Kinesiology 11: Tissues Review Worksheet

Name: Key

Date: _____

Intro to Histology

Cells are the smallest units of life. In complex organisms, cells group together with one another based on similar structure and function to form **tissues**. Tissues provide the numerous functions of organs necessary to maintain biological life. The study of tissues is called **histology**, and is important to the understanding of how the human body is able to function as a unit. The human body is composed of four basic types of tissues; **epithelium**, **connective**, **muscular**, and **nervous** tissues.

- Epithelium- lines and covers surfaces
- Connective tissue- protect, support, and bind together
- Muscular tissue- produces movement
- Nervous tissue- receive stimuli and conduct impulses

Answer the following questions:

1. Tissues are groups of similar cells working together to: b) perform common functions!.
   a. increase the size and mass of structures
   b. perform common functions
   c. deliver messages
   d. fight against disease

2. Which type of tissue would make up the majority of the brain and spinal cord? nervous

3. Which type of tissue would be found in the epidermis and form the lining of internal organs such as the intestines? epithelium

4. Which type of tissue would form ligaments, tendons, fat and bone? connective

5. Which type of tissue makes up majority of the heart? muscular

6. How does the type of tissue in an organ relate to its function?
   ↳ structure of tissue determines function.

Epithelial Tissue

1. Where are epithelial tissues found within the body?
   all over! Lining all body surfaces. inside & out.

2. What are the functions of the epithelial tissues?
   - protection - absorption - excretion
   - secretion - sensory perception

3. Epithelial tissues are avascular which means they have **no blood flow**.

4. What type of tissue always can be found underneath epithelial? connective

5. Since the epithelial tissues have no blood flow, they are able to receive needed nutrients and expel wastes through the process known as diffusion.

6. Do epithelial cells reproduce rapidly or slowly? rapidly

7. Are epithelial cells tightly packed or loosely spaced? tightly.

Connective Tissue

1. What characteristics do all connective tissues share in common?

They bind structures together.

2. Identify the functions of connective tissues

- support
- protection
- stores fat
- fill space
- produce blood cells
- immunity
- help to repair

3. What are the three types of cartilage? Where are they located in the body?
   a. Hyaline → ends of bones / joints
   b. elastic → ears and larynx
   c. fibrocartilidge → intevetebral disks, menisci

4. Identify which type of connective tissue is being described.
   a. Blood tissue transports oxygen, carbon dioxide, nutrients, and waste through the body by traveling through vessels called arteries and veins.
   b. Fibrous tissue is a type of dense connective tissue that connects muscles to bones and connects bone to bone.
   c. Blood tissue is a type of connective tissue that aids in the formation of red and white blood cells. This tissue is found in the spleen and the marrow.
   d. Bone tissue is a type of connective tissue with one of the hardest extracellular matrixes that forms a protective structure used for muscle attachment. This type of connective tissue is formed by a cell known as an osteocyte.
   e. Areolar tissue is a type of loose connective tissue that separates the cells of the body from the blood stream. It is a "go-between" for nutrients and wastes to leave and enter the blood stream on their way to and from the bodies' cells.
   f. adipose is a type of connective tissue also known as fat. Its purpose is to store excess nutrients and fats as energy. It also serves as a type of insulation for the body.
   g. elastic cartilidge is a semi-solid connective tissue that is used as both a protective and supportive structure within the body. This particular type of connective tissue can be found in the nose, ears, ribs, and vertebral disks.
   h. Fibrous tissue is a type of dense connective tissue with irregularly arranged fibers that provides strength where tension is exerted in various directions such as in the dermis.

Connective Tissue

1. Where are connective tissues found?

All over the body!

2. What are the functions of connective tissue?

Same as #2 above (sorry!)

3. How are connective tissue classified? According to function

4. Blood tissue contains cells surrounded by a fluid matrix that transports substances
5. Bone tissue contains cells surrounded by a hard matrix that supports and protects
6. Fibrous tissue contains cells that reduce friction and allow flexibility at joints
7. adipose tissue contains cells that stores energy, insulates the body and cushions organs

Nervous Tissue

1. What are the two types of cells and how are they different?

1) Neurons → structural component, actually transmit the nerve signals
2) Neuroglial → non conducting, support/protect neurons

Muscle Tissue

1. What are the functions of muscular tissue?

- movement
- posture
- joint stabilization
- heat generation

2. What are the 3 types of muscle tissue, and where are they found?

(1) smooth → hollow organs
(2) cardiac → ♡ muscle
(3) Skeletal → skeletal mm.

Tissue Review: Identify the type of tissue from the description below.

C = connective N = nervous E = epithelial M = muscular

3. N composed of neurons and neuroglia
4. E cells are tightly packed forming continuous cellular sheets
5. M highly vascular with elongated cells called fibers
6. C involved in secretion, absorption and protection
8. E avascular
9. E regenerates the quickest of all tissue
10. E relies on nutrients from underlying tissue
11. E covers surfaces, either outside or inside the body
12. M may have multiple nuclei and striations
14. E primary tissue found in glands
15. C supports, protects, storage and attachment
16. N receive, integrate and conduct impulses throughout the body
17. M involved in movement of body, posture and heat production
18. C most common type of tissue