

READING NOTES CHAPTER 5: TISSUES (HISTOLOGY)

Name _____
Period ____ Due date _____

Introduction (p. 152)

Tissues are layers/groups of similar cells with a common _____. Some tissues have cells that are separated from each other in _____ - _____ spaces that we call **matrix**. Others are tightly packed with structures called _____ that connect the cell membranes together. There are 3 types of ways these come together. For each, describe the traits/characteristics and provide an example of where it may be found in the body:

Tight junction:

Desmosomes:

Gap junction:

Be sure to read the latest advances on how we can now treat patients across the blood-brain barrier in the inset box on page 153! This is a revolutionary technique that opens up tons of applications.

Tissue type 1: Epithelial tissues (pages 152 – 160)

These are tissues that are found throughout the body and cover the body surface and _____, forms the inner lining of body _____, and lines _____. _____ anchors epithelium to underlying connective tissue. Cancer cells secrete a substance that dissolves this layer, enabling the cells to invade tissue layers.

As a rule, epithelial tissues:

- 1) Lack _____ and rely on diffusion to obtain nutrients.
- 2) Readily _____, so injuries heal rapidly
- 3) Are tightly _____, which means it **lacks a matrix**.
- 4) Are classified according to their _____ and the number of _____.

For each epithelial tissue type, describe the shape of the cells as well as a location in the body where it can be found:

Simple squamous:

Simple cuboidal:

Simple columnar:

Pseudostratified:

Stratified squamous (keratinized):

Stratified squamous (nonkeratinized):

Stratified cuboidal:

Stratified columnar:

Transitional:

Glandular epithelium is divided into two groups based on how they secrete. **Endocrine glands** secrete into the _____ and will be studied later. There are 3 types of **exocrine glands** and they are classified according to how they _____. For each of the types, describe how they secrete and list an example of where it can be found in the body:

Merocrine:

Apocrine:

Holocrine:

Tissue type 2: Connective tissues (pages 161 – 169)

Most of the body is composed of connective tissues (by weight) and it serves multiple functions. As a rule, connective tissues:

- 1) Have abundant _____
- 2) Is composed of protein _____ and a ground _____.
- 3) Have varying degrees of _____.
- 4) Can either be fixed or _____.
- 5) If fibers are present, there can be 3 types. For each type, list traits and an example of where in the body they may be found:

Collagenous:

Elastic:

Reticular:

For each connective tissue type, describe the traits of the layer as well as a location in the body where it can be found:

Connective proper

Loose areolar:

Loose adipose:

Loose reticular:

Dense regular:

Dense irregular:

Dense elastic:

Specialized connective: There are 3 types – describe the traits as well as a location in the body where it can be found:

Cartilage (differs from proper connective because it is more rigid, contains mostly collagenous fibers, and lacks a direct blood supply). There are 3 types:

Hyaline:

Elastic:

Fibrocartilage:

Bone:

Blood:

Tissue type 3: muscle (pages 171 – 172)

Muscle tissue will be studied in depth in later chapters. General characteristics of this type of tissue include that they are _____, which means they can only pull or contract; they never push. They are composed of cells that are called _____ because they are elongated. There are three types of muscle tissue. For each describe the traits as well as a location in the body where it can be found:

Skeletal:

Smooth:

Cardiac:

Tissue type 4: Nervous (page 173)

Nervous tissues are found in the _____, _____, and _____ nerves. The basic cells are called _____ and are specialized. Incoming signals stimulate cellular processes called _____, which then transmit electrical impulses along processes called _____ to other nerves or muscles or glands. In addition to neurons, there is abundant _____, which are crucial to the functioning of neurons. These support and bind neurons and play a role in cell-to-cell _____. Many neurologic disorders such as dementia and Alzheimer's disease have been found to be a breakdown of this essential material.

Be sure to read the inset on page 174 to explore the challenges to developing a new organ such as the urinary bladder!