МІНІСТЕРСТВО ОСВІТИ І НАУКИ, МОЛОДІ ТА СПОРТУ УКРАЇНИ
Херсонський державний університет
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Англійська мова (за професійним спрямуванням).

Методичні рекомендації до підготовки і проведення практичних занять
для здобувачів ступеня вищою освіти «бакалавр»
спеціальності «222 Медицина» денної та заочної форм навчання

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Пояснювальна записка

Медична професія потребує навчання протягом усієї кар'єри, отже лікарі мають увесь час отримувати та засвоювати новітню медичну інформацію із багатьох джерел, частина яких видані іноземною мовою. Крім того, у сучасній медицині велике значення має міжнародне співробітництво, інтеграція зусиль фахівців різних країн у дослідженні різноманітних проблем охорони здоров'я та розробці новітніх методів діагностики, лікування, профілактики захворювань. Усе зазначене вимагає від майбутніх професіоналів певного рівня володіння іноземною мовою, яка є важливим елементом професійної підготовки.

Англійська мова (за професійним спрямуванням) як навчальна дисципліна ґрунтується на вивченні студентами біохімії, анатомії, фізіології, біофізики і психіатрії та інтегрується з тими дисциплінами, а також закладає основи знань з медичної термінології з перспективою їх подальшого використання у професійній діяльності. Завданням вивчення дисципліни є розвиток комунікативних компетентностей майбутніх фахівців; вдосконалення вмінь та навичок з письма та аудіювання; формування вмінь читати й аналізувати спеціальну літературу англійською мовою.

Збірник «Англійська мова (за професійним спрямуванням). Методичні рекомендації до підготовки і проведення практичних занять для здобувачів ступеня вищою освіти «бакалавр» спеціальності «222 Медицина» денної та заочної форм навчання» містить професійно орієнтовані тексти медичної тематики, що безпосередньо пов'язані з навчальним матеріалом профілюючих медичних дисциплін. Основна мета рекомендацій – забезпечення якісної підготовки студентів до державного іспиту, до медичних ліцензійних іспитів «КРОК», що передбачає комплексну перевірку знань вступників з іноземної мови, визначення професійної іншомовної комунікативної компетентності, оцінку ступеня сформованості умінь володіти словниковим запасом та граматичними структурами.

Методичні рекомендації є додатковою супровідною частиною навчально-методичного комплексу дисципліни «Іноземна мова (за професійним спрямуванням)» для студентів напряму підготовки «222 Медицина». Збірник забезпечує базу для досягнення освітньої мети навчання : формувати у студентів загальні компетенції (декларативні знання, вміння й навички, вміння вчитися); сприяти розвитку здібностей до самооцінки й здатності до самостійного навчання, що дозволятиме студентам продовжувати навчання в академічному й професійному середовищі як під час навчання у ВНЗ, так і після отримання диплома про вищу освіту.

Методичні рекомендації призначені як для підготовки до практичних занять з дисципліни «Іноземна мова (за професійним спрямуванням), так і для роботи в аудиторії разом із викладачем. Для ефективної роботи з текстом у посібнику подано ряд завдань, спрямованих на більш глибоке засвоєння лексичного та граматичного матеріалу, а також систематизацію роботи з медичною термінологією. Збірник містить два змістові розділи (модуль-блоки), теми розподілено відповідно до Програми навчальної дисципліни «Іноземна мова (за професійним спрямуванням)» складеної для спеціальності «222 Медицина». Кожен змістовий розділ включає 10 розроблених практичних занять. Кожна тема представляє сукупність текстів і системи вправ, що містить етапи предтекстової та післятекстової роботи з матеріалом з обов'язковим набором вправ для ознайомлення та вивчення медичної термінології..

Професійна зацікавленість студентів у здобутті знань з медицини англійською мовою і можливість висловитися з проблем майбутньої професії входять до методичного задуму рекомендацій. Усі вправи можна умовно поділити на предтекстові завдання до тексту і післятекстові, що передбачає різні фази мовної діяльності студентів – від прогнозуючої до контролюючої.

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MODULE I. THE HUMAN BODY

Unit 1. STRUCTURE OF THE HUMAN BODY

“ In reality, a cell is a biological mini-me compared to the human body
A cell has every biological system that you have”
Bruce Lipton

Vocabulary

Cell |sel| клітина

ex. The virus will infect **a cell** and then it will begin to replicate.

Tissue |ˈtɪʃuː| тканина

ex. I want to get cure for asthma and develop my cardiac **tissue**.

The meniscus is not a bone. It is a cartilage, a flexible, elastic **tissue**.

To surround оточувати, охопити, обступати

ex. My sleep, however, was interrupted by a feeling that I was **surrounded**.

Nucleus (plural): nuclei |ˈnjuːklɪlaɪ|

ex. DNA replicates in the cell **nucleus**.

She studies the genetic material harbored in a cell's **nucleus**

Greenberg suggests that the clumps may protect **nuclei** from toxic effects of the unbound mutant proteins.

To determine |dɪˈtəːmɪn| визначати. вирішувати

ex. In which month of pregnancy it's possible to **determine** gender of the fetus?

To consist of |kənˈsɪst| складатися із

ex. Elements **consist of** atoms that consist of a nucleus of positive protons, neutral neutrons, and a shell of electrons

Hereditary |hɪˈrɛdɪt(ə)ri|

ex. Overall leukemia is not **hereditary** but there are rare reports of family clusters, that is, more than one case in a family.

Gland |gland| залоза

ex. The adrenal **glands** secrete adrenalin.

Milk comes from the mammary **glands** of females and is a complete food for their young.

To contract |ˈkɒntrækt| – скорочувати, сжимати, стискати

ex. The heart contracts by the action of the muscles

Task 1. Read and translate the text. Fill in the missing letters to complete the words.

What's the Cell?

The cell is the fundamental unit of every animal or plant. Cells are everywhere in the human body – in every *tiss_e*, every organ. All cells are similar. They contain protoplasm. Cell membrane *surr_unds* and protects the internal environment of the cell. The *nucl_us* controls reproduction of a cell, and contains genetic material. Chromosomes are 23 pairs of thin strands of genetic material (DNA). They are within the nucleus of a cell. These 23 pairs of chromosomes contain genes. They determine the *hered_tary* makeup. Cytoplasm is the protoplasmic material outside the nucleus. It carries on the work of the cell (in a muscle cell, it does the contracting; in a nerve cell, it transmits *imp_lses*). Cells are different because they carry out their individual functions. In all multicellular forms of life cells form groups called tissues.

(Read more https://mmegias.webs.uvigo.es/02-english/5-celulas/1-descubrimiento.php)

Task 2. Read and translate the text. Fill in the missing words given below (tissue, consist of, cells, to contract, these, addition, functions, types).

Organs and Tissues

Tissues are collections of cells and together perform specific functions. The major tissue 1._____ of the human are epithelia, connective, muscle, and neural. Epithelia cover every body surface and line the digestive, reproductive, respiratory, and urinary tracts. In 2._____, epithelial tissues line the chambers in the eye, ear, and brain, the inner surfaces of blood vessels, the heart, and the chest cavity. Glands also 3._____epithelial tissue. Glandular cells secrete various substances into ducts, or into blood. Connective tissues connect structures, provide support and protection for body organs, fill spaces, store fat, produce blood 4._____, aid in the repair of tissues, and provide protection against disease agents. The major types of connective tissue include fat, blood, bone, cartilage, reticuloendothelial. Muscle tissues have the ability 5._____. Such contractions move the body skeleton and internal organs. There are three types of muscle tissue: cardiac (heart), skeletal, and smooth. Nerve or neural 6._____takes part in the stimulation, and control of body functions and activities. Nervous tissue also can conduct or transmit waves of excitation to nerve cells, muscles, or glands.

Organs are combinations of tissues that perform complex 7._____. An organ consists of two or more kinds of tissues and performs specific and complex functions. The human body consists of several organ systems. Each of 8._____ systems includes a set of organs. These organs work together to perform specialized functions essential to the survival of the individual.

Task 3. Complete the sentences.

1. All living organisms consist of … . 2. The chromosomes consist of genes … . 3. Cytoplasm is inside the … . 4. Cells are different because they have different number of … . 5. Collections of cells which perform the same function are … . 6. Connective tissues cover body surfaces and … … . 7. Muscular tissue is responsible for … . 8. Organs consist of various types of … … .

Task 3. True/False

1.There is no limit to how big or small a cell can be.
2. Red blood cells carry oxygen to all of your cells.
3.The outer layer of skin is made up of living cells.
4.Muscles only push bones to make them move.
5. Muscle tissue is responsible for movement of the body and internal organs.
6. When you shiver, muscles are working together to keep you warm.
7. The muscular and skeletal systems work together to move your body.
8. Nerve tissues help keep skin soft.
9. The skeletal system protects your internal organs.
10. About 100 bones make up the skeletal system.
11. Organ system do not interact with each other.

Task 4. Match the systems and their organs.

Systems: digestive, reproductive, respiratory, urinary

Organs: esophagus, nerve, heart, intestine, trachea, tendons, kidneys, cartilages, arteries, bronchi, brain, stomach, veins, testis, liver, spinal

cord, bladder, ovary, muscle, pancreas, uterus, bones, lungs, gallbladder, ureter, urethra, joint.

Grammar material. PLURAL OF THE NOUNS

Task 5. Use the proper form of the underlined words:

The brain consists of two (1) *half*, or hemispheres. The (2) bone, (3) joint, (4) muscle are the parts of the musculoskeletal system. Today we have two practical (5) class. The experiment was performed on (6) mouse. I think I need several (7) spectacles. There are 21 (8) student in the room. The study involved 20 patients, of them 12 woman. I don't have many hobbes.

Task 6. Write the plural of Latin and Greek words (use the information from your lessons of Latin or look them up in the dictionary):

Vertebra _____, bursa _____, bulla _____, areola_____, aphtha _____; adnexum _____, sanatorium_____, atrium _____, bacterium _____, diverticulum_____, ovum_____; calculus _____, bronchus_____, nucleus _____, bacillus _____, coccus_____; anastomosis _____, crisis _____, metastasis _____, analysis _____, epiphysis _____, prosthesis_____, axis _____; apex _____, varix _____;ganglion _____, spermatozoon _____, phenomenon_____.

Unit 2. The Human: As a Biological System

Vocabulary

Task 1. Warming up activities. Are you good at solving puzzles? Unscramble the words and name parts of the body and their location

Cken _____. Ahed _____. Ckab _____.
Armfore _____. Dahn _____. Tofo _____.
Bowel _____. Klean _____. Sockttub _____.
Mendoba _____. Estch _____. Istwa _____.

Task 2. Do you remember the parts of the body? Distribute them into two columns answering the questions:

1. "What are some parts of your body you can see?" (Head, arms, hands, chest, back, legs, feet, etc.)
2. "What are some parts of your body you don't see?" (Heart, lungs, stomach, etc.) Write these on the board.

Task 3. Read and translate the text. Do you agree with all of the statements? Answer the questions below.

The human body is unique in every sense. It is an example of a perfect machine, with a superb combination of all kinds of mechanisms: physical, chemical, mechanical, electrical, electronic and all the others processes in the universe. This master creation of nature is so complete and compact that it can perform amazing functions with the utmost ease. As a matter of fact, as we know more and more about human anatomy and physiology, we derive new ideas and perfect know-how for making all kinds of complex, sophisticated machinery. The human body can be compared to a well-planned city which has a network of complex system such as drainage, communications, power supply, repairs, transport and, above all, an extremely efficient administrative system.

1. What are the basic functions of the human body?
2. Which parts are the most important in our body?
3. What can the human body be compared to?
4. What part of the human body can be compared to the hard drive of a computer?
5. What is the heaviest part of the human body?
6. What is the most sensitive part of the human body?

Task 4. Now read the description of different organs. Fill in the missing information using the words from the list. Explain your choice.

A: In one day your heart …… all your blood around your body 1000 times. The heart is ……. of cardiac muscle, which pumps oxygen-rich blood through your body and never gets tired.

Make Transport Transports Made

B: Your wedge-shaped liver is your largest internal organ. Its functions ……. to regulate sugar level in your blood and ……. …… of toxins found in blood. Without it you would die in 24 hours.

Is Get rid Are Gets rid

C: Your stomach is a …… tank for food. It turns food into a creamy mixture. It's the widest part of your …… system

Hold Defeating Holding Digestive

D: The smallest intense …… a narrow 5 m long tube were the most part of digestion occurs. The large intestine is a wide 1.5-meter-long tube responsible for absorption of water and removal of solid waste material.

Are Occurs Is Occur

E: Your dark red kidneys …… your blood by making urine from waste products found in your blood. People can live even with one …….

Kidneys Cleans Kidney Clean

F: Your lungs are sponge-like organs that deliver oxygen ……. your blood and remove carbon dioxide …….it. The maximum volume of air adult male lungs can …….is 5.7 liters

From To Hold Holds

J: The brain makes up about 2% of your …… weight, but needs about 20% of your body and ……. it what to do.

Body' Body's Tells Tell

H: There are 600 …… in the body. You need muscles .to straighten bend, and turn all parts of your body. They also help the organs …… in size

Change Muscles To change Muscle

Task 5. Guess what the people are talking about. Complete the conversation below with the proper parts of the body.

1 A: Are you married?
B: Of course! Haven't you noticed a ring on my ring-…….
2 A: Don't point your ……. at me. It's rude.
B: I'm sorry.
3 A: I want to know my future.
B: O. K. Turn your hand over and let me read your …….
4 A: Ouch! Somebody has poked his …… into my ribs. It really hurts.
B: Ok. Let's change the bus
5 A: You have such a bushy mustache on your …
B: Thank you. I've been growing them for 5 years.
6 A: You look pale. I think you should eat more.
B: It's very difficult for me to move …… after the boxing match.
7 A: What's wrong, Mike?
B: I feel a terrible pain in the ……. area
8 A: Why is your brother walking barefooted?
B: Andrew couldn't find sandals. He has a huge ……-size 52!!!
9 A: While dancing, stretch your …… foreword.
B: A hundred of thanks for advice.
10 A: I'm keen on rollerblading.
B: Then you definitely need to wear pads to protect your …… and …….
11 A: Doctor, what's the matter?
B: I think you sprained your …… working without protective boots.

Task 6. Guess each part of the body by its function and location. The first definition has been already done for you

Model: A: *This is a part of the arm between the elbow and the hand. Guess what it is.*

B: It's a forearm

d. Forearm _ Hair _ Shoulder _ Neck _ Back

_ Elbow _ Hand _ Buttocks _Thigh. _Ankle

_ Heel _ Calf. _ Tail bone. _ Lumber region _Wrist

_ Shoulder blade _ Finger _ Toe _ Knee. _Hip

A) It covers all the body and helps to let sweat out and protects you from cold and heat. It can be of different colors.

B) This part connects the upper arm and the forearm

C) These parts are located on your hands and help you sence hold and move objects

D) This is the part of your arm between the elbow and the hand
E) This is the end of human arm with five fingers
F) The rear part of the body that you sleep on
G) This part connects the arm to the trunk
H) It is a massive part of your body that you sit on.
I) This part helps you to turn the head
J) The top part of your leg to the foot
K) This part connects the leg to the foot
L) Back part of the foot
M) The back part of the foot between the knee and the foot
N) The reduced tail
O) The part connects the forearm and the hand
P) This part of the leg helps you to blend the leg
Q) This is the side of body which is situated between the waist and the thigh.
R) One of two flat triangular bones in upper back
S) The part of your body that you wear your belt on
T) These are fingers on your foot they stabilize your walk on different surface

Grammar material. PRESENT SIMPLE

Task 7. Use the proper form of the verb:

1) We (study) Anatomy. 2) This (be) a difficult subject. 3) We (learn) a lot of new terms, 4) they (be) special words which 5) (describe) the human body. 6) The body (consist) of organs and systems. 7) The human body (have) the following systems: digestive, respiratory, cardiovascular, reproductive, motor, urinary, nervous.

Task 8. Correct the mistakes:

8) London is a city big. 9) My mother work in a hotel. 10) Does he watches TV in the evening? 11) He is like watching football. 12) On Sundays we eats out. 13) You like fishing? 14) My brother no have a dog. 15) I doesn't like going to disco. 16) Do she live in a house or a flat? 17) They works hard. 18) Where does you usually go on Sunday? 19) Live you in a flat? 20) He not smoke.

Unit 3. SKELETAL SYSTEM

Vocabulary

Ankle |ˈaŋk(ə)l| – the joint between your foot and your leg
ex. The nurse bandaged a sprained **ankle**.
Birth |bəːθ| – if a woman gives birth, she produces a baby from her body
ex. A midwife attended the **birth** in the afternoon.
Dense |dɛns| – a substance that is dense has a lot of mass in relation to its size
ex. Oxygen is quite a **dense** gas
Deposit (v) |dɪˈpɒzɪt| – to leave a layer of a substance on the surface of something
ex. In the case of Darwin's Frog, the female **deposits** her eggs into leaf litter.
Fetus |ˈfiːtəs| – a young human or animal before birth
ex. The embryo develops into a **fetus**. The **fetus** has well developed organs.
Flexible |ˈflɛksɪb(ə)l| – something that is flexible can be bent of bend easily
ex. A **flexible** health insurance plan gives patients more choice about doctors and coverage.
Joint |dʒɔɪnt| – a part of your body between two bones
ex. She's been having pain in her muscles and **joints**.
Osseous |ˈɒsɪəs| – bony
ex. **Osseous** tissue is a tissue of the skeletal system otherwise commonly known as bone tissue. It is the major connective tissue of the human body.
Shaft |ʃɑːft| – a thing long piece of metal
ex. The **shaft** is of red granite and is beautifully polished.
Shape |ʃeɪp| – the outer form of something
ex. You can recognize a bird from the unusual **shape** of its tail
Thigh |θʌɪ| – a top part of your leg
ex. She suffered a knife wound to her **thigh**.
Wrist |rɪst|– the joint between your hand and the lower arm
ex. The ball hit him hard on the **wrist.**

Task 1. Guess what parts of the body people of different professions will be interested in. Match the words in column A with the words in column B and explain your choice.

Model: A*: What part of the body is the fortuneteller interested in?*
B: I think the fortuneteller is interested in the client's palm because she reads future by hand lines.

A	B
1. Fortunalteller 2. Boxer 3. Dentist 4. Detective looking for clues 5. Person overboard 6. Police-officer during arrest 7. Psychiatrist 8. Single girl / young man 9. Shop-assistant 10. Oculist 11. Welder	1. Armpits and groin 2. Client's plam 3. Client's teeth 4. Your head 5. Your eyes 6. His face and arms 7. Your index finger 8. Opponent's fists 9. Ring finger 10. Some fingerprints 11. Suspect's wrist

Task 2. Match the terms with their definitions

Term	Meaning
1.Musculoskeletal system	a) The body system that provides support, stability, shape, and movement to the body
2.Joint	b) The point at which two (or more) bones meet.
3.Cartilage	c) Soft connective tissue found between joints
4.Ligaments	d) Connective tissue that attaches bone to bone at a joint
5.Tendons	e) Connective tissue that attaches muscle to bone
6.Voluntary muscle	f) Muscle that can be consciously controlled
7.Involuntary muscle	g) Muscle that is controlled by the autonomic nervous system (not consciously controlled)
8.Striated muscle	h) Muscle tissue that has a striped appearance due to its fiber composition

Task 3. Read and translate the text. Choose the most suitable title for it:
MUSCULOSKELETAL SYSTEM
BONE STRUCTURE BONES
BONE FORMATION
MUSCLES JOINTS SKELETON _____

Bones are composed of osseous tissue and blood vessels and nerves. Osseous tissue is a dense connective tissue which consists of osteocytes. The bones of the fetus are composed of cartilage tissue, which resembles osseous tissue but is more flexible and less dense because of a lack of calcium. As the embryo develops, depositing calcium salts in the bones occurs, and continues throughout the life of the individual after birth.

The formation of bone depends on a proper supply of calcium and phosphorus to the bone tissue. Vitamin D helps the passage of calcium through the lining of the small intestine; and into the bloodstream. The necessary level of calcium in the blood is maintained by the parathyroid gland. Bones all over the body are of several different types. Long bones are found in the thigh, lower leg, and upper and lower arm. These bones are very strong, are broad at the ends where they join with other bones, and have large surface areas for muscle attachment. Short bones are found in the wrist and ankle and have small, irregular shapes. Flat bones are found covering soft body parts. These are the shoulder bone, ribs, and pelvic bones. Sesamoid bones are small, rounded bones, the knee cap is the largest example of this type of bone. The shaft of a long bone is called the diaphysis. Each end of a long bone is called an epiphysis. The surface of a long bone is covered by the periosteum, except at the ends of the epiphyses. Bones other than long bones are completely covered by the periosteum.

The bones of the skull protect the brain and structures related to it, such as the sense organs. The vertebral, or spinal, column is composed of 26 bone segments. They are called vertebrae. The vertebrae are arranged in five divisions. The first seven bones of the

vertebral column are the cervical vertebrae. The second set of 12 vertebrae are known as the thoracic vertebrae. The third set of five vertebral bones are the lumbar vertebrae. The sacrum is a slightly curved, triangular bone. The coccyx is formed from four small bones. A joint is a coming together of two or more bones. There are three types of joints in the body. The surface of the bones at the joint is covered with a smooth cartilage surface.

Task 4. Which was *NOT* mentioned in the text:

a) The structure of the bones. b) The bones in the fetus. c) The bones in infants. d) The bones in teen-agers. e) The bones in elderly. f) Development of a bone. g) Chemicals participating in bone formation. h) Hormone regulation of the chemical composition of the bones. g) Disturbances in chemical composition of the bones and their causes. i) Treatment of malignant diseases of the bones. j) Treatment of thyroid diseases. k) Types of bones. l) Anatomical structures of a bone. m) Differences between different types of the bones. n) The functions of the skull bones. o) Divisions of the spinal column. p) Diseases of the spinal column and their diagnosis. q) Joints and their function. s) Structure of the joints.t) Functions of bursae.

Task 5. Cross the odd words out. Explain your choice.

Model : forearm arm **ankle** wrist

Wrist	palm	finger	knee
Elbow	shoulder	ankle	arm
Ankle	finger	toe	foot
Thigh	abdomen	armpit	jaw
Groin	jaw	forehead	face
Thigh	armpit	elbow	forearm

Task 6. Find the definition of terms

Terms

1. Bones 2. Muscles 3. Tendons 4. Contraction 5. Lengthening 6. Medical Device 7. Biomaterials 8. Biomedical Engineering

Definitions

a) The combination of engineering and medicine to help improve people's health.

b) Tissues that contract to make the body move.

c) Connect muscle to bone.

d) Material that can be engineered to help the body to heal itself.

e) Relaxing of a muscle.

f) Shortening of a muscle.

g) Any material, apparatus, software or other article that is used to: Diagnose, prevent, monitor or treat a disease or injury; Investigate, replace or modify a part or process of the body.

h) Make up the skeleton and provide support and protection to the body

Grammar material. Present, Past, Future Simple

Task 7. Choose the right form of the verb Present, Past, Future Indefinite. Explain the rule.

1.I (to go) to the hospital at ten o'clock every day. 2. I (to go) to neurological department at ten o'clock yesterday. 3. I (to go) to Office of Human Resources at ten o'clock tomorrow. 4. I (not to go) to the gym every day. 5. I (not to go) to the Burn center yesterday. 6. I (not to go) to the Coronary care unit tomorrow. 7. You (to examine) a patient every day? 8. You (to examine) a patient yesterday? 9. You (to examine) a patient tomorrow? 10. When you (to do) the lab tests every day? 11. When you (to do) the lab tests (to leave) yesterday? 12. When you (to do) the lab tests tomorrow? 13. My brother (to take) an X-ray of his chest every year. 14. The doctor (to leave) home at a quarter past eight every morning. As the medical center he (to work) at (to be) near our house, he (to walk) there. He (not to take) a bus. Yesterday he (riot to go) to work. Yesterday he (to get) up at nine o'clock. 14. You (to have) a hot tea with raspberry jam yesterday? — No, I (to do) not. 15. What syrup you (to take) yesterday? – I (to take) the cough syrup before bedtime. 16. Yesterday my father (not to apply) the cream to his rash because he (to be) very busy. He (to apply) the cream to his rash tomorrow and twice a day until it disappears.

Unit 4. Structure & Function of the Body

Vocabulary

Task 1. Match the following terms with their definitions:

Terms: 1) mandible, 2) maxilla, 3) discs, 4) tibia, 5) ligament, 6) femur

Definitions

a) A layer of cartilage separating adjacent vertebrae in the spine.

b) A short band of tough, flexible fibrous connective tissue which connects two bones or cartilages or holds together a joint.
c) The jaw or jawbone, specifically the upper jaw in most vertebrates. In humans it also forms part of the nose and eye socket.
d) The jaw or a jawbone, especially the lower jawbone in mammals and fishes.
e) The bone of the thigh or upper hind limb, articulating at the hip and the knee.
f) The inner and typically larger of the two bones between the knee and the ankle (or the equivalent joints in other terrestrial vertebrates), parallel with the fibula.

Task 2. Study the combining forms:

1) osteo – bone; 2) arthro – joint; 3) costo – rib; 4) vertebra – vertebra; 5) spondylo – vertebra; 6) cranio – skull; 7) sacro – sacrum; 8) thoraco – chest; 9) skeleton – skeleton.

Task 3. Match the terms and the definitions:

Osteocyte	Science of joints
Osteology	Disease of bones
Osteogenesis	Pertaining to ribs
Arthrology	Pertaining to lower back
Osteopathy	Bone cell
Arthropathy	Pertaining to muscles and skeleton
Costal	Pertaining to the skull
Cranial	A field of medicine dealing with bones
Lumbosacral	Disease of joints
Musculoskeletal	Development of bones

Task 4. Read, translate, retell the text. Choose the most suitable title for it. Choose the right form of verb in the brackets. Explain the rule.

To keep the body upright and provide a rigid support and leverage to the various organs for their proper functioning and movements, we *(have, has)* bones in our body which *(provides, provide)* a total scaffolding for the body. Besides serving as a framework around with the body tissues are woven, they *(play, plays)* a very important role in protecting the vital organs like the brain, the heart, the lungs, etc.

The SKULL is a bony cage that *(form, forms)* the head and face and *(have, has)* several bony components. It houses the brain in its largest box and *(protects, protect)* it. Besides, there are sockets for the eyes and ears which *(save, saves)* these delicate organs from external injuries. The nasal bones *(give, gives)* shape to the nose and the hollow cavities in the cheek bones give resonance and depth to the voice. The MAXILLA and the MANDIBLE or the jaw bones *(are, is)* two important construction of the skull. They not only form the base for the teeth but are also vital for chewing movements.

THE VERBAL COLUMN *(run, runs)* from the skull to the pelvis and has 29 component vertebrae which in their central hollows house the delicate spinal cord and *(allow, allows)* the nerves to come out of it though the holes specially provided for them. The vertebrae have strong bands of fibers called LIGAMENTS around them which *(help, helps)* in keeping them together. These ligaments along with powerful muscles are responsible for strength and mobility of the back. Each vertebra *(have, has)* a cushion of cartilage on either side which act as shock absorbers for the bones and are known as INTERVERTEBRAL DISCS or simply DISCS.

The PELVIS is the bony part which is seen outwardly as the hips and girdle on which we sit. It *(serves, serve)* to shape the waist and provides attachment to the lower limbs, besides forming a base for the abdominal organs. The lower limbs *(forms, form)* a base for the abdominal organs. The lower extremities are made of strong bones – the one in the things is the FEMUR, the two in the leg are the TRIBIA and the FIBULA – and several small bones make up the foot.

Task 5. Continue the statements:

1. The bones are formed by …
2. Bones are denser than cartilage because …
3. Calcium and phosphorus are necessary for …
4. The parathyroid gland is responsible for …
5. There are four types of bones in the body: …
6. Diaphysis is …
7. Epiphysis is …
8. Periosteum covers …
9. The function of the skull is …

10. The spinal column consists of …
11. The cervical spine consists of …
12. The spinal column is divided into five portions: …

Task 6. Try to explain the facts:
- Milk contains a lot of calcium.
- Small children fall down a lot but do not have many fractures.
- Deficiency of vitamin D in the diet causes bone problems in children.
- Pregnant and nursing mothers may have a lot of problems with their teeth.

GRAMMAR REVISION: PASSIVE VOICE

Task 7. Each sentence has a mistake. Find and correct it:

1). The body compose of eight systems. 2). Does the heart cell is called cardiocyte? 3). This disease are treated surgically. 4). The lectures delivered by professors. 5). Some muscles do called according to their structure.6). How many groups the muscles are divided into? 7). The cardiovascular system is formed by the heart, arteries, veins and capillaries? 8). Great research work is carry out by the scientists of our university.

Task 8. Use the proper form of the word:

1) The anatomical divisions of the abdomen (use) in anatomy texts. 2) They (describe) the regions 3) where the organs and structures (find) 4) The term "clinical division of the abdomen" (use) to describe divisions of the abdomen 5) when the patient (examine) in clinic

Unit 5. Structure and Function of the Skin

Vocabulary

Cardiac |ˈkɑːdɪak| – connected with the heart

ex. The long-term results of **cardiac** transplantation are now excellent.

Conscious |ˈkɒnʃəs| – awake and able to understand what is happening around you.

ex. She became **conscious** after the anesthesia wore off. He was fully **conscious** when we found him.

Duct |dʌkt| – a pipe or tube for carrying liquids.

ex. A bile **duct** is any of a number of long tube-like structures that carry bile, and is present in most vertebrates.

Fiber |ˈfaɪbər| – the thin pieces of flesh that form the nerves or muscles in your body.

ex. It's important to get enough **fiber** in your diet. Vegetables, cereals, and fruits are the main sources of dietary **fiber**.

Muscle |ˈmʌs(ə)l| – one of the pieces of flesh inside your body that connects your bones together and that you see when you move.

ex. I pulled a **muscle** in my leg when I jumped up.

Sebaceous |sɪˈbeɪʃəs| – related to a part of the body which produces special oils

ex. Overactivity of the **sebaceous** glands causes the skin to become oily.

Smooth |smuːð| – a smooth surface is completely flat and even

ex. She gave one **smooth** to her hair.

Striated |strʌɪˈeɪtɪd| – having narrow lines or bands.

ex. As the only **striated** muscle tissues in the body, skeletal and cardiac muscle share numerous structural and functional characteristics,

Sweat |swɛt| – liquid that comes out through your skin when you are hot, frightened, or doing exercise.

ex. His forehead was dripping **sweat**.

Visceral |ˈvɪs(ə)r(ə)l| – connected with the viscera (the large organs inside your body)

ex. He suffers from **visceral** haemorrhage. This is the dangerous **visceral** fat.

Voluntary |ˈvɒlənt(ə)ri| – voluntary movements of your body are controlled by you.

ex. The voluntary muscles control urination.

Task. 1. Study the combining forms:

Myo – muscle; dermo – skin; dermato – skin; -pathy – disease.

Task.2. Build medical words:

1) science about muscles; 2) development of muscle tissue; 3) muscle cell; 4) pertaining to skin; 5) disease of muscles; 6) disease of bones; 7) field off medicine that deals with skin disorders; 8) development of bones; 9) specialist in skin diseases; 10) science about bones; 11) study of the joints; 12) disease of joints.

Task 3. Read and translate the texts and give the titles to them.

There are three types of muscles in the body. Striated muscles, also called voluntary or skeletal muscles, are the muscle fibers which move all bones, as well as the face and eyes. We have conscious control over the activity of this type of muscle. Striated muscle fibers (cells) contain many nuclei. A delicate membrane surrounds each skeletal muscle fiber. Smooth muscle, also called involuntary or visceral muscles, are those muscle fibers which move our internal organs (the digestive tract, blood vessels, and secretory ducts leading from glands). We have no conscious control over these muscles. There is only one nucleus to a cell in smooth muscle fibers. Skeletal muscle fibers are arranged in bundles, smooth muscle forms sheets of fibers as it wraps around tubes and vessels. Cardiac muscle is striated in appearance but resembles smooth muscle in its action. Its movement is not consciously controlled. The fibers of cardiac muscle are found in the heart. A loose form of connective tissue known as fascia binds separate muscles together. Muscle is attached to a bone by means of tendon.

_____

The skin is the outer covering for the body. The skin and its accessory organs (hair, nails, and glands) are known as the integumentary system of the body. The skin also contains glands which secrete several types of fluids, nerves which carry impulses, and blood vessels which aid in the regulation of the body temperature. The skin guards the deeper tissues of the body against excessive loss of water, salts, and heat and against invasion by microbes and their poisons. Secretions from the skin are slightly acid and this contributes to its ability to prevent bacterial invasion. The skin contains two types of glands which produce important secretions. These are the sebaceous and sweat glands. Nerve fibers under the skin act as receptors for sensations (pain, temperature, pressure, and touch). Several different tissues in the skin help to maintain the body temperature (thermoregulation).

Task 4. Which of the following functions is performed by skin?
Protection, digestion, sensation, temperature regulation, excretion, respiration, mastication.

Task 5. Give a synonym:
striated muscle; smooth muscle; integument.

Task 6. These are the answers. What questions were asked:
a) _____ Three types.
b) _____ They are responsible for movement of the bones, face and eyes.
c) _____ Striated muscles are controlled consciously.
d) _____ They are found around the internal organs.
e) _____ In contrast to the other cells they contain many nuclei.
f) _____ They are found in the heart.
g) _____Because it looks like striated muscles but works like smooth muscles.
h) _____They are hair, nails, sebaceous and sweat glands.
i) _____It contains sebaceous and sweat glands, nerves and blood vessels.
j) _____It is responsible for sensation of pain, temperature, pressure, touch.

Task 7. Continue the statements:
1). The three types of muscles are …
2). The work of smooth muscles is not …
3). There are several nuclei …
4). Smooth muscles are responsible for …
5). The cells of smooth muscles contain only one …
6). Skeletal muscle fibers form …
7). The integumentary system is composed of …
8). The skin is a sense organ responsible for …

Task 8. Read the abstract and fill in the gaps. Learn the text by heart.

The three types of muscles are _____, _____, and _____.

_____ are responsible for movement which is accomplished by the contraction and_____ of muscles. _____ _____ move the bones, face and eyes. The work of this type of muscles is controlled by our _____.

The muscles which move the digestive tract, blood vessels, secretory ducts are termed_____ _____. Our consciousness does not _____ their work.

Cardiac muscle _____ the appearance of striated muscles and function of smooth muscles.

GRAMMAR REVISION: COMPARISONS

Task 9. Use the proper word

1) This work is better … the other ones. 2) Harry is … good student as Jack. 3) This work is similar … mine. 4) This book is different … yours. 5) This bag looks … yours. 6) It's not … bad as you think.

Task 10. Use the proper form of the word:

1) Our house is (small) than yours. 2) Jack's marks are (bad) than mine. 3) This book is (expensive) than that one. 4) You bike is (slow) than mine. 5) Dave is (tall) of all. 6) This is (good) restaurant in the town. 7) Out hotel is (comfortable) than yours. 8) This is (good) holiday I have ever had. 9) The blue coat is (cheap) than the others.

Unit 6 Respiratory system

Vocabulary

Pharynx |ˈfarɪŋks| – the soft part at the top of the throat that connects the mouth and nose to the esophagus

ex. The **pharynx**, or throat, is the passageway leading from the mouth and nose to the esophagus and larynx.

Vocal cords /ˈvəʊ.kəl ˌkɔːdz/ – a pair of folds at the upper end of the throat whose edges move quickly backwards and forwards and produce sound when air from the lungs moves over them

ex. You will need to make certain sounds so your doctor can see your **vocal cords** in action . As air passes over our vocal cords, it makes them vibrate.

Bronchiole /ˈbrɒŋ.ki.əʊl/ – in the lungs, one of the very small tubes that branch out from the bronchi and connect to the alveoli

ex. The **bronchioles** are an important part of the respiratory system.

Pleura /ˈplʊə.rə/ – a thin membrane covering each lung that folds back to make a lining for the chest cavity:

ex. There are two layers; the outer **pleura** (parietal pleura) is attached to the chest wall and the inner **pleura** (visceral pleura) covers the lungs

Diaphragm /ˈdaɪ.ə.fræm/ – the muscle that separates the chest from the lower part of the body

ex. In looking at the muscles of respiration, we'll look first at the **diaphragm**, then at the muscles that produce movements of the ribs.

The new cameras adjust the **diaphragm** automatically.

Voice box /ˈvɔɪs ˌbɒks/ – an organ that contains the muscles that move to create the voice

ex. Cancer of the **voice box**, or laryngeal cancer, is not as well known by the general public as some other types of cancer, yet it is not a rare disease.

Windpipe /ˈwɪnd.paɪp/ – the tube in the body that carries air that has been breathed in from the upper end of the throat to the lungs:

ex. She coughed and choked when a piece of food went down her **windpipe**.

She got something stuck in her **windpipe.**

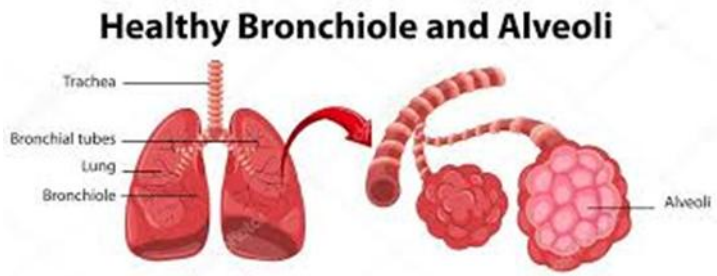
Task 1. The atmospheric air consists of different gases. Among them there are oxygen, carbon dioxide, nitrogen. Match their names with chemical formulas: N2, O2, CO2. How do we call the system which is responsible for breathing? What are the organs of this system?

Task 2. Learn the combining forms and their meaning.

rhino – nose; pharyngo – throat (pharynx); laryngo – voice box (larynx); tracheo – windpipe (trachea); broncho – bronchi; pulmono – lung; pneumo – lung; -rrhea – discharge; -ptysis – spitting; -pnea – breathing; -thorax – chest; -plasty – surgical repair;-itis – inflammation; -scopy – visual examination; -tomy – surgical cutting;-stomy – making a new opening (a surgical procedure); -ole – small; hemi – half ; hemo – blood.

Task 3. Read the text and check yourself.

RESPIRATORY SYSTEM



Air enters the body through the nose and passes through the nasal cavities. After passing through the nasal cavities, the air reaches the pharynx (throat). There are three divisions of the pharynx. The nasopharynx is the first division. The second division of the pharynx is the oropharynx. The third division of the pharynx is the hypopharynx (also called the laryngopharynx). It divides into two branches, the larynx (voice box) and the esophagus.

The larynx contains the vocal cords. Sounds are produced as air passes the vocal cords and the cords vibrate. On its way to the lungs, air passes from the larynx to the trachea (windpipe). In the region of the mediastinum, the trachea divides into two branches called bronchi. Each bronchus leads to a separate lung, and divides and subdivides into smaller and finer tubes. The smallest of the bronchial branches are called bronchioles. At the end of the bronchioles are clusters of air sacs called alveoli.

The very thin wall allows for the exchange of gases between the alveolus and the capillaries which come in close contact with it. The blood which flows through the capillaries accepts the oxygen from the alveolus and deposits carbon dioxide into the alveolus. Oxygen is combined with hemoglobin in erythrocytes and carried to all parts of the body.

Each lung is enveloped in a membrane called the pleura. The outer layer of the pleura is the parietal pleura, and the inner layer is the visceral pleura. The right lung is divided into three lobes, and the left lung is divided into two lobes. The lungs extend from the collarbone to the diaphragm in the thoracic cavity. The diaphragm is a muscular partition which separates the thoracic from the abdominal cavity and aids in the process of breathing.

Task 4. Read the text once again and draw the pathway of air from the nose to the capillaries of the lungs:

Nose → N _____ c_____ → P _____ → N_____ →

O_____ → H_____ → L_____ → T_____ →

B_____ → B _____ → A_____

Task 5. True or false. Make the false statements true:

- The nose is the first division of the respiratory system.
- The throat is divided into three portions.
- Vocal cords aid in sound production.
- Two bronchi lead to each lung.
- Alveoli are small bronchi.
- The blood takes carbon dioxide from the alveoli and gives away oxygen
- Hemoglobin aids in carrying carbon dioxide to different organs and tissues.
- The lungs are covered by the diaphragm.
- Each lung consists of two lobes.
- The diaphragm takes part in the act of respiration.

Task 6. Ask your groupmate. You want to know:

1) the medical word for throat, 2) how many portions the pharynx is divided into, 3) how these portions are called, 4) what branches the trachea divides, 5) how the voice sounds are produced, 6) what structures are responsible for sound production, 7) what enables gas exchange.

Task 7. Describe the function of the following:

The vocal cords …

The pleura …

The diaphragm …

Hemoglobin …

Task 8. Find the common words with the same meaning:

Pharynx _____,

larynx _____,

trachea _____.

Task 9. Write singular forms for the following.

Bronchi _____, alveoli _____, pharynges _____,
larynges_____, capillaries_____

Task 10. Analyze the terms:
Rhinorrhea, Rhinoplasty, Pharyngitis, Laryngoplasty, Laryngoscopy, Laryngotracheobronchitis, Laryngostomy, Tracheotomy, Bronchitis, Bronchiolitis, Pulmonitis, Hemoptysis, Dyspnea, Hemothorax, Hemithorax, Bronchiole.

Task 11. Read the summary and correct the mistakes:

The bronchi are the main organs of the respiratory system. They are located in the chest. The lungs are separated by the mediastinum. The lungs are covered by the pleura. The right lung has two lobes; the left lung consists of three lobes. Gas exchange takes place in the bronchioles. The air comes to the mouth through the nose. Then it passes to the voice box, which divides into larynx and pharynx. From the larynx the air passes to the trachea which divides into several bronchi. Bronchioles are small bronchi. Alveoli are located at the ends of the capillaries.

GRAMMAR REVISION: who, whose, whom, which

Task 12. Use the proper word to combine the sentences:
1. The main part of the head … is composed of 26 bones is called the skull. 2. These bones form two basic parts of the skull … are termed facial and cranial parts. 3. The large cavity …. the brain is located is called the cranial cavity. 4. The cavities … the eyeballs are found are the orbits. 5. The point … two bones come together is called a joint. 6. The doctor … specializes in heart diseases is called a cardiologist. 7. The science … studies the joints is called arthrology. 8. The lectures … are delivered by Prof. Smith are attended by many students. 9. The school … we study is not far.

Task 13. Combine two sentences into one:
10). The vertebra is a small bone. It is formed by the body and the arch. 11). In the spinal column there are seven cervical vertebrae, twelve thoracic vertebrae, five lumbar vertebrae, five sacral vertebrae and five more vertebrae. The latter form the coccyx. 12). The breastbone is a long bone. It is located in the middle of the chest**.**

Unit 7. Cardiovascular system

Vocabulary

Thoracic cavity |θɔːˈrasɪk|– the chamber of the body of vertebrates that is protected by the thoracic wall
ex. The size of the **thoracic cavity** is constantly varying during life with the movements of the ribs and diaphragm
Atria (singular: atrium) –one of the two spaces at the top part of the heart that receive blood from the veins and push it down into the ventricles
ex. The right **atrium** is one of the four chambers of the heart.
Ventricle /ˈven·trɪ·kəl/ – each of the two main spaces in the heart, left and right
ex. Each half consists of an atrium and a **ventricle.** Sections from the left **ventricle** showed diseased tissue.
Septa (singular: septum) /ˈsep.təm/ – a thin part dividing tissues or spaces in an organ such as the nose or heart:
ex. The ventricular **septum** separates the left and right ventricles
Diastole (relaxation) /daɪˈæs.təl.i/ – the period of time when the heart is filling with blood after contraction
ex. This change of the colour of the wall he well ascribes to the compression of the retina by the **diastole** of the artery.
Systole (contraction) /ˈsɪs.təl.i/ – the part of a heart's action where it pushes blood out
ex. **Systole** is the portion of the cardiac cycle in which the heart muscle contracts, forcing the blood into the main blood vessels. Adult blood pressure is considered normal at 120/80 where the first number is the systolic pressure and the second is the diastolic pressure.

Task 1. Match the word to its definition. Write a sentence for each word
1) Beat a) to make someone or something move
2) Branch b) to divide into two or more smaller, narrower, or less important parts
3) Chamber c) how heavy something is
4) Fist d) to make liquid or gas move in a particular direction
5) Force e) when your heart beats it moves in a regular rhythm

6) Phase f) to be all around something or someone on every side
7) Pump g) the hand when the fingers are curled in towards the palm
8) Surround h) a part of a process of development or growth
9) Weight i) an enclosed space especially in your body

Task 2. Answer the questions.

A vacuum cleaner, a pump, a dishwasher, a mixer, a food processor, a coffee grinder are machines that work in a house. Which of them can you find in the human body? What's its job?

Task 3. Read and translate the texts. What questions can be asked to fill in the gaps:

HEART

The human heart weighs less than a pound, is roughly the size of the human fist, and lies in the (1) _____, just behind the breastbone and between the lungs. The heart consists of (2) _____chambers: two upper chambers called (3) _____and two lower chambers called (4) _____. The four chambers of the heart are separated by (5) _____. The interatrial septum separates the two upper chambers (atria), and the interventricular septum is a muscular wall which comes between the two lower chambers (ventricles).

The (6) _____is composed of three layers. The endocardium is (7) _____. The (8) _____ is the middle, muscular layer of the heart wall and is the thickest layer. The epicardium is a thin layer and forms (9) _____. The pericardium is a delicate membrane which surrounds the heart like a sac.

There are (10) _____ phases of the heartbeat. These phases are called (11) _____. During diastole, the atria of the heart fill with blood. At the end of diastole, the atria contract and force blood into the ventricles.

Systole begins when (12) _____. The ventricles contract and pump blood to (13) _____out of the heart. The right ventricle pumps blood to the lungs through the pulmonary artery, and the left ventricle pumps blood into the aorta and its branches. (14) _____is the active contraction phase of the heartbeat, when the ventricles pump blood out of the heart. Diastole is the relaxation phase of the heartbeat, when (15) _____.

Task 4. Explain the meaning of the new words:

Atrium, ventricle, septum, endocardium, myocardium, epicardium, pericardium, systole, diastole.

Task 5. True or false. Make the false statements true:

1) The weight of the heart is about 350 g.
2) The ventricles and aorta are the heart chambers.
3) The ventricles are the upper chambers of the heart.
4) The endocardium, myocardium, epicardium and pericardium are the layers of the heart.
5) The atria pump the blood out of the heart.
6) Diastole is a period of rest for the heart muscle.

Task 6. Arrange the words to make statements about the heart:

1). The the about is of human weight heart 400 g.
2). The is located breastbone heart the behind.
3). The consists heart of atria ventricles and two two.
4). The of the is the inner heart called layer endocardium.
5). The is the of the muscular heart myocardium layer.
6). The known layer of heart is as epicardium the outer.
7). The throughout pumps heart the the body blood.

Task 7. Compare the facts: Use *different from, similar to, the same as*

1) Resting heart rate is usually between 72-80 beats per minute in women and 64-72 beats per minute in men. (slow/quick)
2) The wall of the right ventricle is 2-6 mm thick. The wall of the left ventricle is 10-12 mm thick. (thick/thin)
3) Systole lasts 0.29 seconds. Diastole lasts 0.54 seconds. (long/short)
4) The pulse rate in women is 72-80 beats per minute. The pulse rate in man is 64-72 beats per minute. (slow/quick)
5) In men the heart weighs 300 g. The weight of the heart in women is 200 g. (heavy)
6) In fish the heart has two chambers: the atrium and ventricle. In reptiles the heart has two atria and one ventricle. In mammals and birds, the heart has four chambers.

Grammar material

Task 8. Use the correct form of the verb: Present Continuous, Present Simple, Past Simple, Future Simple.

1. A physician (to examine) a patient yesterday. 2. Tomorrow Nick (not to go) to the hospital. 3. Look! My friends (to play) football. 4, Kate (not to write) letters every day. 5. You (to see) your friend yesterday? 6. Your father (to go) on a business trip last month? 7. What Nick (to do) yesterday? 8. When Nick (to get) up every morning? 9. Where your mother (to go) tomorrow? 10. I (to invite) my friends to come to my place tomorrow. 11. He (not to play) the piano tomorrow. 12. We (to see) a very good film last Sunday. 13. Your mother (to cook) every day? 14. We (to make) a fire last summer. 15. I (to spend) last summer at the seaside. 16. Where you (to spend) last summer? 17. Where he (to spend) next summer? 18. What mother (to do) now? — She (to cook) dinner. 19.I (not to write) a report now

Task 9. Read and translate (Past Simple or Past Continuous)

1.I (jog) in the park, when two squirrels (cross) my way. 2.Robert (fall) off the ladder when he (pick) cherries 3. Archimedes (discover) the theory of buoyancy while he (take) a bath. 4.When we (travel) around Ireland, we (meet) some very nice people. 5.While she (speak) on the phone, the milk (boil) over. 6. When I (leave) the house this morning, the sun (shine). 7. Caroline (burn) her hand when she (iron) her clothes.

Unit 8. Structure & Functions of the Cardiovascular System

Vocabulary

To enlarge

ex. A good way **to enlarge** your vocabulary is to read a daily newspaper.

He was continually dreaming up new schemes to promote and **enlarge** the business.

Slightly

ex. He is **slightly** overweight. The doctor told me I was **slightly** anemic.

The wine had a **slightly** bitter taste.

To increase

ex. The physician **increased** the dosage from one to four pills.The boss finally **increased** her salary.

Artery -|ˈɑːtəri|

Arteriole брит. |ɑːˈtɪərɪəʊl|

ex. There was a drop in pressure in the pulmonary **artery**. You should press against the **artery** in your wrist and count the pulsations to calculate your heart rate. The pulmonary **artery** and vein pass along the surfaces of these air bladders.

stiff

ex. These new boots are so **stiff** that they rub the skin off my ankles. He has a **stiff** hand.

Resilient |rɪˈzɪlɪənt|

ex. Any chemical treatment will leave hair less **resilient** than before. After being dipped in liquid nitrogen, the rubber ball's normally **resilient** surface is as brittle as ceramic.

Task 1. Use the proper forms of the words in brackets in the text about heart aging. Tell about the heart health and aging.

As people age, the heart tends to enlarge slightly, developing (thick) walls and slightly (large) chambers. During rest, the (old) heart functions in almost the same way as a (young) heart except the heart rate is slightly (low). However, during exercise, the (old) heart cannot increase the amount of blood pumped out as much as a (young) heart can.

The walls of the arteries and arterioles become (thick), and the space within the arteries expands slightly. Elastic tissue within the walls of the arteries and arterioles is lost. Together, these changes make the vessels (stiff) and (little) resilient.

Because arteries and arterioles become (little) elastic as people age, they cannot relax as quickly during the rhythmic pumping of the heart. As a result, blood pressure increases more when the heart contracts than it does in (young) people. Abnormally high blood pressure during systole with normal blood pressure during diastole is very common among (old) people. Many of the effects of aging on the heart and blood vessels can be reduced by regular exercise. Exercise helps people maintain cardiovascular fitness as well as muscular fitness as they age. Exercise is beneficial regardless of the age at which it is started.

Task 2. Study the combining forms:

1) cardio – heart; 2) arterio – artery; 3) phlebo – vein; 4) veno – vein; 5) -megaly – enlargement; 6) -graphy – making a picture (usually x-ray).

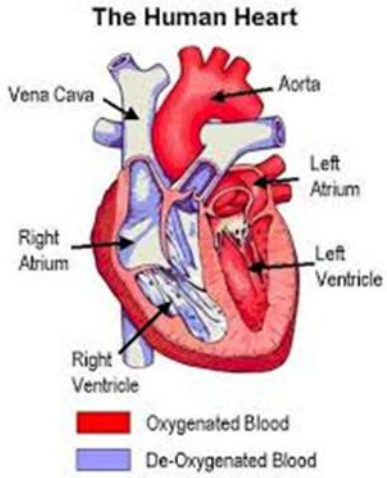
Task 3. Analyze the medical terms:

Cardiologist; Cardiopathy; Cardiocyte; Cardiac; Cardiomegaly; Cardiomyopathy; Cardiography; Cardiovascular.

Task 4. Fill in the gaps to make an abstract:

The heart is located in the _____. It has four _____: two _____ and two _____. A partition which is called_____ separates the chambers. The wall of the heart consists of three _____: _____ which is the inner layer, _____ which is the muscular layer and _____ , the outer layer. The heart is surrounded by the _____. The two phases of the heartbeat are termed _____ and _____. _____ is the phase of relaxation, _____ is the phase of contraction.

Task 5 Describe the heart structure and functions with the help of the picture



GRAMMAR REVISION:

Revision. Perfect Tenses. Use the correct form of the verb: **Present, Past, Future Perfect**

Task . Open the brackets in Present Perfect or Past Simple:

1. I (to lose) this paper yesterday. 2. He just (to play) a game of chess. 3. Nick already (to finish) this job. 4. He never (to travel) by plane. 5. John (to buy) a house last year. 6. I (not to see) Smith since 1998. 7. I (not to see) Smith in 1998. 6. They (not to win) any matches lately.

Task . Complete the sentences in past perfect (affirmative form.)

1. I lost the key that he (give) _____to me. 2. He told me that he (see) _____the film . 3. I went outside as I (hear) _____a noise. 4. When they came home, Liza (cook) _____dinner. 5. We could not send you a postcard because we (lose) _____your address.

Task. Put the verbs into the correct tense (Simple Past or Past Perfect).

My friend (eat) _____up all the biscuit we _____(bake). 2. The teacher (correct)_____ the tests we (write)_____. 3. I (give) _____ them some of the candies I (buy) _____. 4. My sister (see / not) _____ the note that I (lay)_____ on the kitchen table for her. 5. We (want) _____to watch a film that we (see / not) _____ before.

Task . Fill in Future Simple or Future Perfect.

Judy: How long have you been in Miami?

Elaine: I have only been here for a couple of weeks.

Judy: How long do you plan on staying?

Elaine: I love Miami, so I (stay) ___- here for an extended period of time. When I go back home, I (be) ____ here for more than three months.

Judy: Wow, that's quite a vacation! You (see, definitely) _____just about everything there is to see in Miami by then.

Unit 9. Blood. Blood Composition and Functions

Task 1 Answer the questions What does the heart do?

What is blood?

What body fluids do you know?

Vocabulary

To cause (v) |kɔːz| – to make something happen

Cause (n) |kɔːz| – the reason why something, especially something bad, happens

ex. He had no **cause** to complain. She had died of natural **causes.**

Clot – a thick almost solid mass formed when blood is dried

ex. He underwent surgery to remove a blood **clot**. A blood **clot** had occluded a major artery in his body.

Stroke /strəʊk/ – a sudden change in the blood supply to a part of the brain, sometimes causing a loss of the ability to move particular parts of the body

ex. We were told that his **stroke** was caused by a clot in his brain.

To cure – to make somebody who is ill well again

ex. He is past **cure**. He was beyond **cure**. Prevention is better than **cure**. He has pointed out a method of **cure**. Many types of cancer can now be **cured.** There is no easy **cure** for loneliness. Time **cured** him of his grief.

To distinguish /dɪˈstɪŋ.gwɪʃ/– to be able to recognize and understand the difference between two similar things

ex. You can't **distinguish** the detail of injury from this distance. The male bird displays several characteristics which **distinguish** him from the female.

Fluid /ˈfluː. ɪd/ – a liquid

ex. The **fluid** was sucked from his lungs. He is not allowed solid food yet, only **fluids**. Many people with heart problems suffer from **fluid** retention. Sickness may develop from inadequate **fluid** intake.

To invade – to go into a place in large numbers, especially when you are not wanted

ex. The cancer eventually **invaded** the brain. A sense of loss, of loneliness **invaded** her.

Mature |məˈtʃʊə| – fully grown and developed

ex. She's very **mature** for her age. Girls **mature** earlier than boys both physically and mentally.

Maturity |məˈtʃʊərəti| – the time when a person, animal or plant is fully grown or developed

ex. His behavior shows a lack of **maturity.** He reached emotional **maturity** late in his life.

Nutrient |ˈnjuːtrɪənt| – a chemical or food that provides what is needed for plants or animals to live and grow

ex. You need more nutrients in your diet.

Offspring – someone's child or children

ex. She was the mother of many **offspring**. The disease can be transmitted from parent to **offspring**.

To prevent (v) – to stop something from happening

Prevention – the actions that you take in order to prevent something

Removal |rɪˈmuːv(ə)l| – the act of taking something

To remove (v) – to take something away from the place where it is

Stain – to change the color of something by using a special chemical

ex. Her hands were **stained** with blood. Will those grass **stains** wash out? Don't worry, the **stain** will never show.

Task 2. Read and translate the dialogues (1,2,3). Pay attention to the underlined words. Answer the questions

What causes dizziness? What causes blood clots?

Dialogue1

P. My husband is 55 years old. Lately he's been experiencing dizziness when he gets up from sitting for a while. What could be the <u>cause?</u>

A. We often feel dizzy when we are very tired, however real dizziness could indicate on a variety of problems: neurological, <u>cardiovascular</u> (for instance low blood pressure), nutritional (for example lack of glucose, dehydration and more. When someone complains about experiencing dizziness when getting up from sitting or lying down, the cause is usually a sudden drop in <u>blood pressure</u> (called orthostatic hypotension).

Dialogue 2

Q. I'm a 55 years old woman with 2 children, and in the last few weeks I have a feeling of dizziness every time I stand up from my bed. What <u>cause</u> this feeling? Does it mean I have some serious thing? I also have hypertension and diabetes that are usually stable.

A. If this feeling appears solely on standing up, it may be related to drugs you take to treat your hypertension (It's called "orthostatic hypertension"). You should report this to your doctor and maybe changing your treatment can make this feeling disappear.

Dialogue 3

Q. How can I prevent <u>blood clots</u>? I am 45 years old and am supposed to go on a business trip overseas. The flight itself is12 hours long and

then I have to continue traveling by bus. Could this cause me to have blood clots? If so, how can I prevent it?

A. Always walk as much as you can on the plane. Also, rotate your ankles in circles. Sometimes try to use your ankles and make the alphabet with them. Have fun…

Task 3. Make up short dialogues between a doctor and a patient. Discuss three of the following questions.

1. What causes high blood pressure?
2. What causes low blood pressure?
3. What causes anemia?

Task 4. Read and translate, learn the difference between the two words with these helpful examples**.**

Words to be remembered:

cure/treatment

"Cure" is something that will eradicate/remove whatever disease or sickness you have completely "Treatment" will slow down or suppress the illness, but it will still remain.

remedy/medication

"Remedy/Medication" these two are kind of the same. But usually a remedy is something people do themselves at home whilst medication is something proven to work and recommended by doctors.

It would depend on what the dentist is doing. A cavity isn't reversible, so it can only be treated, not cured. However, a gum disease or an infection could be cured.

liquid/ fluid

A fluid is any substance that can change shape. A liquid is a substance that can change shape, but not volume (how much space it takes up).Ex. Water is a liquid and a fluid. Air is fluid, but not liquid.

In general, they two are synonyms. "Fluid" is more common when the substance is used for something in particular or belongs to something, like "body fluids" or "engine fluid".

Task 5. Read and translate the text. Match the statements with the paragraphs of the text:

1). Thrombocytes are responsible for blood coagulation.
2). There are several groups of leukocytes (|ˈluːkəˌsaɪt|)
3). Development of erythrocytes (|ɪˈrɪθrə(ʊ)sʌɪt|)
4). Blood carries different substances throughout the body.
5). Blood is composed of blood cells and fluid portion.
6). The cardiovascular system consists of the heart and blood vessels.

BLOOD

Blood is the body's transportation system. It transports nutrients and hormones, removes cellular waste products, assists in the regulation of body temperature, and aids in the removal and, in certain situations, the destruction of foreign substances and invading microorganisms. Blood plays an important role in the transmission, development, diagnosis, cure, and prevention of many diseases caused by microorganisms and other agents.

Blood is carried throughout the body by a series of vessels that, together with the heart, form the cardiovascular system. Three general types of blood vessels participate in circulating the blood to the body tissues. Arteries carry blood away from the heart and deliver it to the body tissues; veins transport blood back to the heart from body tissues; and the very thin capillaries form connections between arteries and veins. Capillaries allow the exchange of oxygen, nutrients, and cellular waste products between the blood and body tissues.

Blood consists of cellular elements in the fluid called plasma. The cellular components of blood (formed elements) include erythrocytes (red cells), leukocytes (white cells), and platelets. Red blood cells or erythrocytes consist of a membrane that is closely associated with the iron-containing protein, hemoglobin. Since hemoglobin has a great attraction for oxygen, the red blood cell is specialized for the transport of this gas. An erythrocyte’s life span generally ranges from 100 to 120 days. The gradual development of an immature red cell to maturity is accomplished in various stages. The most immature RBCs, which develop from stem cells in the bone marrow, are called erythroblasts. Erythroblasts divide within the bone marrow and their offspring develop into cells called normoblasts. The normoblast then divides and the cell it produces develop into reticulocytes. The last stage in red blood cell development is the progression from reticulocyte to erythrocyte.

White blood cells or leukocytes are grouped into two general categories, the granulocytes and agranulocytes. These blood cells are

distinguished from one another by properties such as the presence or absence of granules, staining reactions, shape of the nucleus, and size. Normally, the numbers of these cells remain constant. However, in cases of certain diseases, decreases and increases of white blood cells occur.

Platelets, or thrombocytes, play an important role in the formation of blood clots. As long as the blood remains in blood vessels, it normally maintains liquid form. However, when blood comes out of a vessel, it changes within a short time to a soft, jelly-like mass, a blood clot or thrombus. Clot formation is a vital mechanism that prevents excessive blood loss from the body.

Task 6. What do the abbreviations RBC, WBC stand for?

Task 7. What questions were asked to obtain the answers:

Q.:_____A.: The blood transports gases, nutrients and hormones.

Q.:_____A.: No, it is not the only function of the blood.

Q.:_____A.: The three types of blood vessels are arteries, veins, and capillaries.

Q.:_____A.: We call it plasma.

Q.:_____A.: Deoxygenated blood.

Q.:_____A.: They are erythrocytes.

Q.:_____A.: They live for 100-120 days.

Q.:_____A.: They change their number in case of disease.

Q.:_____A.: The organism prevents blood loss with the help of thrombocytes.

Task. 8 Fill in the gaps. Tell about the cardiovascular system.

The blood carries _____ throughout the body. The cardiovascular system consists of _____. Blood is composed of _____ and _____. _____ are called formed elements of blood. Erythrocytes are responsible for _____. Blood cells are formed in the _____. A blood clot or thrombus is _____. Granulocytes and agranulocytes differ in _____.

GRAMMAR REVISION: MODALS (CAN, MUST)

Task. 9. Choose the proper form:

1). You must not (take, be taken) photographs in here. 2). Photographs must not (take, be taken) inhere. 3). She must not (bring, be brought) the dog to her room. 4). Carbon dioxide must (pass, be passed) out of the cells. 5). The left ventricle must (pump, be pumped) the blood with great force.

Task. 10. Rewrite the sentences and questions using modals:

6). I'm not able to come to your party. 7). Is it possible for you to play basketball tonight? 8). Do you know how to use a computer? 9). It's impossible for us to answer this question. 10). It's not possible for me to help you. 11). I don't know how to play this game. 12). It is necessary for Paul to leave at 6.00 to catch this plane. 13). It is necessary for you to fill in an application form. 14). It isn't necessary for Mike to wait long for the bus. 15). I am sure he is at home. 16). I am sure it isn't Tuesday today. It's impossible. 17). I am sure we are early!

Unit 10. Blood: composition, properties and functions.

Vocabulary

Task 1. Medical terminology. Study the combining forms:

1) myelo – bone marrow; 2) hemo – blood; 3) hemato – blood; 4) erythro – red; 5) leuko – white; 6) granulo – granules; 7) thrombo – clot; 8) phago – eat; 9) karyo – nucleus; 10) nucleo – nucleus; 11) morpho – shape; 12) -globin – protein; 13) -blast – immature cell; 14) -poiesis – formation; 15) -penia – deficiency; 16) -lysis – breakdown; 17) arterio – artery; 18) veno – vein; 19) phlebo – vein; 20) vaso – vessel; 21) angio – vessel.

Task 2. Analyze and define the medical terms:

Hemolysis	Erythropenia	Erythropoiesis
Leukopenia	Erythroblast	Megakaryoblast
Megakaryocyte	Thrombocytopathy	Thrombocytopenia
Angiography	Angiology	Arterial
Cardiovascular	Angiopathy	Phlebography

Task 3. Arrange the words to make statements. Read and translate them.

1) The the of and cardiovascular system heart arteries veins capillaries consists.
2) Plasma blood portion of a the is liquid.
3) Blood erythrocytes leukocytes elements platelets termed cellular of the and are.
4) Red stem marrow bone blood cells cells formed from are.
5) Erythrocytes oxygen transportation are for responsible.
6) An days lives one to from one hundred hundred and twenty erythrocyte.
7) The leukocytes change in of of case number disease may.
8) Clotting blood platelets take part in.
9) Blood blood protects organism from loss clotting the.

Task 4. Build medical words:

1) lack (deficiency) of neutrophils – _____,
2) destruction of blood –_____,
3) immature monocyte –_____,
4) formation of the bone marrow –_____,
5) disease of platelets – _____.

Task.5. In the text find the description of erythrocyte development. Draw the scheme:

S_____→ C _____→ E_____ → N_____ → R_____ → E_____

Task.6. Study the stages of a platelet development from an immature stem cell in the bone marrow. Fill inn the gaps to describe the process of thrombocyte development:

Stem cell → Megakaryoblast → Promegakaryocyte → Megakaryocyte → Platelet

Platelets _____ from the bone marrow _____ cells. The most_____ platelets _____ megakaryoblasts. Megakaryoblasts _____into other immature cells called _____ . The promegakaryocyte then _____cells _____ megakaryocyte. The _____ stage of clotting cell development is the progression from _____ to _____.

Task 7.

1) Fill in the missing letters in words in the first paragraph.
2) Choose the words in the brackets that best fits the sentences in the second paragraph (red, changing, ten, shapes, move, bones, blood).
3) Choose the correct grammar form in the third paragraph.
4) Make a plan of the text.
5) Put 10 questions to the text.
6) Write an annotation.

From the Modern Medicine
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White Cells and Infection

By Marion Domingo

The other *1) t_pe* of blood cells is white cells. White blood cells are cells in the blood that remove *2) d_ad* cells and *3) m_crobes*. White cells *3) lo_k* very different from red cells and have different *4) j_bs.* A study of white cells shows the following facts: they have *5) n_clei*; they are larger than *6) r_d* cells; there are *7) se_eral* different kinds of white cells.

White cells have a shorter life span than 1) _____cells. White cells may live for only 2) _____ days. Some are made in the soft centers of 3) _____, while others are made in certain glands of the body. Unlike red cells, some white cells can move out of the 4) _____vessels into nearby body tissues. White cells 5) _____ like amoebae. They are one-celled protests that move by 6) _____ their shapes. White cells move in a similar way by constantly changing their 7) _____.

Looking through the microscope you *1) (cans, can)* notice how a white cell *2) (surround, surrounds)* and "eats" a "bacterium". A healthy person will usually have about 8000 white blood cells in a small drop *3) (with, of)* blood. What would happen if there *4) (were, are)* a large number of harmful bacteria in the body? If many bacteria *5) (is, are)* present, the number of white cells can increase to about 20000 in each drop of blood. This increase may take only *6) (a little, a few)* hours.

GRAMMAR REVISION: amount / quantity / number

Task 8. Read and translate. Select the correct version.

1. I would like to thank you for the **amount / quantity** of work you have tackled this week.
2. I have been concealing a substantial **amount / quantity** of disgust for Peter.
3. The team will need a larger **amount / quantity** of radios tomorrow.
4. The company is striving to increase the **amount / number** of shareholders.

Task9. Please log in (amount / quantity/ number) to save your progress.

1. She reduced the ____ of hours she works each week in order to take care of her elderly mother
2. Can you give me an estimate of the_____ of people who will attend the party?
3. The_____ of time he spent at work every Saturday was worth it when he was rewarded with a year-end bonus.
4. What was the exact_____ of people you invited to your birthday?
5. What _____ would you pay for a new house?
6. We travelled a _____of miles before we realized we were lost.
7. Please pay the full _____ (=of money) by the end of the month.
8. A large _____ of children are likely to be watching this programme.
9. We've had an enormous_____ of help from people.
10. Think of a _____and multiply it by four

MODULE 2. THE BASIC VITALLY IMPORTANT SYSTEMS OF THE BODY

Unit 1. Socializing: ABILITIES AND OBLIGATIONS

Task 1. You want to become a doctor. Which of the following is done by the doctors? What other doctor duties and responsibilities do you know?

To give drugs, to prescribe drugs, to write books, to develop drugs, to give injections, to take temperature, to measure the blood pressure, to sing a lullaby, to check the pulse, to make films, to operate on patients, to stop bleeding, to check in guests, to dress the wound, to do x-ray, to care for the patients, to deliver lectures, to carry out tests.

Task 2. Read, translate and discuss the text. Tell about doctor's duties and responsibilities.

The Duties of Doctors Towards Patients

Depending on the reason for the patient's visit, doctors give diagnoses, order treatments and check on the progress of patients. Doctors must base their actions on up-to-date scientific information and use recognized treatments in the right way. They must treat their patients attentively and conscientiously. Doctors must recognize their own limits: in case of doubt, they must get information from other people or refer patients to specialists.

The duty to treat patients includes the duty to prescribe the right medication, tell patients about the advantages, disadvantages, risks and alternatives regarding a proposed treatment or operation, and provide adequate follow-up to the patient within a reasonable amount of time.

Duty to Provide Information

Doctors must give their patients all the information they need to make free and informed decisions. For example, doctors must tell their patients about the following: diagnosis, nature, goal and seriousness of the treatment, risks of the treatment, other treatment options.

The doctor's duty to provide information also includes answering patients' questions.

(Read more: https://www.educaloi.qc.ca/en/capsules/duties-doctors-towards-patients)

Task 3. Role-play. You are a doctor and patients are going to come into your office. Ask them about their condition, prescribe some medicine, and give them some advice.

Dialogue (example) (A = Doctor B= Patient)

A: Hi. Come on in and have a seat. Now what seems to be the problem?

B: I have a rash on my arm.

A: How long have you had the rash?

B: It's been about a week.

A: Are you taking anything for it?

B: I put some cream on it but it doesn't seem to be helping.

A: I see. Are you allergic to any medications?

B: Not that I know of.

A: I'm going to give you a prescription for some ointment. I want you to apply it three times a day. You should also avoid scratching your skin. And it's important to use as little soap as possible. Make an appointment to see me next week if it doesn't get better over the next few days.

Use the information below, as well as your own ideas, to act out dialogues similar to the one above.

1. Ailment: You have high blood pressure. Duration: You have had it for 2 months. Previous Medication: You haven't taking any medication for it. All the following guidelines are consequences of the doctor's obligation to be kind, caring, patient, honest, and respectful:
2. Ailment: You sprained your ankle. Duration: You sprained this morning. Previous Medication: You took a painkiller.
3. Ailment: You have indigestion. Duration: You have had it for three weeks. Previous Medication: You have been taking some ant-acid but it hasn't helped.

Task 4. Read 9 questions your doctor wishes you'd ask. Underline the correct item.

Here's what experts think you should be asking your doctor:

1. "What are the **different/difficult** treatment options?"
2. "What **outcome/idea** should I expect?"
3. "Is there anything I can do on my own to improve my **condition/position**?
4. "What are the **side/party** effects?"
5. "How will I **hear/listen to** about my test results?"
6. "Should I get a second **opinion/aspect**?"
7. "What **questions/challenges** haven't I asked that I should have?"

Unit 2 DIGESTIVE SYSTEM

Vocabulary

Absorb (v) – to take the liquid into itself from the surface or space around

Break down (v) – to change as a result of a chemical process

Chew (v) – to bite food several times before swallowing it

Crucial – very important

Digest (v) – to change food that you have just eaten into substances that your body can use

Eliminate (v) – to completely get rid of something

Extend (v) – to continue for a particular distance

Manufacture (to) – to produce

Release (v) – to let a substance flow out

Secrete (v) – to produce a substance

Solid – firm, hard

Swallow (v) – to make food or drink go down your throat and towards your stomach

Utilization – using something effectively

Task 1. Name five most important things you cannot live without.

How long can you live without them?

Task 2. Study the pathway of food through the digestive tract:

MOUTH → PHARYNX → ESOPHAGUS → STOMACH → DUODENUM → JEJUNUM→ ILEUM → CECUM → COLON→ SIGMOID COLON → RECTUM → ANUS

Describe the pathway of food through the digestive tract.

Task 3. Read and translate the text and fill in the gaps using the information of Task 2:

DIGESTIVE SYSTEM

The digestive system performs three functions. First, complex food material must be digested as it travels through the gastrointestinal tract. Second, the digested food must be absorbed into the bloodstream so that valuable substances can travel to the cells of the body. Within the cells sugars and fatty acids can be burned to release the energy. Third, the waste materials which cannot be absorbed by the intestine must be eliminated.

The digestive system, or gastrointestinal tract, begins with the _____, where food enters the body, and ends with the _____, where solid waste material leaves the body. The cheeks form the walls of the oral cavity, while the lips form the opening to this cavity. The hard and soft palate form the roof of the mouth and separate the mouth from the pharynx. The tongue moves food around during mastication (chewing) and

deglutition (swallowing). Food passes from the mouth to the _____. Through the pharynx the food goes to the _____. This is a muscular tube extending from the pharynx to the _____. The stomach prepares the food chemically and mechanically so that it can be received in the small intestine for further digestion and absorption into the blood.

The small intestine, or small bowel, extends from the pylorus to the first part of the large intestine. It has three parts _____, _____, _____, which is attached to the large intestine. The large intestine extends from the ileum to the anus. It is divided into four parts – _____, _____, _____, and _____. The rectum terminates in the _____. Three important accessory organs of the digestive system are the liver, gallbladder, and pancreas. Although food does not pass through these organs, they play a crucial role in the proper digestion and absorption of nutrients.

The liver manufactures bile. The gallbladder stores and concentrates the bile for later use. After meals the gallbladder contracts forcing the bile to the duodenum. The liver has many other vital and important functions in the body. One of these is keeping the amount of sugar in the blood at a normal level. The liver can remove excess glucose from the bloodstream and store it. It can put sugar back into the bloodstream. Liver cells can make new sugar from amino acids The pancreas manufactures and secretes pancreatic juice which helps to break down all types of foods. Special cells in the pancreas produce a hormone called insulin, which plays a role in the utilization of sugar by the body.

Task 4. How do we call:

1) wedge-shaped spongy organ that gets rid of toxins, regulates your blood sugar levels and produces bile;
2) a J-shaped elastic sac, the widest part of your digestive system responsible for storing food, its chemical and mechanical processing and mixing it with juices secreted by its lining;
3) a pistol-shaped organ behind the stomach which secretes digestion enzymes and hormones that control blood sugar levels

Task 5. Match a phrase in A with a phrase in B:

A	B
The esophagus	digestion, absorption of food and elimination of waste products.
The digestive system is responsible for	goes to the pharynx.
The stomach is the place	carries the food from the pharynx to the stomach.
From the oral cavity the food	for chemical and mechanical preparing of the food.
The food enters the organism	duodenum, jejunum, ileum.
The small intestine consists of	by the liver.
Cecum, colon, sigmoid colon and rectum are	through the liver gallbladder and pancreas.
The food does not go	through the mouth.
The bile is produced	in sugar breakdown.
Insulin takes part	the four parts of the large intestine.

Task 6. Are the statements correct?

1) The only function of the digestive system is to assimilate the food.
2) The other term for the digestive system is gastrointestinal tract.
3) The mouth is the first division of the digestive system
4) The esophagus is the place for mechanical processing of the food.
5) The small intestine consists of cecum, colon, sigmoid colon and rectum.
6) The liver, gallbladder and pancreas are the divisions of the intestine.
7) The pancreas produces several substances important for digestion.
8) The bile is produced by the gallbladder.

Work in pairs to act agreement and disagreement.

Task 7. Complete the sentences. Work in pairs. Ask and answer the questions on topic.

1) In the process of digestion, the tongue ….
2) Absorption of nutrients takes place in …

3) The digestive system ends …
4) The glands of the digestive system are …
5) The function of the gallbladder is …
6) Pancreatic juice aids in …

GRAMMAR REVISION: PRESENT PARTICIPLE AND PAST PARTICIPLE

Task 8. Choose the correct form:

1. The pulmonary artery is the only artery (carrying, carried) deoxygenated blood. 2. Deoxygenated blood (entering, entered) the lung capillaries soon loses carbon dioxide. 3. The blood is pumped out of the left ventricle into the aorta (branching, branched) to carry blood all over the body. 4. The four chambers of the heart are separated by the walls (knowing, known) as septa. 5. The interventricular septum is a muscular wall (coming, come) between the two lower chambers. 6. The endocardium is a smooth layer of cells (lining, lined) the inferior of the heart. 7. The pericardium is a delicate membrane (surrounding, surrounded) the heart. 8. Air passes through the nasal cavities (lining, lined) with a mucous membrane. 9. The pharynx, (serving, served) as a common passageway for the food and air, divides into two branches in the hypopharyngeal region.

Unit 3 Digestive diseases

Vocabulary

Task 1. Medical Terminology. Study the combining forms:

tonsilo- tonsils	pharyngo – pharynx	laryngo- larynx
gastro- stomach	duodeno- duodenum	esophago- esophagus
hepato- liver	pancreato- pancreas	cholecysto- gallbladder

List of Suffixes

-itis– The suffix -itis simply indicates an inflammation of some kind. The -itis is quite popular in medical terminology because it can be applied to just about any body part within any body system (ex. tosilitis (-itis), arthritis (-itis), bronchitis (-itis) cholecystitis, and cholangitis)

-oma – tumor or growth (ex. carcinoma (-oma), leiomyoma (-oma))

-pathy –a disease process (ex. cardiomyopathy (-pathy)

Form the terms with the following meaning (use the dictionary to check their spelling):

Task 2. Supply the words to the definitions:

1) assimilation of food by the body;
2) side of the face below the eye;
3) organ of speech and taste;
4) the tube that connects the stomach to the throat;
5) important organ of body vitally concerned with metabolism, blood clotting and protein production;
6) gland lying behind and below the stomach which produces ferments which are passed into the intestinal tract to help digestion; site of insulin production.

Task 3. Read and translate the text, be ready to answer the questions and tell about digestive diseases.

Digestive diseases

Digestive diseases are disorders of the digestive tract, which is sometimes called the gastrointestinal (GI) tract. In digestion, food and drink are broken down into small parts (called nutrients) that the body can absorb and use as energy and building blocks for cells. The digestive tract is made up of the esophagus (food tube), stomach, large and small intestines, liver, pancreas, and the gallbladder.

The first sign of problems in the digestive tract often includes one or more of the following **symptoms**: *bleeding, bloating, constipation, diarrhea, heartburn, incontinence nausea and vomiting, pain in the belly, swallowing problems, weight gain or loss.*

A digestive disease is any health problem that occurs in the digestive tract. Conditions may range from mild to serious. Some **common problems** include cancer, irritable bowel syndrome, and lactose intolerance. Other digestive diseases include: *gallstones, cholecystitis, and cholangitis*.

Rectal problems, such as *anal fissure, hemorrhoids, proctitis, and rectal prolapse.*

Esophagus problems, such as *stricture (narrowing) and achalasia and esophagitis.*

Stomach problems, including *gastritis, gastric ulcers* usually caused by Helicobacter pylori infection and cancer.

Liver problems, such as *hepatitis B or hepatitis C, cirrhosis, liver*

failure, and autoimmune and alcoholic hepatitis, pancreatitis and pancreatic pseudo cyst.

Intestinal problems, such as *polyps and cancer, infections, celiac disease, Crohn disease, ulcerative colitis, diverticulitis, malabsorption, short bowel syndrome, and intestinal ischemia.*

Gastroesophageal reflux disease (GERD), *peptic ulcer disease, and hiatal hernia.*

Tests for digestive problems can include colonoscopy, upper GI endoscopy, capsule endoscopy, endoscopic retrograde cholangiopancreatography (ERCP), and endoscopic ultrasound.

Many **surgical procedures** are performed on the digestive tract. These include procedures done using endoscopy, laparoscopy, and open surgery. Organ transplants can be performed on the liver, pancreas, and small intestine.

Many health care providers can help diagnose and treat digestive problems. **A gastroenterologist** is a physician specialist who has received extra training in the diagnosis and treatment of the digestive disorders.

Task 4. Read the text and answer the questions. Go to the website https://kidshealth.org/en/teens/ulcers.html and listen to the original text carefully!

Ulcers

"If you guys don't stop yelling; you'll give me an ulcer!" "There's been so much stress at work lately, I'm sure I'll get an ulcer." "Don't worry so much. Do you want an ulcer?" When people talk like this, it sounds like ulcers are easy to give and easy to get. It also sounds like stress is to blame. But is that the real story?

An ulcer is a sore, which means it's an open, painful wound. Peptic ulcers are ulcers that form in the stomach or the upper part of the small intestine, called the duodenum (pronounced: doo-uh-DEE-num). Peptic ulcers are actually very common.

What Causes an Ulcer?

For almost 100 years, doctors believed that stress, spicy foods, and alcohol caused most ulcers. Now we know that most peptic ulcers are caused by a particular bacterial infection in the stomach and upper intestine, by certain medications, or by smoking.

In 1982, two doctors – Barry Marshall and Robin Warren – discovered a certain kind of bacteria that can live and grow in the stomach. Both doctors went on to win the Nobel Prize for their discovery. The medical name for these bacteria is Helicobacter pylori (or H. pylori, for short). Today doctors know that most peptic ulcers are caused by an infection from H. pylori.

How Ulcers Form

When H. pylori bacteria do cause ulcers, here's how doctors think it happens: bacteria weaken the protective coating of the stomach and upper small intestine. Acid in the stomach then gets through to the sensitive tissues lining the digestive system underneath. Acid and bacteria directly irritate this lining resulting in sores, or ulcers.

Symptoms of ulcers can include:

loss of appetite; sudden, sharp stomach pains; nausea; frequent burping or hiccupping; weight loss; vomiting (if blood is in the vomit or the vomit looks like coffee grounds); bloody or blackish bowel movements.

How Are Ulcers Treated?

Ulcers caused by H. pylori bacteria are generally treated with a combination of medications: usually two antibiotics to kill the H. pylori bacteria are taken every day for about 2 weeks. Antacids – acid blockers or proton pump inhibitors – are given for 2 months or longer to lessen the amount of acid in the stomach and help protect the lining of the stomach so the ulcer can heal.

Task 5. Find the information about 3 different digestive diseases. Fill in the chat and be ready to tell about one of them.

Disease	Formation	Causes	Symptoms	Treatments

GRAMMAR REVISION: PRESENT PARTICIPLE AND PAST PARTICIPLE

Task 6. Use the proper form of the verb:

1. A flap of cartilage (attach) to the root of the tongue acts like a lid over

the pharynx. 2. The trachea divides into two branches (call) bronchi. 3. The very thin wall allows for the exchange of gases between the alveolus and the capillaries (surround) it. 4. The blood (flow) through the capillaries accepts the oxygen from the alveolus. 5. The pleura is moistened with a serous secretion (facilitate) the movement of the lung. 6. The diaphragm is a muscular partition (separate) the thoracic from the abdominal cavity. 7. Diphtheria is an acute infectious disease of the throat (cause) by the presence of bacteria. 8. Croup is acute respiratory syndrome (characterize) by obstruction of the larynx 9. The amount of calcium in the blood is maintained by the parathyroid gland (secrete) a special hormone. 10. Long bones (find) in the legs and arms are very strong.

Unit 4. URINARY SYSTEM

Vocabulary

Branch (v) - divide into
Carbon - nonmetallic element (symbol C) that occurs in all living matter
Coil (v) - twist into a circle or spiral shape
Combine (v) - to join together
Discharge (v) - give or send out
Excrete (v) - discharge
Filtration - purifying a liquid by using a filter
Hydrogen - gas (symbol H) which combines with oxygen to form water
Nitrogen - gas (symbol N) forming about four firth of the atmosphere
Pressure - force exerted continuously or against something
Protein - body-building substance n such food as milk, egg, meat
Reservoir - a palace where waste is stored
Soluble - that can be dissolved

Task 1. Match the word to its definition. Write a sentence for each word

Basic terminology

1.Cortex	a. one of the two organs that excrete the urine
2.Glomerulus	b. musculo membranous elastic bag serving as a storage ace for the urine
3.Kidney	c. the thick-walled tube that conducts the urine from the nal pelvis to the bladder
4.Medulla	d. any soft marrow-like structure, especially in the center of a part
5.Tubule	e. relating to urine
6.Ureter	f. the outer portion of an organ, such as the kidney, as distinguished from the inner, or medullary, portion
7.Urethra	g. a small tube
8.Urinary	h. a canal leading from the bladder, discharging the urine externally
9.Urinary bladder	i. a tuft formed of capillary loops at the beginning of each nephric tubule in the kidney

Task 2. Read and translate the text. Be ready to answer the questions. Fill in the gaps using the following words:
1 – aorta, 2 – renal artery, 3 – cortex, 4 – medulla, 5 – kidney, 6 – ureter, 7 – urinary bladder, 8 – urethra.

URINARY SYSTEM

Food and oxygen are combined in the cells of the body to produce energy. Protein foods contain carbon, hydrogen, and oxygen plus nitrogen and other elements. The waste produced when proteins combine with oxygen is called nitrogenous waste. The body excretes it in the form of a soluble waste substance called urea. The major function of the urinary system is to remove urea from the bloodstream.

The organs of the urinary system are two _____, two _____, _____ _____, _____.

Two _____ are bean-shaped organs situated behind the abdominal cavity in the lumbar region of the spine. The kidneys consist of an outer _____ region and an inner _____ region. The kidneys also participate in regulating production of red blood cells and in maintaining normal blood pressure.

Two _____ are muscular tubes lined with mucous membrane. They carry urine from the kidney to the _____ _____. _____ _____ is a hollow muscular sac in the pelvic cavity serving as a temporary reservoir for urine. _____ is a membranous tube through which urine is

discharged from the urinary bladder.

Blood is led to the kidneys from the _____ by way of the _____ arteries. Each renal artery branches into many small arteries called arterioles. Each arteriole in the kidney divides into very tiny, coiled small blood vessels (capillaries) shaped like a little ball and called a glomerulus. There are thousands of glomeruli in the cortex region of each kidney. This is the place for the first stage of urine filtration.

The kidneys also reabsorb all the material the body needs. This process takes place in the renal tubules. They reabsorb about 99 per cent of water filtered out of the glomeruli. A person's entire blood supply is filtered through the kidneys twenty to twenty-five times a day.

Task 3. Listen to the questions and match them with the answers. Arrange the answers in the order the information is presented in the text.

1) The process of reabsorption takes place in the tubules.
2) Urea is a waste material formed in the process of protein break down.
3) The urinary bladder is situated in the pelvic cavity.
4) The urinary system is responsible for urea extraction from the bloodstream.
5) The two regions of the kidneys are cortex and medulla.
6) The urinary system consists of two kidneys, two ureters, urinary bladder, and urethra.
7) The kidneys filter the waste material from the blood.
8) The kidneys are located in the lower back area.

Task 4. Find the names of vessels mentioned in the text. What do they do?

Task 5. Find the plural of glomerulus.

Task 6. Read the text again and find the words with the following meanings:

1) small artery,
2) small tube,
3) waste substance of protein metabolism,
4) muscular tubes carrying the urine from the kidney to the urinary bladder,
5) two small organs of the human body which remove waste products from the blood.

Task 7. Arrange the phrases to make statements about the urinary system:

1. the kidneys / urea is a waste substance / the urinary system / of protein metabolism / is located in
2. the pelvic cavity / the renal arteries / excretes urea from the organism / transport the urine from the
3. kidneys to the urinary bladder / of two kidneys, two ureters, urinary bladder and urethra / the
4. urinary system consists / filter the blood / regulate erythrocyte production and blood pressure / the ureters / the urinary bladder / carry the blood to the kidneys

Task 8. Fill in the gaps:

1) The urinary system removes … from the … .
2) The … … is composed of two kidneys, two ureters, urinary bladder, and urethra.
3) The … are responsible for maintaining normal … pressure.
4) The ureters join the kidneys with the … … .
5) The renal arteries carry the … to the kidneys.
6) Each renal artery divides into … .
7) The first stage of urine filtration takes place in the … .

Task 9. Explain the difference between:

1) ureter – urethra
2) urea – urine
3) gallbladder – bladder
4) glomeruli – tubules.

GRAMMAR REVISION: MAY, SHOULD

Task 10. Choose the proper word:

1). Look at the sky! It can/may/must rain. 2). It is impossible. It cannot/must not/ may not be the answer. 3). I suppose it is possible. I may/can/must come to your party. 4). I am well today. I may/can/must come to your party. 5). Sorry, I can't / may not come. I have a lot of work. 6). Surgery can/ may be indicated in this case.

Task 11. Rewrite the sentences using modals:

7). It is possible that this disease is caused by a virus. 8). She is not able to come to the party. 9). He is unable to call you today. 10). It is possible to perform several operations. 11). I suppose the doctor knows how to treat you. 12). Antibiotics are able to correct this condition. 13). It is possible that this disease is caused by several factors. 14). It is possible that hypertension is the result of kidney disease.

Unit 5 Kidney Diseases

Vocabulary

Task 1. Study the combining forms:

1) uro – urinary, urea, urine;
2) urethra – urethra
3) uretero – ureter
4) reno – kidney
5) nephron – kidney
6) -emia – blood condition

Task 2. Read and analyze the words:

Hematuria, Uremia, Glomerulonephritis, Urologist, Urology, Nephritis, Tubule, Arteriole, Venule, Nephrectomy, Renal, Urography

Task 3. Read the summary. Find and correct the mistakes:

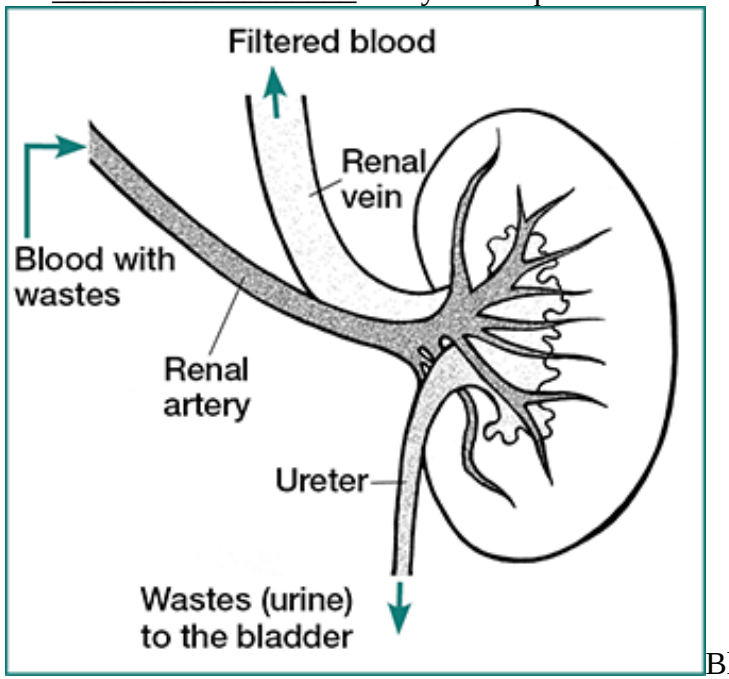
The urinary system excretes the waste product of protein metabolism which is called urine. The urinary system consists of two kidneys, two urethras, a ureter and a gallbladder. The kidneys are located in the lower portion of the abdominal cavity. The external region of the kidneys is called
cortex, the internal region is caller medulla. The blood is filtered in the glomeruli of the kidneys. 99% of the blood supply is filtered through the kidneys every day. The ureters connect the kidneys with the urinary bladder,
which is located in the lumbar region.

Task 4. Read and translate the text. Be ready to tell why kidneys are so important. Retell the text. Why are the kidneys important?

Your kidneys remove wastes and extra fluid from your body. Your kidneys also remove acid that is produced by the cells of your body and maintain a healthy balance of water, salts, and minerals — such as sodium, calcium, phosphorus, and potassium — in your blood. Without this balance, nerves, muscles, and other tissues in your body may not work normally. Your kidneys also make hormones that help control your blood pressure make red blood cells keep your bones strong and healthy

Task 5. Read ant translate the text. Fill in the missing words. How does blood flow through my kidneys?

Blood flows into your kidney through the _____. This large blood vessel branches into smaller and smaller blood vessels until the blood reaches the nephrons. In the _____, your blood is filtered by the tiny blood vessels of the _____ and then flows out of your kidney through the renal vein. Your blood circulates through your _____ many times a day. In a single day, your kidneys filter about 150 quarts of blood. Most of the water and other substances that filter through your glomeruli are returned to your blood by the _____. Only 1 to 2 quarts become urine.



Blood flows into your kidneys through the renal _____ and exits through the renal _____. Your ureter carries urine from the kidney to your _____. If kidney disease is not treated, it can lead to kidney failure. This means the kidneys stop working. Once the kidneys fail, you will need dialysis or a kidney transplant to maintain health.

Task 6. Read the text and tell about your risks for kidney disease, what facts about kidney disease you should know, what are kidney disease symptoms.

Are You at Risk for Kidney Disease?

Kidney disease is a growing problem. More than 4 million Ukrainians may have kidney disease and many more are at risk. Anyone can develop kidney disease, regardless of age or living conditions. *You are at risk for kidney disease if you have*:

Diabetes, high blood pressure, cardiovascular (heart and blood vessel) disease, a family history of kidney failure (your mother, father, sister, or brother had kidney disease or kidney failure).

What you should know about kidney disease:

– Early kidney disease has no signs or symptoms.
– Kidney disease can be treated. The earlier you know you have it, the better.
– Blood and urine tests are used to check for kidney disease.
– Kidney disease can progress to kidney failure.

Testing is the only way to know if you have kidney disease. That means you can't feel that you have it. In fact, you might feel just fine until your kidneys have almost stopped working. Don't wait for symptoms. Blood and urine tests are the only way to know if you have kidney disease. A blood test measures your GFR, determining how well your kidneys are filtering, and a urine test checks for protein.

Treatment may include taking medicines called ACE inhibitors or ARBs to manage high blood pressure and keep your kidneys healthier longer. Treating kidney disease may also help prevent heart disease.

Kidney disease usually does not go away. It may get worse over time and can lead to kidney failure. If the kidneys fail, treatment with dialysis or a kidney transplant is necessary to maintain health. Kidney disease also can lead to other health conditions including heart disease. In fact, people with kidney disease are more likely to have a stroke or heart attack.

What if I have kidney disease?

If tests show you have kidney disease, you can take steps to protect your kidneys from further damage. There are medicines you can take and other things you can do—such as controlling your blood sugar and keeping your blood pressure below the target set by your health care provider—to help delay or prevent kidney failure.

How do I slow the progression of kidney disease?

Ways to take control:

Choose a healthcare team that specializes in your stage of kidney disease.

Don't smoke.

Exercise.

Take medications as prescribed by your doctor.

Eat right by limiting foods that are high in protein, saturated fats, phosphorus, potassium and sodium, all of which can put extra strain on your kidneys. If you need help managing a kidney diet, use DaVita Diet Helpers, a tool that makes it easy to plan meals, track your nutrients and more.

Know more about medications when you have renal disease. Some prescription and over-the-counter medicines and herbal supplements can be very harmful. Check with your doctor or pharmacist before taking any new medications.

Grammar Material. Non-finite forms of the verb: Infinitive/Gerund/Participle

Task 7. Choose the right Participle (I, II)

1. The girl (playing/played) in the garden is my sister.
2. Leaves (lying/lain) on the ground always remind us about September.
3. Have you got any (cutting/cut) bread?
4. I'll show you animals (drawing/drawn) by my brother.
5. Show me the pupils (learning/learned) English.
6. The man (sitting/sat) at the open window is my Dad.
7. (Having worked, working)..... as a taxi-driver before, Leo knew every corner of the town.
8. They looked at Julia in surprise as though ..... (not believing, not having believed)her story.
9. Once ..... (bitten, bitting), twice shy.

UNIT 6. NERVOUS SYSTEM

Vocabulary

Airway – the passage in your throat that you breathe through

Dilate (v) - become wider, larger

Elevate (v) - lift up

Fold (v) – to bend a pierce of paper, cloth etc by laying or pressing one part over another

Fold (n) – a line made in paper or material when you fold one part of it over another

Groove - long, hollow channel on the surface of hard material
Increase (v) - to make or become greater in size
Inhibit (v) - to hinder, to restrain
Monitor (v) - test and detect

Task 1. Read and translate the text. Study the diagram below illustrating the structure of the nervous system. Describe the structure of the nervous system

The nervous system is a complex collection of nerves and specialized cells known as neurons that transmit signals between different parts of the body. It is essentially the body's electrical wiring.

Structurally, the nervous system has two components: the central nervous system and the peripheral nervous system. The central nervous system is made up of the brain, spinal cord and nerves. The peripheral nervous system consists of sensory neurons, ganglia (clusters of neurons) and nerves that connect to one another and to the central nervous system.

Functionally, the nervous system has two main subdivisions: the somatic, or voluntary, component; and the autonomic, or involuntary, component. The autonomic nervous system regulates certain body processes, such as blood pressure and the rate of breathing, that work without conscious effort. The somatic system consists of nerves that connect the brain and spinal cord with muscles and sensory receptors in the skin

Task 2. Match the structure of the nervous system and its function (Use medical encyclopedia if necessary):

Terms:

Cranial nerves, Spinal nerves, Autonomic nervous system, Sympathetic nerves, Parasympathetic Nerves, Brain, Ventricles of the brain, cerebrospinal fluid, thalamus, hypothalamus, Spinal cord, Meninges.

Definitions:

1) the primary center for regulating and coordinating body activities
2) to control body temperature, sleep, appetite, and emotions such as fear and pleasure
3) to carry impulses between the brain and the head and neck
4) to surround the brain and spinal cord
5) to protect the brain and spinal cord from shock
6) to contain cerebrospinal fluid
7) to carry messages between the spinal cord and the chest, abdomen, and extremities
8) to monitor the received sensory stimuli
9) to carry all the nerves which affect the limbs and lower part of the body, to be the pathway for impulses going to and from the brain
10) to slow down heart rate, contract the pupils of the eye, lower blood pressure, stimulate peristalsis to clear the rectum, and increase the quantity of secretions
11) to stimulate the body in times of stress and crisis
12) to carry impulses from the central nervous system to the glands, heart, blood vessels, and the involuntary muscles

Describe the work of the structures of the central nervous system.

Task 3. Read about the nervous system and fill in the gaps using the information of Ex. 1, 2:

THE NERVOUS SYSTEM

The nervous system can be classified into two major divisions: _____ and the _____. The central nervous system consists of _____and _____. The peripheral nervous system consists of _____, which _____, and _____, which_____.

In addition to the spinal and cranial nerves, the peripheral nervous system consists of a large group of _____. This system of nerve fibers _____.

Some of the autonomic nerves are called _____ and others are called _____. The sympathetic nerves _____, i.e., increase heart rate, dilate airways, increase blood pressure, stimulate the adrenal glands to secrete epinephrine (adrenalin), and inhibit intestinal contractions. Parasympathetic nerves _____.

The brain is _____.

It has many different parts. The largest part of the brain is the cerebrum. The outer nervous tissue of the cerebrum, known as the cerebral cortex, is arranged in folds to form elevated portions, gyri, and grooves, also called

sulci. All thought, judgment, memory, association, and discrimination take place within it. The spaces in the cerebrum called ventricles _____CSF) which _____.

Two other important parts of the brain are the thalamus and hypothalamus. The thalamus_____. The hypothalamus_____.

The spinal cord _____. The meninges are three layers of connective tissue membranes that _____. The outer layer is called the dura mater. The second layer is called the arachnoid membrane. The third layer of the meninges is called the pia mater.

Task 4. Which of the following was discussed in the text?

a) Two major divisions of the nervous system.
b) The function of each cranial nerve.
c) The number of nerves in the peripheral nervous system.
d) The work of the autonomic nervous system.
e) Stimulation of the body through the sympathetic nerves.
f) Relaxation of the body through the parasympathetic nerves.
g) The difference between the sympathetic and parasympathetic nerves.
h) The structure of a neuron.
i) Difference between the white matter and the gray matter.
j) The portions of the brain.
k) Functions of the cerebrum.
l) The location of the thalamus and hypothalamus.
m) The work performed by the cerebellum, pons, and medulla oblongata.
n) Main divisions of the vertebral column.
o) The membranes which cover the brain and the spinal cord.
p) Meningitis and its causes.

Task 5 These are the questions which are not answered in the text. Ask for the necessary information using Can you tell me.., Could you tell me…, Would you mind telling me …

1) How many cells does the nervous system consist of?
2) How do we call the substance which transmits nerve impulses?
3) What is the function of the cerebellum?
4) What structure connects the cerebellum and the cerebrum?
5) What centers can be found in the medulla oblongata?
6) What is the volume of CSF in the average adult?
7) What is an average length of the spinal cord?
8) How are the meninges called?
9) What are afferent nerves?
10) What do neurons do?

Task 6 Write the plural of the following terms: gyrus, sulcus, meninx.

Task 7. What do these abbreviations stand for: CNS, CSF

Task 8. Study the combining forms:

1) neuro – nerve; 2) meningo – meninx; 3) cerebro – brain; 4) encephalo – brain; 5) cranio – skull.

Task 9. Build medical words:

Inflammation of the brain _____,
disease of the nervous system_____,
inflammation of the meninges _____,
pertaining to the skull _____,
pertaining to the brain _____,
inflammation of the nerve _____,
science about the nervous system _____,
specialist in diseases of the nervous system _____,
nerve cell _____,
formation of nervous system _____,
surgical cutting of the skull _____.

Grammar material. Conditional Sentences (Type I, II)

Task 10. Complete the Conditional Sentences (Type I) by putting the verbs into the correct form.

1. If you (send) this letter now, she (receive) it tomorrow. 2. If I (do) this test, I (improve) my English. 3. If I (find) your ring, I (give) it back to you. 4. Peggy (go) shopping if she (have) time in the afternoon. 5. Simon (go) to London next week if he (get) a cheap flight. 6. If her boyfriend (phone / not) today, she (leave) him.

UNIT 7 Brain

Task 1 Study the picture of the brain. Write a brief report about the brain.

1 – cerebrum

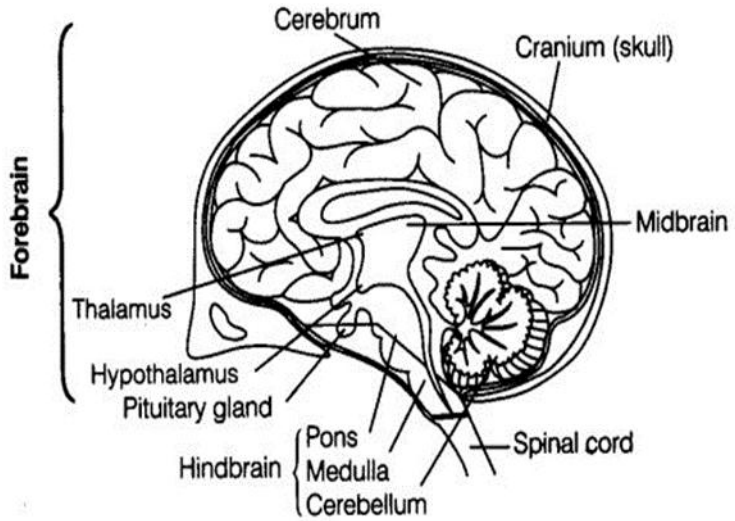


Fig. 21.4 Structure of a brain

2 - cerebellum

3 – medulla oblongata 4 – pons 5 – pituitary gland 6 – hypothalamus 7 – thalamus 8 – membrane

Task 2. Learn the words. Basic terminology

Arachnoid membrane - a delicate fibrous membrane forming the middle of the three coverings of the central nervous system;

Brain - the part of the central nervous system contained within the skull;

Cerebrum - the largest portion of the brain, including mainly the cerebral hemispheres;

Cranial - relating to the skull or head;

Dura mater - a tough, fibrous membrane forming the outer covering of the central nervous system;

Gyrus (pl. Gyri) - one of the prominent rounded elevations that form the cerebral hemispheres;

Meninx (meninges pl.) - one of the membranous coverings of the brain and spinal cord;

Nervous - relating to a nerve or the nerves

Pia mater - a delicate vasculated fibrous membrane firmly adherent to the glial capsule of the brain and spinal cord;

Spinal cord - the elongated portion of the central nervous system, which is contained in the spinal or vertebral canal;

Sulcus (pl. sulci) – one of the grooves or furrows on the surface of the brain, bounding the several convolutions or gyri;

Thalamus - the large, ovoid mass of gray matter that forms the larger dorsal subdivision of the diencephalon.

Task 3. Read and translate the text, be ready to answer the questions and retell.

The brain controls virtually everything humans experience, including movement, sensing our environment, and regulating our involuntary body processes such as breathing, as well as controlling our emotions. Ongoing scientific research into the organization and function of the brain has led, and will continue to lead, to new treatments of diseases such as Parkinson's disease, epilepsy, stroke, and mental illnesses (including depression and schizophrenia).

The brain is the organ of behavior. It is also the organ of our minds. Both overt behavior and consciousness are manifestations of the work of our brains. Other people can see an individual's overt behaviors, whereas consciousness is apparent only in our individual minds. The field of neuroscience studies how people control their behaviors, thoughts, and feelings, and how these actions sometimes get out of control.

The human brain consists of several large regions, each of which is responsible for some of the activities necessary for life. These include the brainstem, cerebellum, limbic system, diencephalon, and cerebral cortex.

The brainstem is the part of the brain that connects the brain and spinal cord. This part of the brain is involved in coordinating many basic functions such as heart rate, breathing, eating, and sleeping.

The cerebellum coordinates the brain's instructions for skilled repetitive movements and for maintaining balance and posture.

The limbic system, as discussed in the next section, is involved in regulating emotions, motivations, and movement. It includes the amygdala and hippocampus, which is important for memory formation.

The diencephalon contains the thalamus and hypothalamus. The

thalamus is involved in sensory perception and regulating movement. The hypothalamus is an important regulator of the pituitary gland, which directs the release of hormones throughout the body.

The cerebral cortex makes up the largest part of the brain mass and lies over and around most of the other brain structures. It is the part of the brain responsible for thinking, perceiving, and producing and understanding language. The cortex can be divided into areas that are involved in vision, hearing, touch, movement, smell, and thinking and reasoning.

Grammar material. Conditional Sentences (Type II)

Ex 1 Complete the Conditional Sentences (Type II) by putting the verbs into the correct form. 1. If we (have) had a yacht, we (sail) would sail the seven seas. 2. If he (have) more time, he (learn) karate.3.If they (tell) their father, he (be) very angry. 4 .She (spend) a year in the USA if it (be) easier to get a green card. 5. If I (live) on a lonely island, I (run) around naked all day. 6. We (help) you if we (know) how.7.My brother (buy) a sports car if he (have) the money. 8 .If I (feel) better, I (go) to the cinema with you.

Unit 8. SENSE ORGANS

Vocabulary

Bend (v) - become curved or angular;
Ray - line, beam of light, heat, energy;
Respond (v) - react to;
Strike (v) - hit, give a blow;
Wave – the form in which some types of energy (light or sound) move;
Conjunctiva - the mucous membrane investing the anterior surface of the eyeball and the posterior surface of the lids;
Cornea - the transparent tissue constituting the anterior sixth of the outer wall of the eye;
Iris - the anterior division of the vascular tunic of the eye, a diaphragm, perforated in the center (the pupil);
Posterior - denoting the back surface of the body. Often used to indicate the position of one structure relative to another, i.e., nearer the back of the body;
Pupil - the circular orifice in the center of the iris, through which the light rays enter the eye;
Receptor - any one of the various sensory nerve endings in the skin, deep tissues, viscera, and special sense organs;
Sclera - a portion of the fibrous tunic forming the outer envelope of the eye;
Stimulus - that which can elicit or evoke action (response) in a muscle, nerve, gland or other excitable tissue.

Task 1. Check your knowledge: How many senses do we have? What are they? What organs help us to do it?

Task 2. Read the text. Which of the sense organs are described in it:

SENSE ORGANS

The eye and the ear are sense organs. Their sensitive cells may be activated by a stimulus in the external or internal environment. The sensitive cells in the eye and ear respond to the stimulus by initiating a series of nerve impulses alone sensory neurons which lead to the brain. The eye consists of the eyeball and accessory structures (eyebrows, eyelids, conjunctiva, lachrymal apparatus). Light rays enter the dark center of the eye, the pupil after they have passed through a mucous membrane called the conjunctiva and a transparent fibrous membrane called the cornea. The cornea bends, or refracts, the rays of light so that they are focused on the sensitive receptor cells of the retina (called rods and cones) in the posterior region of the eye. The sclera, or white of the eye, is a supportive tissue.

The iris is the colored portion of the eye which surrounds the pupil. Two sets of iris muscles
respond to light by contracting. The lens (which lies posterior to the iris) aid in further refracting the light rays. Light energy, when it has focused on the retina, causes a chemical change in the rods and cones, initiating nerve impulses which then travel from the eye to the brain.

The ear can be divided into three separate regions – outer ear, middle ear, and inner ear. Sound waves enter the ear through the auricle. Sound waves travel through the auditory canal and strike a membrane between the outer and middle ear. This is the tympanic membrane, or eardrum. As the eardrum vibrates, it moves three small bones which conduct the sound waves through the middle ear. These

bones are the malleus, the incus, and the stapes. Sound vibrations reach the inner ear also called the labyrinth. Tiny cells receive vibrations and relay the sound waves to auditory nerve fibers which end in the auditory center of the cerebral cortex.

Task 3. These are the structures of the eye. Draw the eye and write the parts of the eye.

PUPIL, CONJUNCTIVA, CORNEA, SCLERA, IRIS, LENS, RETINA

Use the text to match their name with the definitions:

a) a pigmented circular contractile disc around the pupil

b) part of the eye that receives the image and which is connected to the brain by the optic nerve

c) a mucous membrane lining of the eyelid and outer surface of the exposed portion of the eyeball

d) white of the eye

e) transparent biconvex structure which has the ability of bending light rays to bring them to the retina

f) the window of the eye through which light passes to the lens and the retina

g) a membrane covering the eye and lying beneath the conjunctiva

Task 4. Correct the mistakes in the scheme using the text. Describe the passway of signals in the eye:

PUPIL → CONJUNCTIVA → RETINA → OPTIC NERVE → CORNEA → BRAIN

Grammar material COMPLEX SUBJECT

Task 5. Read and compare the two sentences. Which of them is less categorical?

1). The total number of bones in the body is 206.

2). It is reported that the total number of bones in the body is 206.

2. Compare:

(1) It is reported that the total number of bones in the body is 206. =

(2) The total number of bones in the body is reported to be 206.

You may use two ways of saying the same: complex sentence (1) and Complex Subject (2).

Rewrite the sentences:

E.g. Psoriasis is believed to be an inherited skin condition. – It is believed that psoriasis is an inherited skin condition.

a) A woman was found to have an ulcer on the left leg.

b) Hepatitis C virus is known to cause most cases of non-A and non-B hepatitis.

c) Six specific viruses appear to be responsible for hepatitis development.

d) The lifestyle of an individual is believed to contribute to the type of cancer that develops.

e) Sometimes surgical removal of a tumor appears to be successful.

f) Pyogenic infections and abscesses are generally considered to be separate problems.

UNIT 9. HUMAN SENSE ORGANS

Task 1. Read and translate the text. Describe the process of hearing

How do we hear?

Hearing starts with the outer ear. When a sound is made outside the outer ear, the sound waves, or vibrations, travel down the external auditory canal and strike the eardrum (tympanic membrane). The eardrum vibrates. The vibrations are then passed to three tiny bones in the middle ear called the ossicles. The ossicles amplify the sound and send the sound waves to the inner ear and into the fluid-filled hearing organ (cochlea).

Once the sound waves reach the inner ear, they are converted into electrical impulses, which the auditory nerve sends to the brain. The brain then translates these electrical impulses as sound.

Task 1 Arrange the words in the statements:

a) The the ear hearing organ is of.

b) The ear ear ear ear of outer middle consists inner and.

c) The the the to is formed by entrance ear auricle.

d) Sound eardrum makes the vibrate.

e) In middle small ear bones pass the sound three waves the.

f) The the between and inner middle is called partition tympanic membrane ear.

g) The maze a middle resembles ear.

Task 2. Draw the pathway of signals in the ear:

A_____ □ a_____ c_____□
t_____m_____ □ m_____,
i_____, s_____ □ l_____ □
a_____ n_____ □ a_____
c_____

Task 3 Describe how the sound signals travel in the ear.

E.G. The sound waves enter the acoustic canal after they have passed the auricle.

Task 4. Build questions. Work in pairs. Ask and answer the questions.:

What function / eye and ear / perform? How / dark center of the eye / call? What / cornea / do? What / iris / surround? How / the shape and thickness of lens / change? What / rods and cones? What / sound waves / enter the ear through? Where / eardrum / locate? What / tympanic membrane / move? Where / auditory center / locate?

Task 5. Change ONE word to make the statements true:

1). The eye and the brain are sense organs.
2). Impulses in the external and internal environment activate the sensitive cells of the sense organs.
3). The function of the conjunctiva is light refraction.
4). The cornea supports the structures of the eye.
5). The pupil is the colored portion of the eye.
6). The ear ends with the auricle.
7). The tympanic membrane is located between the middle and inner ear.
8). The malleus, the incus and the stapes absorb the sound waves in the middle ear.
9). The hearing center is located in the brain cortex.
10). “Eardrum” and “labyrinth” are synonyms.
11). Nerve impulses from the eye are carried to the brain through the visual nerve.

Task 6. 10. Study the combining forms:

1) Ophthalmo – eye; 2) oto – ear; 3) tympano – tympanic membrane; 4) audio – hearing; 5) -scope – instrument for visual examination; 6) -meter – instrument for measurement; 7) -plasty – surgical repair.

Task 7. Match the definitions and the terms:

Inflammation of the ear	Ophthalmologist
Science about the eye	Tympanitis
Specialist in eye diseases	Ophthalmoscope
Inflammation of the eardrum	Otitis
Instrument to examine the eye	Audiometer
Instrument to measure hearing	Ophthalmology
Surgical repair of the eardrum	Otologist
Ear specialist	Otology
Branch of medicine dealing with the ear	Tympanoplasty

Task 8. Fill in the gaps to make a summary:

The eye and the ear are _____. Their sensitive _____ to various stimuli and send _____ to the brain. The _____ is the dark center of the eye. The _____ refracts the rays. The _____ is a supportive tissue. The _____ is the colored portion of the eye around the pupil.

The light is focused on _____ and _____. A chemical change in the rods and cones _____ nerve impulses which go from the eye to the brain.

The ear can be divided into three _____ – outer ear, middle ear, and inner ear. _____ enter the ear through the _____. They reach _____ membrane. The vibrations of the eardrum _____ three small bones which conduct the sound waves. Sound _____ reach the _____ ear (the labyrinth). Tiny cells transmit the sound waves to _____ which lead to the cerebral cortex.

Task 9 Did you know?

Dark pigment cells of the iris are variously arranged in different people to produce different colored irises.

The pigment is absent in albinos. In blue eyes the pigment cells are confined to the posterior surface of the iris, but in gray eyes, brown eyes, and black eyes the pigment cells appear in the anterior layer of epithelium and in the stroma.

Unit 10 ENDOCRINE SYSTEM

Task 1 Which of the following are endocrine glands?

Thyroid gland, sweat gland, parathyroid gland, adrenal gland, salivary gland, pancreas, sebaceous gland, pituitary gland, ovary, testes, pineal gland, thymus gland, liver

Task 2. Read and translate the text, be ready for retelling

THE ENDOCRINE SYSTEM

The endocrine system is composed of glands, which release specific chemical substances (hormones) directly into the bloodstream. These hormones can regulate the many functions of an organism. The endocrine glands are thyroid gland; parathyroid glands; adrenal glands; pancreas; pituitary gland; ovaries in female; testes in male; pineal gland; thymus gland.

The thyroid gland is located on either side of the trachea. The hormone secreted by the thyroid gland is called thyroxin. It supports the metabolic rate in the body. Injections of thyroxin will raise the metabolic rate, while removal of the thyroid gland, diminishing thyroxin content in the body, will result in a lower metabolic rate, heat loss, and poor physical and mental development.

The parathyroid glands are located behind the thyroid gland. Parathyroid hormone regulates the amount of calcium in the blood. Deficiency of parathyroid hormone is associated with muscular spasms.

The adrenal glands are situated one on top of each kidney. The adrenal cortex secretes three types of steroid hormones: 1. Mineralocorticoids (they regulate the amount of mineral salts) 2. Glucocorticoids (these hormones have an important influence on the metabolism of sugars, fats, and proteins) 3. Androgens, estrogens, and progestins (hormones which maintain the secondary sex characteristics and are necessary for reproduction).

The adrenal medulla secretes two types of catecholamine hormones: epinephrine (adrenaline) which increases cardiac activity, dilates bronchial tubes, and stimulates the production of glucose from a storage substance called glycogen and norepinephrine (noradrenaline) which constricts vessels and raises blood pressure.

The pancreas is located behind the stomach. The cells in the pancreas which produce hormones are called the islets of Langerhans. The islets of Langerhans produce insulin and glucagon. Both of these hormones play a role in the proper metabolism of sugars in the body.

The pituitary gland (hypophysis) is located at the base of the brain and composed of two lobes, adenohypophysis and neurohypophysis. The hormones of the adenohypophysis are pituitary growth hormone (this hormone acts on bone tissue to accelerate its growth in the body), thyroid stimulating hormone (stimulates the growth of the thyroid gland and its secretion of thyroxin), adrenocorticotropic hormone (stimulates the growth of the adrenal cortex and increases its secretion of steroid hormones), gonadotropic hormones (influence the growth and hormone secretion of the ovaries in females and testes in males). The neurohypophysis secretes two important hormones: antidiuretic hormone (stimulates the reabsorption of water by the kidney tubules and can increase blood pressure by constricting arterioles), oxytocin (stimulates the uterus to contract during childbirth).

The ovaries are located in the lower abdominal region of the female. The ovarian hormones are estrogen and progesterone. Estrogen is responsible for the development of secondary sex characteristics. Progesterone is responsible for the preparation and maintenance of the uterus in pregnancy.

The testes produce the male sex cells, spermatozoa, as well as the male hormone called testosterone which stimulates the growth of secondary sex characteristics in the male.

Task 3. Write out the hormones produced by the endocrine glands:

Thyroid gland: Parathyroid gland: Adrenal glands: Pancreas: Hypophysis: Ovaries: Testes:

Task 4. Speaking. Describe hormone production. Use: secrete, produce, manufacture, supply, release.

Task 5. Write out the information about the action of the following hormones:

Thyroxin

Parathyroid hormone

Insulin

Adrenaline

Mineralocorticoids
Pituitary growth hormone
Gonadotropic hormone
Progesterone
Testosterone

Describe the action of the hormones. Use: regulate, be responsible, play a role, stimulate.

Task 6. You want to know:

1) the difference between the endocrine and exocrine glands;
2) what happens if the amount of parathyroid hormone is decreased;
3) which endocrine glands are different in men and women;
4) which endocrine glands produce several hormones;
5) the location of endocrine glands;
6) the gland which regulates the work of the other endocrine glands.

What questions can be asked. Work in pairs. Ask and answer the questions.

Task 7. Write the beginning of the sentences:

1). _____ specific chemical substances released by endocrine glands.
2). _____ secreted by the thyroid gland.
3). _____ on the dorsal surface of the thyroid gland.
4). _____ can be caused by lack of parathyroid hormones.
5). _____ a role in the metabolism of sugars, fats, proteins.
6). _____ regulate sugar metabolism.
7). _____ the two lobes of the pituitary gland.
8). _____ responsible for uterus contractions during delivery of a baby.
9). _____ development of secondary sex characteristics in women.
10)._____manufactured by the testes.
11). _____ above each kidney.
12). _____ in the small pelvis.

Grammar Material. Revision

Task 8. Read about hypophysis. Use the verbs in the proper form:

The hypophysis also (call) the pituitary gland, (be) a small, peashaped gland (locate) at the base of the brain and (compose) of two distinct lobes. The anterior lobe (know) as the adrenohypophysis and (be) composed of glandular tissue. The posterior lobe (call) the neurohypophysis. The hypothalamus (be) a region of the brain which (be) close to the pituitary gland. It (believe) that special hormones from the hypothalamus (control) secretory activities of the pituitary gland.

Appendix

Quiz 1

Answer the quiz questions in the spaces provided.

1. A chair has four of these. You have two. _____
2. People often get these pierced. _____
3. You have 32 of these and you use them to eat. _____
4. You use this part of the body to taste things. _____
5. It can be straight, curly or wavy. _____
6. Women often paint these. _____
7. This sends blood around your body. _____
8. Without them you can't breathe. _____
9. A belt usually goes around this. _____
10. You can put a watch on this part of the body. _____
11. These are usually brown, blue, green or hazel. _____
12. They are half way down your legs. _____
13. The part of your body where food is digested after you've eaten it. _____
14. There are five of these on each foot. _____
15. The part of your body with your hair, eyes, nose, mouth and ears on. _____
16. You put shoes on these. _____
17. You use this to talk, eat and smile. _____
18. People who lift weights and workout a lot have big ones. _____
19. You have one on your face. You use it to smell. _____
20. You can put a ring on this. _____
21. This helps your arm to bend. _____
22. You have one on each hand. They are short and fat. _____
23. This part of the body is between your eyebrows and hair. _____
24. You usually lie down on this. _____
25. This connects your head to your body. _____

Quiz 2

Kidney quiz

1.What is the role of your kidneys in your body?

a. They aid in digestion and help regulate metabolism.

b. They filter out waste and water from the blood.

c. They destroy old red blood cells.

2.What can cause kidney failure?

a. Diabetes b. High blood pressure

c. Autoimmune diseases d. All of the above

3. Is kidney failure preventable?

a. Yes b. No c. Sometimes

4.Who is at risk for chronic kidney disease or kidney failure?

a. People with diabetes or high blood pressure

b. People with heart disease

c. People over the age of 60

d. All of the above

5. Are there things a person can do to keep chronic kidney disease from getting worse?

a. Yes b. No c. Sometimes

6.Where are the kidneys located?

A. Near the armpits but in front of the heart

B. In the back, behind the lungs

C. In the front, above the stomach

D. In the back, just below the rib cage

7. How big are the kidneys?

A. About the size of your fist

B. About the size of a football

C. About the size of a kidney bean

D. About the size of your ears

8. Which of the following are primary functions of the kidneys?

A. To help clean blood

B. To support healthy bones and tissues

C. To help regulate blood pressure

D. All of the above

9. What happens if your kidneys fail?
A. You need to go on dialysis
B. You need a kidney transplant
C. Nothing, kidneys are like your tonsils or your appendix
D. Both A and B
10. Who are potential victims of kidney disease?
A. The old and feeble B. Babies
C. Anyone D. Women
11. What factors put a person at a higher risk for kidney disease?
A. Family history of kidney disease B. High blood pressure
C. Diabetes D. All of the above
12. How many liters of blood do the kidneys filter daily?
A. 10 B. 50 C. 200 D. 2
13. What can be done to keep the kidneys healthy?
A. Eat healthy B. Exercise
C. Watch your blood pressure D. All of the above

Quiz 3

Structures of The Brain Quiz
1. This structure controls thought, voluntary movement, language, reasoning and perception.
A. Cerebellum B. Cerebral cortex C. Cerebrum
2. This is a collection of axons that connect the right and left hemispheres of the brain.
A. Corpus callosum B. Cerebral hemisphere C. Corporal callosum
3. This part controls vision, hearing, eye movement and body movement.
A. Midsection B. Middle brain C. Midbrain
4. This structure controls movement, balance and posture.
A. Cerebrum B. Cerebellum C. Balanced brain
5. Part of the brain stem that controls breathing.
A. Medulla B. Midbrain C. Respiratory system
6. Deals with sensory processing and movement.
A. Thermometer B. Thalamus C. Center of the brain
7. This is part of the brain stem. It is between the medulla and the midbrain.
A. Pons B. Spinal cord C. Midsection
8. This structure extends from the base of the brain.
A. Medullus B. Spinal cord C. End of the brain

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