

Unit 1: Introduction to tissues

Lesson 2: Structural organization of human body-Key

Activity 1 (15'): Body system

Step1: Read the following text and underline words you do not know.

Groups of cells that have a similar structure and work together to perform a specific function form a **tissue**.

There are four types of tissues: epithelial tissue, muscle tissue, nerve tissue and connective tissue.

Different types of tissues that have a specific function for the body form an **organ**.

A **system** consists of groups of organs that work together to contribute to specific tasks. There are 12 different types of systems:

- skeletal system, made of bones, which protects internal organs (e.g rib cage), and it is associated with joints that allow movement;
- muscle system possesses the ability to contract and relax causing body movements;
- nervous system controls and coordinates all the functions in the body and responds to external stimuli;
- respiratory system provides oxygen to the body and removes carbon dioxide from the body;
- reproductive system consisting of sex organs and glands that allows humans to reproduce;
- immune system defends the body against pathogens (harmful bacteria or viruses etc);
- lymphatic system that has three main functions: absorption of fats, fluid balance and protection from infections;
- endocrine system, group of glands secreting hormones to the circulatory system (e.g. pancreas, ovaries, thyroid, testes);
- urinary system eliminates waste products (urea) from the body and regulate the blood volume and composition;
- integumentary system protects the body from environmental factors;

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- circulatory system allows blood to transport nutrients, oxygen, carbon dioxide, hormones to and from the cell in the body;
- digestive system converts food into nutrients important for the body.

Step 2. Following step 1 match the name of the system (column A) with some of its function (column B)

A System	B Function
1. Endocrine	a. Supports and protects the organs beneath it
2. Skeletal	b. Breaks down food into smallest pieces and absorbs the nutrients.
3. Muscular	c. Gas exchange: inhalation of oxygen and exhalation of carbon dioxide
4. Digestive	d. Transports nutrients, gases, hormones etc, throughout the body. It removes waste products.
5. Immune	e. Produces the offspring
6. Respiratory	f. Detects environment changes; Responds to stimuli
7. Reproductive	g. Is responsible for the movement of the body.
8. Lymphatic	h. Produces and secretes hormones
9. Nervous	i. Removes liquid waste from the blood in the form of urine
10. Circulatory	j. Protects against diseases
11. Integumentary	l. Acts as a barrier to protect the body from the outside world
12. Urinary	m. Helps rid the body of toxins, waste and other unwanted materials

1h- 2a - 3g - 4b - 5j - 6c - 7e - 8m - 9f - 10d - 11l - 12i

Activity 2 (10') : Human body system drawings

The following drawings show step 1 different systems.

Label each image with its proper name. (The drawing vii represents two systems)

i)_ Digestive system

ii)_ Muscular system

iii) Cardiovascular system

iv)_ Respiratory system

v)_ Skeletal system

vi)_ Nervous system

vii)_ Lymphatic and Immune systems

viii)_ Endocrine system

ix)_ Urinary system

xa)_ Male reproduction system

xb)_ Female reproduction system

xi)_ Integumentary system

Activity 3 (15'): **Organs**

Each body system is composed of different organs. In the following word puzzle there are two organs for each system. Search the 21 organs, the first and the last letter of each organs has been written for you.

Organs in the human body.

Z N I A R B P E J U R E T E R	BONE	UTERUS
L E S S E V C I T A H P M Y L	ARTERY	VAGINA
M I I P R N R G T A R T E R Y	LYMPHATICVESSEL	SCROTUM
X D N I U S O V Q U J Q Q H O	BONEMARROW	TESTICLE
A I S N N H C B H I I L J S J	THYMUS	PITUITARY
O O U A U I C R I I A T U A B	BRAIN	THYROID
X R G L Q E K V O R W H A I A	SPINALCORD	
V Y A C U J V S Y T C U Z R S	SKIN	
A H H O T T J N N N U S N W Y	LYMPHOID	
G T P R E Y X I O X P M L Y P	LARYNX	
I M O D R W O R R A M E N O B	BRONCHUS	
N G S I U C B B G E M O U T H	MOUTH	
A Q E H S V D R R E D D A L B	ESOPHAGUS	
B D I O H P M Y L S U M Y H T	URETER	
C C C L E L C I T S E T U E F	BLADDER	

Activity 4 (10'): **Peer-assessment**

In pairs, write at least 3 organs for each system. Then, compare your answers with the class.

1. Integumentary **Skin, nails, hair**
2. Circulatory **Veins, artery, hearth, capillaries, blood**
3. Immune **Tonsils and adenoids, lymph nodes, thymus, spleen, peyer's patches, appendix, bone marrow, lymphatic vessels**
4. Lymphatic **Bone marrow, thymus, spleen, lymph nodes, tonsils, lymphatic vessels**
5. Digestive **Mouth, stomach, esophagus, intestine, rectum, accessory organs (liver, pancreas, gallbladder, teeth)**

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|-----------------|---|
| 6. Urinary | Bladder, kidney, urethra |
| 7. Respiratory | Nose, lungs, trachea, bronchi, diaphragm, pharynx, larynx |
| 8. Reproductive | Female (uterus, vagina, vulva, ovary) Male (scrotum, penis, prostate, testicle) |
| 9. Skeletal | Bones (e.g Ribs, skull, femur, humerus) , ligaments, joints, cartilage |
| 10. Muscular | Muscle, tendon, diaphragm |
| 11. Nervous | Brain, nerves, spinal cord |
| 12. Endocrine | Pituitary, adrenal gland, thyroid, ovaries, testes, pancreas |