

Before coming to lab:

1. Familiarize yourself with the major bones of the axial skeleton.
2. Look over *Lab Manual* Fig. 9.3 (p. 116) so that you're comfortable with the structures and vocabulary associated with compact bone histology.

During the lab period (can be completed in any order):

1. For your Histology Notebook:
 - **hyaline cartilage** – *Brief Atlas*: Plate 17 (p. 8); *Histology Atlas*: Fig. 5.3 (p. 45)
 - Recommended # of pages: 1-2
 - Draw at 400x total magnification.
 - A view at 100x may be helpful, too.
 - Label the following: chondrocyte, lacuna, matrix, perichondrium
 - **compact bone** – *Brief Atlas*: Plate 20 (p. 9); *Histology Atlas*: Fig. 6.4 (p. 53)
 - Recommended # of pages: 1-2
 - Draw at 100x total magnification.
 - Label the following: osteon, central (Haversian) canal, lacuna, lamella, canaliculus
 - We also have a model of compact bone. Try to find these structures on the model as well.
2. Sawed bone (stored in a clear, plastic bag)
 - You should be able to see the compact bone surrounding the medullary cavity.
 - The cavity itself is filled with yellow bone marrow.
 - Also, find the periosteum; it's the flaky membrane surrounding the bone.
3. Acid-soaked bone (stored in a small, ziplock bag)
 - Acid dissolves the inorganic component of bone, leaving only the organic component (mostly collagen).
4. Baked bones
 - Baking bones dehydrates them, essentially drying away the organic component. The inorganic component (*i.e.*, hydroxyapatites) remains.
5. Looking at axial skeleton bones:
 - **Note**: Much of the rest of this will seem a bit overwhelming, but we'll cover a great deal of this material in lecture as well.
 - **Cranial bones**

- Use the skull provided and the *Brief Atlas* (Figs. 1-5, pp. 27-31) to identify the following bones and sutures:
 - frontal bone
 - parietal bones
 - temporal bones
 - occipital bone
 - sphenoid bone (*Brief Atlas*: Fig. 9, p. 36)
 - ethmoid bone (*Brief Atlas*: Fig. 10, p. 37)
 - coronal suture
 - sagittal suture
 - squamous suture
 - lambdoid suture
- **Facial bones**
 - Use the Beauchene skull and Marieb *Lab Manual* Fig. 10.6 (p. 129) to identify the following facial bones.
 - mandible
 - maxillae
 - palatine bones
 - zygomatic bones
 - lacrimal bones
 - nasal bones
 - vomer
- **Vertebral column**
 - Your lab group has been given three vertebrae.
 - There is one cervical, one thoracic and one lumbar vertebra.
 - Use Marieb Lab Manual Fig. 10.14 (p. 125) to determine which is which.
 - Once you're confident you can tell the difference, there is a pink Tupperware box of vertebrae on the front bench. Try to sort them out.
- **Bony thorax**
 - On the skeleton, identify the ribs and the sternum.
 - Note how the ribs attach to the sternum.
 - The clay on the skeletons is meant to represent the costal cartilages.

By the next lab:

1. Come into the lab when you are free.
 - The bones will be available in the back room.
 - If there's something missing (or something you'd like to see), I'll be happy to get it out for you.
2. Next week's lab will be dedicated to the appendicular skeleton.
 - I suggest you practice labeling the attached figure.
 - I will post the answers outside of my office. (Note: This is optional.)
3. Spend time looking over the Lab Exam 1 Review Sheet to see what you're responsible for regarding the bones.

