

Bio& 241(A&P) Unit 2 Lab 4: Bone Tissue and Articulations Lab:

G/Blevins & G/Brady
Fall 08



Bone Tissue:

Slide 27

Classic view of **compact bone**. Make sure you can identify these structures while observing the slide: (*Osteon, central canal or Haversian canal, lacuna, Concentric lamellae, Canaliculi, Interstitial lamellae, and Osteocytes*)

Slide 26

A view of demineralized or **decalcified bone**. Bone tissue was prepared by placing in acid to remove the bone salts. As you view this slide, what you are viewing is the organic matrix of bone tissue which will appear very similar to cartilage.

On the superficial surface, you can observe the Periosteum of the bone and skeletal muscle. As you observe the area of compact bone, you should be able to identify the following structures: (*Osteon, central canal or Haversian canal, lacuna, Concentric lamellae, Canaliculi, Interstitial lamellae, Outer Circumferential lamellae, Perforating canals or Volkmann's canals, inner Circumferential lamellae, Osteocytes*)

To the inside of (deep to) the compact bone you can observe spongy bone with its associated red bone marrow.

Slide 28

Classic view of an **Epiphyseal Plate**. Make sure you can identify the four zones associated with bone growth.

Zone of Resting Cartilage (appears like Hyaline Cartilage)

Zone of Proliferating Cartilage (small Chondrocytes are arranged in stacks of cells in the lacuna)

Zone of Hypertrophic Cartilage (Area where Chondrocytes are increasing in size)

Zone of Calcified Cartilage (Area where physiologically stressed Chondrocytes deposit calcium in the matrix)

(See figure available in lab for more details)

Articulations:

Be able to identify the different joints on the skeletons available in lab based upon their Functional Classification. (***Synarthroses, Amphiarthroses, and Diarthroses***)

Be able to identify the different joints on the skeletons available in lab based upon their Structural Classification.

Fibrous: Sutures and Sydesmoses

Cartilaginous: Symphyses and Synchrondroses

Synovial: All Diarthroses

Tibofemoral (knee) joint.

Review the model available in lab. Make sure you can identify the following parts of the Tibofemoral joint:

Anterior Cruciate ligament (ACL)
Lateral meniscus
Fibular (Lateral) collateral ligament,
Patellar Ligament

Posterior Cruciate ligament (PCL)
Medial meniscus,
Tibial (Medial) collateral ligament
Quadriiceps Tendon.

Bone review for Knee:

<i>Femur:</i>	Medial condyle	Lateral condyle	Intercondylar fossa
<i>Tibia:</i>	Medial condyle	Lateral condyle	Intercondylar eminence

Movements:

Using yourself or your lab partner as a model or review the models in lab, make sure you can identify the following movements that occur at Synovial joints:

<i>Flexion</i>	<i>Extention</i>	<i>Abduction</i>
<i>Adduction</i>	<i>Rotation</i>	<i>Circumduction</i>
<i>Pronation</i>	<i>Supination</i>	<i>Inversion</i>
<i>Eversion</i>	<i>Dorsifexion</i>	<i>Plantar Flexion</i>
<i>Hyperextension</i>		

X-Ray Films:

Review the x-ray films available in lab and see if you can identify the bones and processes.

Hand and wrist x-ray	Foot and ankle x-ray	Various factures
Joint replacements		

Anatomy of a Long Bone:

Review the Fresh Calf bone and x-rays available in lab. Make sure you can identify the structural parts of a long bone.

Diaphysis	Epiphysis	Medullary cavity
Compact bone	Spongy Bone	Periosteum
Endosteum,	Red bone Marrow	Yellow Bone Marrow
Epiphyseal plate	Articular Cartilage	

Auditory Ossicles:

Observe the Plastic slide of the Auditory Ossicles and models available in Lab. Make sure you can identify them by their correct names.

Malleus	Incus	Stapes
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