Bone Structure and Tissue

Directions:
Insert and install your Interactions: Support & Movement CD.

a. Click the Contents button.
b. Open the Skeletal System file.
c. Click on Anatomy Overviews.
d. Work through Bone Structure and Tissue.

1. **Describe hyaline cartilage location and function.** (Don’t forget, click on the red captions to access additional information.) Use this interactive diagram to review histological structure, too. Hyaline cartilage is found as the articular cartilage within a synovial joint. It allows flexibility and support. It lessens friction by providing a smooth surface and soaks up vibrations. It is also found in the epiphyseal plate between the end of the bone (epiphysis) and the long, cylindrical body of the bone (diaphysis.) This structure allows for bone growth. As the individual matures and bone growth ceases, this structure becomes replaced with bone and becomes the epiphyseal line.

2. From the main Bone Structure and Tissue page, click the Spongy Bone Tissue.

   a. **Describe spongy (cancellous) bone tissue location and function.** Spongy (cancellous) bone makes up short, flat, and irregularly shaped bones. It also forms the ends (epiphysis) of long bones. Its structural units are called trabeculae “little beams” and within the spaces of these irregular frameworks of columns are found red bone marrow – the sites of blood cell production. The spongy appearance is due to these trabeculae. It serves to lighten the weight of the bone.

   b. Identify each of the following.
a. 3. Return to the main Bone Structure and Tissue homepage and click on Compact Bone Tissue. 

Describe compact bone tissue structure. This bone tissue is composed of its structural unit – the osteon, which are arranged in the same direction along stress lines. These units are composed of rings of concentric lamellae surrounding a central (Haversian) canal, which contains blood and lymphatic vessels. Within these lamellae are spaces (lacunae) that house cells (osteocytes), which maintains bony tissue. These osteocytes connect & communicate with one another via small tunnels called canaliculi.

b.

Identify the following.

4. Return to the main Bone Structure and Tissue homepage and investigate Dense Regular Connective Tissue.

a. Describe the function of dense regular CT relative to bones. Dense regular CT referred to as white fibrous tissue provides resistance against forces in one direction. This makes up critically important tendons (connects muscle to bone) and ligaments (connects bones to bones.)

b. Identify the following.