

Name \_\_\_\_\_

Date \_\_\_\_\_ Score \_\_\_\_\_

## ASSIGNMENT SHEET

### CHAPTER 11: ANATOMY AND PHYSIOLOGY OF THE HUMAN BODY

#### Unit 1: Anatomical Descriptors and Fundamental Body Structure

#### WORDS TO KNOW CHALLENGE

A. Word Search: Find the following words hidden in the puzzle.

ANATOMY  
ANTERIOR  
CAVITY  
CLEFT  
CONNECTIVE  
CRANIAL  
DNA  
DORSAL  
DOWN  
EDEMA  
EPIGASTRIC

EPITHELIAL  
FEET  
GENE  
GENETIC  
ILIAC  
LATERAL  
LIP  
LUMBAR  
MIDLINE  
MUSCLE  
NERVE

ORGAN  
PELVIC  
PKU  
POSTERIOR  
SKIN  
SMOOTH  
SPINA  
TISSUE  
VENTRAL

S P I N A G E N E T I C W P  
S P L N C L E F T D O W N C  
P K U I A F E N M T I C T V  
S P I E P I T H E L I A L E  
Q P A N T E R I O R G A N K  
G M I N A G P N S T I C E P  
S U I N A G E E E S I C R O  
N S V E N T R A L T U C V S  
T C D N A G O N I V F E E T  
W L R N E D E M A L I C T E  
P E I A A G E N Y T I C T R  
A C O N N E C T I V E A T I  
R P I E P I G A S T R I C O  
S P D O R S A L U M B A R R  
I L A T E R A L S M O O T H  
K M I D L I N E C A V I T Y

**B. Matching: Match the term in column I with its description in column II. (Note: Not all descriptions will be used.)**

COLUMN I	COLUMN II
_____ 1. Cardiac	a. Groin area
_____ 2. Cranium	b. A nerve cell
_____ 3. Cytoplasm	c. A covering on a nerve
_____ 4. Diaphragm	d. Heart tissue
_____ 5. Dorsal	e. Toward the midline
_____ 6. Epigastric	f. Change in the genetic code
_____ 7. Homeostasis	g. Part of extremity nearest the body
_____ 8. Hypochondriac	h. Cavity that holds the brain
_____ 9. Inguinal	i. Lack of liver enzyme to act upon phenylalanine
_____ 10. Lateral	j. Muscle tissue in organs
_____ 11. Medial	k. Abdominal area around navel
_____ 12. Myelin	l. Stores hereditary material of the cell
_____ 13. Neuron	m. Consists of like cells
_____ 14. Proximal	n. Skeletal muscle tissue
_____ 15. Smooth	o. A genetic condition due to improper chromosome 21 division
_____ 16. Striated	p. Cellular fluid
_____ 17. Thoracic	q. Part of extremity farthest away from body
_____ 18. Tissue	r. State of normal functioning
_____ 19. Umbilical	s. Muscle that divides anterior cavity
_____ 20. Ventral	t. Away from the midline
_____ 21. Mutation	u. Carried by X chromosome
_____ 22. Chromosome	v. The anterior section
_____ 23. X-linked gene	w. Pertaining to the abdominal area above umbilical
_____ 24. PKU	x. Chest area
_____ 25. Down syndrome	y. Of or pertaining to the posterior section
	z. The abdominal area below the umbilical
	aa. The cell nucleus
	bb. Swelling in the tissues
	cc. Abdominal area below ribs

**UNIT REVIEW**

**A. Short Answer**

1. Describe the meaning of the phrase "anatomical position." \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
2. List the organs within each body cavity.
  - a. Thoracic: \_\_\_\_\_
  - b. Abdominal: \_\_\_\_\_
  - c. Pelvic: \_\_\_\_\_
  - d. Cranial: \_\_\_\_\_
  - e. Spinal: \_\_\_\_\_

3. The abdomen can be divided into four sections for reference purposes. Name the sections.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
4. List the structures of a cell.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
  - f. \_\_\_\_\_
  - g. \_\_\_\_\_
  - h. \_\_\_\_\_
  - i. \_\_\_\_\_
  - j. \_\_\_\_\_
5. List three things that may cause a mutation to occur.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
6. Name three types of inheritance patterns and explain how they affect an individual's inherited traits.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
7. List the six processes by which materials pass through cell membranes.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
  - f. \_\_\_\_\_
8. What is the name of the project that sequenced genes? \_\_\_\_\_
9. Explain the term "DNA fingerprinting" and how it can be used. \_\_\_\_\_
10. List the four types of tissues. Identify three places in the body where the tissue can be found.
- a.
    - 1. \_\_\_\_\_
    - 2. \_\_\_\_\_
    - 3. \_\_\_\_\_
  - b.
    - 1. \_\_\_\_\_
    - 2. \_\_\_\_\_
    - 3. \_\_\_\_\_
  - c.
    - 1. \_\_\_\_\_
    - 2. \_\_\_\_\_
    - 3. \_\_\_\_\_
  - d.
    - 1. \_\_\_\_\_
    - 2. \_\_\_\_\_
    - 3. \_\_\_\_\_
11. List the 10 systems of the body.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_

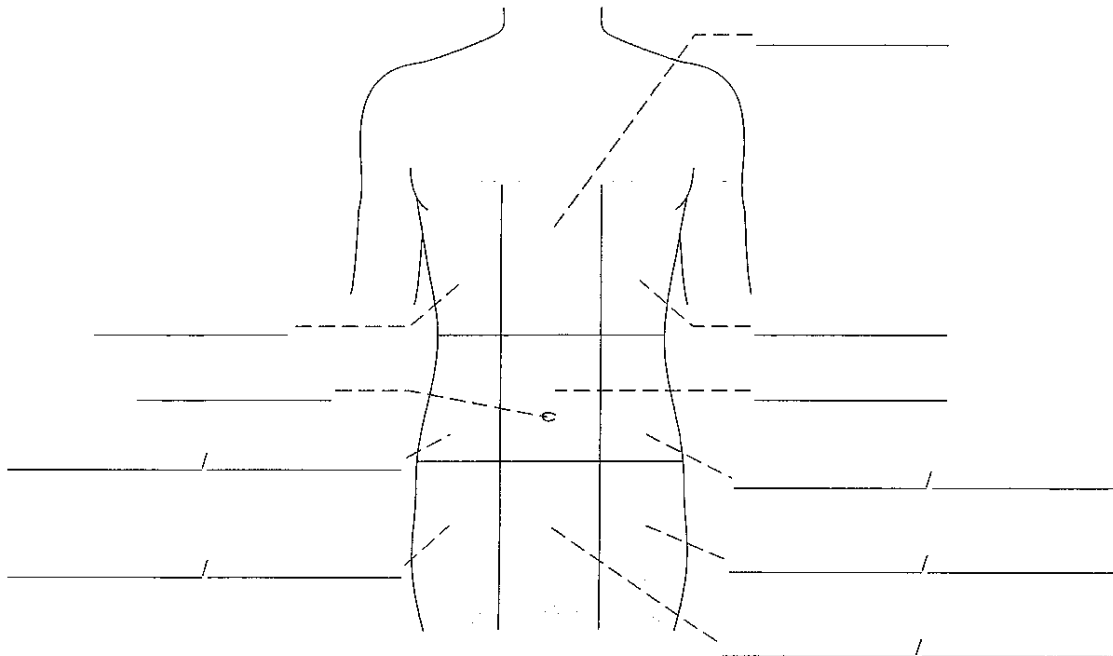
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_
- g. \_\_\_\_\_
- h. \_\_\_\_\_
- i. \_\_\_\_\_
- j. \_\_\_\_\_

**B. Fill in the Blank**

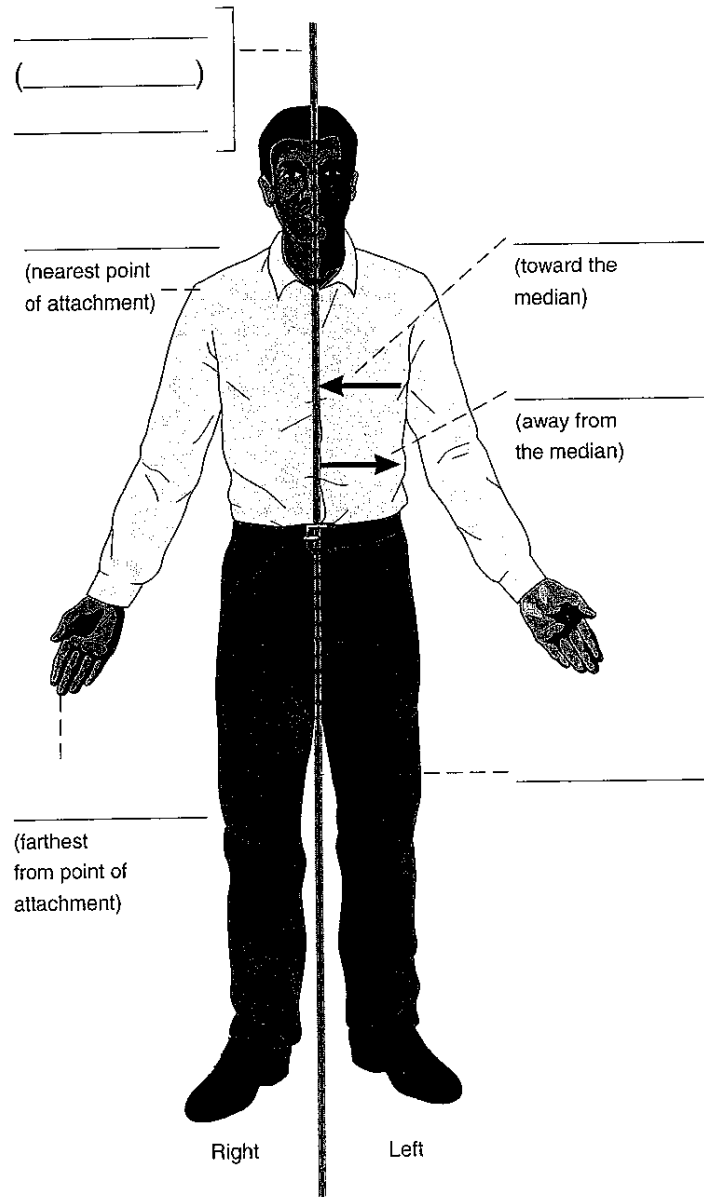
1. In anatomical position, the patient's right side is across from your \_\_\_\_\_ side.
2. Something toward the midline is said to be \_\_\_\_\_; if it is away from the midline it is \_\_\_\_\_.
3. Arms and legs are known as \_\_\_\_\_.
4. The front of the body is called the \_\_\_\_\_ or \_\_\_\_\_ section.
5. The back section is called the \_\_\_\_\_ or \_\_\_\_\_ side.
6. The body has two main cavities. The anterior cavity is further divided into an upper \_\_\_\_\_ and a lower \_\_\_\_\_ cavity.
7. The posterior body section has a(n) \_\_\_\_\_ cavity and a(n) \_\_\_\_\_ cavity.
8. The osmotic characteristics of solutions are classified by their effect on \_\_\_\_\_.
9. If the solution is the same osmotic pressure as blood serum, it is known as a(n) \_\_\_\_\_ solution.
10. When osmolality is lower, the solution is called \_\_\_\_\_. If it is higher, it is called \_\_\_\_\_.
11. A salt solution with the same salt content as that of a red blood cell is called normal \_\_\_\_\_.

**C. Label the Illustration**

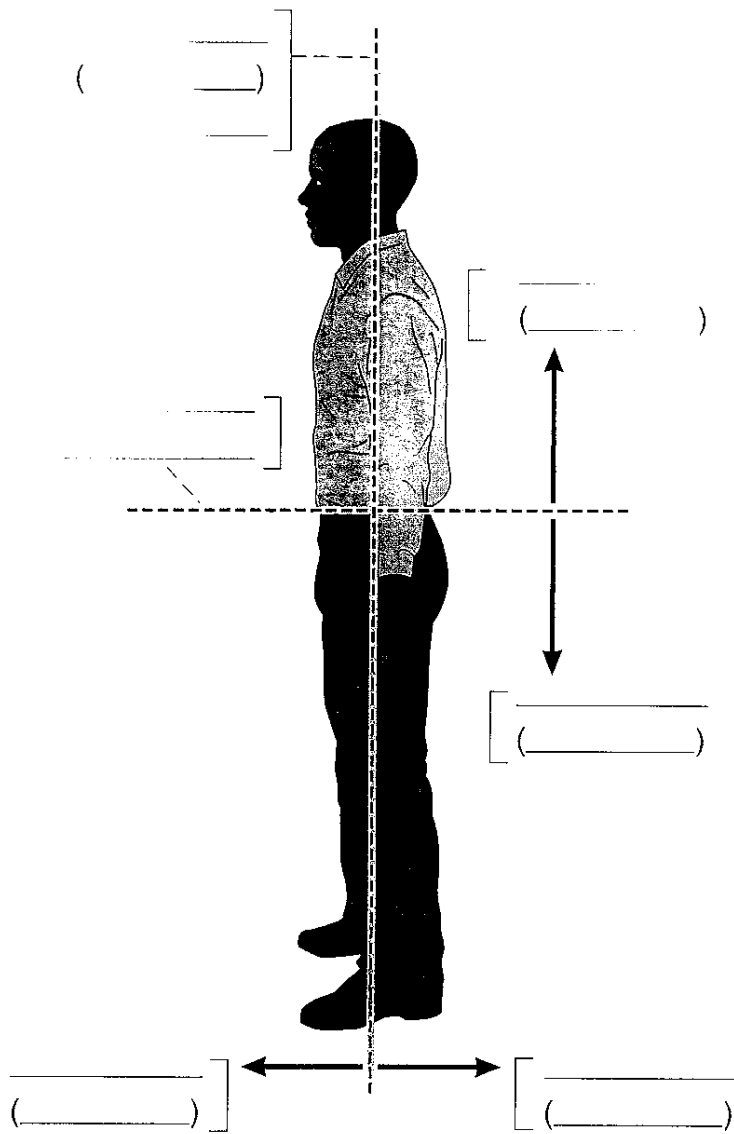
1. Label the nine anatomical divisions and one reference point of the abdomen on the following illustration. Refer to Figure 11-7 in the textbook.



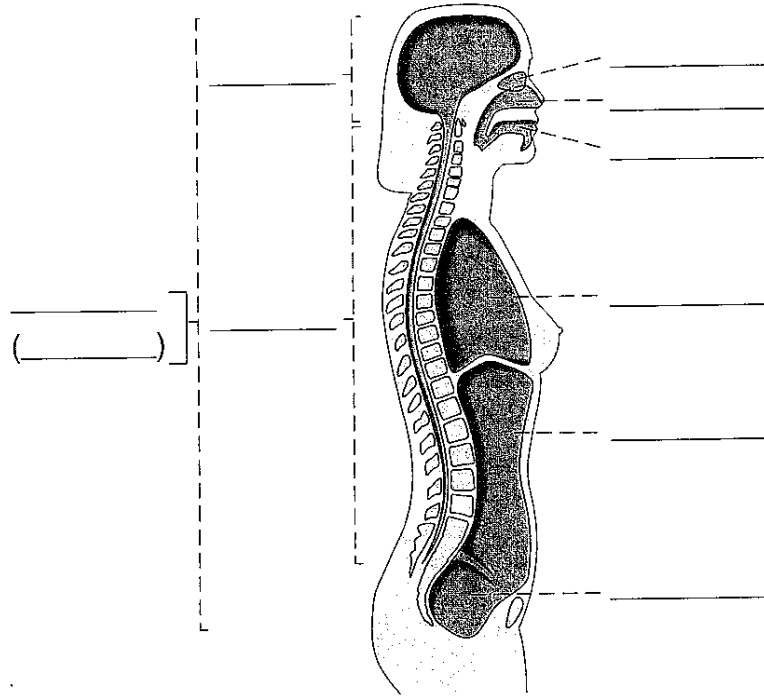
2. Label the directional reference terms on the illustrations of anatomical position. Refer to Figure 11-1 in the textbook.



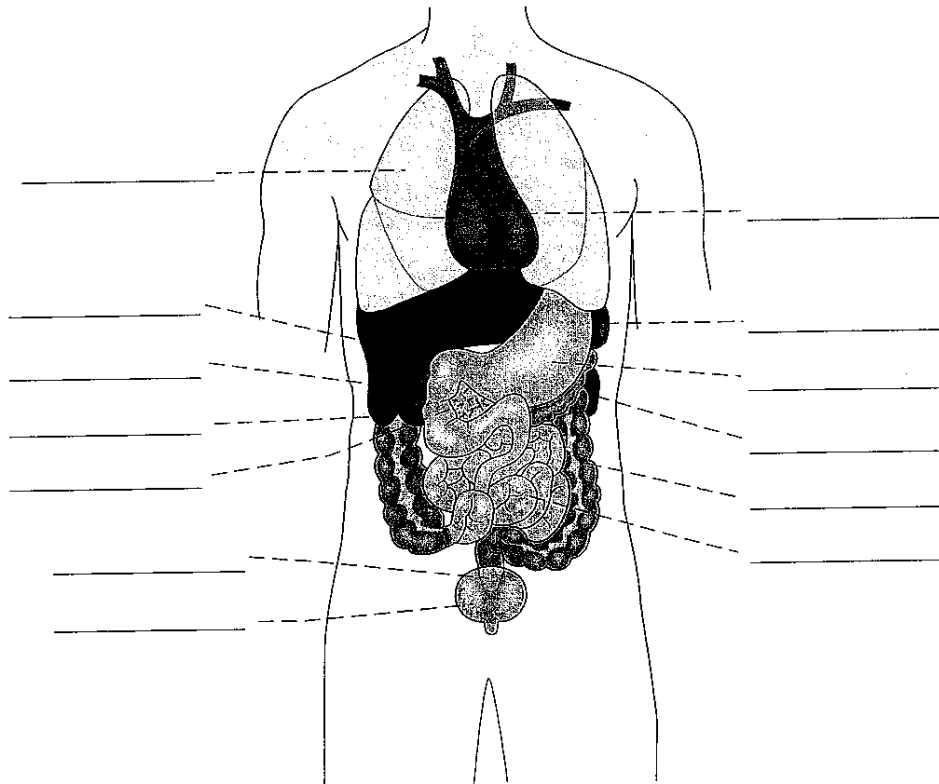
3. Label the directional reference terms on the illustration of anatomical position. Refer to Figure 11-3 in the textbook.



4. Label the eight body cavities on the following illustration. Refer to Figure 11-4 in the textbook.



5. Label the thoracic and abdominal organs. Refer to Figure 11-5 in the textbook.



**D. Matching:**

**1. Match the acid or base in column I with its possible location in column II.**

COLUMN I	COLUMN II
_____ 1. Acetic acid	a. Batteries
_____ 2. Boric acid	b. Household liquid cleaners
_____ 3. Hydrochloric acid	c. Lye
_____ 4. Sulfuric acid	d. Vinegar
_____ 5. Ammonium hydroxide	e. The stomach
_____ 6. Magnesium hydroxide	f. Weak eyewash
_____ 7. Sodium hydroxide	g. Milk of Magnesia

**2. The following genetic conditions have visible abnormal characteristics that make them readily recognized. Match the condition in column I to its visible sign in column II.**

COLUMN I	COLUMN II
_____ 1. Cleft lip	a. Male with long legs and short, obese trunk
_____ 2. Cleft palate	b. Malformation of one or both feet
_____ 3. Down syndrome	c. Vertical split in upper lip
_____ 4. Spina bifida	d. Female with webbing of the neck
_____ 5. Klinefelter's syndrome	e. Opening in the top of mouth
_____ 6. Talipes	f. Small head and slanting eyes
_____ 7. Turner's syndrome	g. A malformation of the back

**CASE STUDIES**

**Scenario 1**

Your best friend shares with you that she is trying to become pregnant. You know that she is 39 years old and has a younger brother with Down syndrome. She tells you she has not talked to a physician about pregnancy.

**Critical Thinking Questions**

1. What type of physician does she need to see? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. How do you feel about asking her if she considered the risks of this pregnancy? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. How would you determine if it might be appropriate to talk with her about how she would deal with it if she learned she was having a Down child? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**Scenario 2**

A neighbor confides in you that her 15-year-old son has not shown any signs of sexual maturity, even though he is in high school and almost 6 feet tall. You know from previous discussions that he has had some difficulty in school. She has asked you what you think.

**Critical Thinking Questions**

1. What kind of questions do you need to ask to determine what she means by sexual maturity? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. What could you tell her it sounds like he might have a hormone deficiency? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. How can you help her to identify a physician for her to consult? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**UNIT APPLICATION**

**Research Activity**

Select one of the congenital disorders discussed in the text. Do an Internet search to learn more about the condition. Find out about the causes and treatment. Is there a support group for people and families dealing with the condition? Is there a national, state, or local association supporting the disorder? (You may need to refer to your phone directory for local information.) Prepare a short written report of your findings.

As an alternative to a disorder search, find out more about gene therapy, genetic engineering, or genetic counseling. Look for new techniques or options for genetic conditions.

**CERTIFICATION AND REGISTRATION PREPARATION**

- \_\_\_\_\_ 1. Chromosomes are:
  - a. responsible for cellular division
  - b. structures composed of DNA
  - c. made up of all the cell's organelles
  - d. in the cytoplasm outside of the nucleus of the cell
- \_\_\_\_\_ 2. Diffusion is:
  - a. the movement of solutes and liquid molecules evenly within a medium
  - b. the movement of water or a solvent through a selected permeable membrane
  - c. the engulfing of bacteria or damaged cells
  - d. the movement of water across a membrane as a result of gravity or pressure

- \_\_\_\_\_ 3. The study of chemical reactions within the body is called:
- a. physiology
  - b. pathology
  - c. biology
  - d. biochemistry
- \_\_\_\_\_ 4. Cleft lip and palate are:
- a. the result of improper cell division after conception
  - b. the result of failure of tissue to unite during pregnancy
  - c. caused by a defect in the 10th gene
  - d. treated with medication
- \_\_\_\_\_ 5. Cystic fibrosis:
- a. causes hard cysts to grow on the skin
  - b. is ultimately fatal
  - c. affects middle-aged people
  - d. is caused by a lack of vitamins A, D, E, and K
- \_\_\_\_\_ 6. Down syndrome:
- a. is caused by amniocentesis
  - b. occurs most often among poor families
  - c. results primarily in only physical (observable) characteristics
  - d. results from improper cell division
- \_\_\_\_\_ 7. Hemophilia:
- a. occurs equally in males and females
  - b. is an X-linked trait carried by females
  - c. can be cured by administering clotting factors
  - d. can be prevented by giving clotting factors to the mother during pregnancy
- \_\_\_\_\_ 8. The main types of tissue are:
- a. epithelial, connective, nerve, and muscular
  - b. endocrine, exocrine, muscular, nerve
  - c. muscular, bone, nerve, skin
  - d. connective, osseous, nerve, muscular
- \_\_\_\_\_ 9. The muscle tissue of the heart is composed of:
- a. striated muscle cells
  - b. smooth muscle cells
  - c. involuntary muscle cells
  - d. cardiac muscle cells
- \_\_\_\_\_ 10. Nerve cells are:
- a. sensory, connecting, or motor
  - b. peripheral, spinal, or central
  - c. involuntary, voluntary, or a combination
  - d. dendrites, axons, or myelin