Lecture 1

Medical Terminology -The language of medicine. The Organization of the Body.

Plan

I. Medical Terminology -The language of medicine
    i. Basic Elements of Medical word
        a) Root
        b) Prefix
        c) Combining vowel
        d) Suffix
    ii. Defining and Building Medical Words
II. Orientation to anatomy
    i. Anatomical position
    ii. Anatomical Planes and Sections
    iii. Directional terms
III. Body Regions
    i. Abdominal Quadrants and Regions
    ii. Body Cavities and Membranes
    iii. Potential Spaces
IV. Organ systems

LEARNING OUTCOMES

1. Identify the four word elements used to build medical words.
2. Divide medical words into their component parts.
3. Apply the basic rules to define and build medical words.
4. Demonstrate the anatomical position
5. Describe the human body using directional and regional terms 6. Identify three planes most commonly used in the study of anatomy 7. Distinguish between the posterior (dorsal) and the anterior (ventral) body cavities, identifying their subdivisions and representative organs found in each
8. Describe serous membrane and explain its function
9. Describe the 11 organ systems, the functions of each, and list the principal organs of each system

In describing the human body, anatomists assume that it is in anatomical position —that of a person standing upright with the feet flat on the floor, arms at the sides, and the palms and face directed forward. Without such a frame of reference, to say that a structure such as the sternum, thyroid gland, or aorta is “above the heart”

would be vague, since it would depend on whether the subject was standing, lying face down (prone), or lying face up (supine). From the perspective of anatomical position, however, we can describe the thyroid as superior to the heart, the sternum s anterior to it, and the aorta as posterior to it. These descriptions remain valid regardless of the subject's position.

Even if the body is lying down, such as a cadaver on the medical student's dissection table, to say the sternum is anterior to the heart invites the viewer to imagine the body is standing in anatomical position and not to call it "above the heart" simply because that is the way the body happens to be lying.

Knowledge of the external anatomy and landmarks of the body is important in performing a physical examination and many other clinical procedures. For purposes of study, the body is divided into two major regions called the axial and appendicular regions.

The body wall encloses multiple body cavities, each lined with a membrane and containing internal organs called viscera (singular, viscus). Some of these membranes are two-layered, having one layer against the organ surface (such as the heart or lung) and one layer against a surrounding structure (forming, for example, the inner lining of the rib cage); there is only a thin film of liquid between them. In such cases, the inner layer, against the organ, is called the visceral layer of the membrane, and the more superficial or outer one, the parietal layer.

The human body has 11 organ systems and an immune system, which is better described as a population of cells that inhabit multiple organs rather than as an organ system. The organ systems are classified in the following list by their principal functions, but this is an unavoidably flawed classification. Some organs belong to two or more systems— for example, the male urethra is part of both the urinary and reproductive systems; the pharynx is part of the respiratory and digestive systems; and the mammary glands can be considered part of the integumentary and female reproductive systems. The organ systems are as follows: Systems of protection, support, and movement: Integumentary system, Skeletal system, Muscular system

Systems of internal communication and control: Nervous system, Endocrine system,

Systems of fluid transport: Circulatory system, Lymphatic system

Systems of intake and output: Respiratory system, Urinary system, Digestive system

Systems of reproduction: Male reproductive system, Female reproductive system
To test your knowledge, discuss THE FOLLOWING TOPICS with a study partner

or in writing, ideally from memory.

Part 1 General Anatomical Terminology

1. Anatomical position and why it is important for anatomical description

2. Directions along which the body or an organ is divided by the sagittal, frontal, and transverse planes; how the median plane differs from other sagittal planes

3. Meanings of each of the following pairs or groups of terms, and the ability to describe the relative locations of two body parts using these terms: ventral and dorsal; anterior and posterior; cephalic, rostral, and caudal; superior and inferior; medial and lateral; proximal and distal; superficial and deep

4. Why the terms ventral and dorsal are ambiguous in human anatomy but less so in most other animals; what terms are used in their place in human anatomy; and reasons why they are occasionally appropriate or unavoidable in human anatomy

Part 2 Major Body Regions

1. Distinctions between the axial and appendicular regions of the body 2.

Subdivisions of the axial region and landmarks that divide and define them

3. The abdomen's four quadrants and nine regions; their defining landmarks; and why this scheme is clinically useful

4. The segments of the upper and lower limbs; how the anatomical meanings of arm and leg differ from the colloquial meanings

Part 3 Body Cavities and Membranes

1. Locations and contents of the cranial cavity, vertebral canal, thoracic cavity, and abdominopelvic cavity; the membranes that line them; and the main viscera contained in each

2. Contents of the mediastinum and its relationship to the thoracic cavity as a whole

3. The pericardium, its two layers, the space and fluid between the layers, and its function

4. The pleurae, their two layers, the space and fluid between the layers, and their function

5. The two subdivisions of the abdominopelvic cavity and the skeletal landmark that divides them

6. The peritoneum; its functions; its two layers and their relationship to the abdominal viscera; and the peritoneal fluid

7. Mesenteries and serosae

8. Intraperitoneal versus retroperitoneal organs, examples of both, and how one would identify an organ as being intra- or retroperitoneal

9. Names and locations of the posterior and anterior mesenteries 10. The serosa of an abdominopelvic organ and how it relates to the peritoneum 11. Examples of potential spaces and why they are so named Part 4 Organ Systems

1. The 11 organ systems, the functions of each, and the principal organs of each system

Recommended readings:

1. Kenneth S Saladin - Anatomy & Physiology. The Unity of Form and Function (2016, McGraw-Hill Education)
2. Barbara Gylys - Medical Terminology Systems (2012, F.A. Davis Company)