Histology & the Skin

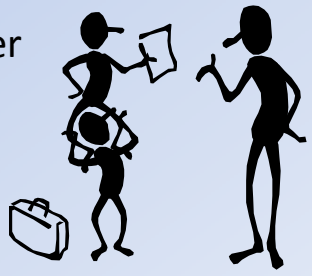
(Week 2)

First Tasks…

- Choose a lab partner
  (preferably seated next to you)
- Sign seating chart
- Get microscope cabinet combination, and sign microscope roster
- Exchange combos with partner

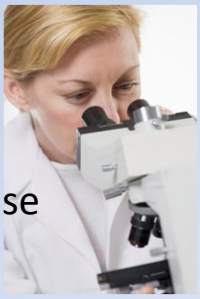
❖**Open Labs** start this week

❖Any questions @ the lab?



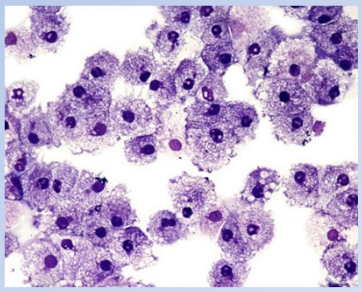
Use and Care of the Microscope p. 23

- Use both hands to move scope between cabinet and desk
- Locate object under low power first
- Adjust width of eyepieces
- Switch to high power, but then only use fine focus knob
- Returns slides to correct slot in slide box when finished
- Clean with lens paper ***ONLY***



Introduction to Histology, p. 25

- The study of tissues
- 4 Basic Tissue Types:
  - **Epithelial**
  - **Connective**
  - **Muscular**
  - **Nervous**



How is a tissue different than a cell?

What can be said about the cells in a single tissue?

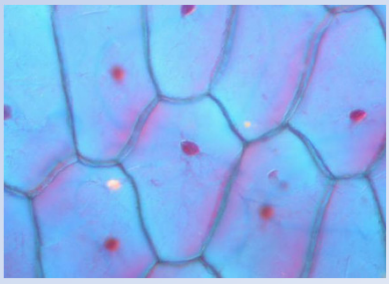
Learning Objectives

1. Recognize and describe the anatomical and physiological characteristics, locations and functions of epithelial, connective, muscular, and nervous tissues.
2. Be able to answer the questions posed in the histology guides in the lab manual, e.g. which tissues have a good blood supply and which have a poor blood supply, and why?
3. Distinguish between various intercellular substances, including the basement membrane, matrix, and various cell-to-cell junctions.
4. Describe the structure and function of glandular epithelium, and differentiate between exocrine, endocrine, and heterocrine glands.

Epithelial Tissues are especially challenging…

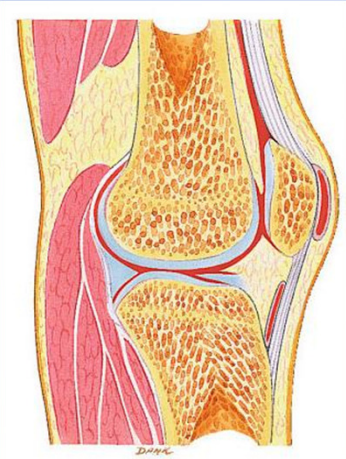
Named according to cell **shape** & **arrangement**

- Arrangement:
  - Single layer of cells = "simple"
  - More than one layer of cells = "stratified"
- Shape:
  - Flat = squamous
  - Cubes = cuboidal
  - Columns = columnar
  - Others…?

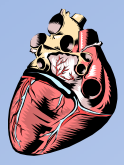


Connective Tissues …

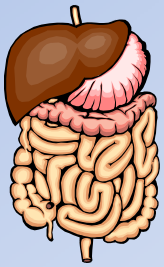
- "Connect"
  - support, cover, hold-together, etc.
- Often have a lot of **inter**cellular material ("matrix") between cells
  - The type of matrix often determines the function of the connective tissue, e.g. blood vs. bone



*Differentiate between **intra**cellular and **inter**cellular.*



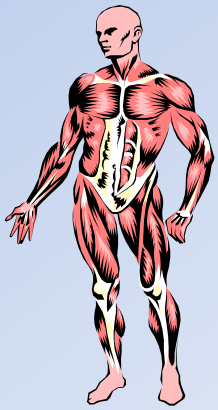
Muscle Tissues



3 types:

- Skeletal (attached to the skeleton)
- Cardiac (in the heart)
- Smooth (in visceral organs)

All types conduct electricity in order to contract



Which of these muscle types is controlled voluntarily?

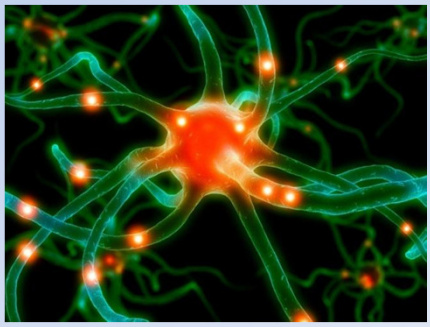
…involuntarily?

Nervous Tissues

Each neuron has one **axon** and at least one **dendrite**.

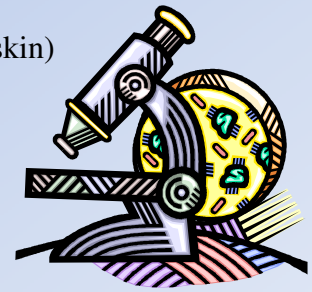
These extensions enable neurons to communicate with:

1. other neurons
2. effectors:
   - muscle tissues
   - glands

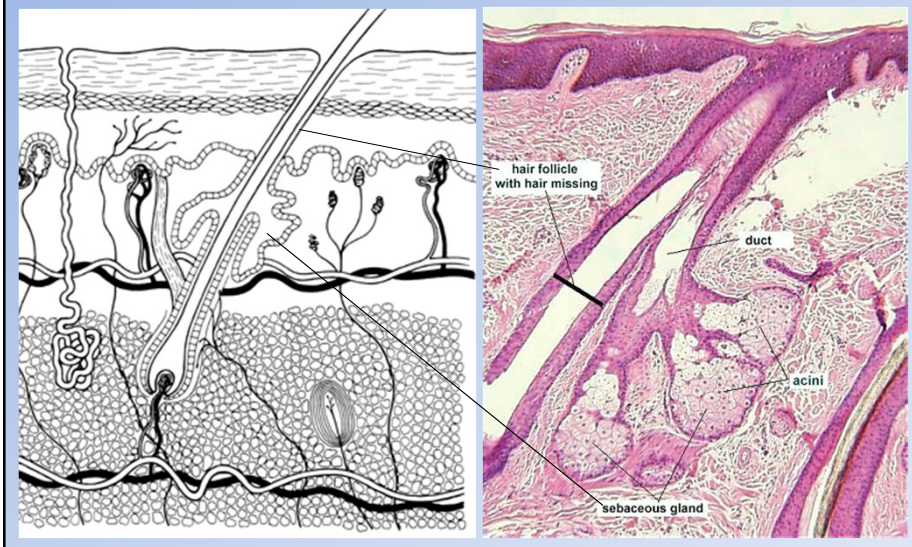


General Histology (Tuesday)

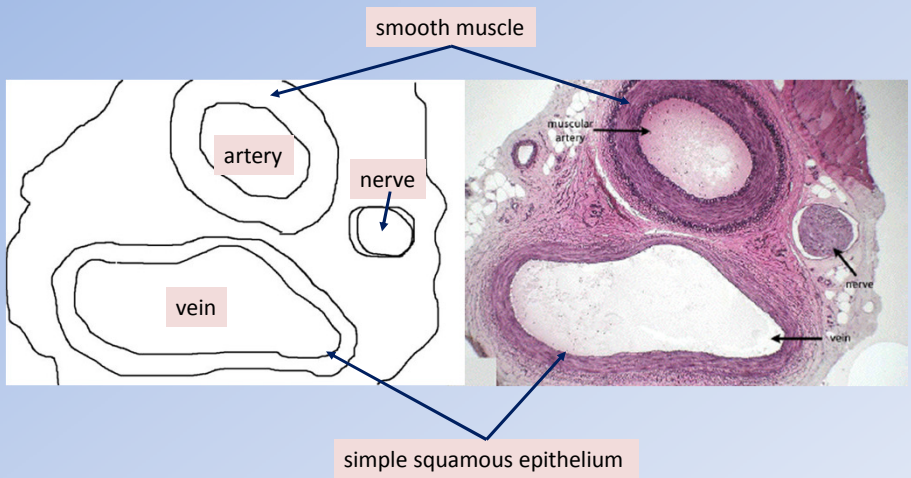
- List of slides to study on p. 26
- Guide to histology assignment begins on p. 27
- Demonstration slides for initial practice:
  - ❑ stratified squamous epithelium (skin)
  - ❑ artery, vein and nerve
  - ❑ thyroid gland
  - ❑ smooth muscle



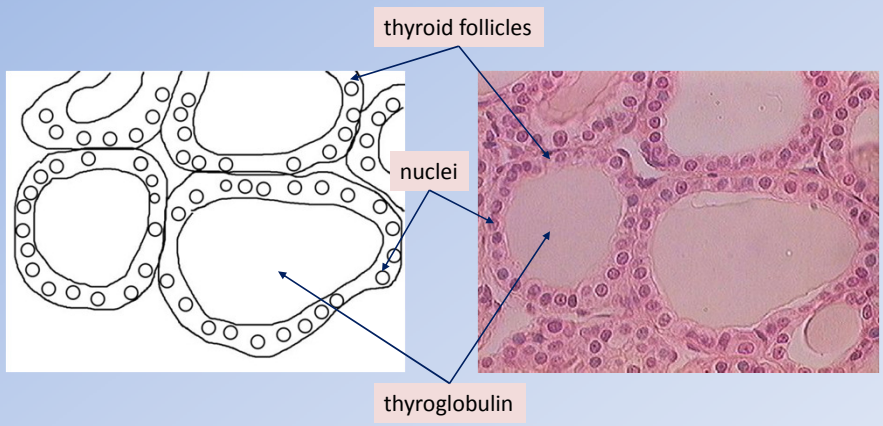
Demo: Stratified Squamous



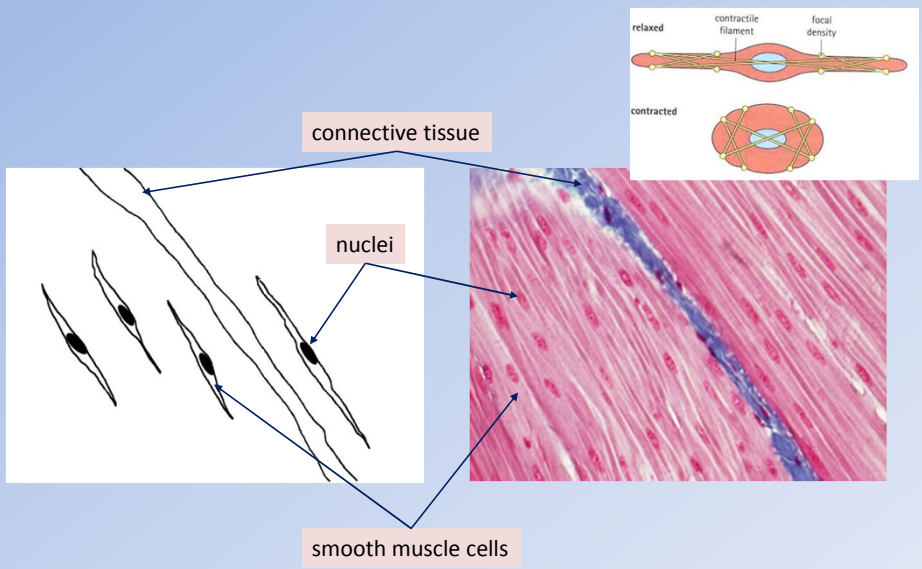
Demo: Neurovascular Bundle



Demo: Thyroid Gland



Demo: Smooth Muscle

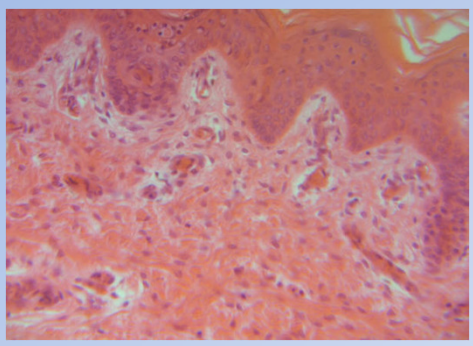


You should be able to…

1. recognize the basic tissue type
2. identify the specific tissue
3. describe any distinguishing characteristics (eg. Nissl bodies, fibers, etc)
4. list one function of the tissue
5. name one location where the tissue is normally found

You may want to create a study guide with the answers to these questions for each slide in the assignment.

Integumentary System (Thursday)



- See p. 26, and the study guide for these slides on p. 30
- Use your textbook to label the picture on p. 31
- Continue to study the rest of the histology assignment
- *Optional:* PPT demo of some histology (epithelial)

Next Week:

- "Begin" **Skeletal System** (p. 35)
- View set of **X-rays** and answer questions
  (on workstation desktops & course web page)
- **Calf Joint Dissection**
  (demonstration)
- Video of **Arthroscopic surgery**