

## Before you come to lab:

1. Make sure that you've completed Part 1 of the System Assignment for tissues.
  - You can either do this alone or with your lab group.
2. When you come to lab, you (or your group) should have a first draft of your identification key.

## During the lab period (work on Part 2 of Sys. Assgn. first; worry about Lab Notebook if you have time):

1. This week, there are two main goals.
  - First, you will look at a variety of tissues under the microscope to determine if your identification key works.
  - Second, you will **begin** the process of adding tissues to your Histology Notebook.
2. Clear off some room on your lab bench and get your assigned microscope.
3. At the front of the room, there are slide trays that have the following tissues on them:
  - **simple squamous epithelium** – *Brief Atlas*: Plate 2 (p. 3); *Histology Atlas*: Fig. 2.1 (p. 19)
  - **stratified squamous epithelium** – *Brief Atlas*: Plate 7 (p. 5); *Histology Atlas*: Fig. 2.18 (p. 23), Fig. 2.20 (p. 24)
  - **simple cuboidal epithelium** – *Brief Atlas*: Plate 3 (p. 3); *Histology Atlas*: Fig. 2.5 (p. 20)
  - **stratified cuboidal epithelium** – *Brief Atlas*: Plate 8 (p. 5); *Histology Atlas*: Fig. 2.27 (p. 26)
  - **simple columnar epithelium** – *Brief Atlas*: Plate 4 (p. 4), Plate 5 (p. 4), Plate 45 (p. 19)
  - **pseudostratified columnar epithelium** – *Brief Atlas*: Plate 6 (p. 4)
  - **areolar connective tissue** – *Brief Atlas*: Plate 11 (p. 6); *Histology Atlas*: Fig. 4.4 (p. 40)
  - **adipose connective tissue** – *Brief Atlas*: Plate 12 (p. 6); *Histology Atlas*: Fig. 4.5 (p. 40)
  - **dense irregular connective tissue** – *Brief Atlas*: Plate 14 (p. 7); *Histology Atlas*: Fig. 4.6 (p. 41)
  - **dense regular connective tissue** – *Brief Atlas*: Plate 15 (p. 7); *Histology Atlas*: Fig. 4.7 (p. 41)

- **hyaline cartilage** – *Brief Atlas*: Plate 17 (p. 8); *Histology Atlas*: Fig. 5.3 (p. 45)
  - **compact bone** – *Brief Atlas*: Plate 20 (p. 9); *Histology Atlas*: Fig. 6.4 (p. 53)
  - **smooth muscle** – *Brief Atlas*: Plate 32 (p. 13); *Histology Atlas*: Fig. 9.3 (p. 76)
  - **skeletal muscle** – *Brief Atlas*: Plate 28 (p. 12); *Histology Atlas*: Figs. 9.6-9.8 (p. 78)
  - **cardiac muscle** – *Brief Atlas*: Plate 31 (p. 13); *Histology Atlas*: Fig. 9.13 (p. 81)
4. Begin to test your key.
- See if the questions you asked on your key can be readily answered by looking at the tissue under the microscope.
    - If not, then change the questions.
  - Your questions don't have to sound scientific (as long as they aren't wrong and they help you identify the correct tissue).
    - “Do I see tree trunks?” or “Do I see cells in Swiss cheese?” are fine questions, as long as they're used to help you identify bone and hyaline cartilage, respectively.
  - I suggest that you set up two or three microscopy stations at your bench with a different slide on each scope. Have all lab group members rotate between the scopes, making sure you can tell the differences between the tissues.
  - **Remember**: All slides will have a free edge that's produced by hacking at the tissue with a knife. This isn't a biological free edge.
  - **Also remember**: Not all slides are created equal. Sometimes, it's just a bad slide.
5. Once I've looked at your key and have given you comments on it, I'll assign you a number that corresponds to your unknown slide.
- Use this slide to complete Part 3 of the System Assignment.
6. For your Histology Notebook:
- We'll begin with the epithelial tissues and selected connective tissues.
    - There's no way you'll get this all done in lab; in fact, it will probably take a couple of weeks. That's okay. Take your time.
  - **simple squamous epithelium** – *Brief Atlas*: Plate 2 (p. 3); *Histology Atlas*: Fig. 2.1 (p. 19)

- Recommended # of pages: 1
  - Draw at 400x total magnification.
  - Label the following: free edge, epithelial cell, nucleus
- **stratified squamous epithelium** – *Brief Atlas*: Plate 7 (p. 5); *Histology Atlas*: Fig. 2.18 (p. 23), Fig. 2.20 (p. 24)
  - Recommended # of pages: 1
  - Draw at 400x total magnification.
  - Label the following: free edge, epithelial cell, nucleus, basement membrane
- **simple cuboidal epithelium** – *Brief Atlas*: Plate 3 (p. 3); *Histology Atlas*: Fig. 2.5 (p. 20)
  - Recommended # of pages: 1
  - Draw at 400x total magnification.
  - Label the following: free edge, epithelial cell, nucleus, basement membrane
- **stratified cuboidal epithelium** – *Brief Atlas*: Plate 8 (p. 5); *Histology Atlas*: Fig. 2.27 (p. 26)
  - Recommended # of pages: 1
  - Draw at 400x total magnification.
  - Label the following: free edge, epithelial cell, nucleus, basement membrane
- **simple columnar epithelium** – *Brief Atlas*: Plate 4 (p. 4), Plate 5 (p. 4), Plate 45 (p. 19)
  - Recommended # of pages: 1
  - Draw at 400x total magnification.
  - Label the following: free edge, epithelial cell, nucleus, basement membrane
- **pseudostratified columnar epithelium** – *Brief Atlas*: Plate 6 (p. 4)
  - Recommended # of pages: 1
  - Draw at 400x total magnification.
  - Label the following: free edge, epithelial cell, nucleus, basement membrane, cilia
  - **Question 2:** Explain why this tissue is called *pseudostratified*.
- **areolar connective tissue** – *Brief Atlas*: Plate 11 (p. 6); *Histology Atlas*: Fig. 4.4 (p. 40)
  - Draw at 400x total magnification.

- Label the following: fibroblast nucleus, elastic fibers, collagen fibers, ground substance
- **adipose connective tissue** – *Brief Atlas*: Plate 12 (p. 6); *Histology Atlas*: Fig. 4.5 (p. 40)
  - Recommended # of pages: 1
  - Draw at 400x total magnification.
  - Label the following: adipocyte, nucleus, fat droplet
  - **Question 3**: Explain why you cannot see any cytoplasmic details in these cells.
- **dense regular connective tissue** – *Brief Atlas*: Plate 15 (p. 7); *Histology Atlas*: Fig. 4.7 (p. 41)
  - Recommended # of pages: 1
  - Draw at 400x total magnification.
  - Label the following: collagen fibers, fibroblast nucleus
- **dense irregular connective tissue** – *Brief Atlas*: Plate 14 (p. 7); *Histology Atlas*: Fig. 4.6 (p. 41)
  - Recommended # of pages: 1
  - Draw at 400x total magnification.
  - Label the following: collagen fibers, fibroblast nucleus

**By the next lab:**

1. Using your tissue ID key, complete Part 3 in the System Assignment for the tissues.
2. Continue drawing the epithelial tissues and the connective tissues proper in your Histology Notebook.
  - Again, you won't have finished these in the lab time, but you should expect to come in on your own time to get them drawn. Procrastination will definitely catch up with you!
3. Continue the process of learning the terms that deal with regional anatomy ("Naked Man" – Marieb Figure 1.7; p. 14).
  - Pick 11 more terms on the anterior view and 7 more on the posterior view, and learn those.