МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ

СЕВЕРО-КАВКАЗСКАЯ ГОСУДАРСТВЕННАЯ АКАДЕМИЯ

МЕДИЦИНСКИЙ ИНСТИТУТ

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ПРАКТИЧЕСКИЕ ТЕКСТЫ ДЛЯ БУДУЩИХ ВРАЧЕЙ

Учебно-методическое пособие для обучающихся по специальностям 31.05.01 «Лечебное дело», 31.05.02 «Педиатрия», 31.05.03 «Стоматология»

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Ч 75 **Чотчаева, И.А.** Практические тексты для будущих врачей: учебно-методическое пособие по английскому языку для студентов медицинских вузов для всех специальности / И. А. Чотчаева, А. А. Чомаева. – БИЦ СКГА, 2025. – 132 с.

Данное учебно-методическое пособие предназначено для студентов медицинского университета для всех специальностей и может быть использовано в качестве дополнительной учебно- методической литературы на занятиях по английскому языку.

Структура и содержание пособия ориентированы на взаимосвязанное решение коммуникативных, познавательных, развивающих и воспитательных задач и формирование у студентов-медиков профессиональной иноязычной коммуникативной компетенции.

В учебно-методическом пособии собраны и систематизированы тексты для чтения по английскому языку имеющие медицинскую направленность. Все тексты аутентичны, предназначены для развития основных видов речевой деятельности: чтения, письма, говорения.

Учебно-методическое пособие предназначен для преподавателей и студентов медицинских специальностей.

УДК 811.111
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СОДЕРЖАНИЕ

Введение

Данное учебно-методическое пособие предназначено для студентов медицинских вузов, продолжающих изучение английского языка. В основе пособия лежит принцип коммуникативной направленности и положения современной методики и психологии о взаимосвязанном и одновременном формировании рецептивных и продуктивных умений и навыков с учетом профессиональных потребностей будущих специалистов.

Основной целью учебно-методического пособия, в соответствии с новыми государственными образовательными стандартами и действующей рабочей программой по дисциплине, является формирование иноязычной коммуникативной компетенции специалиста-медика, позволяющей использовать иностранный язык как средство профессионального и межличностного общения, выработка умений и навыков, необходимых для использования английского языка как средства получения информации по специальности и профессионального общения.

Пособие помогает решать следующие задачи: 1) расширять словарный запас, развивать речевые навыки и умения в основных видах речевой деятельности в пределах изучаемой тематики для медицинской литературы; 2) активизировать познавательные и коммуникативные ресурсы личности; 3) формировать у студентов умения использовать английский язык как средство профессионального общения, получения информации и самообразования.

И так, основной задачей учебно-методического пособия является формирование у студентов умения использовать английский язык как средство профессионального общения и самообразования, что предполагает овладение, прежде всего, навыками извлечения и обработки информации из иноязычного источника (чтение, перевод, аннотирование и реферирование медицинской литературы), а также устными коммуникативными навыками, необходимыми для обсуждения медицинской проблематики с иностранными коллегами, т.е. научить студентов-медиков навыкам разговорной речи на основные общемедицинских тем.

Пособие предусматривает развитие у обучающихся навыков и умений чтения, аудирования и говорения на английском языке на материале текстов и лексики, типичных для медицинской литературы.

Языковой (лексический) материал учебно-методического пособия отобран на основе статистического исследования подъязыка медицины. Обучение чтению и переводу медицинских текстов. Текстовой материал содержит лексический минимум, специально отобранный с учетом принципа функциональной и профессиональной направленности. По замыслу авторов, текстовой материал методички должен обеспечить постепенный переход к чтению специальной литературы.

Тематика текстового материала соответствует требованиям программы и отражает содержание профессиональной подготовки студента-медика.

Структура

Структурной единицей курса является урок, включающий текст и лексику, состоящие:

– из активного словаря (глоссария) современной наиболее употребительной лексики, обязательной для усвоения;

– текста, который включает основную смысловую информацию урока и предназначен для развития навыков устной речи.

Рекомендуется использовать тексты преимущественно для самостоятельной работы студентов дома.

Данное учебно – методическое пособие позволяет преподавателю организовывать интенсивную, самостоятельную и творческую деятельность студентов, направленную на решение конкретных познавательных, профессионально важных проблем, побуждающих их к поиску и открытию новых знаний. Пособие реализует принципы личностно-ориентированного подхода в обучении с целью повышения качества подготовки специалиста в рамках изучения дисциплины «Английский язык».

Тексты также расширяют лексический материал по изучаемой теме и предназначен для развития навыков ознакомительного чтения с моментами поискового чтения, обычно предваряющего аннотирование текста. Отдельные абзацы могут быть использованы для обучения изучающему чтению.

При создании курса устной речи авторы руководствовались принципом коммуникативного подхода, направленного на развитие умения практически пользоваться реальным, «живым» языком и призванного обучать осознанному соотнесению языковых структур с их коммуникативными функциями в ситуациях общения, связанных с учебной и будущей профессиональной деятельностью студентов-медиков.

В результате изучения теоретического материала по темам данного раздела обучающиеся должны

знать:

 лексический минимум, необходимый для чтения и перевода профессионально ориентированных медицинских текстов;

 лексический минимум, необходимый для устного высказывания по текстам для будущих медиков.

уметь:

 применять знания изученного лексического материала для чтения и перевода, иноязычных профессионально ориентированных текстов по темам раздела;

 извлекать необходимые сведения из иноязычных источников информации, используя изученный лексический материал;

 употреблять изученный лексический минимум в устных высказываниях в различных ситуациях.

ЦЕЛИ:

Образовательные:

1. Знакомство с лексическим минимумом, необходимым для чтения и перевода профессионально-ориентированных текстов;
2. Активизация лексического материала по теме;
3. Развитие умения самостоятельно добывать и обрабатывать информацию;
4. Развитие внимания, памяти, культуры мышления.

Воспитательные:

1. Продолжить формирование чувства ответственности, милосердия и участия;
2. Показать значимость знаний, умений, навыков, получаемых в результате обучения;
3. Продолжить формирование уважения к людям, труду и трудовой деятельности;

Развивающие

1. Продолжить формирование положительных мотивов при изучении английского языка;
2. Научить планировать свою деятельность, осуществлять самоконтроль при выполнении заданий, перевода текстов;
3. Научить выделять главные мысли в тексте;
4. Научить грамотно и логично выражать свои мысли на иностранном и родном языках.

Text 1. History of medicine

Medicine is among the most ancient of human occupations. It began as an art and gradually developed into a science over the centuries. There are 3 main stages in medicine development: Medicine of Ancient Civilizations, Medicine of Middle Ages and Modern Medicine.

Early man, like the animals, was subject to illness and death. At that time medical actions were mostly a part of ceremonial rituals. The medicine-man practiced magic to help people who were ill or had a wound. New civilizations, which developed from early tribes, began to study the human body, its anatomic composition. Magic still played an important part in treating but new practical methods were also developing. The early Indians, e. g., set fractures and practiced aromatherapy. The Chinese were pioneers of immunization and acupuncture. The contribution of the Greeks in medicine was enormous. An early leader in Greek medicine was Aesculapius. His daughters, Hygeia and Panacea gave rise to dynasties of healers (curative medicine) and hygienists (preventive medicine). The division in curative and preventive medicine is true today. The ethical principles of a physician were summarized by another Greek, Hippocrates. They are known as Hippocrates Oath.

The next stage of Medicine's development was the Middle Ages. A very important achievement of that time was the hospital. The first ones appeared in the 15-th century in Oriental countries and later in Europe. Another advance of the Middle Ages was the foundation of universities during 13 – 14-th centuries. Among other disciplines students could study medicine. During 18-th century new discoveries were made in chemistry, anatomy, biology, others sciences. The advances of that time were invention of the stethoscope (by Rene Laennec), vaccination for smallpox, discovery of anesthetics and development of immunology and scientific surgery.

The next century is rise of bacteriology. Important discoveries were made by Louis Pasteur and Robert Koch. The development of scientific bacteriology made possible advances in surgery: using antiseptics and control of wound infection.

Medicine in the 20-th century made enormous contribution in the basic medical sciences. These are discovery of blood groups and vitamins, invention of insulin and penicillin, practice of plastic surgery and transplantation.

Words

1. medicine – медицина
2. human – человеческий
3. occupation – занятие
4. to develop – развивать
5. science – наука

6. civilization – цивилизация
7. Middle ages – Средние века
8. modern – современный
9. animal – животное
10. illness – заболевание
11. death – смерть
12. discovery – открытие
13. blood – кровь

Составьте шесть вопросов к тексту и отвечайте на них письменно.

Text 2. Doctor

A doctor is a medical professional who is trained to diagnose and treat illnesses and injuries. Doctors work in a variety of settings, including hospitals, clinics, and private practices, and they may specialize in a particular area of medicine, such as pediatrics, surgery, or internal medicine.

To become a doctor, an individual must study for a long time. After completing medical school, doctors must also complete a period of supervised training, known as a residency, in their chosen field of medicine.

Doctors are responsible for a wide range of duties, including conducting physical exams, ordering and interpreting diagnostic tests, prescribing medications, and treating illnesses and injuries.

They also play a vital role in educating patients about their health and providing guidance on how to maintain and improve their overall well-being.

Полезные слова:

1. to treat – лечить.
2. Illness – болезнь.
3. Injury – ранение.
4. Particular – конкретный.
5. Surgery – хирургия.
6. to supervise – контролировать.
7. Responsible – ответственный.
8. Range – список.
9. to conduct – проводить.
10. to prescribe – прописывать (о лекарствах).
11. Vital – ключевой.
12. to provide – снабжать.
13. Guidance – наблюдение.
14. to maintain – поддерживать.

Составьте шесть вопросов к тексту и отвечайте на них письменно.

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Text 3. Medicine

It is almost impossible to imagine the modern world without medicine. The word medicine is derived from Latin and means «the art of healing». Being an ancient science, medicine has always helped to cure people from dangerous diseases.

The main aim of medicine is not only to treat the illness, but also to diagnose and try to prevent it. Contemporary medicine is so advanced that doctors can foresee the health problems of a baby yet in the womb. It became possible thanks to modern technology.

The development of medicine started at ancient times, when animal parts, minerals and plants were used to cure people. It was the time of 'herbal medicine'. Some people still follow this type of treatment and find it effective. Middle Ages have introduced small hospitals attached to cathedrals or monasteries.

Modern medicine has brought various vaccines and antibiotics. There are also many branches and highly-qualified health professionals in modern medicine. If someone is allergic to some products or plants, he or she can see an allergist. If someone suffers from poor eyesight, he or she can address the ophthalmologist. If the problem is connected with teeth, people go to the dentist.

Nowadays, our country offers two kinds of medical service. There are state institutions which treat the local residents free of charge, and private clinics, where all services are paid and quite expensive. Speaking of my family, we usually try to go to a state clinic if someone gets ill but it's not always easy. You need to schedule an appointment in advance and be a resident of a region where you want to be treated.

Составьте пять вопросов к тексту.

Text 4. I want to be a doctor

Choosing a profession is one of the most important decisions one has to make. We spend at work a lot of hours in our life that is why it has to bring us happiness and satisfaction.

The profession of a doctor is one of the oldest professions in the world. This is a very demanding job which requires a lot of skills and knowledge. In my opinion, only those ones who truly want to help other people can become good doctors.

They do not just listen to the patient complaints. A doctor has to diagnose a case and prescribe the right treatment. And this cannot be done without an appropriate training and high level of professionalism.

I want to become a doctor because I have a strong desire to help people and make a positive impact in their lives. The satisfaction that comes from helping someone get better is immeasurable, and it is a feeling that I would like to experience on a regular basis.

Another factor that has influenced my decision to become a doctor is the stability that this profession provides. Healthcare is an essential service, and it will always be in demand. I am also interested in conducting research to advance the field of medicine and help find new treatments and cures for diseases.

Advantages and disadvantages.

There are both advantages and disadvantages in being a doctor. First of all, profession of a doctor is the one where you do not have weekends and holidays, where you have to work at nights and change your plans because of an emergency call. Another disadvantage is that sometimes you have to deal with fatal illnesses which can be very stressful.

However, advantages of this profession surpass its disadvantages. Everyone treats doctors with great respect. There are no limits for improvement in this profession and where there is a will, there is a way. And the last, but not the least is joy and gratitude of a recovered patient.

Составьте шесть вопросов к тексту и отвечайте на них письменно.

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Text 5. Role of medicine in our life.

The role of medicine has greatly increased, especially now when people are trying to look after their health. They undergo medical examinations on a regular basis and do not neglect any indisposition.

With the development of modern technologies new methods of treatment become available. And all that means that profession of a doctor will remain in high demand for many years to come.

I believe that everyone deserves access to quality medical services, regardless of their financial status.

I am confident that I have the skills to succeed as a doctor and provide the best possible care to my patients.

Becoming a doctor is not an easy path. But I am determined to succeed and I know that with hard work, dedication and passion, I can achieve my goal.

Составьте шесть вопросов к тексту и отвечайте на них письменно.

Передайте письменно содержание текста.

Text 6. My Future Profession Doctor

There are many interesting professions, doctor is one of them. It is a necessary and noble profession, that is why I want to be a doctor. To become a doctor, I need to read a lot of specialized literature and to study hard, especially in biology and chemistry. This profession requires great responsibility because doctors deal with the most precious things people have - their lives and their health. Doctors not only operate people and prescribe medicine, but they must also listen to their parents, check them up and sometimes make quick and important decisions. A doctor has to be a kind and attentive person, because if patients trust their doctor it is easier to work. Sometimes working day continues even after a doctor comes home from the hospital. Relatives, friends or neighbors often ask for medical advice, for example how to lower the kid's temperature. There are different types of doctors: cardiologists, gastroenterologists, pediatricians, traumatologists and many others.

In my opinion, being a doctor is highly noble and prestigious. People understand that you are trying to help them and their good attitude is the best pay. In fact, a doctor is one of the oldest professions in the world. It existed since the antiquity and the first renowned doctor was Hippocrates. That's why all doctors today should take the Hippocratic Oath before actual practice of medicine.

When it comes to the choice of appropriate medical branch I'm completely at a loss. I like almost all medical specialties and they are equally interesting for me. I could be a dentist, an oculist, a traumatologist, a surgeon, an obstetrician or simply a nurse. But most of all I like the profession of a physician, because it somehow combines all the knowledge about people's health. Physicians are people who know how to handle various problems and how to treat most diseases. That's why, I would go for this profession.

Words

1. an allergist – Аллерголог
2. a cardiologist – Кардиолог
3. a dentist – Дантист
4. a dermatologist – Дерматолог
5. a GP (general practitioner), a physician – врач общей практики, терапевт, семейный врач
6. a gynecologist (AmE) / a gynaecologist (BrE) – Гинеколог
7. a neurologist – Невропатолог
8. an ophthalmologist – Офтальмолог
9. an orthopedic doctor – врач-ортопед
10. a pediatrician – Педиатр
11. a surgeon – Хирург

Text 7. Cell

The cell is a smallest independent unit in the body containing all the essential properties of life. Many types of human cells can be grown in test tubes after being taken from the body. Cells which are functionally organized are often grouped together and operate in concert as a tissue, such as muscle tissue or nervous tissue. Various tissues may be arranged together to form a unit called organ as the kidney, liver, heart or lungs. Organs often function in groups called organ systems. Thus the esophagus, stomach, pan-creas, liver and intestines constitute the digestive system.

Cells are characterized by high degree of complexity and order in both structure and function. The cell contains a number.

Of structures called cell organelles. These are responsible for carrying out the specialized biochemical reactions characterizing each. The many chemical reactions taking place in a cell require the establishment of varied chemical microenvironment.

Carefully controlled transport mechanisms along with highly effective barriers – the cell membranes – ensure that chemicals are present in the proper region of the cell in appropriate concentration.

The cell membranes of a mixture of protein and lipid form its surroundings.

Membranes are an essential component of almost all cells organelles. The membrane allows only certain molecules to pass through it.

The most visible and essential organelle in a cell is the nucleus, containing genetic material and regulating the activities of the entire cell.

The area outside of the molecules is called the cytoplasm. Cytoplasm contains a variety of organelles that have different functions.

Words

1. cell – клетка
2. independent – независимый
3. unit – единица
4. body – тело
5. all – все
6. lipid – жир
7. microenvironment – микровооружение
8. muscle – мышечный
9. nervous – нервный
10. digestive – пищеварительный
11. life – жизнь
12. human – человеческий
13. together – вместе
14. tissue – ткань
15. organ systems – системы органов
16. to function – функционировать
17. to contain – содержать
18. membranes – мембраны

19. protein – протеин
20. nucleus – ядро
21. cytoplasm – цитоплазм
22. different – различный

Передайте содержание текста своими словами

Составьте шесть вопросов к тексту и отвечайте на них письменно.

Text 8. Tissue

A tissue is a group of cells working together to do a special job A histologist is one who specializes in the study of tissues. The cells, of which the tissues are made, contain from 60 to 99 % water. Chemical reactions that are necessary for proper body function are carried on much more readily in a water solution. The water solution and other materials in which the tissues are bathed is slightly salty. It must be mentioned that an insufficiency of tissues fluid is called dehydration and an abnormal accumulation of this fluid caused a condition called edema.

Tissue classification: The 4 main groups of tissues are:

1) epithelial tissue forms elands, covers surfaces and lines cavities;

2) connective tissue holds all parts of the body in Place. This can be fat, cartilage, bone or blood. Blood sometimes is considered a sort of tissue, since it contains cells and performs many of the functions of tissues. However; the blood has many other unique characteristics;

3) nerve tissue conducts nerve impulses all over the body;

4) the muscle tissue is designed for power-producing contractions.

The surface of the body and of the tubes or passages leading to the exterior and the surface of the various cavities in the body are lined by cells which are closely approximated to each other; thus have a small amount of intercellular substance. This lining cellular layer is called epithelium. The nature and consistency of intercellular substance, the matrix, and the amount and arrangement of fibers furnish the basis for the subdivision of connective tissue into three main groups: connective tissue proper, cartilage and bone In connective tissue the intercellular substance is soft; in cartilage it is firm, yet flexible and elastic; in bone it is rigid due to the deposition of calcium salt in the matrix. In multicellular organisms certain cells developed to a high degree the properties of irritability and conductivity. These cells form the nervous tissues.

The nervous system of higher animals is characterized by the multiplicity of cellular forms and intercellular connections and by the complexity of its functioning.

Muscle tissue is composed of elongated cells which have the power of contracting or reducing their length. This property of contraction is ultimately a molecular phenomenon and is due to the presence of protein molecules. The following three types of muscle tissue occur in the body.

Smooth muscle tissue is found in sheet or tubes forming the walls of many hollow or tubular organs, for example the bladder, the intestines of blood vessels. The cells forming this tissue are long spindles with a central oval nucleus.

Striated muscle tissue is composed of cylindrical fibres often of great at length in which separate cells cannot be distinguished. Many small nuclei are found in the fibres lie just under the surface. Cardiac muscle resembles striated muscle in its structure, but smooth one in its action.

Words

1. liquid – жидкость
2. epithelial – эпителиальный

3. layer – слой
4. body – тело
5. flexible – гибкий
6. elastic – эластичный
7. nucleus – ядро
8. smooth – гладкий
9. fibre – волокно
10. cardiac – сердечный

Составьте шесть вопросов к тексту и отвечайте на них письменно.

Передайте содержание текста

Text 9. Matter

Matter is anything that occupies space, possesses mass and can be perceived by our sense organs. It exists in nature in three, usually inter convertible physical states: solids, liquids and gases. For instance, ice, water and steam are respectively the solid, liquid and gaseous states of water. Things in the physical world are made up of a relatively small number of basic materials combined in various ways. The physical material of which everything that we can see or touch is made is matter. Matter exists in three different states: solid, liquid and gaseous. Human senses with the help of tools allow us to determine the properties of matter. Matter can undergo a variety of changes – physical and chemical, natural and controlled.

Chemistry and physics deal with the study of matter, its properties, changes and transformation with energy. There are two kinds of properties: physical – colour, taste, odour, density, hardness, solubility and ability to conduct electricity and heat; in solids the shape of their crystals is significant, freezing and boiling points of liquids.

Chemical properties are the changes in composition undergone by a substance when it is subjected to various conditions. The various changes may be physical and chemical. The physical properties are temporary. In a chemical change the composition of the substance is changed and new products are formed. Chemical properties are permanent.

It is useful to classify materials as solid, liquid or gas (though water, for example, exists as solid (ice), as liquid (water) and as gas (water vapour). The changes of state described by the terms solidify (freeze), liquefy (melt), vapourise (evaporate) and condense are examples of physical changes. After physical change there is still the same material. Water is water whether it is solid, liquid or gas. Also, there is still the same mass of material. It is usually easy to reverse a physical change.

Words

1. matter – материя
2. mass – масса
3. sense – чувство
4. organ – орган
5. steam – пар
6. to undergo – подвергать
7. variety – разнообразие
8. change – перемена
9. physical – физический
10. chemical – химический
11. natural – природный
12. transformation – трансформация
13. colour – цвет
14. taste – вкус
15. odour – запах
16. density – плотность

17. hardness – твердость
18. solubility – растворимость
19. ability – возможность
20. to conduct – проводить
21. permanent – постоянный

Передайте письменно содержание текста.
Составьте вопросы к тексту.

Text 10. Skeletal system

The components of the skeletal system are derived from mesenchymal elements that arise from mesoderm and neural crest. Mesenchymal cells differentiate into fibroblasts, chondroblasts, and osteoblasts, which produce connective tissue, cartilage, and bone tissue, respectively. Bone organs either develop directly in mesenchymal connective tissue (intramembranous ossification) or from preformed cartilage models (endochondral ossification) The splanchnic mesoderm gives rise to cardiac and smooth muscle.

The skeletal system develops from paraxial mesoderm. By the end of the fourth week, the sclerotome cells form embryonic connective tissue, known as mesenchyme. Mesenchyme cells migrate and differentiate to form fibroblasts, chondroblasts, or osteoblasts.

Bone organs are formed by two methods.

Flat bones are formed by a process known as intramembinous ossification, in which bones develop directly within mesenchyme.

Long bones are formed by a process known as endochondral ossification, in which mesenchymal cells give rise hyaline cartilage models that subsequently become ossified

Skull formation.

Neurocranium is divided into two portions: The membranous neurocranium consists of flat bones that surround the brain as a vault The bones appose one another at sutures and fontanelles, which allow overlap of bones during birth and remain membranous until adulthood.

The cartilaginous neurocranium (chondro-cranium) of the base of the skull is formed by fusion and ossification of number of separate cartilages along the median plate.

Viscerocranium arises primarily from the first two pharynge arches.

Appendicular system: The pectoral and pelvic girdles and the limbs comprise the appendicular system.

Except for the clavicle, most bones of the system are end chondral. The limbs begin as mesenchymal buds with an apical ectodermal ridge covering, which exerts an inductive influence over the mesenchyme.

Bone formation occurs by ossification of hyaline cartilage models. The cartilage that remains between the diaphysis and the epiphyses of a long bone is known as the epiphysial plate. It is the site of growth of long bones until they attain their final size and the epiphysial plate disappears.

Vertebral column.

During the fourth week, sclerotome cells migrate medially to surround the spinal cord and notochord. After proliferation of the caudal portion of the sclerotomes, the vertebrae are formed, each consisting of the caudal part of one sclerotome and cephalic part of the next.

While the notochord persists in the areas of the vertebral bod ies, it degenerates between them, forming the nucleus pulposus. The latter, together with surrounding circular fibers of the annulus fibrosis, forms the intervertebral disc.

Words

1. skeletal – скелетный
2. mesoderm – мезодерма
3. cartilage – хрящ
4. fibroblasts – фибробласты
5. chondroblasts – хондробласты
6. osteoblasts – остеобласты
7. paraxial – паракси альный
8. flat – плоский
9. bone – кость

Составьте пять вопросов к тексту.

Text 11. Muscular system

Skeletal (voluntary) system.

The dermomyotome further differentiates into the myotome and the dermatome.

Cells of the myotome migrate ventrally to surround the intraembryonic coelom and the somatic mesoderm of the ventrolateral body wall. These myoblasts elongate, become spindle-shaped, and fuse to form multinucleated muscle fibers.

Myofibrils appear in the cytoplasm, and, by the third month, cross-striations appear. Individual muscle fibers increase in diameter as myofibrils multiply and become arranged in groups surrounded by mesenchyme.

Individual muscles form, as well as tendons that connect muscle to bone.

Trunk musculature: By the end of the fifth week, body-wall musculature divides into a dorsal epimere, supplied by the dorsal primary ramus of the spinal nerve, and a ventral hypomere, supplied by the ventral primary ramus. Epimere muscles form the extensor muscles of the vertebral column, and hypomere muscles give rise to lateral and ventral flexor musculature. The hypomere splits into three layers. In the thorax, the three layers form the external costal, internal intercostal, and transverse thoracic muscle. In the abdomen, the three layers form the external oblique, internal oblique, and transverse abdominal muscles.

Head musculature.

The extrinsic and intrinsic muscles of the tongue are thought to be derived from occipital myotomes that migrate forward.

The extrinsic muscles of the eye may derive from preoptic myotomes that originally surround the prochordal plate.

The muscles of mastication, facial expression, the pharynx, and the larynx are derived from different pharyngeal arches and maintain their innervation by the nerve of the arch of origin.

Limb musculature originates in the seventh week from soma mesoderm that migrates into the limb bud. With time, the limb musculature splits into ventral flexor and dorsal extern groups. The limb is innervated by spinal nerves, which penetrate the limb bud mesodermal condensations. Segmental branches of the spinal nerves fuse to form large dorsal a ventral nerve.

The cutaneous innervation of the limbs is also derived from spinal nerves and reflects the level at which the limbs arise.

Smooth muscle: the smooth muscle coats of the gut, trachea, bronchi, and blood vessels of the associated mesenteries are derived from splanchnic mesoderm surrounding the gastrointestinal tract. Vessels elsewhere in the body obtain their coat from local mesenchyme.

Cardiac muscle, like smooth muscle, is derived from splanchnic mesoderm.

Words

1. ventral – брюшной
2. somatic – соматический
3. cytoplasm – цитоплазма
4. cross-striations – поперечные бороздчатости

5. extensor – разгибающая мышца
6. dorsal – спинной
7. vertebral – позвоночный
8. archer – дуга
9. abdomen – живот
10. facial – лицевой
11. branch – ветвь

Передайте кратко содержание текста.

Text 12. Skeleton

The bones of our body make up a skeleton. The skeleton forms about 18 % of the weight of the human body.

The skeleton of the trunk mainly consists of spinal column made of a number of bony segments called vertebrae to which the head, the thoracic cavity and the pelvic bones are connected. The spinal column consists of 26 spinal column bones.

The human vertebrae are divided into differentiated groups. The seven most superior of them are the vertebrae called the cervical vertebrae. The first cervical vertebra is the atlas. The second vertebra is called the axis.

Inferior to the cervical vertebrae are twelve thoracic vertebrae. There is one rib connected to each thoracic vertebra, making 12 pairs of ribs. Most of the rib pairs come together ventrally and join a flat bone called the sternum.

The first pairs or ribs are short. All seven pairs join the sternum directly and are sometimes called the «true ribs». Pairs 8, 9, 10 are «false ribs». The eleventh and twelfth pairs of ribs are the «floating ribs».

Inferior to the thoracic vertebrae are five lumbar vertebrae. The lumbar vertebrae are the largest and the heaviest of the spinal column. Inferior to the lumbar vertebrae are five sacral vertebrae forming a strong bone in adults. The most inferior group of vertebrae are four small vertebrae forming together the coccyx.

The vertebral column is not made up of bone alone. It also has cartilages.

Words

1. skeleton – скелет
2. make up – составлять
3. weight – вес
4. trunk – туловище
5. vertebrae – позвоночник
6. thoracic cavity – грудная клетка
7. pelvic – тазовый
8. cervical – шейный
9. atlas – 1 шейный позвонок
10. sternum – грудина
11. mainly – главным образом
12. axis – ось
13. spinal column – позвоночник
14. inferior – нижний
15. rib – ребро
16. pair – пара
17. sacral – сакральный
18. coccyx – копчик
19. floating – плавающий
20. forming – формирующий
21. cartilage – хрящ
22. lumbar – поясничный
23. adult – взрослый

Text 13. Muscles

Muscles are the active part of the motor apparatus; their contraction produces various movements.

The muscles may be divided from a physiological standpoint into two classes: the voluntary muscles, which are under the control of the will, and the involuntary muscles, which are not.

All muscular tissues are controlled by the nervous system.

When muscular tissue is examined under the microscope, it is seen to be made up of small, elongated threadlike cells, which arc called muscle fibres, and which are bound into bundles by connective tissue.

There are three varieties of muscle fibres:

1) striated muscle fibres, which occur in voluntary muscles;

2) unstriated muscles which bring about movements in the internal organs;

3) cardiac or heart fibres, which are striated like (1), but are otherwise different.

Muscle consists of threads, or muscle fibers, supported by connective tissue, which act by fiber contraction. There are two types of muscles smooth and striated. Smooth, muscles are found in the walls of all the hollow organs and tubes of the body, such as blood vessels and intestines. These react slowly to stimuli from the autonomic nervous system. The striated, muscles of the body mostly attach to the bones and move the skeleton. Under the microscope their fibres have a cross – striped appearance. Striated muscle is capable of fast contractions. The heart wall is made up of special type of striated muscle fibres called cardiac muscle. The body is composed of about 600 skeletal muscles. In the adult about 35–40 % of the body weight is formed by the muscles. According to the basic part of the skeleton all the muscles are divided into the muscles of the trunk, head and extremities.

According to the form all the muscles are traditionally divided into three basic groups: long, short and wide muscles. Long muscles compose the free parts of the extremities. The wide muscles form the walls of the body cavities. Some short muscles, of which stapedius is the smallest muscle in the human body, form facial musculature.

Some muscles are called according to the structure of their fibres, for example radiated muscles; others according to their uses, for example extensors or according to their directions, for example, – oblique.

Great research work was carried out by many scientists to determine the functions of the muscles. Their work helped to establish that the muscles were the active agents of motion and contraction.

Words

1. muscles – мышцы
2. active – активный
3. motor apparatus – двигательный аппарат
4. various – различный
5. movement – движение
6. elongated – удлиненный

7. threadlike – нитевидный
8. be bound – быть связанным
9. ability – возможность
10. capable – способность
11. scientist – ученый
12. basic – основной

Составьте вопросы к тексту и отвечайте на них письменно.

Text 14. Bones

Bone is the type of connective tissue that forms the body s supporting framework, the skeleton. Serve to protect the internal organs from injury. The bone marrow inside the bones is the body's major producer of both red and white blood cells.

The bones of women are generally lighter than those of men, while children's bones are more resilient than those of adults Bones also respond to certain physical physiological changes: atrophy, or waste away.

Bones are generally classified in two ways. When classified on the basis of their shape, they fall into four categories: flat bones, such as the ribs; long bones, such as the thigh bone; short bones, such as the wrist bones; and irregular bones, such as the vertebrae. When classified on the basis of how they develop, bones are divided into two groups: endochondral bones and intramembraneous bones. Endochondral bones, such as the long bones and the bones at the base of the skull, develop from cartilage tissue Intramembranous bones, such as the flat bones of the roof of the skull, are not formed from cartilage but develop under or within a connective tissue membrane. Although endochondral bones and intramembranous bones form in different ways, they have the same structure.

The formation of bone tissue (ossification) begins early in embryological development. The bones reach their full size when the person is about 25.

Most adult bone is composed of two types of tissue: an outer layer of compact bone and an inner layer of spongy bone. Compact bone is strong and dense. Spongy bone is light and porous and contains bone marrow The amount of each type of tissue varies in different bones. The flat bones of the skull consist almost entirely of compact bone, with very little spongy tissue. In a long bone, such as the thigh bone, the shaft, called the diaphysis, is made up largely of compact bone. While the ends, called epyphyses, consist mostly of spongy bone. In a long bone, marrow is also present inside the shaft, in a cavity called the medullary cavity.

Surrounding every bone, except at the surface where it meets another bone, is a fibrous membrane called the periosteum. The outer layer of the periosteum consists of a network of densely packed collagen fibres and blood vessels. This layer serves for the attachment of tendons, ligaments, and muscles to the bone and is also important in bone repair.

The inner layer of the periosteum has many fibres, called fibres of Sharpey, which penetrate the bone tissue, anchoring the periosteum to the bone. The inner layer also has many bone-forming cells, or osteoblasts, which are responsible for the bone's growth in diameter and the production of new bone tissue in cases of fracture, infection.

In addition to the periosteum, all bones have another membrane, the endosteum. It lines the marrow cavity as well as the smaller cavities within the bone. This membrane, like the inner layer of the periosteum, contains osteoblasts, and is important in the formation of new bone tissue.

Text 15. The Skull

The cranium (skull) is the skeletal structure of the head that supports the face and protects the brain. It is subdivided into the facial bones and the brain case, or cranial vault (Figure 1). The facial bones underlie the facial structures, form the nasal cavity, enclose the eyeballs, and support the teeth of the upper and lower jaws. The rounded brain case surrounds and protects the brain and houses the middle and inner ear structures.

In the adult, the skull consists of 22 individual bones, 21 of which are immobile and united into a single unit. The 22nd bone is the mandible (lower jaw), which is the only moveable bone of the skull.

DISORDERS OF THE SKELETAL SYSTEM

Head and traumatic brain injuries are major causes of immediate death and disability, with bleeding and infections as possible additional complications. According to the Centers for Disease Control and Prevention (2010), approximately 30 percent of all injury-related deaths in the United States are caused by head injuries. The majority of head injuries involve falls. They are most common among young children (ages 0–4 years), adolescents (15–19 years), and the elderly (over 65 years). Additional causes vary, but prominent among these are automobile and motorcycle accidents.

Strong blows to the brain-case portion of the skull can produce fractures. These may result in bleeding inside the skull with subsequent injury to the brain. The most common is a linear skull fracture, in which fracture lines radiate from the point of impact. Other fracture types include a comminuted fracture, in which the bone is broken into several pieces at the point of impact, or a depressed fracture, in which the fractured bone is pushed inward. In a countercoup (counterblow) fracture, the bone at the point of impact is not broken, but instead a fracture occurs on the opposite side of the skull. Fractures of the occipital bone at the base of the skull can occur in this manner, producing a basilar fracture that can damage the artery that passes through the carotid canal.

A blow to the lateral side of the head may fracture the bones of the pterion. The pterion is an important clinical landmark because located immediately deep to it on the inside of the skull is a major branch of an artery that supplies the skull and covering layers of the brain. A strong blow to this region can fracture the bones around the pterion. If the underlying artery is damaged, bleeding can cause the formation of a hematoma (collection of blood) between the brain and interior of the skull. As blood accumulates, it will put pressure on the brain. Symptoms associated with a hematoma may not be apparent immediately following the injury, but if untreated, blood accumulation will exert increasing pressure on the brain and can result in death within a few hours.

LEARNING OBJECTIVES

- List and identify the bones of the brain case and face
- Locate the major suture lines of the skull and name the bones associated with each

- Locate and define the boundaries of the anterior, middle, and posterior cranial fossae, the temporal fossa, and infratemporal fossa
- Define the paranasal sinuses and identify the location of each
- Name the bones that make up the walls of the orbit and identify the openings associated with the orbit
- Identify the bones and structures that form the nasal septum and nasal conchae, and locate the hyoid bone
- Identify the bony openings of the skull

Words

1. brain – мозг
2. frontal – лобная
3. parietal – теменная
4. temporal – височная
5. occipital – затылочная
6. ethmoid – решетчатая
7. maxilla – верхняя челюсть
8. zygomatic – скуловой
9. mandible – нижняя челюсть
10. sphenoid – клиновидная
11. vomer – сошник
12. lacrimal – слезная
13. palatine – небная
14. nasal concha – носовая раковина

Передайте письменно содержание текста.

Text 16. Blood. Formed elements of the blood. Erythrocytes and platelets

Blood is considered a modified type of connective tissue Mesodermal is composed of cells and cell fragments (erythrocytes, leukocytes, platelets), fibrous proteins (fibrinogen), and an extracellular fluid and proteins (plasma). It also contains cellular elements of the immune system as well as humoral factors

The formed elements of the blood include erythrocytes, leukocytes, and platelets.

Erythrocytes, or red blood cells, are important in trans porting oxygen from the lungs to tissues and in returning carbon dioxide to the lungs. Oxygen and carbon dioxide carried in the RBC combine with hemoglobin to form oxyhemoglobin and carbanion hemoglobin, respectively.

Mature erythrocytes are DE nucleated, biconcave disks with a diameter of 7–8 mm. The biconcave shape results in a 20–30 % increase in sur face area compared to a sphere.

Erythrocytes have a very large surface area: volume ratio that allows for efficient gas transfer. Erythrocyte membranes are remarkably pliable, enabling the cells to squeeze through the narrowest capillaries in sickle cell anemia, this plasticity is lost, and the subsequent clogging of capillaries leads to sickle crisis. The normal concentration of erythrocytes in blood is 3,5–5,5 million/mm^3 in women and 4,3–5,9 million/mm^3in men. The packed volume of blood cells per total volume of known as the hematocrit. Normal hematocrit values are 46 % for women and 41–53 % for men.

When aging RBCs develop subtle changes, macrophages in the bone marrow, spleen, and liver engulf and digest them. The iron is carried by transferring in the blood to certain tissues, where it combines with Apo ferritin to form ferritin. The heme is catabolized into believer din, which is converted to bilirubin. The latter is secreted with bile salts.

Platelets (thromboplastins) are 2–3 mm in diameter.

They are a nuclear, membrane-bound cellular fragments derived by cytoplasmic fragmentation of giant cells, called megakaryocytes, in the bone marrow.

They have a short life span of approximately 10 days.

There are normally 150 000–400 000 platelets per mm3 of blood. Ultra structurally, platelets contain two portions: a peripheral, light-staining hyalomere that sends out fine cytoplasmic processes, and a central, dark-staining granulomere that con tains mitochondria, vacuoles, glycogen granules, and granules. Platelets seal minute breaks in blood vessels and maintain endothelial integrity by adhering to the damaged vessel in a process known as platelet aggregation. Platelets are able to form a plug at the rupture site of a vessel because their mem brane permits them to agglutinate and adhere to surfaces.

Platelets aggregate to set up the cascade of enzymatic reactions that convert fibrinogen into the fibrin fibers that make up the clot.

Words

1. mesodermal – мезотермальный

2. erythrocytes – эритроциты
3. platelets – тромбоциты
4. carbon – углерод
5. dioxid – диоксид
6. span – промежуток
7. light-staining – легкое окрашивание
8. to aggregate – соединяться

Передайте письменно содержание текста.

Text 17. Blood. Formed elements of the blood. Leukocytes

Leukocytes, or white blood cells, are primarily with the cellular and humoral defense of the organism foreign materials. Leukocytes are classified as granulocytes (neutrophils, eosinophils, basophils) and granulocytes (lympmonocytes).

Granulocytes are named according to the staining properties of their specific granules. Neutrophils are 10–16 mm in diameter.

They have 3–5 nuclear lobes and contain azurophilic granules (lysosomes), which contain hydrolytic enzymes for bacterial destruction, in their cytoplasm. Neutrophils are phagocytes that are drawn (chemotaxis) to bacterial chemoattractant. They are the primary cells involved in the acute inflammatory response and represent 54–62 % of leukocytes.

Eosinophils: they have a bilobed nucleus and possess acid granulations in their cytoplasm. These granules contain hydrolytic enzymes and peroxidase, which a discharged into phagocytic vacuoles.

Eosinophils are more numerous in the blood during allergic diseases; they norma ascent only – 3 % of leukocytes.

Basophils: they possess large spheroid granules, which are basophilic and metachromatic

Basophils degranulate in certain immune reaction, releasing heparin and histamine into their surroundings They also release additional vasoactive amines and slow reacting substance of anaphylaxis (SRS-A) consisting of leukotrienes LTC4, LTD4, and LTE4. They represent less than 1 % – of leukocytes

A granulocytes are named according to their lack of specific granules. Lymphocytes are generally small cells measuring 7 – 10 mm in diameter and constitute 25–33 % of, leukocytes. They contain circular dark-stained nuclei and scanty clear blue cytoplasm. Circulating lymphocytes enter the blood from the lymphatic tissues. Two principal types of immunocompetent lymphocytes can be identified T lymphocytes and B lymphocytes.

T cells differentiate in the thymus and then circulate in the peripheral blood, where they are the principal effectors of cell-mediated immunity. They also function as helper and suppressor cells, by modulating the immune response through their effect on B cells, plasma cells, macrophages, and other T Cells.

B cells differentiate in bone marrow. Once activated by contact with an antigen, they differentiate into plasma cells, which synthesize antibodies that are secreted into the blood, intercellular fluid, and lymph. B lymphocytes also give rise to memory cells, which differentiate into plasma cells only after the second exposure to the antigen. Monocytes vary in diameter from 15–18 mm and are the largest of the peripheral blood cells. They constitute 3–7 % of leukocytes.

Monocytes possess an eccentric nucleus. The cytoplasm has a ground-glass appearance and fine azurophilic granules.

Monocytes are the precursors for members of the mononuclear phagocyte system, including tissue macrophages (histiocytes), osteoclasts, alveolar macrophages, and Kupffer cells of the liver.

Words

1. mesodermal – мезодермальный
2. erythrocytes – эритроциты
3. leukocytes – лейкоциты
4. fibrous proteins – волокнистые белки
5. immune – иммунный
6. humoral – гуморальный
7. to contain – содержать
8. nuclei – ядра

Составьте пять вопросов к тексту и отвечайте на них письменно.

Text 18. Plasma

Plasma is the extracellular component of blood. It is an aqueous solution containing proteins, inorganic salts, and organic com pounds Albumin is the major plasma protein that maintains the osmotic pressure of blood. Other plasma proteins include the globulins (alpha, beta, gamma) and fibrinogen, which is necessary for the formation of fibrin in the final step of blood coagulation Plasma is in equilibrium with tissue interstitial fluid through capillary walls; therefore, the composition of plasma may be used to judge the mean composition of the extracellular fluids Large blood proteins remain in the intravascular compartment and do not equilibrate with the interstitial fluid Serum is a clear yellow fluid that is separated from the coagulum during the process of blood clot formation. It has the same com position as plasma, but lacks the clotting factors (especially fibrinogen).

Lymphatic vessels

Lymphatic vessels consist of a, fine network of thin-walled vessels that drain into progressively larger and progressively thicker-walled collecting trunks. These ultimately drain, via the thoracic duct and right lymphatic duct, into the left and right subclavian veins at their angles of junction with the internal jugular veins, respectively. The lymphatics serve as a one-way (i. e., toward the heart) drainage system for the return of tissue fluid and other diffusible substances, including plasma proteins, which constantly escape from the blood through capillaries. They are also important in serving as a conduit for channeling lymphocytes and antibodies produced in lymph nodes into the blood circulation.

Lymphatic capillaries consist of vessels lined with endothelial cells, which begin as blind-ended tubules or saccules in most tis sues of the body Endothelium is attenuated and usually lacks a continuous basal lamina. Lymphatic vessels of large diameter resemble veins in their structure but lack a clear-cut separation between layers. Valves are more numerous in lymphatic vessels. Smooth muscle cells in the media layer engage in rhythmic contraction, pumping lymph toward the venous system. Smooth muscle is well-developed in large lymphatic ducts.

Circulation of lymph is slower than that of blood, but it is nonetheless an essential process. It has been estimated that in a single day, 50 % or more of the total circulating protein leaves the blood circulation at the capillary level and is recaptured by the lymphatics.

Distribution of lymphatics is ubiquitous with some notable exceptions, including epithelium, cartilage, bone, central nervous system, and thymus.

Words

1. plasma – плазма
2. extracellular – внеклеточный
3. aqueous – водный
4. solution – раствор
5. proteins – белки
6. inorganic – неорганический
7. salts – соли

8. organic – органический
9. albumin – альбумин
10. globulins – глобулины
11. alpha – альфа
12. beta – бета
13. gamma – гамма
14. fibrinogen – фибриноген
15. lymphatic – лимфатический
16. vessel – сосуд
17. endothelium – эндотелий
18. circulation – кровообращение
19. lymph – лимфа
20. ubiquitous – вездесущий
21. notable – известный

Составьте шесть вопросов к тексту и отвечайте на них письменно.

Text 19. Hematopoietic tissue. Erythropoiesis

Hematopoietic tissue is composed of reticular fibers and cells, blood vessels, and sinusoids (thin-walled blood channels). Myeloid, or blood cell-forming tissue, is found in the bone marrow and provides the stem cells that develop into erythrocytes, granulocytes, agranulocytes, and platelets. Red marrow is characterized by active hematopoiesis; yellow bone marrow is inactive and contains mostly fat cells. In the human adult, hematopoiesis takes place in the mar row of the flat bones of the skull, ribs and sternum, the vertebral column, the pelvis, and the proximal ends of some long bones. Erythropoiesis is the process of RBC formation. Bone marrow stem cells (colony-forming units, CFUs) differentiate into proerythroblasts under the influence of the glycoprotein erythropoietin, which is produced by the kidney.

Proerythroblast is a large basophilic cell containing a large spherical euchromatic nucleus with prominent nucleoli.

Basophilic erythroblast is a strongly basophilic cell with nucleus that comprises approximately 75 % of its mass. Numerous cytoplasmic polyribosomes, condensed chromatin, no visible nucleoli, and continued hemoglobin synthesis characteristics of this cell.

Polychromatophilic erythroblast is the last cell in this line undergoes mitotic divisions. Its nucleus comprises approximately 50 % of its mass and contains condensed chromatin which appears in a «checkerboard» pattern. The polychnsia of the cytoplasm is due to the increased quantity of acidophilic hemoglobin combined with the basophilia of cytoplasmic polyribosomes.

Normoblast (orthochromatophilic erythroblast) is a cell with a small heterochromatic nucleus that comprises approximately 25 % of its mass. It contains acidophilic cytoplasm because the large amount of hemoglobin and degenerating organelles. The pyknotic nucleus, which is no longer capable of division, is extruded from the cell.

Reticulocyte (polychromatophilic erythrocyte) is an immature acidophilic denucleated RBC, which still contains some ribosomes and mitochondria involved in the synthesis of a small quantity of hemoglobin. Approximately 1 % of the circulating RBCs are reticulocytes.

Erythrocyte is the mature acidophilic and denucleated RBC. Erythrocytes remain in the circulation approximately 120 days and are then recycled by the spleen, liver, and bone marrow.

Words

1. reticular – сетчатый
2. sinusoids – синусоиды
3. granulocytes – гранулоциты
4. agranulocytes – агранулоциты
5. active – активный
6. yellow – желтый
7. glycoprotein – гликопротеин

8. erythropoietin – эритропоэтин
9. amount – количество
10. hemoglobin – гемоглобин
11. degenerating – дегенерирующие
12. condensed – сжатый

Передайте кратко содержание текста.

Text 20. Hematopoietic tissue. Granulopoiesis, thrombopoiesis

Granulopoiesis is the process of granulocyte formation. Bone marrow stem cells differentiate into all three types of granulocytes.

Myeloblast is a cell that has a large spherical nucleus containing delicate euchromatin and several nucleoli. It has a basophilic cytoplasm and no granules. Myeloblasts divide differentiate to form smaller promyelocytes.

Promyelocyte is a cell that contains a large spherical indented nucleus with coarse condensed chromatin. The cytoplasm is basophilic and contains peripheral azurophi-lic granules.

Myelocyte is the last cell in this series capable of division. The nucleus becomes increasingly heterochromatic with subsequent divisions. Specific granules arise from the Golgi apparatus, resulting in neutrophilic, eosinophilic, and basophilic myelocytes.

Metamyelocyte is a cell whose indented nucleus exhibits lobe formation that is characteristic of the neutrophil, eosinophil, or basophil. The cytoplasm contains azurophilic granules and increasing numbers of specific granules. This cell does not divide. Granulocytes are the definitive cells that enter the blood. Neutrophilic granulocytes exhibit an intermediate stage called the band neutrophil. This is the first cell of this series to appear in the peripheral blood. It has a nucleus shaped like a curved rod or band.

Bands normally constitute 0,5–2 % of peripheral WBCs; they subsequently mature into definitive neutrophils.

Agranulopoiesis is the process of lymphocyte and monocyte for mation. Lymphocytes develop from bone marrow stem cells (lymphoblasts). Cells develop in bone marrow and seed the secondary lymphoid organs (e. g., tonsils, lymph nodes, spleen). Stem cells for T cells come from bone marrow, develop in the thymus and, subsequently, seed the secondary lym phoid organs.

Promonocytes differentiate from bone marrow stem cells (monoblasts) and multiply to give rise to monocytes.

Monocytes spend only a short period of time in the marrow before being released into the bloodstream.

Monocytes are transported in the blood but are also found in connective tissues, body cavities and organs.

Outside the blood vessel wall, they are transformed into macrophages of the mononuclear phagocyte system.

Thrombopoiesis, or the formation of platelets, occurs in the red bone marrow.

Megakaryoblast is a large basophilic cell that contains a U-shaped or ovoid nucleus with prominent nucleoli. It is the last cell that undergoes mitosis.

Megakaryocytes are the largest of bone marrow cells, with diameters of 50 mm or greater. They undergo 4–5 nuclear divisions without concomitant cytoplasmic division. As a result, the megakaryocyte is a cell with polylobulated, polyploid nucleus and abundant granules in its cytoplasm. As megakaryocyte maturation proceeds, «curtains» of platelet demarcation vesicles form in the

cytoplasm. These vesicles coalesce, become tubular, and eventually form platelet demarcation membranes. These membranes fuse to give rise to the membranes of the platelets.

A single megakaryocyte can shed (i. e., produce) up to 3,500 platelets.

Words

1. capable – способный
2. spherical – сферический
3. indented – зазубренный
4. chromatin – хроматин

Составьте вопросы к тексту.

Text 21. Arteries

Arteries are classified according to their size, the appearance of their tunica media, or their major function.

Large elastic conducting arteries include the aorta and its large branches. Unstained, they appear yellow due to their high con tent of elastin.

The tunica intima is composed of endothelium and a thin subjacent connective tissue layer. An internal elastic membrane marks the boundary between the intima and media.

The tunica media is extremely thick in large arteries and consists of circularly organized, fenestrated sheets of elastic tissue with interspersed smooth muscle cells. These cells are responsible for producing elastin and other extracellular matrix components. The outermost elastin sheet is considered as the external elastic membrane, which marks the boundary between the media and the tunica adventitia.

The tunica adventitia is a longitudinally oriented collection of collagenous bundles and delicate elastic fibers with associated fibroblasts. Large blood vessels have their own blood supply (vasa vasorum), which consists of small vessels that branch profusely in the walls of larger arteries and veins. Muscular distributing arteries are medium-sized vessels that are characterized by their predominance of circularly arranged smooth muscle cells in the media interspersed with a few elastin components. Up to 40 layers of smooth muscle may occur. Both internal and external elastic limiting membranes are clearly demonstrated. The intima is thinner than that of the large arteries.

Arterioles are the smallest components of the arterial tree. Generally, any artery less than 0,5 mm in diameter is considered to be a small artery or arteriole. A subendothelial layer and the internale lastic membrane may be present in the largest of these vessels but are absent in the smaller ones. The media is composed of several smooth muscle cell layers, and the adventitia is poorly developed. An external elastic membrane is absent.

Words

1. endothelium – эндотелий
2. media – средняя
3. arteries – артерии
4. to be classified – классифицированный
5. according – соответственно
6. size – размер
7. appearance – вид
8. tunica – оболочка
9. major – главный
10. elastic – эластичный
11. conducting – проведение
12. arteries – артерии
13. to include – включать

14. aorta – аорта
15. branches – ветви
16. up to – до
17. layers – слои
18. smooth – гладкий
19. may – может
20. infima – внутренняя полость артерии

Передайте письменно содержание текста.

Text 22. Capillaries

Capillaries are thin-walled, narrow-diameter, low-pressure vessels that generally permit easy diffusion across their walls. Most capillaries have a cross-sectional diameter of 7 – 12 mm. They are composed of a simple layer of endothelium, which is the lining of the entire vascular system, and an underlying basal lamina. They are attached to the surrounding tissues by a delicate reticulum of collagen. Associated with these vessels at various points along their length are specialized cells called peristyles. These cells, enclosed within their own basal lamina, which is continuous with that of the endothelium, contain contractile proteins and thus may be involved in the control of capillary dynamics. They may also serve as stem cells at times of vascular repair. Capillaries are generally divided into three types, according to the structure of their endothelial cell walls

Continuous (muscular, somatic) capillaries are formed by a single uninterrupted layer of endothelial cells rolled up into the shape of a tube and can be found in

locations such as connective tissue, muscle, and nerve

Fenestrated (visceral) capillaries are characterized by the presence of pores in the endothelial cell wall. The pores are covered by a thin diaphragm (except in the glomeruli of the kidney) and are usually encountered in tissues where rapid substance interchange occurs (e. g., kidney, intestine, endocrine glands)

Sinusoidal capillaries can be found in the liver, hematopoietic and lymphopoietic organs, and in certain endocrine glands. These tubes with discontinuous endothelial walls have a larger diameter than other capillaries (up to 40 mm), exhibit irregular cross-sectional profiles, have more tortuous paths, and often lack a continuous basal lamina. Cells with phagocytic activity (macrophages) are present within, or just subjacent to, the endothelium.

Words

1. capillaries – капилляры
2. to thin-walled – окруженный тонкой стеной
3. narrow-diameter – узкий диаметр
4. low-pressure – низкое давление
5. generally – главным образом
6. permit – разрешение
7. diffusion – распространение
8. cross-sectional – поперечный
9. to be composed – быть сложным
10. simple – простой
11. endothelium – эндотелий
12. lining – выравнивание
13. entire – весь
14. vas cular – сосудистый
15. underlying – лежащий в основе
16. basal – основной
17. lamina – тонкая пластинка

Передайте письменно содержание текста.

Text 23. Veins

Veins are low-pressure vessels that have larger Lumina and thinner walls than arteries. In general, veins have more collagenous connective tissue and less muscle and elastic tissue than their arterial counterparts. Although the walls of veins usually exhibit the three layers, they are much less distinct than those of the arteries. Unlike arteries, veins contain one-way valves composed of extensions of the intima that prevent reflux of blood away from the heart. Veins can be divided into small veins or venules, medium veins, and large veins.

Venules are the smallest veins, ranging in diameter from approximately 15–20 mm (post-capillary venules) up to 1–2 mm (small veins). The walls of the smaller of these are structurally and functionally like those of the capillaries; they consist of an endothelium surrounded by delicate collagen fibers and some pericytes. In those vessels of increased diameter, circularly arranged smooth muscle cells occur surrounding the intima layer, but unlike in the small arteries, these cells are loosely woven and widely spaced. Venules are important in inflammation because their endothelial cells are sensitive to histamine released by local mast cells. This causes endothelial cells to contract and separate from each other, exposing a naked basement membrane. Neutrophils stick to the exposed collagen and extravasate (i. e., move out into the connective tissue). Histamine also causes local arterioles to relax, affecting a rise in venous pressure and increased leaking of fluid. This produces the classic signs of inflammation: redness, heat, and swelling.

Medium veins in the range of 1–9 mm in diameter have a well – developed intima, a media consisting of connective tissue and loosely organized smooth muscle, and an adventitia (usually the thickest layer) composed of collagen bundles, elastic fibers, and smooth muscle cells oriented along the longitudinal axis of the vessel. Venous valves are sheet-like outfoldings of endothelium and underlying connective tissue that form flaps to permit unidirectional flow of blood.

Large veins, such as the external iliac, hepatic portal, and vena cavae, are the major conduits of return toward the heart. The intima is similar to that of medium veins. Although a network of elastic fibers may occur at the boundary between the intima and media, a typical internal elastic membrane as seen in arteries is not present. A tunica media may or may not be present. If pre sent, smooth muscle cells are most often circularly arranged. The adventitia is the thickest layer of the wall and consists of elastic fibers and longitudinal bundles of collagen. In the vena cava, this layer also contains well-developed bundles of longitudinally oriented smooth muscle.

Words

1. vein – вена
2. low-pressure – низкое давление
3. collagenous – коллагеновый
4. intima – интима
5. reflux – рефлюкс

6. inflammation – воспаление
7. longitudinal – продольный
8. flaps – створки
9. iliac – подвздошный
10. hepatic – печеночный

Передайте письменно содержание текста.

Text 24. Heart

Intrapulmonary bronchi: the primary bronchi give rise to three main branches in the right lung and two branches in the left lung, each of which supply a pulmonary lobe. These lobar bronchi divide repeatedly to give rise to bronchioles.

Mucosa consists of the typical respiratory epithelium.

Submucosa consists of elastic tissue with fewer mixed glands than seen in the trachea.

Anastomosing cartilage plates replace the C-shaped rings found in the trachea and extra pulmonary portions of the primary bronchi.

Bronchioles do not possess cartilage, glands, or lymphatic nodules; however, they contain the highest proportion of smooth r muscle in the bronchial tree. Bronchioles branch up to 12 times to supply lobules 2n the lung.

Bronchioles are lined by ciliated, simple, columnar epithelium with conciliated bronchiolar cells. The musculature of the bronchi and bronchioles contracts following stimulation by parasympathetic fibers (vagus nerve) and relaxes in response to sympathetic fibers. Terminal bronchioles consist of low-ciliated epithelium with bronchiolar cells.

The costal surface is a large convex area related to the inner surface of the ribs.

The mediastinal surface is a concave medial surface, contains the root, or hilus, of the lung.

The diaphragmatic surface (base) is related to the convex sur face of the diaphragm. The apex (cupola) protrudes into the root of the neck.

The hilus is the point of attachment for the root of the lung. It contains the bronchi, pulmonary and bronchial vessels, lymphatics, and nerves. Lobes and fissures ventricular con traction (systole). Semilunar valves (aortic and pulmonic) prevent reflux of blood back into the ventricles during ventricular relaxation (diastole). Impulse conducting system of the heart consists of specialized cardiac myocytes that are characterized by auto-maticity and rhythmicity (i. e., they are independent of nervous stimulation and possess the ability to initiate heart beats). These specialized cells are located in the sinoatrial (SA) node (pacemaker), intern-odal tracts, atrioventricular (AV) node, AV bundle (of His), left and right bundle branches, and numerous smaller branches to the left and right ventricular walls. Impulse conducting myocytes are in electrical contact with each other and with normal contractile myocytes via communicating (gap) junctions. Specialized wide-diameter impulse conducting cells (Purkinje myocytes), with greatly reduced myofilament components, are well-adapted to increase conduction velocity. They rapidly deliver the wave of depolarization to ventricular myocytes.

Words

1. heart – сердце
2. muscular – мышечный
3. cardiac – сердечный
4. to pump – качать

5. endocardium – эндокардиум
6. innermost – самый внутренний
7. conducting system – проведение системы
8. subendocardial – внутрисердечный
9. impulse – импульс
10. fibrosi – фиброзные кольца

Передайте письменно содержание текста.

Text 25. Lungs

Intrapulmonary bronchi: the primary bronchi give rise to three main branches in the right lung and two branches in the left lung, each of which supply a pulmonary lobe. These lobar bronchi divide repeatedly to give rise to bronchioles.

Mucosa consists of the typical respiratory epithelium.

Submucosa consists of elastic tissue with fewer mixed glands than seen in the trachea.

Astomosing cartilage plates replace the C-shaped rings found in the trachea and extra pulmonary portions of the bronchi.

Bronchioles do not possess cartilage, glands, or lymphatic nodules; however, they contain the highest proportion of smooth r muscle in the bronchial tree. Bronchioles branch up to 12 times to supply lobules in the lung.

Bronchioles are lined by ciliated, simple, columnar epithelium with nonciliated bronchiolar cells. The musculature of the bronchi and bronchioles contracts following stimulation by parasympathetic fibers (vagus nerve) and relaxes in response to sympathetic fibers. Terminal bronchioles consist of low-ciliated epithelium with bronchiolar cells.

The costal surface is a large convex area related to the inner surface of the ribs.

The mediastinal surface is a concave medial surface, contains the root, or hilus, of the lung.

The diaphragmatic surface (base) is related to the convex sur face of the diaphragm. The apex (cupola) protrudes into the root of the neck.

The hilus is the point of attachment for the root of the lung. It contains the bronchi, pulmonary and bronchial vessels, lymphatics, and nerves. Lobes and fissures.

The right lung has three lobes: superior, middle and inferior.

The left lung has upper and lower lobes.

Bronchopulmonary segments of the lung are supplied by the segmental (tertiary) bronchus, artery, and vein. There are 10 on the right and 8 on the left.

Arterial supply: Right and left pulmonary arteries arise from the pulmonary trunk. The pulmonary arteries deliver deoxygenated blood to the lungs from the right side of the heart.

Bronchial arteries supply the bronchi and nonrespiratory portions of the lung. They are usually branches of the thoracic aorta.

Venous drainage. There are four pulmonary veins: superior right and left and inferior right and left. Pulmonary veins carry oxygenated blood to the left atrium of the heart.

The bronchial veins drain to the azygos system.

Bronchomediastinal lymph trunks drain to the right lymphatic duct and the thoracic duct.

Innervation of Lungs: Anterior and posterior pulmonary plexuses are formed by vagal (parasympathetic) and sympathetic fibers. Parasympathetic stimulation

has a bronchoconstrictive effect. Sympathetic stimulation has a bronchodilator effect.

Words

1. lungs – легкие
2. intrapulmonary bronchi – внутрилегочные бронхи
3. the primary bronchi – первичные бронхи
4. lobar bronchi – долевые бронхи
5. submucosa – подслизистая оболочка

Передайте письменно содержание текста.

Text 26. Respiratory system

The respiratory system is structurally and functionally adapted for the efficient transfer of gases between the ambient air and the bloodstream as well as between the bloodstream and the tissues. The major functional components of the respiratory system are: the airways, alveoli, and blood vessels of the lungs; the tissues of the chest wall and diaphragm; the systemic blood vessels; red blood cells and plasma; and respiratory control neurons in the brainstem and their sensory and motor connections. LUNG FUNCTION: provision of 02 for tissue metabolism occurs via four mechanisms. Ventilation – the transport of air from the environment to the gas exchange surface in the alveoli. 02 diffusions from the alveolar air space across the alveolar-capillary membranes to the blood.

Transport of 02 by the blood to the tissues: 02 diffusions from the blood to the tissues. Removal of C02 produced by tissue metabolism occurs via four mechanisms. C02 diffusion from the tissues to the blood. Transport by the blood to the pulmonary capillary-alveolar membrane.

C02 diffusion across the capillary-alveolar membrane to the air spaces of the alveoli. Ventilation – the transport of alveolar gas to the air. Functional components: Conducting airways (conducting zone; anatomical dead space).

These airways are concerned only with the transport of gas, not with gas exchange with the blood.

They are thick-walled, branching, cylindrical structures with ciliated epithelial cells, goblet cells, smooth muscle cells. Clara cells, mucous glands, and (sometimes) cartilage.

Alveoli and alveolar septa (respiratory zone; lung parenchyma).

These are the sites of gas exchange.

Cell types include: Type I and II epithelial cells, alveolar macrophages.

The blood-gas barrier (pulmonary capillary-alveolar membrane) is ideal for gas exchange because it is very thin (‹ 0,5 mm) and has a very large surface area (50 – 100 m^2). It consists of alveolar epithelium, basement membrane interstitium, and capillary endothelium.

Words

1. respiratory – дыхательный
2. air – воздух
3. bloodstream – кровоток
4. airways – воздушные пути
5. alveoli – альвеолы
6. blood vessels – кровеносные сосуды
7. lungs – легкие
8. chest – грудь
9. diaphragm – диафрагма
10. the systemic blood vessels – системные кровеносные сосуды
11. red blood cells – красные кровяные клетки
12. plasma – плазма

13. respi ratory control neurons – дыхательные нейроны контроля
14. brainstem – ствол мозга
15. sensory – сенсорный
16. motor connections – моторные связи
17. ventilation – вентиляция
18. transport – транспортировка
19. environment exchange – окружающая среда
20. surface – поверхность

Составьте пять вопросов к тексту.

Text 27. "Healthy Life / Здоровый образ жизни"

Healthy lifestyle

«Healthy mind in a healthy body», says a proverb. And I must admit that I couldn't agree more! I'd like even to paraphrase this statement to "When you're healthy, you're happy'. Now I'll try to explain my idea.

To begin with, I'd say that only when we feel well and good, we have energy and desire to live, work and study. We need to feel well. It means physical wellbeing when there're no any deceases or illnesses. As for me, I think that the most important thing about physical health is a well-thought-out diet.

We are what we eat. I realize that everything I eat influence my physical state. So I try to make my diet well-balanced and full of nutrients. For example, I eat grains and cereal, a lot of vegetables, lean meat, fish, some fruit, nuts and other food products that are healthy. They contain a lot of protein, carbs and a necessary amount of fats. So you can guess that I seldom buy fast-food because it's full of artificial flavourings and colours, unhealthy carbs and fats.

Unfortunately, I'm not a person that loves sports or other physical activities. That's why I pay so much attention to a healthy diet. To my mind, if you can't do sport, you should do anything else to compensate the harm. What I can do is to walk. Walking is good for our heart and it's also a kind of exercising. So I walk everywhere: to school, to my music classes, to the shops and so on. I never use public transport if I have enough time. And when I have no time instead of a bus I use my bike. I believe it's eco-friendlier and health-conscious. So I call it a "win-win" solution.

What is more, I tend to care about my mental health. I love communicating with people, I try to avoid conflicts, I find time for doing something I really love (for example, listening and playing music, making models of rare cars, walking my dog, watching good films and so on). All these give me pleasant emotions, helps to relax and chill out. I'm sure that we need to find a way to relax because it's an important part of mental well-being.

So, you see we can find possibilities to do something not really difficult to stay healthy. I can advise you -eat right food, move more and be positive. That are 3 simple and effective ways to care about yourself.

Text 28. Trachea

The trachea, a hollow cylinder supported by 16–20 cartilaginous rings, is continuous with the larynx above and the branching primary bronchi below.

Mucosa of the trachea consists of the typical respiratory epithelium, an unusually thick basement membrane, and an underlying lamina propria that is rich in elastin. The lamina propria contains loose elastic tissue with blood vessels, lymphatics, and defensive cells. The outer edge of the lamina propria is defined by a dense network of elastic fibers.

Submucosa consists of dense elastic connective tissue with secure tyfocus glands whose ducts open onto the surface of the epithelium.

Cartilage rings are C-shaped hyaline cartilage pieces whose free extremities point dorsally (posteriorly). They are covered by a perichondrium of fibrous connective tissue that surrounds each of the cartilages. Smooth muscle bundles (trachealis muscle) and ligaments span the dorsal part of each cartilage.

Adventitia a consists of peripheral dense connective tissue that binds the trachea to surrounding tissues.

Primary bronchi

The trachea branches at its distal end into the two primary bronchi. Short extrapulmonary segments of the primary bronchi exist before they enter the lungs at the hilus and then branch further. The histologic structure of the walls of the extrapulmonary segment of the primary bronchi is similar to that of the tracheal wall.

Words

1. hollow – пустота
2. cylinder – цилиндр
3. supported – поддержанный
4. cartilaginous rings – хрящевые кольца
5. larynx – гортань
6. above – выше
7. branching – переход
8. primary bronchi – первичные бронхи
9. below – ниже
10. mucosa – слизистая оболочка
11. typical – типичный
12. respiratory epithelium – дыхательный эпителий
13. an unusually – нетипитчно
14. thick – толстый
15. basement – основание
16. underlying – основной
17. lamina – тонкая пластинка
18. rich – богатый
19. elastin – эластин
20. loose – свободный

21. vessel – сосуд
22. lymphatics – лимфатический
23. defensive cells – защитные клетки
24. outer – внешний
25. edge – край

Составьте пять вопросов к тексту.

Text 29. Respiratory bronchioles

Respiratory bronchioles are areas of transition (hybrids) between the conducting and respiratory portions of the airways. In addition to the typical bronchiolar epithelium of the terminal bronchioles, these passageways contain outpouchings of alveoli, which comprise the respiratory portion of this system.

Terminal bronchioles give rise to respiratory bronchioles.

Respiratory bronchioles branch to from two to three alveolar ducts, which are long sinuous tubes.

Alveolar sacs are spaces formed by two or more conjoined alveoli. They are lined by the simple squamous alveolar epithelium. Alveoli are the terminal, thin-walled sacs of the respiratory tree that are responsible for gas exchange. There are approximately 300 million alveoli per lung, each one 200–300 mm in diameter. Blood-air interface. Oxygen in the alveoli is separated from hemoglobin in the red blood cells of alveolar capillaries by five layers of membrane and cells: the alveolar epithelial cell (apical and basal membranes) and its basal lamina, the basal lamina of the capillary and its endothelial cell (basal and apical membranes), and the erythrocyte membrane. The total thick ness of all these layers can be as thin as 0,5 mm.

Alveolar epithelium contains two cell types. Type I cells completely cover the alveolar luminal surface and provide a thin surface for gas exchange. This simple squamous epithelium is so thin (-25 nm) that its details are beyond the resolution of the light microscope.

Type II cells are rounded, plump, cuboidal-like cells that sit on the basal lamina of the epithelium and contain membrane-bound granules of phospholipid and protein (lamellar bodies). The contents of these lamellar bodies are

secreted onto the alveolar surface to provide a coating of surfactant that reduces alveolar surface tension.

Alveolar macrophages (dust cells) are found on the surface of the alveoli.

Derived from monocytes that extravagant from alveolar capillaries, alveolar macrophages are part of the mononuclear phagocyte system. Dust cells, as their name implies, continuously remove particles and other irritants in the alveoli by phagocytosis.

Words

1. respiratory bronchioles – дыхательные бронхиолы
2. hybrids – гибриды
3. respiratory portions – дыхательные части
4. airways – воздушные трассы
5. bronchiolar – бронхиолярный
6. terminal bronchioles – предельные бронхиолы
7. passageway – проходы
8. tocomprise – включить
9. ducts – трубочки
10. sinuous tubes – извилистые трубы

11. thin-walled – окруженный тонкой стеной
12. sacs – мешочки
13. respiratory tree – дыхательное дерево
14. hemoglobin – гемоглобин
15. apical – апикальный

Составьте вопросы к тексту.

Text 30. The digestive system: the function

The digestive system, or gastrointestinal tract, begins with the mouth, where food enters the body, and ends with the anus, where solid waste material leaves the body. The primary function of the organs of the digestive system are threefold.

First, complex food material which is taken into the mouth must be digested mechanically and chemically, as it travels through, the gastrointestinal tract.

Second, the digested food must be absorbed by passage through the walls of the small intestine into the blood stream so that the valuable energy-carrying nutrients can travel to all cells of the body.

The third function of the gastrointestinal tract is to eliminate the solid waste materials which are unable to be absorbed by the small intestine.

In the man the food in the mouth is masticated, that is to say it is bitten and broken up by the teeth and rolled into the bolus by the tongue.

The act of swallowing is divided into three stages

The first stage is under voluntary control. The food which has been transformed into a soft, mass by the act of mastication is brought into position upon the root of the tongue, and by the action of the lingual muscles is rolled backwards towards the base of the tongue.

The second stage is brief and is occupied in guiding the food through the pharynx and past the openings that lead from it. The muscular movements during this stage are purely reflex in nature. The third stage involves the passage of the food down the esophagus. The food is seized by peristaltic wave which, traveling along the esophagus, carries the material before it into the stomach. The cardiac sphincter which guards the lower end of the esophagus and which at other times is kept tonically closed relaxes upon the approach of the bolus which is then swept into the stomach by the wave of constriction which follows.

Peristalsis is a type of muscular contraction characteristic of the gut and consists in waves of contraction, these running along the muscles, both circular and longitudinal, towards the anus.

If the food is fluid it enters the stomach six seconds after the beginning of the act, but If It is solid it takes much long e r, up to fifteen minutes, to pass down the esophagus.

In the stomach the food is thoroughly mixed by the series of contractions, three or four a minute, the contraction waves passing from the middle of the stomach to the pylorus. These tend to drive the food in the same direction, but the pylorus being closed, there is axial reflex, owing to which the food is well mixed. After a time – a bout a minute when water has been swallowed – the pylorus relaxes at each wave, allowing some of the stomach contents to enter the duodenum. Fat stays in the stomach longer than carbo hydrate, but all food leaves generally in three or four hours. In the small intestine the food continues to be moved by peristalsis, the latter controlled by the deep nerve plexus. The small intestine undergoes segmentation movements, the food contents being thoroughly mired The wall becomes constricted into a number of segments and then about five seconds later the constrictions disappear, there being another set exactly out of

phase with the first. The large intestine undergoes infrequent powerful contractions, food having entered it. From the large intestine the food enters the rectum.

Words

1. voluntary control – добровольный контроль
2. soft – мягкий
3. mastication – перетирание
4. position – положение
5. root – корень

Составьте пять вопросов к тексту.

Text 31. The digestive system: liver and stomach. Sources of energy

Liver, the pancreas and the kidneys are the organs primarily engaged in the intermediary metabolism of the materials resorbed from the gastro – intestinal tract and in the excretion of metabolic waste products of these 3 organs the liver performs the most diverse functions. It acts as the receiving depot and distributing center for the majority of the products of intestinal digestion and plays a major role in the intermediary metabolism of carbohydrates, fats, proteins and purines.

It controls the concentration of cholesterol esters in the blood and utilizes the sterol in the formation of bile acid. The liver takes in the regulation of the blood volume and in water metabolism and distribution. Its secretion, the bile, is necessary for fat digestion.

The liver is a site for the formation of the proteins of the blood plasma, especially for fibrinogen, and also forms heparin, also forms heparin, carbohydrate which prevents the clotting of the blood It has important detoxicating functions and guards the organism against toxins of intestinal origin as well as other harmful substances The liver in its detoxicating functions and manifold metabolic activities may well be considered the most important gland of the body.

The normal position of the empty human stomach is not horizontal, as used to be thought before the development of rentgenology. This method of examination has revealed the stomach to be either somewhat J-shaped of comparable in outline to a reversed L. The majority of normal stomachs are J-shaped. In the J-shaped type the pylorus lies at a higher level than the lowest part of the greater curvature and the body of the stomach is nearly vertical. The stomach docs not empty itself by gravity, but through the contraction of its muscular wall like any other part of the digestive tube, of which it is merely a segment.

Gastric motility shows great individual variation; in some types of stomach the wave travels very rapidly, completing its journey in from 10 to 15 seconds. In others the wave takes 30 seconds or go to pass from its origin to the pylorus. The slow waves are the more common.

Передайте содержание текста

Text 32. The urinary system: embryogenesis

The urinary system is formed mainly from mesodermal and endodermal derivatives. Three separate systems form sequentially. The pronephros is vestigial; the mesonephros may function transiently, but then mainly disappears; the metanephros develops into the definitive kidney. The permanent excretory ducts are derived from the metanephric ducts, the urogenital sinus, and surface ectoderm.

Pronephros: Segmented nephrotomes appear in the cervical intermediate mesoderm of the embryo in the fourth week. These structures grow laterally and canalize to form nephric tubules. Successive tubules grow caudally and unite to form the pronephric duct, which empties into the cloaca. The first tubules formed regress before the last ones are formed.

Mesonephros: In the fifth week, the mesonephros appears as «S-shaped» tubules in the intermediate mesoderm of the thoracic and lumbar regions of the embryo.

The medial end of each tubule enlarges to form a Bowman's capsule into which a tuft of capillaries, or glomerulus, invaginates.

The lateral end of each tubule opens into the mesonephric (Wolffian) duct.

Mesonephric tubules function temporarily and degenerate by the beginning of the third month. The mesonephric duct persists in the male as the ductus epididymidis, ductus deferens, and the ejaculatory duct.

Metanephros: During the fifth week, the metanephros, or permanent kidney, develops from two sources: the ureteric bud, a diverticulum of the mesonephric duct, and the metan-ephricmas, from intermediate mesoderrn of the lumbar and sacral regions. The ureteric bud penetrates the metanephric mass, which cordenses around the diverticulum to form the metanephrogen cap. The bud dilates to form the renal pelvis. One-to-three million collecting tubules develop from the minor calyces, thus forming the renal pyramids. Penetration of collecting tubules into the metanephric mass induces cells of the tissue cap to form nephrons, or excretory units. The proximal nephron forms Bowman's capsule, whereas the distal nephron connects to a collecting tubule.

Lengthening of the excretory tubule gives rise to the proximal convoluted tubule, loop of Henle, and the distal convoluted tubule.

The kidneys develop in the pelvis but appear to «ascend» into the abdomen as a result of fetal growth of the lumbar and sacral regions.

The upper and largest part of the urogenital sinus becomes the urinary bladder, which is initially continuous with the allantois. Later the lumen of the allantois becomes obliterated. The mucosa of the trigone of the bladder is formed by the incorporation of the caudal mesonephric ducts into the dorsal bladder wall. This mesodermal tissue is eventually replaced by endodermal epithelium so that the entire lining of the bladder is of endodermal origin. The smooth muscle of the bladder is derived from splanchnic mesoderm.

Mile urethra is anatomically divided into three portions: prostatic membranous, and spongy (penile).

The prostatic urethra, membranous urethra, and proximal penile urethra develop from the narrow portion of the urogenital sinus below the urinary bladder. The distal spongy urethra is derived from the ectodermal cells of the glans penis.

Female urethra: The upper two-thirds develops from the mesonephric ducts, and the lower portion is derived from the genital sinus.

Words

1. urinary system – мочевая система
2. kidneys – почки
3. bladder – мочевой пузырь
4. excretory ducts – выделительные трубочки
5. pronephros – первичная почка
6. urogenital – мочеполовой

Составьте пять вопросов к тексту.

Text 33. The urinary system: kidneys

The urinary system is the major system involved in the excretion of metabolic waste products and excess water from the body It is also important in maintaining a homeostatic balance of fluids and electrolytes. The urinary system consists of two kidneys, two ureters, the urinary bladder, and the urethra. Urine is produced by the kidneys and is then transmit ted via the ureters to the bladder for temporary storage The urethra is the final pathway that conveys urine to the exterior. This system also has an important endocrine function in the production of renin and erythropoietin, which influence blood pressure and red blood cell (RBC) formation, respectively.

Each kidney is composed of stroma and parenchyma. The stroma consists of a tough fibrous connective tissue capsule and a delicate interstitial connective tissue com posed of fibroblasts, wandering cells, collagen fibrils, and a hydrated proteoglycan extracellular matrix, which is collectively called the renal interstitium The parenchyma consists of more than one million elaborate uriniferous tubules that represent the functional units of the kidney.

The kidney contains a hilum, a cortex, and a medula. The hilum is located medially and serves entrance as the point of entrance and exit for the renal artery, renal veins, and ureter. The renal pelvis, the expanded upper, divides into two or three entrance into the kidney. These, in turn, divide into eight minor calyces.

The cortex forms the outer zone of the kidney.

The medulla appears as a series of medullary pyramids. Two or three pyramids may unite to form a papilla. Uriniferous tubules consist of two functionally related portions called the nephron and the collecting tubule

Glomerulus is made up of several anastomotic capillary loops interposed between an afferent and an efferent arteriole. Plasma filtration occurs in the glomerulus.

Bowman's capsule consists of an inner visceral layer and an outer parietal layer. The space between these layers, the urinary space, is continuous with the renal tubule.

Visceral layer is apposed to the glomerulus and closely follows the branches of the glomerular capillaries. The visceral layer is composed of a single layer of epithelial cells resting on a basal lamina, which is fused with the basal lamina of the capillary endothelium. The cells of the visceral layer, call podocytes.

Cytoplasmic extensions of podocytes rest on the basal lamina.

Between adjacent pedicles, a thin slit diaphragm assists in preventing large plasma proteins from escaping from the vascular system.

In fact, most of the components of the glomerular filtrate are reabsorbed in the proximal tubule. Loop of Henle is a hairpin loop of the nephron that extends into the medulla and consists of thick and thin segments. The thick proximal portion of Henle's loop, or the descending thick segment, is a direct medullary continuation of the cortical proximal convoluted tubule.

The thick distal portion of the loop of Henle, the ascending thick segment, ascends to the cortex and is continuous with distal convoluted tubule. The major

function of the distal tubule is to reabsorb soduim and chloride from the tubular filtrate. Collecting tubules consist of arched and straight segments.

Words

1. urea – моча
2. stroma – строма
3. parenchyma – паренхима
4. fibrous capsule – волокнистая капсула
5. delicate – тонкий
6. interstitial – промежуточный

Составьте пять вопросов к тексту.

Text 34. The urinary system: kidney vascular supply

Vascular supply begins with the renal artery, enters the kidney the hilum, and immediately divides into interlobar arteries The arteries supply the pelvis and capsule before passing direct between the medullary pyramids to the corticomedullary junction. The interlobar arteries bend almost 90 degrees to form shoarching, arcuate arteries, which run along the corticomedullary junction. The arcuate arteries subdivide into numerous fine interlobul arteries, which ascend perpendicularly to the arcuate arteries through the cortical labyrinths to the surface of the kidney. Each interlobular artery passes midway between two adjacent medullary rays.

The interlobular arteries then give off branches that become the afferent arterioles of the glomeruli.

As the afferent arteriole approaches the glomerulus, some its smooth muscle cells are replaced by myoepithelioid cells, which are part of the juxtaglomerular apparatus. The juxtaglomerular apparatus consists of juxtaglomerular cells, pelisse cells, and the macula dense. Cells of the distal convoluted tubule near the afferent arteriole are taller and slenderer than elsewhere in the distal tubule.

The juxtaglomerular cells secrete an enzyme called renin, which enters the bloodstream and converts the circulating polypeptide angiotensinogen into angiotensin I. Angiotensin I is converted to angiotensin II, a potent vasoconstrictor that stimulates aldosterone secretion from the adrenal cortex. Aldosterone increases sodium and water reabsorption in the distal portion of the nephron.

Their nuclei are packed closely, so the region appear darker under the light microscope. The macula dense is thought to sense sodium concentration in the tubular fluid.

Polkissen cells are located between the afferent and efferent arterioles at the vascular pole of the glomerulus, adjacent to the macula dense.

Their function is unknown. Efferent glomerular arteriole divides into a second system of capillaries, the peritub-ufar plexus, which forms a dense network of blood vessels around the tubules of the cortex.

Arterial supply of the medulla is provided by the efferent arterioles of the glomeruli near the medulla. The arteriolae rectae and the corresponding venae rectae with their respective capillary networks comprise the vasa recta, which supplies the medulla. The endothelium of the venae rectae is fenestrated and plays an important role in maintaining the osmotic gradient required for concentrating urine in the kidney tubules.

Words

1. renal artery – почечная артерия
2. renal veins – почечные вены
3. expanded upper – расширенный верхний
4. minor calyces – незначительные чашечки
5. to supply – снабжать
6. arcuate arteries – дугообразные артерии

7. to subdivide – подразделять
8. numerous – многочисленный
9. interlobul – междолевой
10. to ascend – поднимать
11. perpendicularly – перпендикулярно
12. arcuate arteries – дугообразные артерии

Составьте пять вопросов к тексту.

Text 35. The urinary system: ureters, uretra

The calyces, renal pelvis, and ureters constitute the main excretory ducts of the kidneys. The walls of these structures, in particular the renal pelvis and ureter, consist of three coats: an inner mucosa, middle muscularis, and an outer adventitia.

Mucosa of the calyces and ureter is lined by a transitional epithelium, which varies in thickness with the distention of the ureter. In the collapsed state, the cells are cuboidal with larger c shaped cells in the superficial layer. In the relaxed state, the lumen of the ureter is thrown into folds that generally disappear when the organ dilates during urine transport. Muscularis consists of an inner longitudinal and an outer circular layer of smooth muscle. In the distal ureter, an additional discontinuous outer longitudinal layer is present.

Adventitia consists of loose connective tissue with many large blood vessels. It blends with the connective tissue of the surrounding structures and anchors the ureter to the renal pelvis. The urinary bladder functions as a strong organ for urine. The structure of the wall of the bladder is similar to but thicker than of the ureter. Mucosa of the urinary bladder is usually folded, depending the degree of the bladder distention. The epithelium is transitional and the number of apparent layers depends on the fullness of the bladder. As the organ becomes distended, the superficial epithelial layer and the mucosa become flattened, and the entire epithelium becomes thinner. At its fullest distention, the bladder epithelium maybe only two or three cells thick. Lamina propria consists of connective tissue with abundant elastic fibers. Muscularis consists of prominent and thick bundles of smooth muscle that are loosely organized into three layers. Adventitia covers the bladder except on its superior part, where serosa is present. Male urethra serves as an excretory duct for both urine and semen. It is approximately 20 cm in length and has three anatomic divisions. The prostatic portion is lined by transitional epithelium similar to that of the bladder. The prostatic urethra is surrounded by the fibromuscular tissue of the prostate, which normally keeps the urethral lumen closed. In the membranous and penile portions, the epithelium is pseudostratified up to the glans. At this point, it becomes stratified squamous and is continuous with the epidermis of the external part of the penis. The membranous urethra is encircled by a sphincter of skeletal muscle fibers from the deep transverse perineal muscle of the urogenital diaphragm, which also keeps the urethral lumen closed. The wall of the penile urethra contains little muscle but is surrounded and supported by the cylindrical erectile mass of corpus spongiosum tissue. Female urethra is considerably shorter than that of the male urethra. It serves as the terminal urinary passage, conducting urine from the bladder to the vestibule of the vulva. The epithelium begins at the bladder as a transitional variety and becomes stratified squamous with small areas of a pseudostratified columnar epithelium. The muscularis is rather indefinite but does contain both circular and longitudinal smooth muscle fibers. A urethral sphincter is formed by skeletal muscle as the female urethra passes through the urogenital diaphragm.

Words

1. ureter – мочеточник
2. renal pelvis – почечная лоханка
3. calyces – чашечки
4. urethra – уретра

Передайте письменно содержание текста.

Text 36. The kidney`s function

The kidneys are filters which remove waste products from the blood. In the human each is a bean-shaped organ, some four inches long and about two inches wide. The two are situated high up on the posterior abdominal wall behind the peritoneum and in front of the last ribs and the upper two lumbar transverse processes. Each is invested by a fibrous capsule surrounded by more or less perinephric fat. On the upper pole of each is a supra-renal gland. On the medical side is a notch called the hilum where the vessels and the ureter are attached.

Vertical selections through a kidney discloses three more or less concentric zones. The other light-colored zone is the renal cortex, within this is the darker renal medulla and within this again is a space – the renal sinus which is normally occurred by a fibrous bag called the renal pelvis. The pelvis opens below into the ureter. The cortex extends inwards in a series of renal columns which divide the medulla into a number of renal pyramids. Each pyramid has a free rounded projection – a renal papilla – which lies in a cap – like extension, of the pelvis cal led a renal calyx. The pelvis is lined by transitional epithelium, which extends the calyces and covers the papillae

Within the cortex each minute artery presents along its course a convoluted knot, called a glomerulus; the branch which enters the knot is the afferent vessel, that which leaves is she efferent vessel. Each glomerulus project into the dilated end of its corresponding renal tubule, from which it is separated by a thin layer of cells called glomerular (Bowman s) capsule; glomerulus plus capsule form a renal (Nalpighian) corpuscle. The cortex contains multitudes of such corpuscles, each giving rise to a tubule which passes down into the medulla and back again in the so-called loop of Henle. Back in, the cortex loop ends in a functional tubule which joins a larger collecting tube. Ultimately, a number of collecting tubes combine to form an excretory tube, which opens at the apex of a papilla into a renal calyx. The efferent vessel from the glomerulus accompanies the loop of Henle, supplying the tubule on the way and finally ends in a small vein. A renal corpuscle plus its complement of tubules and blood vessels is called a renal unit, or nephron; there are said to be one million such units in each kidney, their tubing totaling a length of some twenty miles.

Words

1. bean-shaped organ – орган в форме боба
2. four inches long – 4 дюйма в длину
3. two inches wide – 2 дюйма в ширину
4. peritoneum – брюшина
5. lumbar – поясничный
6. renal cortex – корковый слой
7. renal medulla – мозговой слой
8. fibrous – волокнистая
9. dilated – расширенный
10. to be separated – быть разделенным

Text 37. BACTERIA

Bacteria are small living things that can be found almost everywhere. They live on the ground, in oceans, in the food that we eat and even in our bodies. They have been on earth long before there were any other organisms. Bacteria are so small you can only see them with the help of a microscope. They have only one cell and very simple structures.

Bacteria have outer cell walls that protect the inside. A cell membrane is inside the cell wall. It prevents harmful substances from getting in and out. Inside the membrane is a soft, jelly-like substance called the cytoplasm. It has chemicals that help build the parts of a cell and break down food. Within it is the nucleoid, which contains the DNA. growth and other activities Bacteria appear in different shapes. Spherical bacteria are round or ball-like. Rod-shaped bacteria live in your intestine and form chains. Spiral-shaped bacteria have a twisted form.

Bacteria absorb nutrients and remove waste through their cell walls. They reproduce by splitting themselves in the middle. The two new cells can then split into four cells and so on. In a short time, some single bacteria can reproduce billions of times.

Some bacteria can get inside the human body, reproduce and cause an infection. These harmful bacteria are called pathogens. Our immune system is in charge of fighting off these bacteria. However, sometimes we need a vaccine to help fight off these intruders. Vaccines are weak or dead forms of the bacteria itself. Such a substance helps our body fight off bacteria in the future. Some examples of illnesses caused by bacterial infections are tuberculosis or pneumonia.

The best way to protect yourself form bacteria is to keep yourself clean and wash your hands. Because bacteria may be transported by air, we should cover our nose and mouth when we sneeze. Vitamins also help strengthen our immune system and fight off bacteria. Bacteria can be helpful to the human body as well. They live in our stomach and help us digest food. Other bacteria create cheese and yoghurt. Bacteria are at work in the soil and decompose

Text 38. VITAMINS

The word “vitamin” goes back to the Polish scientist Casimir Funk in 1912. He was studying a substance in the layer that covers rice. This substance was believed to cure a disease called beriberi.

Funk believed the substance belonged to a group of chemicals known as amines. He added the Latin word "vita," meaning life. So he called the substance a “vitamine” -- an amine necessary for life.

Scientists have discovered fourteen kinds of vitamins. They are known as vitamins A, the B group, C, D, E and K. Scientists say vitamins help to carry out chemical changes in cells. If we do not get enough of the vitamins we need in our food, we may develop a number of diseases.

This brings us back to Casmir Funk. His studies of rice were part of a long search for foods that could cure disease.

One of the first people involved in that search was James Lind of Scotland. In the 1740s, Lind was a doctor for the British navy. He investigated a problem that had existed in the navy for many years.

The problem was the disease scurvy. So many sailors had scurvy that the navy’s lost some of its strength. The sailors were weak from bleeding inside their bodies. Even the smallest wound would not heal. Doctor Lind thought the sailors were getting sick because they failed to eat some kinds of foods when they were at sea for many months.

Doctor Lind separated twelve sailors who had scurvy into two groups. He gave each group different foods to eat. One group got oranges and lemons. The other did not. The men who ate the fruit began to improve within seven days. The other men got weaker. Doctor Lind was correct. Eating citrus fruits prevents scurvy.

Types of Vitamins

Vitamin A helps prevent skin and other tissues from becoming dry. It is also needed to make a light-sensitive substance in the eyes. People who do not get enough vitamin A cannot see well in darkness. Their eyes may get dry. This can result in infections and lead to blindness.

Vitamin A is found in fish liver oil. It also is in the yellow part of eggs. Sweet potatoes, carrots and other darkly colored fruits and vegetables contain substances that the body can change into vitamin A.

Vitamin B-one is also called thiamine. Thiamine changes starchy foods into energy. It also helps the heart and nervous system work well. Without it, we would be weak and would not grow. We also might develop beriberi. Apart from rice thiamine is found in beans, peas, nuts, meat and fish.

Another B-vitamin is niacin. It helps cells use food energy. It also prevents pellagra -a disease that causes weakness, reddish skin and stomach problems. Niacin is found in meat, fish and green vegetables.

Vitamin B-12 helps produce red blood cells. It is found naturally in foods such as eggs, meat, fish and milk products. It also helps babies of pregnant

mothers before they are born. Vitamin B-12 is found in green leafy vegetables and other foods and citrus fruits. In some countries, it is added to products like bread.

Vitamin C is needed for strong bones and teeth, and for healthy blood. It also helps wounds heal quickly. Because our body stores little vitamin C we must get it every day in foods such as citrus fruits, tomatoes and cabbage.

Vitamin D helps make calcium in the blood. Calcium is needed for nerve and muscle cells to work normally. It also is needed to build strong bones. Ultraviolet light from the sun changes a substance in the skin into vitamin D. Fish liver oil also contains vitamin D. In some countries, milk producers add vitamin D to milk so children will get enough.

Vitamin K is needed for healthy blood. It thickens the blood around a cut to stop bleeding. Bacteria in the intestines normally produce vitamin K. It can also be found in pork products, liver and in vegetables like cabbage, and spinach.

Some people fear they do not get enough vitamins from the foods they eat. So they take products with large amounts of vitamins. They think these products or vitamin supplements will improve their health and protect them from disease.

Experts note that taking too much of some vitamins can be harmful. People should be sure to discuss what vitamins they take with their doctors. This is because some vitamins can cause harmful effects when mixed with medicines.

Передайте письменно содержание текста.

Text 39. NUTRITION

All living things need food to survive. It gives us energy for everything that we do. It also gives the body what it needs to repair muscles, organs and skin. Food helps us fight off dangerous diseases.

It is important to eat a wide range of food in order to stay healthy. Nutrition is the science that deals with food and how the body uses it.

How the body uses food? Food has nutrients in it— substances that give our body many important things that we need. They provide us with energy and also help control the way our body grows.

Before nutrients can go to work food must be broken down so that they can pass into our body. This is called digestion. It starts when we chew the food that we eat. When we swallow it travels on to the stomach where it is mixed together with water and other fluids. Then the food is passed on to the intestine. Nutrients escape through the walls of the intestine into our blood. From there they are carried to all parts of the body.

Most food leaves waste that the body cannot use. Some of it goes to the kidneys and turns into urine. The liver also filters out waste. What is left over passes through the large intestine and leaves our body?

Nutrients

There are six main groups of nutrients: proteins, carbohydrates, fats, vitamins, minerals and water. The energy that food gives us is measured in kilocalories, or one thousand calories. A calorie is the energy that is needed to raise the temperature of water by one degree Celsius.

Water

Although water does not give us energy it is the most important nutrient. We may be able to live on without the others for weeks, but we cannot go on without water for more than a few days.

Water has many functions in our body. It helps break down food. It also cools the body down when it becomes too hot. The body carries away waste products in a watery solution.

Our body needs about 2 –3 litres of water a day. We get it from the water and liquids we drink but also from fruits, vegetables and other food.

Carbohydrates

Carbohydrates are the main source of energy for our body. Sugars and starches have carbohydrates in them.

Sugar is a simple carbohydrate. It gives us energy very quickly. This form of energy can be found in dairy products, honey, syrup, jams and jelly.

Starches must be broken down into sugars before our body can use them. They are found in beans, bread, potatoes, cereals, corn, pasta, peas and potatoes. They provide our body with a constant supply of energy.

Fats

Our body needs fat in small amounts. Fats are made up of carbon, oxygen and hydrogen. They store vitamins and produce fatty acids. We need these acids to produce cell membranes.

Fats can come from animals or plants. They are in meat and dairy products, like butter and cheese. Other types of fats are in vegetable oils, nuts or seeds.

Too many saturated fats produce a high level of cholesterol, a waxy material made by the body. It starts building up in the walls of blood vessels and may block blood as it flows through our body.

Proteins

Proteins are among the most important building blocks of our body. Muscles, skin and hair, for example, are made up of proteins.

Proteins are complex molecules made up of amino acids. The body can produce some of them itself, but we must get the others from food. Proteins are in cheese, eggs, fish, meat, milk, as well as in nuts, peas and beans.

Minerals

Minerals are needed for growth. They are inorganic, not made up of living things. Our body needs different amounts various minerals. Calcium and magnesium, for example, are important for bones and teeth. We also need small amounts of iron. It is a component of hemoglobin, which carries oxygen to red blood cells. Fluorine or zinc are other minerals we need in very small amounts. They are called trace elements.

Vitamins

Our body needs a variety of vitamins to stay healthy. Each of them does a different job. Vitamin A, for example, helps skin and hair grow. Vitamin C is needed to fight off infections. Vitamin D helps the growth of bones and teeth

The right diet

key to staying healthy is eating the right food. Nutritionists suggest eating according to the food guide pyramid. It has five sections. You should eat a lot of the bottom parts, but only a little of the upper parts.

Eating guidelines

Be careful of your weight. Obesity can lead to health problems.

Exercise every day. It helps the body burn calories and the fat you don't need.

Eat a lot of grain products

Be careful not to eat food that has too much saturated fat and cholesterol

Do not eat too much sugar. High-sugar foods and drinks have a lot of calories but not many nutrients.

Don't put too much salt on your food. This may lead to high blood pressure.

Include fiber in your diet. It helps food move along in your body.

Beware of alcoholic drinks. They have a lot of calories but no nutrients.

Store and cook foods properly so that they do not lose their nutritional value.

Nutrition and diseases

All over the world people suffer from illnesses that are caused by eating the wrong food or not having enough to eat.

In developing countries deficiency diseases arise when people do not get the right nutrients. Kwashiorkor is a disease that occurs if your body doesn't get

enough proteins. Marasmus occurs in young children who don't get enough calories every day. They become weak, underweight and often die.

Diseases often occur if you suffer from a lack of vitamins. Not enough vitamin D, for example, may lead to bone illnesses.

In industrialized countries people often suffer from eating too much. Too much fat and cholesterol in your body can lead to heart diseases, obesity and cancer. High cholesterol levels may make your arteries narrow. The result may be high blood pressure , a heart attack or a stroke.

lack of certain minerals may also lead to illnesses. Not enough iron in your food reduces the blood's ability to make red blood cells, which are needed to transport oxygen through our body.

Words

1. ability = power
2. according to = as shown by something or someone
3. acid = chemical substance that has a pH of less than 7; strong acids can burn your skin
4. although = while
5. amino acid =one of the substances that combine to form protein
6. amount =how much of something
7. arise = come up
8. artery = one of the tubes that carries blood around in your body
9. bean = seed that comes from a climbing plant and which can be cooked as food
10. beware = be careful of; watch out
11. block = stop; not let through
12. blood pressure = the power with which blood travels through your body
13. blood vessel = tube through which blood flows
14. break down = here: to make smaller
15. building block = the parts that make it possible for something to exist
16. cancer = a very dangerous disease in which cells start to grow in an uncontrolled way
17. carbon = chemical that is in coal or diamonds
18. cell membrane = cell wall that separates the inside from the outside of a cell
19. cereal = breakfast food made from wheat or corn; mostly eaten with milk
20. chew = to bite food a few times before swallowing it
21. complex = complicated
22. component = part
23. constant = regular, stable
24. dairy products = food that is made from cows
25. deal with = is about
26. deficiency disease = illness in which you do not get enough of a certain kind of food or vitamins

27. developing country = poor country of the Third World
28. diet = the food that you eat
29. disease = illness
30. exercise = to do sport and move your body so that you stay healthy
31. fatty acid = an acid that the cells in your body need to use food
32. fiber = part of the plants that you eat but cannot digest; they move through your body quickly
33. fight off = to keep away
34. fluid = liquid, juice
35. grain products = food from corn, wheat or rice
36. growth = in order to grow
37. hydrogen = colorless gas that can burn; if you combine it with oxygen you get water
38. illness = disease
39. industrialized countries = rich countries of the First World
40. inorganic = not from living things
41. intestine = the long tube in your body through which food passes after it goes through your stomach
42. jam = thick sweet food made from sugar and fruit; you eat it with butter on bread
43. jelly = like "*jam"*
44. key = solution, answer
45. kidney = one of two organs in your back that takes waste products out of your blood and makes urine
46. lack of = not enough
47. large intestine = the place where food is changed into waste
48. liquid = fluid; something to drink
49. measure = the unit of something
50. narrow = not wide
51. nutrition = getting the right kind of food for your body
52. nutritional value =how good a type of food is for your body
53. nutritionist = someone who knows a lot about the right kind of food to eat
54. obesity = when someone is so fat that it is unhealthy
55. occur = happen
56. oxygen = gas that has no color or smell and is in the air that we breathe
57. pass = travel
58. pea = round green seed that is cooked and eaten as a vegetable
59. poultry = meat from birds like chickens, ducks and turkeys
60. provide = give
61. raise = to make something go up
62. reduce = become lower
63. repair = fix

64. saturated fat = type of fat from meat and milk products; it is not as healthy as fats from vegetables or fish

65. science = knowledge about something

66. seed = hard object that comes from plants

67. serving = portion; the amount of food that is enough for one person

68. sparingly = only very little

69. starch = food that has carbohydrates in it and that gives your body energy; rice or potatoes have a lot of starch in them

70. store = keep in a place

71. stroke = if an artery suddenly breaks or is blocked so that blood cannot go through any more

72. substance = material

73. survive = to live on

74. swallow = to make food go down your throat

75. trace element = a chemical element that your body needs only a little of

76. urine = the yellow liquid that comes out of your body

77. variety = many different kinds of

78. various = different

79. vegetable oil = oil from plants and vegetables

80. waste = material that you cannot use any more

81. watery solution = a liquid like water

82. waxy = made of wax

83. weight = how heavy you are

84. wide range = many different types of

Составьте вопросы к тексту.

Text 40. HEADACHE

A headache is a pain in the head which almost everyone feels at one time or another. Almost half of all people have a headache at least once a year. Most headaches are not dangerous but they get in the way of your work and disturb your life. Although many people see a doctor when they have a headache, physicians normally cannot see any causes in their offices.

Types of headaches

There are two main types of headaches- tension headaches and migraines.

Tension headaches cause a mild to strong pain in the head. Many people describe such headaches as a tightening feeling. Some headaches cause a dull pain that can last for hours. They occur anywhere from the front to the back of your head. Other people feel a sharp, throbbing pain in their head.

About 20% of all headaches are migraines. They are strong headaches that can cause extreme pain. They can last as long as a couple of days. Warning signs like nausea, vomiting and seeing flashes of light sometimes occur shortly before migraines attack. Such a forewarning is called an aura. Migraines are often passed down to you from your parents and grandparents.

Causes of headaches

Headaches are a disorder of the nervous system. Even though the exact causes of a headache are not clear most of them are caused by the widening of blood vessels combined with chemicals that are set free around them. Nerves send pain messages to your brain.

There are many factors that can lead to a headache. Here are some of them:

not enough sleep
not enough water
stress
watching TV or looking at a computer screen for a long time
smoking
alcohol
coffee, tea and certain foods

Sometimes headaches can be caused by injuries and infections. Emotional factors like depression, sadness, being afraid of something can also lead to pain in the head.

How to fight off headaches?

Pain relievers and other drugs are often used to combat headaches. Many people take aspirin when they have a headache. Doctors also suggest that patients should relax when they experience a headache. In some cases, changing your diet may result in relieving pain and weakening headaches.

In any case, you should exercise regularly and get a lot of fresh air. This may not make headaches disappear completely but it can help make you feel better.

Words

1. although = while
2. blood vessel = tube in your body through which blood flows

3. brain = organ inside your head that controls how you feel, think and move
4. cause = lead to
5. cause = source; what makes something happen
6. combat = fight off
7. combined = together with
8. diet = the food that you eat regularly
9. disappear = go away
10. disorder = disease that prevents you from working the way should
11. disturb = here: to make you feel bad
12. dull = not very strong but something that does not stop
13. exercise = do sports or other activities to stay healthy and make your body stronger
14. experience = have
15. flash = bright light that shines for a short time
16. forewarning = something bad that is expected to happen
17. injury = damage to your body caused by an accident
18. message = information
19. nausea = feeling that you have when you are going to throw up
20. nervous system = made up of nerves, brain and your back ; it controls your movements and how the body feels pain
21. occur = happen
22. pain = the feeling you get when a part of your body hurts
23. pain reliever =medicine or drug that reduces pain or makes it go away
24. pass down = here: you get it from someone else in your family
25. physician = doctor
26. regularly = often
27. relax = rest
28. set free = release
29. sharp = sudden and strong
30. tension = a tight feeling
31. throb = beat
32. vomit = when food comes back up through your mouth because you are ill
33. weakening = to make weaker
34. widening = to make wider

Передайте письменно содержание текста.

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Text 41. THE HUMAN BRAIN

The human brain is a very powerful organ. It controls all parts of the body and allows you to think, feel, move your arms and legs and it helps you stay healthy.

The brain looks like a pink sponge and consists of a mass of nerve cells. It is protected by the skull. An adult's brain weighs about 1.5 kilograms.

Main Parts of the Brain

Cerebrum

The biggest part of the brain is the cerebrum. It makes up about 85 % of the brain's weight. Its surface has a lot of wrinkles and cracks. The cerebrum is the thinking part of the brain. It controls your muscles and makes them move when you want them to.

When you think hard, try to solve a math problem or draw a picture you use your cerebrum. It is also the area which stores your memory.

The cerebrum has two halves. Some scientists think that the right half helps you think about things like music, colours or shapes. The left half helps you think logically and controls your speech. The right half of the cerebrum controls the left side of your body and the left half controls the right side.

Cerebellum

The cerebellum is a lot smaller than the cerebrum and sits at the back of the brain. It's very important because it controls balance, movement and the way your muscles work together.

It allows you to stand on your feet without falling down or lets you balance your weight on a surf– or snowboard.

Brain Stem

The brain stem is below the cerebrum and in front of the cerebellum. It connects the brain to your spinal cord. This part of the brain controls the functions your body needs in order to stay alive and it is in charge of things that happen automatically. Breathing, body temperature, pain , hunger and heartbeats are all managed by the brain stem.

It tells your heart to pump more blood when you go jogging and need more oxygen, or it tells your stomach to digest the food that you eat. It sends messages back and forth between your brain and other organs of your body.

The Nervous System

The brain is made up of millions and millions of nerve cells called neurons. Almost all of them are there when you are born but they are not connected with each other. When you learn things as a child the brain starts to create pathways between the neurons. As time goes on things become easier for you to do and you don't have to think about them because you do them automatically.

Brain disorders

Injuries, illnesses and other diseases that you may inherit from your parents or grandparents can damage your brain. Disorders that destroy brain cells are very serious because the body cannot replace lost cells.

A stroke occurs when the brain cells do not get enough oxygen, which is transported throughout your body by blood. If this happens the brain can no longer work in the damaged area. Many stroke victims are not able to use a certain side of their body and, very often, they lose the ability to speak clearly. Strokes are often caused by high blood pressure or when arteries become harder. Some stroke victims die, others recover partly.

Brain tumours are caused by the rapid growth of cells. Such fast-growing cells destroy healthy ones. As they grow they create pressure and may damage other areas of the brain. Sometimes tumours can be removed by operations or with drugs

Many diseases that are caused by bacteria or viruses can also do damage to the human brain. One of the most common illnesses is meningitis, a disease that affects the membranes that cover the brain and the spinal cord.

Sometimes the brain of an unborn baby does not develop the way it should. In Down's syndrome there is an extra chromosome that causes mental disorder. In other cases, genetic errors cause brain damage in later life. Huntington's disease, for example, occurs mostly during middle age. It leads to jerky movements of the body.

Alzheimer's disease often occurs after the age of 60. Many victims suffer from a loss of memory and they often cannot care for themselves.

Today, modern medicine has ways and methods of looking into the human brain. The EEG (electroencephalogram) records the activity in the brain. Computed tomography makes pictures by sending many X-rays through the brain. Magnetic resonance imaging (MRI) uses powerful magnets to show how atoms in your brain change.

What can you do for your brain?

Eat healthy food

Don't drink alcohol or smoke cigarettes

Wear a helmet when you ride a bike, go snowboarding or roller skating. It protects you from head injuries.

Use your brain by doing a lot of things that forces it to work. Activities like reading, playing music and solving puzzles keep your brain active.

Interesting facts about the brain

In an unborn baby, the brain is formed much quicker than other organs

The brain reaches its full weight when you are 6 years old.

The brain does not feel any pain. As a result, doctors can perform operations on people who are conscious.

Brain cells begin to die if they don't get oxygen for three to five minutes.

The brain gets 20% of your body's oxygen even though it only makes up 2 % of your weight.

Everyone's brain has the same features but no brain looks exactly like any other.

Text 42. STRESS - SIGNS, SYMPTOMS AND HOW TO MANAGE STRESS

Stress is a feeling we have when we react to events that don't make us feel very good. Such events can happen at school, like a test or examination, at your office, like getting a new boss or in your private life, like preparing for a divorce.

Our body has certain hormones that it releases during times of stress. In this period more adrenalin gets into your blood. The hormones make your heartbeat go up and change your blood pressure and the way you breathe. Blood vessels become wider and let more blood pass through. Our body heats up and produces sweat to cool it down.

Stress response is what your body does to fight stress. It makes you handle stress and do well during such situations. Stress response happens, for example, when you are in a car and step on the brakes to avoid an accident. Or when you are the one chosen to shoot a penalty in a football game that may decide if you win or lose.

Stress can also be long term, like preparing for a difficult exam or having private problems with your parents, teachers or friends. Stress happens when you work too much and don't have the time to relax. This long-term stress keeps your body alert and pumps hormones into your bloodstream for a longer time. This can hurt your body, make you tired and weaken your immune system.

Although the right amount of stress can be good, too much stress isn't. A little stress can motivate you to study hard. But if stress lasts too long your body can't cope with it any more. Some people overact to stress and even make small problems seem difficult to solve. They feel worried, upset and anxious all the time.

Signs of stress

People who are experiencing long-term stress may have the following symptoms:

panic attacks
the feeling of constant pressure on them
they change moods
stomach problems, headaches
sleeping problems
drink too much alcohol
smoking
depression

How to keep stress under control?

Managing stress is not an easy thing to do. Knowing how to de-stress can keep it under control

Don't think you can do everything. Concentrate on the things that are important

Be realistic- Don't try to be perfect!

Get enough sleep! It helps your body relax

Learn simple breathing exercises and use them in stressful situations

Read a book or take a relaxing bath

Treat your body well. Get enough exercise, go for long walks or a run

Give your body the right food and enough vitamins.

Think positively. Many people who endure long-term stress are pessimistic.

Solve small problems. This gives you a feeling that you are in control. It gives you confidence and you can manage bigger problems better.

Words

1. adrenalin = a chemical that your body produces; it makes your heart beat faster when you are afraid, or excited
2. alert = aware, awake
3. although = while
4. amount = quantity
5. anxious = nervous
6. avoid = keep away from
7. blood pressure = the force with which blood travels through your body
8. brake = a tool that makes your car stop or go more slowly
9. breathe = to take air in through your mouth or nose and push it out
10. choose- chosen = select
11. confidence = feel good
12. constant = always
13. cope = deal with
14. de-stress = fight off stress
15. divorce = to end a marriage and break up
16. endure = suffer from
17. exercise = keep fit, work out, do some training
18. experience = have
19. heartbeat = the sound of your heart as it pumps blood through your body
20. hormone = a chemical that your body produces
21. immune system = the system by which your body protects itself against a disease
22. long term = last a longer time
23. manage = deal with
24. mood = how you feel
25. overreact = to react to something with too much emotion
26. prepare = get ready for
27. pressure = stress
28. relax = rest
29. release = set free
30. solve = work out
31. stress response = how you react to stress
32. sweat = drops that come through your skin when you are hot, are frightened or do exercise
33. symptom = sign upset = troubled, sad

Text 43. HOW HAPPINESS AFFECTS OUR HEALTH

Doctors, psychologists, economists and other experts have recently got together to find out what makes us happy and have come to surprising results.

One of the main topics was how to measure happiness. While some experts state that there are many ways to measure happiness, like capturing a person's feelings, satisfaction in life or being healthy and physically fit, others say that you can't really measure happiness but you can see it.

While money does play an important role for many, once they have enough to support their style of living they focus on other values. In many cases, friends and a functioning family are more important. Most people also need meaningful and creative work to find happiness.

Studies have also found that there is a connection between happiness and health. In general, people who are happier have a better overall health. Their immune system works better and they are not as stressed as others. In addition, happier people may be able to live longer and enjoy their happiness. Data also suggests that those who laugh a lot, have a good sense of humor and are often in a good mood are also happier.

Is there a way of learning happiness or improving it? Some experts say that if people express their thanks and gratefulness they can become happier. Engaging in informative conversations can also contribute to more satisfaction and happiness. Not surprisingly, men feel that a good love relationship is an important factor in being happy. Happiness is also contagious. Reports say that if you happen to have a member of your family or a friend near you who is happy, chances are you will be happy too.

Words

1. capture = here: record
2. chances are = there is a good chance; probably
3. connection = link
4. contagious = infectious; something can spread from one person to another
5. contribute = add
6. data = information that comes out of a research paper
7. economist = a person who knows a lot about business, money and selling
8. engage = take part in
9. focus = concentrate on
10. gratefulness = thanks
11. immune system = system by which your body protects itself from diseases
12. improve = to make better
13. in addition = also
14. in general = usually, most of the time
15. informative = meaningful

16. meaningful = important
17. measure = to find out how big or strong something is
18. mood = feeling, state of mind
19. overall = general
20. physically = in your body
21. psychologist = a person who studies the human mind and how it affects our behaviour
22. recently = a short time ago
23. satisfaction = feeling of pleasure and being happy
24. sense of humour = the ability to understand and enjoy things that are funny
25. state = to say that something is true
26. stress = so worried and tired that you cannot relax
27. study = piece of work that tries to find out more about a subject
28. suggest = here: to state something in an indirect way
29. support = hold up, keep up
30. topic = issue
31. value = quality, things that are important
32. weaken= to make weaker

Составьте вопросы к тексту

Text 44. FIRST AID

First Aid - Printable PDF-Version with exercises and vocabulary at our shop

Go to Shop

First aid is the help that you give someone quickly after they have hurt themselves or have had an accident. It can stop a person from becoming more ill. In some cases, it can even save a person's life.

Only someone who knows first aid well should try to treat an injured or sick person. Usually, you give first aid until a doctor or an ambulance arrives. Never try to give someone first aid unless you know what to do. The wrong actions can do more harm than good.

Call for help

When someone has been hurt or has had an accident, the first thing to do is get help. If you don't know the phone number of the local doctor or hospital dial an emergency number: 144 for an ambulance, 133 for the fire department and 122 for the police.

When you call for help you should be able to give correct information. An ambulance needs to know where the injured located and what exactly has happened. In some cases, you will be given instructions on what to do until a doctor or ambulance arrives.

Immediate help

Sometimes you cannot wait until help arrives. You must begin helping a person at once, especially if the victim is bleeding strongly, has been poisoned or if breathing has stopped. Even if you wait for a short time this can be fatal. Here are some important rules for immediate help.

Do not move a person who may have a broken bone , internal injuries or an injured spine unless you really have to.

If the victim is lying down, keep the person in that position. Do not allow them to walk or stand up.

Never give food or liquid to a person who may need an operation.

If the victim is unconscious turn the head to one side to keep the person from choking. But do not move the head of a person who may have a spinal injury.

Never give water to a person who is unconscious.

Make sure that the victim has an open airway. The nose, mouth and throat should be clear in order for them to breathe.

Make the victim comfortable, but touch a person only if you have to.

If necessary move the victim away from the sun or put them into the shade.

Remain calm and talk to the injured person. Explain what is being done and say that help is on its way.

Shock treatment

If the blood in your body does not circulate properly it may result in shock. Any serious injury or illness may lead to shock. When a person is in shock blood does not carry enough oxygen and food to the brain and other organs.

victim who suffers from shock may look afraid, confused, weak and be extremely thirsty. The skin appears pale and feels cold. Pulse and breathing are fast.

To treat shock, place the victim on his or her back and raise the legs a little. Warm the victim by putting blankets around them.

Bleeding

Strong bleeding can cause death in minutes. Bleeding from small wounds usually stops after a short time because the blood clots. But clotting cannot stop the flow of blood when a wound is big.

The best way to stop bleeding is to press on the wound itself. If possible let the person lie down and raise the bleeding part of the body. Then put a sterile handkerchief, cloth or towel on the wound and press it down with your hand. Do with for 10 to 20 minutes until help arrives.

Sometimes direct pressure cannot stop strong bleeding. If the leg or arm is hurt you can try to stop bleeding by putting pressure on the artery that carries blood to the injured body part.

Poisoning

There are four ways in which a victim may be poisoned. Poison may be swallowed, inhaled, injected or absorbed through the skin. If a poison victim becomes unconscious or has difficulty breathing call for an ambulance immediately.

A person who has swallowed something poisonous may die within minutes if they are not treated. The first step is to find out what kind of poison the person has Call a doctor or a poison control center immediately and follow the instructions that you are given carefully.

If a person has inhaled poison like carbon monoxide or chlorine gas move him or her to fresh air at once. Open all doors and windows.

Injected poisons are those that come from insect stings or bites. If you are stung by a bee the stinger remains in wound. Remove it carefully and put ice on the sting or run cold water over it. If a person is bitten by a tick pull out the remaining part carefully and slowly. Use a glove or something else but not your bare hands. Do not try to burn it off or put oil on it. If a rash or flulike symptoms develop in the following weeks contact a doctor.

Sometimes a victim may have an allergy towards bite or stings. In such a case either call a doctor, an ambulance or take the person to the nearest hospital.

Poisons can also be absorbed through the skin if you get in contact with poisonous plants or chemical substances. In such a case remove all the clothes that someone is wearing and flush the skin with water for about 10 minutes.

Artificial respiration

Begin with artificial respiration as soon as possible if a person has stopped breathing. Two or three minutes without breathing can cause brain damage and six minutes can be fatal . The most efficient way is mouth-to mouth resuscitation. Put the victim on their back. Kneel down, press the nose together and place your mouth over the mouth of the victim. Take a deep breath and blow hard enough to

make the chest rise. Then remove your mouth and listen for the air to come out. Then repeat procedure. Do this until the victim starts breathing again or until help has arrived.

Burns

The first aid treatment of burns depends on how severe the burns are. First degree burns show a reddening of the skin. Second degree damage deeper skin layers and third degree burns destroy tissue of deeper layers of skin.

To treat a first and second degree burn put ice on it or run cold water over it. Then put on sterile bandages. A person who has third degree burns should not be treated at home.

When you treat burns never open blisters and do not put oil or other greasy substances on the burn.

Frostbite

Frostbite occurs when a person has been in extremely cold weather for a long time. It mostly affects the skin of the ears, fingers, nose or toes. Frostbitten skin appears pale or grayish blue and feels numb. It should be treated gently. Warm the affected area with the heat of your hand or cover it with clothes until you can get the victim indoors. Thaw the skin by putting it in lukewarm water. Never use water that is hotter than 40°C. If you get blisters do not open them.

First aid kits

It is a good idea to have a kit with first aid supplies at home or in your car when you travel. It should include bandages, tissue, something to write on, a flashlight, scissors, safety pins, a spray or a lotion that kills germs. Always have a blanket ready to cover a person.

In conclusion, it can be said that,

1. First Aid is the first help given to any person suffering from a minor or serious illness or injury.
2. The aim of First Aid is to provide immediate assistance before visiting a hospital or doctor.
3. It helps in saving life and prevents the condition from worsening.
4. First Aid also promotes recovery and in some cases, first aid is completely a treatment.
5. First Aid includes decisions taken by using common sense that is necessary for an injured person.
6. The First Aid kit should include bandages, dressings, antibiotic cream, scissors, needle-nose tweezers, gloves, and spirit.
7. It is usually performed by a non – professional person in case of emergency.
8. First Aid skills can be applied anywhere at home, the workplace, or in public places.
9. First Aid can also apply to animals and birds.

10. ABC terms of First Aid are important to learn. ABC are airway, breathing, and compression.

Q.1. **What are the three PS (points) in First Aid?**

Ans. Three PS are the main goals of first aid.

1. Preserve life
2. Prevent further injury
3. Promote recovery

Q.2. **What is the ABC of first aid?**

Ans. A means:- airways (clear the airways)

B means:- breathing

C means:- circulation or compression

Q3. **What is the symbol of first aid?**

Ans. A symbol of the Red Cross is first aid.

Words

1. absorb = take in
2. accident = a situation in which a person is hurt
3. affect = influence, change
4. airway = the passage in your throat that you breathe through
5. ambulance = special car that takes a person to a hospital
6. appear = seem, look as if
7. artery = one of the passages that carries blood from your heart to the rest of your body
8. artificial respiration = the way of making someone breathe again by blowing air into their mouth
9. bandage = a narrow piece of cloth that you tie around a wound
10. bare = naked
11. blanket = thick cover for something
12. bleed = if blood comes out of your body
13. blister = a swelling of your skin that has liquid in it
14. bone = a hard part of your body
15. brain = the organ inside your head that controls how you move, think or feel
16. brain damage = damage to your brain that is caused by an accident or another illness
17. breath =the air that you send out of your lungs when you breathe
18. breathe = to take air into your lungs and send it out again
19. calm = quiet, still
20. carbon monoxide = a poisonous gas that is produced when you burn something
21. case =situation
22. cause = lead to
23. chemical substance = chemical material
24. chest = the front of your body between your neck and your stomach

25. chlorine gas = a greenish yellow gas that has a strong smell
26. choke = if you cannot breathe because there is something in your throat and you cannot get enough air
27. circulate = to travel around
28. clot = to make thicker
29. cloth = material that is used for making clothes
30. confused = mixed up
31. damage =the harm that you do to your body
32. degree =the level of something
33. depend on =to be affected or decided by something
34. destroy =damage
35. dial = call, phone
36. difficulty = trouble, problem
37. efficient = here: best
38. either =whichever
39. especially =above all, more than the rest
40. fatal = deadly
41. fire department = organization that works to prevent fires and stop them burning
42. flashlight = a small electric light that you carry
43. flow =here: the steady running of a liquid
44. flulike symptoms =the signs that your body shows you when you have a cold or a flu
45. flush = wash out
46. gently = quietly, smoothly
47. germ = a very small living thing that can make you ill
48. glove = something that you wear on your hand to protect it or to keep it warm
49. greasy = oily
50. handkerchief = a piece of cloth that you use for drying your nose or eyes
51. harm =damage
52. heat = warmth, very high temperature
53. immediate = at once, right now
54. inhale = breath something in
55. inject = to put a liquid into a someone's body with a needle
56. injured = hurt
57. insect sting = if an insect makes a very small hole in your skin
58. instruction = information that tells you what to do
59. internal injury = injuries inside your body
60. kit = a box that has special things in it which you need
61. kneel = go down on your knees
62. leg = the long part of your body that your feet are connected to
63. liquid =fluid, watery material
64. located = to be found

65. lotion = cream, oil, gel
66. lukewarm = not too hot and not too cold
67. mouth-to-mouth resuscitation = a method used to make someone start breathing again by blowing air into their mouth
68. necessary =needed, basic
69. numb = frozen, without any feeling
70. oxygen = a gas that has no colour or smell; it is in the air and we need it to breathe
71. pale = colourless
72. place = put
73. poison = something that can lead to death or serious illness if you eat or drink it
74. poison control centre = organization that gives you information on different types of poison and what to do
75. press = push down
76. pressure =force, weight
77. procedure = process
78. properly = correctly, as it should be
79. raise = lift, move up
80. rash = a lot of red spots on your skin caused by an illness
81. reddening = to become red
82. remain = stay
83. remove = take away
84. rise = to go up
85. rule =instruction, advice
86. safety pin = a metal pin that keeps things together
87. scissors = a tool for cutting paper, cloth and other materials
88. serious = very important
89. shade = out of sunlight
90. skin layers =the parts of your skin
91. spinal = everything that has to do with your spine
92. spine = the row of bones down the centre of your back that keeps your body upright
93. sterile bandage =a completely clean piece of cloth that you put around a part of the body that is injured
94. stinger = the needle-shaped part of an insect's body, with which it stings you
95. substance = material
96. suffer =to feel pain
97. supplies =here: the necessary things you need at home
98. swallow = to make something go down your throat and into your stomach
99. thaw = melt
100. thirsty = if you want to drink something

101. throat =the passage that leads from your mouth to your lungs and stomach

102. tick = a very small animal like an insect that lives under the skin of other animals and sucks their blood

103. tissue = the material that forms animal or plant cells

104. toe = one of the five moveable parts at the end of your foot

105. touch =to put your hand or finger on something

106. towel = piece of cloth that you use for drying your skin

107. treat = take care of, heal

108. treatment =something that is done to cure or heal someone or make them healthy again

109. unconscious = you are not able to see, move or feel anything

110. unless = if not

111. victim = someone who suffers because of an illness or disease

112. weak = tired, shaky

113. within = inside

Передайте письменно содержание текста.

Text 45. Acute renal failure

The two major mechanisms may participate in association between intratubular hemorrhage and nephron damage in acute renal failure. The first mechanism is direct nephrotoxicity from hemoglobin, because intratubular degradation of erythrocytes releases heme and iron which are toxic to cells. The second mechanism is hypoxic damage induced by regional vasoconstriction because heme avidly binds the potent vasodilator nitric oxide.

Intratubular degradation of hemoglobin releases heme containing molecules and eventually free iron. These breakdown products, also elaborated from myoglobin, probably play an important role in the pathogenesis of acute tubular necrosis. Endocytic reabsorption from the tubular him of filtered free hemoglobin or myoglobin may be a major pathway to proximal tubular damage in pigment nephropathy. In addition, free iron promotes the formation of oxygen free radicals, lipid peroxidation and cell death Another source of toxic iron is from the breakdown of intracellular cytochrome P-450 under hypoxic condition. One of the most potent intrarenal vasodilator system is nitric oxide, produced from L-arginine in vascular endothelium. smooth muscle and tubular calls, causing Vascular smooth muscle relaxation through the induction of intracellular cyclic GMP. Blocking nitric oxide synthesis causes profound vascular constriction, systemic hypertension and a marked decline in renal blood flow. Endothelial dysfunction with reduced nitric oxid production may underlie the defective regional vasodilation in diabetes and atherosclerosis, predisposing to renal ischemia and nephrotoxic insult.

Hemoglobin avidly binds nitric oxide and inhibits nitro vasodilation. The presence of large pool of hemoglobin in the tubular lumen could therefore affect the vasomotor balance of kidney circulation: intrarenal vasoconstriction is likely to be most pronounced and most significant in the medulla., because the ratio of tubular mass to vessels surface may be particularly high in this region. The medulla normally functions at low oxygen tension, because of limited medulla blood flow and counter-current exchange of oxygen. Inhibinion of nitric oxide synthesis induces severe and prolonged outer medullary hypoxia and predisposes to tubular necrosis Unfortunately, biopsy specimens of glomerulonephritis associated with acute tubular necrosis do not provide the precise distribution of the tubular lesions.

In chronic glomerulonephritis tubulo-interstitiaJ damage has often been reported as correlate of kidney function and also its best prognostic marker. Glomerular obsolescence deprives the renal parenchyma from nutritional blood flow, leading to tubule-interstitial fibrosis in medullary rays and outer medulla. Proteinuria imposes to the proximal tubules a constant burden of reabsorption and catabolism of albumin and other proteins from the tubular lumen, which have been suggested to cause cellular injury.

New words
nephron – нефрон
intratubular – внутриканальцевый
heme – гем
tubu lar necrosis – канапьцевый некроз
reabsorption – реабсорбция
proteinuria – протеннурия

Передайте письменно содержание текста.

Text 46. Iron in the body

It is accepted that the total amount of iron in the body is between 2 and 5 g., varying with body-weight and hemoglobin level; about two-thirds of this is in the form of hemoglobin and about 30 % is storage iron; iron in myo-globin and enzymes makes up the small remaining fraction together with iron in transport, which is only 0,12 %. There is a big difference between the sexes: in the adult male the total iron is about 50 mg. per kg. body-weight. But in the adult female the figure is only 35 mg. per kg., mainly be cause the normal blood-level of hemoglobin is lower than in the male. Iron exists in the body mainly in two forms: firstly, as heme in hemoglobin, and c ytochrome concerned with the utilization of oxygen; and secondly, bound to a protein without heme formation, as storage and transport iron. Iron in the body has a very rapid turnover, since some 3 million red blood cells are broken down per second and the greater part of the iron released is returned to the bone marrow and re-formed into fresh hemoglobin; some 6,3 g. of hemoglobin containing 21 mg. of iron is handled this way every 24 hours.

The amount of iron in the body is regulated by control of absorption, since excretion is very small. The amount of iron absorbed from food differs with different foodstuffs, so the com position of the diet is important. Absorption can be increased in the normal Individual when the blood-hemoglobin is lower than normal and is the iron stores are low. Iron stores are normally lower in women than men and so they tend to absorb more iron. Iron absorption can decrease in older persons, especially in those over 60. Many estimates have agreed that the average Western diet pro vides between 10 and 15 mg. of iron daily, of which only 5 – 10 % is absorbed.

Iron absorption takes place mainly in the upper jejunum, though some is absorbed in all parts of the small intestine and even in the colon. Iron in food is mostly in ferric form and must be reduced to the ferrous form before it can be absorbed; this reduction begins in the stomach – though very little is absorbed there – and continues in the small intestine. The iron is absorbed via the brush-border of the intestine and then may take one of two paths; it is either passed into the blood, where it combines with a globulin, and passes to the marrow or to storage sites; or it combines with the protein, which is then deposited in the intestinal cells.

Iron is lost mostly through the gastrointestinal tract by way of red cells and intestinal cells containing iron lost in the constant desquamation from the intestinal mucosa.

New words

iron – железо
varying – изменение
hemoglobin – гемоглобин
storage – хранение
myoglobin – миоглобин
fraction – фракция

together – вместе
body-weight – масса тела
desquamation – десквамация

Передайте письменно содержание текста.

Text 47. Atherosclerotic mechanisms

Pivotal mechanisms involved in atherogenesis include.

1. Focal intimal influx and accumulation of plasma lipoproteins at lesion-prone sites.

2. Focal intimal monocyte-macrophage recruitment.

3. Generation within the intima of reactive oxygen species of free radicals by smooth muscle cells, macrophages and endothelial cells.

4. Oxidative modification of intimal lipoproteins by these reactive oxygen species to produce such oxidatively modified lipoproteins species as oxidized LDL and Lp(a).

5. Foam cell formation due to the uptake of oxidatively modified lipoproteins by the non-down-regulating macrophage scavenger receptors.

6. Foam cell necrosis, most likely due to the cytotoxic effects of oxidatively modified LDL. This process gives rise to the extracellular lipid core, and is an important event in the transition from the reversible fatty streak to the less readily reversible, more advanced atherosclerotic lesion.

7. Smooth muscle cell migration to and proliferation in the arterial intima, a process in which platelet-derived growth factor is believed to act as a chemo oattractant. Fibroblast growth factors likely regulate smooth muscle cell proliferation.

8. Plaque rupture, primarily at sites of greatest macrophage density. Proteolytic enzymes released by macrophages may stimulate plaque rupture, which ultimately leads to mural or occlusive thrombosis. Thrombosis contributes significantly to the stages of plaque growth.

9. Autoimmune inflammation, likely the result of anti-genic epitopes of oxidized LDL. Lipoproteins, such as LDL and Lp(a), enter the subendothelial space and intercept free radicals generated by endothelial cells. Following oxidation, these charge-modified lipoproteins are taken up by the non-down-regulating macrophage scavenger receptors pathway, resulting in lipid-rich, cholesteryl ester rich foam cells. Concurrently, circulating monocytes continue to attach to the endothelium, attracted by the chem oattractant MCP-1, and oxidized LDL. The expression and synthesis of MCP-1 by endothelial and smooth muscle cells is augmented by oxidatively modified lipoproteins, allowing the process to continue.

The next phase in atherogenesis is the development of the classic fatty streak as result of the continued uptake of oxidatively modified LDL by the macrophage scavenger receptors with continuing foam cell formation. A few smooth muscle cells can also be seen apparently entering the subendothelial space and proliferating within the intima during this phase. The transitional phase of atherogenesis is characterized by necrosis of the foam cells and the formation of an extracellular lipid core. In this stage, there is an increase in both smooth muscle cells proliferation and collagen synthesis, and lesions continue to grow. As long as elevated low density lipoproteins are present in the circulation, the atherosclerosis

process continues. Among the additional changes taking place is the influx of Tlymphocytes. The involvenment of an autoimmune inflammatory component becomes obvious in the late stages of lesion development and is reflected by a prominent lymphocytic infiltration of the adventitia.

New words
atherogenesis – атерогенез
plaque – атеросклеротическая бляшка
lymphocytic – лимфотический
inflammatory – воспалительный
low density lipoproteins – липопротеины низкой плотности

Передайте письменно содержание текста.

Text 48. Advances in blood component separation and plasma treatment for therapeutics

The separation of blood cells from plasma is done routinely by centrifugal techniques.

Membranes for plasma separation.

Membrane modules vary in surface area from about 0,15 to 0,8 m2. Membrane plasma separation is a relatively simple process. At relatively low transmembrane pressure (generally less than 50 mm Hg), adequate plasma fluxes can be achieved. Equipment requirements are only minimal and the operation is much akin to that for other extracorporeal treatment technologies as hemodialysis, hemofiltration and hemoperfusion.

Membrane of on-line plasma treatment.

Plasma exchange whether by centrifugal or membrane techniques requires that the plasma discarded be replaced by physiological solution, which in most cases is en albumin solution. Because essential plasma components as well as pathological ones, are removed during plasma exchange, techniques designed to remove only the pathological components would be highly desirable. Review of the disease states treated by plasma exchange reveals that mane of the marker solutes are of molecular weight larger (generally greater than 100 000 Daltons) than albumin, suggesting membrane filtration as physical separation techniques for their removal.

With presently available membranes, selective passage of albumin (near 70 000 Daltons) and lower molecular weight solutes with complete retention of larger molecular weight solutes is difficult to achieve. However, such a complete separation may not be desirable since many higher molecular weight solutes are normal components of plasma to apply some selectivity in the separation of the marker solutes with a high return to the normal constituents of plasma and thus no requirement for plasma product infusion, the technique of cry filtration was applied.

Cry filtration is the on-line technique of plasma treatment consisting of plasma cooling followed by membrane filtration. By cooling the plasma, cryogen is deposited on the membrane during the Filtration process. The cryogen has been shown to contain concentrated quantities of the marker solutes. Response to therapy in the majority of patients with rheumatoid arthritis has been from good to excellent. In treatments, decreases in marker solutes have been noted coupled with improvement in clinical symptomology.

Membrane technology appears very promising in the separation and treatment of plasma on-line. Chronic treatment therapies appear safe and well tolerated by the patients.

New words

centrifugal technique – центрифужные технологии

plasma exchange – плазмообмен

therapeutic – терапевтический
metabolic – метаболический
multiple – множественный
extracorporeal – экстракорпоральный

Передайте письменно содержание текста.

Text 49. Artificial oxygen carries

Artificial oxygen (O2) carries aim at improving O2delivery Artificial O2carries thus may be used as alternative to allogeneic blood transfusions or to improve tissue oxygenation and function of organs with marginal O2supply. Artificial O2carries can be grouped into modified hemoglobin (Hb) solutions and perfluorocarbon (PFC) emulsions. The native human Hg molecule needs to be modified in order to decrease O2affinity and to prevent rapid dissociation of the native tetramer into dimers. The O2transport characteristics of modified Hb solutions and PFC emulsions are fundamentally different. The Hb solutions exhibit a sigmoidal O2dissociation curve similar to blood. In contrast, the PFC emulsions are characterized by a linear relationship between O2partial pressure and O2content. Hb solutions thus provide O2transport and unloading capacity similar to blood. This means that already at a relatively low arterial O2partial pressure substantial amounts of O2are being transported. In contrast, relatively high arterial O2partial pressures are necessary to maximize the O2transport capacity of PFC emulsions. Modified Hb solutions are very promising in improving O2transport and tissue oxygenation to a physiologically relevant degree. Because cross-matching is unnecessary, these solutions hold great promise as alternative to allogeneic blood transfusions and as O2therapeutics, which might be of great value also in the prehospital resuscitation of trauma victims or in specific situations in intensive care medicine. In patients with a reduced cardiac contractility and normal or elevated mean arterial pressure Hb infusion may increase systemic and pulmonary vascular resistances with consequent reduction in, cardiac output. In contrast, in a previously healthy trauma victim, suffering from severe hypovolemia due to massive hemorrhage, the combined effects of volume replacement, added O2transport capacity, and mild vasoconstriction due to the infusion of a modified Hb solution may be beneficial.

PFC are carbon fluorine compounds characterized by a high gas-dissolving capacity, low viscosity, and chemical and biological inertness. Manufacturing an emulsion with very specific characteristics is a great technologic challenge. After intravenous application, the droplets of the emulsion are being taken up by the reticular-endothelial system, droplets are slowly broken down, the PFC molecules are being taken up in the blood again and transported to the lungs, where the unaltered PFC molecules are finally excreted via exhalation. The ability of PFC emulsions to transport and efficiently unload O2is undisputed. With the application of perflubron emulsion, cardiac output tender to increase.

New words

saturation – насыщение гемоглобина кислородом
emulsion – эмульсия
oxygen – кислород
solution – раствор
tissure oxygenation – оксигенация тканей

Text 50. POLICLINICS

There are many polyclinics in our country. Doctors of different specialties: therapeutics, neurologists, surgeons, dentists, oculists, psychiatrists, urologists and nurses wore there. There are many different laboratories, x-ray and procedure rooms, consulting and waiting rooms in our polyclinics.

When a patient comes to the polyclinics he goes to the registry first. A registering clerk on duty asks his name, address, age, occupation and writes it down in the patient's card.

Doctors examine their patients in their consulting rooms. During the medical examination doctors question their patients thoroughly, listen to their heart and lungs, feel their pulse and take their blood pressure, palpate, auscultate and percuss them, make the diagnosis, fill in their cards and prescribe them a special treatment.

During the physical examination doctors use such methods as palpation, percussion, auscultation, questioning a patient, feeling his pulse, taking electrocardiograms, etc.

At the end of the physical examination doctors make a diagnosis, prescribe the necessary medicine and treatment if it is necessary.

Our doctors treat patients not only with the help of different mixtures, powders, injections, but they always use a good bedside manner and deal with patients very carefully.

The duty of the doctor is to treat a patient not only with different remedies but with a kind word and hearty attitude.

Words:

1. specialty – специальность
2. laboratory – лаборатория
3. therapeutist – терапевт
4. x-ray room – рентгеновский кабинет
5. neurologist – невролог
6. procedure room – процедурный кабинет
7. surgeon – хирург
8. waiting room – комната ожидания
9. psychiatrist – психолог
10. registry – регистратура
11. urologist – уролог
12. to auscultate – выслушивать(мед)
13. nurse – м.сестра
14. to percuss – выстукивать(мед.)

Ex.1 Find English equivalents. Найдите английские эквиваленты.

Врачи разных специальностей, процедурные кабинеты, медицинский осмотр, поставить диагноз, измерять кровяное давление, лечить пациента.

Ex.2 Find Russian equivalents. Найдите русские эквиваленты.

Consulting and waiting rooms, listen to heart and lungs, to auscultate and percuss, prescribe them a special treatment, to use a good bedside manner.

Ex.3 Answer the questions. Ответьте на вопросы.

1.What are our policlinics equipped with?
2.Where do doctors examine their patients?
3.What do doctors do during the medical examination?
4. What kind of methods do doctors use during the physical examination?
5. How must the doctor treat a patient?

Text 51. HOSPITAL

When patients are admitted to the hospital, they are examined by a doctor on duty in the reception ward. He gives the instructions to what wards and departments a sick person should be admitted.

A nurse on duty fills-in a patient's case report (case history) in which she writes down a name and initial diagnosis made by a doctor at the polyclinic (= made by a district doctor).

At the in-patient department nurses begin working early in the morning. They take patient's to, give them intramuscular and intravenous injections, take stomach juice for analysis apply cups and mustard plasters, give all prescribed medicines (remedies).

The drugs are kept in a special drug cabinet'. All medicines have labels with names and doses indicated on them.

Doctors begin to make rounds at nine o'clock in the morning.

After medical check-up (examination) doctors administer different procedures to the patients. They order electrocardiograms to be taken of some patients. Other patients are to undergo lab. tests. Some patients are administered a bed regimen, some are recommended (allowed) to have a walk, some are to follow a special diet to relieve pain in the stomach or to prevent stomach troubles.

As a rule, the doctors treat their patients carefully that helps sick people to get better.

As soon as the patient is admitted to the in-patient department the ward doctor fills-in the patient's case report (case history, case record, in-patient'' card, in-patient's chart – история болезни). It must include the information about the patient's parents – if they alive or dead.

The doctor must know what caused the death and at what age the parents died. It is necessary for a doctor to know if anybody in the family has ever been ill with tuberculosis or has had any mental or emotional impairments. This information composes the family history (семейный, наследственный анамнез).

The patient's medical history (case report, case record, medical in-patient card, chart) must include the information about diseases the patient had both as a child and as an adult. The doctor must know if a patient had an operation or a trauma. These finding compose the past history (PH past medical history, life history – жизненный анамнез). The patient's blood group and his sensitivity to antibiotics must be determined. The doctor writes down the obtained information in the case report.

The attending doctor must know the symptoms and complaints of patients as well as how long the people have had these complaints.

The history of present illness makes a part of a case history. The history of present illness contains a lot of findings, i.e. information of the patient on his admission, the results of laboratory tests and X-ray examination, the course of the disease with any changes in symptoms and condition, the exact doses of the administered (prescribed) medicines, the effects of treatment.

The case history must always be written, very accurately and have exact and complete information.

Words.

1. case history (case report, in-patient card, in-patient chart, case record) – история болезни;
2. to cause the death – вызывать смерть;
3. mental or emotional impairments – душевные или эмоциональные нарушения (повреждения);
4. trauma – травма;
5. past history (PH, past medical history, life history) – жизненный анамнез;
6. blood group – группа крови;
7. sensitivity – чувствительность;
8. the history of present illness – история настоящего заболевания.

Ex.1 Find Russian equivalents. Найдите русские эквиваленты:

To admit to the hospital, a reception ward, a doctor on duty, a nurse on duty, to fill-in a case report, initial diagnosis, to give intravenous injections, to give intramuscular injections, stomach troubles, bed regimen, accurately, exact, complete information, is admitted to the in-patient department, fills-in, the patient'' case report, must include, if they alive or not, to cause the death, has ever been ill with, tuberculosis, any mental or emotional impairments, to compose, medical history, must include, to have an operation or a trauma, past history, sensitivity, the patient'' blood group, the obtained information, symptoms and complaints.

Ex.2 Find English equivalents. Найдите английские эквиваленты.

история болезни (дать синонимы); точный полный; верный (правильный); при поступлении в больницу

Text 52. FIRST AID STATION

The other day two medical students had a very interesting talk with Victor. Victor had graduated from the University two years before. He had been working as an ambulance doctor at the First Aid Station for two years. The two friends were greatly interested in the work of the First Aid Station. Victor was glad to answer their questions. Victor said that in case of an accident or a sudden severe illness calls were made to the First Aid Station which was on duty all day round.

The First Aid Station has many ambulances which are equipped with everything necessary for giving first aid and making a diagnosis. The ambulances carry artificial respiration apparatuses, different medicines, such as painkillers, tonics and sedatives; dressings, first aid instruments, such as pincers, scalpels, syringes and others; sets of splints and stretchers. There are special ambulances equipped with everything necessary for reanimation of the organism. All ambulances are radio equipped. This is a very important thing for the ambulance doctor, because it enables him to send the necessary information to the hospital, so that the hospital can prepare beforehand all the necessary instruments for an urgent operation, a blood transfusion or anything else.

The main thing in the work of the ambulance doctor is to make a correct diagnosis quickly. The ambulance doctor must have a deep knowledge of emergency surgery, toxicology, emergency therapy, obstetrics and gynecology, because he must always do his best to give the patient a proper aid on the spot.

While working as an ambulance doctor Victor had had some interesting cases. Last June, for example, a call was made to the First Aid Station. It turned out that a man had been run over by a car. When Victor reached the place of the accident he examined the victim. The man was badly injured, he had an open bleeding wound in his leg, his arm was fractured, there were many injuries, abrasions and bruises on his face and forehead. The man lost his consciousness and was moaning all the time.

First Victor tried to arrest profuse arterial bleeding; he elevated the injured extremity carefully and applied a tourniquet to it. Next he applied a sterile gauze dressing on the man's face and forehead to prevent contamination. Then Victor examined the arm and applied a splint to it. The injection of morphine and camphor having been given, the man recovered his consciousness, but he complained of nausea. It was necessary to transport the patient to the nearest hospital without delay, because the patient was in a very poor state, in which shock might develop as well. The stretcher-bearers laid the patient down on the stretcher carefully and in 15 minutes the patient was brought to the hospital. If the ambulance doctor hadn't given the patient emergency help, the patient would have died.

Once Victor had to give first aid to a boy who was badly burned. He removed only that clothing which was absolutely necessary. The remaining pieces of the clothing were removed from the burned surface with pincers. Victor didn't carry out any other measures to treat the burn, as excessive handling of the burned

part could increase pain and cause shock. If Victor had done so, shock would have developed. The burn was covered with a sterile, dry dressing. Doing this Victor tried to handle the burned part as little as possible. As it was a severe burn involving the whole leg and the knee-joint, a splint was applied over the dressing for the immobilization of the injured extremity.

Just the other day Victor was called to a patient with myocardial infarction. Being questioned the patient said he had been suffering from a severe, squeezing pain in the substernal area for two hours. The patient had had such a pain before, but it had been relieved by nitroglycerin. This time the pain was much more severe and it didn't subside after nitroglycerin. Besides the pain radiated to the left shoulder and arm. The examination suggested myocardial infarction.

Victor came up to the ambulance and called up a thromboembolic team. Before the arrival of the thromboembolic team Victor gave the patient an injection of 1 % promidole and 0,1 % atropine, after which the pain considerably subsided. If

Victor had not given the patient these injections, the pain would have been too severe. The thromboembolic team having arrived, the electrocardiogram was taken, the blood analysis was made, the prothrombin time was determined. The electrocardiogram and the blood analyses confirmed the diagnosis of myocardial infarction. The patient was transported to the hospital without delay.

Words:

Syringe – шприц
Emergency –неотложный
Gynaecology - гинекология
Injure – травма, повреждение
Abrasion – ссадина, царапина
Bruise – синяк, кровоподтек, гематома
Moan – стонать
Elevate – поднимать
Tourniquet – жгут
Nausea – тошнота
Excessive – избыточный
Joint – сустав
All day round – круглые сутки

For reanimation of the organism – для оживления (реанимации) организма.

This is a very important thing – это очень важно обратите внимание на перевод слова thing после прилагательного:

The main thing is to make a correct diagnosis. Главное – это поставить правильный диагноз

he must always do his best – он всегда должен делать все возможное

shock might develop as well — мог также развиться шок; to develop — развиваться, появляться.

Ex.1 Find English equivalents. Найдите английские эквиваленты.

Оборудование, первая помощь, студенты медики, закончил университет, круглые сутки, ставить диагноз, аппарат искусственного дыхания, оснащены радио, быстро, неотложная хирургия, стараться изо всех сил, потерял сознание, стонал, остановить кровотечение, осмотреть пострадавшего, положить на носилки, обожженная поверхность, перевозить пациента, сделать пациенту уколы.

Ex.2 Find Russian equivalents. Найдите русские эквиваленты.

To sterilize a syringe, syringes are sterilized before giving injections, an ambulance doctor must always have a syringe with him, emergency case, emergency measures, emergency surgery, emergency therapy, lectures in Emergency Surgery, to take notes of a lecture in Gynaecology, to pass an examination in Gynaecology, injured, to injure badly, to injure seriously, to injure slightly, to be injured in an accident, to injure one's arm, to injure one's leg, to injure the kidney, to injure the liver, abrasions, a slight abrasion, bad abrasions, to get abrasions while falling down, there are abrasions on the patient's face, bruises, many bruises, there are many bruises on the patient's body, to get bruises in an accident, bruises.

Ex. 3. Answer the questions. Ответьте на вопросы.

1. With whom did medical students have a very interesting talk the other day?
2. When did Victor graduate from the University?
3. Where had Victor been working for two years?
4. What do ambulances carry?
5. What is the main thing in the work of the ambulance doctor?
6. What knowledge must the ambulance doctor have?
7. What did Victor do to arrest profuse arterial bleeding?
8. Why did Victor apply a sterile gauze dressing?
9. What injection did Victor give the man
10. What did the man complain of after he recovered his consciousness?
11. Why was it necessary to transport the man to the nearest hospital without delay?
12. What did the stretcher-bearers do?
13. What had happened to the boy whom Victor gave first aid?

Text 53. HEALTH CARE IN RUSSIA

The characteristic feature of health care in Russia is the attention paid to the prophylaxis. One of the main tasks is the fight against various diseases is the early detection of the first signs of the diseases. That's why much attention is paid to the health education of the population.

The primary medical care is provided by polyclinics. Modern polyclinics are large, they have their own laboratories and X-ray, physiotherapy (medical treatment), surgical and dental departments. There are polyclinics for adult patients and for children. Out-patients are seen at the polyclinics by district doctors.

The emergency ambulance service operates day and night and is free of charge. A person has to dial 03 for a doctor to come.

Specialized hospitals in big cities are for the treatment of particular diseases –infectious diseases and mental impairments, cancer, eye diseases and others. Nowadays there are a number of private diagnostic and consultation centers, general hospitals specialized clinics in Russia. Medical and health care is provided with compulsory and voluntary medical insurance programs set up by the State via [vaiə] private insurance companies.

Words:

1. health care – здравоохранение
2. district doctor – участковый врач
3. emergency ambulance service – скорая (неотложная) помощь
4. primary medical care – первичная медицинская помощь
5. to be equipped with – быть оборудованным чем-либо
6. qualitative – качественный
7. mental impairment [im'peəmənt] – умственное расстройство
8. medical insurance – медицинское страхование

Ex.1 Find English equivalents. Найдите английские эквиваленты.

Раннее выявление; санитарное просвещение, взрослые пациенты, участковые врачи, работает день и ночь, надо набрать 03, определенные заболевания, обязательное и добровольное страхование.

Ex.2 Find Russian equivalents. Найдите русские эквиваленты.

the attention paid to the prophylaxis; the fight against various diseases; polyclinics for adult patients and for children; are for the treatment of particular diseases .

Ex.3 Answer the questions. Ответьте на вопросы.

1. What is the characteristic feature of health care in Russia?
2. Why is much attention paid to the health education of the population?
3. What is primary medical care provided by?
4. Is ambulance service free of charge in our country?
5. What are specialized hospitals for?

Text 54. HEALTH CARE IN THE USA

Health care system in the USA exists on three levels: the level of the family doctor, the medical institution or hospital and the United States Public Health Service. Not many Americans seek medical help from private doctors.

A private doctor, they call him a family doctor, gives his patients regular examinations and inoculations. In case professional care is needed, the family doctor arranges for the patient to see a specialist or to go to a hospital. The family

doctors´ receives pay directly from the patient. Most physicians have private practices. They make use of the hospital`s facilities whenever necessary. A family doctor either has his own private office or works with several other doctors in a so-called group practice.

Many Americans have no family doctor and they come directly to the hospital for all their medical needs. The hospital provides health care to the sick and injured. They have government-financed and private hospitals. The patients are admitted to hospitals or clinics staffed by consulting physicians, residents, interns and highly skilled nurses. The nursing staff is very important. Nurses and patients are in close contact throughout the patients` stay in the hospital. Social services are available to the patients and families regarding personal, emotional, and financial problems that may arise from continued illness or disabilities.

Most hospitals have the following major departments or units: surgery, obstetrics and gynecology, pediatrics and general medicine. They may also have trauma and intensive care units, neurosurgical and renal care units, and a psychiatric unit. The emergency room (unit) is a very special area in the hospital. The emergency patients receive immediate attention.

The cost of medical care in country is very high. Two thirds of the population have private health insurance. Some people have health insurance, life insurance (financial assistance for the relatives in case of death), disability insurance and retirement benefits at their place of employment. Most employees and their families now pay more than 50 per cent of the costs of health insurance. The great cost of medical care in the country and a lot of people who could not pay for it forced the federal government to develop two health insurance programs – Medicaid and Medicare.

Medicaid, started in 1966, is a federal program providing free medical care for low-income people, the aged, the blind and for dependent children.

Medicare, started in 1967, is a health insurance program for the elderly and disabled. It provides free medical care aged Americans over 65, for those who in the past had the greatest medical expenses.

The chief scientific problems facing USA medicine are: heart disease and cancer. The chief causes of suffering and death today are cancer and cardiovascular disease, including hypertension, stroke and atherosclerosis. Also much medical research is done on illnesses of aging, disabilities caused by arthritis, mental illness, drug addiction, and genetic problems.

Words:

private doctor – частный врач
to inoculate – делать прививку
inoculation – прививка
consulting physician – врач-консультант
disability – нетрудоспособность, инвалидность
retirement – пенсия
stroke – инсульт
dependent children – несовершеннолетние дети
the aged – пожилые
the blind – слепые
the disabled – инвалиды

Ex.1 Find English equivalents. Найдите английские эквиваленты.

Здравоохранение; нуждаются в медицинской помощи; больницы, финансируемые государством; урологическое отделение; пособие по инвалидности; люди с низкими доходами; престарелые; бесплатная медицинская помощь; заболевания сердца; генетические проблемы.

Ex.2 Find Russian equivalents. Найдите русские эквиваленты.

To give regular examinations and inoculations; to arrange; to receive pay directly from the patient; private practices; the hospitals facilities; provides health care; highly skilled nurses; are in close contact; social services; emergency patients; health insurance; scientific problems.

Ex.3 Answer the questions. Ответьте на вопросы.

1. What kinds of hospitals are there in the USA?
2. What duties does a private doctor have?
3. Who works at the American hospitals?
4. Do social services help people at the hospitals?
5. Do nurses work in close contact with patients?
6. What are the departments of hospitals?
7. Is the cost of medical care high in the USA?
8. Are there people who can’t pay for medical care?
9. What are Medicaid and Medicare?
10. What are the main problems of medical science in the USA?

Text 55. HEALTH CARE IN GREAT BRITAIN

In Great Britain the National Health Service (NHS) provides free medical care both in hospitals and in the out-patient clinic. Free emergency medical treatment is given to any visitor from abroad who becomes ill while staying in the country. But those who come to England specifically for treatment must pay for it.

The general practitioner services include the family doctor service, the dental service, the pharmaceutical service and the ophthalmic service. If a patient is dissatisfied with NHS or family doctor, or a dentist, he may change to another one. In fact, 97% of the population uses the NHS. It is necessary to say about the role of the family doctor (General Practitioner – GP), which is very important. As a rule, not all patients need highly specialized attention and GP does 90% or so of the total medical work. Family doctors work in close cooperation with the hospital doctors.

A patient in England may choose between NHS or private treatment. Many people who have enough money prefer to be private patients because they want to establish a closer relationship with the doctor and they do not want to be put in a large ward with other patients.

In big cities there are some private hospitals which people may use.

There are many small hospitals with only about 200 beds in Great Britain.

Most of them are housed in inconvenient buildings because they are over 100 years. They are not economical and cannot provide a full range of service which requires a district hospital of 800 beds or more. Now there are more than 150 big health centers in the UK. The first Scottish health center was opened in Edinburgh in 1953. Health centers are institutions where various medical services both preventive and curative are brought together.

Health centers provide all the special diagnostic and therapeutic services family doctors may need, such as electrocardiography, X-ray, physiotherapy and good administrative and medical records systems. Health centers are the basis of primary care. They provide consultant services in general medicine, ear-nose-throat diseases, obstetrics and surgery, gynecology, ophthalmology, psychiatry and orthopedics. All consultations in the center are by appointment only. The patient is given a definite time at which to attend. Each doctor decides for himself how many patients he can examine in one hour.

The patient is the most important person in the health center and the doctors should direct all their energy towards helping him as much as possible.

Words:

To be dissatisfied – быть неудовлетворенным
Close cooperation – тесное сотрудничество
Enough – доста – неудобный

Ex.1 Find English equivalents. Найдите английские эквиваленты.

Национальная система здравоохранения; оказывается; население; как правило; нуждаться; работают в тесном сотрудничестве; индивидуальное лечение; быть помещенным; помещены, центр здоровья; рентгенологическое обследование; электрокардиограмма; основа; хирургия; только по назначению; определенное время; за час.

Ex.2 Find Russian equivalents. Найдите русские эквиваленты.

Our-patient clinic; free medical care; may change; highly specialized attention; to provide; a full range of service; are housed; preventive and curative; by appointment; a definite time; towards.

Text 56. AT THE CHEMISTS

When you are ill you consult a doctor. He prescribes you the treatment and writes out a prescription.

At the chemist's you can get patent medicines of all kinds: ampules of glucose and camphor for injections, different pills, tablets and powders, cough mixtures, heart drops, nasal drops, vitamins, cod liver oil, ointments, sleeping draughts, laxatives, sedatives, bandages, adhesive plasters, mustard plasters, bottles of iodine.

There are usually two departments in a large chemist s at the chemist s department one can have the medicine immediately, other drugs have to be ordered at the prescription department.

At the chemist's all medicines are kept in drug cabinets, on the open shelves and in the refrigerator. Every small bottle, a tube or a box has a label with the name of the medicine. There are labels of four colours: green labels indicate medicines for internal use; blue labels indicate drugs for injections, labels of a yellow colour indicate drugs for external application and labels of a pink colour indicate drugs for the treatment of eye diseases. The single dose and the total dosage are indicated on the label.

At the chemist's one can buy different drugs for intramuscular and intravenous injections, tubes of ointments, different pills and tablets for internal use, tonics and sedatives; drugs for cough and headache; cardiac medicines; herbs and things for medical care (hot-water bottles, medicine droppers, cups, thermometers) and many other things. One must be careful using medicine.

Words:

1. A chemist – аптека
2. a chemist s department – отдел ручной продажи
3. a prescription department – рецептурный отдел
4. for internal use – для внутреннего использования
5. for external application – для внешнего использования
6. to indicate – указывать,показывать
7. cod liver oil – рыбий жир
8. infusion – настой
9. drops – капли
10. tincture – настойка
11. powder – порошок

Ex.1 Find English equivalents. Найдите английские эквиваленты.

Лечение; выписывать рецепт; различные таблетки; снотворное; слабительное средство; рыбий жир; два отдела; внутримышечные и внутривенные

Ex.2 Find Russian equivalents. Найдите русские эквиваленты.

you can get patent medicines of all kinds; have to be ordered at the prescription department; all medicines are kept in drug cabinets; drugs for external application ; must be careful using medicine.

Ex.3 Answer the questions. Ответьте на вопросы.

1. What can you get at the chemist's
2. How many departments are there in a large chemist s?
3. Where are all medicines kept in?
4. What do labels of four colours mean?
5. How must we use medicine?

Text 57. DRUGS

The metric system is used exclusively when ordering and prescribing drugs. The metric unit of weight is the gram (g) and this is divided into thousandths called milligrams (mg).

The unit of volume is the liter (l) which is subdivided into thousandths called milliliters (ml). A liter is equivalent to just under two pints. The standard medicine teaspoon holds 5 ml.

Various reference books are available to help practitioners keep up to date with new drugs, the trade names of drugs, dosages and precautions with particular drugs. Manufacturers are also legally required to provide data sheets for all new drugs, giving full details of usage.

Drugs may be administered externally or internally.

Drugs are classified into groups which have a specific action, such as antibacterial drugs, which are used for the treatment of infections, or local anesthetics, which abolish pain. Some drugs belong to more than one group. For example, lignocaine, which is local and surface anesthetic. Let's take antibacterial drugs as an example.

They are administered internally to kill bacteria.

Antibiotics are drugs originally derived from microorganisms: for example, penicillin, tetracycline, and erythromycin. Many people are allergic to penicillin and its derivatives. If such people are given any of these drugs they are liable to develop a dangerous reaction. Patients must always be asked beforehand if they are allergic to penicillin or any other drugs.

There are strict legal requirements for the purchase, storage, use, identification, dispensing and prescription of drugs.

Many drugs are poisonous if taken accidentally or in excess; others caustic and may cause painful burns. Some common sense precautions in storing drugs are to keep them well away from food and drinks; keep poisons locked up in a special poisons cabinet; and to keep caustics on the lowest shelf where accidental spillage cannot affect the eyes or burn the face.

Stocks of drugs must be stored in accordance with manufacturers' instructions and not kept beyond their expiry date. Records of their purchase, supply and expiry date must be kept for at least 11 years. Any drugs which have passed their expiry date should be discarded, together with any solutions which have become discolored or cloudy.

Certain drugs, such as adrenaline, halothane and hydrogen peroxide must be stored in dark bottles to prevent premature deterioration, while poisons bottles are ribbed to indicate by touch that their contents are dangerous.

Words:

1. drug – лекарство, наркотик
2. exclusively – исключительно
3. prescribe – предписывать
4. volume – объем
5. reference book – справочник
6. available – доступный
7. precaution – осторожность, противопоказание
8. data sheet – вкладыш – инструкция
9. administer – назначать, применять, давать (лекарство)
10. externally – наружно
11. anesthetic – анестетик
12. abolish – снимать, устранять
13. kill – убивать
14. derive – происходить от
15. derivatives – производные
16. liable – подверженный, склонный
17. beforehand – заранее
18. order – заказывать
19. just under two pints – приблизительно двум пинтам
20. various reference books are available – существуют самые различные справочники
21. keep up to date with new drugs – осваивать новые препараты
22. trade names – торговые знаки (зарегистрированные фирменные названия, например, лекарств)
23. to provide data sheets – обеспечить вкладышем – инструкцией
24. which abolish pain – которые действуют обезболивающе

Ex.1 Find English equivalents. Найдите английские эквиваленты.

метрическая система, деленные на тысячные доли, стандартная чайная ложка содержит 5 мл, торговый знак, в соответствии с законом, представляя детальное предписание по употреблению, внутреннее или наружное применение, классифицироваться по группам, местное обезболивающее, получаемые из микроорганизмов, быть аллергенным, опросить заранее.

Ex.2 Answer the questions. Ответьте на вопросы.

1. What system is used when ordering and prescribing drugs?
2. What is the metric unit of weight?
3. What units of volume do you know?
4. Why are reference books useful to practitioners?
5. Who are legally required to provide full details of new drugs usage?
6. How are drugs administered?

7. What groups are drugs classified into?
8. Do drugs belong only to one group?
9. What is the aim of administering antibacterial drugs?
10. What are antibiotics originally derived from?
11. What reaction can develop if the people are allergic to some drugs?

Text 58. INFECTIOUS DISEASES

Infection means invasion of the body by microorganisms which are harmful. Every infectious disease has its own specific way of invasion into a human body. Infection may pass from one person to another through blood, stools, saliva, instruments; it may enter the body through skin cuts, it may be swallowed.

There are intestinal infections, which are spread through intestines and stools; infections of the respiratory tract, which are spread during coughing or talking; skin infections and infections spread by living insects.

All-the infectious diseases are divided in several stages. They are: 1) the period of incubation, 2) the prodromal stage during which the initial symptoms may appear, 3) the stage of a fully developed disease, 4) the stage of decline

To establish a proper disease, it is necessary to do some laboratory tests at the right time and in the right place.

Characteristic symptoms of the diseases may be local and systemic. Symptoms very according a disease, but a sore throat, sneezing, nausea and vomiting, restlessness and prostration, pain the limbs and back, rash may occur among the most characteristic local symptoms.

A lot of disease may begin with these symptoms.

It is necessary for a medical staff to be careful during physical examination of the infected patients. There are two important steps which mustn't omitted: to take the temperature and examine the throat. A nurse who looks after the infected person must wear a special gown and a mask. She must wash her hands with soap as often as she can, she must be very careful to prevent the spread of the infection.

Words:

infection – инфекция
infectious – инфекционный
invasion – инвазия, вторжениеi
intestinal – кишечный
respiratory – респираторный
insect – насекомое
prodromal – предшествующий
decline – упадок, стихание

Ex.1 Find English equivalents. Найдите английские эквиваленты.

Микроорганизмами; может переходить; через порезы в коже; можно проглотить; во время кашля или разговора; распространяемые живыми насекомыми; делятся; чтобы осмотреть горло; ухаживать за инфицированным больным; предотвратить распространение инфекции.

Ex.2 Find Russian equivalents. Найдите русские эквиваленты.

Invasion of the body; specific way of invasion; it may be swallowed; through intestines and stools; skin infections; are divided; fully developed disease; characteristic symptoms; rash may occur; medical staff; must be very careful.

Ex.3 Answer the questions.Ответьте на вопросы.

1. What does infection mean?
2. In what ways may infection pass?
3. What kinds of infections are there?
4. How many stages are infectious diseases divided in?
5. What is necessary for a medical staff during examination of the infected patients?
7. What are the main tasks for nurses?

Text 59. SWINE INFLUENZA

Swine influenza is a new highly infectious respiratory disease of pigs caused by influenza a (H1N1) that was not previously detected in swine or humans. Infection in human is a result of close contact with infected animals. Later the infection is spread by human-to-human transmission. If efficient human-to-human transmission is established, a pandemic is possible.

Symptoms of H1N1 influenza (swine flu) are the same as of seasonal influenza: fever, cough, a sore throat, body aches, headache, chills and fatigue, diarrhea, nausea and vomiting.

Persons with these symptoms should stay at home, avoid close contact with people who are not sick, wash their hands often, avoid touching their eyes, nose and mouth and should call their districts doctor immediately. The duration of illness is typically 4-6 days.

If swine flu is suspected, the doctor should obtain a respiratory swab for H1N1 influenza testing and send it to the laboratory for diagnostic study.

Treatment of a patient ill with swine flu, is largely supportive and consists of the following: a doctor must give a patient a sick list or take him to the hospital prescribe him a bed regimen, much fluid to drink, cough suppressants, may require intravenous injection and others supportive measures.

If there is a confirmed case of H1N1 flu, preventive measures are recommended. Schools and colleges should be closed for some time. Children and students must avoid all meetings. Duration of schools and colleges closing depends on epidemiological findings.

Words:

1. pandemic – пандемия
2. chills – озноб, дрожь
3. fatigue – усталость, утомление
4. diarrhea – понос
5. nausea – тошнота
6. vomiting – рвота
7. respiratory swab – мазок из верхних дыхательных путей
8. cough suppressants – противокашлевое средство
9. antipyretic – жаропонижающее средство
10. to confirm – подтверждать

Ex.1 Find English equivalents. Найдите английские эквиваленты.

Инфекционное респираторное заболевание; вызванное; тесный контакт; распространяется; устанавливается; озноб и усталость; тошнота и рвота; участковый врач; продолжительность заболевания; подозревается; мазок из верхних дыхательных путей; поддерживающий; пить много

жидкости; внутривенная инфекция; предупредительные меры; должны избегать встреч; показатель.

Ex.2 Find Russian equivalents. Найдите русские эквиваленты.

Highly infectious disease; close contact; infected animals; human -to-human transmission; seasonal influenza; should call a district doctors; should obtain a respiratory swab; antipyretics and analgesics for fever; other supportive measures; schools and colleges should be closed; depends on epidemiological findings

Ex.3 Answer the questions. Ответьте на вопросы.

1. What is swine influenza?
2. How is swine influenza spread?
3. Is pandemic of swine influenza possible?
4. What are the symptoms of swine influenza?
5. What is the treatment of swine flu?
6. Should a patient stay at home if he becomes ill?
7. What are the tasks of a district doctor?
8. What preventive measures are recommended if there is a confirmed case of a swine flu?

_____
_____
_____
_____
_____
_____

Text 60. HEPATITIS

This is quite a common disease and every now and then one hears of someone who has jaundice. The disease is acquired by drinking, or eating anything contaminated by the hepatitis virus, which is passed in the infected person's stool.

The presence of hepatitis is a pointer to the inadequate arrangements of safe water supply and sewage disposal in a locality. The virus is very resistant and even boiling does not destroy it.

There is fever, loss of appetite, vomiting and pain in the upper abdomen. Loss of appetite and a feeling of being ill is out of proportion of the fever. Even the smell or sight of food may make the person sick. In 4-5 days the urine becomes dark in colour, and later the eyes and skin become yellow. Gradually, the appetite returns and the fever comes down.

The child should remain in bed as long as he has fever and feels ill. Once his appetite returns he can play about in the house, but should not go to nursery school till jaundice has disappeared and he feels quite well.

In the acute stage, the child should be encouraged to drink sweet drinks such as orange juice. Sugarcane juice is excellent. Sugar is good for recovery of the liver.

As the appetite returns, ordinary household food can be given, but you should cut down on butter, oil, fried food.

Words:

Jaundice – желтуха
To cut down – исключить
Sewage – сточные воды
Resistant – стойкий
Disease – болезнь
Boiling – кипение
Vomiting – рвота

Ex.1 Find English equivalents. Найдите английские эквиваленты

остаточно распространенное заболевание; вирус очень устойчив; потеря аппетита; рвота и боль в верхней части живота; моча становится темного цвета.

Ex.2 Find Russian equivalents. Найдите русские эквиваленты.

The presence of hepatitis; even boiling does not destroy it; the eyes and skin become yellow; the child should remain in bed; ordinary household food can be given.

Ex.3 Answer the questions. Ответьте на вопросы.

1.What kind of disease is hepatitis?
2. Name the common sources of hepatitis?
3. Does boiling destroy it?
4. When does the urine become dark in colour
5. What are the typical symptoms of hepatitis?

Приложение 1

Медицинская терминология

Называние болезни	
abscess	абсцесс, нарыв
ache (pain, hurt)	Боль
allergy	Аллергия
asthma	Астма
bronchitis	Бронхит
bruise	Синяк
burn	Ожог
cancer	Рак
cold	Простуда
cold (in the head)	Насморк
cut	Порез
diabetes	Диабет
diarrhea	Диарея
fever	повышенная температура
flu (influenza)	Грипп
fracture	Перелом
giddiness (dizziness)	Головокружение
headache	головная боль
heart attack	сердечный приступ
pus	Гной
rash	Сыпь
sickness	тошнота (также: болезнь)
stroke	Инсульт
sunstroke	солнечный удар
symptom	Симптом
toothache	зубная боль
wound	Рана

medical insurance	медицинская страховка
Health	Здоровье
Diagnosis	Диагноз
Pulse	Пульс
Hygiene	Гигиена
illness (disease)	Болезнь
Recovery	Выздоровление
Injury	травма, повреждение
Cough	Кашель
Cold	Простуда
Crutch	Костыль
Wheelchair	инвалидная коляска
Painkiller	болеутоляющее средство
Patient	Пациент
Dropper	Капельница
patch (plaster)	Пластырь
side-effect	побочное действие
sleeping pills	Снотворное
Thermometer	Термометр
Surgery	операция (хирургия)
Syringe	Шприц
medical examination	Медосмотр
blood pressure	кровяное давление
urine test	анализ мочи
drug test	анализ на наркотики
X-ray	Рентген
Treatment	Лечение
Therapy	Терапия
Prescription	Рецепт

medicine (drug)	Лекарство
injection (shot)	Укол
pharmacy (drugstore)	Аптека
Pills	Таблетки
Ointment	Мазь
Ambulance	скорая помощь
Bandage	бинт, повязка
first aid	первая помощь

Медицинский персонал	
doctor	доктор, врач
nurse	Медсестра
physician	врач (медик, терапевт)
veterinarian	Ветеринар
family doctor	семейный врач (лечащий врач)
dentist	Дантист
surgeon	Хирург
anesthesiologist	Анестезиолог
cardiologist	Кардиолог
traumatologist	Травматолог
orthopedist	Ортопед
gastroenterologist	Гастроэнтеролог
dermatologist	Дерматолог
gynecologist	Гинеколог
urologist	Уролог
ophthalmologist	окулист, офтальмолог
therapist	Физиотерапевт
pediatrician	Педиатр
healer	Целитель

Тело человека	
Height	Рост
Weight	Вес
Body	Тело
Head	Голова
Neck	Шея
Shoulder	Плечо
arm	рука (полностью)
hand	рука (кисть)
wrist	Запястье
forearm	Предплечье
chest	Грудь
back	Спина
lower back	Поясница
leg	Нога
foot	Ступня
knee	Колено
joints	Суставы
bones	Кости
stomach	Желудок
lung	Лёгкое
brain	Мозг
liver	Печень
spine, backbone, spinal column	Позвоночник
kidney	Почка
heart	Сердце
skeleton	Скелет
skull	Череп
ribs	Ребра
skin	Кожа

Области медицины	
anesthesiology /æn.əsˌθiː.ziˈɒl.ə.dʒi/	анестезиология
cardiology	кардиология
dentistry	стоматология
dermatology	дерматология
emergency /ɪˈmɜː(r)dʒ(ə)nsi/	неотложная помощь
endocrinology	эндокринология
gastroenterology	гастроэнтерология
gynecology	гинекология
internal medicine, general practice	терапия
nephrology /nɪˈfrɒl.ə.dʒi/	нефрология
obstetrics /əbˈstetrɪks/	акушерство
oncology	онкология
ophthalmology /ˌɒf.θælˈmɒl.ə.dʒi/	офтальмология
orthodontics /ˌɔː.θəˈdɒn.tɪks/	ортодонтия
orthopedics/orthopaedics	ортопедия
otolaryngology, otorhinolaryngology	отоларингология, оториноларингология
palliative medicine	паллиативная медицина
pediatrics	педиатрия
psychiatry /saɪˈkaɪətri/	психиатрия
rheumatology /ˌruːməˈtɒlədʒi/	ревматология
surgery	хирургия
urology	урология

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