

The heart is a muscular organ situated in the mediastinum. It is divided into 4 chambers, 2 on the right and 2 on the left. The upper chambers are called atria, the lower ones ventricles. The function of the heart is to pump blood throughout the body via the vessels.

There are 3 types of vessels:

- 1) Arteries - they transport blood from the heart, the largest is aorta
- 2) Capillaries - they receive blood from the arterioles
- 3) Veins - they carry blood back to the heart, the largest is vena cava

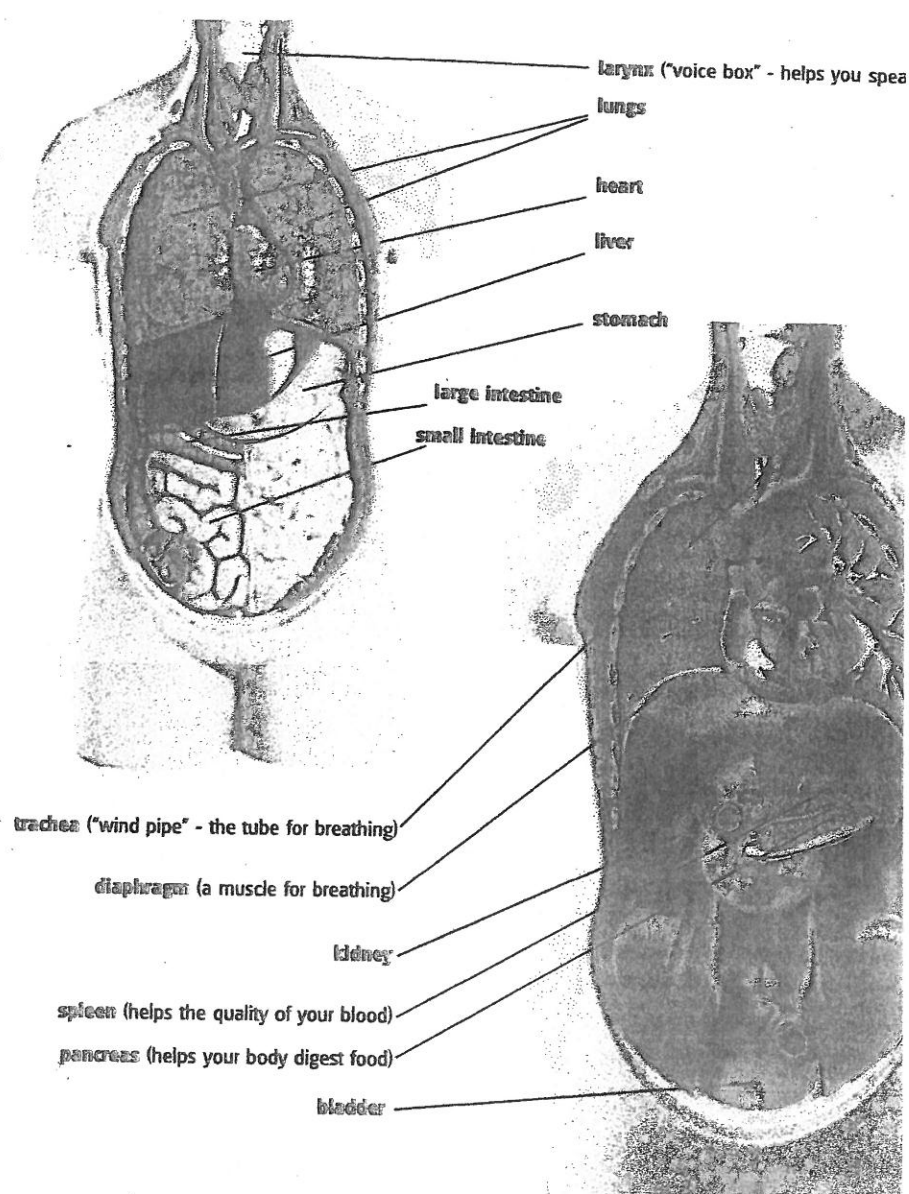
The blood has many important functions, for example:

- a) Transportation of oxygen from the lungs to the cells and carbon dioxide from the cells to the lungs
- b) Distribution of hormones
- c) Transportation of nutrients in the body

The section of medicine dealing with blood is called haematology.

The blood is composed of plasma and blood cells: erythrocytes, leukocytes and thrombocytes. The most common diseases of blood are anaemia and leukaemia.

We have 4 blood groups: A, B, AB and O. They are important in blood transfusion.



CS consists of the heart and the vessels.

## HUMAN BODY - CARDIOVASCULAR SYSTEM (CS)

The human body functions as a whole, but it is composed of many separate functional units that must work together.

### The cell

The smallest and most basic unit of life is called the cell. Cells are made of protoplasm, a watery substance that consists of proteins, carbohydrates and nucleic acids and have three parts: cytoplasm, the cell membrane and the nucleus.

All the cells have three functions: reproduction, movement of fluid through the cell membrane and metabolism. Groups of similar cells form tissue: epithelium, connective tissue, muscle tissue and nerve tissue.

Epithelium contains no nerve or blood vessels and its main function is protection.

Connective tissue supports and shapes the body and muscle tissues enable contractions (movements). Nerve tissue is composed of cells that transmit electrical impulses in the body, which provide communication between body parts.

A body system consists of a group of organs that form different systems as:

1. The **musculoskeletal system**, composed of the skeletal system which provides a framework for the body and protects vital organs. It consists of bones and joints and its functions are connected with the muscle system. The purpose of this system is a movement caused by contraction and extension of muscles. We distinguish between voluntary and involuntary muscles. Most of the voluntary (or transversely striped) muscles are found in the extremities, in the trunk and in the head and they are capable of rapid and complicated movements. Involuntary (or smooth) muscles provide only mechanical movement in the walls of the tracts and organs.
2. The **circulatory system** - it is the heart and a network of blood vessels: arteries, capillaries and veins.
3. The **digestive system** - the mouth, oropharynx, oesophagus, stomach, small intestine, large intestine and the anus.
4. The **respiratory system** - the nose, nasopharynx, trachea, bronchi and the lungs.
5. The **urinary system** - the kidneys, ureters, bladder and the urethra.
6. The **nervous system** - the brain, spinal cord, peripheral nerves, autonomic nerves.
7. The **endocrine system** - it consists of seven glands and its function is to produce hormones.
8. The **reproductive system** which is divided into the male's: the testes, epididymis, seminal vesicles and the prostate; and the female's: the ovaries, Fallopian tubes, uterus and the vagina.
9. The **integumentary system** which protects the body against pathogenic organisms and injury and consists of the skin, lymph channels and the lymph nodes.

The nucleus is responsible for the cell reproduction and contains 46 chromosomes important for the hereditary factors. They are made up of ribonucleic acid known as RNA and deoxyribonucleic acid, or DNA.

Organs of the body are positioned within spaces called **cavities**. The skull surrounds the **cranial cavity** that contains the brain. The **spinal cavity** formed by the vertebrae contains the spinal cord. The **thoracic cavity** contains the heart, bronchial tubes and the lungs. The floor of this cavity is a muscle organ called the diaphragm. Below the diaphragm there are the **abdominal cavity** which contains organs of the digestive system and next the **pelvic cavity** where we can find organs of the reproductive and urinary systems.

The human body itself consists of three **major areas**: the head, the trunk and the extremities.

The **head** consists of the cranium and the face. The cranium contains the brain and its membranes and is covered by the hair. The face is made up of the forehead, eyes, cheeks, nose, ears and the chin. The mouth has two lips and contains the tongue and the teeth.

The head and the trunk are joined together at the neck which contains the cervical vertebrae, the larynx, the pharynx and important vessels and nerves.

The **trunk** is made up of the vertebral column, the chest, the abdomen and the pelvis. Each vertebra has a spinal canal through which the spinal cord runs. The chest contains the oesophagus, the trachea, the heart, the lungs and the great vessels. On the chest there are two nipples and, in women, two breasts.

The **upper limb** is made up of the shoulder, upper arm, elbow, forearm, wrist and the hand with a thumb and four fingers.

The **lower limb** is composed of the pelvic girdle, the hip, thigh, knee, lower leg with the calf and the shin, the ankle and the foot with five toes. Fingers and toes are called the digits.

The **skeleton** of an adult consists of more than 200 bones of various shapes and sizes. They are made up of hard osseous tissue and are described as long, short, flat or irregular. The point where two bones meet is a joint which contains an oily substance called synovia. The bones are held together by the ligaments.

head  
hair  
face  
skin  
eye  
cheek  
nose  
ear  
mouth  
tooth  
tongue  
lip  
neck  
chin

hlava  
vlasy  
obličej  
kůže  
oko  
tvář  
nos  
ucho  
usta  
zub  
jazyk  
ret  
krk  
brada

body

shoulder

chest

arm

elbow

stomach

leg

knee

toe

foot

ankle

heel

hand

finger

thumb

wrist

back

body

shoulder

chest

arm

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head

hair

face

eye

cheek

nose

ear

neck

mouth

tooth

tongue

lip

chin

skin

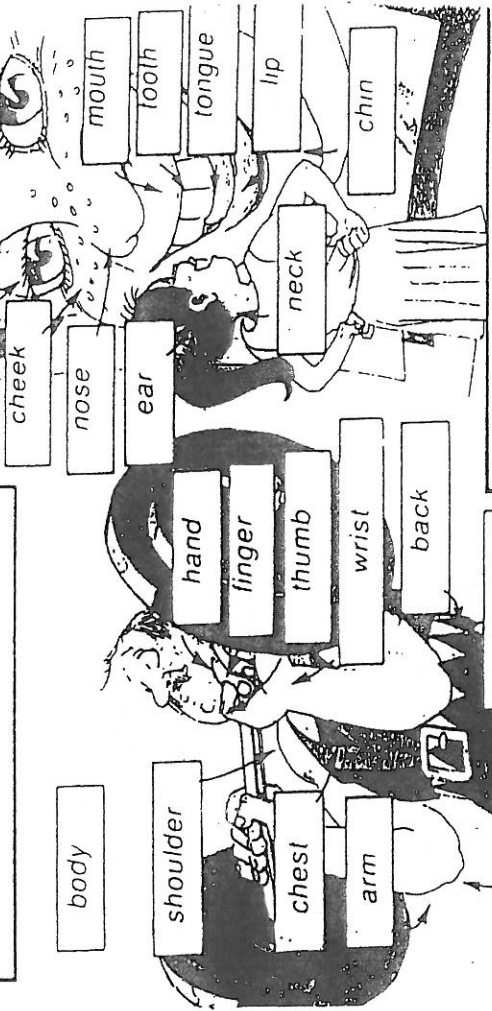
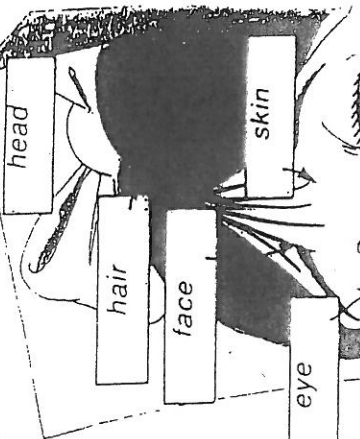
body

shoulder

chest

arm

elbow



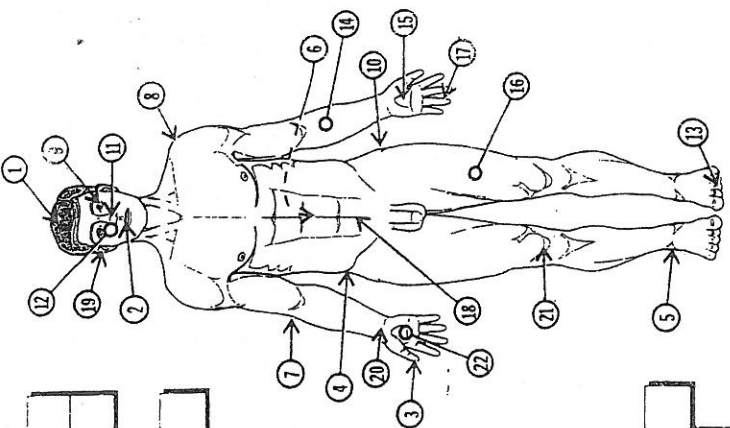
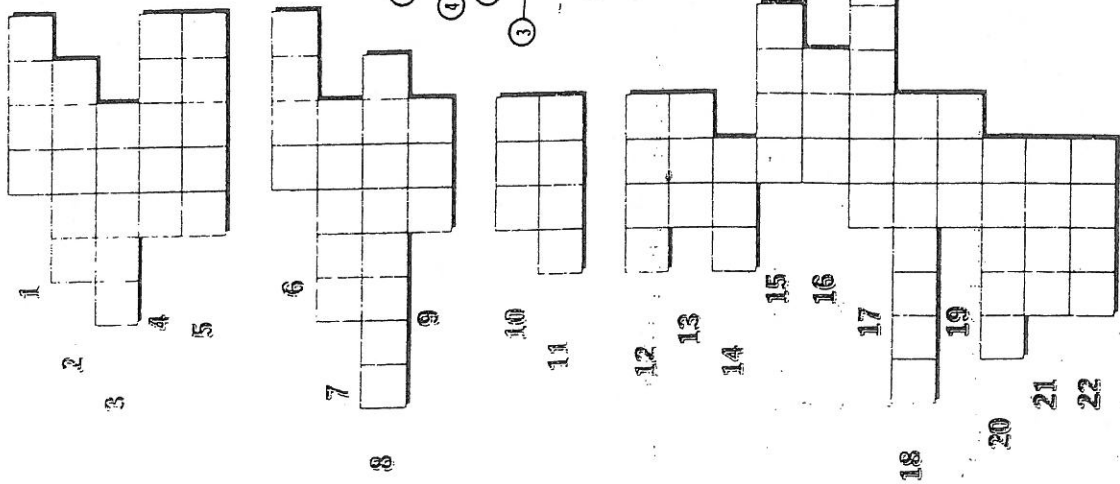
body  
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wrist  
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leg  
knee  
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foot  
ankle  
heel

tělo  
rameno  
hrud'  
paže, ruka  
loket  
ruka  
prst  
palec  
zápěstí  
záda  
žaludek  
břicho  
noha (celá)  
koleno  
prst (u nohy)  
noha  
kotník  
pata

miscellaneous

# CROSSWORD PUZZLE

Name correctly the parts of the body to complete the crossword puzzle.



prst na noze, paže, dlan', noha,  
prst, břicho, ucho, zápěstí, palec,  
pas, kotník, vlasy, ústa, záda,  
loket, rameno, oko, bok, nos,  
obličej, koleno, ruka