Anatomy and Physiology 1
Worksheet for Tissue Types

Name Key

Read and study ~~Chapter 4~~ our notes on tissue types before you attempt this worksheet. This activity is to help you learn the four primary tissue types, their location and functions. **This worksheet must be turned in on Monday [redacted] at the beginning of class.**

Sept 21st

Using the key choices, correctly identify the following *major* tissue types. Enter the appropriate answer in the answer blanks.

Key Choices

A. Connective B. Epithelium C. Muscle D. Nervous

Epithelium 1. Forms membranes

muscle 2. Allows for movement of limbs and for organ movements within the body

Nervous 3. Uses electrochemical signals to carry out its functions

muscle 4. Supports and reinforces body organs

Epithelium 5. Cells of this tissue may absorb and/or secrete substances

Nervous 6. Basis of the major controlling system of the body

muscle 7. Its cells shorten to exert force

epithelium 8. Forms endocrine and exocrine glands

Connective 9. Surrounds and cushions body organs

Connective 10. Characterized by having large amounts of extracellular material

muscle 11. Allows you to smile, grasp, swim, ski, and throw a ball

Connective 12. Widely distributed; found in bones, cartilages, and fat depots

Nervous 13. Forms the brain and spinal cord

Epithelial Tissue

1. List the 5 major functions of epithelium. Protection, Absorption, Secretion, ion transport, filtration

2. List 7 special characteristics of epithelium. Cellularity, polarity innervated, Regenerative, Avascular, Specialized contacts

3. For 1–5, match the epithelial type named in Column B with the appropriate *location* in Column A.

Column A		Column B
B	1. Lines the stomach and most of the intestines	A. Pseudostratified ciliated columnar
F	2. Lines the inside of the mouth	B. Simple columnar
A	3. Lines much of the respiratory tract	C. Simple cuboidal
D	4. Endothelium and mesothelium	D. Simple squamous
G	5. Lines the inside of the urinary bladder	E. Stratified columnar
		F. Stratified squamous
		G. Transitional

Write T in the answer blank if a statement is true. If a statement is false, correct the underlined word(s) by writing the correct word(s) in the answer blank.

F, by structure 1. Exocrine glands are classified <u>functionally</u> as merocrine, holocrine, or apocrine.

T 2. The above classification refers to the way <u>ducts branch</u>.

T 3. Most exocrine glands are <u>apocrine</u>.

T 4. In <u>apocrine</u> glands, secretions are produced and released immediately by exocytosis.

T 5. <u>Holocrine</u> glands store secretions until the cells rupture. Ruptured cells are replaced through mitosis.

F, Holocrine 6. In <u>apocrine</u> glands, the secretory cells <u>die</u> when they pinch off at the apex to release secretions.

T 7. A sweat gland is an example of a <u>holocrine</u> gland.

T 8. The mammary gland is the most likely example of an <u>apocrine</u> gland.

Connective Tissue

1. Using the key choices, identify the following connective tissue types. Insert the appropriate answers in the answer blanks.

Key Choices

A. Adipose connective tissue
B. Areolar connective tissue
C. Dense regular connective
D. Dense irregular connective
E. Elastic cartilage
F. Elastic connective tissue
G. Fibrocartilage
H. Hyaline cartilage
I. Mucous connective → mostly ground substance (mucoproteins)
J. Osseous tissue
K. Reticular connective tissue
L. Vascular tissue

C _____ 1. Parallel bundles of collagenic fibers provide strength; found in tendons

A _____ 2. Stores fat

D _____ 3. The skin dermis

J _____ 4. Hardest tissue of our "skull cap"

B _____ 5. Composes the basement membrane; surrounds and cushions blood vessels and nerves; its gel-like matrix contains all categories of fibers and many cell types

H _____ 6. Forms the embryonic skeleton; covers surfaces of bones at joints; reinforces the trachea

A _____ 7. Insulates the body

H _____ 8. Firm, slightly "rubbery" matrix; milky white and "glassy" in appearance

J _____ 9. Cells are arranged in concentric circles around a nutrient canal; matrix is hard due to calcium salts

G _____ 10. Contains collagenous fibers; found in intervertebral discs

K _____ 11. Makes supporting framework of lymphoid organs

I _____ 12. Found in umbilical cord

E _____ 13. Found in external ear and auditory tube

L _____ 14. Provides the medium for nutrient transport throughout the body

F _____ 15. Forms the "stretchy" ligaments of the vertebral column

. Arrange the following tissue types from 1 to 3 in order of *decreasing* vascularity.

3 A. Cartilage → has no vascularity

1 B. Areolar connective

2 C. Dense connective

. Using the key choices, select the structural or related elements of connective tissue (CT) types that permit specialized functions. Insert the appropriate answers in the answer blanks.

Key Choices

A. Adipocytes	D. Elastic fibers	G. Macrophages	J. Osteocytes
B. Chondrocytes	E. Ground substance	H. Matrix	K. Osteoblasts
C. Collagen fibers	F. Hemocytoblast	I. Mesenchyme	L. Reticular fibers

H 1. Composed of ground substance and structural protein fibers

E 2. Composed of glycoproteins and water-binding glycosaminoglycans

C 3. Tough protein fibers that resist stretching or longitudinal tearing

J 4. Primary bone marrow cell type that remains actively mitotic

L 5. Fine, branching protein fibers that construct a supportive network

G 6. Large, irregularly shaped cells, widely distributed, often found in CT; they engulf cellular debris and foreign matter and are active in immunity

H 7. The medium through which nutrients and other substances diffuse

B 8. Living elements that maintain the firm, flexible matrix in cartilage

D 9. Randomly coiled protein fibers that recoil after being stretched

E 10. The structural element of areolar tissue that is fluid and provides a reservoir of water and salts for neighboring tissues

A 11. In a loose CT, the nondividing cells that store nutrients

H 12. The embryonic tissue that gives rise to all types of CT

K 13. Cellular elements that produce the collagen fibers of bone matrix

Nervous Tissue

1. Describe briefly how the particular structure of a neuron relates to its function in the body. Allows for conduction of impulses over relatvly long distances due to long cytoplasmic extensions

2. Circle the word that does *not* apply to neuroglia: Support Insulate (Conduct) Protect
↳ DO not send signals, just support / insulate / protect neurons

Muscle Tissue

1. The three types of muscle tissue exhibit certain similarities and differences. Insert Sk (skeletal), C (cardiac), or Sm (smooth) into the appropriate blanks to indicate which muscle type exhibits each characteristic.

Characteristic

SK 1. Voluntarily controlled

C/Sm 2. Involuntarily controlled

SK/C 3. Banded appearance

Sm/C 4. Uninucleate

SK 5. Multinucleate

SK 6. Found attached to bones

Sm 7. Enables you to swallow

Sm 8. Found in the walls of the small intestine, uterus, bladder, and veins

Sm 9. Contains spindle-shaped cells

C 10. Contains cylindrical cells with branching ends

SK 11. Contains long, nonbranching cylindrical cells

C 12. Displays intercalated discs

SK 13. Concerned with locomotion of the body as a whole

C 14. Changes the internal volume of an organ as it contracts

C 15. Tissue of the circulatory pump

2. Develop two criteria that would identify the three different muscle itssues in two steps.

Step 1: Intercalated disks are only in Cardiac

Step 2: Smooth = no striations, Skeletal has vertical Pattern & is multinucleated.