Practice no. 8 – Connective tissue - cartilage and bone (deadline April 10, 2020)

1. Classify principal histological types of cartilage. Schematize arrangement of cartilage cells and matrix in the individual types of cartilage.

2. Define the term “perichondrium”, draw its localization into the scheme of hyaline cartilage and describe its function.

3. Into the scheme of hyaline cartilage graphically indicate, how the cartilage grows, and how the nutrition of chondrocytes is provided.

4. Draw localization of territorial matrix in structure of hyaline cartilage. Why is the territorial matrix basophilic?

5. Provide three examples of occurrence of fibrous cartilage in human body. Why is the fibrous cartilage found specifically in these anatomical locations?

6. Classify principal histological types of bone tissue, and graphically schematize arrangement of mineralized collagen fibers in individual types. What method can be used for preparation of bone slide?

7. Draw the structure of Haversian systems in compact bone and indicate localization of Volkmann’s canals.

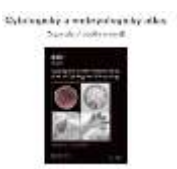
8. Draw the localization and histological structure of periosteum and endosteum in an idealized scheme of a bone (e.g. femur, humerus). Where are the Sharpey’s fibers located?

9. Graphically schematize principal ultrastructural hallmarks of osteoblasts, osteocytes and osteoclasts. What is the origin of these cells?

10. Draw a graphical scheme of bone remodeling.

11. By using any information resource decipher what is the histological background of osteoporosis, and why osteoporosis typically develops after menopause?

12. Graphically schematize the growth plate with complete zonation. By using any information resource explain, why the growth plates close after the puberty. What is the principle of bone age determination in clinical or forensic practice?

Recommended study materials:   WWW presentations in the IS