cells at the free surface. The epidermis is divisible into a stratum germinativum (including the 1. **stratum basale** and 2. **stratum spinosum**), 3. **stratum granulosum**, 4. **stratum lucidum**, and 5. **stratum corneum** as shown on the screen shot for slide 181.
- B. The **dermis** (or corium – that is analogous to a lamina propria) may be divided into:
1. **papillary layer** - a dense irregular connective tissue just under the epithelium. It forms **dermal papillae** which protrude into the epidermis between **epidermal ridges** or **pegs**. Dermal papillae contain blood vessels and sensory receptors. **Meissner's corpuscle** may be seen.
 2. **reticular layer** - a dense irregular connective tissue that is composed of larger collagen fibers. The reticular layer lies between the hypodermis and papillary layer. **Hairs, sweat glands, sebaceous glands, and Pacinian corpuscles** are found here.
- C. The **hypodermis** (the superficial fascia of gross anatomy / also like the submucosa of other organs) is found beneath the dermis. It is a looser connective tissue and may be infiltrated with fat (panniculus adiposus). It is classified as a **loose or areolar connective tissue**.

Slides 183 and 183.1. Examine the epidermis, dermis and hypodermis of thin skin.

The epidermis is thin compared to thick skin. The layers of the epidermis are less well defined. The distinction between thick and thin skin is based on the thickness of the epidermis only. The dermis of thin skin may be quite thick (see slide 183).

II. Hair Follicle

Slide 183.1 Scalp, Homo, H&E.
Virtual Slide ID 282

Slide 132.1 Developing Toot; Pig; H&E.

Analyze the structure of a **hair follicle using either slide.**

Identify the hair shaft, the bulb, the matrix and the papilla. Distinguish **internal** and **external root sheaths** and the **dermal sheath**. Note the relationship of sebaceous glands and smooth muscle (arrector pili muscle) to the follicle.

III. Merocrine (Eccrine) Sweat Glands

Slide 181 Thick skin, Homo, H&E.
Virtual Slide ID 324

Slide 181. Examine both the glandular endpieces and the ducts of the **merocrine sweat glands**.

1. The duct of the gland is composed of a bilayered epithelium. Cells of the duct are darkly stained and their apical surfaces may be highly acidophilic (area of terminal web). You may find one or all of its three subdivisions: a **deep coiled component**, a **straight or spiral dermal segment**, and an **intraepidermal segment**.
2. The **glandular portion (or secretory endpiece)** is composed of a simple cuboidal epithelium. It is found in the hypodermis or deep part of the dermis. Cells are more lightly stained than those of the duct.

IV. Myoepithelial Cells

Slide 182 Thick skin, Monkey, H&E
Virtual Slide ID 327

Slide 182. Myoepithelial cells (may actually be smooth muscle cells) are found in association with the secretory portion of many glands (e.g., mammary, salivary). They are located between the secretory cells with which they share a basal lamina, and they are more acidophilic than the secretory cells.

V. Sebaceous Glands - ON NEXT PAGE

V. Sebaceous Glands

Slide 183.1 Scalp, Homo, H&E
Virtual Slide ID 282

Slide 122 Cheek, Child, H&E.
Virtual Slide ID 293

Examine either slide for the following features of sebaceous glands:

1. The ducts of sebaceous glands are lined with a stratified epithelium that is usually (but not always) continuous with the epithelial sheath of a hair follicle.
2. The epithelium of the duct is in turn continuous with the flattened epithelium lining the secretory (saccular) portion of the gland.
3. The saccular portion consists of a **stratified epithelium**. Low or cuboidal cells positioned along the periphery of the saccule are found beneath more lightly stained and more superficially located cells. The saccule is embedded in loose (areolar) connective tissue.
4. The more lightly stained cells have nuclei and cytoplasmic strands that separate lipid droplets (which are lost in the preparation).
5. Within the interior of the sac locate **pycnotic nuclei**.
6. Cellular debris in the ducts and saccules is due to **holocrine secretion**.