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English for Physicians

A manual for the **1-year trainees** in the training programs
31.05.01 ***General Medicine***

Simferopol, 2017.

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The manual *English for Physicians* contains sixteen thematic units covering the material of the program for students of medical higher schools of the Russian Federation. The manual is designed for first-year trainees of speciality “General Medicine”. It is also supplied with appendices, vocabulary, test tasks and questions.

Пособие «Английский для врачей» содержит шестнадцать тематических уроков, охватывающих материал программы для обучающихся медицинских вузов Российской Федерации. Пособие предназначено для обучающихся первого курса по специальности «Лечебное дело». Пособие также снабжено приложениями, словарем, вопросами и заданиями на зачет.

English for Physicians
Содержание

UNIT I. A CAREER IN MEDICINE

In this unit

- talking about pros and cons of a medical profession
- using *to be* and *to have*
- plurals of nouns
- personal pronouns and possessives

Lead-in

1. Работа в парах. Задавайте вопросы и отвечайте на них. Вы можете выбрать несколько ответов или свой вариант.

1. Why are you learning English?
   a to know it better
   b to get a better job
   c to get to know people from other countries
   d to understand information in English
2. Which two of these things do you think are the most useful for learning a language?
   a to have a good memory
   b to have patience
   c to make an effort
   d to be interested in
3. How do you learn languages best?
   a taking part in class activities
   b doing exercises at home
   c doing games and listening to songs
   d having regular tests
4. What problems do you have speaking in English?
   a I am sometimes nervous
   b I make a lot of mistakes
   c I can't remember the right word
   d I take a long time to say things

2. Тест. Попробуйте ответить на эти вопросы.

1. How many people spoke English in 1000 AD?
a) 2 million b) 12 million c) 20 million
2. How many people speak it now?
a) 200 million b) 500 million
c) more than a billion
3. What percentage of the world's e-mails are in English?
a) 50% b) 80% c) 90%
4. How many languages are there in the world?
a) 4,000 b) 6,500 c) 9,000
5. What percentage of scientists read in English?
a) 40 to 50% b) 60 to 70% c) 80 to 90%

3. Просмотрите текст и проверьте ваши ответы.

English in the Third Millennium

Two thousand years ago English did not exist. A thousand years ago it was a language used by less than two million people. Today it is the most influential language in the world spoken by more than a billion people on the planet. They use it as the first, second or third language. In the next decade 2 billion people will learn English and about half the world will speak it.

Today English dominates science, business, the mass media and popular culture. 80% of e-mails on the Internet are in English, 66% of scientists read in English. But where will English be at the end of the third millennium?

One view is that English is going to become even more important as the global language while many other languages will just die out. At present half of the world's 6,500 languages are in danger of extinction. Another view is that English is already breaking up into separate languages, such as Australian English, American English, which differ greatly from standard British English.

Fortunately, neither of these things will happen. Although different variants of English will develop around the world, standard English will survive for international communication. But it won't be the only language. Other languages will also develop as the cultural and linguistic diversity is of great importance.

"When a man goes through six years training to be a doctor he will never be the same. He knows too much"

Enid Bagnold

Reading

To Be or Not to Be a Doctor

Applicants who effectively demonstrate to admissions committees that they have the proper motivation and **skill** set to be a good doctor are the ones who are accepted. Thus, here is a list of potential **reasons** to be a doctor. If you can only identify with one or two of these reasons, most likely you do not have the right motivation to become a **physician**.

Helping others in an incredibly significant way

Most people value their health above everything else in their lives whether they know it or not. When someone is ill or **injured**, his or her normal way of life is changed and doctors have the incredible **opportunity** to restore these people's lives to normal and even save some from death itself. Therefore being a doctor is extremely **rewarding**.

Medicine is fascinating

Becoming a doctor means learning everything there is to know about the human body. Medical students and doctors have the opportunity to examine the human body with the most innovative technology. From the pumping of the heart to **drugs** that take away **pain** to machines that allow you look inside a person, modern medicine remains one of the most fascinating subjects in the world.

Trust and honour

Doctors are trusted with sensitive information that most other people would not have **access** to. Patients share their deepest concerns with their doctors in hopes of being **healed**. To be trusted so much by anybody is a great honour.

Requires critical thinking and problem solving

Doctors have to use their **intelligence** and technical skills to treat patients. Many doctors enjoy the **challenge** of having to diagnose a patient and determine the best way to **treat** them. **Surgeons** and other procedure-based doctors love to work with their hands to find and fix problems.

However, those who survive medical schools (which are really **tough** and **require** all your abilities to move through) have a new set of problems in the real world. Here are some key challenges for a doctor serving humanity that can make helping patients very difficult.

Stressful and demanding work

A lot is **expected** of doctors. Many doctors are constantly on call. Most doctors work more than 40 hours a week. Their work is stressful because they **deal with** ill and often **frustrated** people. They carry a great burden on their shoulders because people lives' are in their hands. Many doctors feel overworked and stressed because of these pressures.

Work not worth the money

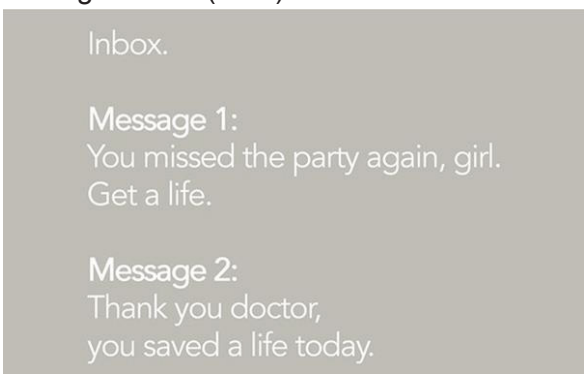
Many medical professionals feel like they are not making enough money. Doctors think that they are being underpaid for the amount of work they do especially since the typical physician works longer than the standard 40-workweek.

Excess of administrative work

Most people become doctors to treat patients, not to do paperwork. Yet a third of physicians spend more than 10 hours a week fulfilling those duties.

Difficulty of balancing work and life

Long hours at work means less hours at home with family and friends. Doctors can have very difficult time balancing work and outside life. This struggle plays a factor in the high **divorce** rate among doctors (29%).



Abridged. The full text is available at:
www.prospectivedoctor.com/reasons-to-be-a-doctor/
www.prospectivedoctor.com/reasons-to-not-be-a-doctor/

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Подберите определения к данным словам:

1. access	a) something that is difficult and that tests someone's ability or determination
2. challenge	b) the ability to learn, understand, and think about things
3. divorce	c) the right or opportunity to use or see something
4. intelligence	d) the facts about why something happens or why someone does something
5. skill	e) the official ending of a marriage
6. reason	f) an unpleasant physical feeling caused by an illness or injury
7. pain	g) the ability to do an activity or job well, especially because you have practiced it

3. Закончите предложения, используя активную лексику урока.

1. Physicians _____ patients with drugs and medications, while surgeons _____ _____ traumas.
2. The word "_____" has two main meanings: first, it is any substance used to treat a patient, and second, it is a synonym to the word "narcotic".
3. Have you ever heard about emotional _____, the ability to understand and listen to yourself and others?
4. The man opened fire in an Oklahoma restaurant and _____ several people.
5. Nowadays, patients feel no _____ during the operations.
6. Working-class people are _____ because they can't make as much money as they want.
7. Being a medical professional is really _____, but it's also one of the most _____ careers in the world.

4a. Найдите в тексте английские эквиваленты данных слов. Отработайте их произношение.

демонстрировать	
комиссия	
восстановить, реставрировать	
медицинский	
инновационный	
диагностировать	
процедура	
профессиональный	
типичный	
стандартный	
больной, пациент	
определить, идентифицировать	
человек, индивидуум	
основанный, базирующийся	
решать (проблему), фиксировать	

Такие слова называются интернационализмами. Всегда ли можно догадаться о значении этих слов в английском языке?

4b. Приведите ваши собственные примеры интернационализмов.

English word	Russian equivalent

Составьте с двумя из них предложения.

1. _____
_____

2. _____
_____

5. Подберите синонимы к данным словам и выражениям:

1. to treat	a) a patient
2. tough	b) a physician
3. an ill person	c) to solve
4. concerns	d) administrative work
5. to fix	e) normal
6. a doctor	f) to heal
7. paperwork	g) challenging
8. a skill	h) problems
9. typical	i) interesting
10. demanding	j) difficult
11. fascinating	k) an ability

Language Development

1. Просмотрите текст еще раз и ответьте на вопросы:

1. Which applicants are accepted into a medical school?

_____
_____

2. Why is being a doctor rewarding?

_____
_____

3. What do medical students learn?

_____
_____

4. Why are doctors trusted with sensitive information?

_____
_____

5. What do doctors need to treat their patients?

_____
_____

6. Why is doctor's work stressful?

_____
_____

7. Do doctors get enough money for their work?

_____
_____

8. Do doctors have to fill in many papers?

_____
_____

9. Why is it difficult for doctors to balance work and outside life?

_____
_____

2. Найдите в тексте *To Be or Not to Be a Doctor* слова, соответствующие данным определениям:

1. Wish to do something; enthusiasm:

_____

2. The state of being free from illness or injury:

_____

3. The end of the life of a person or organism:

_____

4.  _____

5.  _____

6. a group of people who are related to each other, such as a mother, a father, and their children: _____

7. the practical, especially industrial, use of scientific discoveries: _____

3. Какие из перечисленных ниже утверждений указывают на преимущества профессии врача? Какие относятся к недостаткам?

1. Doctors are considered the leaders in health care and have the final say on treatment decisions.
2. Doctors have always felt helpless and frustrated in the face of incurable diseases. Doctors and other healthcare workers now have to deal with the strains of superbugs that are emerging.
3. Doctors can treat and take care of their parents, children, other relatives and friends.
4. There are numerous opportunities available for healthcare professionals: clinical research, journalism, consulting, business ventures, and hospital administration.
5. Doctors do not have enough time to interview, examine and treat patients. Sometimes it may lead to incorrect diagnosis.
6. In a medical profession a simple mistake can cost a life.
7. The medical field is not very influenced by the ups and downs of the economy. Doctors are always needed so you will not have to worry about a job market as much as most other jobs.

4. Проект.

Prepare a short speech or essay on why you have decided to enter Medical Academy. Mention both advantages and disadvantages of your future profession.

Grammar in Use

Множественное число существительных

	Singular	Plural
A.	a surgeon a d**ay**	surgeon**s** d**ays** (compare with **C.**)
B.	a campus a class a lash a match	campus**es** class**es** lash**es** match**es**
C.	a difficulty	difficult**ies**
Exceptions		
D.	a person a child a man a woman a tooth a foot	people children men women teeth feet

1. Образуйте множественное число существительных.

Singular	Plural
an address a minibus a physician a schoolchild a university a businessman a sportswoman a way a person a church	

2. Перепишите предложения во множественном числе, внеся необходимые изменения.

E.g. He is a student. – They are students.

1. She is a businesswoman.

_____

2. Our university is rather big.

_____

3. A student was at the campus.

_____

4. He is a good person.

_____

5. I am a future surgeon.

_____

Личные местоимения и притяжательные прилагательные

Subject	Object	Possessive Adjective	Possessive Pronouns
I	me	my	mine
He	him	his	his
She	her	her	hers
It	it	its	its
We	us	our	ours
You	you	your	yours
They	them	their	theirs

5. Вставьте правильное местоимение или притяжательное прилагательное.

1. James has two friends. … goes to the library with … every Monday.
2. That's my Latin workbook. Can I have … back, please?
3. Our new professor is Mr Lagunov. … like … and … lectures a lot.
4. This book isn't … . My book has a different cover.
5. Who are those people? Do you know … names?
6. Rose and I are good students. … like our teacher Ms Smith and … likes … .
7. My father met Jim 30 years ago. He is an old friend of … .
8. Jane and Jack live not far from the University. … takes … 5 minutes to get there.

Глагол *to have*

Present Simple (Positive)			
I / We / You / They	**have**	a workbook.	
He / She / It	**has**		
Present Simple (Negative)			
I / We / You / They	**don't**	**have**	a workbook.
He / She / It	**doesn't**		
Present Simple (Questions)			
Do	I / we / you / they	**have**	a workbook?
Does	he /she /it		

Have got

Positive			
I / We / You / They	**have**	**got**	a workbook.
He / She / It	**has**		
Negative			
I / We / You / They	**haven't**	**got**	a workbook.
He / She / It	**hasn't**		
Questions			
Have	I / we / you / they	**got**	a workbook?
Has	he / she / it		

6. Употребите соответствующие формы *have* или *do* в данных предложениях.

1. What problems ____ you have speaking English?
2. Every day I _____ two or three lectures.
3. ____ you got any friends from foreign countries?
4. She _____ not have any problems with anatomy.
5. ____ he got any books on chemistry?
6. My friend _____ got three brothers.

Глагол *to be*
Positive/negative

Present Simple			
I	**am**	(not)	from Russia.
He / She / It	**is**		
We / You / They	**are**		
Past Simple			
I / He / She / It	**was**	(not)	at hospital yesterday.
We / You / They	**were**		
Future Simple			
I / He / She / It We / You / They	**will (won't)**	**be**	in London tomorrow.

Глагол *to be*
Questions

Present Simple			
Where	**am**	I	from?
	is	he / she / it	
	are	we / you / they	
Past Simple			
Where	**was**	I / he / she / it	at hospital yesterday?
	were	we / you / they	
Future Simple			
When	**will**	I / he /she / it we / you /they	**be** in London?

8. Закончите предложения, употребив глагол *to be* в соответствующей форме.

1. … you Nick Ivanov?
2. Where … your brother yesterday?
3. All students … … at university at 8 a.m. tomorrow.
4. I … not a doctor yet.
5. My dream … to become a paediatrician.
6. Kizito … from Nigeria.
7. These boys … my friends.
8. … you at Anatomy classes last week?
9. … she … a family doctor or a surgeon?
10. I … at a hostel yesterday.
11. Latin … my favourite subject.
12. We … not graduates.
13. 80 % of e-mails on the Internet ... English.

9. Какие предложения верны? Где допущены ошибки? Исправьте неверные утверждения.

E.g. My friend's name is Peter. -
No, it isn't. My friend's name is Jim.

1. My grandmother is 75 years old now.
2. We are in the classroom now.
3. My mother is from Russia.
4. My parents were students 10 years ago.
5. Doctor's job is very easy.
6. I'll be in Yalta next Sunday.
7. Our campus is rather far from the University.
8. My mother was 20 when she started working.
9. Our group will be at the conference next month.
10. All students of our group are from Russia

10. Употребите глагол *to be* в соответствующей форме. Ответьте на вопросы.

Question	Me	Partner	Teacher
1. What … your name?			
2. How old … you?			
3. Where … you from?			
4. Where … your parents from?			
5. … you the only child in the family?			
6. When … you born?			
7. When … your birthday?			
8. What … your favourite subject?			
9. Where … you yesterday?			
10. Where … you … tonight?			
11. What … you going to be after graduation?			
12. … you happy that you … a student of MA?			

11. Прочитайте три диалога, в которых принимает участие студент-иностранец. Заполните пробелы словами *are, is, am, have*.

Определите, где происходят эти беседы.

☐ The Anatomy department

☐ The Internet café

☐ The canteen

I. A Hello. Can I help you?
S Yes. Can I _____ a piece of cake, please?
A Anything to drink?
S Yeah. A cup of coffee, please.
A OK. Here you _____.
S How much _____ that?
A 75 roubles, please.
S Thanks.

II. S Hello! How much does it cost to use a computer for half an hour?
B _____ you an MA student?
S Yes, I _____. I _____ a first-year student of the International Faculty.
B Then it _____ free for you. You may use any computer.
S _____ you got headphones that I can use?
B Sorry. We _____ no headphones.
S That's OK. Thanks.

III. C Hello. Can I help you?
S Yes. I need a clavicle, please.
C Oh, I ____ sorry, we _____ got no clavicles left. It seems all the first-year students _____ here tonight.
S Oh, it ____ a pity. May I _____ a scapula then?
C Yes. What ____ your name, please?
S I ____ Gregory House.
C Which group _____ you from?
S 135a.
C That ___ all. Here ____ the scapula. Return it by 8 p.m. And do not take it home, please.
S Of course I won't. Thanks a lot.

Воспроизведите диалоги со своим партнером.

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I can talk about myself and my studies at a higher medical school
- I know the spelling and reading rules and can apply them
- I can use *to be* and *to have*
- I can form the plurals of nouns
- I know the personal pronouns and possessives and can use them

Key Words

access *n* /ək `ses/
applicant *n* /`aplikənt/
challenge *v* /`ʧalɪnʤ/
deal with *v* /`di:l/
divorce *n* /dɪ`vɔ:s/
drug *n* /drʌg/
expect *v* /ɪks`pekt/
frustrated *adj* /`frʌ`streɪtɪd/
heal *v* /hi:l/
injure *v* /`ɪnʤə/
intelligence *n* /ɪn`telɪʤəns/
opportunity *n* /ɔpə`tju:nɪtɪ /
pain *n* /peɪn/
physician *n* /fɪ`zɪʃən/
reason *n* /`ri:zən/
require *v* /rɪ`kwʌɪə/
rewarding *adj* /rɪ`wɔ:dɪŋ/
skill *n* /skɪl/
surgeon *n* /`sɜ:ʤən/
tough *adj* /tʌf/
treat *v* /tri:t/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT II. MEDICAL SCHOOLS

In this unit

- talking about higher medical school in which I study
- using *Present Simple* and *Present Continuous*
- degrees of comparison
- dates

Lead-in

1. Вы узнаете это здание? Да, это ваша *Alma Mater*. Что вам известно о Медицинской Академии имени С.И. Георгиевского?

Highlights in the History of MA

- **April, 1931.** The Crimean Medical Institute is founded with the only faculty - medical.
- **September, 1936.** The paediatrics faculty is organized.
- **September 1941 – August 1945.** The years of evacuation during the Great Patriotic War. In this period 850 doctors graduate from the Institute – most of them go directly to the front.
- **Year 1951.** Associate professor Sergey Ivanovich Georgievsky becomes the Director, lately Rector of the Institute.
- **Year 1961.** The institute starts training doctors for the countries of Asia, Africa and Latin America.
- **Year 1978.** The faculty of dentistry is founded, new departments appear.
- **Year 1981.** The Institute is awarded a high state award of the USSR – Order of the Red Banner of Labour for training highly qualified specialists for public health.
- **December, 1995.** The institute is named after S. I. Georgievsky for his great contribution to the development of the Institute and the medical science as a whole.
- **January, 1998.** By the decree of Cabinet of Ministers of Ukraine the Crimean State Medical Institute named after S.I. Georgievsky gets the status of the university (CSMU).
- **Year 2008.** MA is the only higher medical school in Ukraine certified by the International Educational Society (London). According to it MA is awarded the category AA denoting “top institution that is internationally known and recognized”.
- **Year 2014.** After the Crimea had become a part of the Russian Federation, MA joined Vernadsky Crimean Federal University as Medical Academy named after S.I. Georgievsky.

2. Прочитайте текст о медицинской академии. Выберите из списка утверждений A-G те, что лучше всего отражают содержание каждой части (1-6) текста. Здесь есть одно лишнее утверждение, которое вам не понадобится. В начале текста приведен пример (0).

A. Academy departments
B. Life of foreign students
C. Entering a medical academy
D. Postgraduate training
E. Students’ leisure activities
F. Faculties of MA
G. The curriculum for medical students

Reading

Medical Academy

0. C

If you want to become a doctor, after finishing school you enter a medical university. If you want to become a really good doctor and spend your students' years in the picturesque Crimea, you should enter Medical Academy named after S. I. Georgievsky (a part of Vernadsky Crimean Federal University) which is situated in the very centre of Simferopol. But first you should pass **universal state exam** successfully. Those **entrants** who **achieve** very good results will get the chance to study **for free**. Others will have to pay **tuition fees**.

1.

The word 'doctor' is very general, but whether you want to become a **psychiatrist** or a **neurologist**, you start with **choosing** one of the **faculties**. At MA there are five faculties. If your dream is to work as a physician, a paediatrician, a surgeon or a family doctor, you choose the First or the Second Medical Faculty. It takes 6 years to **complete** the course. Future dentists study at the Faculty of Dentistry. They spend here 5 years. For those who are not **citizens** of Russia, there is the International Medical Faculty. **Postgraduates attend** the Faculty of Postgraduate Training.

2.

Each faculty has a number of subdivisions called **departments**. In fact, there are 56 different departments at MA where 106 **professors** and 524 **associate professors** work. Some of the departments **are situated** at hospitals and clinics rather far from the Academy. It takes students half an hour or even more to get to some of them by minibus.

3.

The course of studies at the medical academy is roughly divided into two parts. During the first three years students take basic medical subjects, such as anatomy, physiology, **histology**, biology, as well as general subjects. These include **philosophy**, **psychology**, history of Russia, Latin and foreign languages. Beginning with the fourth year, the **curriculum includes** clinical and special subjects, such as therapy, surgery, paediatrics, neurology, **obstetrics** and **gynaecology**, **psychiatry**, etc. Each academic year has two terms. Each term ends with a set of tests and exams which students should pass to be allowed to continue studies.

4.

The number of subjects taken at the university is huge, but it is not enough to become a doctor yet. All graduates continue their studies at the Faculty of Postgraduate Training. Depending on the specialty they choose (and the list includes 31 specialties) they attend residency for 1 or 2 years. Only after that they **are allowed to** work as doctors. But still, every five years they should take **refresher courses** at higher medical schools or at large hospitals. Those who dream of scientific **career** continue training at postgraduate courses to become candidates and, with time, doctors of science.

5.

Though students spend a lot of time **memorising** and **revising** (particularly during the first one or two years), they also socialise a lot, go in for sports and take part in **festive events**. Our academy is proud of its facilities. The students surf the Internet in 25 computer labs or read monographs and articles in different languges in the reading halls of the library. They come to the sports facilities to go running or swimming, to play volleyball, basketball or badminton, or to take wushu or kudo classes. If you feel you have a real talent you are welcome to participate in Miss MA or Mister MA shows, concerts on the Days of Faculties, and, of course, the Graduation Ball. And then, after graduation, you will boast not only vast store of knowledge and **practical skills**, but also good memories about wonderful students' years.

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Закончите предложения, используя слова из таблицы, синонимы к которым даны в скобках.

complete	***internship***	***memorise***
refresher courses	***curriculum***	***choose***
	is situated	***revise***

1. It is not an easy thing to _____ a career out of more than 7,000 professions existing in the world. (**select**)
2. The _____ of MA includes about 70 subjects. (**the list of all subjects studied at the University**)
3. When the students _____ the University course they attend the _____ _____. (**finish; a period of training to get qualification of a medical practitioner**)
4. Before module testing the students usually _____ their lecture notes thoroughly. (**reread notes to improve their knowledge**)
5. The library of our University _____ on the first and second floors and the reading room is on the second floor **(is located**).
6. To know Anatomy well, the students have to_____ a lot of medical terms. (**learn by heart**)
7. When doctors take _____, they learn new ideas, methods and innovations in medicine. (**a short course to improve professional skills**)
8. The medical students are not _____ to be late for classes and to be present at classes without uniform. (**permitted)**

3. Составьте словосочетания, используя слова из списка. Каждое слово можно использовать только один раз.

wonderful	***sports***	***external***
refresher	***foreign***	***scientific***
postgraduate	***practical***	***clinical***
festive	***computer***	***tuition***

1._____ career
2._____ testing
3._____ skills
4._____ courses
5._____ subjects
6._____ training
7._____ fee
8._____ facilities
9._____ events
10._____ lab
11._____ language
12._____ years

Составьте предложения с несколькими словосочетаниями:

_____
_____
_____
_____

4. Закончите предложения, используя однокоренные слова, образовав их с помощью суффиксов *-ian, -ist, -eon* от слов из правого столбика.

1. He always wanted to be a _____.	NEUROLOGY
2. She is studying to become a _____ .	CHEMISTRY
3. The profession of a _____ is very difficult but interesting.	PSYCHOLOGY
4. Why does he want to be a _____?	SURGERY
5. I know this _____. She works at children's centre.	PAEDIATRICS
6. He is going to be a _____.	GYNAECOLOGY
7. My mother works as a _____.	PSYCHIATRY
8. Is it difficult to become an _____ ?	OBSTETRICS

5. Закончите предложения, используя подходящие по смыслу числительные.

1. There are _____departments at MA.
2. The academic staff of MA includes _____ professors and _____ associate professors.
3. The students study _____ years at the First and Second medical faculties.
4. The course of studies at the faculty of Dentistry lasts _____ years.
5. The graduates study at the internship for ___ years.
6. The list of medical specialities at the faculty of Postgraduate training includes _____ specialities.
7. The tuition fee at our Academy is _____.
8. There are ____ computer labs at MA.

6. Найдите определения для данных слов и словосочетаний.

1. internship	**a)** testing school leavers to use test results for admissions to higher schools
2. associate professor	**b)** a short course to review knowledge and skills in one's profession
3. refresher courses	**c)** a job or jobs that you do during your working life
4. universal state exams	**d)** a period of training for postgraduates to get qualification of a medical practitioner
5. postgraduate training	**e)** a senior lecturer holding the rank below professor
6. a career	**f)** training to be specialists or get postgraduate degree qualification (MD).

Language Development

1. Просмотрите текст еще раз и ответьте на вопросы:

1. What do you need to enter a higher medical school?

_____

2. Is MA an old Academy? How old is it?

_____
_____

3. How many faculties does the Academy have?

_____
_____

4. What faculty do you study at?

_____

5. Who is the Dean of your faculty?

_____

6. Must you pay for studies?

_____

7. What specialists does the Academy train?

_____
_____

8. How long does the course last?

_____

9. What subjects do the students study during the first three years?

_____
_____

10. What special subjects does the curriculum include?

_____
_____

11. How many terms does the academic year have? How long does each term last?

_____

12. What do the students have at the end of each term?

_____
_____

13. Do the students have any time for fun activities? How do they spend it?

_____
_____

14. How can graduates get a qualification of a medical practitioner?

_____
_____

15. How often do the doctors take refresher courses?

_____
_____

2. Темы для обсуждения

a. Используя утверждения, приведенные перед текстом в качестве плана, перескажите текст.

b. Расскажите об основных этапах медицинского образования в России.

c. Используя подсказки, расскажите об основных проблемах, с которыми сталкиваются студенты-медики и врачи.

- to take a lot of years to get a profession
- to work hard
- to memorise a lot of medical terms
- to have lectures and practical classes from morning till night
- to spend long hours in the library and the dissecting room
- to have practically no time for fun activities
- to take refresher courses every 5 years
- to be ready at any time to come to the patient and save his/her life
- to learn all life

e.g. It takes 5 or 6 years to graduate from the medical Academy, and 2 or 3 years to complete the internship.

d. Ниже приведен список личных качеств человека. По вашему мнению, какими из них должен обладать хороший студент?

lazy/hardworking
sociable/shy
well organized/disorganized
friendly/aggressive
ambitious/inactive
talented/ordinary
interested/bored
cheerful/depressed
funny/serious

e.g. I strongly believe that a good student should be hardworking, first of all.

3. Проект.

Think about your groupmate (yourself?) who is a perfect medical student. Prepare a short speech or essay on which features help him/her/you to overcome challenges of becoming a medical professional.

Grammar in Use

Present Simple

Positive				
I / We / You / They	**study**	medicine.		
He / She / It	**studies**			
Negative				
I / We / You / They	**don't**	**study**	medicine.	
He / She / It	**doesn't**			
Questions				
(Why)	**do**	I / we / you / they	**study**	medicine?
	does	he / she / it		

Сигнальные слова: ***always*** *(всегда),* ***often*** *(часто),* ***regularly*** *(регулярно),* ***every day*** *(каждый день),* ***on Mondays*** *(по ПН),* ***usually*** *(обычно),* ***in general*** *(в общем),* ***sometimes*** *(иногда),* ***seldom*** *(редко),* ***never*** *(никогда)*

Present Simple используется для того, чтобы обозначить**:**

1 Факты: *A molecule* ***consists*** *of atoms.*

2 Привычные действия: *I* ***take*** *wushu classes on Tuesday and Friday.*

3 Указание на будущее (для расписаний): *The exam* ***starts*** *at 8 a.m. next Wednesday.*

Present Continuous

Positive/Negative			
I	**am**	(not)	**swimming** now.
He / She / It	**is**		
We / You / They	**are**		
Questions			
(Where)	**am**	I	**swimming** now?
	is	he / she / it	
	are	we / you / they	

Сигнальные слова: *now* *(сейчас)****, still*** *(всё ещё)****, at present*** *(в настоящее время)****, at the moment*** *(в данный момент)****, while*** *(пока)*

Present Continuous используется для того, чтобы обозначить**:**

1 Действия, которые происходят (длятся) в момент речи: *She****'s surfing*** *the Internet now.*

2 Временные действия/ситуации: *My friends* ***are studying*** *Dentistry at MA.*

3 Запланированные действия в будущем (с обязательным употреблением слов *tomorrow, next year/month*, etc.): *We****'re spending*** *next holiday in England.*

Статические глаголы (**Stative verbs**) обычно не употребляются во временах Continuous:

want	hate	need	remember
like	think	forget	understand
love	see	know	believe

e.g. I ***think*** *you are right. I* ***hate*** *being late.*

1. Закончите предложения, употребив глагол в соответствующей форме *Present Simple* или *Present Continuous.*

1. Jane … (to want) to become a neurologist.
2. 'Where's Boris?' 'He … … (to play) badminton in the sports facilities.'
3. How long … it … (to take) you to revise for the test in chemistry?
4. We … (to memorise) from 50 to 200 new anatomical terms every week.
5. Usually I … (not to work) at the library. I … (to like) surfing the Internet.
6. In June all of us are very busy. We … … (to take) universal state exam.
7. Shhhh… I … … (to talk) to the Rector!
8. The first-year curriculum … (not to include) Russian literature or geography.
9. What departments … the fourth-year students … (to attend)?

2. Задайте вопросы, чтобы получить недостающую информацию. Затем ответьте на них.

e.g. I am going to _____ tonight. Where are you going tonight? – To the cinema.

1. Our classes usually start at _____.
What time_____?
2. He memorises _____ terms for 10 minutes.
How many terms _____
_____?
3. It takes _____ years to complete the course at the medical university.
How long _____
_____?
4. She can't come. She's cutting a cadaver at _____.
Where _____?
5. The students are discussing _____ with the associate professor.
What _____?
6. We start communicating with patients _____.
When _____?
7. They work in small groups with _____.
Who _____with?

Сравнительная и превосходная степень прилагательных и наречий

	comparative	**superlative**
fast	fast**er**	fast**est**
early	earl**ier**	earl**iest**
competitive	**more** competitive	**most** competitive
good	**better**	**best**
bad	**worse**	**worst**
far	**farther/further**	**farthest/furthest**
little **few**	**less**	**least**
much **many**	**more**	**most**

3. Образуйте сравнительную и превосходную степень прилагательных.

e.g. strong - stronger - strongest

tough _____
interesting _____
easy _____
serious _____
high _____
useful _____

4. В каждом предложении употребите одно из прилагательных из таблицы в сравнительной или превосходной степени.

old, near, influential, far, experienced, modern, successful, hard

1. English is the _____ language in the world.
2. Now I live _____ from the Academy than earlier.
3. The _____ world's student is 86 years old.
4. The laboratory is _____ to the hostel than the library.
5. This professor is _____ than the assistant.
6. Our laboratory is the _____ at the Academy.
7. This year is the _____ in my life.
8. If you want to succeed you should work ____.

Как произносить годы

Pattern	e.g.	Pronunciation
XX**00**	5**00** **2000** (exception)	five **hundred** two **thousand**
XX**0**X	17**0**4 19**0**6 **2008** (exception)	seventeen **oh** four nineteen **oh** six two **thousand and** eight
XXXX	1780 1998 2025	seventeen eighty nineteen ninety eight twenty twenty five

5. Соотнесите события и годы. Обратите внимание на произнесение годов.

1931	**a** CSMU became a part of Crimean Federal University (as MA)
1978	**b** my entrance into MA
2014	**c** receiving of Order of the Red Banner of Labour
1936	**d** organisation of the first medical faculty of CSMU
1961	**e** organisation of the paediatrics faculty of CSMU
201X	**f** foundation of the faculty of dentistry of CSMU
1945	**g** coming of first foreign students to CSMU
1981	**h** return of CSMU from evacuation

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I can talk about MA, a higher medical school where I study
- I can talk about students' studies and how they spend their free time
- I can describe what is happening at the moment
- I know how to make sentences in English
- I can put general and special questions
- I know how to pronounce dates

Key Words

achieve *v* /ə`ʧi:v/
achievement *n* /ə`ʧi:vmənt/
associate professor /ə`səusıət prə`fesə/
attend *v* /ə`tend/
be allowed /ə`laud/ to do smth
be situated /`sıtjueıtıd/
career *n* /kə`rıə/
choose *v* /ʧu:z/
citizen *n* /`sıtızən/
complete *v* /kəm`pli:t/
curriculum *n* /kə`rıkjuləm/
department *n* /dı`pɑ:tmənt/
entrant *n* /`entrənt/
faculty *n* /`fækəltı/
Faculty of Postgraduate Training
festive event /`festıv ı`vent/
for free
gynaecology *n* /gaınə`kɒlədʒı/
histology *n* /hıs`tɒlədʒı/
include *v* /ın`klu:d/
internship *n* /`ıntɜ:nʃıp/
memorise *v* /`meməraız/
neurologist *n* /njuə`rɒlədʒıst/
obstetrics *n* /ɒb`stetrıks/
philosophy *n* /fı`lɒsəfı/
postgraduate *n* /pəust`grædʒuət /
practical skills
professor *n* /prə`fesə/
psychiatrist *n* /saı`kaıətrıst/
psychiatry *n* /saı`kaıətrı/
psychology *n* /saı`kɒlədʒı/
refresher courses /rı`freʃə `kɔ:sız/
revise *v* /rı`vaız/
tuition fee /tju:`ıʃən `fi:/
universal state exam /juni`və:səl steıt ıg`zæm/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT III. MEDICAL SPECIALTIES

In this unit

- talking about medical specialties
- describing specific jobs of different specialists
- using *Future Simple/going to* and *Future Continuous*
- speaking about new medical jobs

Lead-in

1. Посмотрите на рисунок, ответьте на вопросы.

- What specialists do you see in the pictures? What are they doing?
- What uniform are the physicians wearing?
- Do you always wear a white gown and a cap during classes?
- What other medical specialties can you name?
- What is your future specialty? Have you made up your mind yet?
- Is it difficult to choose specialty? What or who helps you make a decision?

2. Подходит ли вам профессия врача?

- Do you care about other people, their problems, and their pain?
- Do you enjoy helping people with your knowledge and your skills?
- Do you enjoy learning, gaining new knowledge (understanding)?
- Do you try to learn more about a subject than your teacher requires?
- Is the process of learning more important for you than just getting a good mark?
- Are you interested in functioning of the human body?
- Do you want to learn how medicine can improve life?

If you answered “yes” to most of these questions, then you have the right kind of personality for a medical career.

3. Знаете ли вы, что

- there are thousands of different types of medical jobs nowadays
- healthcare is the largest industry; it employs 14 million people and it will include 3 million medical jobs more by 2016
- the highest-paid medical job abroad is anesthesiology with the annual income of $190,000
- the most well-paid medical specialty in our country is neuro- and cardiosurgery
- the top 5 most popular medical specialties nowadays are plastic surgery and cosmetology, urology, gynaecology, stomatology and surgery.

4. Ниже приведены пять утверждений о медицинских специальностях. К какой специальности относится каждое утверждение? Прочитайте текст и дополните его этими предложениями.

1. They are trained in the diagnosis and treatment of **cancer**, infections, and diseases of internal organs.
2. They use their clinical experience together with their practical knowledge to **ensure** the safe **supply** and use of medicines by patients.
3. Most doctors of this specialty work in private practices but some work in dental hospitals.
4. They also ease the day-to-day difficulties of children and adolescents with chronic conditions.
5. They may use specialised instruments during operative procedures.

The aim of medicine is to prevent disease and prolong life; the ideal of medicine is to eliminate the need of a physician. – William James Mayo

Reading

Choosing Your Medical Speciality

Those graduates who want to become specialists must attend residency in a particular medical specialty, and many practising physicians go on to specialise in a particular area of medicine.

Internal medicine

A general physician provides long-term care in the office and the hospital, treating both common and complex illness of **adolescents**, adults, and the **elderly**. **[A]** _____ _____ _____.

They also get an idea about an understanding of disease prevention, wellness, **substance abuse**, mental health, and effective treatment of common problems of the eyes, ears, skin, nervous system, and reproductive organs.

Paediatrics

Paediatricians both help healthy children to develop properly and treat those who are seriously or chronically ill. They easily understand emotions of their little patients and can be advocates for children and adolescents in difficult situations. In caring for children's physical health, paediatricians diagnose and treat infections, injuries, **genetic defects**, **tumours**, and many types of organic disease and dysfunction. They work to **reduce infant** and child mortality, control infectious disease, and foster healthy lifestyles. **[B]** _____ _____ _____.

Surgery

A surgeon **manages** a wide variety of surgical conditions affecting different parts of the body. The surgeon makes the diagnosis and provides the preoperative, operative, and postoperative care to surgical patients and is usually responsible for the comprehensive **management** of the patients with trauma and the critically ill surgical patient. The surgeon uses diagnostic techniques, including endoscopy, for observing internal structures. **[C]**

_____
_____
_____
_____.

Dentistry

Dentistry is a branch of medicine that deals with the study, diagnosis, prevention, and treatment of diseases that **affect** the teeth and gums. The most common oral diseases are dental caries (tooth decay) and periodontal disease (gum disease). Common treatments **involve** the restoration of teeth, **extraction** or surgical **removal** of teeth, scaling and root canal treatment. Dental treatment is carried out by the dental team, which often consists of a dentist, dental assistants, dental hygienists, dental technicians, and dental therapists. **[D]** _____ _____ _____

Pharmacy

Pharmacists and chemists play a key role in providing quality healthcare to patients. **[E]** ____ _____ _____

Pharmacists and chemists also offer advice on common problems such as **coughs**, **colds**, **aches** and **pains**, as well as healthy eating and stopping smoking. They can also help you decide whether you need to see a doctor.
You can talk to your pharmacist in **confidence**, even about the most personal **symptoms** and you don't need to **make an appointment.**

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Словообразование.

a. Образуйте слова, обозначающие специалистов, от названий специальностей.

specialtiy	**specialists**	**rule**
neur**ology**	neurolog**ist**	**-ology → ist** **-ics → an** **Exception: anaesthetics → anaesthetist**
cardiology		
geriatr**ics**	geriatric**ian**	
optics		
traumatology		
obstetrics		
pediatrics		
rheumotology		
gynaecology		
pathology		
technics		

b. Дополните таблицу недостающими словами.

Verb	**Noun (person)**	**Noun (activity or thing)**
specialize		
practise		
consult		
assist		
graduate		
qualify		

3. Заполните таблицу словами и словосочетаниями из текста.

Medical specialties	
Organs and systems of the humn body	
Health conditions (diseases)	
Medical procedures	

5. Закончите предложения, используя слова из таблицы, синонимы к которым даны в скобках.

elderly	***prevention***	***particular***
adolescents	***mortality***	***care***
entire	***reduce***	***diagnosis***

1. An emergency physician provides _____ (**recognition**) and _____ **(treatment**) of the patients.
2. All physicians must attend residency in a _____ (**definite**) medical specialty.
3. Pediatricians work to _____(**make less)** infant and child _____ (**number of deaths**).
4. Special emphasis is placed on _____ (**prophylactic measures**) and the primary care of _____ (**whole)** families.
5. A general physician provides care of _____ (**teenagers**), adults and _____ (**old people**).

6. Составьте словосочетания, употребляя слова из таблицы. Используйте каждое слово только один раз.

acute	***mental***	***life***
internal	***effective***	***genetic***
primary	***common***	***comprehensive***
entire	***reproductive***	***infectious***

1._____disease
2._____ care
3._____ defect
4._____ cycle
5._____ organ
6._____problem
7._____ management
8._____ treatment
9._____ family
10. _____ health
11. _____ medicine
12._____ illness

Составьте предложения с данными словосочетаниями:

_____
_____
_____
_____

Language Development

1. Соотнесите названия специалистов и описание их работы. Запишите ответы в таблицу. Первое предложение выполнено для вас в качестве примера.

1. They.treat diseases and other conditions that affect the teeth and gums.
2. They establish diagnosis and provide operative care.
3. They operate equipment in the X-ray department.
4. They operate on patients to repair skin damage or improve a patient's appearance.
5. These doctor's specialty is children.
6. They deal with the total health care of the individual and the family.
7. They specialize in the prevention and treatment of mental and emotional disorders.
8. They take care of women's health.
9. They are responsible for preparing and dispensing medicines.
10. They give massage and exercise to restore the specific body functions.

a. pharmacists
b. pediatricians
c. physiotherapists
d. radiographers
e. gynecologists
f. psychiatrists
g. family physicians
h. dentists
i. surgeons
j. plastic surgeons

1	2	3	4	5	6	7	8	9	10
h									

2. Сначала самостоятельно ответьте на данные вопросы. Затем сравните ваши ответы с ответами одногруппников. Аргументирйте свою точку зрения.

Which hospital job…
is the most highly respected? _____
is physically the hardest? _____
is the most rewarding? _____
would you least like to do? _____
is mentally the hardest? _____
is the most interesting? _____
should be better paid? _____
is the most dangerous? _____
would you like to do one day? _____

3. Просмотрите текст еще раз и ответьте на вопросы:
1. How many medical specialties are there? What medical specialties do you know?
_____
_____
_____.
2. What does a graduate need to do to become a specialist in a particular medical field?
_____
_____.
3. What kind of treatment does a general physician provide?
_____
_____.
4. Where does a general physician consult patients?
_____
_____.
5. What do paediatricians specialize in?
_____
_____
_____.
6. What diseases does paediatrician work with? What is the aim of their work?
_____
_____.
7. What kind of specialist is a surgeon?
_____
_____.
8. What is surgeon responsible for?
_____
_____.
9. What does dentistry deal with? What dental specialties are there?
_____
_____.
10. What procedures do dentists provide?
_____
_____.
11. What is the main responsibility of pharmacists and chemists?
_____
_____.
12. What other health services are available at pharmacies?
_____
_____
_____.

4. Проект.

Lots of medical specialties have emerged recently. Prepare a short speech or essay on.the most impressive medical job(s) which might change medicine itself in the (nearest?) future.

Grammar in Use

Способы выражения будущего

Future Simple

Positive				
I / He / She / It / We / You / They	**will study**			medicine.
Negative				
I / He / She / It / We / You / They	**won't (will not)**	**study**		medicine.
Questions				
(Why)	**will**	I / he / she / it / we / you / they	**study**	medicine?

Future Simple используется для того, чтобы обозначить:

1. Решение, принятое в момент речи:
   *'I'm cold' - 'I**'ll close** the window.'*
2. Предсказание, основанное на чьем-либо мнении:
   *I think I**'ll get** the best mark at the exam.*
3. Факт, который будет иметь место в будущем:
   *The operation **will start** at 7am.*
4. Обещания, просьбы:
   *I**'ll help** you with your homework.*
   *I **will give up** smoking!*

1. Примите решение или сделайте предсказание.

*e.g. I'm tired. I **won't go** to the library.*

1. I am interested in children diseases.
become / a paediatrician
_____.

2. I am not sure about the diagnosis.
speak / an experienced doctor
_____.

3. I don't understand this rule. –
explain / to you
_____.

4. He is spending almost all his time in the computer lab.
I think / he / make / an excellent report
_____.

5. She likes caring about children.
I think / she / become / a paediatrician.
_____.

Future Continuous

Positive		
I / He / She / It / We / You / They	**will be revising**	Latin at 5 tomorrow.
Negative		
I / He / She / It / We / You / They	**won't (will not)**	**be revising** Latin at 5 tomorrow
Questions		
(Why) **will**	I / he / she / it / we / you / they	**be revising** Latin at 5 tomorrow?

Future Continuous используется для того, чтобы обозначить:

1. Действие, которое будет иметь место, длиться, будет «в разгаре» в будущем:
   *At this time tomorrow, **the surgeon will be making** endoscopy.*
2. Запланированное действие, которое будет иметь место в будущем (=**Present Continuous**, 3)
   *We**'re spending** holiday at home.*
   *We'**ll be spending** holiday at home.*

NB. Существует еще один способ передачи запланированного действия в будущем. Мы можем использовать сочетание **going to+ инфинитив глагола.**

   *We**'re going to spend** holiday at home.*
   *Look out! She'**s going to faint**!*

2. Употребите Future Continuous вместо глаголов в скобках. Поставьте (✓), если мы можем также использовать Present Continuous и 'going to' в предложении, и (✗) , если не можем.

e.g. We _____ (to learn) new topics on psychiatry tonight ☐
*We'**ll be learning** new topics on psychiatry tonight.* ☑

1. Don't come after three. The doctor _____ _____ (to talk) to a group of adolescents with chronic diseases. ☐

2. At this time tomorrow, I _____ _____ (to speak) with my first patient. ☐

3. What _____ you _____ (to do) tonight? ☐

4. She _____ (to see (=to meet)) her family doctor on Tuesday. ☐

5. Next month we _____ (to take) care of the elderly at the nursing home. ☐

3. "Предсказание судьбы"

1. Do you have a passport?
2. Write the numbers from your passport.
   123456
3. Add the numbers: 1+2+3+4+5+6=21
4. Add the numbers again: 2+1=3
5. This is your lucky number: **3**.

Теперь найдите ваши предсказания в таблице. Расскажите другим о вашем будущем.

*e.g. My lucky number is 3. I'**ll become** a clever family doctor. I'**ll have** a long life. In future I'**ll organise** a private clinic of family medicine. In 10 years' time I'**ll be fostering** healthy lifestyles in a TV show.*

	Who will you become?	**What will happen to you in future?**
1	a rich surgeon	specialise in treating traumas
2	a happy paediatrician	advocate little patients in difficult situations
3	a clever family doctor	organise a private clinic of family medicine
4	a famous dentist	become the Dean of the Dental Faculty
5	a successful psychiatrist	take a course on psychotherapy in the UK
6	a serious pharmacist	become a professor
7	a popular biochemist	become the Minister of Public Health of Russia
8	a responsible cardiologist	take care of people with heart diseases
9	an inventive neurologist	get the Nobel Prize
	What will you have?	**What will you be doing in 10 years' time?**
1	a lot of money	take part in the World Conference of Surgeons
2	lots of friends	work on the project *Happy Healthy Children*
3	long life	foster healthy lifestyles in a TV show
4	a well-paid job	invent a vaccine against caries
5	five children	work on a new method of treatment of schizophrenia
6	a yacht	work on a panacea
7	a plane	look for a medicine for cancer
8	two cars	organise courses on prevention of infarction
9	lots of dogs	introduce a new method of treating brain traumas

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I know the names of medical specialties and can describe daily routine of physicians
- I can describe specific jobs of different specialists
- I can use *Future Simple/going to* and *Future Continuous*
- I can speak about my future profession

Key Words

ache *n* /eɪk/
adult *n, adj* /ˋædəlt, əˋdʌlt/
adolescent *n, adj* /ædəˋlesənt/
affect *v* / əˋfekt /
care *n, v* /keə/
cancer *n* /ˋkænsə/
confidence *n* / ˋkɔnfɪdəns /
cough *n* / kɔf /
defect *n* /dɪˋfekt/
diagnosis *n* /daɪəgˋnəusɪs/
elderly *adj* /ˋeldəlɪ/
ensure v / ɪnˋʃuə /
extraction *n* / ɪksˋtrækʃən /
illness *n* /ˋɪlnəs/
infant *n* /ˋɪnfənt/
involve v / ɪnˋvɔlv /
make an appointment
manage *v* /ˋmænɪʤ /
management *n* /ˋmænɪʤmənt/
prevention *n* /prɪˋvenʃən/
provide *v* /prəˋvaɪd/
pain *n* / peɪn /
reduce *v* /rɪˋdjuːs/
removal *n* / rɪˋmuvəl /
substance abuse /ˋsʌbstəns əˋbjuːs/
supply v / səˋplai /
tumour *n* /ˋtjuːmə/
treat *v* /ˋtriːt/
treatment *n* /ˋtriːtmənt/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT IV. ACHIEVEMENTS OF MODERN MEDICINE

In this unit

- talking about advanvces in modern medical science
- describing the most impressive achievements in medicine
- using *Past Simple* and *Past Continuous*

Lead-in

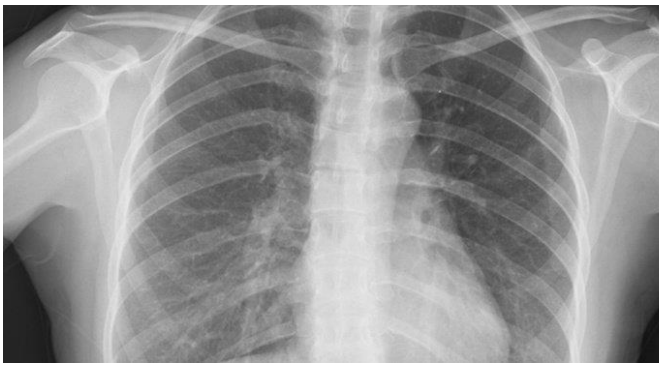
1. Изучите список из 10 самых значимых открытий в истории медицины. Соотнесите события и даты, когда они произошли:

Throughout history, disease has been a subject of fear and fascination. However, each revolutionary medical discovery has brought us closer to understanding the complex mysteries of disease and medicine. As a result, we have been able to develop medicines and treatments that have been instrumental in saving millions of lives. Here's a list of the top medical advances in history so far:

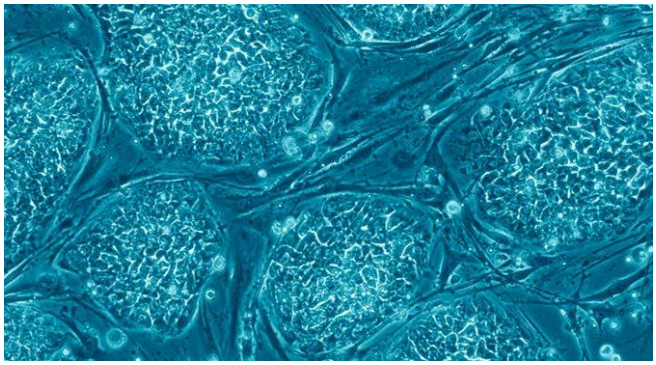
1. Anaesthesia	**a**. 1796
2. Medical imaging (x-rays)	**b**. 1846
3. Organ transplants	**c.** 1861
4. Stem cell therapy	**d**. 1895
5. Vaccines	**e**. 1928
6. Penicillin	**f**. 1954
7. Artificial intelligence (AI)	**g**. 1960s
8. Immunotherapy	**h**. 1970s
9. Antiviral drugs	**i**. 1970s
10. Germ theory (discovery of pathogens)	**k**. 21st century

2. Какие открытия изображены на иллюстрациях?

A.



B.



C.

D.

3. Согласны ли вы с автором статьи? Какие изобретения вы считаете наиболее важными? Дополните список двумя-тремя пунктами:

1. _____
_____
2. _____
_____
3. _____
_____

There are two objects of medical education: To heal the sick and to advance the science.

— Charles Mayo

Reading

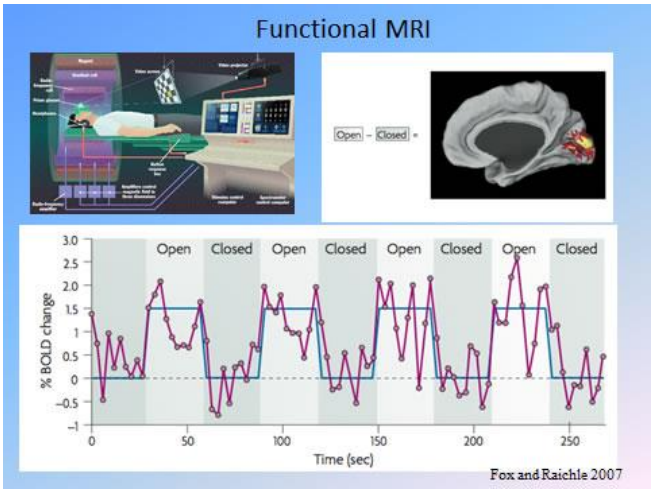
Medical Advances

Doctors and Patients Exploit Information Technology

Patients may not even think of it. But doctors say the Internet and information technology has actually changed the way they practice medicine for the better. Even doctors need to **look** things **up** from time to time.

"Early in practice, if I had a clinical question to **research**, I had to go to the library, pull out multiple years of the Index Medicus, look up the topic, write down the **references**, go to the stacks and pull the volumes of journals, find the article, read the article, go to the copy machine and make a copy. If I were lucky, I would have my answer in about four hours," said John Messmer, MD, associate professor at the Penn State College of Medicine in Hershey.

"Now I can be on rounds and in five minutes have more information on the topic than I need on my iPod Touch, I can look up a medication, check for **interactions** with a patient's other medications and double-check details of the pharmacology of the med plus quickly **review** the problem I am treating, and I don't even have to go online," said Messmer.



Fox MD, Raichle ME. Spontaneous fluctuations in brain activity observed with functional magnetic resonance imaging. Net Rev Neurosci. 2007 Sep;8(9);700-11.

Minimally Invasive and Robotic Techniques Revolutionize Surgery

Ten years ago a patient would typically be left with a 10-inch **scar** when a doctor removed a kidney, but in late 2007 the surgeons at the Cleveland Clinic began removing kidneys through a single **incision** in the patient's navel. The reality is that robotic surgery is occurring daily in a growing number of centers across the developed countries.

The greatest benefit of tiny openings into the body rather than large incisions made by traditional surgery, is shorter and less painful **recovery time**.

Doctors have also used robotic surgery to improve the accuracy of procedures, especially in cancer cases.

"Robotic surgery **increased** the ability of cancer surgeons to get clean margins due to the **magnification** of the structures," said Douglas Bacon, MD, of the Mayo Clinic in Rochester, Minn.

Scientists Peer into Mind with fMRI

The functional MRI, often called fMRI, traces the working of neurons -- brain cells -- by **tracking** changes in the oxygen **levels** and **blood flow** to the brain. The more brain activity in one area, the more oxygen will be used and the more blood will flow to that area. As the patient answers the question, the fMRI tracks the activated areas of the brain by tracing the speed at which the cells metabolize glucose. fMRI was first developed in the early 1990s.

"It has certainly **taken off** in the past 10 years as a **means** for studying the living human brain in action," said Caselli. "It has given us innumerable insights into cognition, social interactions, **reward** systems, **decision-making**, and so on."

Using this technique, researchers are learning **valuable** information about disease such as depression, brain cancer, autism, memory **disorders**, and even conditions such as the skin disorder **psoriasis**.

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Найдите определения для данных слов и словосочетаний.

1. blood flow	**a.** a permanent mark left on the body from a cut or other injury
2. incision	**b.** the small, round, and usually hollow place on your stomach, where you were connected to your mother before birth
3. navel	**c.** something good that you get or experience because you have worked hard, behaved well
4. interaction	**d.** quantity of blood flowing through a vessel, region or organ in unit time
5. magnification	**e.** an opening that is made in something with a sharp tool, especially in someone's body during an operation
6. recovery time	**f.** the way that two or more things combine and have an effect on each other
7. scar	**g**. the process of making something look bigger than it is, for example by using a microscope
8. reward	**h.** the time between the end of an anesthetic infusion and the opening of a patient's eyes.

3. Найдите в тексте синонимы к данным словам.

an umbilicus	
an opening	
a study	
a theme	
a medication	
2.54 cm	
a cut	
an advantage	
to enlarge	
a method	

4. Составьте словосочетания со словами из таблицы. Используйте каждое слово только один раз.

to write down	***to double-check***
information	***to look up***
associate	***to practice***
to remove	***cancer***
memory	***to metabolize***

1. _____ technology
2. _____ medicine
3. _____ the topic
4. _____ references
5. _____ professor
6. _____ details
7. _____ a kidney
8. _____ surgeons
9. _____ disorder
10. _____ glucose

Составьте 3 предложения с данными словосочетаниями.

_____

_____

_____

_____

5. Просмотрите текст еще раз и выполните задания:

Find in the text

… what the letters IT stand for

_____

… where John Messmer works

_____

… the title of the book including abbreviations of scientific journal titles

_____

… a short form of the word “medication”

_____

… the length of the scar after the kidney removal

_____

… a synonym to the words “little, small”

_____

… where the Mayo Clinic is situated

_____

… the decade where the first MRI appeared

_____

… an example of a dermal disorder

_____

Language Development

1. Какие предложения верны (T)? Где допущены ошибки (F)? Исправьте неверные утверждения.

1. The Internet and information technology do not have much effect on modern healthcare professionals. **F**

2. The only way to solve a clinical problem in the 20th century was to go to the library. _____

3. Today the physician can get the necessary information about the meds while examining a patient. _____

4. When the kidney was removed in a patient using traditional surgery, the scar was more than 35 cm long. _____

5. Robotic surgery is not very useful in oncological operations. _____

6. fMRI measures both the amount of oxygen and the speed of blood flow. _____

7. fMRI can help treat dermal diseases. _____

2. Закончите предложения, используя слова из таблицы. Фамилии каких ученых послужили основой для образования эпонимов: имен собственных, перешедших в названия?

procedure, cholera, radiation, Nobel, Röntgen, sterilize, anaesthetic, anesthesia, vaccine, discovered, Aspirin

In 1800, British chemist and inventor Humphry Davy described the _____properties of nitrous oxide, known as laughing gas.
In 1842, Crawford Long, an American pharmacist and surgeon, was the first doctor to give a patient inhaled ether _____for a surgical _____.
In 1867, Joseph Lister, a British surgeon and a pioneer of antiseptic surgery, successfully used phenol to clean wounds and _____ surgical instruments.
In 1879, Lois Pasteur produced the first laboratory-developed _____, which was against chicken_____.
In 1890, Emil von Behring, a German physiologist, _____ antitoxins and used them to develop vaccines for diphtheria and tetanus. He later received the first _____ Prize in Physiology or Medicine.
In 1895, Wilhelm Conrad _____, a German physicist, discovered X-rays by producing and detecting electromagnetic _____.
In 1897, chemists of the German company Bayer AG produced the first _____. Within 2 years, it became a global commercial success.

3. Просмотрите текст еще раз и ответьте на вопросы.

1. What did medical professionals have to do earlier to find an answer to a clinical question?
_____
_____.

2. Which information about disease and meds is available now instantly thanks to information technology?
_____
_____.

3. How has the technique of removing kidneys changed over years?
_____
_____.

4. What is the main advantage of Minimally Invasive Surgery?
_____
_____.

5. What is the role of robots in cancer surgery?
_____
_____.

6. What is functional MRI? How does it work?
_____
_____.

7. What do researchers learn using fMRI??
_____
_____.

4. Проект.

Which inventions are changing medicine right now? How do they work? Which diseases can they help treat?
Surf the Internet and prepare a short speech or essay on one of such important medical advances.

Grammar in Use

Past Simple

Positive				
I / We / You / They / He / She / It		**examined (saw)**		10 patients.
Negative				
I / We / You / They / He / She / It	**didn't**		**examine (see)**	patients.
Questions				
(Where)	**did**	I / we / you / they / he / she / it	**examine (see)**	them?

Сигнальные слова: ***yesterday*** *(вчера)****, the day before yesterday*** *(позавчера)****, last week (month, year)*** *(на прошлой неделе (в прошлом месяце, году)****, ago*** *(тому назад)****, in 1999 (1917, 2000)*** *(в 1999 (1917, 2000) году).*

Past Simple используется для того, чтобы обозначить:
1 Действия, которые имели место и были завершены в прошлом: *Last Friday I **talked** to my pharmacist.*
2 Привычные действия в прошлом: *This patient **smoked** 40 cigarettes a day before the operation on the heart.*

Past Continuous

Positive/Negative			
I / He / She / It	**was**	(not)	**making an operation** at 10 yesterday.
We / You / They	**were**		
Questions			
(Where)	**was**	I / he / she / it	**making an operation** at 10 yesterday?
	were	we / you / they	

Сигнальные слова: ***while*** *(в то время как (в прошлом)****, as long as*** *(пока)****, at 7 p.m. yesterday*** *(в семь вечера вчера)*

Past Continuous используется для того, чтобы обозначить:
1 Действия, которые имели место, были «в разгаре», когда произошло что-либо еще: *The dentist **was making** an x-ray when the phone rang.*
2 Действия, которые происходили одновременно в прошлом: *While I **was examining** a patient, the nurse **was making** notes.*
3 Временные действия, которые происходили в определенное время в прошлом: *What **were** you **doing** yesterday at 9? – I **was sleeping**.*

1. Задайте вопросы, чтобы получить недостающую информацию. Затем ответьте на них:

1. Yesterday Dr Faulkner installed _____ crowns.
How many crowns_____ _____?
2. I was seeing Mr Smith _____.
At what time _____ _____?
3. My mother saw _____ in hospital.
Who _____ _____?
4. Professor Mortimer taught the students ___.
What _____ _____?
5. I didn't come yesterday because_____.
Why _____ _____?
6. When I was having a severe pain, I went to _
Where _____ _____?
7. The dentist was making _____ when the phone rang.
What _____ _____?
8. This patient gave up smoking _____
When _____ _____?

2. Закончите предложения, употребив глаголы в форме Past Simple или Past Continuous.

1. While the nurse _____(to give) a vaccine to the little boy, the paediatrician _____ (to talk) to his parents.

2. My grandfather _____ (to have) heart surgery last month.

3. Mr Brown _____ (to smoke) 20 cigarettes a day when he _____ (to be) younger.

4. What _____ you _____ (to do) all evening yesterday? I _____ (to call) you ten times!

5. Last week Jack _____ (to be) ill with a cold. He _____ (to buy) all the medicines possible but they _____ (not to help) him much really.

6. 'What _____ you _____ (to do) when you _____ (to have) this pain for the first time?' 'I _____ (to work) in the garden.'

7. When _____ scientists _____ (to start) using AI in medicine?

3. Прочитайте статью о «теледокторе», работающем в одной из больниц США. Употребите глаголы, данные в скобках, в правильной форме (Present, Past или Future Simple или Continuous).

Ries Denial _____ [1] (to wait) in his hospital room the morning after bladder surgery when the door finally _____ [2](to open). But it _____ [3] (not to be) a doctor. The robot _____ [4] (to come) to the patient's bed and _____ [5] (to switch) on its 15-inch video-screen.
'Good morning,' _____ [6] (to say) the voice from the robot's speaker. It _____ [7] (to be) Louis Kavoussi, Daniel's urologist. He _____ [8] (to look) at his patient from the screen of the so-called Dr Robot. 'So, how _____ [9] (to be) you today?'
'I _____ [10] (to be) fine, doctor.'
Then Kavoussi _____ [11] (to focus) the camera on the Daniel's chart. 'Oh, I _____ [12] (to see) you _____ [13] (to have) high temperature yesterday evening.'
'Yes, I _____ [14] (not to feel) quite well. But the nurse _____ [15] (to give) me some medicine, and it _____ [16] (to be) OK.'
Kavoussi _____ [17] (to examine) Daniel with the help of the camera.
'You _____ [18] (to look) good now,' _____ [19] (to say) Kavoussi. 'I _____ [20] (to think) I _____ [21](to let) you go home tomorrow. But first you _____ [22] (to do) an x-ray and some other tests.'
'OK.'
After that Kavoussi _____ [23](to make) the robot leave the room.
In dozens hospitals across the country doctors _____ now _____ [24] (to use) such robots to monitor A&E departments and post-operative patients, to respond to emergency calls and consult with other physicians.
Some people _____ [25] (to think) that such 'telemedicine' technologies _____ [26] (to help) doctors to use their time more efficiently and see more patients.
Sceptics, however, _____ [27](to think) that the technology _____ [28] (to depersonalise) health care and doctors _____ [29] (to spend) less and less time with their patients.

Каково ваше мнение о «телемедицине»? Хотели бы вы быть «теледоктором»? «телепациентом»?

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I can talk about advanvces in modern medical science
- I can describe the most impressive achievements in medicine
- I can use *Past Simple* and *Past Continuous*

Key Words

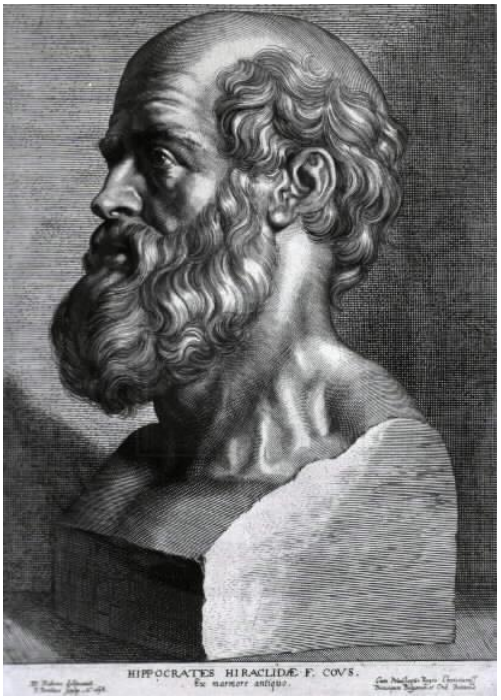
blood flow /blʌd fləu/
decision-making *n* /dɪ`sɪʒən `meɪkɪŋ/
disorder *n* /dɪs`ɔdə/
exploit *v* /iks`plɔɪt/
incision *n* /ɪn`sɪʒən/
increase *v* /ɪn`kri:s/
interaction *n* /ˌɪntə`rækʃən/
invasive *adj* / ɪn`veɪzɪv /
level *n* /`levəl/
look up *v* / luk ʌp /
magnification *n* / ˌmægnɪfɪ`keɪʃən /
means *n* /mi:nz /
navel *n* /`neɪvəl /
psoriasis *n* / sɔ`raɪəsɪs /
recovery time / rɪ`kʌvərɪ taɪm /
reference *n* /`refərəns/
research *n* /rɪ`sə:tʃ/
review *v* /rɪ`vju:/
reward *n* /rɪ`wɔ:d/
scar *n* /skɑ:/
take off v / teɪk ɔf/
track *v* / træk /
valuable *adj* /`væljubl/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT V. MEDICAL ETHICS

In this unit

- talking about ethics, medical ethics, bioethics
- describing the main principles and rules of medical boiethics and its influence on native medical ethics
- using *the modal verbs*



Hippocrates (460 – 370 BC).
Engraving by Peter Paul Rubens

Lead-in

1. Ответьте на вопросы.

- What is *ethics*? How do you understand it?
- Can you say that "*ethical"* is the synonym to "*moral"*?
- What can be ethical? (behaviour, issue, question, problem, norms, standards)
- What spheres can ethical norms be applied to?
- How do we call ethics for medical profession?
- Which of the following issues do you think are ethical? unethical?

a. sexual relationship between patients and doctors
b. using organs for transplantation of the person who has just died
c. doing abortion and terminating pregnancy
d. donating an organ to a sick relative
e. applying plastic surgery to reshape and rebuild your nose, cheekbones, teeth, *etc.*

2. Прочитайте отрывок из клятвы Гиппократа. Как вы понимаете данные утверждения?

"I swear to fulfil, to the best of my ability and judgment, this covenant:

I will apply, for the benefit of the sick, all measures which are required

I will remember that there is art to medicine as well as science, and that warmth, sympathy, and understanding may outweigh the surgeon's knife or the chemist's drug.

I will not be ashamed to say "I know not," nor will I fail to call in my colleagues when the skills of another are needed for a patient's recovery.

I will respect the privacy of my patients, for their problems are not disclosed to me that the world may know.

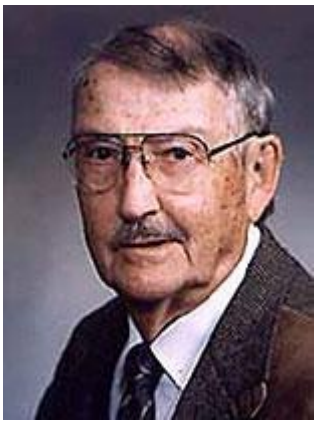
I will remember that I do not treat a fever chart, a cancerous growth, but a sick human being

I will prevent disease whenever I can, for prevention is preferable to cure.

If I do not violate this oath, may I enjoy life and art, respected while I live and remembered with affection thereafter …

3. Прочитайте текст о медицинской этике. Приготовьтесь пересказать текст по плану:

1. Overview of medical ethics.
2. History.
3. Ethical guidelines.
4. Bioethics.
5. Bioethical issues.



Van Rensselaer Potter
(1911- 2001)

In 1970, American biochemist and Professor of oncology V.R.Potter proposed the term *bioethics* to describe a new philosophy that sought to integrate biology, ecology, medicine and human values.

The greatest ethical imperative for the physician is the welfare of the patient.

The principle objective of the medical profession is to render service to humanity with the full respect to the dignity of man – Ethical Code, 1957

Reading

Medical Ethics

Overview of Medical Ethics

Ethics (from Greek ***ethos****, customary behaviour, morals)* means the system of principles of right or wrong in human conduct. Ethics in medical practice is called **medical ethics.** Medical ethics as an essential branch of general ethics **determines** the moral norms and standards for medical care.
The statements of medical ethics **require** the physician to do what is best for the patient and place the patient's interests before the interests of the physician. Above all, the purpose of medical ethics is to **protect** and defend the **dignity** and patients' rights.

History

The global medical profession has **maintained** simple ethical standards for more than 4,000 years. For example, the Hippocratic Oath, the Holy Bible, the Holy Koran, the Islamic legacy, as well as cultures, traditions, and social morality have shaped and **guided** the development of ethical standards in the medical profession. One of the oldest documents in history, the Oath by Hippocrates is still held sacred by physicians: to treat the ill to the best of one's ability, to **preserve** a patient's privacy, to teach the secrets of medicine to the next generation, *etc*.

Ethical Guidelines

Development of science and technology have led to advances in medicine and health care. The changing life **brings about** new challenges for health workers, health researchers. Medical professionals constantly confront moral questions and ethical dilemmas. The old ethical norms became **outdated** and could not **meet the requirements** of modern life. That is why the World Medical Association (WMA) adopted a number of international ethical codes (the Declaration of Geneva (1948) and the Declaration of Lisbon (1984), which are the guidelines for the medical profession nowadays. According to these guidelines health care providers must not **violate** any ethical standards. Every doctor must

- make the ***care*** of his patient his first concern.
- treat every patient politely and considerately.
- give patients information in a way they can understand.
- keep his professional knowledge **up to date**.
- recognize the limits of his ***professional competence.***
- be honest and trustworthy.
- respect and protect ***confidential*** information.
- make sure his personal beliefs do not ***prejudice*** his patient's care.
- act quickly to protect patients from risk if he has a good reason to believe that he or his colleague may not be ***fit to practice.***

Bioethics

The branch of ethics that directly relates to medicine and biology is known as bioethics or biomedical ethics.
Bioethics is the study of debatable ethical problems brought about by advances in biology and medicine. Bioethicists are concerned with the ethical questions that arise in the relationships among life sciences, biotechnology, medicine, politics, law, and philosophy. The examples of bioethical **issues** are:

- **Euthanasia**

Should the medical profession help the **terminally ill** to end their lives when they choose?

- **Genetic engineering**

Should we permit an embryo to be cloned – copied exactly – to replace a child who has died? Should parents be able to select the **genetic makeup** of their children to produce so-called designer babies?

- **Human Fertility**

IVF - in vitro fertilization - has made it possible for infertile women to have children, but should this include women long past the normal age of childbearing?
Embryos can be **frozen** and implanted in the mother at a later date but should this require the **consent** or permission of both parents if the marriage has broken down?
What are the rights of a **surrogate mother**, one who carries a child for a woman who is unable to do so, over that child?

- **Transplant surgery**

Who should give consent for the removal of body parts for transplant surgery?

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Словообразование. Образуйте слова от данных в таблице с помощью приставки *re-* и объясните значение новых слов.

to do – to redo	to shape -
to name -	to build -
to place -	to construct -
to use -	to write -
to read -	to make -
to examine	to visit

3. Найдите определения для данных слов и словосочетаний.

1. dignity	**a.** an operation in which a damaged organ from one organism is replaced with a healthy organ from another organism
2. euthanasia	**b.** the science of changing the structure of genes of a living thing in order to make it healthier
3. competence	**c.** ability to have children
4. guideline	**d**. general rule, principle, or piece of advice on how to do sth
5. fertility	**e.** the ability to do sth well
6. genetic engineering	**f.** the act of killing without pain a person who is suffering from incurable disease or from very old age
7. transplant surgery	**g**. calm, serious and controlled behaviour that makes people respect you

4. Составьте словосочетания со словами из таблицы. Используйте каждое слово только один раз.

surrogate	***confidential***	***moral***
frozen	***ethical***	***human***
infertile	***social***	***customary***
genetic	***professional***	***essential***

1. _____ branch
2. _____ conduct
3. _____ norms
4._____ mother
5. _____ makeup
6. _____ women
7._____ information
8._____ morality
9. _____ guidelines
10. _____ behaviour
11. _____ embryos
12._____ competence

5. Закончите предложения, используя слова из таблицы, синонимы к которым даны в скобках.

issues	***preserve***	***protect***
violation	***consent***	***requirement***
bring about	***maintained***	***determine***

1. Medical ethics _____ (**establish**) the moral norms and standards for medical care.
2. The purpose of medical ethics is to _____ **(defend**) the dignity and patient's rights.
3. He said that the way the hospital staff treated him was a gross _____ (**breaking the rules**) of his civil, constitutional and human rights.
4. The global medical profession has _____ (**preserved**) simple ethical standards for more than 4,000 years.
5. The new President must _____ (**cause to happen**) a change in the health care system.
6. A good degree is a minimum _____ (**demand**) for many jobs.
7. Politicians never discuss the real _____ (**problems**).
8. One of the Hippocrates' principles is to _____ (**protect**) a patient's privacy.
9. In nonemergency situations, written informed _____ (**agreement**) is generally required before many medical procedures, such as surgery, endoscopy, *etc*.

6. Образуйте словосочетания со словом *ethical*, затем составьте с ними предложения.

Ethical: norms, dilemmas, codes, standards, questions, problems, issues, guidelines.

_____
_____
_____
_____
_____
_____
_____
_____

7. Укажите синонимы к словам, выделенным жирным шрифтом.

Up to date	**Out of date**	**Terminally ill**
modern	out of way	mortal
fashionable	old fashioned	fatal
recent	no longer valid	lethal
new	antiquated	seriously ill
human	obsolete	incurable

Language Development

1. Просмотрите текст еще раз и ответьте на вопросы.

1. What is *ethics*? Give the definition.

_____
_____

2. What is the purpose of medical ethics?

_____
_____

3. What books and manuscripts helped to develop the ethical standards and norms of a medical profession?

_____
_____

4. When and where were the modern international codes of ethics adopted?

_____
_____

5. What must the doctor do according to the guidelines of ethical code?

_____
_____

6. What is bioethics?

_____
_____

7. What issues is bioethics concerned with?

_____
_____

2. Перескажите текст по плану, данному в упражнении 3 на стр. 49.

3. Какая из этических норм профессии врача, упомянутых в тексте, нарушается в каждом из перечисленных случаев?

a. A GP falls asleep regularly during consultations. His colleagues do nothing.
b. A doctor is aware that a patient has a history of violence against women. She informs a friend whose daughter has just become engaged to this man.
c. A doctor attempts to discourage a patient from having an abortion as this procedure is against his religious beliefs.
d. A doctor refers a patient to a medical textbook for an explanation of his pancreatic cancer.
e. A doctor fails to complete the number of days of professional development training advised annually.
f. A doctor tells a seriously overweight patient who has ignored his advice to diet that she deserves any ill effects that might result from her obesity.

4. Запомните значение новых слов и выражений. Прочитайте статью из журнала:

to be struck off	removed from the GMC register and banned from practising medicine in the UK
palliative care	treatment to relieve rather than to cure symptoms
hospice	facility providing care to terminally ill patients
terminally ill	not expected to live
persistent vegetative state	unable to speak or follow simple commands; does not respond in any psychologically meaningful way

Assisted Dying

A 53-year-old woman with **incurable** muscular dystrophy flew to Switzerland to end her life. **Assisted dying** is legal in Switzerland but illegal in the UK. Opponents of euthanasia, or "mercy killing", argue that legalization would lead to abuse and call for doctors who participate to be **struck off.** What Britain needs, they claim, is better **palliative care** and more **hospices** for the **terminally ill** to allow such patients to die with dignity.
This follows a recent US case where the husband of a woman who had been in a **persistent vegetative state** for 16 years was successful in having artificial feeding withdrawn in spite of opposition from his wife's parents.

Ответьте на вопросы по тексту.

1. What ethical question is described in the text?
2. In which countries is euthanasia legal and in which is illegal?
3. Why are doctors in the UK against euthanasia?
4. What is an alternative to euthanasia?

5. Проект.

What is your opinion on assisted dying? Prepare a short speech or essay on pros and cons of euthanasia.

Grammar in Use

Модальные глаголы

Positive/Negative		
I He She It We You They	**can / can't** **could / couldn't** **may / may not** **must / mustn't** **should / shouldn't**	treat this patient for pneumonia. be honest and trustworthy. give consent for the removal of body parts for transplant surgery. preserve a patient's privacy. respect and protect confidential information. learn hard to get the best results.
Questions		
Can **Could** **May** **Must** **Should**	I he she it we you they	treat this patient for pneumonia? be honest and trustworthy? give consent for the removal of body parts for transplant surgery? preserve a patient's privacy? respect and protect confidential information? learn hard to get the best results?

Все модальные глаголы имеют два значения. В первом значении они выражают способность, обязательство, разрешение и т.п. Второе значение модальных глаголов связано с выражением вероятности или возможности каких-либо действий. В этом уроке мы говорим о модальных глаголах **в первом значении**.

The Modal Verbs in the First Meaning (Tenses)

The modal verb	Present	Past	Future
can	can am/is/are able to	could was/were able to	will be able to
may	may am/is/are allowed to	was/were allowed to	will be allowed to
must	must have to	had to	will have to
should	should	-	-

Мы используем модальные глаголы, чтобы выразить:

Способность:

*He **can** take an x-ray. (Он **умеет** делать рентген.) – He **could** take an x-ray when he was in the sixth year. – He **will be able to** take an x-ray after graduation.*

Разрешение/запрет:

***May/Can/Could** I take your stethoscope? (**Можно** взять твой стетоскоп?) – Yes, of course. (Да, конечно) /I'm afraid, you **may** not. I need it right now. (Боюсь, **нельзя**. Он мне нужен прямо сейчас).*

*I **was not allowed to** examine the patient myself. (Мне **не разрешили** осмотреть пациента самому.)*

*You **may not** take the exam if your score is less than 76. (Вам **нельзя** сдавать экзамен, если вы наберете менее 76 баллов.)*

*We'**ll be allowed to** take part in health researches after graduation.*

Обязательство:

*Students **must** do their homework. (Студенты **должны** делать домашнее задание.)*

*We **have to** wear uniform at work. (Нам **приходится** носить спецодежду на работе.)*

*I **had to** work late last night. (Мне **пришлось** работать допоздна прошлой ночью.)*

***Must** we come at 8 tomorrow?(Нам **нужно** приходить завтра в 8?) – Yes, you **must.** (Да) / No, you **don't have to. (**Нет, в этом **нет необхоимости**). – No, you **mustn't.**(Нет, вы **не должны** приходить, это запрещено*)

Совет:

*Doctors **should** follow ethical standards. (Врачам **следует** соблюдать этические нормы.)*

*You **shouldn't** eat so much. (Вам **не следует** так много есть.)*

Просьба:

***Can/Could** I ask you a question? (**Можно** задать вам вопрос?)*

1. Составьте как можно больше предложений, используя слова из грамматических таблиц. Объясните значение модального глагола в каждом предложении.

2. Употребите модальные глаголы или их эквиваленты в следующих предложениях. Укажите, в каких предложениях возможны варианты.

1. Medical professionals _____ not shout at patients.

2. Every doctor _____ understand the limits of his/her professional competence.

3. My father _____ assist at the operations when he was 20 years old.

4. Next month Dr Thomas _____ work more because Dr Smith will be on holiday.

5. _____ I ask you a question, please?

6. All medical students _____ have stethoscopes of their own.

7. I think you _____ ask a doctor to give you more information about your condition.

8. The university library is free. You _____ not _____ pay to take a book.

9. You _____ not smoke inside the hospital.

10. I am learning philosophy very hard but I still _____ not understand a lot.

11. I am sorry, I _____ not help you now, but I _____ help you tomorrow.

12. You _____not _____ become a good doctor in future if you don't work hard right now.

13. _____ second-year students take an ECG?

14. I think every person _____ be happy.

15. Medical students _____ not _____ attend classes without their uniform.

16. _____ we finish this work by Monday? – No, you _____.

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

.

- I can talk about ethics, medical ethics and bioethics
  I can describe the main principles and rules of medical bioethics
- I can make the right decision in difficult cases from the point of view of medical ethics.
- I can use *the modal verbs*

Key Words

bioethics *n* /baɪəu`eθɪks/
bring about *v* /brɪŋ ə`baut/
consent *n* /`kɒnsənt/
determine *v* /dɪ`tɜ:mɪn/*
dignity *n* /`dɪgnɪtɪ/
embryo *n* /`embrɪəu/
ethics *n* /`eθɪks/
euthanasia *n* /ju:θə`neɪʒə/
fertility *n* /fə`tɪlɪtɪ/
fertilisation *n* /,fɜ:tɪlaɪ`zeɪʃən/
freeze *v* /fri:z/
genetic makeup /ʤə`netɪk `meɪk,ʌp /
guide *v* /gaɪd/
guidelines *n pl.* /`gaɪdlaɪnz/
issue *n* /`ɪʃu:/
maintain *v* /meɪn`teɪn/
meet the requirements /rɪ`kwaɪəmənts/
out-of-date *adj* /,autəv`deɪt/
outdated *adj* /aut`deɪtɪd/
preserve *v* /prɪ`zɜ:v/
protect *v* /prə`tekt/
require *v* /rɪ`kwaɪə/
requirement *n* /rɪ`kwaɪəmənt/
surrogate mother /`sʌrəgət `mʌðə/
terminally ill /`tɜ:mɪnəlɪ ɪl/
transplant surgery /træn`splɑ:nt `sɜ:ʤərɪ/
up-to-date *adj* /,ʌptə`deɪt/
violate *v* /`vaɪəleɪt/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT VI. AT THE HOSPITAL

In this unit

- talking about different types of medical institutions providing health care
- describing different departments of the hospital and work of the hospital staff
- using *numerals* and *prepositions of time*

Lead-in

1. Ответьте на вопросы.

- Are there any large hospitals in our city? Where are they located?
- What type of hospitals are they? Are they general, teaching or specialized hospitals?
- In what city hospitals do you have your classes or practical training? Are they far from the University? How do you get there?
- What hospital (department) would you like to work at after the Academy? Why?

2. Соотнесите отделенияи работу, которую они выполняют.

Which of the departments shown opposite
1. dispenses medicine? ____
2. treats kidney disease? ____
3. specializes in pregnancy and birth? ____
4. studies illnesses and analyses samples? ___
5. treats diseases of the skin? ____
6. performs operations on patients? ____
7. designs special exercises for patients? ____
8. treats dental and gum problems? ____
9. treats bones? ____
10. specializes in the heart? ____
11. deals with sick children? ____
12. treats disorders of the nervous system ____
13. provides x-rays and other images? ____
14. provides assessment and treatment of acutely ill patients? ____

3. Укажите, в каких отделениях работают эти специалисты.

b	cardiologist	____	urologist
____	anaesthetist	____	physiotherapist
____	lab technician	____	radiologist
____	midwife	____	surgeon
____	paediatrician	____	nurse
____	pharmacist	____	dermatologist
____	neurologist	____	gynaecologist
____	scrub nurse		

4. Прочитайте. Подчеркните подходящие по смыслу слова.

In the Middle Ages hospitals served different functions to modern **institutes**/**institutions**. People who stay in the hospital for several days and weeks are called **inpatients**/**outpatients**. People who come to the hospital to have tests or treatment and then return home on the same day are **inpatients**/**outpatients**. The rooms where patients stay in hospital are called **departments/ wards**. After the treatment is completed the patient is **admitted**/**discharged** back to the GP's care. In case of life-threatening situation the patient is admitted to the **ICU/A&E.**

Hospital Departments

Pathology	**a**
Cardiology	**b**
Physiotherapy	**c**
Renal Unit	**d**
Pharmacy	**e**
Orthopaedics	**f**
Neurology	**g**
Paediatrics	**h**
Dermatology	**i**
Dentistry	**j**
Obstetrics	**k**
Surgery	**l**
X-ray	**m**
Emergency	**n**

"If I am to care for people in hospital I really must know every aspect of their treatment and to understand their suffering." – Princess Diana

Reading

Hospitals

Etymology

During the Middle Ages hospitals served different functions to modern **institutions**, being almshouses for the poor, hostels for pilgrims, or hospital schools. The word *hospital* comes from the Latin *hospes*, signifying a stranger or foreigner, *i.e.,* a guest.
At present, the definition for the word reads as follows: '**Hospital** is an institution that provides medical, surgical, or psychiatric care and treatment for the sick or the injured.'

Types

Some patients go to a hospital just for diagnosis, treatment, or therapy and then leave (**'outpatients'**) without staying overnight; while others are **'admitted'** and stay overnight or for several days or weeks or months (**'inpatients'**). Hospitals usually are distinguished from other types of medical facilities by their ability to admit and care for inpatients while the others often are described as clinics.

General

The best-known type of hospital is the general hospital, which is set up to deal with many kinds of disease and injury, and normally has an emergency department to deal with immediate and urgent threats to health. Larger cities may have several hospitals of varying sizes and facilities. Some hospitals have their own **ambulance** service.

District

A district hospital typically is the major health care facility in its region, with large numbers of beds for intensive care and long-term care; and specialized facilities for surgery, plastic surgery, childbirth, **bioassay laboratories**, *etc.*

Teaching

A teaching hospital combines assistance to patients with teaching to medical students and nurses and often is linked to a medical school, nursing school or university.

Specialized

Types of specialized hospitals include trauma centres, rehabilitation hospitals, children's, **geriatric** hospitals, and hospitals for dealing with specific medical needs such as psychiatric problems, certain disease categories such as cardiac, oncology, or dental problems, and so forth.

Clinics

A medical facility smaller than a hospital is generally called a **clinic**, and often is run by a government agency for health services or a private partnership of physicians (in nations where private practice is allowed). Clinics generally provide only outpatient services.

Departments

A patient can be admitted to the hospital in a number of ways. He may be seen in his outpatient clinic and then referred by his GP to a certain **department** of the hospital. If there is a lot of demand for the treatment he needs, as in the case of hip replacement, he is put on a waiting list for admission. Or in case of emergency, he may be seen in the A&E Department, where the doctor **on duty** – working at that time – **arranges** the admission.
Hospitals vary widely in the services they offer and therefore, in the departments (or "**wards**") they have.
A large hospital may have different departments, *e.g.*

- Emergency department
- Cardiology
- **ICU (Intensive care unit)** (paediatric, neonatal, cardiovascular)
- Neurology
- Oncology
- Obstetrics and gynaecology, *etc.*

Some hospitals will have outpatient departments and some will have chronic treatment units such as behavioural health services, dermatology, physical therapy, psychiatric ward and rehabilitation services.
The people who work in hospitals are called the **staff.** Once a patient is admitted, treatment is controlled by one of the hospital doctors. On his regular **ward rounds** he is **accompanied** by a consultant and a **nurse** and they discuss the management of patients and decide when the patient is ready **to be discharged.** The nurse's role is general patient's care, **checking temperature**, **pulse rate** and blood pressure, **changing dressings**, **giving injections** and **removing sutures**.

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Словообразование. Образуйте существительные от глаголов.

Verb	Noun
admit	
assess	
discharge	
operate	
refer	
treat	
arrange	

3. Подберите антонимы из столбика B к словам из столбика A.

A. 1. outpatient	**B.** a.rich
2. poor	b. state
3. to be admitted	c. neonatal department
4. private	d. chronic treatment
5. emergency care	e. off duty
6. geriatric department	f. to be discharged
7. on duty	g. inpatient

4. Подберите синонимы к словам из первого столбика.

1. strange	a. immediate
2. care	b. foreign
3. sick	c. organize
4. hospital	d. accept
5. admit	e. clinic
6. urgent	f. ill
7. arrange	g. wounded
8. injured	h. treatment

5. Составьте словосочетания со словами из таблицы. Используйте каждое слово только один раз.

psychiatric	***intensive***	***regular***
specific	***geriatric***	***urgent***
nursing	***medical***	***plastic***

1. _____ facility
2. _____hospital
3. _____ needs
4. _____ school
5. _____ ward rounds
6. _____ problem
7. _____ surgery
8. _____ treatment
9. _____care

Составьте предложения со словосочетаниями из упражнений 3-5.

_____
_____
_____
_____

6. Закончите предложения, используя слова из таблицы, синонимы к которым даны в скобках.

accompanied	***departments***	***checks***
was discharged from	***admitted***	***clinic***
intensive care	***geriatric***	***urgent***

1. The rehabilitation _____ (**hospital**) for alcoholics is near the Green Park.
2. Patients were _____ (**hospitalized**) at the inpatient department.
3. My grandfather is in the _____ ward (**the department for old people**).
4. 'Can I see you for a moment?' 'Is it _____ (**immediate**)?'
5. Yesterday he _____ (**left**) the hospital as his condition had improved.
6. In the morning the nurse on duty _____ (**takes**) patients' temperature and feels pulse.
7. Every large hospital has a unit that provides _____ (**health care provided to critically ill patients**).
8. On his regular ward rounds the doctor is _____ (**followed**) by a consultant and a nurse.
9. The hospital had many different _____ (**divisions**).

7. Образуйте словосочетания, затем употребите их в предложениях.

1 remove	**a** a dressing
2 arrange	**b** sutures
3 put on	**c** an injection
4 check	**d** admission
5 give	**e** a waiting list
6 change	**f** blood pressure (BP)

1. The patient's condition wasn' t critical, so he was _____ for heart transplantation.
2. It took the nurse several minutes to _____ _____ from my wound.
3. The GP may _____ for his patients by telephone.
4. In case of acute pain in your injured arm it is necessary to _____ of painkiller.
5. Twice a week the patient goes to the outpatient department to _____ on the wound.
6. Elderly people should _____ regularly.

8. Составьте словосочетания, используя данные существительные.

facility, service, care, health, disease, category, rate, emergency, ambulance, district, department, pulse , hospital, service, rehabilitation, trauma, centre.

e.g. health care facility

_____
_____

Language Development

1. Дополните описания обязанностей медицинского персонала глаголами, и соотнесите их со специальностями из Lead-in (упражнение 3).

~~treats~~	performs	prepares
gives	extracts	takes
supports	specializes	delivers
administers	checks	

e.g. A *paediatrician* treats children.
1. A _____ attends births and _____ babies.
2. A _____ _____in illnesses of the heart and blood vessels.
3. A _____ _____ x-rays and other images.
4. A _____ _____ surgeons in the operating theatre.
5. A _____ _____ medicines to give to medical staff or patients.
6. A paramedic responds to emergencies and _____ first aid.
7. A _____ _____ operations.
8. A _____ treat oral diseases and _____ bad teeth.
9. An _____ _____ anaesthesia to pre-operative patients.
10. A _____ _____ pulse rate, blood pressure and temperature of patients in the ward.

2.Закончите предложения, используя слова из таблицы.

ward, ambulance, admits, patients, ward round, outpatient, clinic, discharged, referral

1. A patient who is well enough to go home will be _____.
2. Every day the doctor will speak to the patients during the_____.
3. A patient who does not need to stay in hospital overnight can see the hospital specialist as an _____ and will be given an appointment to attend the _____.
4. People in hospital with some form of illness are known as _____.
5. When patients first arrive at hospital, a doctor or nurse_____them and shows them to a bed in a _____.
6. There may be the letter of _____ from another doctor explaining the history.
7. A vehicle with special equipment, used for taking sick or injured people to a hospital is an _____.

3. Просмотрите текст еще раз и ответьте на вопросы.

1. What is a hospital?
_____
_____
_____

2. What types of hospital do you know?
_____
_____
_____

3. What diseases do general hospitals deal with?
_____
_____
_____

4. What types of specialized hospitals can you name?
_____
_____
_____

5. What is the difference between hospital and clinic?
_____
_____
_____

6. What departments does a large hospital have?
_____
_____
_____

7. What do doctors do during their ward rounds?
_____
_____
_____

8. What are the duties of the nurse in hospital?
_____
_____
_____

4. Проект.

Think about the features of an ideal place where you would like to work. Which departments would it include? Which specialists would you invite to your team?
Surf the Internet and find out about modern technologies which help doctors. Which of these would you like to have?
Prepare a short speech or essay.

Grammar in Use

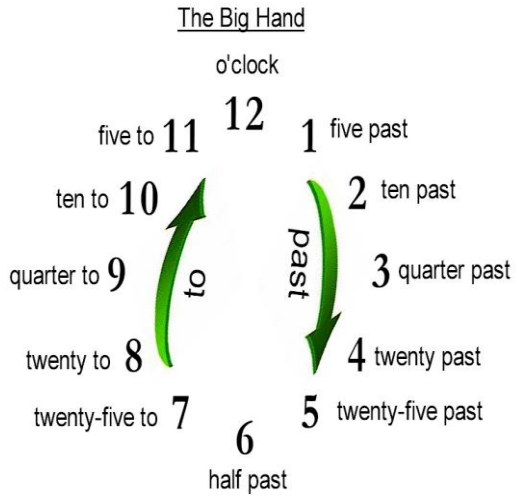
Числа

Числительные

Количественные	Порядковые
0 (nought/zero/oh)	-
1 one	1st first
2 two	2nd second
3 three	3rd third
4 four	4th fourth
11 eleven	11th eleventh
12 twelve	12th twelfth
13 thirteen	13th thirteenth
20 twenty	20th twentieth
21 twenty one	21st twenty first
30 thirty	30th thirtieth
32 thirty two	32nd thirty second
100 one hundred	100th one hundredth
101 one hundred and one	101st one hundred and first
200 two hundred	200th two hundredth
1,000 one thousand	1,000th one thousandth
1,234 one thousand two hundred and thirty four	1,234th one thousand two hundred and thirty fourth

Примечания:
1 0 произносится: ***oh*** **(**или ***nought*****)** в номерах телефонов, банковских счетах и других «длинных» числах: *25-06-08 two five oh six oh eight*, либо ***zero*** в научном контексте: *-20ºC twenty degrees below **zero**.*
2 В числах после 1,000 мы используем запятые.

Который час?



07.00 – It's seven o'clock
07.05 – It's five past seven
07.15 – It's quarter past seven
07,30 – It's half past seven
07.40 – It's twenty to eight

Метаматические символы и дроби

% (the percentage sign):
3% - *three **per cent***

Простые дроби:

$^1/_2$ – *a/one half* $^1/_3$ – *a/one third*
¼ – *a/one quarter* or *one fourth*
$5^9/_{16}$ – *five **and** nine sixteenths*

Десятичные дроби:
23.674 – *twenty three point six seven four*
0.0023 – *(nought) point nought nought two three*

Степени и корни:
x^2 – *x squared / x (raised) to the power two*
x^3 – *x cubed*
x^n – *x to the nth / x to the power n*
x^{-n} – *x to the (power) minus n*
$\sqrt{x}$ - *(square) root (of) x / the square root of x*
$\sqrt[3]{x}$ - *x cube root (of) x*
$\sqrt[n]{x}$ - n*th root (of) x*

Химические формулы
H_2O – pronounced 'aitch-two-oh'
HCl – pronounced 'aitch-see-ell'

Выражение времени
Как называть дату:
1/9/12(BrE): **the** first **of** September, twenty twelve, или September **the** first, twenty twelve
1/9/12 (AmE): **the** ninth **of** January, twenty twelve, или
January **the** ninth, twenty twelve

Предлоги времени

at	in	no preposition
- **at** six o'clock - **at** night - **at** midnight - **at** Christmas - **at** the weekend	- **in** the morning/ afternoon/ evening - **in** December - **in** winter - **in** 2006 - **in** two weeks' time - **in** a minute - **in** an hour	- today - yesterday - tomorrow - the day after tomorrow - the day before yesterday - last night - last week - next month - yesterday evening - tomorrow morning - this evening - this year tonight
on		
- **on** Sunday - **on** Monday morning - **on** Christmas Day - **on** March 8		

1. Прочитайте:

1) 13 31st 1,093 45 222nd 0
52 673rd 91 588 1,000,001

2) telephone numbers:
+7 978-122-43-57
+7 3652-55-77-00
your telephone number

3) fractions and decimals:

$^{1}/_{2}$ $555^{1}/_{11}$ $^{3}/_{8}$ $10^{1}/_{7}$ $17^{17}/_{18}$ $67^{6}/_{7}$

0.12 34.056 0.0075 1,001.001 56.907865

4) powers and roots, percentage:

2^{10} 5^{x} 10^{17} $\sqrt{16}$ $\sqrt[3]{81}$ $\sqrt[5]{x}$ 5%; 0.54%;

5) now tell the group chemical formulas of some well-known substances.

2. Употребите правильный предлог (где это необходимо) в данных предложениях.

1. My friend was born _____ two o'clock _____ the morning _____ Wednesday, the twenty-fifth of January, 1995.
2. Mrs Brown is going to see her dentist _____ tomorrow morning.
3. We have hols (holidays) twice a year, _____ winter and _____ summer.
4. Normally, clinics are closed _____ the weekends.
5. What is square root _____ one hundred?
6. We pronounce 16^{4} so: sixteen _____ the fourth power.
7. This woman will be operated on _____ten weeks' time.
8. Usually I am the happiest _____ Monday morning.

3. Ответьте на вопросы:

1. When is your birthday?
2. What is your date of birth?
3. What days are national holydays in your country?
4. When does your holyday start?
5. When is the Day of Medical Professionals in your country?
6. What time are you going home today?
7. When do you do your homework?
8. When did you last attend a lecture?
9. When did you last clean your teeth?
10. What is the chemical formula of water?
11. How many people live in Russia? in the Crimea?
12. What is the telephone number of your best friend? of your family physician?
13. How many per cent of students in your group are girls? are 18 years old? have part-time jobs?

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I can talk about different types of medical institutions providing health care
- I know the names of hospital departments and can describe hospital jobs
- I can describe the duties of a doctor in the English hospital
- I can use *numerals and prepositions of time*

Key Words

accompany *v* /ə`kʌmpənɪ/
admit *v* /əd`mɪt/
ambulance *n* /`æmbjuləns/
bioassay laboratory /baɪə`æseɪ lə`bɒrətrɪ/
CBC (complete blood count) /kəm`pli:t blʌd kaunt/
change dressing /tʃeɪndʒ `dresɪŋ/
discharge *v* /dɪs`tʃɑ:dʒ/
doctor on duty /`dju:tɪ/
drug chart /drʌg tʃɑ:t/
ECG (electrocardiography) /ɪ,lektrə,kɑ:dɪ`ɒgrəfɪ/
geriatric *adj* /,dʒerɪ`ætrɪk/
give injection /ɪn`dʒekʃən/
hospital *n* /`hɒspɪtəl/
in charge /tʃɑ:dʒ/ of
inpatient *n* /`ɪnpeɪʃənt/
institution *n* /ɪnstɪ`tju:ʃən/
intensive care unit (ICU) /ɪn`tensɪv kɜə `ju:nɪt/
investigation *n* /ɪn,vestɪ`geɪʃən/
outpatient *n* /`autpeɪʃənt/
patient record /`peɪʃənt `rekɔ:d/
present *v* /prɪ`zent/
procedure *n* /prə`si:dʒə/
pulse rate /pʌls reɪt/
remove sutures /rɪ`mu:v `su:tʃəz/
specimen *n* /`spesəmɪn/
staff *n* /stɑ:f/
supervise *v* /`sju:pəvaɪz/
ultrasound *n* /`ʌltrəsaund/
ward *n* /wɔ:d/
ward round /wɔ:d raund/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT VII. MEDICAL EXAMINATION

In this unit

- describing the procedure of clinical examination of patient, its stages and essence
- formation and using of *the present and past participles*
- using *Passive Voice*

Lead-in

1. Ответьте на вопросы.

- What methods of medical examination of patients are there?
- What appliances for carrying out medical examination do you know?
- Which of them are most frequently used nowadays?
- Which of them are considered up-to-date? out-of -date?

2. Знаете ли вы, что

- the **microscope** was invented in 1590. Laboratory technicians use it regularly to analyze specimens of blood, urine and tissue.

- the **stethoscope** was invented in France in 1816 by René Laennec at the Necker-Enfants Malades Hospital in Paris. It consisted of a wooden tube and was monaural. René Laennec was the first to propose auscultation in 1816.

- in 1895, Roentgen discovered the **X-ray** to detect abnormalities inside the body.

- the word **sphygmomanometer** comes from the Greek *sphygmós* (pulse), plus the scientific term *manometer* (pressure meter). The device was invented by Samuel Siegfried Karl Ritter von Basch in 1881.

Scipione Riva-Rocci introduced a more easily used version in 1896.
In 1901, Harvey Cushing modernized the device and popularized it within the medical community.

- the development of radar and sonar during the World War II made it possible to use **ultrasound** for medical diagnostic purposes. Ultrasonic techniques can accurately differentiate tissue and fluid interfaces within the body, thus providing valuable information on many internal structural defects.

- in the early 1900s, the Italian radiologist Alessandro Vallebona proposed a method to represent a single slice of the body on the radiographic film. This method was known as **tomography**.

- The first commercially viable **CT scanner** was invented by Sir Godfrey Hounsfield in the United Kingdom in 1967. The first scanner was installed in Atkinson Morley Hospital in Wimbled, England, and the first patient's brain-scan was done on 1 October, 1971. It was publicly announced in 1972.

3. Прочитайте текст об осмотре больного. Подготовьтесь к обсуждению следующих вопросов:

- History taking.
- Methods of physical examination.
- Methods of imaging studies.

"The trouble with doctors is not that they don't know enough, but that they don't see enough."
Sir Dominic J. Corrigan

"Always listen to the patient, they might be telling you the diagnosis."
Sir William Osler

Reading

Clinical Examination

Doctors who are directly **involved** in the care of patients have four fundamental tasks:

- making a diagnosis
- discovering the **cause** of the problem
- determining treatment
- establishing prognosis.

Everything the clinicians do to and for the patient – includes one or another of these basic jobs.

History Taking

Progress in making the diagnosis depends on taking a good history and doing a careful physical examination.
During the course of history, the physician gathers full information about the patient: his biographical data (age, race, sex, occupation, education, habits), chief **complaints**, data on past illnesses (major acute and **chronic** diseases, operations and injuries the patient had in the past), and data about chronic illnesses of the immediate family. The way and manner the physician asks the patient questions is of particular importance.

Physical Examination

History taking is generally **followed** by **physical examination** or **clinical examination** - the process by which a doctor **investigates** the body of a patient for **signs** of disease. Generally, there are 4 parts of physical examination:

- **Inspection:** looking for signs
- **Palpation:** feeling for signs
- **Percussion:** tapping for signs, used when doing a lung and/or gut examination.
- **Auscultation:** listening using the stethoscope, or in olden times, purely listening with direct ear.

Whatever part of the patient is examined, whatever disease is **suspected**, the four motions must be done in that order. You look first then feel; when you have felt, you may tap, but not before; and last of all comes the stethoscope.
The examination will cover most of the basic systems of the body, including the heart system, lung system, gastrointestinal system and nerve system examination.

Palpation

Percussion technique

Investigations

After physical examination the physician makes an **initial** diagnosis which must be **confirmed** by **laboratory findings** and **imaging technologies** before the treatment is decided upon. The most common laboratory findings are **biopsy**, **blood** and **urine testing**. Imaging studies include **radiograghy** (X-ray), **ultrasound** investigation, **computed tomography** (CT), **electrocardiography** (ECG), **electroencephalography** (EEG), magnetic resonance imaging (MRI).
It is said that over 80% of diagnoses are made on history alone, a further 5-10% on examination and the remainder on investigation. Whether this saying is true or not may be open to debate but it is clear that history and examination skills remain at the very core of clinical practice.

Lung auscultation

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Расшифруйте аббревиатуры.
ICU, A&E, EEG, MRI, CT, ECG.

3. Найдите определения для данных слов.

1. examination	**a.** a diagnostic procedure designed to determine the density of a part by the sound produced by tapping the surface with the finger or a plessor
2. palpation	**b.** listening to the sounds made by various body structures and functions as a diagnostic method, usually with a stethoscope.
3. percussion	**c.** any investigation or inspection made for the purpose of diagnosis
4. auscultation	**d.** examination with the hands, feeling for organs, masses, or infiltration of a part of the body, feeling the heart or pulse beat, vibrations in the chest, *etc*.

4. Подберите синонимы к данным словам.

information	
investigations	
symptom	
radiography	
touch	
gut system	

5. Составьте словосочетания: ***глагол – прилагательное – существительное***

to cause	acute	pains
to complain of	chronic	illness
to prevent	physical	symptoms
to develop	unusual	complaints
to describe		suffering
		injuries

6. Словообразование. Образуйте как можно больше слов с терминоэлементом –*graphy*. Объясните их значение.

*e.g. angio**graphy*** _____
_____
_____
_____
_____

7. Закончите предложения, используя слова из таблицы, синонимы к которым даны в скобках.

causes	***sign***	***chronic***
involves	***palpate***	***confirm***
specimens	***auscultation***	***suspects***
initial		

1. Radiography _____ (**includes**) exposing a part of the body to a small dose of radiation to produce an image of the internal organs.
2. X-ray is the commonest diagnostic examination used to _____ (**establish the truth**) lung abnormalities.
3. Drunken driving is one of the commonest _____ (**reasons**) of traffic accidents.
4. Headaches may be a _____ (**indication**) of stress.
5. The doctor may decide to have blood, urine or tissue _____ (**samples**) analysed.
6. It is difficult to cure _____ (**continual**) bronchitis.
7. _____ (**listening**) is one of the most important diagnostic techniques for examining such organs as lungs, heart, vessels.
8. To _____ (**touch**) means to examine with hands.
9. The doctor _____ (**supposes**) that the patient has problems with the gut system.
10. The physician should be able to make an _____ (**primary)** diagnosis after examination of a patient.

8. Найдите «лишнее» слово.
1. specimen, illness, pattern, sample, example
2. chronic, acute, constant, permanent, continual
3. involve, consist of, include, contain, study
4. initial, first, primary, final, elementary
5. investigate, examine, research, explore, remain

9. Закончите предложения, образовав present или past participle от глаголов, данных в скобках.

1. The initial diagnosis is _____ (confirm) by laboratory findings.
2. I went to the lecture but I felt_____ (bore).
3. It was very _____ (disappoint) not to get the results of blood testing in time.
4. When the surgeon performed his first operation he felt _____ (frighten).
5. Doctors who are directly _____ (involve) in the care of patients have four fundamental tasks.
6. The results were _____ (surprise).

Language Development

1. Закончите предложения.

1. The main tasks of every physician involved in patent care are

_____
_____

2. Case history includes information about

_____
_____

3. The main parts of physical examination are

_____
_____

4. Laboratory findings include

_____
_____

5. The most common imaging studies are

_____
_____

2. Прочитайте предложения. Задайте вопросы к словам, выделенным курсивом.

1. The activity of the heart can be studied *by means of electrocardiography.*

_____
_____

2. The x-ray examination was necessary *to confirm the initial diagnosis.*

_____
_____

3. The doctor found a small lump *on the patient's head.*

_____
_____

4. The patient suffered from polio *in his childhood.*

_____
_____

5. Biopsy is necessary *in case of tumour removal.*

_____
_____

6. *The tumour* was found out by x-ray examination.

_____
_____

7. The presence of blood or protein in urine indicates *some pathology.*

_____
_____

3. Просмотрите текст еще раз и ответьте на вопросы.

1. What tasks does the doctor have before treating the patient?

_____
_____

2. What are the main methods of physical examination of the patient?

_____
_____

3. What is the sequence of these methods?

_____
_____

4. What is the initial diagnosis confirmed by?

_____
_____

5. What are the most common laboratory procedures?

_____
_____

6. What do imaging studies include?

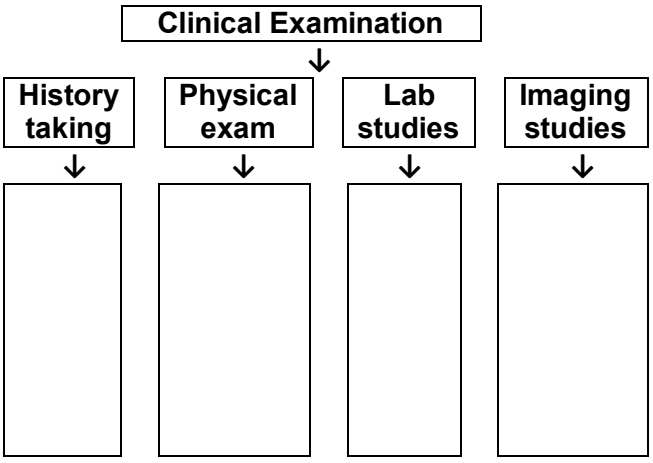
_____
_____

4. Проект.

Choose one of the specialties.

neurosurgeon, oral surgeon, cardiologist, dentist, alternative therapist, psychiatrist

Fill in the table for the chosen specialty (use the Internat or ask working specialists).



Describe clinical examination of a patient who came to see such a specialist for the first time. You may consider a particular patient's problem as an example.

Grammar in Use

Past Participle

Для правильных глаголов	Для неправильных глаголов
+ ed	**The 3rd form of the verb**
*to try – tri**ed***	*to freeze – frozen*
*to save – sav**ed***	*to bring – brought*
*to include – includ**ed***	*to come – come*

Мы используем **Past Participle**:
1. В качестве прилагательного:
*The **examined** patient was in a good condition.*
2. Чтобы образовывать времена группы **Perfect** и пассивный залог (the passive voice):
*The physician has just **examined** her.**
*The patient was **examined** yesterday.*
* Времена группы **Perfect** мы будем изучать позже.

Present Participle

Для любых глаголов
+ ing
*to improve – improv**ing***
*to attend – attend**ing***
*to die – d**ying***

Мы используем **Present Participle**:
1. В качестве прилагательного:
*The **examining** doctor is a good specialist.*
2. Чтобы образовывать времена группы **Continuous**:
*The physician was **examining** patient S. the whole morning.*

Внимание: Обратите внимание на разницу в значении между **Present** и **Past Participle**:
*The trip was **tiring**. (Путешествие было **утомительным**)– We were **tired** after the trip. (Мы были **уставшими** после путешествия.)*

1. Образуйте Past или Present Participle от данных глаголов и используйте их в следующих предложениях.

1. *to determine*
Now we know the cause of the disease. The cause was _____.
Cost of treatment was not a _____ factor for me.

2. *to confirm*
At last the scientist received the _____ data and was able to finish his report.
All theories should be _____ on practice.

3. *to protect*
Dolphins are a _____ species.
The WHO is working hard on _____ measures against spread of malaria

The Passive Voice

Present Simple Passive

Positive/Negative			
I	**am**	(not)	**examined** every day.
He / She / It	**is**		
We / You / They	**are**		

Questions			
(Where)	**am**	I	**examined** every day?
	is	he / she / it	
	are	we / you / they	

Past Simple Passive

Positive/Negative			
I / He / She / It	**was**	(not)	**examined** yesterday.
We / You / They	**were**		

Questions			
(Where)	**was**	I / he / she / it	**examined** yesterday?
	were	we / you / they	

Future Simple Passive

Positive	
I / He / She / It / We / You / They	**will be examined** tomorrow.

Negative		
I / He / She / It / We / You / They	**won't (will not)**	**be examined** tomorrow

Questions				
(Why)	**will**	I / he / she / it / we / you / they	**be examined**	tomorrow?

Мы используем пассивный залог:

1. Когда мы не хотим брать ответственность за что-либо: *The patient **will be examined** during the ward round.*
2. Когда мы хотим сосредоточить внимание на самом действии: *The MRI **was performed** last Monday.*
3. Когда мы не хотим использовать подлежащие типа *они, кто-то,* etc.: *In what order **are** patients **seen** in the Emergency Department?*

2. Употребите глаголы, данные в скобках, в Simple Passive.

1. History taking _____ generally _____ (*to follow)* by physical examination.

2. Every time fracture _____ (*to suspect*), x-ray_____ (*to perform*).

3. Yesterday blood pressure in this patient _____ _____ (*to take*) three times.

4. As biopsy takes quite long, the diagnosis ____ _____ (*to confirm*) next Monday.

5. What medical appliances _____ (*not to use*) anymore nowadays?

6. This patient's specimens of blood _____ _____ (*to analyse*) in an hour.

7. These students _____ (*to teach*) the main principles of palpation last year.

8. The methods of tomography _____ (*to propose*) by Alessandro Vallebona in the early 1900s.

3. В каждой паре предложений употребите один глагол в active voice, другой в passive voice.

1. *to suspect*
The experienced physician _____ asthma as soon as he had a look at the patient.
If fracture _____, x-ray is performed immediately.

2. *to prevent*
Thanks to the efforts of the WHO, spread of the epidemics in 2000 _____.
Unfortunately, all the taken efforts _____ not _____ spread of the grippe last winter.

3. *to involve*
Many patients _____ in the research next year.
A surgeon's job _____ long hours and hard work.

4. *to accompany*
Fractures _____ not usually _____ by bleeding.
Both students and junior doctors usually _____ the professor during his ward rounds.

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I can talk about the procedure of clinical examination of patients
- Ican express the results of the physical examination of patients
- I can form and use *the present and past participles*
- I can use *the Passive*

Key Words

auscultation *n* /ɔːskəl`teɪʃən/
biopsy *n* /`baɪəpsɪ/
blood testing /blʌd `testɪŋ/
cause *n, v* /kɔːz/
chronic *adj* /`krɒnɪk/
complain *v* /kəm`pleɪn/
complaint *n* /kəm`pleɪnt/
computed tomography (CT) /kəm`pjuːtɪd tə`mɒgrəfɪ/
confirm *v* /kən`fɜːm/
electroencephalography (EEG) /ɪ,lektrəuɪn,sefə`lɒgrəfɪ/
follow *v* /`fɒləu/
history taking /`hɪstərɪ `teɪkɪŋ/
imaging studies /`ɪmɪdʒɪŋ `stʌdɪz/
initial *adj* /ɪ`nɪʃəl/
inspection *adj* /ɪn`spekʃən/
investigate *v* /ɪn`vestigeɪt/
involve *v* /ɪn`vɒlv/
laboratory findings / lə`bɒrətrɪ `faɪndɪŋs/
magnetic resonance imaging (MRI) /mæg`netɪk `rezənəns `ɪmɪdʒɪŋ /
palpation *n* /pəl`peɪʃən/
percussion *n* /pə`kʌʃən/
physical examination /`fɪzɪkəl ɪg,zæmɪ`neɪʃən/
radiography (X-ray) /,reɪdɪ`ɒgrəfɪ/
sign *n* /saɪn/
suspect *v* /sə`spekt/
ultrasound investigation /`ʌltrəsaund ɪn,vestɪ`geɪʃən/
urine testing /`juərɪn `testɪŋ/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT VIII. AT A CHEMIST'S

In this unit

- talking about different types of pharmacy
- describing the work of chemist's shops
- describing types and forms of medications and ways of their storage
- studying the structure of a drug prescription
- *Impersonal sentences*

The mortar and pestle is an international symbol of pharmacists and pharmacies.

Lead-in

1. Проанализируйте данные группы слов. Различаются ли они по значению?

pharmacy → **chemist's** (shop) → **drugstore**
a pharmacist → **a chemist** → **a druggist**
medicine→drug→remedy→preparation

2. Ответьте на вопросы:

- Where can you get medicine?
- When do you go to the chemist's?
- What medicine do you often get at the chemist's?
- What do you need to get tablets, pills, drops?
- What is a prescription?

℞ is a symbol meaning "prescription". It is sometimes transliterated as "R_x" or just "Rx". This symbol originated in medieval manuscripts as an abbreviation of the Late Latin verb *recipe*, which means "take..." and medieval prescriptions invariably began with the command to "take" certain materials and compound them in specified ways. Today, when a medical practitioner writes a prescription beginning with "℞", he or she is completing the command.

3. Прочитайте текст «В аптеке». Подготовьтесь к обсуждению следующих вопросов:

- Types of pharmacies
- Structure of a community pharmacy
- Types of dosage forms

The opening of the first drugstores is recorded by Muslim pharmacists in Baghdad in 754.
(According to Sharif Kaf al-Ghazal)

Reading

AT A CHEMIST'S

Pharmacy is the field of health sciences focusing on safe and effective use of medications. The word *pharmacy* derives from Greek "pharmakon", meaning "drug" or "medicine". A place where drugs are **dispensed** is called **a chemist's** (shop), or **pharmacy**, or **drugstore**. In the USA and Canada drugstores commonly sell not only medicines, but also sweets, cosmetics, magazines, as well as light refreshments and groceries.

Pharmacists, also known as **druggists** or **chemists**, are healthcare professionals who practice in pharmacy.

Historically, the fundamental role of a pharmacist as a healthcare practitioner was to **distribute** drugs to doctors for treatment of their patients. Nowadays, pharmacists advise patients and health care providers on the selection, **dosages**, **interactions**, and **side effects** of medications, and act as a learned intermediary between a prescriber and a patient. Pharmacists undergo university-level education to understand biochemical mechanisms of action of drugs, drug uses and therapeutic roles, side effects, potential drug interactions, *etc.*
Different countries require pharmacists to hold either a Bachelor of Science in Pharmacy or Doctor of Pharmacy degree.

There are a lot of different types of pharmacies from clinical or hospital ones (which can be found at hospitals and clinics, of course) to the most exotic ones, like military pharmacy (where no civil people are allowed to work) or **nuclear** pharmacy which focuses on preparing **radioactive** materials for diagnostic tests and for treating certain diseases.
But the most popular type of chemist's shops is surely community pharmacy. The modern community pharmacy has the following areas:

- **a dispensary** is the area of a pharmacy where drugs are stored and prepared for dispensing and distribution and to which the public has no access;
- **a prescription area** is equipped with a prescription counter where communication between customers and pharmacists takes place. The patient can buy medicines here by prescription only. These are poisonous, psychotropic, narcotic drugs which are **potent** and can be dangerous if taken in an **overdose**.
- **a private counselling area** is a separate room or part of the room where clients may discuss their personal health issues with qualified pharmacists;
- **a waiting area** should provide enough space and comfortable seats for those who are waiting for their turn;
- **a storage area** has space for storing all types of medicines. All the drugs should be stored on or in shelves, drawers of drug cabinets; at that medications for external use are kept separately from internal and injectable drugs and non-prescription preparations.

In our country a chemist's will provide you with all kinds of drugs in different dosage forms**. Dosage forms** are a mixture of active drug components and non-drug components. The most common dosage forms are **solid** (**pills**, tablets, **capsules,** or **suppositories)**, **semisolid** (creams, ointments) and liquid (syrups, spirits, elixirs, tinctures, solutions, sprays, aerosols, emulsions, extracts). Many drugs described as **over-the-counter** (OTC) drugs are available without prescription. Others require a health care provider's prescription for use.

Apart from medicines you can buy other things and devices at a chemist's like **medicine droppers,** thermometers, **hot water bottles**, **mustard plasters**, sphygmomanometers, scales, *etc.*

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Найдите определения для данных слов и словосочетаний:

1. side effect	**a.** written or signed order for a drug with directions for administration
2. dosage	**b.** a person who helps in diagnosing or preventing or treating illness
3. prescription	**c.** an amount of drug or medicine to be taken at one time or over a period
4. overdose	**d.** an undesirable effect
5. health care provider	**e.** an excessive and dangerous dose of a drug
6. chemist	**f.** a person authorized to dispense medicinal drugs

3. Что обозначают данные аббревиатуры?

1. cap	**a.** prescription
2. elix	**b.** tablet
3. MED(s)	**c.** suspension
4. OTC	**d.** tincture
5. Rx	**e.** ointment
6. supp	**f.** elixir
7. susp	**g.** infusion
8. tab	**h.** over-the-counter
9. tinc	**i.** suppository
10. ung	**j.** medicine(s), medication(s)
11. infus	**k.** capsule

4. Закончите предложения, используя слова из таблицы, синонимы к которым даны в скобках.

side effects	***dose***	***interacts***
pills	***druggist***	***capsule***
chemist's	***suppository***	***overdose***

1. The maximal _____ of paracetamol for an adult is 4 g daily. (**amount**)
2. A patient took a _____ which had a measured amount of medicine inside. (**a small container**)
3. The majority of medicines may have _____ _____ . (**bad effects**)
4. A _____ should be placed into the rectum and left to dissolve gradually. **(a small piece of solid medicine**)
5. Some women take _____ to avoid pregnancy. (**tablets**)
6. She was admitted to hospital after taking an _____ of sleeping pills. (**too much of a drug**)
7. Perfume _____ with the skin's natural chemicals. (**has an effect**)
8. My friend is a _____, his job is to prepare and sell medicines. (**chemist)**
9. You can buy medicine droppers, mustard plasters, thermometers, scales and other things at a _____ (**drugstore**).

5. Распределите данные лекарственные формы по группам:

pills, creams, syrups, aerosols, tablets, extracts, capsules, suppositories, elixirs, spirits, ointments, tinctures, emulsions, solutions, sprays.

Solid:

_____
_____

Semisolid: _____
_____

Liquid:

_____
_____

6. Составьте словосочетания со словами из таблицы. Используйте каждое слово только один раз.

safe	***external***
fundamental	***injectable***
potential	***non-prescription***
counselling	***common***
potent	***radioactive***

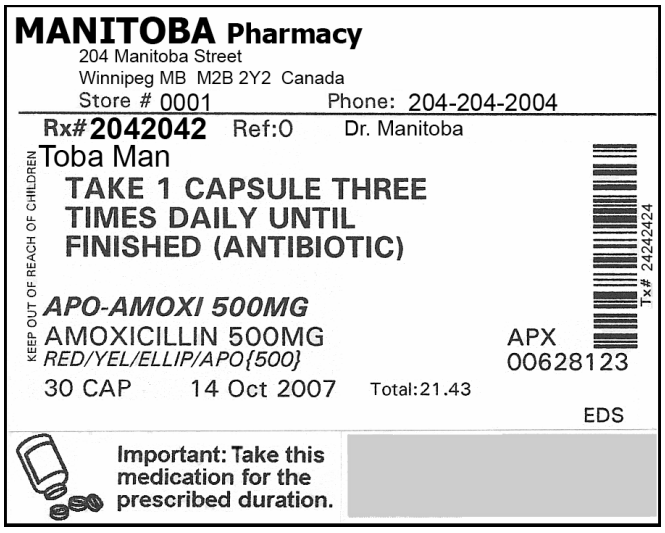
1._____ dosage
2._____ preparation
3._____ drug
4._____ use
5._____ area
6._____ medicine
7._____ drug interaction
8._____ role
9._____ material
10._____ use

7. С какими существительными могут употребляться данные группы слов?

Area, pharmacies, drugs		
1.	**2.**	**3.**
poisonous	clinical	prescription
psychotropic	hospital	private
narcotic	military	counselling
potent	nuclear	waiting
dangerous	community	storage

Language Development

1. Изучите рецепт; затем ответьте на вопросы.



1. What is the name of the pharmacy?
_____Pharmacy

2. What is the address of the pharmacy?
204 Manitoba _____, Winnipeg MB M2B 2Y2 Canada

3. What is the store number of the pharmacy?
Store: ____0001

4. What is the phone number of the pharmacy?
Phone: _____

5. What is the prescription number?
Rx: # _____

6. What is the physician's name?
Dr. _____

7. What is the date that the prescription was filled?
_____ 14, 2007

8. What is the name of the person for whom the drug is prescribed?
Toba _____

9. What is the brand name of this drug?
APO-_____

10. What is the name of the medication or the main ingredient (generic name)?
_____ is the generic _____ for the drug.

11. What is the strength of the medication?
_____ mg

12. What do the letters APX mean?
The _____ indicate the manufacture's/company's code.

13. What does the number listed below the company code represent?
The _____ indicates the drug identification number (DIN).

14. How much is in the package?
_____ caps (capsules)

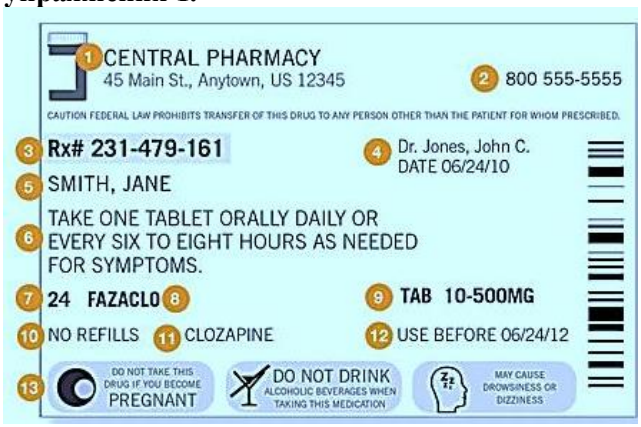
15. What are the directions or instructions for taking the medication?
_____1 capsule _____times daily until _____ (antibiotic).

16. Are there any cautions or warnings on the label?
Important: Take this medication for the _____.

Keep out of reach of _____.

17. Do prescription drug labels often include any additional information that is not on this one?
Expiry date, refill information, and additional information, on stickers, such as Take with food.

2. Какая информация обозначена числами на этом рецепте? Соотнесите с вопросами из упражнения 1.



3. Проект.
Write out a prescription of your own. Choose a medication which you know about. Consult the Guide to Pharmacology (an open-access website). Be ready to talk about dosage, interactions, and side effects of this medication.

4. Закончите предложения:

1. The main types of pharmacy are _____
_____
_____

2. The main areas of the community pharmacy are _____

_____.

3. A person who dispenses drugs is a _____
_____.

4. Liquid dosage forms are _____
_____

5. Solid dosage forms include _____
_____ .

6. Semisolid dosage forms are _____
_____ .

5. Просмотрите текст еще раз и ответьте на вопросы:

1. What is a chemist's?
_____
_____

2. Who works at a chemist's? What is their role?
_____
_____

3. What types of pharmacy do you know?
_____
_____

4. What areas does a community pharmacy have?
_____
_____

5. Where can you buy medicines by prescription? What drugs are sold by prescription only?
_____
_____

6. What dosage forms do you know? Give examples of each dosage form.
_____
_____
_____
_____

6. Прочитайте рецепт. Используя данную информацию, закончите диалог.

Generic name: Aspirin
Therapeutic classification: Analgesic
Indication: pain, heart attack, fever
Contraindication: blood disorder, liver or kidney impairment, hypersensitivity.
Pregnancy Category: D (potential benefits may warrant use of the drug in pregnant women despite potential risks.
Dosage: 325-650 mg 4-6 hourly. Max: 4g/day
The way of taking: It comes as a tablet to take by mouth, with food.
Warnings and Precautions: caution in patients with stomach pain, ulcers, anemia, kidney or liver diseases, allergy.
Avoid alcohol consumption.
It should not be given to children.
Side effects: nausea, vomiting, stomach pain, allergic reactions.
Storage condition: store it at room temperature.

At the Pharmacy

Customer: Can you help me? I need Aspirin.
Pharmacist: _____

C: I have a headache. What is the action of Aspirin? Can I get a relief?
Ph: _____

C: How should I take it?
Ph: _____

C: Can I take it with food?
Ph: _____

C: Can I drink alcohol?
Ph: _____

C: What is the dosage of the drug?
Ph: _____

C: Can it be taken by children and pregnant women?
Ph: _____

C: What are possible precautions?
Ph: _____

C: Should I expect any side effects?
Ph: _____

C: Should I store it in a special place?
Ph: _____

Grammar in Use

Безличные предложения

It is	said considered thought	(that)	the symbol Rx originated in medieval manuscripts.
They	say consider think		the first drugstores were opened in Baghdad in 754 AD.
One	says considers thinks		a lot of antihistamine drugs have undesirable side effects.

В безличных предложениях могут также употребляться глаголы: ***to believe, to assume, to suppose*** и другие. Безличные предложения переводятся на русский язык так: *считают (считается), говорят, полагают,* и т.д.

Безличные предложения используют**:**

1. Чтобы сообщить о чем-то, в чем вы не уверены:

They say / It is said / One says *(that) soon people will live for 150 years.*

2. Чтобы ваш совет звучал менее категорично:

They think / it is thought / One thinks *(that) people should read instructions carefully before taking a medicine.*

1. Ответьте на вопросы, используя безличные предложения с данными словами.

e.g. Who is the best student in your group? – ***It is believed*** *that Ruslan is the best student in our group.*

1. What should a person do if (s)he has a cold? _____ _____(*one/assume*).
2. Why can't some drugs be bought without a prescription? _____ _____(*they/consider*).
3. Where and when were the first drugs prepared? _____ _____(*it/believe*).
4. What is the most difficult subject in the 1st year? _____ _____(*they/think*).
5. What should a student do if (s)he has a lot of absences in English? _____ _____(*it/suppose*).

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I can talk about different types of pharmacies
- I can describe the work of chemist's shops
- I can describe different types and forms of medication and ways of their storage
- I can read a drug prescription label
- I can use the impersonal sentences

Key Words

capsule *n* /ˈkæpsjuːl/
chemist BE *n* /ˈkemɪst/ = druggist AE *n* /ˈdrʌgɪst/
dispensary *n* /dɪsˈpensərɪ/
dispense *v* /dɪsˈpens/
distribute *v* /dɪˈstrɪbjuːt/
dosage *n* /ˈdəusɪʤ/
dosage form /ˈdəusɪʤ fɔːm/
drug cabinet /drʌg ˈkæbɪnət/
elixir *n* /ɪˈlɪksɪə/
interaction *n* /ˌɪntəˈrekʃən/
liquid *n, adj* /ˈlɪkwɪd/
medicine dropper /ˈmedɪsən ˈdrɑpə/
nuclear *adj* /ˈnjuːklɪə/
ointment *n* /ˈɔɪntmənt/
overdose *n* /ˈəuvədəus/
over-the-counter (OTC) drug /ˌəuvəðəˈkauntə drʌg/
pharmacist *n* /ˈfɑːməsɪst/
pharmacy /ˈfɑːməsɪ/ = chemist's (shop) BE /ˈkemɪsts (ʃɑp)/ = drugstore AE /ˈdrʌgstɔː/
pill *n* /pɪl/
semisolid *n, adj* /ˌsemiˈsɑlɪd/
side effect /said ɪˈfekt/
solid *n, adj* /ˈsɑlɪd/
solution *n* /səˈluːʃən/
spirit *n* /ˈspɪrɪt/
storage *n* /ˈstɔːrɪʤ/
store *v, n* /stɔː/
suppository *n* /səˈpɑzɪtrɪ/
syrup *n* /ˈsɪrəp/
thermometer *n* /θəˈmɑmɪtə/
tincture *n* /ˈtɪŋktʃə/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT IX. MEDICATION

In this unit

- types of medications
- routes of drug administration
- understanding directions for drug use
- *Infinitive* and *its functions*

Lead-in,

1. Укажите, к какой группе относится каждый из этих препаратов.

a. Paracetamol

b. Cyclizine

c. Salbutanol

d. Aspirin

e. Amoxicillin

f. Ranitidine

g. Chlorphenamine

h. Diazapam

1. ___ antibiotic
2. ___ analgesic
3. ___ antiemetic
4. ___ sedative/hypnotic
5. ___ gastrointestinal
6. ___ antihistamine
7. ___ cardiovascular
8. ___ respiratory

2. Используя данные выражения, скажите, когда применяют эти медикаменты:
It is used to …
It's prescribed in order to …
It helps …

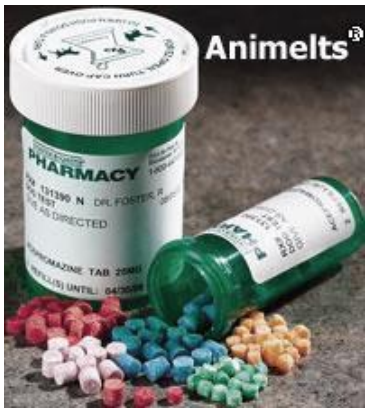
3. Ниже приведены некоторые правила по выписке лекарственных средств. Обсудите, почему они важны и к чему может привести их несоблюдение.

- Always check a **formulary** (a **list** of medicines) when prescribing to children.
- Consult your seniors when in doubt.
- Check if the patient has allergic reactions to drugs.
- Check if the patient is a responsible person.
- Check to alternatives to drugs.

4. Как вы думаете, какие еще рекомендации следует выполнять при выписке препаратов?

5. Прочитайте текст и подготовьтесь к обсуждению следующих вопросов:

- Types of drugs
- Methods of giving medication
- Side effects of drugs
- Role of medication



Reading

Medication

A drug is a substance that changes body functions. It is used in the diagnosis, treatment and prevention of disease in humans. Traditionally, drugs were derived from natural plants, animals, and mineral sources. Today, most are manufactured synthetically by pharmaceutical companies. A few, such as certain hormones and enzymes are produced by genetic engineering.

Drugs may be called by either their generic or their trade names. A **generic name** is usually a simple version of the chemical name for the drug and is not capitalized (e.g., *lidocaine hydrochloride*). The **trade name** (brand name, proprietary name) is a registered trademark of the manufacturer and is written with an initial capital letter. The same drug may be marketed by different companies under different trade names. For the above mentioned drug these include *Akten, Anestafoam, Lida Mantle, Lidocaine, Lidocream, Lidoderm, Topicaine, Xylocaine, etc.*

One of the most striking qualities of drugs is the diversity of their actions and effects on the body. Depending on their effect on the body, the drugs are divided into different categories, for example:
analgesics (painkillers) relieve pain;
anaesthetics reduce or **eliminate** pain;
anticoagulants prevent coagulation and formation of blood clots;
antiemetics relieve symptoms of **nausea** and prevent **vomiting**;
antihistamines are used when treating allergies;
antihypertensive drugs lower blood pressure;
anti-inflammatory drugs counteract inflammation and swelling;
anti-infective drugs kill or prevent the growth of infectious organisms;
antineoplastics destroy cancer cells;
diuretics promote excretion of water;
sedatives/hypnotics induce relaxation, sleep;
psychotropics affect the mind changing mental activity, state or behaviour; *etc.*

Drugs are introduced into the body by several routes. They may be taken by mouth (**orally**); given by injections into a vein (**intravenously**), into a muscle (**intramuscularly**), or beneath the skin (subcutaneously); placed under the tongue (**sublingually**); inserted in the rectum (**rectally**) or vagina (vaginally); instilled in the eye (by the ocular route);sprayed into the nose and absorbed through the nasal membranes (nasally); breathed into the lungs, usually through the mouth (by inhalation); applied to the skin (**cutaneously**). Each route has specific purposes, advantages, and disadvantages.

Most drugs have potential adverse effects or **side effects,** *i.e.,* any secondary, undesirable effect. In addition there may be contraindications, or reasons not to use a particular drug for a specific individual based on that person's medical conditions, current medications, sensitivity, or family history. Because drugs given in combination may interact, they produce a greater effect than either of the drugs acting alone. They may also react adversely with certain foods or substances, such as alcohol or tobacco. The real challenge for a physician is to take into account all these possibilities and to administer the most effective treatment for each patient.

In general, drugs are of vital importance today. Thus, Ann Halliday, a journalist, calls them one of the seven wonders of the modern world. She thinks that nothing has done more for the comfort and happiness of the mankind than the advance of medical knowledge! Humble penicillin has saved millions of lives. Smallpox and poliomyelitis are now virtually extinct. Illnesses such as diabetes, hypertension, and mental depression are effectively controlled with modern drugs. Average life expectancy in Europe has risen dramatically over the last hundred years, from about 50 years in 1906 to about 75 years today.

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2.a. Словообразование. Запомните значение данных терминоэлементов.

Word Part	Meaning	Example
PREFIXES		
anti-	against	anti-inflammatory anti-infectious
contra-	against	contraindication contraceptive
counter-	opposite	counterpoison counterdepressant
SUFFIXES		
-lytic	dissolving reducing loosening	anxio**lytic** – agent reducing anxiety
-tropic	acting on	ino**tropic** – acting on the force of muscle contraction (*ino* means *fiber*)
ROOTS		
alg/o, algio algesi/o	pain	**algesi**c - painful
chem/o-	chemical	**chemo**therapy – treatment with drugs
hypno-	sleep	hypnosis – a mental state like sleep in which a person's thoughts are easily influenced by smb
pyr/o-, pyret/o	fever	antipyretic – counteracting fever
tox/o, toxic/o	poison, toxin	toxic - poisonous
vas/o	vessel	vasomotor – changing vessel diameter

b. Используя вышеприведенные приставки, подберите антонимы к данным словам:

pyretic	
indicated	
inflammatory	
balance	
septic	
lateral	
coagulant	
depressant	
stimulant	

3. Объясните значение данных аббревиатур, применяемых при выписке лекарств.

The frequency of drugs**:**	
ac	before meals (Latin, *ante cibum*)
pc	after meals (L., *post cibum*)
bid	twice a day(L., *bis in die*)
tid	three times per day (L., *ter in die*)
qid	four times a day (L., *quarter in die*)
qd	every day (L., *quaqer die*)
qh	every hour (L., *quaqer hora*)
1-4h	every 4 hours
prn	as needed, as required (pro re nata)
The route of administration	
IM	intramuscular(ly)
IV	intravenous(ly)
SC	subcutaneous(ly)
PO	by mouth
PR	(per rectum) by rectum
INH	by inhalation
Measurements	
mg	milligram
µg	microgram
ml	millilitre

4. Работа в парах. По очереди читайте данную таблицу. Произносите аббревиатуры полностью.

Drug	Dose	Freq	Route	24 h Max
paracetamol	1 g	qid	PO	4 g
loperamide	4 mg	prn	PO	16 mg
ranitidine	150 mg	bid	PO	300mg
atorvastatin	10 (10-80 mg)	qd	PO	80 mg

e.g. Give the patient 1 gram of paracetamol four times a day, by mouth, up to a maximum of 4 grams.

5. Составьте предложения из данных слов, расположив их в нужно порядке.

1. day / needs / take / a / to / meals / two / twice / she / tablets / before.

_____

2. Smith / what / is / for / Penicillin / necessary / dosage / of / Mr?

_____

3. medicine / he / often / need / does / his / how?

_____

4. each / drop / should / twice / put / one / into / eye / a / be / day.

_____

6. Подберите подходящее определение для каждого термина.

1. sedative **2.** antiemetic **3.** antineoplastic **4.** psychotropic **5.** syringe **6.** ampule **7.** emulsion	**a.** relieving nausea **b.** an instrument for injecting fluid **c.** a mixture of liquids **d.** a small glass container for liquid medicine **e.** causing relaxation **f.** agent that destroys cancer cells **g.** acting on the mind

7. Тест. Выберите наиболее подходящий ответ:

1. Another term for trade name is:

a. indicated name **d.** chemical name
b. generic name **e.** brand name
c. prescription name

2. An analgesic is used to treat:

a. diarrhea **d.** pain
b. arrhythmia **e.** thrombosis
c. psychosis

3. A drug that is administered cutaneously is:

a. inserted with the catheter **d.** injected
b. placed under the tongue **e.** swallowed
c. applied to the skin

4. Drug administered by injection is described as:

a. partial **d.** bolus
b. instilled **e.** parenteral
c. encapsulated

8. Напишите термин для каждого определения:

1. counteracting fever - _____

2. dissolving blood clots - _____

3. one who prepares, sells or dispenses drugs - _____

4. one who studies poisons - _____

5. using drug through the skin - _____

6. the way of breathing in the drug through the mouth - _____

Language Development

1. Просмотрите текст еще раз и ответьте на вопросы:

1. What is a drug?
_____
_____

2. What names do drugs have? What do their names mean?
_____
_____

3. What are drugs made of?
_____
_____

4. What types of drugs do you know?
What is their effect on the body? Give examples.
_____
_____
_____
_____
_____

5. How are drugs introduced into the body?
_____
_____
_____
_____
_____

6. What is a side effect?
_____
_____

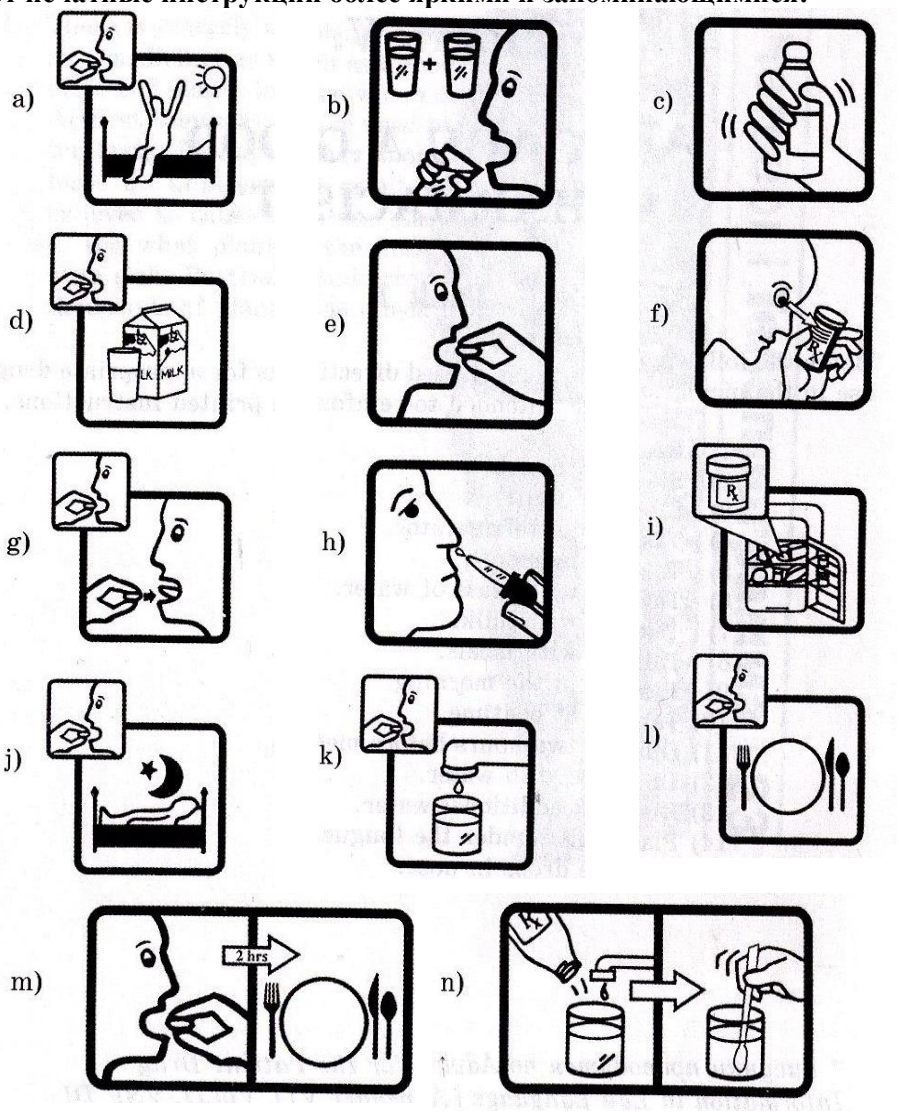
7. What may change the effect of drug?
_____
_____

8. Why are drugs so important in our life?
Give the examples.
_____
_____
_____
_____
_____

9. What diseases have been eliminated due to drugs?
_____
_____
_____

2. Подберите к следующим рекомендациям по применению лекарственных средств соответствующие пиктограммы, которые делают печатные инструкции более яркими и запоминающимися.

1. Read the label.
2. Shake well.
3. Store in refrigerator.
4. Take by mouth.
5. Take with glass of water.
6. Take with milk.
7. Take with meals.
8. Take in the morning.
9. Take at bedtime.
10. Take two hours before meals.
11. Dilute with water.
12. Drink additional water.
13. Dissolve under the tongue.
14. Place drops in nose.



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f													

3. Работа в парах. Обсудите с партнером, страдали ли вы или кто-то из ваших близких от данных проблем. Какое лечение вам назначили? Оказалось ли оно эффективным?

1. an infection
2. a cut
3. an insect bite
4. constipation
5. obesity
6. vitamin deficiency
7. a burn
8. an allergy
9. toothache
10. stress due to too much homework

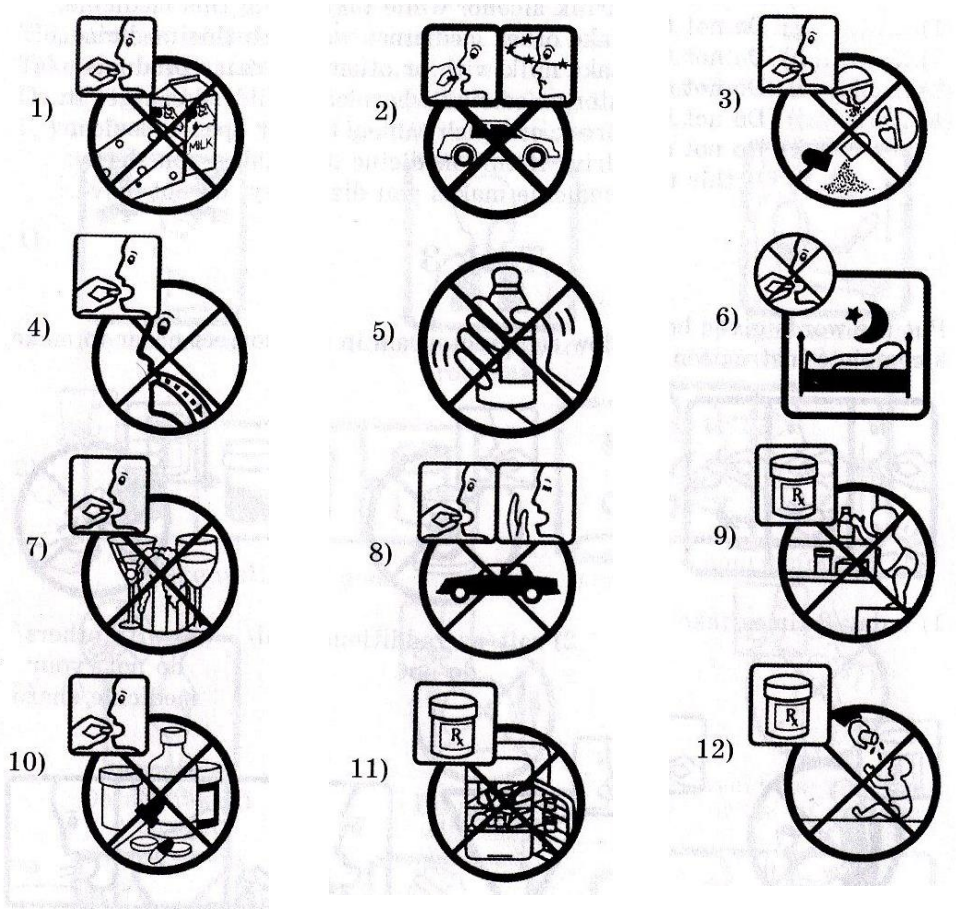
4. Закончите предложения, используя названия групп препаратов из таблицы.

a painkiller	an antibiotic	a supplement
a sedative	an inoculation	a laxative
a stimulant	an antihistamine	
an anti-inflammatory	an antidepressant	

1. _____ kills bacteria and other germs.
2. _____ relieves pain.
3. _____ reduces swelling.
4. _____ encourages bowel movements.
5. _____ provides a substance that the body lacks.
6. _____ treats allergies.
7. _____ increases activity in the body.
8. _____ reduces feelings of extreme sadness.
9. _____ makes you relaxed and sleepy.
10. ____protects you against infectious diseases.

5. Соотнесите пиктограммы и инструкции о том, чего не следует делать при приеме лекарственных препаратов.

a. Do not swallow.
b. Do not shake.
c. Do not refrigerate.
d. Do not take at bedtime.
e. Do not give medicine to babies.
f. Do not drink alcohol while taking this medicine.
g. Do not take other medicines with this medicine.
h. Do not take milk with or other dairy products.
i. Do not store medicine where children can get it.
j. Do not break or crush tablets or open capsules.
k. Do not drive if this medicine makes you sleepy.
l. If this medicine makes you dizzy, do not drive.



1	2	3	4	5	6	7	8	9	10	11	12
h											

6. Работа в парах. Студент А выбирает информацию, относящуюся к препарату Moxilox, студент В – к препарату Fatigin. Определите, к какой группе можно отнести каждый из этих препаратов.

1. Shake bottle well before use.
2. Swallow whole – do not break, crush or chew.
3. For relief of sleeplessness.
4. May cause vivid dreams and nightmares.
5. Do not drive or operate machinery.
6. Use dosing cup to measure 5 ml.
7. May cause sleeplessness.
8. 60 mg in 3 x 20 mg tablets.
9. Do not take before going to bed.
10. Taken for fatigue and sleepiness

Student A.

Moxilox for insomnia

indications (what it's for) _____
liquid dosage _____
instructions _____
side effects _____
warning _____

Student B.

Fatigin for tiredness

indications (what it's for) _____
solid dosage _____
instructions _____
side effects _____
warning _____

7. Проект

What are the new methods of introduction of medications? What are their advantages/ disadvantages? How soon will they be available in hospitals? Prepare a short speech or essay.

Grammar in Use

Инфинитив и его функции
Простой инфинитив

Simple Active	Simple Passive
the verb in a dictionary	**to be** + 3rd form of the verb
to check to consult to give to take to destroy	to **be** check**ed** to **be** consult**ed** to **be given** to **be taken** to **be** destroy**ed**

Внимание:

1. В некоторых предложениях ***to*** пропускают, например, после модальных глаголов:

*e.g. You **should check** the alternatives to drugs.*

2. Чтобы образовать **отрицательную** форму инфинитива, мы ставим **not** перед ним:

*e.g. I came here **not** to watch, but to help.*

Инфинитив с частицей ***to*** используется**:**

1. Чтобы обозначить цель действия (***'to'*** синонимично ***'in order to' (чтобы)***):

*e.g. Antihistamines are used **to treat** allergies.*

2. В качестве подлежащего:

*e.g. **To choose** the proper drug for each patient is the real challenge for a physician.*

3. В качестве дополнения:

*e.g. They expected **to be given** more books on this topic.*

4. В качестве определения:

*e.g. Do you have any nice book **to read**?*

5. После прилагательных в таких конструкциях:

- ***It is** + прилагательное + **to**-инфинитив*
  *e.g. **It is** challenging **to work** as a surgeon.*
- ***It is** + прилагательное + **for** кого-либо **+ to**-инфинитив.*
  *e.g. **It is** hard **for** students **to do** everything they should.*
- ***It is** + прилагательное **+ of** кого-либо **+ to**-инфинитив.*
  *e.g. **It is** unkind **of** the professor **to put** me a bad mark.*

6. После словосочетания «прилагательное + существительное» (в комментариях):

*e.g. This is the **right thing to do.***

1. Употребите правильную форму инфинитива (с частицей *to* или без).

1. May I _____ (to take) this pen?

2. They'll _____ (to go) to Moscow _____ (to take) part in the International Congress.

3. _____ (to be) or _____ (not to be), that is the question.

4. Where is Bob? – He's gone to the library _____ (to get) prepared for the report in Chemistry.

5. It is such a pity that Jane caught a cold and had _____ (to leave) earlier.

6. Any pharmacy needs an area _____ (to store) drugs.

7. These are stupid words _____ (to say).

8. Medical science managed _____ (to eradicate) smallpox.

2. Поставьте инфинитивы в форму Active или Passive Simple.

1. The NHS provides treatment for all, regardless of the ability _____ (to pay).

2. People expect _____ (to give) advice on minor health problems when they go to a pharmacy.

3. In Great Britain, you'll have _____ (to register) with a GP _____ (to get) medical help.

4. The patient agreed _____ (to operate) on in two months.

5. My friend needs a computer _____ (to make) a presentation.

6. It is not very pleasant _____ (to treat) by a dentist whom you don't know well.

7. After finishing school Melanie was eager _____ (to enrol) into the medical school.

3. Ответьте на вопросы. Ответы обязательно должны включать инфинитив в одной из функций.

*e.g. What is the most challenging task in Anatomy? – **To cut a cadaver** is the most challenging task in this subject.*

1. What are drugs used for?
_____
_____.

2. Why do patients take anticoagulants?
_____
_____.

3. What are diuretics used for?
_____
_____.

4. What is the action of sedatives?
_____
_____.

5. Give the definition of contraindications.
_____
_____.

6. What is the easiest thing about being a student?
_____
_____.

7. Why have you entered the medical university?
_____
_____.

8. What do you think is the most difficult job for your friend? for your parents? for yourself?
_____
_____.

9. What are you going to do during your summer vacations?
_____
_____.

10. What do you think is an absolutely impossible thing for you?
_____
_____.

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I can talk about different types of medications
- I know the routes of drug administration
- I can understand directions for drug use
- I can use infinitive and understand its functions

Key Words

analgesic *n, adj* /ˌænəlˋʤiːzɪk/
anaesthetic *n, adj* /ˌænəsˋθetɪk/
anticoagulant *n, adj* /ˌæntɪkəuˋægjulənt/
antiemetic *n, adj* /ˌæntɪ ɪˋmetɪk/
antihistamine *n, adj* /ˌæntɪˋhɪstəmɪn/
antihypertensive *n, adj* /ˌæntɪˌhaɪpəˋtensiv/
anti-infective *n, adj* /ˌæntɪ ɪnˋfektɪv/
anti-inflammatory *n, adj* /ˌæntɪ ɪnˋflæmətrɪ/
antineoplastic *n, adj* /ˌæntɪˌniːəuˋplæstɪk/
cutaneous *adj* /kjuˋteɪnɪəs/
diuretic *n, adj* /daɪjuəˋretɪk/
eliminate *v* /ɪˋlɪmɪneɪt/
generic name /ʤəˋnerɪk neɪm/
hypnotic *adj* /hɪpˋnɑtɪk/
intramuscular *adj* /ˌɪntrəˋmʌskjulə/
intravenous *adj* /ˌɪntrəˋviːnəs/
nausea *n* /ˋnɔːzɪə/
orally *adv* /ˋɑrəlɪ/
painkiller *n* /ˋpeɪnˌkɪlə/
psychotropic *n, adj* /ˌsaɪkəˋtrɑpɪk/
rectal *adj* /ˋrektəl/
relieve *v* /rɪˋliːv/
sedative *n, adj* /ˋsedətɪv/
side effect /saɪd ɪˋfekt/
sublingual *adj* /səbˋlɪŋgwəl/
trade name /treɪd neɪm/
vomiting *n* /ˋvɑmɪtɪŋ/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT X. NUTRITION

In this unit

- talking about nutritional value of different foods
- acquiring the notion of balanced and unbalanced diet
- describing the role of balanced diet for person's health
- giving recommendations as for healthy nutrition
- *Future Perfect* and *Past Perfect*

Lead-in

1. Рассмотрите рисунки и ответьте на вопросы:

- Which of these foods are healthy and which are unhealthy?
- Can you think of other healthy and unhealthy foods?
- What is your favourite dish? Why?
- Have you ever tasted ethnic food (*e.g.,* Chinese, Indian, *etc.)?* Did you enjoy it?
- What dishes is your country famous for?
- What is junk food? Why do people eat so much junk food nowadays?
- Which of these foods are good sources of proteins? vitamins? carbohydrates?
- Which foods are high in fats?
- Which foods contain high level of vitamin C?
- Which foods are low in vitamins?
- Which items on the list are junk food?
- Which food do you think is the highest in calories?

Reading

Nutrition

Food provides the energy and nutrients you need to be healthy. Nutrients include proteins, carbohydrates, fats, vitamins, minerals and water.

Protein is in every living cell in the body. Our bodies need protein from the foods we eat to build and maintain bones, **muscles** and skin. We get proteins in our diet from meat, dairy products, nuts and certain grains and beans. It is important to get enough dietary protein. You need to eat protein every day, because your body doesn't store it the way it stores fats or carbohydrates. The average person needs 50 to 65 grams of protein each day.

Carbohydrates are one of the main types of nutrients. They are the most important source of energy for your body. Your digestive system changes carbohydrates into **glucose** (blood sugar). Your body uses this sugar for energy for your cells, tissues and organs. It **stores** any extra sugar in your **liver** and muscles for when it is needed.
Carbohydrates are called simple or complex, depending on their chemical structure. Simple carbohydrates include sugars found naturally in foods such as fruits, vegetables, milk, and milk products. Complex carbohydrates include whole grain breads and cereals, starchy vegetables and legumes.

Fat is a major source of energy and aids your body in absorbing vitamins. It's important for **proper** growth, development and keeping you healthy. Fats are an especially important source of calories and nutrients for infants and toddlers. Dietary fat also plays a major role in your cholesterol levels.
But not all fats are the same. You should try to **avoid**

- **Saturated fats** such as butter, solid shortening, lard and fatback
- *Trans* fats, found in vegetable shortenings, some margarines, crackers, cookies, snack foods

Vitamins should be supplied daily in the diet. **Minerals** are important for your body to stay healthy. Your body uses minerals for many different jobs, including building bones, making hormones and regulating your **heartbeat**.
There are two kinds of minerals: macrominerals and trace minerals. The former are needed in larger amounts and include **calcium**, **phosphorus**, **magnesium**, sodium, potassium, chlorine and sulphur. The latter are needed just in small amounts and include **iron**, manganese, copper, iodine, zinc, cobalt, fluorine and selenium.

Every living creature needs clean and safe **drinking water**. How much do you need? It depends on your size, activity level and the weather - all make a difference.
The food which contains all above nutrients and provides the optimal growth and development is known as a balanced diet, whereas an unbalanced diet causes various health problems, such as **obesity**, **anorexia**, **bulimia**.

In today's fast-moving world people have less and less time to spend eating, let alone cooking. It is probably for this reason that **junk food** has become so popular. Junk food includes anything that is high in calories but lacking in nutrition. Hamburgers, crisps, chocolate bars and hot dogs fall into this category. Pizzas are also included as they contain a lot of fats. The researchers suggest that the new generation will be much more likely to **suffer** from heart and liver diseases because of unhealthy food.
Learning to eat nutritiously is not hard. The key is to

- Eat a variety of foods, including vegetables, fruits and whole-grain products
- Eat lean meats, poultry, fish, beans and low-fat dairy products
- Drink lots of water
- Go easy on the salt, sugar, alcohol, saturated fat and trans fat

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Определите, какую роль играют питательные вещества в нашей жизни.

1. minerals	**a.** building and maintaining bones, muscles, skin.
2. carbohydrates	**b.** absorption of vitamins, proper growth especially for infants and toddlers.
3. proteins	**c.** source of energy for cells, tissues and organs.
4. vitamins	**d.** building bones, making hormones, regulation of heartbeat
5. fats	**e.** synthesis of DNA, RNA, cell division, energy metabolism, bone and teeth development.

3. Составьте словосочетания, используя данные прилагательные и существительные.

1. carbohydrates	**a.** saturated, trans, dietary, solid
2. fats	**b.** macro, trace
3. minerals	**c.** simple, complex
4. water	**d.** hydrogenated, olive, sunflower
5. diet	**e.** drinking
6. food	**f.** balanced, healthy, unbalanced
7. product	**g.** junk, high in calories, lacking in nutrition, snack
8. oils	**h.** whole-grain, low-fat dairy

4. Закончите предложения, употребив подходящие по смыслу предлоги.

from, into, for, on (x2), in (x2), as

1. Daily consumption of water depends_____ your size and activity level.
2. Fats play an important role _____ cholesterol level.
3. Our generation suffers _____ heart and liver diseases because of unhealthy food.
4. Vitamins and different minerals should be supplied_____ our diet.
5. People should go easy_____ saturated fat, salt, sugar and alcohol.
6. The food which provides the optimal growth and development is known_____ a balanced diet.
7. Fats are important_____ proper growth and development of the body.
8. The digestive system changes carbohydrates _____ glucose.

5. Распределите продукты по трем группам. Укажите, какие из них полезны для здоровья, а какие нет.

legumes, grain breads, starchy vegetables, dairy products, poultry, lard, cereals, butter, soybeans, shortening, nuts, meat, grains, fruits, olive and sunflower oil, fatback.

Proteins:_____
_____
Carbohydrates:_____
_____
Fats:_____
_____

Какие из полезных продуктов вы едите каждый день? Какие вы хотели бы добавить в ваш рацион?

6. Заполните пробелы словами из таблицы.

calories, fats, cholesterol, balanced diet, malnutrition, carbohydrates, minerals, vitamins, fast food, genetically modified

Most children enjoy eating 1_____, but scientific tests have shown us that burgers and pizzas can lack essential 2_____ and 3_____, which are important for health and growth, while simultaneously containing large amount of 4 _____ and 5 _____ which can result in obesity and health problems. Many children end up suffering from, 6_____ since they eat too much of the wrong sort of food. Dieticiasы tell us that we must eat a 7 _____ as it is essential we consume sufficient quantities of the different food groups. They tell us that we should all eat more fibre and fewer foods which are high in 8_____, as it can block the walls of arteries and lead to heart problems. Many of the ready-prepared foods we buy from supermarkets are high in 9_____. 10 _____ foods are appearing on our supermarket shelves, even though nobody is really sure if altering the composition of food cells is safe.

Language Development

1. Просмотрите текст еще раз и ответьте на вопросы:

1. What is the main function of food? List the nutrients we get from food.
_____
_____

2. What is the role of protein?
_____
_____

3. Which food contains protein?
_____
_____

4. What is the most important source of energy for your body?
_____
_____

5. What types of carbohydrates are there? Where can we get them from?
_____
_____
_____

6. What do we need fat for? Which fats are not healthy?
_____
_____

7. What kinds of minerals are there? Give examples.
_____
_____

8. Which problems can unbalanced diet cause?
_____
_____

9. What would you recommend to provide balanced diet for your patient?
_____
_____
_____

2. Проект.

Research one of the following substances, and write about why our body needs it, what it is found in. Use the active vocabulary of the Unit.

Vitamin E	Selenium
Vitamin K	Folic acid
Potassium	Nicotinic acid

Grammar in Use

Present Perfect

<table>
<tr><td colspan="5">Positive</td></tr>
<tr><td>I / We / You / They</td><td colspan="2">have</td><td>bought</td><td>vitamins.</td></tr>
<tr><td>He / She / It</td><td colspan="2">has</td><td></td><td></td></tr>
<tr><td colspan="5">Negative</td></tr>
<tr><td>I / We / You / They</td><td colspan="2">haven't</td><td>bought</td><td>vitamins.</td></tr>
<tr><td>He / She / It</td><td colspan="2">hasn't</td><td></td><td></td></tr>
<tr><td colspan="5">Questions</td></tr>
<tr><td rowspan="2">(Why)</td><td>have</td><td>I / we / you / they</td><td>bought</td><td rowspan="2">vitamins?</td></tr>
<tr><td>has</td><td>he / she / it</td><td></td></tr>
</table>

Сигнальные слова: ***before (now), ever, never (before), up till now, so far, since/for, just, yet, recently, lately, already***.

Present Perfect используется для обозначения**:**
1 Действий, начавшихся в прошлом и продолжающихся до настоящего момента:
e.g. Vitamin D ***has accumulated*** *since birth.*
2 Действия, которые произошли в неопределенном прошлом:
e.g. ***Have*** *you* ***taken*** *the pill yet?*

1. Закончите предложения, употребив глаголы в форме Present Perfect или Past Simple.

1. In 1747, the Scottish surgeon James Lind _____ (to discover) beneficial properties of citrus foods to prevent scurvy.

2. The baby _____ recently _____ (to develop) rickets due to Vitamin D deficiency.

3. This patient _____ (to have) nausea and vomiting the day before yesterday.

4. _____ you ever_____ (to have) any allergic reactions?

5. Why _____ not you _____ (to answer) the phone yesterday evening?

6. Why _____ not you _____ (to answer) your mother's letter yet?

Past Perfect

Positive			
I / We / You / They / He / She / It	**had**	**bought**	vitamins.
Negative			
I / We / You / They / He / She / It	**hadn't**	**bought**	vitamins.
Questions			
(Why)	**had**	I / we / you / they / he / she / it	**bought**	vitamins?

Сигнальные слова: ***already, before (then), never … before; after, when, as soon as, by the time that.***

Past Perfect используется**:**
Чтобы указать на предыдущее действие, то есть на более раннее из двух действий:

*e.g. When the doctor **arrived** the patient **had died**. = First the patient died. Then the doctor arrived.*

*When the doctor **arrived** the patient **ied.** = First the doctor arrived. Then the patient ied.*

2. Закончите предложения, употребив глаголы в форме Past Perfect или Past Simple.

1. I _____ (to go) to bed as soon as I ___ _____ (to memorise) all the names of the bones of the skull.

2. The physician _____ (to write) out a prescription after he _____ (to listen) to all the complaints of the patient.

3. The child _____ (to have) severe stomach-ache when he _____ (to eat) three pizzas.

4. After Kate _____ (to complete) her homework, she _____ (to go) out.

Future Perfect

Positive			
I / We / You / They / He / She / It	**will have**	**bought**	vitamins.
Negative			
I / We / You / They / He / She / It	**won't have**	**bought**	vitamins.
Questions			
(Why)	**will**	I / we / you / they / he / she / it	**have bought**	it?

Сигнальные слова: ***by*** **a certain time in the future*****, not… till/until*** **something happens in the future.**

Future Perfect используется**:**
Чтобы показать, что действие будет уже завершено к определенному моменту в будущем:

*e.g. We **will have finished** this essay by the end of the week.*

3. Что вам удастся завершить (сделать) к определенному моменту в будущем? Ответьте на вопросы, употребив Future Perfect. Полет фантазии приветствуется.

1. By the tomorrow morning I _____ _____.

2.By the end of the week I _____ _____.

3. By the end of the term I _____ _____.

4. By the end of the year I _____ _____.

5. By 2050 I _____ _____.

4. Закончите предложения, употребив глаголы в соответствующей форме настоящего, прошедшего или будущего времени.

1. "When _____ you _____ (to leave) the hospital yesterday?"
"I _____ (to leave) the hospital after I _____ (to examine) all my patients."

2. "What _____ you _____ (to do) at this time next Sunday?"
"I am afraid I _____ still _____ (to work) on my report!"
"I am sure you _____ (to finish) it by tomorrow night."
"I _____ (not to think) so."

3. "_____ you ever_____ (to be) to Vienna?"
"Yes, I _____. Just last year I _____ (to go) to *The Marriage of Figaro* in the famous Vienna Opera."

4. Yesterday while I _____ (to prepare) for the test in chemistry, Jack _____ (to come). He _____ (to leave) his workbook at university and so he _____ (to want) to learn with me. We _____ (to study) the whole evening and _____ (to finish) by midnight only. I hope we _____ (to get) excellent marks for this test.

5. "What _____ you _____ (to do) on winter holiday?"
"I _____ (to go) to Sochi. I _____ (to like) snowboarding and skiing. _____ you _____ (to ski)?"
"Oh, no. I _____ (to be) afraid of skiing and such things."
"So, where _____ you _____ (to go) to?"
"I _____ (not to know) yet. I _____ (to think) I _____ (to go) on some European tour."
"Oh, nice. I _____ (to wish) you a good trip."
"Thanks. The same to you."

6. The physician _____ (to think) that she _____ (to discharge) Mr Johns from the hospital next Friday. By that time he _____ (to complete) the course of antibiotics. He _____ still _____ _____ (to take) some other medicines but he _____(to be) able to continue treatment at home.

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I can talk about nutritional value of different foods
- I can differentiate the balanced and unbalanced diet
- I can describe the role of balanced diet for person's health
- I can give recommendations as for healthy nutrition
- I can use *future perfect* and *past perfect*

Key Words

absorb *v* /əb`zɔ:b/
anorexia *n* /ænə`reksɪə/
avoid *v* /ə`vɔɪd/
bulimia *n* /bu`lɪmɪə/
calcium *n* /`kælsɪəm/
carbohydrate *n* /ˌkɑ:bəu`haɪdreɪt/
drinking water /`drɪnkɪŋ `wɔ:tə/
fat *n* /fæt/
glucose *n* /`glu:kəus/
heartbeat *n* /`hɑ:tbi:t/
iron *n* /aɪən/
junk food /ʤʌŋk fu:d/
liver *n* /`lɪvə/
magnesium *n* /mæg`ni:zɪəm/
muscle *n* /`mʌsl/
obesity *n* /əu`bi:sɪtɪ/
phosphorus *n* /`fɑsfərəs/
proper *adj* /`prɑpə/
protein *n* /`prəuti:n/
saturated *adj* /`sætjureɪtɪd/
store *n* /stɔ:/
suffer *v* /`sʌfə/
unsaturated *adj* /ʌn`sætjureɪtɪd/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT XI. THE HUMAN BODY I

In this unit

- describing the structure of the human body
- describing the organs of the oral, thoracic and pelvic cavities
- describing the structure of the extremities
- learning the terms referring to the structure of the human body
- *Sequence of Tenses*

Lead-in

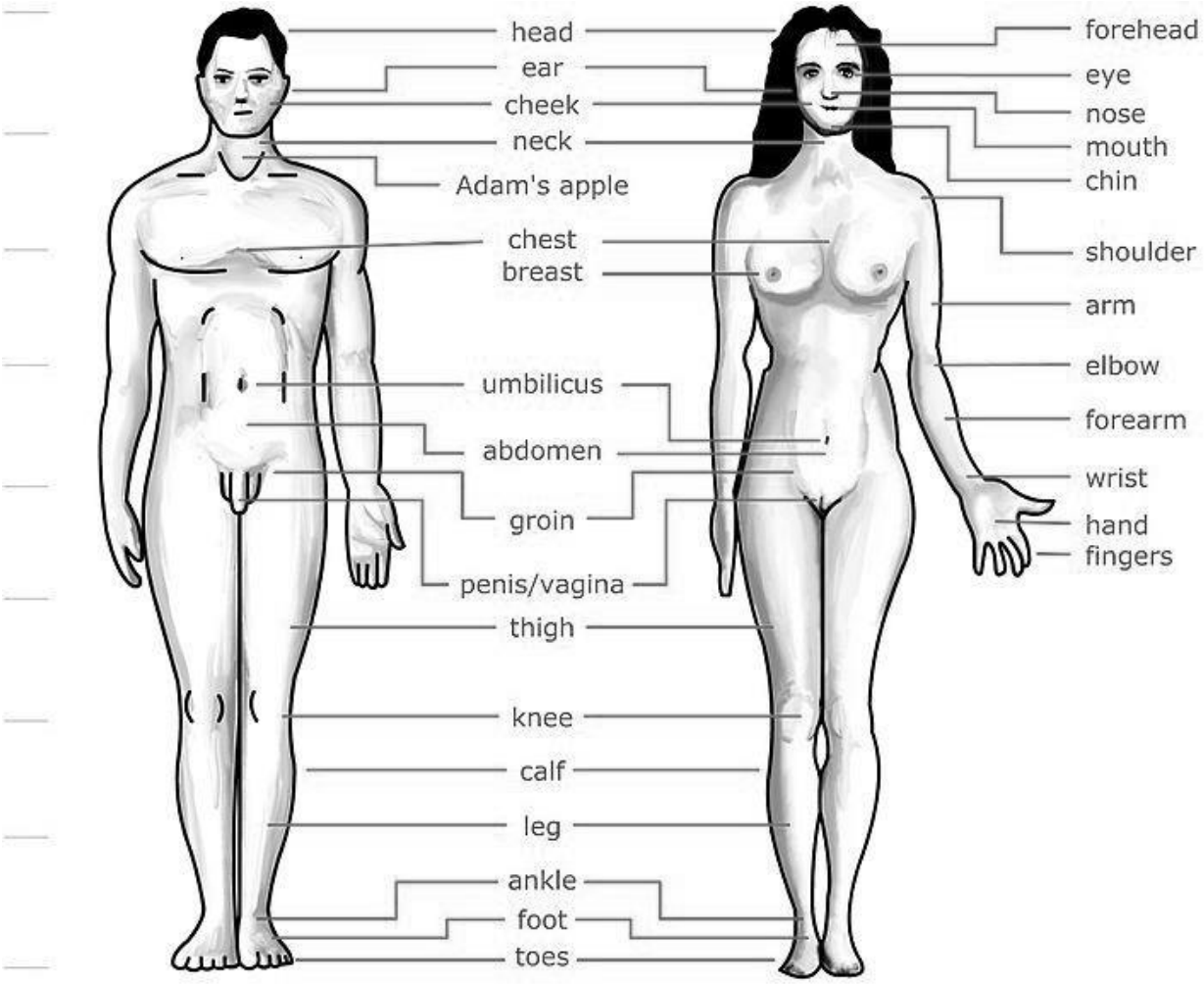
1. Это интересно:

- Approximately 90 percent of the body is made up of four elements: oxygen, carbon, nitrogen, and hydrogen.
- Between 40 and 50 percent of body heat is lost through the head. That is why hats keep the body warm in winter – they keep the heat in the body.

2. Рассмотрите рисунок. Все ли слова, обозначающие части тела, вам известны?

3. Прочитайте текст о частях тела человека. Выберите из списка заголовков A-F те, что лучше всего отражают содержание каждой части (1-5) текста. Здесь есть один лишний заголовок, который вам не понадобится. В начале текста приведен пример (0).

A. The trunk
B. Cavities of the body
C. The upper extremity
D. The lower extremity
E. The oral cavity
F. The head



Reading

Parts of the Human Body

The principal parts of the human body are the head, the **trunk** and the **limbs** or **extremities**.

0. F

The head is connected with the trunk by the neck.
The bony framework of the head enclosing the brain is the **skull**. The front part of the head is the face. Its upper part is **composed** of the **forehead** and **temples**. The two sides of the lower face are called the cheeks. The two jaws (upper and lower) form the framework of the mouth with two lips, the upper and lower. The lower jaw also gives shape to the chin.

1.

The **oral cavity** contains the tongue and the gums, teeth, the hard and the soft **palates** and **salivary glands**. The organs of the special senses in the face are the eyes and the nose. The eye is set in the bony **socket** called the orbit. The eyes are protected by the **eyelids, eyelashes** and **eyebrows**. The ear includes three principal parts: the external ear, the middle ear and the internal ear. The nose which we use for smelling, **breathing** and **sneezing** has two openings called the **nostrils**. The top and the back part of the head is covered by hair.

2.

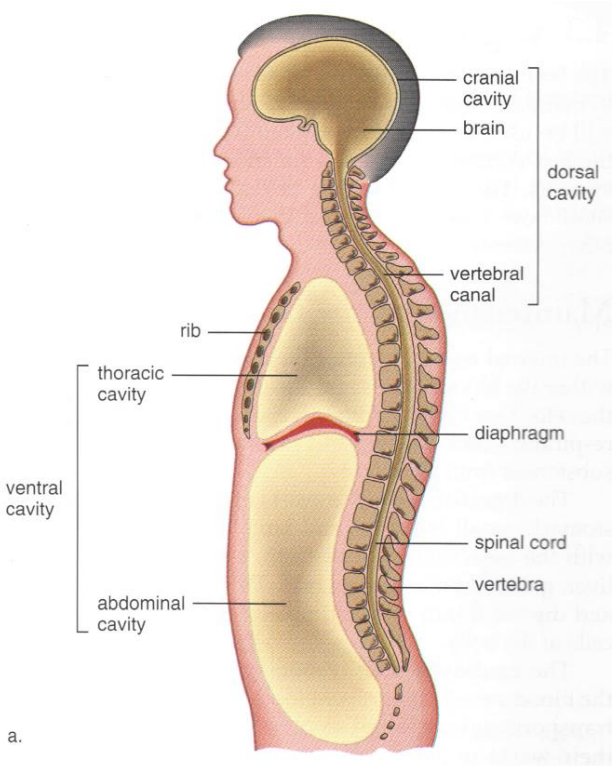
The trunk consists of the chest, the **abdomen** and the back. You can find three cavities in the trunk: the **thoracic**, **abdominal** and **pelvic** ones.
The thoracic cavity's organs include two lungs located in the lateral cavities and the heart.
In the abdominal cavity the liver, stomach and **intestines** are located. The third cavity, the pelvic one, is below the abdominal cavity. It includes the body's reproductive organs, as well as the **urinary** organs such as the urinary **bladder**.

3.

We have four limbs or extremities: two arms and two legs. The arms are the upper extremities and the legs form the lower extremities. The upper extremity is divided into the **shoulder**, the upper arm, the **forearm** and the hand. Between the upper arm and the forearm there is the **elbow**. The **joint** between the forearm and the hand is called the **wrist**. Each hand has four **fingers** and one **thumb**. At the tips of the fingers there are **fingernails**.

4.

The parts of the lower extremity are the **thigh**, the lower leg and the foot. The back of the lower leg is called the **calf**. Between the thigh and lower leg there is the **knee joint**. The joints between the lower legs and the feet are the **ankles**. The foot consists of the **heel**, the **sole** and the **toes**.
The body is covered with the skin.



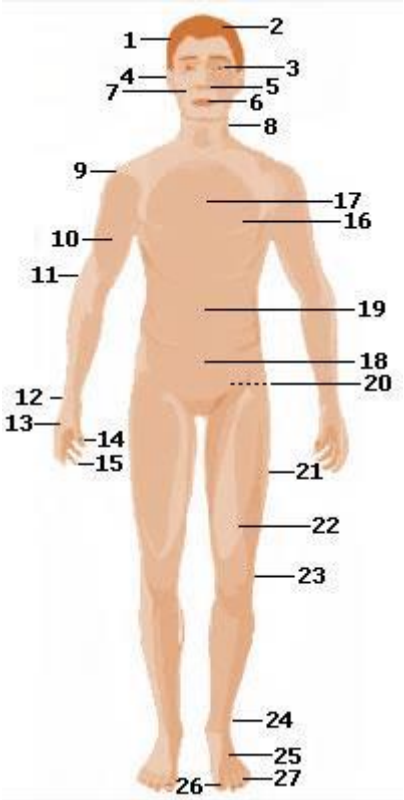
Body cavities

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.
2. Какие части тела человека соответствуют данным описаниям?

1. the upper part of the body - _____
2. the part of the upper extremity from the shoulder to the hand - _____
3. the part of the body that connects the head and the shoulders - _____
4. the end of the arm - _____
5. the part of the lower extremity between the thigh and the foot - _____
6. the lowest part of the leg below the ankle on which a person stands - _____
7. the human body apart from the head and extremities - _____

3. Запишите названия частей тела.



1.	15.
2.	16.
3.	17.
4.	18.
5.	19.
6.	20.
7.	21.
8.	22.
9.	23.
10.	24.
11.	25.
12.	26.
13.	27.
14.	

4. Используя ваши знания по другим предметам, запишите общеупотребительные эквиваленты к данным анатомическим терминам.

Anatomical term	Common word
abdomen	
axilla	
carpus	
coxa	
cubitus	
mamma	
nates	
patella	

5. Какие органы поражены при данных заболеваниях? Составьте предложения по образцу.

1. hepatitis	**a.** bladder
2. pneumonia	**b.** gall bladder
3. nephritis	**c.** ear
4. gastric ulcer	**d.** kidney
5. cystitis	**e.** liver
6. angina pectoris	**f.** lung
7. cholecystitis	**g.** stomach
8. ulcerative colitis	**h.** large intestine
9. otitis	**i.** heart

e.g. Angina pectoris is a heart disease.

_____
_____

6. Заполните пробелы словами из таблицы. Переведите предложения на русский язык.

heart	eye (eyes)	from head to foot
brain	skeleton	skull and cross-bones
hand	tongue	lungs

1. Four _____ see more than two (a proverb).
2. A good surgeon must have an eagle's _____ and lady's _____ .
3. You are so thin! You look almost like a _____ _____ .
4. "The Jolly Roger" is the emblem on pirates' flags, it pictures _____ .
5. It's raining heavily! I am wet _____ .
6. They told him to hold his _____ and to keep their secret.
7. This carpet is very expensive, it is ____-made.
8. He is a brilliant scientist, in fact he is the ____ _____ of our research group.
9. He will forgive you, I am sure. I know him as a man with a kind _____ .
10. Parks and forests around Simferopol are the "green _____" of our city.

Language Development

1. Просмотрите текст еще раз и ответьте на вопросы:

1. What are the principal parts of the human body?

_____
_____

2. How many parts does the head consist of?

_____
_____

3. What does the skull contain?

_____
_____

4. What does the face consist of?

_____
_____

5. What structures are there in the mouth?

_____
_____

6. What are the principal parts of the ear?

_____
_____

7. What connects the trunk with the head?

_____
_____

8. What cavities can you find in the trunk?

_____
_____

9. What are the principal organs in the chest? abdominal cavity? pelvic cavity?

_____
_____

10. What parts does the upper (lower) extremity consist of?

_____
_____

2. Как вы думаете, что такое здоровье? Прочитайте текст. Объясните значение выделенных слов. Ответьте на вопросы:

The Meanings of Health in the Modern World
By Norman Sartorius

The Constitution of the World Health Organization, which came into force on April 7, 1948, defined health "as a state of complete physical, mental and social **well-being**." However, today, three types of definition of health seem to be possible and are used.
The first is that health is the absence of any disease or **impairment**. The second is that health is a state that allows the individual to **cope** with all demands of daily life (implying also the absence of disease and impairment). The third definition states that health is a state of balance, an **equilibrium** that an individual has established within himself and between himself and his social and physical **environment**.

There are obvious difficulties with the first and the second of the definitions mentioned above. There are individuals who have abnormalities that can be counted as **symptoms** of a disease but do not feel ill. There are others who have peptic ulcers and other diseases, but have no problems, do not know that they have a disease and do not **seek** treatment for it.

The third definition mentioned above makes health **depend on** whether a person has established a state of balance within oneself and with the environment. This means that those with a disease or impairment will be considered as being healthy if they can achieve an internal equilibrium **despite** the presence of the disease. This definition is also useful because it makes us speak and think about our patients as people who are defined by different **dimensions** (including health) and who, at a point, suffer from a disease – and thus make us say "a person with **schizophrenia**" rather than "a schizophrenic," or a "person who has **diabetes**" rather than a "diabetic".

The huge challenges that face societies aiming to improve the health of their **citizens** will not be appropriately answered if we do not change our **attitude** towards the concepts of health and disease.

1. In what way do the three definitions of health differ?
2. Why is it important not to stigmatize a person as a "patient"? How does it help people with certain diseases?

3. Проект.

Surf the Internet and find out how the definition of health has been changing with time. What was the attitude towards patients with mental disorders or chronic illnesses in the Middle Ages? In the 19th century? What is it now? Prepare a short speech or essay on what can be done to make the life of such people easier. Is it a task for public health or the society as a whole?

Grammar in Use

Согласование времен

Мы применяем **правило согласования времен,** если нам нужно трансформировать прямую речь в косвенную. В этом случае, мы должны изменить время глаголы таким образом (правило «один шаг назад»):

Original sentence	Changed to…
Present Simple	**Past** Simple
Present Continuous	**Past** Continuous
Present Perfect	**Past** Perfect
Past **Simple**	Past **Perfect**
will (**Future)**	*would* (**Future-in-the-Past)**
can	*could*
may	*might*
must	*had to*

Время **Past Perfect** остается без изменений.

1. Трансформируйте данные предложения в косвенную речь:

1. The surgeon said, “This drug has certain side effects.”

_____
_____.

2. The nurse said, “Dr Brown is making an operation”.

_____
_____.

3. The dietician said, “Betty has eaten only fruit and vegetables recently.”

_____
_____.

4. The lecturer said, “Students cannot write out prescriptions to patients”.

_____
_____.

5. The patient said, “Dr Smith gave me a referral to a neurologist yesterday”.

_____
_____.

6. The nurse said, “This patient will come again.”

_____
_____.

7. The student said, “We must complete this experiment tomorrow.”

_____
_____.

Меняя время по правилу соглсования времен, мы должны выполнить и некоторые другие изменения:

Original sentence	Changed to…
today	**that** day
this morning (evening)	**that** morning (evening)
now	then
tomorrow	the following day
in a month	a month **later**
yesterday	the day before
last week	the week **before**
ago	before
here	there

e.g. *The physician said, “The patient **may** feel some gastric discomfort **today**”. – The physician said **that** the patient **might** feel some gastric discomfort **that day**.*

N.B. Не забывайте менять формы личных местоимений, как мы делаем это в русском языке:

e.g. *She said, “**I** want to become a nurse”. – She said that **she** wanted to become a nurse.*

2. Употребите глаголы в скобках в правильной форме Present Simple, Past Simple или Past Perfect:

1. He said, “Ibuprofen _____ (to be) available without prescription”.

2. He said that the patient _____ (to be) ill with angina pectoris.

3. He said, “I _____ (to be) at University yesterday.”

4. He said that he _____ (not to be) at the lecture on philosophy the day before.

5. He said, “I _____ (to have) an allergy to aspirin”.

6. He said a month before he _____ (to have) a severe allergy.

7. He said, “We _____ (to speak) about the pelvic cavity last week.”

8. He said that they _____ (not to speak) about the structure of the ear yet.

3. Что было сказано на самом деле?
Трансформируйте косвенную речь в прямую:

e.g. Mr Holmes said that he would deliver a lecture on the diseases of joints two weeks later.
Mr Holmes said: "I'll deliver a lecture on the diseases of joints in two weeks."

1. Dr Bayer said that Aspirin was the most popular drug in the USA.
Dr Bayer said, "_____
_____".

2. Sylvia said that she wanted to ask for another injection of codeine as she felt severe pain.
Sylvia said, "_____
_____".

3. Mother said that she had bought soya and some whole grains after consulting with her dietician.
Mother said, "_____
_____".

4. My friend said that he would study pathology of the urinary organs after university.
My friend said, "_____
_____".

5. Dr House said that the patient had had a very unusual disease two years before.
Dr House said, "_____
_____".

6. Dr Watson said that his friend had suffered from drug addiction for many years already.
Dr Watson said, "_____
_____".

7. My friend said that he would see his dentist again 3 days later.
My friend said, "_____
_____".

8. The ENT doctor said that the child had developed otitis two days before.
The ENT doctor said, "_____
_____".

9. The student said that she didn't know the difference between the thumb and the finger.
The student said, "_____
_____".

10. Konrad Adenauer said that all parts of the human body got tired eventually – except the tongue.
Konrad Adenauer said, "_____
_____".

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I can describe the structure of the human body
- I can describe the organs of the oral, thoracic and pelvic cavities
- I can describe the structure of the extremities
- I know the terms referring to the structure of the human body
- I can apply the rules of sequence of tenses

Key Words

abdomen *n* /ˋæbdəmən/
abdominal *adj* /æbˋdɑmınəl/
ankle *n* /ˋæŋkl/
breathe *n* /briːð/
calf (*pl.* calves) *n* /kɑːf (kɑːvz)/
cavity *n* /ˋkævıtı/
compose *v* /kəmˋpəuz/
elbow *n* /ˋelbəu/
extremity *n* /ık`stremıtı/
eyebrow *n* /ˋaıbrau/
eyelash *n* /ˋaılæʃ/
finger *n* /ˋfıŋgə/
fingernail *n* /ˋfıŋgəneıl/
forearm *n* /ˋfɔːrɑːm/
forehead *n* /ˋfɑrıd/, /ˋfɔːhed/
gland *n* /glænd/
heel *n* /hiːl/
intestines *n* /ın`testınz/
joint *n* /ʤɔınt/
knee *n* /niː/
limb *n* /lım/
nostril *n* /ˋnɑstrıl/
palate *n* /ˋpælət/
pelvic *adj* /ˋpelvık/
salivary *adj* /sə`laıvərı/
shoulder *n* /ˋʃəuldə/
skull *n* /skʌl/
sneeze *v* /sniːz/
socket *n* /ˋsɑkıt/
sole *n* /səul/
temple *n* /ˋtempl/
thigh *n* /θaı/
thoracic *adj* /θɔːˋræsık/
thumb *n* /θʌm/
toe *n* /təu/
trunk *n* /trʌŋk/
urinary bladder /ˋjuərınərı `blædə/
wrist *n* /rıst/

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

UNIT XII. THE CELL

In this unit

- describing the structure and functions of the cell
- describing the chemical substances of the cell
- relative clauses

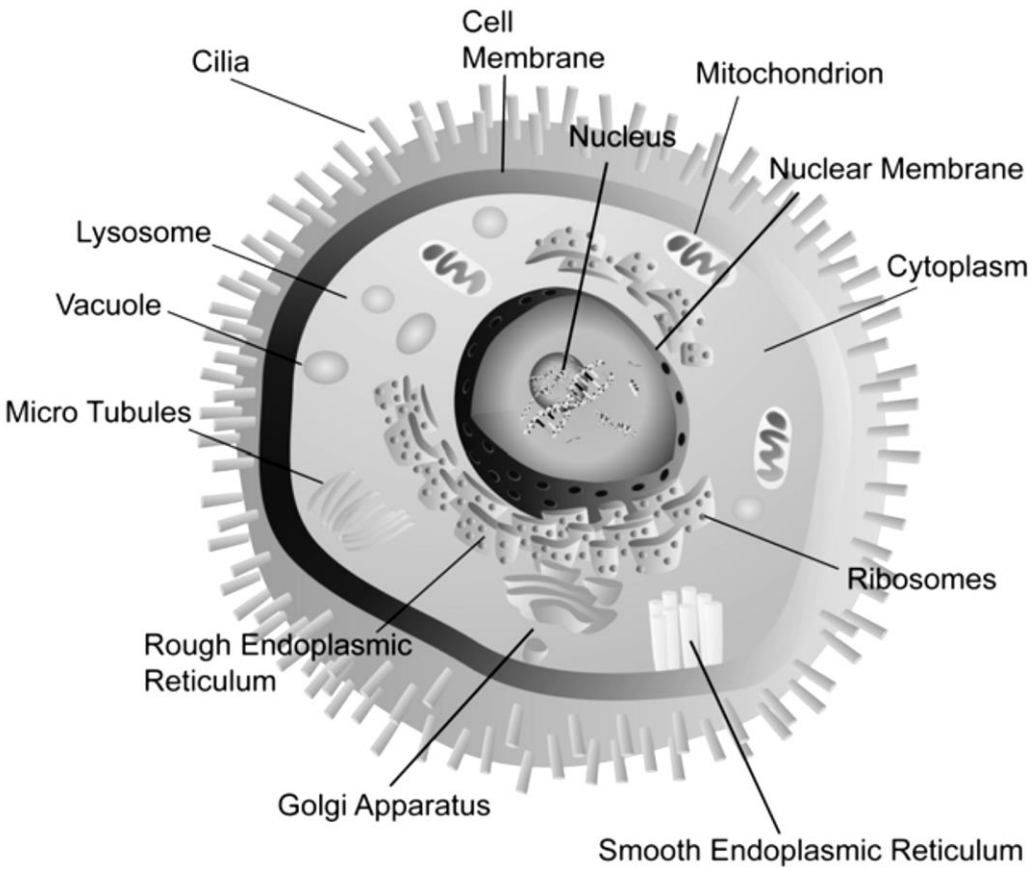
Lead-in

1. Прочитайте об истории исследования клетки и ответьте на вопрос: каковы основные положения клеточной теории?

- Very little was known about the structure of living matter until the development of the light microscope. Then Robert Hook, an English scientist, made an important discovery in 1665 while using a simple microscope that he designed. He observed tiny, orderly, but empty spaces in a thin slice of **cork**, a type of dead plant material. These spaces reminded him of the spaces in a honeycomb. He called these spaces "**cells**".
- By the late 1830s, a formal theory about the structure and function of all life had been developed. This theory, called the Cell Theory, may be stated as follows:

1. All living things are made up of cells.
2. The cell is the basic unit of all living things.
3. Only living cells can produce new living cells.

2. Прочитайте текст о клетке и подготовьтесь ответить на вопросы, вынесенные в заглавия разделов текста.



Human Cell. Some important elements of a cell, including the nucleus, cytoplasm, mitochondria, lysosomes and ribosomes.

Each of us is a universe of our living cells.

Toba Beta

Reading

The Cell

1. What is a cell?

Cells are the structural and functional units of all living organisms. Some organisms, such as bacteria, are **unicellular**, consisting of a single cell. Human organisms are multicellular, or have many cells - an estimated 100,000,000,000,000 (100 trillion) cells! Each cell is an amazing world in itself: it can take in nutrients, convert these nutrients into energy, carry out specialized functions, and reproduce as necessary. There are numerous types of cells having different shape and size and performing various specific functions.

2. What is the basic structure of the cell?

Despite their different shape and size, most cells have four common structural features: a **cell membrane,** a **nucleus,** a **cytoplasm** and **cell organelles.**
The outer lining of a cell is called a **cell membrane**. This membrane serves to separate and protect a cell from its surrounding environment and is made mostly from a double layer of proteins and lipids. Part of the job of the membrane is to keep out dangerous substances that will harm the cell, and therefore the body.

3. What is a nucleus?

The **nucleus** is the most clearly visible organelle found in a cell. It contains 46 chromosomes which carry genetic information. Chromosomes are made up of DNA and protein. DNA is the body's genetic code. The nucleus is spheroid in shape and separated from the cytoplasm by a membrane called the **nuclear envelope** which protects a cell's DNA from damage.

4. What is cytoplasm?

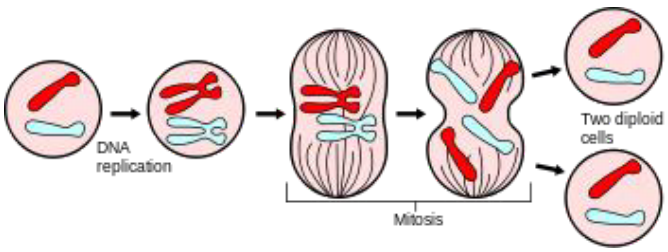
Inside the cell there is a large fluid-filled space called the **cytoplasm**. The cytoplasm dissolves nutrients, helps break down waste products, and moves material around the cell. The nucleus often flows with the cytoplasm changing its shape as it moves. The cytoplasm contains minerals, gases, and other organic molecules as well as cell organelles.

5. What organelles are there in the cell?

Each of these organelles has a specific job to do in order to **enable** cells to function.
Thus **ribosomes** are the protein-making organelles. They are made of protein and ribosomal RNA where the protein synthesis occurs.
Another cell organelle is the **mitochondrion,** which provides the energy that cells need to function. It is in mitochondria that cell respiration takes place.
Another type of organelle is **lysosomes,** which contain digestive enzymes and help white blood cells to destroy bacteria, digest dead cells and damaged cellular parts.

6. What is mitosis?

When the body cell divides, by the process of **mitosis,** the chromosomes are doubled and then equally distributed in the two daughter cells.



Mitosis divides the chromosomes in a cell nucleus.

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Найдите определения для данных слов и словосочетаний.

1. Lysosome	**a.** Structure in the cytoplasm where proteins are made.
2. Cell membrane	**b.** Structure in the cytoplasm that releases energy from food.
3. Ribosome	**c**. Digestive enzyme which breaks down dead and aging cell parts.
4. Nucleus	**d.** Rod-shaped structure found in the nucleus of the cell that are made of DNA.
5. Mitochondrion	**e.** The jelly-like substance surrounding the nucleus of the cell.
6. Chromosome	**f.** The part of cell that directs all the cell's activities.
7. Cytoplasm	**g.** The part of the cell that determines what enters and leaves the cell.

3. Закончите предложения, используя слова из таблицы. Некоторые слова можно использовать дважды.

mitosis, DNA and RNA, organelles, cell(s)

1. The basic unit of a living organism is a _____ .
2. The genetic materials that determine how all organisms grow and develop are _____.
3. During _____ nucleus of a cell divides into two nuclei and the formation of two new daughter cells begins.
4. _____ are tiny specialized structures within a cell that perform cell functions.
5. All animals and plants consist of _____ .

4. Образуйте как можно больше словосочетаний со словом *cell*.

e.g. cell growth

_____
_____
_____
_____
_____

5. Тест: выберите подходящий по смыслу ответ.

1. The science that studies cell is

a. *cytology* ***c.*** *biology*
b. *histology* ***d.*** *pathology*

2. Cytology deals with

a. *microorganisms*
b. *classification of living things*
c. *cells*

3. Cells are

a. *the smallest units of any substance*
b. *the microscopic units of life*
c. *tiny units of plants*

4. The outer covering of a cell is the

a. *cell wall* ***c.*** *cell membrane*
b. *organelle* ***d.*** *mitochondria.*

5. The control centre of the cell is the

a. *cytoplasm* ***c.*** *mitochondria*
b. *nucleus* ***d.*** *nucleolus*

6. Structures involved in the digestive activities of the cell are

a. *lysosomes* ***c.*** *nuclear membrane*
b. *chromosome* ***d.*** *endoplasmic reticulum*

7. Protein factories in the cell are known as

a. *mitochondria* ***c.*** *endoplasmic reticulum*
b. *ribosomes* ***d.*** *cytoplasm*

8. The network of passageways that transports proteins throughout the cell is known as the

a. *nuclear membrane* ***c.*** *lysosomes*
b. *endoplasmic reticulum* ***d.*** *ribosome*

9. The scientist who was the first to observe the tiny structures in cells was

a. *Gregor Mendel*
b. *Robert Hook*
c. *Charles Darwin*

10. The number of cells in a human organism is

a. *100 million*
b. *100 billion*
c. *100 trillion*

Language Development

1. Назовите основные структурные компоненты клетки.

a.	**d.**
b.	**e.**
c.	**f.**

2. Закончите предложения.

1. The four basic common elements of cell structure are
_____
_____ .

2. Cells can differ in _____
_____ .

3. The control centre of the cell is _____ .

4. The number of chromosomes each human cell has is _____ .

5. Organelles that destroy damaged cells are
_____ .

6. Usually cells are so _____
that we can't see them with unaided eye.

7. The process of doubling a cell is _____ .

3. Просмотрите текст еще раз и ответьте на вопросы:

1. What is a cell?
_____

2. How many cells are there in the human body?
_____

3. What is the basic structure of the cell?
_____

4. What is a nucleus?
_____

5. What do you know about chromosomes of the nucleus?
_____

_____

6. What is the role of cytoplasm in the cell?
_____

7. What other organelles are there in the cell?
_____

8. What is the role of ribosomes? lysosomes? mitochondria?
_____
_____
_____

9. What is mitosis?
_____

4. Прочитайте текст и назовите плюсы и минусы нового метода лечения опухолей.

DNA Used To Fight Skin Cancer

New York. The injection of new genes directly into a patient's tumour tissue is a safe procedure that can help induce the immune system to destroy the malignancy, scientists have reported.

The results from the first phase of a clinical trial suggest that the use of DNA as a drug, a radical new approach to combat cancer and other disorders, may eventually supplement if not replace standard tumour treatments like radiation or chemotherapy.

Dr Gary J. Nabel of the Medical Institute at the University of Michigan and his colleagues reported their findings in the Proceedings of the National Academy of Sciences. They **found** that when they injected DNA into the tumours of five patients with advanced skin cancers the genes slipped deep inside the malignant cells and switched on, as the scientists hoped.

All five patients tolerated the novel therapy well. In one patient, a 68-year-old man for whom conventional and experimental therapies had failed, the treatment caused many disseminated tumours to shrink and in some cases disappear.

But the researchers stressed that much more investigation remains to be done before the method can be introduced on a wide scale for the treatment of melanoma and other tumours.

5. Проект.

Research the topic "Stem Cells", and make up a report about the use of stem cells from embryos in treatment of serious illnesses. What is the controversy of this problem?

Grammar in Use

Относительные придаточные предложения

Относительные придаточные предложения вводятся относительными местоимениями *who, whom, which, that* и *whose* и **могут**:

1. Относиться к **подлежащему**, когда относительное местоимение является **подлежащим** в предложении.

a) Мы используем ***who*** или ***that,*** когда говорим о людях.

*e.g. Robert Hook was the scientist **who/that** introduced the term "cell".*

b) Мы используем ***which*** или ***that***, когда говорим о неодушевленных предметах**.**

*e.g. One of the cell organelles is the mitochondria**, which/that** provide the energy.*

c) мы используем ***whose***, когда говорим о предметах, принадлежащих людям.

*e.g. Dr Gary J. Nabel was the physician **whose** new methods were used to treat cancer.*

1. Составьте сложноподчиненные предложения, используя *who* или *which*. (*That* можно употребить во всех случаях).

1. These are digestive enzymes. They break down dead and aging cell parts.
_____
_____.

2. This is Robert Hook. He discovered cells in 1665.
_____
_____.

3. This is the article. It should be read by all medical students.
_____
_____.

4. This is the professor. He is my uncle's friend.
_____
_____.

5. The word *cell* comes from the Latin *cella*. It means *a small room*.
_____
_____.

6. Bacteria consist of only one cell. It can divide and make other bacteria.
_____
_____.

2. Относиться к **дополнению**, когда относительное местоимение является **дополнением** в предложении.

a) Мы используем ***who, whom, that*** или вообще не используем союз, когда говорим о людях.

*e.g. He is the professor **who/whom/that** I respect most. = He is the professor I respect most.*

b) Мы используем ***which, that*** или вообще не используем союз, когда говорим о предметах.

*e.g. Mitochondria provide the energy **that/which** cells need to function. = Mitochondria provide the energy cells need to function.*

c) Мы используем ***of which,*** когда говорим об одном предмете, соотносящемся с другим.

*e.g. This is his new book the publication **of which** made him famous.*

2. Поставьте (✓), если выделенное относительное местоимение можно опустить; напишите 'No', если этого сделать нельзя.

1. A patient's own blood was used to make personalised stem cells, **which** will be used to treat a range of diseases. _____

2. The team **which** works at the University of Cambridge says **that** this could be one of the easiest and safest sources of stem cells.
_____ _____

3. In a study, **which** the journal *Stem Cells* published in 2014, the cells were used to build blood vessels. _____

4. However, there are some experts **who** stated **that** the safety of using such stem cells was still unclear. _____ _____

5. Stem cells can transform into any other type of cell **that** the body is built from. _____

6. So these cells **which** should be able to repair everything from the brain to the heart, and eyes to bone, are really great. _____

7. The British Heart Foundation **which** is a charity **that** aims to prevent people dying from heart diseases said **that** these cells had "great potential".
_____ _____ _____

3. Составьте сложноподчиненные предложения, используя относительное местоимение, данное в скобках, либо не используя никаких соединительных слов (*zero*).

1. All cells contain DNA. This holds genetic information. (*which*)

_____
_____.

2. Dmitri Mendeleyev is a scientist. We are studying him. (*whom*)

_____
_____.

3. One of the most complex structure is a human body. It contains over 100,000 billion cells. (*that*)

_____
_____.

4. This is a very useful book. I borrowed it from the library. (*which*)

_____
_____.

5. This is the picture of a cell. Katya drew it as a part of her project. (*zero*)

_____
_____.

6. Today there will be extra classes for the students. These students will take part in the conference. (*that*)

_____
_____
_____.

7. I would recommend you to see the professor. I know him well. (*zero*)

_____
_____.

8. Yesterday I met Mr Leah. His daughter won the competitions. (*whose*)

_____
_____.

9. It was a very famous monument. Its destruction impressed everyone. (*of which*)

_____
_____.

10. This is Mrs Goldsmith. She is my favourite lecturer. (*who*)

_____
_____.

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I can describe the structure of the cell
- I know the chemical substances of the cell
- I can use relative pronouns *which and that* in complex sentences
- I know about tumour treatment with the help of DNA

Key Words

cell membrane /sel `membreɪn/
chromosome *n* /`krəuməsəum/
controversy *n* /kən`trɑvəsɪ/
conventional *adj* /kən`venʃənəl/
cytoplasm *n* /`saɪtəuplæzm/
enable *v* /ɪ`neɪbl/
lysosome *n* /ˌlaɪsə`səum/
malignancy *n* /mə`lɪgnənsɪ/
malignant *adj* /mə`lɪgnənt/
mitochondrion (*pl.* mitochondria) *n* /ˌmaɪtə`kɑndrɪən (ˌmaɪtə`kɑndrɪə)/
mitosis *n* /maɪ`təusɪs/
multicellular *adj* /ˌmʌltɪ`seljələ/
nuclear envelope /`nju:klɪə `envələup/
nucleus (*pl.* nuclei) *n* /`nju:klɪəs (`nju:klɪaɪ)/
organelle *n* /`ɔ:gənəl/
proceedings *n pl.* /prəu`si:dɪŋz/
ribosome *n* /ˌraɪbə`səum/
rough *adj* /rʌf/
smooth *adj* /smu:ð/
supplement *n* /`sʌplɪmənt/
tumour *n* /`tju:mə/
unicellular *adj* /ˌju:nɪ`seljələ/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT XIII. TISSUE

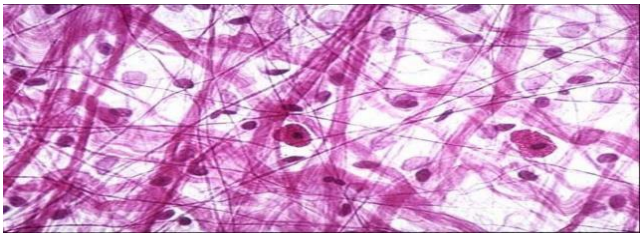
In this unit

- names of the basic types of tissues
- describing the structure of the organs of the human body
- substitute words *one, ones, that, those, there, do*

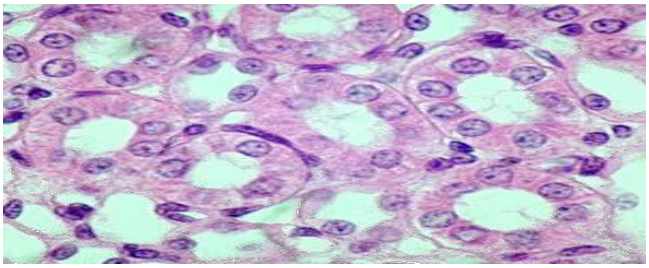
Lead-in

Cells are organized into four basic types of tissues:

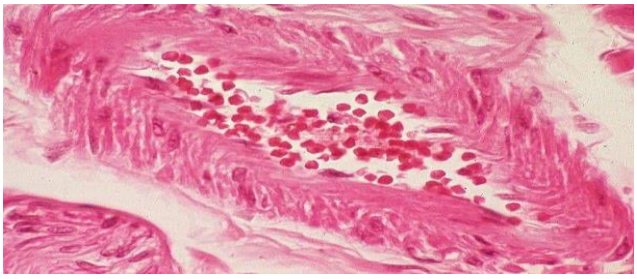
Connective tissue



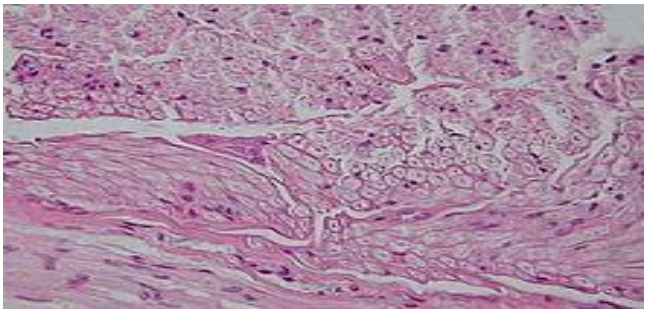
Epithelial tissue



Muscle tissue



Nervous tissue



1. Это интересно:

- There are four basic types of tissue: muscle, nervous, connective, and epithelial.
- Connective tissue is the material inside your body that supports many of its parts. It is the "cellular glue" that gives your tissues their shape and helps keep them strong.
- Adults have a certain number of muscle cells. Through exercise, such as weight lifting, the cells enlarge but the overall number of cells does not increase.
- Nervous tissue is responsible for many of the body's activities and processes, including memory, reasoning and emotions.
- Skin is the largest organ of the body so its epithelial tissues cover the most ground. Skin epithelium is truly the first line of defence against the outside physical world, creating a barrier like none other found in the body.
- Scar tissue replaces normal skin tissue after the skin is damaged. Scars form every time the skin is damaged beyond its first layer, whether that damage comes from a cut, burn, or a skin condition like acne or a fungal infection.

2. Прочитайте текст о мышцах. Выберите из списка утверждений A-E те, что лучше всего отражают содержание каждой части (1-4) текста. Здесь есть одно лишнее утверждение, которое вам не понадобится.

A. What is muscle?
B. What is an organ system?
C. What is an organ?
D. What are the three primary germ cell layers that form the embryo?
E. What are the four main types of tissue?

The law of the heart is thus the same as the law of muscular tissue generally, that the energy of contraction, however measured, is a function of the length of the muscle fibre.— Ernest Henry Starling

Reading

Tissue

1.

Tissue is a collection of similar cells that group together to perform a specialized function.
All tissues of the body develop from the three primary **germ** cell layers that form the embryo:
Mesoderm – develops into epithelial tissue, connective tissue and muscle tissue.
Ectoderm - develops into nervous tissue and epithelial tissue.
Endoderm – develops into epithelial tissue.
Different kinds of tissue have different physical properties. Tissues may be hard (bone), soft (muscle), or even liquid (blood).

2.

The **epithelial tissues** are formed by cells that cover the organ surfaces such as the surface of the skin, the airways, the reproductive tract, and the inner lining of the digestive tract. This tissue provides a barrier between the external environment and the organ it covers. Epithelial tissue helps to protect organisms from microorganisms, injury, and fluid loss. Epithelial tissues help in absorption of water and nutrients, and in elimination of waste product.

Connective tissue adds support and structure to the body. Most types of connective tissue contain fibrous **strands** of the protein collagen that add strength to connective tissue. Some examples of connective tissue include the inner layers of skin, tendons, ligaments, cartilages, bones, blood, and fat tissue.

Muscle tissue is a specialized tissue that can contract. Muscle tissue contains the specialized proteins actin and myosin that **slide** past one another and allow movement. Examples of muscle tissue are contained in the muscles throughout your body.
Muscles are divided into 3 categories: skeletal, cardiac and smooth.

Nerve tissue contains two types of cells, neurons and glial cells, and it makes up the central nervous system (CNS) and the peripheral nervous system (PNS). Nerve tissue has the ability to generate and conduct electrical signals in the body. These electrical messages are managed by nerve tissue in the brain and transmitted down the spinal cord to the body.

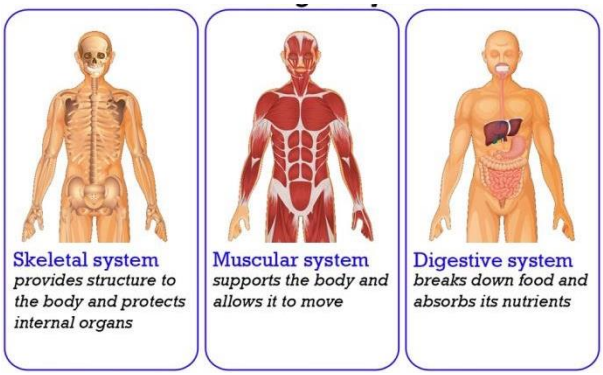
The study of tissue is known as **histology** or, in connection with disease, **histopathology**.

3.

Organs are the next level of organization in the body. An **organ** is a structure that contains at least two different types of tissue functioning together for a common purpose. There are many organs in the body: the liver, kidneys, heart, even skin is an organ. The heart is an example of an organ made up of all four kinds of tissues.

4.

Organ system is a group of related organs performing a major function for an organism. Examples of human organ systems include the circulatory, digestive, nervous, reproductive, respiratory, skeletal, muscular, **excretory**, endocrine systems.



The highest level of organization of life is the multicellular **organism**. Multicellular organisms are composed of the combination of all its cells, tissues, organs, and organ systems.

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Соотнесите мышцы и их функции.

1. nervous tissue	**a.** carries messages between brain and body parts (brain and spinal cord tissues are examples)
2. muscle tissue	**b.** connects and supports parts of the body (bone and fat are examples)
3. epithelial tissue	**c.** covers the surfaces of the body and lines the internal organs (skin is an example)
4. connective tissue	**d.** contracts and allows movement of the body (heart muscle is an example)

3. Прочитайте текст, заполнив пробелы словами из таблицы.

Tissue, skin, connective, muscle, walls, cells, impulses, organ, epithelial, protection, smooth, internal.

Many different tissues grouped together create an 1. _____, which has a specific job. An example of an organ would be the stomach. Epithelial 2. _____ covers the body surface and forms the lining for most internal cavities. The major function of 3. _____ tissue includes protection, secretion, absorption, and filtration. The 4. _____ is an organ made up of epithelial tissue which protects the body from dirt, dust, bacteria and other microbes that may be harmful. Connective tissues perform a variety of functions including support and 5._____. Fat tissue, dense fibrous tissue, cartilage, bone, blood, and lymph are all considered 6. _____ tissue. There are three types of muscle tissue: skeletal, 7._____ and cardiac**.** Skeletal 8. _____ is a voluntary type of muscle tissue that is used in the contraction of skeletal parts. Smooth muscle is found in the walls of 9._____ organs and blood vessels. It is an involuntary type. The cardiac muscle is found only in the 10. _____ of the heart and is involuntary in nature. Nerve tissue is composed of specialized 11. _____ and conducts 12. _____ to and from all parts of the body. Nerve cells or neurons are long and string-like.

4. Определите тип ткани.

1. This tissue contains two types of cells: neurons and glial cells. Its functions are to transmit messages in form of impulse.

2. The tissue serves as membranes lining organs and helping to keep the body's organs separate. The cells of the body surface form the outer layer of skin. Inside the body, this tissue forms lining of mouth and alimentary canal and protects these organs.

3. This tissue is usually made of cells and extracellular fibres that hold structures together (tendons), protect them (cartilage), store energy (fat), or produce blood.

4. The tissue is made of cells that are organized to shorten and produce force when they contract.

1.	3.
2.	4.

5. Тест: выберите правильный вариант ответа.

1. A group of similar cells that perform a similar function is called a(an)
a*. tissue* ***c.*** *organ system*
b. *organ* ***d.*** *living thing*

2. A tissue that has ability to contract is
a. *muscle tissue* ***c.*** *connective tissue*
b. *nerve tissue* ***d.*** *epithelial tissue*

3. Which type of tissue is blood?
a. *muscle tissue* ***c.*** *connective tissue*
b. *nerve tissue* ***d.*** *epithelial tissue*

4. An organ made up of all four kinds of tissues is the
a. *brain* ***c.*** *heart*
b. *blood* ***d.*** *spinal cord*

5. A tissue that protects the surface of the body is
a. muscle tissue **c.** nerve tissue
b. connective tissue **d.** epithelial tissue

6. The tissue that has ability to generate and conduct electrical signals in the body is
a. *nerve tissue* ***c.*** *connective tissue*
b. *epithelial tissue* ***d.*** *muscle tissue*

Language Development

1. Просмотрите текст еще раз и ответьте на вопросы.

1. What is tissue? _____

2. What do all tissues of the body develop from? _____

3. What are the physical properties of tissue? _____

4. What are the four main types of tissue? _____

5. What type of tissue protects the organism from microorganisms, injury, and fluid loss? _____

6. What are the main functions of connective tissue? _____

7. What are examples of muscle tissue? _____

8. What two types of cells does nerve tissue contain?_____ _____

9. What is an organ? _____ _____

10. What is an organ system? _____ _____

2. К какому типа тканей относятся данные органы и образования?

1. epithelial	**a.** muscles throughout the body
2. connective	**b.** brain and spinal cord
3. muscle	**c.** the inner layers of skin, tendons, ligaments, cartilage, bone, blood, and fat tissue
4. nervous	**d.** the outer layer of the skin, the inside of the mouth and stomach, and the tissue surrounding the body's organs

3. Изучите информацию об основных системах органов и ответьте на вопросы.

System	Function
Skeletal	Protects and supports the body.
Muscular	Supports the body and enables to move.
Digestive	Receives, transports, breaks down, and absorbs food.
Circulatory	Transports oxygen, wastes, and digested food.
Respiratory	Permits the exchange of gases in the body.
Excretory	Removes liquid and solid wastes from the body.
Nervous	Conducts messages throughout the body to aid in coordination of body functions.
Reproductive	Produces male and female sex cells.

1. Which organ system enables the body to move? _____

2. Which system transports materials throughout the body? _____

3. Which organ system enables humans to continue their own kind by producing more humans? _____

4. Which system changes food into simpler compounds that can be used by the cell? _____

5. Name the organ system which receives, coordinates, and acts upon information from the environment. _____

6. Which organ system exchanges gases between outside and inside the body? _____

4. Проект.

Nowadays, there are lots of artificial tissues (like artificial blood) and organs (like skin equivalent). Choose one of such organs or tissues, describe its properties and compare with corresponding natural ones. Prepare a short speech or essay.

Grammar in Use

Слова-заместители
one, ones, that, those, there, do

Если возможно, мы избегаем повторения слова или фразы, которые были использованы ранее. Одним из способов избежать подобного повторения является применение слов-заместителей **that, one, do,** и **there**.

Substitute word	Word to be substituted	Example
one/ones	person/ thing	*See those two girls? Helen is the **one** on the left / the tall **one**.* *Let's fill in the case histories. The **ones** the lecturer has given you.*
that/those (formal)	person/ thing	*The curriculum here is like **that** in Cambridge.* *Skeletal muscles are **those** attached to the skeleton.*
do (do it, do so)	action	*Can you help me with this report? – I'll **do it** (= help you with this report) at once.*
there	place	*Are you going to the clinic today? – Yes. – Then I'll see you **there.***

При замене существительных *one/ones* и *that/those*, мы выбираем *one/ones* при использовании с прилагательными или самостоятельно, и *that/those* – в сочетаниях с предлогом. (См. примеры выше.)
Мы часто употребляем *one* и *ones* после ***Which ...*** in questions:

*e.g. You can borrow a book. Which **one** do you want?*

*There are lots of books here. Which **ones** are yours?*

Мы используем **do so** и **do it / that** в качестве заместителей глагольных сочетаний.

*e.g. I asked her to take part in the preparation for the concert but she didn't want to **do so**.*

1. Замените повторяющиеся слова или выражения словами *one, ones, that, those, there, do*, где это возможно. Подчеркните слова, которые нужно заменить, и напишите слово-заместитель, которое вы выбрали.

e.g. The students I like to teach are <u>the students</u> who like to learn.
<u>the</u> <u>ones / those</u>

1. Have you met our new lecturer? – Is she the new lecturer who joined us last week?
_____

2. The temperature in the boy is higher than the temperature in the girl.
_____

3. I would like to spend summer working as a nurse assistant at some large hospital to get more experience. – Oh, I would like to spend summer working as a nurse assistant at some large hospital to get more experience, too.
_____

4. Let us go to the Natural History Museum tomorrow. – But I don't want to go to the Natural History Museum. Let's go to some other place.
_____

5. There are three very important reports in the latest treatise. Which very important report would you like to start with?
_____

6. The blood pressure on the left arm was a little bit higher than the blood pressure on the right arm.
_____

7. Which computer did you use? – I used the computer that is in your surgery.
_____

8. Have you examined all the patients on your ward round? – No, I've examined only the patients in wards 5, 6 and 7.
_____

9. My patient weighs 130 kg. – In case of obesity, it is strongly recommended to go to the dietician to correct the diet. – Then, I would advise my patient to go to the dietician to correct the diet.
_____

10. Which job are you dreaming about? – The well-paid job._____

2. Дополните предложения словами *one, ones, that, those, do, there.*

1. How old are my children? The younger _____ is five and the elder _____ is ten.

2. The University clinic is much more modern than _____ in the centre of the city.

3. The new stethoscopes are much more convenient than the older _____.

4. And now, dear students, I would like to tell some words to _____ who weren't present at my last lecture.

5. It doesn't matter what hospital it is, I just want the _____ that will help me.

6. Which would you prefer, this _____ or that _____?

7. Examples of human organ systems include the circulatory, digestive, and nervous _____.

8. I need new glasses. The _____ I have now are broken.

9. I hope this holiday will be the _____ to remember.

10. You may take any three journals. Which _____ would you choose?

11. Are you going to the International Congress of Psychiatrists next month? – No, I am not going _____. I'll be very busy then.

12. There is residency in neurosurgery and in obstetrics. Which _____ would you prefer?

13. I hope someone will take the prescription for aspirin from Dr Myles. – Oh, I'll _____ it right now.

14. There are three beds in Ward 11. Where should I put Mrs Darling? – On the _____ between the windows.

15. The digestive system is the _____ that changes food into simpler compounds that can be used by the cell.

16. Have you ever been to *the Cross-Bones Café*? – Not yet. – That's for the best. Never go _____. It's absolutely horrible.

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I know the names of the basic types of tissues
- I can describe the structure of the organs of the human body
- can use the substitute *words one-ones; that-those, do, there*

Key Words

barrier *n* /ˋbærɪə/
circulatory *adj* /ˌsɛɪkjuˋleɪtərɪ/
connective *adj* /kəˋnektɪv/
digestive *adj* /daɪˋʤestɪv/
ectoderm *n* /ˋektəˌdəːm/
endoderm *n* /ˋendəˌdəːm/
epithelial *adj* /ˌepɪˋθiːlɪəl/
excretory *adj* /ɪkˋskriːtərɪ/
fibrous *adj* /ˋfaɪbrəs/
germ *n* /ʤəːm/
histology *n* /hɪsˋtɑlədʒɪ/
histopathology *n* /ˌhɪstəpəˋθɑlədʒɪ/
lining *n* /ˋlaɪnɪŋ/
mesoderm *n* /ˋmezəˌdəːm/
organ *n* /ˋɔːgən/
organism *n* /ˋɔːgənɪzm/
reproductive *adj* /ˌriːprəˋdʌktɪv/
respiratory *adj* /rɪˋspɪrətərɪ/
slide *v* /slaɪd/
smooth *adj* /smuːð/
strand *n* /strænd/

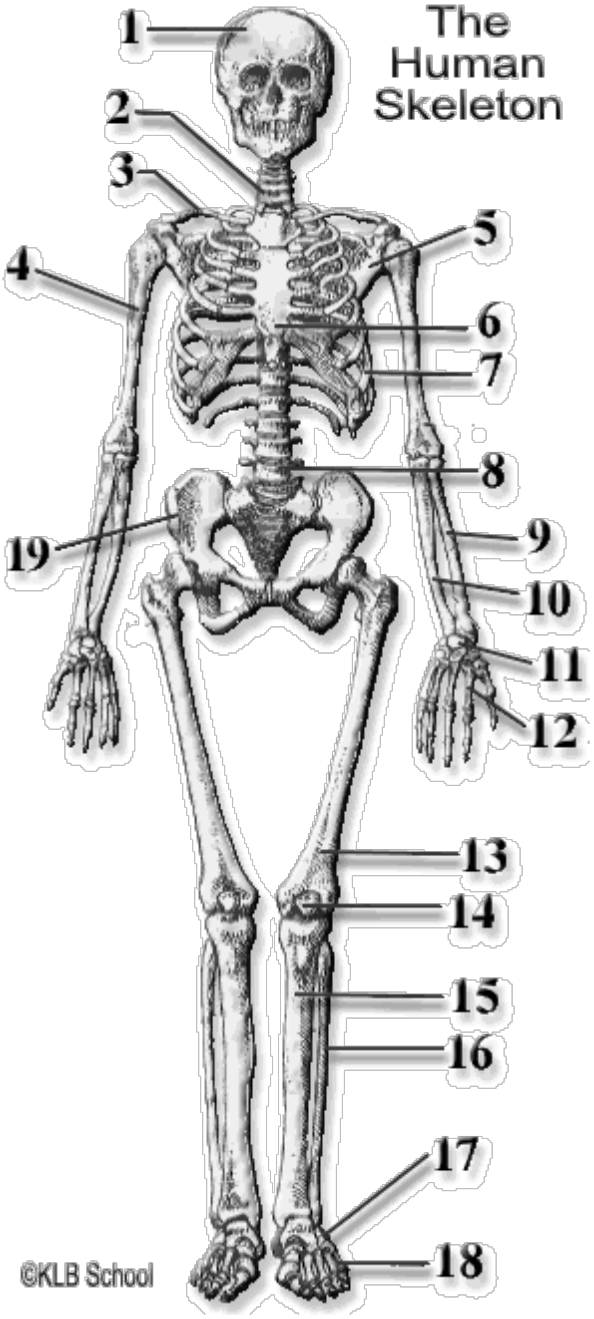
Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT XIV. BONES

In this unit

- names of the main bones of the human body
- describing the processes of bone formation and growth
- *Perfect Passive*

Lead-in



1. Это интересно

- Eighty bones protect the vital organs of heart, lungs, spinal cord, and brain.
- Children with broken bones heal much faster than adults. A bone that requires three to five months for healing in an adult will mend in four to six weeks in a child.
- The spinal column consists of a series of 26 individual bones, or vertebrae.
- Motorcycle accidents account for one injury to the skeletal and muscular systems in every 7,000 hours of biking; horseback-riding accidents account for one injury in every 2,000 hours of riding—three and one-half times more than motorcycling.
- Osteoclasts consume old and worn bone matter; osteoblasts manufacture new bone tissue. Both are important to good bone health.

2. Обозначьте основные кости тела человека.

The Major Bones of the Human Body

_____ A. Scapula [`skæpjulə]
_____ B. Knee cap [`ni: kəp]
_____ C. Tibia [`tıbıə]
_____ D. Neck vertebra [`nek `və:tıbrə]
_____ E. Tarsals [`ta:slz]
_____ F. Humerus [`hju:mərəs]
_____ G. Sternum (breastbone) [`stə:nəm]
_____ H. Lumbar [`lʌmbə] vertebra
_____ I. Clavicle [`klævıkl]
_____ J. Radius [`reıdjəs]
_____ K. Rib [rıb]
_____ L. Wrist [rıst] bones
_____ M. Pelvis [`pelvıs]
_____ N. Skull [skʌl]
_____ O. Metacarpals [,metə`ka:pəlz]
_____ P. Femur [`fi:mə]
_____ Q. Ulna [`ʌlnə]
_____ Q. Fibula [`fi:bjulə]
_____ S. Metatarsals [`metə`ta:slz]

3. Прочитайте текст о костях и подготовьтесь ответить на вопросы, вынесенные в заглавия разделов текста.

The average person will walk about 115,000 miles during a lifetime; that accounts for more than four jaunts around the equator on the feet.

About 6.8 million people seek medical attention each year for injuries involving the skeletal system.

Reading

The Skeleton

How many bones are there in the human body?

The adult human skeleton is **made up of** 206 bones. A baby is actually born with about 300 bones but many **fuse** together as it grows up. The skeleton consists of the **skull**, the **spinal column**, the ribs, and the **sternum**. The skull consists of eight **cranial** bones and 14 bones of the face. Skull bones are joined by nonmoveable joints (sutures), except for the joint between the lower jaw (mandible) and the temporal bone of the cranium, the **temporomandibular** joint.
The 26 vertebrae of the spinal column are divided
into five regions: **cervical** (7); **thoracic** (12); **lumbar** (5); the **sacrum** (5 fused); and the **coccyx** (4 to 5 fused). Between the **vertebrae** are disks of cartilage that add strength and **flexibility** to the spine. The spine, the **ribs** and the **breastbone** form the chest (thorax).
The bones of the upper extremity are attached to the spine by the shoulder girdle, while the bones of the lower extremity are attached to the spine by the pelvic girdle.

What are the bones of the skeleton made of?

In the human **embryo** the skeleton is made of cartilage, a **firm** but elastic material (in an adult, cartilage supports the ear). Cartilage is made up of non-elastic fibres called collagen, mixed with elastic fibres.
Gradually the bones develop **depositing** a hard mineral called calcium phosphate. This is called **ossification**. The final bone is made up of this mineral and the firm collagen fibres.
The collagen fibres are necessary for the bone neither to be too hard nor to break very easily. The minerals are necessary for it not to be too flexible so that it could **support** and protect other parts of the body.

What are the functions of the skeleton?

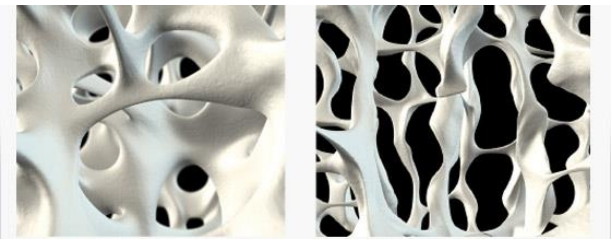
- ***Support*:** The skeleton keeps the human body in the correct **shape**, supporting many **internal** organs and the muscles of the body.
- ***Protection*:** Important and **delicate** organs are protected by bone. Examples include the skull protecting the brain and **eyeballs**, the ribs protecting the heart and lungs, and the spinal column protecting the spinal cord.
- ***Movement*:** Many muscles are set in pairs so they pull one bone towards another. The bones are arranged as levers so a small contraction in the muscle produces a large movement in the bones. **Joints** between the bones allow the movement to be smooth, without friction.
- ***Blood cell production:*** Blood cells are produced in the red bone marrow inside the larger bones of the body.

How can broken bones repair themselves?

Bone is a living material and can repair itself when it is broken or fractured. Small bones such as the ribs can repair themselves quickly but a large bone such as a femur can take a long time.

What can weaken bones?

If a child's diet is low in calcium or vitamin D the bones will grow but ossification is not completed. This deficiency disease is called ***rickets***.
During old age, both the organic and inorganic components of bone decrease, producing ***osteoporosis*** - a reduction in the quantity of bone (atrophy of skeletal tissue). Hence, the bones become brittle, lose their elasticity, and fracture easily.



Normal bone VS Osteoporotic Bone

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Запомните общеупотребительные слова для обозначения некоторых костей.

English name	Anatomical name
skull	cranium
jaw bone	mandible
spine	vertebral column
breastbone	sternum
rib	costa
collarbone	clavicle
shoulder blade	scapula
thigh bone	femur
kneecap	patella
shinbone	tibia

3. Составьте словосочетания со словами из таблицы. Используйте каждое слово только один раз.

support, protect, allow, fuse, deposit, break, repair, take	
1.	calcium phosphate
2._____	the heart and lungs
3._____	easily
4._____	oneself
5._____	the movement
6._____	together
7._____	internal organs
8._____	a long time

4. Подберите антонимы к словам из столбика A.

Column A	Column B
1. baby	**a.** non-elastic
2. elastic	**b.** repair oneself
3. flexible	**c.** firm
4. be broken	**d.** large
5. small	**e.** adult

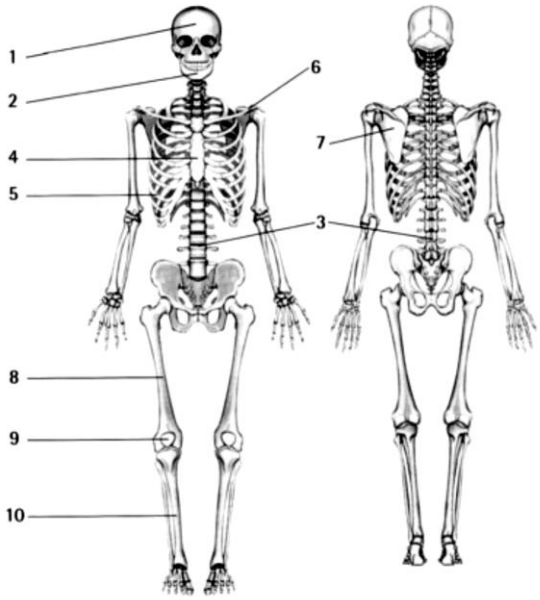
5. Работа в паре.

Ask and answer questions about the skeleton and its parts (the chest, the spine, the upper/ lower limb). Use the following structures:

1. What do/does … consist of? = What is/are … made up of?
2. Where is/are … located?

*e.g. What **does** the spine **consist of**? = What **is** the spine **made up of**? – The spine is made up of neck, thoracic, lumbar, sacral vertebrae and the coccyx.*

6. Обозначьте кости скелета.



_____ breastbone
_____ collarbone
_____ jaw bone
_____ kneecap
_____ rib
_____ shinbone
_____ shoulder blade
_____ skull
_____ spine
_____ thigh bone

7. Закончите предложения, используя present или past participles глаголов из таблицы. Используйте каждое слово только один раз.

deposit, connect, pull, divide, repair, support, compose, protect

1. The chest is made up of the sternum and ribs _____ the heart and lungs.
2. The bones develop _____ calcium phosphate.
3. Muscles contract _____ one bone towards another.
4. Cartilage is a firm but elastic material _____ the ear in the adult.
5. Bone is a living material _____ itself when it is fractured.
6. All the vertebrae of the spine are _____ into 5 regions.
7. The coccyx is _____ of 4 to 5 fused vertebrae.
8. The lower extremity is _____ to the spine with the pelvic girdle.

Language Development

1. Какие предложения верны (T)? Где допущены ошибки (F)? Исправьте неверные утверждения.

1. There are about 300 bones in the human body.
2. Cartilage consists of collagen.
3. Blood cells are produced inside the bones.
4. Bones cannot repair themselves.
5. Vitamin D deficiency causes osteoporosis.
6. The spinal column has 48 vertebrae.
7. Skull bones are joined by immoveable joints.
8. All the bones can quickly and easily repair themselves.
9. The deposits of calcium potassium make bones firm.

2. Просмотрите текст еще раз и ответьте на вопросы.

1. What is the skeleton made up of?

_____

2. What are the major bones of the skeleton?

_____

3. What does the skull consist of?

_____

4. What is the spine made up of?

_____

5. What is the upper (lower) extremity connected with the spine with?

_____

6. How do bones change as a human grows?

_____

7. What substances does a bone consist of?

_____

8. What are the main functions of the skeleton?

_____

9. What diseases of the bones do you know? What are they caused by?

_____

3. a. Прочитайте текст и выполните задания.

Osteoporosis

Millions of women all over the world – most often older women – suffer from such disease as osteoporosis. It is a condition in which the bones are weakened due to a decrease in bone mass that makes up the skeleton. As a rule this process starts after 35 years of age and leads to an increased risk of bone fracture.

Key risk factors for osteoporosis include genetics, lack of exercise, lack of calcium and vitamin D, cigarette smoking, excessive alcohol consumption, low body weight, and family history of osteoporosis. Patients with osteoporosis have no symptoms until bone fractures occur.

There are certain measures that everyone can take to avoid osteoporosis, such as lifestyle changes and sometimes medication. Lifestyle changes include diet, exercise, stopping use of alcohol and cigarettes, preventing falls. Medication includes calcium, vitamin D, and some others.

Very inactive people, such as those confined to bed, lose bone mass 25 times faster than people who are moderately active. Thus, regular, moderate, weight-bearing exercise like walking or jogging is a good way to maintain bone strength.

b. Найдите в тексте слова с таким значением:

broken bone _____

become less _____

appear

_____

to be kept in bed for some time

_____

c. Задайте вопрос к каждому абзацу текста. Ваш партнер должен на них ответить.

d. Составьте план текста, озаглавив каждый абзац. Перескажите текст по плану.

_____

_____

_____

_____

_____

_____

_____

4. Проект.

At present, to help people with mobility disorders, scientists are working on the so-called exoskeleton. Surf the Internet and find out what kind of a device this is, what functions it can fulfil and when it will become (or has become) available to patients. Prepare a short speech or essay.

Grammar in Use

Present Perfect Passive

Positive			
I / We / You / They		**have**	**been examined.**
He / She / It		**has**	
Negative			
I / We / You / They		**haven't**	**been examined.**
He / She / It		**hasn't**	
Questions			
(Why)	**have**	I / we / you / they	**been examined?**
	has	he / she / it	

Past Perfect Passive

Positive			
I / We / You / They / He / She / It		**had**	**been examined.**
Negative			
I / We / You / They / He / She / It		**hadn't**	**been examined.**
Questions			
(Why)	**had**	I / we / you / they / he / she / it	**been examined?**

Future Perfect Passive

Positive			
I / We / You / They / He / She / It		**will have**	**been examined.**
Negative			
I / We / You / They / He / She / It		**won't have**	**been examined.**
Questions			
(Why)	**will**	I / we / you / they / he / she / it	**have been examined?**

1. В данных предложениях использовано формальное подлежащее. Трансформируйте предложения, употребив глаголы в Perfect Passive.

*e.g. Someone **has brought** the book. – The book **has been brought**.*

1. They had finished the job by 5 p.m. yesterday.
_____
–
_____.

2. They will have completed the course of physiotherapy by June.
_____
_____.

3. Someone has already delivered a lecture on osteoporosis.
_____
_____.

4. Has anyone taken an x-ray of the broken bone?
_____
_____.

5. Had anyone treated your arthritis before you were admitted to our hospital?
_____
_____.

6. I think they won't have decreased this patient's BP by evening.
_____
_____.

7. They haven't discharged Mr Jones yet.
_____
_____.

8. Something has weakened this child's bones.
_____
_____.

9. They will have examined all the patients by 10 a.m.
_____
_____.

10. They haven't discussed Vitamin D deficiency yet.
_____
_____.

2. Употребите глаголы, данные в скобках, в правильной форме Perfect Active или Passive.

1. The spinal column _____ just _____ _____ (to x-ray).

2. I think we _____ (to complete) the report by tomorrow morning.

3. _____ the baby _____ (to examine) by a neurologist before she had this attack?

4. _____ you ever _____ (to be) to an A&E department earlier?

5. The physician thinks that the bones _____ _____ (to weaken) due to osteoporosis.

6. The x-ray showed that the tibia _____ _____ (to break) several months before.

7. Many bones _____ (to fuse) by the end of the first year.

3. Закончите вопросы, употребив глаголы в Past или Present Simple. Легко ли перевести такие предложения на русский язык?

Skeleton Jokes

Q (question): Why _____ the skeleton_____ (not to dance) at the Halloween party?
A (answer): It had no body to dance with.
Q: What _____ the skeleton _____ (to say) when his brother told a lie?
A: You can't fool me, I can see right through you.
Q: Who _____ (to be) the most famous skeleton detective?
A: Sherlock Bones.
Q: Who _____ (to be) the most famous French skeleton?
A: Napoleon Bone-apart
Q: What instrument _____ skeletons _____ (to play)?
A: Trom-BONE.
Q: What _____ the skeleton _____ (to say) to his girlfriend?
A: I love every bone in your body!
Q: Why _____ skeletons _____ (not to play) music in church?
A: They have no organs!
Q: What _____ (to be) a skeleton's favourite pop group?
A: Boney M!
Q: What _____ (to happen) to the skeleton who went to a party?
A: All the others used him as a coat rack!

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I know the names of the main bones of the human body
- I can describe the processes of bone formation and growth
- I can understand the text about *osteoporosis*
- I can use *Perfect Passive*

Key Words

breastbone *n* /ˈbrestbəun/ = sternum *n* /ˈstəːnəm/
cervical *adj* /ˈsəːvɪkl/
coccyx *n* /ˈkɑksɪks/
cranial *adj* /ˈkreɪnɪəl/
cranium *n* /ˈkreɪnɪəm/ = skull *n* /skʌl/
delicate *adj* /ˈdelɪkət/
deposit *n, v* /dɪˈpɑzɪt/
embryo *n* /ˈembrɪəu/
eyeball *n* /ˈaɪbɔːl/
firm *adj* /fəːm/
flexibility *n* /fleksɪˈbɪlɪtɪ/
fuse *v* /fjuːz/
lumbar *adj* /ˈlʌmbə/
make up /meɪk ʌp/
ossification *n* /ˌɒsɪfɪˈkeɪʃən/
osteoporosis n /ˌɑstɪəupəˈrəusɪs/
pelvic girdle /ˈpelvɪk gəːdl/
sacrum *n* /ˈseɪkrəm/
shoulder girdle /ˈʃəuldə gəːdl/
skeleton *n* /ˈskelɪtən/
spinal column /ˈspaɪnəl ˈkɑləm/
spine *n* /spaɪn/
temporomandibular *adj* /ˌtempərəmənˈdiːbjulə/
thoracic *adj* /θɔːˈræsɪk/
vertebra (vertebrae) *n* /ˈvəːtɪbrə (ˈvəːtɪbriː)/

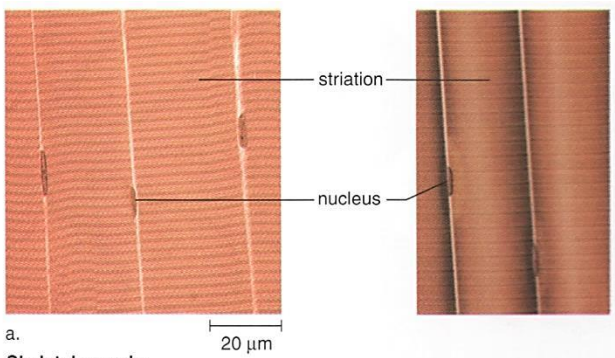
Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT XV. MUSCLES

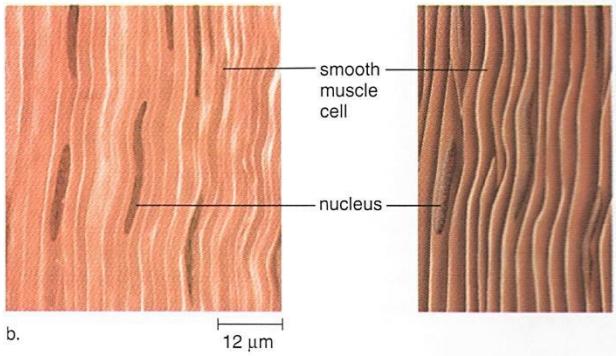
In this unit

- names of muscles
- describing the growth of muscles
- derivatives of *some, any, no, every*

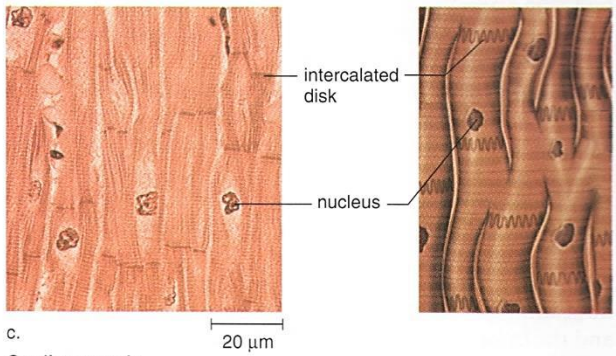
Lead-in



Skeletal muscle
- has striated cells with multiple nuclei.
- occurs in muscles attached to skeleton.
- functions in voluntary movement of body.
- voluntary



Smooth muscle
- has spindle-shaped cells, each with a single nucleus.
- cells have no striations.
- functions in movement of substances in lumens of body.
- involuntary.



Cardiac muscle
- has branching striated cells, each with a single nucleus.
- occurs in the wall of the heart.
- functions in the pumping of blood.
- involuntary.

1. Это интересно:

- The body contains roughly 630 skeletal muscles.
- The skeletal muscles account for roughly 50 percent of the body weight in men, 40 percent of the body weight in women, and 25 percent of a baby's body weight.
- After age 50, people lose about 10 percent of their muscle fibres per decade.
- Resting muscles receive about 20 percent of blood flow.
- During heavy exercise, the muscles receive from 60 to 85 percent of blood flow.
- Five to ten percent of a person's body weight is heart and smooth muscle.
- A fast-twitch muscle reaches peak contraction in about 1/20 of a second.
- A slow-twitch muscle reaches peak contraction in about 1/10 of a second.
- A single motor unit can range from two to three muscle fibres in the larynx to 2,000 fibres in the hamstring.
- You have all the muscle fibre you will ever have at birth. Once damaged they can't be replaced.

2. Прочитайте текст о мышцах. Выберите из списка утверждений A-F те, что лучше всего отражают содержание каждой части текста. Здесь есть одно лишнее утверждение, которое вам не понадобится. В начале текста приведен пример (0).

A. What is muscle?
B. The structure and main functions of smooth and cardiac muscles.
C. Two types of muscle fibres.
D. Two different ways of muscle contraction.
E. The main functions of voluntary muscles.
F. The growth in muscle size and muscle tension.

It takes seventeen muscles to smile and forty-three muscles to frown.

Reading

Muscles

0. What is muscle?

Muscle is a soft tissue. The term *muscle* is derived from the Latin *musculus* meaning "little mouse" perhaps because of the shape of certain muscles or because contracting muscles look like mice moving under the skin. Muscle cells contain protein **filaments** that slide past one another, producing a contraction that changes both the length and the shape of the cell. Muscle function is to produce force and cause motion. They are primarily responsible for changes in posture, locomotion of the organism itself, as well as movement of internal organs, such as the contraction of the heart and movement of food through the digestive system. There are three types of muscle within the human body.

1.

Skeletal muscle is the type of muscle that we can see and feel. Skeletal muscles attach to the skeleton and come in pairs -- one muscle to move the bone in one direction and another to move it back the other way. Skeletal muscles are also sometimes called **voluntary** muscles, because we have direct control over them through nervous impulses from our brains sending messages to the muscle. Skeletal muscles have the ability to stretch or contract and still return to their original shape.

2.

Smooth muscle is found in the digestive system, blood vessels, bladder, and airways. Smooth muscle has the ability to **stretch** and maintain **tension** for long periods of time. It contracts **involuntarily**, meaning that you do not have to think about contracting it because the nervous system controls it automatically.

This muscle type is stimulated by involuntary neurogenic impulses and has slow, rhythmical contractions used in controlling internal organs, for example, moving food along the esophagus or contracting blood vessels.
Cardiac muscle is found solely in the walls of the heart. It has similarities with skeletal muscles in that it is striated and with smooth muscles in that its contractions are not under conscious control. Cardiac muscle is highly resistant to fatigue due to the presence of a large number of mitochondria, myoglobin and a good blood supply.

3.

Muscles are made of **bundles** of fibres. These can be either fast twitch or slow twitch.
Fast twitch fibres are used for powerful, fast movements. This however means they get tired quickly. Athletes who are good at short events which require speed and power will have a higher number of fast twitch fibres.
Slow twitch fibres are good for **endurance** activities. They contract slowly with less force, but do not tire so easily. Long distance runners tend to have more of these fibres.
Everyone has a similar number of muscle fibres. People with larger muscles have larger fibres, not more of them.

4.

Performing exercises and being active in our daily life can cause our muscles to get stronger. As already mentioned, strong people have larger muscle fibres. This growth in muscle size is called **hypertrophy**. If we do not use our muscles regularly, the opposite can happen and the muscles reduce in size. This is called **atrophy**.
Muscles are always slightly under tension, to enable us to hold a position, such as sitting upright. This small amount of muscle tension is known as **muscle tone**. Exercise improves muscle tone.

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.

2. Найдите определения для данных слов и словосочетаний.

1. voluntary	a. strain
2. involuntary	b. to make a sudden quick movement that you can't control
3. to stretch	c. done without exercise of the will
4. tension	d. done of one's own free will
5. to twitch	e. to extend, to make smth longer
6. filament	f. a number of things tied together
7. bundle	g. a long thin wire
8. endurance	h. tolerance

3. Тест: выберите правильный ответ.

1. Skeletal muscles are also known as
a. involuntary muscles
b. smooth muscles
c. voluntary muscles

2. Cardiac muscle is found solely in the walls of
a. the heart
b. the esophagus
c. the bladder

3. The small amount of muscle tension is known as
a. atrophy
b. muscle tone
c. hypertrophy

4. Fast twitch fibres are used for powerful, fast movements but they
a. get tired quickly
b. get tired slowly
c. are highly resistant to fatigue

5. People with larger muscles have
a. less fibres
b. more fibres
c. bigger fibres

4. Соотнесите вопросы и ответы.

1. What are the three types of muscles?
2. What are the three characteristics of skeletal muscles?
3. Which type of muscle is unstriated?
4. Which muscle types are involuntary?
5. Where is smooth muscle found?
6. What do muscle cells contain?
7. What are muscles made of?

a. walls of hollow organs and blood vessels.
b. cardiac, smooth.
c. smooth muscle.
d. voluntary contractions, attached to bones, striated appearance.
e. skeletal, smooth, cardiac.
f. bundles of fibres.
g. protein filaments.

1	2	3	4	5	6	7
e						

5. Дополните текст словами из таблицы.

control, muscle, heart, smooth, walls, fatigue, skeletal, blood, voluntary, striated, direct

There are three types of muscle within the human body: 1._____muscle is attached to our skeleton and causes us to move our body parts. They are called 2. _____ muscles as they are under our control. They are sometimes also called 3. _____ as they have a stripy appearance.
Smooth muscle is not under our 4._____ control and contracts of its own accord. It is situated in the 5. _____of many of our organs, such as the stomach and 6._____ vessels. It is called 7._____as it does not share the same stripy appearance as skeletal 8._____. Cardiac muscles are found in the 9._____and nowhere else. It is a specialised type of muscle which works continuously and is not under our 10._____. Cardiac muscle is highly resistant to 11._____.

Language Development

1. Закончите предложения, используя информацию из текста о мышцах.

1. Muscle function is to produce_____
_____
2. Muscles are primarily responsible for_____
_____
3. Fast twitch fibres are used for_____
_____
4. Slow twitch fibres are good for_____
_____
5. The growth in muscle size is called _____
_____
6. If we do not use our muscles regularly, the muscles reduce in size. This is called _____
_____
7. The small amount of muscle tension is known as
_____
8. The term *muscle* is derived from_____
_____
9. There are three types of muscles within the human body:_____
_____

2. Определите тип мышц и волокон.

1. They have the ability to stretch and maintain tension for a long period of time. They contract involuntary.
2. They are good for endurance activities; they contract slowly with less force.
3. They are highly resistant to fatigue due to the presence of a large number of mitochondria.
4. They are used for powerful fast movements; they get tired quickly.
5. This type of muscles we can see and feel; they attach to the skeleton and come in pairs.

a. skeletal
b. cardiac
c. fast twitch fibres
d. slow twitch fibres
e. smooth

1	2	3	4	5
e				

3. Просмотрите текст еще раз и ответьте на вопросы.

1. What is muscle?
_____
2. What do muscle cells contain?
_____
_____
3. What is the main function of muscles?
_____
_____
4. What are the muscles responsible for?
_____
_____
5. What are the main types of muscles?
_____
6. Where can skeletal muscle be found?
_____
7. How does smooth muscle contract?
_____
8. What similarities do cardiac and skeletal muscles have?
_____
9. What is the difference between fast twitch fibres and slow twitch fibres?
_____
10. What is hypertrophy?
_____
11. What is the cause of atrophy?
_____
_____

12. What can improve muscle tone?
_____
_____

4. Прочитайте и переведите интересные факты о ваших мышцах.

1. The hardest working muscle is in the eye.
2. Arnold Schwarzenegger has as many muscle fibres as you - they're just thicker!
3. We need 72 muscles to speak.
4. The strongest muscle of the body is the masseter muscle used for chewing!
5. If all your muscles could pull in one direction you could create a force of 25 tons!
6. The human tongue consists of sixteen separate muscles, not one as many people think.

5. Проект.

Imagine that a patient (or a friend) asks for advice on how to build muscles. What would you recommend? Is it a good idea at all? Surf the Internet and prepare a short speech or essay.

Grammar in Use

Неопределенные местоимения

For people		For things
-body	***-one***	***-thing***
somebody *anybody* *everybody* *nobody*	*someone* *anyone* *everyone* *no one*	*something* *anything* *everything* *nothing*

Мы используем неопределенные местоимения, когда называем предметы или людей, не уточняя, кого или что именно мы имеем в виду:

e.g. ***Everybody*** *enjoyed the lecture.*
I opened the ward but there was ***no one in****.*

Мы используем глагол в единственном числе после неопределенных местоимений:

e.g. Everybody ***knows*** *the answer.*
Everything ***was*** *ready for the operation*.

Мы можем добавить ***-'s*** к неопределенному местоимению, чтобы образовать притяжательную форму.

e.g. I'll take ***somebody's*** *stethoscope. I left mine at home.*

Мы используем неопределенные местоимения с ***no-*** как подлежащее в отрицательных предложениях (а не местоимения с ***any***.)

e.g. ***Nobody*** *could make this task.*

Мы не используем другие отрицания в предложениях с ***nobody***, ***no one*** или ***nothing***:

e.g. Nobody came.
Nothing happened.

Мы используем ***else*** после неопределенных местоимений, чтобы назвать людей или предметы, **помимо тех**, о которых мы уже упоминали.

e.g. All the students came but no one ***else.***
Would you like anything ***else****?*

Мы используем неопределенные местоимения ***somewhere, anywhere, everywhere, nowhere***, когда говорим о месте.

e.g. I could find my phone ***nowhere****.*
His students go ***everywhere*** *with him.*
The patient had to stay at the ICU as ***everywhere else*** *was fully occupied.*

N.B. Выбор ***some/any*** зависит от типа предложения. Смотри Unit 3 (Essential English for Medical Students, Part 1)

1. Закончите предложения, используя слова *someone, anyone, something, anything, somewhere, anywhere.*

1. I've got _____ in my eye.

2. There is _____ in the waiting area.

3. We haven't heard _____ about Peter of late. Is he ill?

4. Has _____ seen my report?

5. Does Jane live _____ in the centre?

6. _____ wants to see you.

7. My pencil won't write. Can I take _____'s pencil?

8. I'm tired of holidays in Paris. I'd like to go _____ else.

9. He told me _____ but I couldn't hear him well.

10. So, there is a microscope, slides, samples of blood… But we need _____ else.

2. Закончите предложения, употребив глагол в правильной форме.

1. _____ anyone _____ (to know) Kate's e-mail?

2. No one _____ (to use) the laptop now so you may take it.

3. _____ (to be) everyone ready for the module testing in anatomy?

4. Can you imagine this? Someone _____ (to do) my homework for me!

5. _____ everyone _____ (to participate) in the Students' Conference next spring?

6. He is very stubborn. Nothing ever _____ (to change) his mind.

7. Let me know if anything _____ (to happen).

8. There _____ (to be) something unusual about his condition.

9. Everything _____ (to be) perfect but the professor put me a bad mark.

3. Закончите предложения, употребив правильное неопределенное местоимение.

1. There is _____ in your hair; I think it's a bug.

2. My speech was perfect. _____ went as I wished.

3. _____ is safe from the flu. You can catch it at any place.

4. He didn't say _____ new. I had known all these things before.

5. Are you looking for your workbook? I think it's _____ on the shelf.

6. I will do _____ for you. You are my best friend.

7. Oh, I've found _____ interesting on the Internet. This is a nice picture of the lymphatic system.

8. _____ we did to help the dog was useful. It died.

9. My dictionary was on the desk. _____ has taken it.

10. I'm sure she will fail at the exam. She did _____ yesterday, but just slept all day long.

4. Спрашивайте и отвечайте на вопросы партнера, чтобы заполнить таблицу в разделе Lead-in на стр. 138.

About 200 BC	Chinese scientists learnt about the circulation of blood
1492	Doctors of Rome performed the first blood transfusion. They gave blood from three boys to the Pope. The boys and the Pope all died.
1818	British doctor James Blundell made the first successful human blood transfusion.
1901	Austrian Karl Landsteiner discovered three main human blood groups – A, B, and O.
1940	Karl Landsteiner discovered the Rhesus factor.
1962	Max Perutz was awarded the Nobel prize for his discovery of haemoglobin.

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I can talk about types of muscles
- I can describe the functions of three types of muscles
- I can form and use derivatives of *some, any, no, every*

Key Words

atrophy *n* /ˋætrəfɪ/
bundle *n* /ˋbʌndl/
cardiac muscle /ˋkɑːdɪək mʌsl/
endurance *n* /ɪnˋdjuərəns/
esophagus *n* /ɪˋsɑfəgəs/
fast twitch fibre /fɑːst twɪtʃ ˋfaɪbə/
filament *n* /ˋfɪləmənt/
force *n* /fɔːs/
hypertrophy *n* /haɪˋpəːtrəfɪ/
involuntary *adj* /ɪnˋvɑləntrɪ/
motion *n* /ˋməuʃən/
muscle *n* /mʌsl/
muscle tone /mʌsl təun/
skeletal muscle /ˋskelətəl mʌsl/
slow twitch fibre /sləu twɪtʃ ˋfaɪbə /
smooth muscle /smuːð mʌsl/
stretch *n, v* /stretʃ/
striated *adj* /straɪˋeɪtɪd/
tension *n* /ˋtenʃən/
voluntary *n* /ˋvɑləntrɪ/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT XVI. BLOOD

In this unit

- talking about composition of blood
- describing the functions of the three types of blood cells
- coordinating double conjunctions *both…and; either…or; neither…nor; not only...but also*

Lead-in

1. Что нам известно о крови? Работа в парах. Студент А изучает информацию на стр. 100, студент В – на стр. 99. Задавайте друг другу вопросы, например: *What happened in 200 BC? What did Chinese scientists do?* Отмечайте ответы.

2. Это интересно:

- Blood is a connective tissue in which the matrix is plasma.
- Every second, 10 million red blood cells die in the normal adult. The body replaces them just as quickly, however, so the total number remains constant.
- Blood is three to four times more viscous than water.
- As the heart contracts and blood rushes into the aorta, it is travelling at a speed of about 20 centimetres per second.
- Even in a person who is resting, blood issuing from the heart can travel down to the person's toes and back to the heart in just a minute. When a person is exercising heavily, that trip can take just 10 seconds. On average, every red blood cell completes the heart-to-body-to-lungs circuit 40-50 times an hour.
- A red blood cell gradually wears out and dies in about 120 days, so these cells must be constantly replaced.
- Each red blood cell contains approximately 300 million molecules of haemoglobin.

Time	Person	
About 500 BC	Alcmaeon	
About 200 BC	Chinese scientists	
1492	Doctors of Rome	
1658	Jan Swammaedam	
1818	James Blundell	
1874	William Ostler	
1901	Karl Landsteiner	
1912	Roger Lee	
1917	Oswald Robertson	
1940	Karl Landsteiner	
1948	Dr Carl Walter	
1962	Max Perutz	

Blood is that fragile scarlet tree we carry within us.
Osbert Sitwell

Reading

Blood

1. What is blood?

Blood is more than just a simple, red liquid. It is actually a clear, somewhat gold-coloured, protein-rich fluid crowded with red and white cells.
Blood circulates through the vessels, bringing oxygen and nourishment to all cells and carrying away waste products. The total adult blood volume is about 5 litres. Whole blood can be divided into two main components: the liquid portion, or **plasma** (55%), and formed elements, or blood cells (45%).

2. Blood plasma

Plasma is about 90% water. The remaining 10% contains nutrients, **electrolytes** (dissolved salts), gases, **albumin** (a protein), clotting factors, antibodies, wastes, enzymes, and hormones.
The plasma serves as the liquid in which the red and white blood cells, as well as other chemical compounds travel throughout the body.

3. Blood cells

The blood cells are **erythrocytes,** or red blood cells; **leukocytes,** or white blood cells; and **platelets,** also called **thrombocytes.** All blood cells are produced in red **bone marrow**. Some white blood cells multiply in lymphoid tissue as well.

Erythrocytes

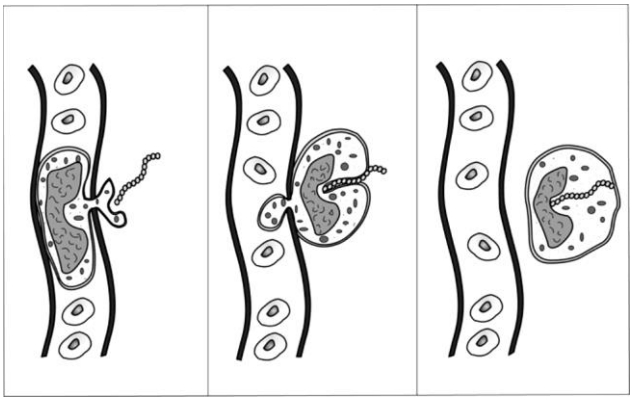
Erythrocytes are small, disk-shaped cells without nuclei. Their concentration of about 5 million per mL (cubic millimetre) of blood makes them by far the most numerous of the blood cells. They must be **flexible** as well, because they have to bend, twist and deform in order to squeeze through tiny capillaries.
The presence of the red pigment **haemoglobin** makes the cells red, and in turn, makes the blood red.
The major function of erythrocytes is to transport oxygen and carbon dioxide. After a human breathes in oxygen, the red blood cells deliver it to the tissues. As tissue cells use the oxygen, carbon dioxide begins to accumulate. The red blood cells then pick up the carbon dioxide waste product and transport it back to the lungs, where it is discharged during exhalation.

Leukocytes

White blood cells have a completely different function than red blood cells. They protect the organism against foreign substances. Leukocytes engulf and destroy the bacteria or other foreign bodies invading the organism. This process is called **phagocytosis**.
In contrast to red blood cells, leukocytes are larger in size and have a nucleus. They total about 5,000 to 10,000 per µL (*microliters*), but their number may increase during infection.
In diagnosis it is important to know the total number of leukocytes because the change in their number can indicate different disease conditions.

Platelets

The blood platelets (thrombocytes) are fragments of larger cells formed in the bone marrow. They number from 200,000 to 400,000 per L of blood. Platelets are important in **haemostasis,** *i.e.* prevention of blood loss, a component of which is the process of blood clotting, also known as **coagulation.** When a vessel is injured, platelets stick together to form a plug at the site.



Phagocytosis. Leukocytes are primary players in the body's defence mechanism. Here, a leukocyte protrudes from a blood vessel and surrounds an invading bacterium. Once the bacterium is engulfed, it is destroyed. This process of engulfing and destroying materials is called phagocytosis.

Vocabulary Practice

1. Объясните значение выделенных слов из текста на предыдущей странице.
2. Подберите термины к данным определениям.

1. the red colouring substance of erythrocytes - _____
2. a fluid tissue with many different functions - _____
3. the white blood cell - _____
4. blood cells which have great flexibility - _____
5. formation of clots - _____
6. the most numerous cellular elements of blood- _____
7. the process of catching and destroying microbes by leukocytes - _____
8. a process that takes place in the nucleus of a dividing cell - _____
9. prevention of blood loss - _____
10. a blood cell that destroys microorganisms - _____
11. formed elements of blood - _____

3. Образуйте словосочетания.

1. bone	**a.** mechanism
2. waste	**b**. portion
3. blood	**c.** tissue
4. lymphoid	**d.** loss/volume
5. liquid	**e.** product
6. disease	**f.** condition
7. defence	**g.** marrow

4. Подберите синонимы к данным словам.

albumin -
breathing in -
breathing out -
blood clotting -
to throw off -
nutrition -
fluid -

5. Составьте как можно больше словосочетаний со словом "blood".

blood count_____
_____
_____
_____

6. Тест. Работа в парах.
Задайте вопросы, чтобы получить недостающую информацию.

1. A red blood cell lives for about _____ .
How long _____?

a. 4 days **b.** 4 months **c.** 4 years

2. Your blood travels about _____ kilometres every day.
How far _____?

a. 200 km **b.** 2,000 km **c**. 20,000 km

3. There are _____ white blood cells in a drop of blood.
How many _____?

a. 25,000 **b.** 5 mln **c.** 50, 000

4. Blood plasma is _____ % water.
What percentage of _____?

a. 40% **b.** 50% **c.** 96%

5. There are _____ litres of blood in an adult human.
How much _____?

a. 5.6 L **b.** 6.5 L **c.** 4.5 L

6. Red blood cells form about _____ % of the volume of blood.
What percentage of _____?

a. 90% **b.** 40% **c.** 55%

7. A newborn child has _____ cupful of blood in its body.
How much _____?

a. one **b.** two **c.** three

8. It takes _____ for a human body to replace red blood cells.
How long _____?

a. 8 hours **b.** 8 days **c.** 8 weeks

9. _____% of blood is plasma.
What percentage of _____?

a. 45% **b.** 55% **c.** 50%

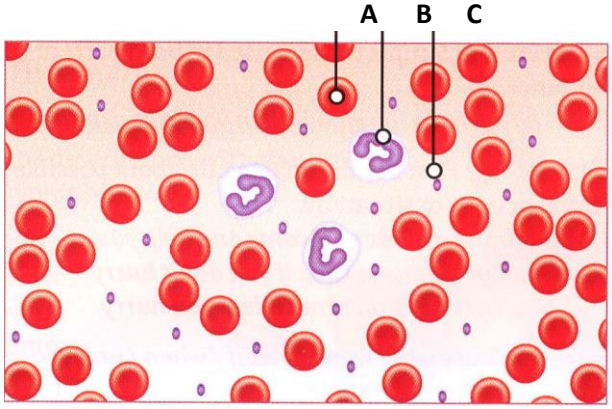
10. Blood is _____ % of your body's weight.
What percentage _____?

a. 10% **b.** 25% **c.** 7%

Language Development

1. Определите тип клеток крови на рисунке.

_____ platelets
_____ white blood cells
_____ red blood cells

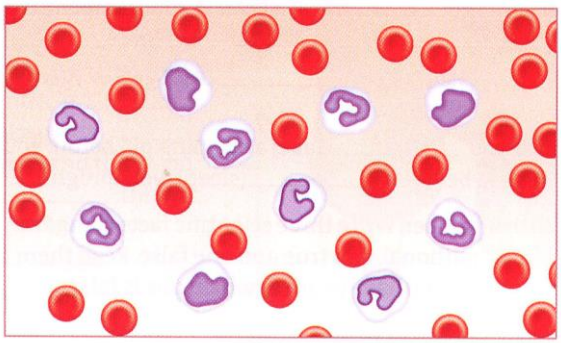


2. Найдите и исправьте еще 4 ошибки в этом описании.

circular

There are many ~~rectangular~~ red blood cells moving freely in the plasma. The centres of the red blood cells are a light colour and the cells are all the same size. There are three white blood cells in the diagram. They are more regular in shape than the larger red blood cells. There are many platelets in this drop of blood. They are the small, dark, oval-shaped bodies.

3. Кровь на этом рисунке поражена раком. Опишите, что вы видите.



_____
_____
_____

4. a. Прочитайте текст об общем анализе крови (ОАК) и запомните новые слова.

Complete Blood Count (CBC)

In the investigation of blood diseases the simplest test is a **complete blood count** (**CBC**). A complete blood count measures the following in the sample of blood:

- the amount of haemoglobin
- the number of different cells - red blood cells (erythrocytes), white blood cells (leukocytes) and platelets (thrombocytes)
- the volume of the cells
- the **erythrocyte sedimentation rate** (**ESR**) – a measurement of how quickly red blood cells fall to the bottom of a sample of blood.

b. Закончите описание результатов ОАК, употребив слова из таблицы.

infection	haemoglobin	clot
platelets	red blood cells	
oxygen	white blood cells	

A CBC measures the number of different cells that make up the blood. It looks at _____1 - these take _____2 from the lungs to the body's tissues, and take carbon dioxide away at the same time. The CBC also measures the amount of _____3 (a protein in the cells that carries the oxygen), and looks at the size and shape of the cells. _____ 4 - these protect the body against _____ 5.
6 _____ - these make the blood 7 _____ .

5. Задайте вопросы собеседнику, чтобы заполнить таблицу на стр. 96 в разделе Lead-in.

About 200 BC	Chinese scientists learnt about the circulation of blood
1492	Doctors of Rome performed the first blood transfusion. They gave blood from three boys to the Pope. The boys and the Pope all died.
1818	British doctor James Blundell made the first successful human blood transfusion.
1901	Austrian Karl Landsteiner discovered three main human blood groups – A, B, and O.
1940	Karl Landsteiner discovered the Rhesus factor.
1962	Max Perutz was awarded the Nobel prize for his discovery of haemoglobin.

6. Просмотрите текст еще раз и ответьте на вопросы:

1. What is blood? What is its function?

_____

2. What is blood composed of?

_____

3. What is the role of plasma?

_____

4. What is the major function of erythrocytes? leukocytes? platelets?

_____

5. What makes the blood red?

_____

6. What is phagocytosis?

_____

7. a. Прочитайте диалог и ответьте на вопросы. Подготовьтесь воспроизвести его на занятии.

A Blood Test

N = nurse; P = patient

N. How do you feel?

P. Tired all the time, really – never have any energy.

N. Have you had a blood test before?

P. No, I haven't, no. How much blood will you take?

N. Oh, just enough to fill the syringe – just five millilitres …Well we've got the results of your blood test. As I thought, you're a little bit anaemic.

P. Is that bad?

N. No, not necessarily. It just means that your red blood cell count is a little on the low side. A normal count is about 4.2 to 5.4 million red blood cells per microlitre of blood, and yours was 3.9.

P. Oh, dear – what does that mean?

N. Don't worry - anaemia is very common in women. If you take iron supplements your red cell count should soon go up. The cells are normal in size and shape, so that looks good. Your white cells are a little high, but you've just had a sore throat, haven't you?

P. Yes.

N. Well, that's just a sign that your body's been fighting the infection, so that's fine. And platelets were normal.

b. Ответьте на вопросы:

1. How does the patient feel?

2. How much blood is the nurse going to take?

3. What problem does the test result show?

4. How many million red blood cells per microlitre does it show?

5. How can the patient correct the problem?

6. What is the shape of the red cells?

7. How is the patient's white blood cell count?

8. How are the platelets?

9. How did the nurse calm the patient?

8. Спрашивайте и отвечайте на вопросы партнера, чтобы заполнить таблицу в разделе Lead-in на стр. 96.

About 500 BC	The Greek scientist Alcmaeon saw that arteries and veins were different.
1658	In Holland Jan Swammaedam used one of the first microscopes, and saw that there are different types of cells in the blood.
1874	William Ostler identified platelets.
1912	Roger Lee demonstrated that it is safe to give group O to patients of any blood group, and that blood from all groups can be given to AB patients.
1917	An American army doctor Oswald Robertson set up the first blood bank.
1948	Dr Carl Walter designed plastic bags for collecting and storing blood.

9. Проект.

Blood tests are now a part of a routine check-up. Everyone knows that we can determine lots of factors with the help of humble blood analysis. But is that all?

Surf the Internet and find out what biomarkers are and what diseases they help diagnose. When is a patient recommended to take blood tests?

Prepare a short speech or essay.

Grammar in Use

Двойные союзы

Двойные союзы соединяют два равных члена предложения или два равных придаточных предложения:

Double Conjunction	Example
both…and	*The professor explained to the students **both** the diagnosis of the patient **and** his management.*
either…or	*He knows nothing about **either** leucocytosis **or** phagocytosis.*
neither…nor	*She could give **neither** intravenous **nor** intramuscular injections.*
not only… but also	*This guy is **not only** a talented student, **but also** a very kind person.*

1. Объедините два предложения в одно, используя двойные союзы. Не делайте ненужных повторов.

*e.g. He likes chemistry. He also likes physics.(both…and) – He likes **both** chemistry **and** physics.*

1. A complete blood count measures the number of different cells. A complete blood count measures their volume. (*not only…but also*)

_____
_____.

2. Red blood cells travel in the plasma throughout the body. White blood cells travel in the plasma throughout the body. (*both…and*)

_____
_____.

3. The doctor didn't administer painkillers. The doctor didn't administer hypnotics either. (*neither…nor*)

_____
_____.

4. You may see the dentist on Monday. However, you may see the dentist on Tuesday, too. (*either…or*)

_____
_____

Checklist

Оцените, чему вы научились в этом уроке. Отметьте (✓) утверждения, которые справедливы для вас.

- I can talk about composition of blood
- I can describe the functions of three types of blood cells
- I know what the complete blood count includes
- I can use coordinating double conjunctions *both…and; either…or; neither…nor; not only…but also.*

Key Words

adequate *adj* /ˋædəkwət/
albumin *n* /ˋælbjumɪn/
anaemia *n* /əˋniːmɪə/
blood loss /blʌd lɑs/
bone marrow /bəun ˋmærəu/
carbon dioxide /ˋkɑːbən daɪˋɑksaɪd/
clotting factor /ˋklɑtɪŋ ˋfæktə/
coagulation *n* /kəuˋægjuleɪʃən/
complete blood count /kəmˋpliːt blʌd kaunt/ (CBC)
deliver *v* /dɪˋlɪvə/
differential diagnosis /ˌdɪfəˋrenʃəl daɪəgˋnəusɪs/
enzyme *n* /ˋenzaɪm/
erythrocyte /ɪˋrɪθrəusaɪt/ = red blood cell (RBC)
erythrocyte sedimentation rate /ɪˋrɪθrəusaɪt ˌsedɪmənˋteɪʃən reɪt/ (ESR)
exclude *v* /ɪkˋskluːd/
flexible *adj* /ˋfleksɪbl/
haemoglobin *n* /ˌhiːməˋgləubɪn/
haemostasis *n* /ˌhiːməˋsteɪsɪs/
leukocyte /ˋljuːkəusaɪt/ = white blood cell (WBC)
multiply *v* /ˋmʌltɪplaɪ/
phagocytosis *n* /ˌfægəˌsaɪˋtəusɪs/
plasma *n* /ˋplæzmə/
rare *adj* /reə/
thrombocyte /ˋθrɑmbəsaɪt/ = platelet *n* /ˋpleɪtlət/
vessel *n* /ˋvesəl/
waste (product) *n* /weɪst (ˋprɑdʌkt)/

Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

Test Questions

1. About myself and my studies at a higher medical school.
2. A higher medical school where I study.
3. Students' studies and how they spend their free time.
4. Medical education in Russia.
5. Medical education in the USA and the UK.
6. Features of medical education in Russia and English-speaking countries (the USA and UK).
7. Names of different medical specialties and jobs of different specialists.
8. Daily routine of physicians.
9. Specific jobs of different specialists.
10. Healthcare system in the UK and the USA.
11. Features of healthcare system in Russia and English-speaking countries.
12. Ethics, medical ethics and bioethics.
13. The main principles and rules of medical bioethics.
14. Types of medical institutions providing health care.
15. Hospital departments and hospital jobs.
16. The work of the hospital staff.
17. Duties of a doctor in the hospital.
18. The procedure of clinical examination of patients.
19. The results of the physical examination of patients.
20. Different types of medical emergencies.
21. First aid procedures, instructions how to give first aid.
22. Different types of pharmacy.
23. The work of chemist's shops.
24. Types and forms of medications and ways of their storage.
25. Different types of medications.
26. The routes of drug administration.
27. Directions for drug use.
28. Nutritional value of different foods.
29. Balanced and unbalanced diet.
30. Role of balanced diet for person's health.
31 Give recommendations as to healthy nutrition
32 The structure of the human body.
33. The organs of the oral, thoracic and pelvic cavities.
34. The structure of the extremities.
35. The structure of the cell.
36. Chemical substances of the cell.
37. Basic types of tissues.
38. The structure of the organs of the human body.
39. The main bones of the human body.
40. The processes of bone formation and growth.
41. Types of muscles.
42. The functions of three types of muscles.
43. Composition of blood.
44. Functions of three types of blood cells.
45. Blood types in the ABO system.
46. Mechanism of blood transfusion and indications for blood transfusion.

TASKS FOR THE FINAL TEST

I. Choose the best answer among A, B, C, and D. (Grammar Test)

1. It ___ that medical profession is the most difficult to master.
a) considers b) consider c) is considering d) is considered

2. Your presentation should ___ by the lecturer.
a) to be checked b) to check c) check d) be checked

3. The scientists ___ already ___ the new equipment for the dental surgery.
a) have … tested b) haven't … tested c) had … tested d) hadn't … tested

4. I'm afraid you won't be able to leave on Sunday. Treatment ___ by the end of the week.
a) has not completed b) hasn't been completed
c) won't have completed d) won't have been completed

5. My friend said that he _____ at the lecture on biochemistry the day before.
a) wasn't b) isn't c) hasn't been d) hadn't been

6. Tomorrow I will talk to the professor ____ daughter is my group mate.
a) who b) whose c) that d) these

7. "You may take these books to the library." "Which ____? There are so many on the shelf."
a) ones b) that c) one d) those

8. Medical science managed _____ smallpox.
a) eradicate b) eradicating c) to eradicate d) to be eradicated

9. There will be only five of us at the party. Could you invite ____ else?
a) someone b) anyone c) no one d) anything

10. The patient felt rather well so the physician administered ____ antibiotics ____ analgesics.
a) either…or b) both…and c) neither…nor d) not only… but also

11. One ___ that potent drugs may cause serious side effects.
a) is believed b) believe c) is believing d) believes

12. The doctor agreed ___ on this patient in a week.
a) to operate b) be operated c) to be operated d) will operate

13. Up to now my brother and his friend ___ only 10 tasks for the module.
a) prepared b) has prepared c) have prepared d) prepare

14. My friend ___ at the module test because he _____ the material properly.
a) failed… hadn't revised b) failed … didn't revise
c) fail … hasn't revised d) had failed … didn't revise

15. Any pharmacy needs an area _____ drugs.
a) to be stored b) storing c) stored d) to store

16. The nurse ___is giving injections in your ward is very experienced.
a) which b) whose c) who d) of which

17. "Let's go to the laboratory tomorrow at 8.00." "I don't want to go ___ so early."
a) somewhere b) then c) there d) everywhere

18. No cases of poliomyelitis ___ for the last two decades.
a) have been reported b) has been reported c) have reported d) were reported

19. I'll have to buy a new stethoscope. I could find mine _____.
a) everywhere b) somewhere c) anywhere d) nowhere

20. He knows nothing about _____ bones _____ muscles.
a) either … or b) neither … no c) and… and d) and… or

21. Does your friend live _____ in Switzerland?
a) everywhere b) nowhere c) somewhere d) anywhere

22. You should _____ the alternatives to drugs.
a) to be checked b) be checked c) to check d) check

23. ___ you ___ that medication yet?
a) Had … taken b) Have … taken c) Did … take d) Do … take

24. Where ___she ___ before she started working at our hospital?
a) did .. study b) has … studied c) had … studied d) do … study

25. My friend asked me where I _____ to spend my summer holidays.
a) would b) was going c) will d) am going

26. I would recommend you the doctor ____ the best surgeon in our hospital.
a) who is b) when is c) which is d) what is
27. Do you have a stethoscope? If not, you may take the ___ on the table.
a) ones b) it c) that d) one
28. One ___ that the first drugstores were opened in Baghdad in 754.
a) supposing b) is supposed c) supposes d) suppose
29. This method ___ by the specialists of our clinic.
a) is developed b) is developing c) developed d) has been developed
30. There are ___ universal donors ___ universal recipients.
a) not only … but also b) either … or c) neither … nor d) and … and
31. Jane wanted _____ a qualified medical treatment.
a) to give b) to be giving c) to be given d) giving
32. She _____a surgeon two years ago.
a) becomes b) became c) has become d) had become
33. My brother _____ home since last Sunday.
a) wasn't b) hasn't been c) hadn't been d) isn't
34. Patients with obesity are recommended to reduce consumption ____ carbohydrates.
a) from b) with c) of d) on
35. Yesterday while I _____ for my English test, my friend _____ me.
a) prepared, called b) preparing, calling
c) was preparing, called d) am preparing, is calling
36. It is _____ that this drug shouldn't be taken before going to bed.
a) consider b) considered c) considering d) been considered
37. By the 1st of June I _____my essay.
a) will complete b) will be completed
c) will have completed d) will have been completed
38. The doctor thought that he _____ her patient once more on Wednesday.
a) will examine b) examined c) examines d) would examine.
39. Dr Jones _____ articles have been published in our journal is a very famous researcher.
a) what b) those c) whose d) that
40. Pharmacy is a field of health sciences _____ on safe and effective use of medications.
a) focused b) focus c) focusing d) has focused
41. Muscles contract _____ one bone towards another.
a) pulled b) be pulled c) pulling d) pull
42. I hope by July I _____ all my exams.
a) will pass b) am passing c) will have passed d) would have passed
43. May I take _____´s stethoscope?
a) anybody b) someone c) no one d) anything
44. I _____ Jane for 4 years.
a) knew b) know c) have known d) had known
45. Nobody _____ to support him in this situation.
a) doesn´t want b) didn´t want c) want d) wants
46. Patients expect _____ the procedure in detail.
a) to explain b) to be explaining c) to be explained d) explaining
47. Multicellular organisms are _____ of the combination of cells, tissues and organs.
a) composing b) composes c) being composed d) composed
48. The x-ray showed that the bone _____ eight weeks before.
a) was broken b) broke c) had been broken d) has been broken
49. She _____ for a walk only after she _____ her report in physics.
a) goes, finished b) went, had finished
c) went, has finished d) has gone, had finished
50. ____ the nurse ____ gave me analgesic yesterday.
a) It is...when b) It was....when c) It was....that d) It was ....who
51. The patient said that he _____ the following Monday.
a) will have been operated on b) will be operated on
c) was operated on d) would be operated on

52. She _____ the cadaver the day before yesterday.
a) dissects b) has dissected c) had dissected d) dissected
53. The physician said that the patient ____ feel gastric discomfort.
a) may b) can c) might have d) might
54. I hope this weekend will be _____ to remember.
a) which b) whose c) one d) this
55. _____ could do this exercise.
a) Something b) Somewhere c) Everything d) No one
56. I am sure you _____ your presentation by tomorrow night.
a) finish b) will finish c) will have finished d) have finished
57. She _____ hundreds of doctors in her life.
a) visited b) visits c) has visited d) was visiting
58. Yesterday I met Mr McKnight, the professor _____ lectures I like very much.
a) which b) that c) whom d) whose
59. He wanted his proposal _____.
a) to accept b) to be accepted c) to have accepted d) to be accepting
60. A lecture on osteoporosis _____ already _____ by this prominent professor.
a) will be delivered b) will have been delivered
c) has been delivered d) has delivered
61. They ___ pregnant women shouldn't take aspirin.
a) considers b) consider c) are considered d) are considering
62. A doctor provides first aid to all regardless of their ability ___.
a) to pay b) pay c) to be paid d) be paid
63. I ___ articles since I returned to clinic.
a) haven't written b) hasn't written c) didn't write d) don't write
64. I went to bed after I _____ all the English words.
a) have memorised b) had memorised c) memorised d) would memorise
65. He said that CSMU students _____ to university on Saturday and Sunday.
a) didn't go b) don't go c) won't go d) wouldn't have gone
66. It was the nervous system ___ our group chose as a topic for presentation.
a) what b) who c) why d) that
67. May I help you with this procedure? I'll ___ immediately.
a) do b) make it c) do it d) do one
68. The patient ___by the doctor before the results of his analyses _____ ready.
a) had been examined… were b) has been examined … were
c) was examined … had been d) examined … were
69. ____ is safe from the flu. You can catch it at any place.
a) Anybody b) Everybody c) Somebody d) Nobody
70. The doctor prescribed ___ balanced diet ___ some medications to the patient.
a) either … or b) both … and c) nothing … nor d) and … and
71. One ___ that anaemia can be caused by chronic blood loss.
a) was believed b) is believed c) believed d) believes
72. It is such a pity that Kate felt unwell and had _____ early.
a) to leave b) to be left c) leave d) be left
73. They ___ just ___ an exam in chemistry.
a) has … passed b) have … passed c) were … passing d) had… passed
74. By the end of the first year medical students ___ all Latin terms.
a) will have learned b) would have learned c) will learn d) would learn
75. The lecturer said the biggest bone in the body ___the femur in the thigh.
a) am b) are c) was d)were
76. Yesterday we met Mr Goldsmith ___ students had won competitions.
a) of which b) who c) whose d) which
77. Oh, there are some new journals in the library. Which ___ would you take?
a) one b) that c) those d) these
78. This method ___ never ___ in clinical practice.
a) has … been used b) have … been used c) has … used d) have … used

79. Can you ask ___to help me?
a) someone b) somebody c) anybody d) nobody
80. We don't need ____plasma ___ blood for transfusion.
a) either … or b) both … and c) neither … nor d) not only … but also
81. It ___ that the most popular type of chemist's shops is community pharmacy.
a) knowing b) knows c) is known d) was known
82. People expect _____ advice on minor problems by a pharmacist.
a) to be given b) to give c) be given d) giving
83. Why ___ he ___ at the anatomy test yesterday?
a) did … fail b) has … failed c) have … failed d) had …failed
84. The patient _____ the course of antibiotics by next Saturday.
a) will complete b) is completing c) completes d) will have completed
85. He said the results _____ to the GP yet.
a) has not been brought b) had not been brought
c) were not brought d) would not be brought
86. Mitochondria provide energy _____ cells need to function.
a) of which b) who c) whose d) which
87. Which computer did you use? – I used the ____ in your surgery.
a) one b) those c) that d) ones
88. My pen won't write. Can I take _____'s pen?
a) someone b) everyone c) no one d) anyone
89. _____ Robert Boyle _____ reported the first transfusion between animals.
a) It is ___ that b) It was ____ that c) It was ___ who d) It is ___ who
90. Blood group 0 has ___ A ___ B antigens.
a) neither … nor b) either … or c) both … and d) and … also
91. My friend promised that by the end of the term she _____ all the new words.
a) will learn b) would learn c) will have learnt d) would have learnt
92. We can improve muscle tone _____ physical exercises.
a) done b) having done c) doing d) do
93. Yesterday I met Dr Simpson _____ daughter is a medical student, too.
a) that b) those c) which d) whose
94. This patient expects _____ blood transfusion tomorrow.
a) to give b) be giving c) to be given d) giving
95. We went home only when all the tests _____.
a) were done b) did c) had been done d) have been done
96. Is there _____ else in the waiting area?
a) someone b) no one c) anyone d) everyone
97. The doctor said that the patient ____ hypnotics.
a) takes b) is taking c) was taking d) will take
98. We _____ more than twenty module tests so far.
a) have passed b) passed c) has passed d) have been passed
99. My father _____ a new sphygmomanometer at the chemist's three days ago.
a) buys b) has bought c) had bought d) bought
100. A lecture on balanced diet _____ by professor Miles lately.
a) will be delivered b) will have been delivered
c) has been delivered d) has delivered
101. A prescription area _____ with a prescription counter.
a) equipped b) is equipping c) is equipped d) has equipped
102. One _____ that it is very difficult to study at a medical school.
a) knows b) is known c) knew d) was known
103. Average life expectancy in Europe _____ dramatically over the last hundred years.
a) had risen b) rose c) is rising d) has risen
104. This patient _____ just _____ by the consultant.
a) has … examined c) had … been examined
b) has … been examined d) had … examined
105. My brother has dreamt _____ a surgeon since childhood.
a) becoming b) become c) will become d) to become

106. I was late. So when I came the lecture _____.
a) had started b) started c) would start d) has started
107. The article _____ by next Friday.
a) will be finished b) will have finished c) will finish d) will have been finished
108. He said that he ____ at home the day before.
a) was b) has been c) had been d) would be
109. Dr Smith is the physician ____ methods of therapy are very popular.
a) which b) that c) those d) whose
110. It ____ antiemetics ___ prevent vomiting.
a) is ….that b) is…which c) was….that d) was….who
111. ____ anyone ___ patient N. yet?
a) Does…examine b) Is …examining c) Had….examined d) Has…examined
112. It ___ antihistamines ___ are prescribed to allergic patients.
a) was…who b) was…that c) is….that d) is…who
113. The right lung is bigger than the left _____.
a) one b) ones c) those d) that
114. Don't worry, Mum. I _____ everything by the exam.
a) will have revised b) have revised c) will revise d) would have revised
115. Physicians ___ antibiotics for more than 100 years.
a) use b) are using c) have used d) used
116. Vitamins and different minerals should ___ in our diet.
a) supply b) to be supplied c) to supply d) be supplied
117. After Peter ____ his homework, he ____ out.
a) had completed, went b) has completed, went
c) completes, went d) will complete, will go.
118. The nurse said that Dr Brown ___ an operation at that moment.
a) is making b) made c) was making d) had made
119. antihypertensive drugs are used _____ high blood pressure.
a) to treat b) treat c) to be treated d) be treated
120. _____ could answer the question correctly.
a) Something b) Nothing c) Everything d) No one

II. A. Report the following sentences:
1. The surgeon said: "This drug has certain side effects."
The surgeon said that _____.
2. My friend said: "I was at the conference last year."
My friend said that _____.
3. The lecturer said: "I'll have checked your papers by Monday."
The lecturer said that _____.
4. The nurse said: "Dr Johnson is making an operation."
The nurse said that _____.
5. The professor said: "Your mother will recover in a week."
The professor said that _____.
6. The paediatrician said: "In deficiency of Vitamin D your child may develop rickets."
The paediatrician said that _____.
7. The patient said: "I am not feeling very well."
The patient said that _____.
8. My mother said: "I hope you visited your granny last weekend."
My mother said that _____.
9. The nurse said: "After taking these drugs you may have nausea."
The nurse said that _____.
10. The patient said: "I cannot move my right foot."
The patient said that _____.
11. Our lecturer said: "I have answered all your questions."
Our lecturer said that _____.
12. The physician said: "I am examining a patient with osteoporosis now."
The physician said that _____.

13. The patient said: "The professor examined me yesterday."
The patient said that _____.
14. The doctor said: "I will confirm my diagnosis after tests."
The doctor said that _____.
15. The visitor said to Jane: "I can bring you more books."
The visitor said to Jane that _____.
16. The patient said: "I will be discharged from the hospital tomorrow."
The patient said that _____.
17. The doctor said: "This patient had rickets in childhood."
The doctor said that _____.
18. The nurse said to the patient: "I can give you another injection of a pain-killer."
The nurse said to the patient that _____.
19. The nurse said: "You may see the dentist on Monday."
The nurse said that _____.
20. The doctor said: "I've prescribed you some painkillers."
The doctor said that _____.
21. The patient said: "I don't normally have headaches."
The patient said that _____.
22. The nurse said: "The doctor will see you next Tuesday."
The nurse said that _____.
23. The doctor said: "The consultant examined your mother yesterday."
The doctor said that _____.
24. Jack said: "My friend never goes to hospital."
Jack said that _____.
25. My friend said: "I've found something interesting on the Internet."
My friend said that _____.
26. The doctor said: "I am looking for my stethoscope."
The doctor said that _____.
27. The nurse said to the patient: "Today you can eat only porridges."
The nurse said to the patient that _____.
28. The professor said: "Robert Hook discovered a cell in 1665."
The professor said that _____.
29. The doctor said: "This drug is not safe for pregnant women."
The doctor said that _____.
30. The patient said: "I may go home tomorrow."
The patient said that _____.
31. The professor said: "Students cannot write out prescriptions to patients."
The professor said that _____.
32. The doctor said: "I am waiting for you next Wednesday."
The doctor said that _____.
33. The patient said: "Two years ago I had appendicitis."
The patient said that _____.
34. The professor said: "Vitamin C was isolated in 1932."
The professor said that _____.
35. The nurse said to me: "I am going to take your blood pressure."
The nurse said to me that _____.
36. The patient said: "The doctor will confirm his diagnosis after investigations."
The patient said that _____.

B. Transform the following sentences from active into passive voice.

1. Someone has already described the digestive system to the students.
_____.
2. The doctor will x-ray the patient's leg.
_____.
3. Someone had brought the stethoscope before we left. (*Make changes in the 1st part only*)
_____.
4. Students observed organelles under the microscope.
_____.

5. Someone has already described all blood types.

_____.

6. I hope she will have returned the book by next month.

_____.

7. The neck connects the trunk with the head.

_____.

8. Someone has already checked all the students' works.

_____.

9. The epithelial tissue lines the internal organs.

_____.

10. Students will have described all the pictures by tomorrow.

_____.

11. The shoulder girdle connects the trunk with the upper limbs.

_____.

12. They have already discussed nutrition for patients with obesity.

_____.

13. Someone has just x-rayed the spinal column.

_____.

14. Immovable joints unite skull bones.

_____.

15. Someone has already explained the hospital rules to a new patient.

_____.

16. The doctor will discharge him tomorrow.

_____.

17. Something has weakened the bones in this child.

_____.

18. They will examine twenty patients on Thursday.

_____.

19. Dr Smith has just given me a referral to a cardiologist.

_____.

20. Someone will do the task next month.

_____.

21. The professor will not deliver a lecture on anatomy next Friday.

_____.

22. They have already operated on three patients today.

_____.

23. Dr Lind published the Treatise on the Scurvy in 1753.

_____.

24. Someone will have checked all the students' works by Sunday.

_____.

III. Provide the synonyms to the following words.

a painkiller	an operation	platelets
femur	slow twitch fibres	a skull
a chemist's (shop)	a skull	a vertebral column
to finish	an oral cavity	a jaw bone
erythrocytes	a sternum spine	white blood cells
to give blood	passage	blood clotting
extremity	adverse reaction	a brand name
toxic	respiration	a druggist
somebody	leukocytes	blood clotting
drug	pharmacist	an undesirable effect
limbs	nourishing substance	erythrocytes
to link		

IV. Provide the antonyms to the following words:

recipient	atrophy	fast twitch fibres
dangerous	a contraindication	voluntary
compatible	dangerous	liquid
the generic name	rough endoplasmic reticulum	indicated
striated	unicellular	slow twitch fibres
involuntary	saturated	contract
junk food	to decrease	atrophy
solid	elastic	a trade name
balanced		

V. Give the definition to the following terms:

mitosis	a lymph node	a neck
phagocytes	rickets	type a blood
obesity	hypertrophy	an organ system
an organ	smooth muscles	an antigen
antihistamines	complete blood count	antiemetics
lymph	a dispensary	a nose
haemoglobin	platelets	type o blood
osteoporosis	antihypertensive drugs	anticoagulants
histopathology	mitochondria	a waiting area
a cell	dosage	type b blood
cytoplasm	carbohydrates	a prescription area
phagocytosis	overdose	antineoplastics
a cranium	nerve tissue	muscle tone
atrophy	type ab blood	ossification
plasma	fats	sedatives
a skeleton	a private counselling area	a pharmacy
a vertebra	epithelial tissue	a trunk
a cell	haemostasis	avitaminosis
a tissue	diuretics	a nucleus
vitamins	proteins	

Последнее задание будет выглядеть следующим образом:

V. Fill in the gaps with the words or word combinations which suit best. There are two extra words which you do not need to use. Then write three questions to the text.

Text 1

lymph, liquid, nervous, support, healthy, cells, coverings, contraction, protection

Tissues are materials made up of groups of similar _____ . There are four main types of tissue in the human body. Epithelial one forms _____ like the skin, lining membranes and glands. Connective tissue helps to _____ and bind parts together, holding them in place. There are several types of connective tissue including bone, cartilage, ligaments, fatty and elastic tissue, also blood and _____ (the fluid tissues). Muscular tissue has the power of _____, which causes movement. _____ one conducts nerve impulses. Tissues are jointed into larger units called organs, such as the heart, lungs, brain, liver. A system is a group of organs, which together carry out one of the essential functions of the body. There are nine systems in the human organism. All of these systems work harmoniously together in a _____ body.

1. _____?
2. _____?
3. _____?

Так как все тексты будут основаны на материалах учебника, мы не включаем их в тренировочные материалы. Изучайте образец и просматривайте все тексты.

VOCABULARY

adj = adjective /`ædʒıktıv/ имя прилагательное
adv = adverb /`ædvɜ:b/ наречие
conj = conjunctive /kən`dʒʌŋktıv/ союз, союзное слово
irreg = irregular /ı`regjulə/ неправильный *(о глаголах)*
pl = plural /`pluərəl/ множественное число
prep = preposition /ˌprepə`zıʃən/ предлог
pron = pronoun /`prəunaun/ местоимение
pp = past participle /pɑ:st `pɑ:tısıpl/ причастие прошедшего времени
n = noun /naun/ имя существительное
v = verb /vɜ:b/ глагол

A

abdomen /`æbdəmən/ *n* брюшная полость, живот
abdominal /æb`dɑmınəl/ *adj* абдоминальный, брюшной
abnormality /ˌæbnɔ:`mælətı/ *n* отклонение, аномалия
absorb /əb`zɔ:b/ *v* поглощать, абсорбировать
accept /ək`sept/ *v* принимать, соглашаться
access /`æksəs/ *n* доступ; *v* получить доступ
accessible /ək`sesəbl/ *adj* доступный, достижимый
accident /`æksıdənt/ *n* несчастный случай
accompany /ə`kʌmpənı/ *v* сопровождать
accord /ə`kɔ:d/**: of one's own accord** само по себе, без чьего-либо участия
according to /ə`kɔ:dıŋ tə/ в соответствии с
account /ə`kaunt/ **for** являться причиной, объяснять
accumulate /ə`kju:mjuleıt/ *v* накапливать, скапливаться
ache /eık/ *n* боль
achieve /ə`ʧi:v/ *v* достигать
achievement /ə`ʧi:vmənt/ *n* достижение
acne /`æknı/ *n* акне, угри
actin /`æktın/ *n* актин *(белок мышечных волокон)*
activity /æk`tıvıtı/ *n* активность, деятельность
acute /ə`kju:t/ *adj* острый *(о боли)*
add /æd/ *v* прибавлять, присоединять
additional /ə`dıʃənəl/ *adj* добавочный, дополнительный
adequacy /`ædıkwəsı/ *n* соответствие, адекватность
adequate /`ædəkwət/ *adj* соответствующий, адекватный
admit /əd`mıt/ *v* принимать, допускать
adult /`ædəlt, ə`dʌlt/ *n* взрослый человек; *adj* взрослый
advance /əd`vɑ:ns/ *n* достижение, успех; *v* делать успехи, развиваться; **in advance** заранее
advanced /əd`vɑ:nst/ *adj* современный, «продвинутый»
advantage /əd`vɑ:ntıdʒ/ *n* преимущество
adverse /`ædvə:s/ *adj* неблагоприятный, побочный
advice /əd`vaıs/ *n* совет
advise /əd`vaız/ *v* советовать
aerosol /`eərəusɑl/ *n* аэрозоль
affect /ə`fekt/ *v* оказывать *(вредное)* воздействие
affected /ə`fektıd/ *adj* поражённый *(болезнью)*
age /eıdʒ/ *n* возраст; век
aging /`eıdʒıŋ/ *n* старение; *adj* стареющий
aid /eıd/ *v* оказывать помощь
aim /eım/ *n* цель; *v* ставить целью
airways /`eəweız/ *n pl.* дыхательные пути
albumin /`ælbjumın/ *n* альбумин, белок
alike /ə`laık/ *adj* подобный, похожий
alimentary /ˌælı`mentərı/ *adj* пищеварительный
allergic /ə`lə:dʒık/ *adj* аллергический
almost /`ɔ:lməust/ *adv* почти
alter /`ɔ:ltə/ *v* изменять
alternative /ɒl`tɜ:nətıv/ *n* альтернатива, выбор
although /ɔ:l`ðəu/ *conj* хотя; несмотря на то что
among /ə`mʌŋ/ *prep* среди
amount /ə`maunt/ *n* количество, сумма
anaemia /ə`ni:mıə/ *n* анемия
anaemic /ə`ni:mık/ *adj* анемичный
anaesthetic /ˌænəs`θetık/ *n* обезболивающее средство; *adj* обезболивающий
analgesic /ˌænəl`dʒi:zık/ *n* болеутоляющее средство; *adj* болеутоляющий
ankle /`æŋkl/ *n* лодыжка
anorexia /ænə`reksıə/ *n* анорексия, отвращение к пище
antibody /`æntıˌbɑdı/ *n* антитело
anticoagulant /ˌæntıkəu`ægjulənt/ *n* антикоагулянт, противосвертывающее средство
antiemetic /ˌæntı ı`metık/ *n* противорвотное средство; *adj* противорвотный
antihistamine /ˌæntı`hıstəmın/ *n* антигистаминное средство; *adj* антигистаминный
antihypertensive /ˌæntıˌhaıpə`tensiv/ *n* гипотензивное средство; *adj* гипотензивный, снижающий кровяное давление
anti-infective /ˌæntı ın`feltıv/ *n* антибактериальное средство

anti-infective /ˌæntɪ ɪn`feltɪv/ *n* антибактериальное средство; *adj* антибактериальный
anti-inflammatory /ˌæntɪ ɪn`flæmətrɪ/ *n* противовоспалительное средство; *adj* противовоспалительный
antineoplastic /ˌæntɪˌniːəu`plæstɪk/ *n* противоопухолевое средство; *adj* противоопухолевый
anxiolytic /`æŋksaɪəlɪtɪk/ *n* седативное средство; *adj* седативный, противотревожный
aplastic anaemia /ə`plæstɪk ə`niːmɪə/ апластическая анемия
appearance *n* внешний вид
appendix /ə`pendɪks/ *n* аппендикс; приложение
appliance /ə`plaɪəns/ *n* аппарат, прибор
applicant /ˈæpləkənt/*n* кандидат, претендент
apply /ə`plaɪ/ *v* применять
approach /ə`prəutʃ/ *n* подход
appropriate /ə`prəupriət/ *adj* подходящий, соответствующий
approximately /ə`prɔksɪmətlɪ/ *adv* приблизительно, почти
arm /ɑːm/ *n* рука *(предплечье + плечо)*
armpit /`ɑːmpɪt/ *n* подмышечная ямка
artery /`ɑːtərɪ/ *n* артерия
arthritis /ɑː`θraɪtɪs/ *n* артрит
assess /ə`ses/ *v* оценивать
assure/ə`ʃuə/ *v* уверять, убеждать
assured /ə`ʃuəd/ *adj* уверенный
atrophy /`ætrəfɪ/ *n* атрофия, истощение
atrophy *n* /`ætrəfɪ/
attach /ə`tætʃ/ *v* прикреплять, присоединять(ся)
average /`ævərɪdʒ/ *adj* средний, среднестатистический
avitaminosis /ˌævɪˌtemɪ`nəusɪs/ *n авитаминоз*
avoid /ə`vɔɪd/ *v* избегать
award /ə`wɔːd/ *v* присуждать *(награду)*
aware /ə`weə/ *adj* осведомлённый; **be aware of sth** знать, осознавать
axillary /æk`sɪlərɪ/ *adj* подмышечный

B

bachelor /`bætʃələ/ *n* бакалавр
bacterium (*pl.* **bacteria**) /bæk`tɪərɪəm (bæk`tɪərɪə)/ *n* бактерия
balanced diet /`bælənst daɪət/ сбалансированное питание
ban /bæn/ *v* запрещать
bandage /`bændɪdʒ/ *n* бинт, повязка; *v* перевязывать, бинтовать
barrier /`bærɪə/ *n* барьер, преграда
bean /biːn/ *n* боб, фасоль
behave /bɪ`heɪv/ *v* вести себя
behaviour /bɪ`heɪvjə/ *n* поведение
belief /bɪ`liːf/ *n* убеждение
believe /bɪ`liːv/ *v* верить
below /bɪ`ləu/ *adv* внизу; *prep* ниже
beneficial /ˌbenɪ`fɪʃəl/ *adj* полезный, целебный
benefit /`benəfɪt/ *n* польза
beriberi /`berɪ`berɪ/ *n* бери-бери, дефицит тиамина
billion /`bɪljən/ *num* миллиард
bioassay /baɪə`æseɪ/ *n* биотест, биологический анализ
biopsy /`baɪəpsɪ/ *n* биопсия
biotin /`baɪətɪn/ *n* биотин, один из витаминов В комплекса
bladder /`blædə/ *n (мочевой)* пузырь, *тж.* **urinary bladder** /`juərɪnərɪ `blædə/
bleeding /`bliːdɪŋ/ *n* кровотечение
blood /blʌd/ *n* кровь
blood flow /blʌd fləu/ кровоток
blood loss /blʌd lɑs/ кровопотеря
blood test /blʌd test/ анализ крови
blood testing /blʌd `testɪŋ/ исследование (анализ) крови
bloodstream /`blʌdstriːm/ *n* кровоток
blueprint /`bluːprɪnt/ *n* синька
bolus /`bəuləs/ *n* болюс; пищевой комок
bone /beun/ *n* кость
bone marrow /bəun `mærəu/ *n* костный мозг
borrow /`bɔrəu/ *v* занимать, заимствовать
bowel /bauəl/ *n, usually pl.* кишечник
brain /breɪn/ *n* мозг
bran /bræn/ *n* отруби
branch /brɑːntʃ/ *n* ветвь, отрасль; *v* разветвляться
brand name /brænd neɪm/ фирменное название товара
break /breɪk/ *v irreg* ломать, разбивать; **break up** распадаться; **break down** расщеплять(ся)
breast /brest/ *n* грудь, молочная железа
breastbone /`brestbəun/ = **sternum** /`stəːnəm/ *n* грудина
breathe /briːð/ *v* дышать
breathing /briːðɪŋ/ *n* дыхание
bring /brɪŋ/ *v irreg* приносить; **bring about** вызывать, осуществлять; **bring up** ***(food)*** вырвать *(пищу)*
brittle /`brɪtl/ *adj* хрупкий, ломкий
broad /brɔːd/ *adj* широкий, просторный
bug /bʌg/ *n* жучок
bulimia /bu`lɪmɪə/ *n* булимия
bundle /`bʌndl/ *n* пучок
burn /bəːn/ *n* ожог

C

calciferol /kæl`sɪfərɔl/ *n* кальциферол, витамин D
calcium /`kælsɪəm/ *n* кальций
calf /kɑ:f/ *n pl.* **calves** икра *(ноги)*
calm /kɑ:m/ *adj* спокойный; *v* успокаивать
cancer /`kænsə/ *n* рак *(заболевание)*
capillary /kə`pɪlərɪ/ *n* капилляр
capitalise /`kæpɪtəlaɪz/ *v* писать с большой буквы
capsule /`kæpsju:l/ *n* капсула
carbohydrate /ˌkɑ:bəu`haɪdreɪt/ *n* углевод
carbon dioxide /`kɑ:bən daɪ`ɑksaɪd/ углекислота, углекислый газ
cardiac arrest /`kɑ:dɪək ə`rest/ остановка сердечной деятельности
cardiac muscle /`kɑ:dɪək mʌsl/ сердечная мышца
care /keə/ *n* забота; *v* заботиться
carefully /keəfəl/ *adv* осторожно
carry /`kærɪ/ *v* нести, переносить
cartilage /`kɑ:tɪlɪʤ/ *n* хрящ
cause /kɔ:z/ *n* причина; *v* вызывать, быть причиной
caution /`kɔ:ʃən/ *n* осторожность; предостережение
cavity /`kævɪtɪ/ *n* полость
CBC (complete blood count) /kəm`pli:t blʌd kaunt/ ОАК *(общий анализ крови)*
cell /sel/ *n* клетка *(организма)*
cell membrane /sel `membreɪn/ клеточная оболочка или мембрана
cereals /`sɪərɪəlz/ *n pl.* злаки, блюдо из злаков (хлопьев)
certain /`sə:tən/ *adj* определенный
cervical /`sə:vɪkl/ *adj* шейный
challenge /`ʧælɪnʤ/ *v* бросать вызов, побуждать к действиям
challenging /`ʧælɪnʤɪŋ/ *adj* побуждающий к действиям, требующий напряжения сил
charity /`ʧærɪtɪ/ *n* благотворительность; благотворительная организация
chart /ʧɑ:t/ *n* таблица, график
check /ʧek/ *v* проверять
chemist /`kemɪst/ *n* химик; BE аптекарь
chemist's (shop) BE /`kemɪsts (ʃɑp)/ аптека
chemotherapy /ˌki:məu`θerəpɪ/ *n* химиотерапия, лечения болезни химическими препаратами
chest /ʧest/ *n* грудная клетка
chew /ʧju:/ *v* жевать
chill /ʧɪl/ *n* озноб
chin /ʧɪn/ *n* подбородок
chromosome /`krəuməsəum/ *n* хромосома
chronic /`krɒnɪk/ *adj* хронический
church /ʧɜ:ʧ/ *n* церковь
chyle /kaɪl/ *n* млечный сок, хилус
cilia /`sɪlɪə/ *n pl.* реснички
circuit /`sə:kɪt/ *n* окружность; кругооборот
circulation /ˌsə:kju`leɪʃən/ *n* кровообращение
circulatory /ˌsə:kju`leɪtərɪ/ *adj* кровеносный, циркуляторный
circumstance /`sɜ:kəmstæns/ *n* обстоятельство
civil /`sɪvɪl/ *adj* гражданский
clavicle /`klævɪkl/ *n* ключица
clinical trial /`klɪnɪkəl traɪəl/ клиническое испытание
clot /klɑt/ *n* сгусток; *v* свертываться
clotting factor /`klɑtɪŋ `fæktə/ фактор свертывания крови
clump /klʌmp/ *v* образовывать группу
cluster /`klʌstə/ *n* скопление
coagulation /kəu`ægjuleɪʃən/ *n* коагуляция, свертывание крови
coat rack /kəut ræk/ вешалка
coccyx /`kɑksɪks/ *n* копчик, хвостец
cold /kəuld/ *n* простуда, *мж.* **common cold**
collagen /`kɑləʤən/ *n* коллаген
collarbone /`kɑləbəun/ *n* ключица
combat /`kɑmbət/ *v* бороться
combine /kəm`baɪn/ *v* сочетать, соединять
common /`kɒmən/ *adj* распространенный
commonly /`kɑmənlɪ/ *adv* обычно, в большинстве случаев
community pharmacy /kə`mju:nɪtɪ `fɑ:məsɪ/ розничная аптека
compare /kəm`peə/ *v* сравнивать
compatible /kəm`pætɪbl/ *adj* совместимый
complain /kəm`pleɪn/ *v* жаловаться *(**of** – на)*
complaint /kəm`pleɪnt/ *n* жалоба
complete /kəm`pli:t/ *v* завершать; *adj* полный
complex /`kɔmpleks/ *adj* сложный
compose /kəm`pəuz/ *v* формировать, составлять
compound /kəm`paund/ *n* смесь, соединение; *adj* сложный, составной; *v* смешивать
conception /kən`sepʃən/ *n* зачатие
concern /kən`sɜ:n/ *v* касаться, иметь отношение
conclusion /kən`klu:ʒən/ *n* вывод, заключение
condition /kən`dɪʃən/ *n* условие; состояние
conduct /kən`dʌkt/ *v* проводить
confined /kən`faɪnd/ **to bed** прикованный к постеле
confirm /kən`fɜ:m/ *v* подтверждать
connective /kə`nektɪv/ *adj* соединительный
conscious /`kɑnʃəs/ *adj* сознательный
consequence /`kɔnsɪkwəns/ *n* последствие
conspicuous /kən`spɪkjuəs/ *adj* видимый, заметный

consume /kən`sju:m/ *v* потреблять
consumption /kən`sʌmpʃən/ *n* потребление
contain /kən`teɪn/ *v* содержать
continue /kən`tɪnju:/ *v* продолжать
continuing /kən`tɪnju:ɪŋ/ *adj* непрерывный
contraction /kən`trækʃən/ *n* сокращение *(мышц)*
contra-indication /ˌkɑntrəɪndɪ`keɪʃən/ *n* противопоказание
control /kən`trəul/ *v* контролировать, купировать
controversy /kən`trɑvəsɪ/ *n* разногласие
conventional /kən`venʃənəl/ *adj* традиционный, обычный
cookies /`kukɪz/ *n pl.* печенье
cork /kɔ:k/ *n* пробка *(вещество)*
corporeal /kɔ:`pɔ:rɪəl/ *adj* корпоральный, относящийся к телу
cosmetics /kɑz`metɪks/ *n pl.* косметические средства
cough /kɒf/ *n* кашель
counselling area /`kaunsəlɪŋ `eərɪə/ место для консультаций *(в аптеке)*
counter /`kauntə/ *n* прилавок
counteract /kauntə`rækt/ *v* противодействовать, нейтрализовать
cranial /`kreɪnɪəl/ *adj* черепной
cranium /`kreɪnɪəm/ = **skull** /skʌl/ *n* череп
create /krɪ`eɪt/ *v* создавать
creature /`kri:tʃə/ *n* создание, существо
crew /kru:/ *n* экипаж *(судна)*
crowd /kraud/ *n* толпа; *v* скапливаться, толпиться
crucial /`kru:ʃəl/ *adj* ключевой, решающий
curable /`kjuərəbl/ *adj* излечимый
cure /kjuə/ *v* излечить
current /`kʌrənt/ *adj* текущий
cut /kʌt/ *n* порез; *v irreg.* резать, порезать(ся)
cutaneous /kju`teɪnɪəs/ *adj* кожный
cytoplasm /`saɪtəuplæzm/ *n* цитоплазма

D

dairy /`deərɪ/ *adj* молочный
damage /`dæmɪʤ/ *n* повреждение; *v* повреждать
dangerous /`deɪnʤərəs/ *adj* опасный
data /`deɪtə/ *n pl* данные
deal /di:l/ **with** иметь дело с
debatable /dɪ`beɪtəbl/ *adj* спорный
decade /`dekeɪd/ *n* десятилетие
decisión-making /dɪ`sɪʒən `meɪkɪŋ/ *n* принятие решений
defect /dɪ`fekt/ *n* порок
defence /dɪ`fens/ *n* защита
defend /dɪ`fend/ *v* защищать
deficiency /dɪ`fɪʃənsɪ/ *n* недостаточность, дефицит
definition /ˌdefɪ`nɪʃən/ *n* определение
delicate /`delɪkət/ *adj* тонкий, чувствительный
deliver /dɪ`lɪvə/ *v* доставлять
dementia /dɪ`menʃə/ *n* слабоумие
dense /dens/ *adj* плотный, густой
depend /dɪ`pend/ *v* зависеть ***(on – от)***
depending on /dɪ`pendɪŋ ən/ в зависимости от
deposit /dɪ`pɑzɪt/ *n* отложение, осадок; *v* откладываться
derive /dɪ`raɪv/ **from** происходить от
describe /dɪ`skraɪb/ *v* описывать
destroy /dɪs`trɔɪ/ *v* разрушать
destruction /dɪ`strʌkʃən/ *n* разрушение, уничтожение
detect /dɪ`tekt/ *v* обнаруживать, выявлять
determine /dɪ`tɜ:mɪn/ *v* определять
develop /dɪ`veləp/ *v* развиваться
development /dɪ`veləpmənt/ *n* развитие
device /dɪ`vaɪs/ *n* прибор
diagnose /`daɪəgnəuz/ *v* диагностировать
diagnosis /daɪəg`nəusɪs/ *n* диагноз
dietary /`daɪətrɪ/ *adj* диетический, пищевой
differ /`dɪfə/ *v* различаться
differential diagnosis /ˌdɪfə`renʃəl daɪəg`nəusɪs/ дифференциальная диагностика
digest /daɪ`ʤest/ *v* переваривать *(пищу)*
digestive /daɪ`ʤestɪv/ *adj* пищеварительный
dilute /daɪ`lu:t/ *v* разбавлять, разводить
direct /dɪ`rekt/ *adj* прямой; *v* направлять
directions /dɪ`rekʃənz/ *n pl.* указания, инструкция
dirt /də:t/ *n* грязь
disadvantage /ˌdɪsəd`vɑ:ntɪʤ/ *n* недостаток, неудобство
discharge /dɪs`ʧɑ:ʤ/ *v* выписывать *(из больницы)*
discover /dɪs`kʌvə/ *v* открывать, обнаруживать
disease /dɪ`zi:z/ *n* болезнь
dislocation /dɪsləu`keɪʃən/ *n* вывих
disorder /dɪ`sɔ:də/ *n* расстройство, нарушение
dispensary /dɪs`pensərɪ/ *n* помещение для приготовления и хранения лекарственных средств
dispense /dɪs`pens/ *v* готовить и распространять *(лекарства)*
disseminated /dɪ`semɪneɪtɪd/ *adj* диссеминированный. распространенный
dissolve /dɪ`zɑlv/ *v* растворять
distribute /dɪs`trɪbju:t/ *v* распределять
distribution /dɪstrɪ`bju:ʃən/ *n* распространение
diuretic /daɪjuə`retɪk/ *n* мочегонное средство; *adj* мочегонный
diversity /daɪ`vɜ:sɪtɪ/ *n* разнообразие

divide /dɪ`vaɪd/ *v* разделять
divorce /də`vɔːs/ *n* развод
dizzy /`dɪzɪ/ *adj* испытывающий головокружение
donation /dəu`neɪʃən/ *n* отдача крови
donor /`dəunə/ *n* донор
dosage /`dəusɪʤ/ *n* доза; дозировка
dosage form /`dəusɪʤ fɔːm/ лекарственная форма
doubt /daut/ *n* сомнение; *v* сомневаться
drain /dreɪn/ *v* оттекать, отводить воду
drawer /`drɔːə/ *n* ящик *(выдвижной)*
dressing /`dresɪŋ/ *n* повязка
drinking water /`drɪnkɪŋ `wɔːtə/ питьевая вода
drop /drɔp/ *n* капля
drug /drʌg/ *n* лекарство
drug cabinet /drʌg `kæbɪnət/ шкаф для хранения лекарств
druggist AE /`drʌgɪst/ *n* аптекарь
drugstore AE /`drʌgstɔː/ *n* аптека
duct /dʌkt/ *n* канал, проток
due to /djuː tə/ из-за
dust /dʌst/ *n* пыль
dysfunction /dɪs`fʌŋkʃən/ *n* дисфункция
dystrophy /`dɪstrəfɪ/ *n* дистрофия

E

ear /ɪə/ *n* ухо
easy-going /`iːzɪˌgəuɪŋ/ *adj* добродушный, веселый
ectoderm /`ektəˌdəːm/ *n* эктодерма
efficacy /`efɪkəsɪ/ *n* эффективность, действенность
elbow /`elbəu/ *n* локоть
elevate /`elɪveɪt/ *v* поднимать
eliminate /ɪ`lɪmɪneɪt/ *v* устранять
elixir /ɪ`lɪksɪə/ *n* эликсир
embryo /`embrɪəu/ *n* эмбрион
emergency /ɪ`mɜːʤənsɪ/ *n* непредвиденный случай
empty /`emptɪ/ *n* пустой; *v* опустошать
emulsion /ɪ`mʌlʃən/ *n* эмульсия
enable /ɪ`neɪbl/ *v* делать возможным
enclose /ɪn`kləuz/ *v* окружать, заключать
encourage /ɪn`kʌrɪʤ/ *v* воодушевлять
endocrine /`endəukraɪn/ *adj* эндокринный
endoderm /`endəˌdəːm/ *n* эндодерма
endurance *n* /ɪn`djuərəns/
engulf /ɪn`gʌlf/ *v* поглощать, заглатывать
enjoy /ɪn`ʤɔɪ/ *v* наслаждаться
enough /ɪ`nʌf/ *adv* достаточно
ensure /ɪn`ʃuə/ *v* обеспечивать
entire /ɪn`taɪə/ *adj* целый, весь
entirely /ɪn`taɪə/ *adv* целиком, полностью
environment
enzyme /`enzaɪm/ *n* фермент, энзим
epithelial /ˌepɪ`θiːlɪəl/ *adj* эпителиальный
equip /ɪ`kwɪp/ *v* оборудовать
equipment /ɪ`kwɪpmənt/ *n* оборудование
eradicate /ɪ`rædɪkeɪt/ *v* искоренять
erythrocyte /ɪ`rɪθrəusaɪt/ = **red blood cell** (**RBC**) эритроцит, красная клетка крови
erythrocyte sedimentation rate /ɪ`rɪθrəusaɪt ˌsedɪmən`teɪʃən reɪt/ (**ESR**) скорость оседания эритроцитов
essential /ɪ`senʃəl/ *adj* основной
establish /ɪ`stæblɪʃ/ *v* организовывать, устанавливать
eventually /ɪ`ventʃuəlɪ/ *adv* в конечном счете, в итоге
examine /ɪgˌzæmɪn/ *v* обследовать
example /ɪg`zɑːmpl/ *n* пример
excess /ɪk`ses/ *n* избыток, превышение
excessive /ɪk`sesɪv/ *adj* чрезмерный, излишний
excision /ek`sɪʒən/ *n* иссечение, удаление
exclude /ɪk`sluːd/ *v* исключать
excrete /ɪk`skriːt/ *v* выделять
excretory /ɪk`skriːtərɪ/ *adj* выделительный
exist /ɪg`zɪst/ *v* существовать
expand /ɪks`pænd/ *v* расширяться, растягиваться
expect /ɪks`pekt/ *v* ожидать, рассчитывать
expectancy /ɪks`pektənsɪ/*n*: **life expectancy** ожидаемая продолжительность жизни
experience /ɪk`spɪərɪəns/ *n* (жизненный) опыт; *v* испытывать
expiry date /ɪk`spaɪərɪ deɪt/ срок годности
explain /ɪks`pleɪn/ *v* объяснять
explain /ɪks`pleɪn/ *v* объяснять
expose /ɪk`spəuz/ *v* подвергать *(воздействию)*
external /ɪk`stɜːnəl / *adj* наружный, внешний
extinct /ɪks`tɪŋk/ *adj* вымерший, исчезнувший
extra /`ekstrə/ *adj* дополнительный
extremity /ɪk`stremɪtɪ/ *n* конечность
eye /aɪ/ *n* глаз
eyeball /`aɪbɔːl/ *n* глазное яблоко
eyebrow /`aɪbrau/ *n* бровь
eyelash /`aɪlæʃ/ *n* ресница

F

facilitate /fə`sɪlɪteɪt/ *v* облегчать, содействовать
fall /fɔːl/ **into** распадаться на
fancy /`fænsɪ/ *adj* необычный; *v* воображать, представлять себе
fast twitch fibre /fɑːst twɪʧ `faɪbə/ быстросокращающееся волокно
fat /fæt/ *n* жир
fatback /`fætbek/ *n* сало, корейка

fatigue /fə`ti:g/ *n* усталость, утомление
fat-soluble /`fæt,sɑljubl/ *adj* жирорастворимый
favourite /`feɪvərɪt/ *adj* любимый
feature /`fi:tʃə/ *n* отличительная черта
femur /`fi:mə/ *n* бедренная кость
fetus /`fi:təs/ *n* плод *(зародыш с 9-ой недели развития до момента рождения)*
fever /`fi:və/ *n* жар, лихорадка
fibre /`faɪbə/ *n* волокно
fibrous /`faɪbrəs/ *adj* фиброзный, волокнистый
fibula /`fi:bjulə/ *n* малоберцовая кость
fight /faɪt/ *v irreg* бороться
figure /`fɪgə/ *n* цифра; *pl* цифровые данные
filament /`fɪləmənt/ *n* филамент, нить
findings /`faɪndɪŋz/ *n pl* данные, результаты
finger /`fɪngə/ *n* палец руки *(кроме большого)*
fingernail /`fɪŋgəneɪl/ *n* ноготь
firm /fə:m/ *adj* крепкий, прочный
first aid /fɜ:st eɪd/ первая помощь
fleshy /`fleʃɪ/ *adj* состоящий из мякоти
flexibility /fleksɪ`bɪlɪtɪ/ *n* гибкость
flexible /`fleksɪbl/ *adj* гибкий
flexing /`fleksɪŋ/ *n* сгибание
flow /fləu/ *v irreg.* течь
flu /flu:/ *n* грипп
fluid /flu:ɪd/ *n* жидкость
fluoride /`fluəraɪd/ *n* фтористое соединение
food intake /fu:d `ɪnteɪk/ прием пищи
fool /ful/*v* обманывать
foot /fut/ (*pl.* **feet** /fi:t/) *n* стопа
force /fɔ:s/ *n* сила
forearm /`fɔ:rɑ:m/ *n* предплечье
forehead /`fɒrɪd/, /`fɔ:hed/ *n* лоб
foreign /`fɒrɪn/ *adj* иностранный; инородный
formulary /`fɔ:mjulərɪ/ *n* фармацевтический справочник
fracture /`fræktʃə/ *n* перелом
framework /`freɪmwə:k/ *n* каркас, строение
frequency /`fri:kwənsɪ/ *n* частота
frequently /`fri:kwəntlɪ/ *adv* часто
friction /`frɪkʃən/ *n* трение
frustrated /`frə,streɪtid/ *adj* разочарованный
fungal /`fʌŋgəl/ *adj* грибковый
fuse /fju:z/ *v* объединяться, сплавляться
future /`fi:utʃə/ *adj* будущий

G

gain /geɪn/ *v* получать, приобретать
gall bladder /`gɔ:lblædə/ *n* желчный пузырь
gastrointestinal /,gæstrəuɪn`testɪnəl/ *adj* желудочно-кишечный
general /`ʤenərəl/ *adj* общий
General Medical Council /`ʤenərəl `medɪkəl `kaunsəl/ Генеральный медицинский совет *(в Великобритании)*
generate /`ʤenəreɪt/ *v* генерировать, создавать
generic name /ʤə`nerɪk neɪm/ обобщенное название
genetic /ʤə`netɪk/ *adj* генетический
germ /ʤə:m/ *n* зародыш; микроб, микроорганизм
girdle /gə:dl/ *n* пояс
give injection /ɪn`ʤekʃən/ делать укол
gland /glænd/ *n* железа
glandular /`glændjulə/ *adj* железистый, гландулярный
glial /glænd/ *adj* глиальный, нейроглический
glucose /`gluːkəus/ *n* глюкоза
glue /gluː/ *n* клей
goal /gəul/ *n* цель
Golgi apparatus /`gɑlʤi: ,əpə`reɪtəs/ аппарат Гольджи
grains /greɪnz/ *n pl.* злаки
groceries /`grəusrɪz/ *n pl.* продовольственные товары; бакалея
groin /grɔɪn/ *n* пах
grow /grəu/ *v irreg.* расти
growth /grəuθ/ *n* рост; опухоль
guidelines /`gaɪdlaɪnz/ *n pl.* нормативы
gum /gʌm/ *n* десна
guy /gaɪ/ *n* парень; *pl.* ребята *(при обращении)*

H

haemoglobin /,hi:mə`gləubɪn/ *n* гемоглобин
haemostasis /,hi:mə`steɪsɪs/ *n* гемостаз
half /hɑ:f/ *n* половина
hamstring *n* подколенное сухожилие
happen /`hæpən/ *v* случаться, происходить
harm /hɑ:m/ *n* вред; *v* вредить, причинять вред
harmful /`hɑ:mfəl/ *adj* вредный
heal /hi:l/ *v* вылечивать, исцелять
health /helθ/ *n* здоровье
healthcare /`helθkeə/ *n* здравоохранение
healthy /`helθɪ/ *adj* здоровый
heart /hɑ:t/ *n* сердце
heartbeat /`hɑ:tbi:t/ *n* сердечное сокращение
heartburn /`hɑ:tbə:n/ *n* изжога
heel /hi:l/ *n* пятка
hip /hɪp/ *n* бедро
histology /hɪs`tɑləʤɪ/ *n* гистология
histopathology /,hɪstəpə`θɑləʤɪ/ *n* патологическая гистология
HIV/AIDS /,eɪtʃ aɪ `vi:/eɪdz/ ВИЧ/СПИД
honeycomb /`hʌnɪkəum/ *adj* ячеистый, сотовидный
hope /həup/ *n* надежда; *v* надеяться
hospital /`hɒspɪtəl/ *n* больница
hot water bottle /hɑt `wɔ:tə `bɑtl/ грелка

however /haʊ`evə/ *conj* однако
humerus [`hju:mərəs] *n* плечевая кость
hurt /hɜ:t/*v irreg* причинять боль, болеть
hydrogen /`haɪdrədʒən/ *n* водород
hygiene /`haɪdʒi:n/ *n* гигиена
hypersensitivity /ˌhaɪpəˌsensɪ`tɪvɪtɪ/ *n* повышенная чувствительность
hypertrophy /haɪ`pə:trəfɪ/ *n* гипертрофия, увеличение органа или его части
hypervitaminosis /ˌhaɪpəvɪˌtemɪ`nəusɪs/ *n гипервитаминоз*
hypnotic /hɪp`nɑtɪk/ *adj* снотворный, гипнотический

I

identify /aɪ`dentɪfaɪ/ *v* устанавливать, определять
illness /`ɪlnəs/ *n* болезнь
immediate /ɪ`mi:dɪət/ *adj* немедленный
impairment /ɪm`peəmənt/ *n* повреждение
impression /ɪm`preʃən/ *n* впечатление
improve /ɪm`pru:v/ *v* улучшать
impulse /`ɪmpʌls/ *n* импульс
inch /ɪntʃ/ *n* дюйм *(2,54 см)*
incision /in`sɪʒən/ *n* надрез, разрез
include /ɪn`klu:d/ *v* включать в себя
incompatible *adj* /ˌɪnkəm`pætɪbl/
increase /ɪn`kri:s/ *v* увеличивать
incurable /ɪn`kjuərəbl/ *adj* неизлечимый
indicate /`ɪndɪkeɪt/ *v* показывать, указывать
indication /ˌɪndɪ`keɪʃən/ *n* показание
indigestion /ˌɪndɪ`dʒestʃən/ *n* диспепсия, нарушение пищеварения
induce /ɪn`dju:s/ *v* вызывать, стимулировать
infant /`ɪnfənt/ *n* младенец
inflammation /ɪnflə`meɪʃən/ *n* воспаление
influence /`ɪnfluəns/ *n* влияние; *v* оказывать влияние, влиять
ingest /ɪn`dʒest/ *v* глотать, принимать внутрь
ingestion /ɪn`dʒestʃən/ *n* проглатывание, прием внутрь
inherit /ɪn`herɪt/ *v* наследовать
initial /ɪ`nɪʃəl/ *adj* первоначальный
injectable /ɪn`dʒektəbl/ *adj* впрыскиваемый, для инъекций
injure /`ɪndʒə/ *v* поражать, травмировать
injured /`ɪndʒəd/ *adj* травмированный
injury /`ɪndʒərɪ/ *n* травма, ранение
inner /`ɪnə/ *adj* внутренний
inoculation /ɪˌnɔkju`leɪʃən/ *n* прививка
inotropic /ˌi:nə`trɔpɪk/ *adj* инотропный, изменяющий силу мышечного сокращения
insert /ɪn`sə:t/ *v* вставлять, вводить
insomnia /ɪn`sɔmnɪə/ *n* бессоница
instance /`ɪnstəns/ *n* пример
instead /ɪn`sted/ *adv* вместо этого
instil /ɪn`stɪl/ *v* вливать *(какую-либо жидкость)* по капле
insulate /`ɪnsjəleɪt/ *v* изолировать
integrity /ɪn`tegrɪtɪ/ *n* целостность
intelligence /ɪn`telidʒəns/ *n* интеллект, разум
intensive care unit (ICU) /ɪn`tensɪv kɜə `ju:nɪt/ отделение интенсивной терапии
interaction /ˌɪntə`rekʃən/ *n* взаимодействие
intermediary /ˌi:ntə`mi:dɪərɪ/ *adj* промежуточный
internal /ɪn`tɜ:nəl/ *adj* внутренний
intestinal tract /ɪn`testɪnəl trækt/ кишечный тракт
intestines /ɪn`testɪnz/ *n pl.* кишечник
intramuscular /ˌɪntrə`mʌskjulə/ *adj* внутримышечный
intravenous /ˌɪntrə`vi:nəs/ *adj* внутривенный
introduce /ɪntrə`dju:s/ *v* вводить, внедрять
invade /ɪn`veɪd/ *v* поражать, вторгаться
invariably /ɪn`veərɪblɪ/ *adv* неизменно, без исключений
invasive /ɪn`veɪzɪv/ *adj* инвазивный, нарушающий целостность
involuntary /ɪn`vɑləntrɪ/ *adj* непроизвольный
involve /ɪn`vɒlv/ *v* вовлекать, включать
iron /aɪən/ *n* железо
isolation /aɪsə`leɪʃən/ *n* изоляция
issue /`ɪʃu:/, /`ɪsju:/ *n* предмет разговора, спорный вопрос; *v* вытекать, исходить
item /`aɪtəm/ *n* пункт, вопрос

J

jaunt /dʒɔ:nt/ *n* прогулка, поездка
jaw /dʒɔ:/ *n* челюсть
joint /dʒɔɪnt/ *n* сустав
junk food /dʒʌŋk fu:d/ низкокачественная пища (*богатая калориями, но не имеющая питательной ценности*)

K

kidney /`kɪdnɪ/ *n* почка *(орган)*
knee /ni:/ *n* колено
kneecap /`ni: kəp/ коленная чашечка

L

lack /læk/ *v* испытывать недостаток чего-л.
laptop /læptɑp/ *n* лэптоп, ноутбук
lard /lɑ:d/ *n* свиное сало
larynx /`lærɪŋks/ *n* гортань
laxative /`læksətɪv/ *n* слабительное средство; *adj* слабительный
layer /leɪə/ *n* слой
lead /li:d/ *v irreg* вести, приводить

leafy /ˈliːfɪ/ *adj* зеленый, покрытый листьями
lean meat /liːn miːt/ постное мясо
learned /ˈləːnɪd/ *adj* эрудированный, сведущий
legumes /ˈlegjuːmz/ *n pl.* бобовые
leukaemia /luːˈkiːmɪə/ *n* лейкемия
leukocyte /ˈljuːkəusaɪt/ **= white blood cell (WBC)** *n* лейкоцит, белая клетка крови
level /ˈlevəl/ *n* уровень
lever /ˈliːvə/ *n* рычаг
life-threatening /ˈlaɪf.θretənɪŋ/ *adj* опасный для жизни
ligament /ˈlɪgəmənt/ *n* связка
limb /lɪm/ *n* конечность *(человека или животного)*
line /laɪn/ *v* выстилать
lining /ˈlaɪnɪŋ/ *n* выстилка
link /lɪŋk/ *v* связывать
lipid /ˈlɪpɪd/ *n* липид
liquid /ˈlɪkwɪd/ *n* жидкость; *adj* жидкий
list /lɪst/ *n* список
liver /ˈlɪvə/ *n* печень
locomotion /ˌləukəˈməuʃən/ *n* локомоция *(совокупность согласованных движений, посредством которых человек перемещается в пространстве)*
look up /luk ʌp/ *n* смотреть *(слово в словаре)*
loosen /ˈluːsən/ *v* ослаблять
loss /lɑs/ *n* потеря
lower /ləuə/ *adj* нижний; *v* опускать
lumbar /ˈlʌmbə/ *adj* поясничный
lumen /ˈluːmən/ *n* просвет, полость трубчатого органа
lump /lʌmp/ *n* припухлость, вздутие
lung /lʌŋ/ *n* легкое
lymph /lɪmf/ *n* лимфа
lymph node /lɪmf nəud/ лимфатический узел
lymphangiitis /ˌlɪmfədʒiːˈaɪtɪs/ *n* лимфангиит *(воспаление лимфатических сосудов)*
lymphatic system /lɪmˈfætɪk ˈsɪstəm/ лимфатическая система
lymphedema /ˌlɪmfəˈdiːmə/ *n* лимфедема, лимфангиэктатический отек
lymphoma /lɪmˈfəumə/ *n* лимфома *(название опухолей, исходящих из лимфоидной ткани)*
lysosome /ˌlaiːsəˈsəum/ *n* лизосома

M

mackerel /ˈmækrəl/ *n* макрель, скумбрия
macrophage /ˈmækrəuˌfeɪdʒ/ *n* макрофаг
magnification /ˌmægnɪfɪˈkeɪʃən/ *n* увеличение (*оптическое*)
mainly /ˈmeɪnlɪ/ *adv* главным образом
maintain /meɪnˈteɪn/ *v* поддерживать
make up /meɪk ʌp/ составлять
malignancy /məˈlɪgnənsɪ/ *n* злокачественность
malignant /məˈlɪgnənt/ *adj* злокачественный
malnutrition /ˌmælnjuːˈtrɪʃən/ *n* недостаточность или нарушение питания
mandible /ˈmændɪbl/ *n* нижняя челюсть
mankind /mænˈkaɪnd/ *n* человечество
manufacture /ˌmænjuˈfæktʃə/ *v* производить
manufacturer /ˌmænjuˈfæktʃərə/ *n* производитель
market /ˈmɑːkɪt/ *v* реализовывать, торговать
masseter /mæˈsiːtə/ *n* жевательная мышца
match /mætʃ/ *v* подбирать пару
matrix /ˈmeɪtrɪks/ *n* матрикс, основное вещество цитоплазмы
matter /ˈmætə/ *n* материя; *v* иметь значение
maturation /ˌmætʃuˈreɪʃən/ *n* созревание, достижение полного развития
meal /miːl/ *n* прием пищи
means /miːnz/ *n* средство, способ
measurement /ˈmeʒəmənt/ *n* измерение
medicine /ˈmedɪsən/ *n* медицина; лекарство
medicine dropper /ˈmedɪsən ˈdrɑpə/ пипетка
medieval /ˌmedɪˈiːvəl/ *adj* средневековый
memorise /ˈmeməraɪz/ *v* запоминать
mend /mend/ *v* чинить, ремонтировать
mesoderm /ˈmezəˌdəːm/ *n* мезодерма
message /ˈmæsɪdʒ/ *n* послание, сообщение
metacarpals /ˌmetəˈkaːpəlz/ *n pl.* пястные кости
metatarsals /ˈmetəˈtaːslz/ *n pl.* плюсневые кости
Middle Ages /ˈmɪdl ˈeɪdʒɪz/ *n pl.* Средние века
military /ˈmɪlɪtərɪ/ *adj* военный
mind /maɪnd/ *v* иметь в виду
mistake /mɪsˈteɪk/ *n* ошибка
mitochondrion (*pl.* **mitochondria**) /ˌmaɪtəˈkɑndrɪən (ˌmaɪtəˈkɑndrɪə)/ *n* митохондрий
mitosis /maɪˈtəusɪs/ *n* митоз
morale /məˈrɑːl/ *n* мораль; моральное состояние
mortality /mɔˈtælɪtɪ/ *n* смертность
mortar /ˈmɔːtə/ *n* ступка
motion *n* /ˈməuʃən/
mouse (*pl.* mice) /maus (maɪs)/ *n* мышь
multicellular /ˌmʌltɪˈseljələ/ *adj* многоклеточный

multiple /`mʌltɪpl/ *adj* множественный
multiply /`mʌltɪplaɪ/ *v* размножаться
muscle /`mʌsl/ *n* мышца
muscle tone /mʌsl təun/ мышечный тонус
muscular /`mʌskjulə/ *adj* мышечный
Muslim /`muzlɪm/ *adj* мусульманский
mustard plaster /`mʌstəd `plɑːstə/ горчичный пластырь
myoglobin /ˌmaɪəu`gləubɪn/ *n* миоглобин, мышечный гемоглобин

N

nausea /`nɔːzɪə/ *n* тошнота
navel /`neɪvəl/ *n* пуп, пупок
neck /nek/ *n* шея
neoplasm /`niːəuplæzm/ *n* новообразование, опухоль
nephrolithiasis /ˌnefrəulaɪ`θaɪəsɪs/ *n* нефролитиаз, почечнокаменная болезнь
nerve /nɜːv/ *n* нерв
nervous /`nɜːvəs/ *adj* нервный
nervous system /`nəːvəs `sɪstəm/ нервная система
neuron /`njuərɔn/ *n* нейрон
niacin /`naɪəsɪn/ *n* никотиновая кислота
nickname /`nɪkneɪm/ *n* прозвище, кличка
night blindness /naɪt `blaɪndnəs/ ночная слепота, куриная слепота
nightmare /`naɪtmeə/ *n* кошмар, страшный сон
nitrogen /`naɪtrədʒən/ *n* азот
nostril /`nɑstrɪl/ *n* ноздря
nourishment /`nʌrɪʃmənt/ *n* питание, пища
nuclear /`njuːklɪə/ *adj* ядерный
nuclear envelope /`njuːklɪə `envələup/ оболочка ядра *(клетки)*
nucleus (*pl.* **nuclei**) /`niːuːklɪəs (`njuːklɪaɪ)/ *n* ядро
numerous /`njumərəs/ *adj* многочисленный
nutrient /`njuːtrɪənt/ *n* питательное вещество; *adj* питательный
nutrition /njuː`trɪʃən/ *n* питание, пища

O

obesity /əu`biːsɪtɪ/ *n* тучность, ожирение
observe /əb`zɜːv/ *v* наблюдать
obstetrics /ɒb`stetrɪks/ *n* акушерство
obstruction /əb`strʌkʃən/ *n* закупорка, обструкция
obtain /əb`teɪn/ *v* получать
obvious /`ɑbvɪəs/ *adj* очевидный, само собой разумеющейся
occur /ə`kəː/ *v* случаться, происходить
oesophagus /ɪ`sɑfəgəs/ *n* пищевод
oil /ɔɪl/ *n* масло *(растительное или минеральное)*
ointment /`ɔɪntmənt/ *n* мазь
oncology /ɔn`kɔlədʒɪ/ *n* онкология
opinion /ə`pɪnjən/ *n* мнение
opportunity /ɔpə`tjuːnɪtɪ/ *n* возможность
oral /`ɔːrəl/ *adj* ротовой; предназначенный для приема внутрь
orally /`ɑrəlɪ/ *adv* внутрь, через рот
organ /`ɔːgən/ *n* орган
organelle /`ɔːgənəl/ *n* органелла
organism /`ɔːgənɪzm/ *n* организм
originate /ə`rɪdʒəneɪt/ *v* происходить, брать начало
ossification /ˌɒsɪfɪ`keɪʃən/ *n* окостенение
osteoporosis /ˌɑstɪəupə`rəusɪs/ *n остеопороз*
outbreak /`autbreɪk/ *n* вспышка, начало
outer /`autə/ *adj* наружный, внешний
overall *adj*
overdose /`əuvədəus/ *n* передозировка
over-the-counter (OTC) drug /ˌəuvəðə`kauntə drʌg/ лекарственное средство, отпускаемое без рецепта

P

package /`pækɪdʒ/ *n* пакет; упаковка
pain /peɪn/ *n* боль
painkiller /`peɪnˌkɪlə/ *n* болеутоляющее
palate /`pælət/ *n* нёбо
paraesthesiae /ˌperəs`θiːzɪə/ *n* парестезия *(ощущение онемения, покалывания и под.)*
parenteral /pæ`rentərəl/ *adj* парентеральный *(минуя пищеварительный тракт)*
particular /pə`tɪkjulə/ *adj* особенный
particulate /pə`tɪkjuːlət/ *n* частица; *adj* копрускулярный
passageway /`pæsɪdʒweɪ/ *n* проход; канал
past /pɑːst/ *adj* прошлый
patella /pə`telə/ *n* коленная чашечка
pathology /pə`θɔl`dʒɪ/ *n* патология
patient /`peɪʃənt/ *n* больной
peak /piːk/ *adj* высший, максимальный
pellagra /pə`legrə/ *n* пеллагра *(один из видов авитоминоза)*
pelvic /`pelvɪk/ *adj* тазовый
pelvis /`pelvɪs/ *n* таз
percent /pə`sent/ *n* процент
percentage /pə`setɪdʒ/ *n* процентное содержание
perform /pə`fɔːm/ *v* выполнять
perfume /`pəːfjuːm/ *n* аромат, духи
perhaps /pə`hæps/, /præps/ *adv* возможно
permit /pə`mɪt/ *v* позволять, разрешать
pernicious anaemia /pə`nɪʃəs ə`niːmɪə/ злокачественная анемия
pestle /pesl/ *n* пест, пестик
phagocytosis /ˌfægəˌsaɪ`təusɪs/ *n* фагоцитоз

pharmacist /ˈfɑːməsɪst/ *n* фармацевт
pharmacology /ˌfɑːməˈkɔlədʒɪ/ *n* фармакология
pharmacy /ˈfɑːməsɪ/ *n* фармация; аптека
phosphorus /ˈfɑsfərəs/ *n* фосфор
physician /fɪˈzɪʃən/ *n* врач, терапевт
pill /pɪl/ *n* таблетка, пилюля
plague /pleɪg/ *n* чума; *v* изводить, мучить
plant /plɑːnt/ *n* растение
plasma /ˈplæzmə/ *n* плазма
plaster /ˈplɑːstə/ *n* гипс
plug /plʌg/ *n* закупоривающая масса, пробка
pneumonia /njuːˈməunɪə/ *n* пневмония
poisoning /ˈpɔɪzənɪŋ/ *n* отравление
poisonous /ˈpɔɪzənəs/ *adj* ядовитый
poor /puə/ *adj* бедный; слабый, недостаточный
Pope /pəup/ *n* папа римский
population /ˌpɔpjuˈleɪʃən/ *n* население
possible /ˈpɔsɪbl/ *adj* возможный
postulate /ˈpɔstjələt/ *n* аксиома, постулат; /ˈpɔstjəleɪt/ *v* постулировать, ставить условием
posture /ˈpɑstʃə/ *n* осанка
potassium /pəˈtæsɪəm/ *n* калий
potent /ˈpəutənt/ *adj* сильнодействующий
poultry /ˈpəultrɪ/ *n* мясо домашней птицы
precaution /prɪˈkɔːʃən/ *n* предосторожность
preceding /priːˈsiːdɪŋ/ *adj* предшествующий
precursor /prɪˈkəːsə/ *n* предшественник
pregnancy /ˈpregnənsɪ/ *n* беременность
pregnant /ˈpregnənt/ *adj* беременная
preparation /ˌprepəˈreɪʃən/ *n* препарат, лекарство
prepare /prɪˈpeə/ *v* готовить
prescribe /prɪˈskraɪb/ *v* прописывать
prescriber /prɪˈskraɪbə/ *n* человек, который имеет право выписывать рецепты
prescription /prɪˈskrɪpʃən/ *n* рецепт
presence /ˈpresəns/ *n* присутствие, наличие
pressure /ˈpreʃə/ *n* давление
prevent /prɪˈvent/ *v* предотвращать
prevention /prɪˈvenʃən/ *n* профилактика
primary /ˈpraɪmərɪ/ *adj* первичный
prior /praɪə/ **to** до, перед тем как
priority /praɪˈɒrɪtɪ/ *n* приоритет
probably /ˈprɔbəblɪ/ *adv* вероятно
procedure /prəˈsiːdʒə/ *n* процедура
proceedings /prəuˈsiːdɪŋz/ *n pl.* труды, записки ученого общества
promote /prəˈməut/ *v* продвигать
proper /ˈprɔpə/ *adj* соответствующий
properly /ˈprɔpəlɪ/ *adv* соответствующим образом
protect /prəˈtekt/ *v* защищать
protein /ˈprəutiːn/ *n* белок, протеин
protrude /prəˈtruːd/ *v* выпячиваться, выдаваться
prove /pruːv/ *v* доказывать
provide /prəˈvaɪd/ *v* обеспечивать
psychiatrist /saɪˈkaɪətrɪst/ *n* психиатр
psychiatry /saɪˈkaɪətrɪ/ *n* психиатрия
psychology /saɪˈkɒlədʒɪ/ *n* психология
psychotropic /ˌsaɪkəˈtrɑpɪk/ *n* психотропное средство; *adj* психотропный
pulse rate /pʌls reɪt/ частота пульса
pump /pʌmp/ *n* насос; *v* накачивать
purpose /ˈpɜːpəs/ *n* цель

Q

quality /ˈkwɔlɪtɪ/ *n* качество
quantity /ˈkwɔntɪtɪ/ *n* количество
quiz /kwɪz/ *n* тест
quote /kwəut/ *n* цитата

R

radioactive /ˌreɪdɪəuˈæktɪv/ *adj* радиоактивный
radius /ˈreɪdjəs/ *n* радиус; лучевая кость *(предплечья)*
range /reɪndʒ/ *n* ряд, диапазон
rare /reə/ *adj* редкий
ratio /ˈreɪʃɪəu/ *n* соотношение, коэффициент
reach /riːtʃ/ *v* достигать
reason /ˈriːzən/ *n* причина
recipient /rɪˈsɪpɪənt/ *n* реципиент
record /ˈrekəd/ *n* запись
recovery /rɪˈkʌvərɪ/ *n* выздоровление
rectal /ˈrektəl/ *adj* ректальный
reduce /rɪˈdjuːs/ *v* снижать
reduction /rɪˈdʌkʃən/ *n* снижение
refer /rɪˈfəː/ *v* обращаться, направлять
reference /ˈrefərəns/ *v* обращение, отсылка
refreshment /rɪˈfreʃmənt/ *n* восстановление сил; отдых
refrigerate /rɪˈfrɪdʒəreɪt/ *v* охлаждать
refuse /rɪˈfjuːz/ *v* отказывать
relate /rɪˈleɪt/ *v* относиться
release /rɪˈliːs/ *v* высвобождать, выделять
relief /rɪˈliːf/ *n* облегчение
relieve /rɪˈliːv/ *v* облегчать
remain /rɪˈmeɪn/ *v* оставаться
remarkable /rɪˈmɑːkəbl/ *adj* замечательный, выдающийся
remedy /ˈremədɪ/ *n* средство, лекарство
remind /rɪˈmaɪnd/ *v* напоминать
render /ˈrendə/ *v* оказывать
repair /rɪˈpeə/ *v* ремонтировать
replace /rɪˈpleɪs/ *v* замещать
reproductive /ˌriːprəˈdʌktɪv/ *adj* репродуктивный
require /rɪˈkwaɪə/ *v* требовать
requirement /rɪˈkwaɪəmənt/ *n* требование

research /rɪ`sɜ:ʧ/ *n* научное исследование
reside /rɪ`zaɪd/ *v* жить, находиться
resistance /rɪ`zɪstəns/ *n* сопротивляемость, устойчивость
respiration /ˌrespɪ`reɪʃən/ *n* дыхание
respiratory /rɪ`spɪrətərɪ/ *adj* дыхательный
responsibility /rɪˌspɒnsə`bɪlɪtɪ/ *n* ответственность
responsible /rɪ`spɒnsɪbl/ *adj* ответственный
restrictive /rɪ`strɪktɪv / *adj* ограничивающий
retirement /rɪ`taɪəmənt/ *n* отставка, пенсия
review /rɪ`vju:/ *v* делать обзор
reward /rɪ`wɔ:d/ *n* награда
Rh (rhesus) factor /ˌɑ:r`eɪʧ (`ri:səs)`fæktə/ резус-фактор
rib /rɪb/ *n* ребро
riboflavin /ˌraɪbəu`fleɪvɪn/ *n* рибофлавин, витамин B_2
ribosome /ˌraɪbə`səum/ *n* рибосома
rice /raɪs/ *n* рис
rickets /`rɪkɪts/ *n* рахит
rough /rʌf/ *adj* жесткий, неровный
roughly /`rʌflɪ/ *adv* приблизительно, ориентировочно
route /ru:t/ **(of administration)** способ применения *(лекарственного средства)*
routine /ru:`ti:n/ *adj* стандартный, обычный
rush /rʌʃ/ *v* бросаться, нестись

S

sacrum /`seɪkrəm/ *n* крестец
safe /seɪf/ *adj* безопасный
sailor /`seɪlə/ *n* моряк
salivary /sə`laɪvərɪ/ *adj* слюнной
salmon /`sæmən/ *n* лосось, сёмга
sample /sɑ:mpl/ *n* пример, образец; *adj* примерный
saturated /`sætjureɪtɪd/ *adj* насыщенный
scales /skeɪlz/ *n pl.* весы
scapula /`skæpjulə/ *n* лопатка
scar /skɑ:/ *n* шрам
schedule /`ʃədju:l/ *v* назначать, планировать
screen /skri:n/ *v* проводить регулярное медицинское обследование
scurvy /`skə:vɪ/ *n* цинга
secondary /`sekəndərɪ/ *adj* вторичный
sedative /`sedətɪv/ *n* седативное, успокоительное средство; *adj* седативный
seed /si:d/ *n* семя
seek /si:k/ *v irreg.* искать
semisolid /ˌsemɪ`sɑlɪd/ *adj* полутвердый
senior /`si:nɪə/ *n* человек, старший по званию/возрасту
separate /`sepərət/ *adj* отдельный
serum /`sɪərəm/ *n* сыворотка
severe /sɪ`vɪə/ *adj* тяжелый
sex /seks / *adj* половой
shake /ʃeɪk/ *v irreg.* трясти, дрожать
shelf /ʃelf/ *n* полка
shellfish /`ʃəlfɪʃ/ *n* моллюск, ракообразное
shinbone /`ʃɪnbəun/ *n* большеберцовая кость
shoulder /`ʃəuldə/ *n* плечо
shoulder blade /`ʃəuldebleɪd/ *n* лопатка
shrink /ʃrɪŋk/ *v* уменьшаться, сокращаться
sick /sɪk/ *adj* больной
side effect /saɪd ɪ`fekt/ побочный эффект
sign /saɪn/ *n* знак; признак болезни *(объективный)*
similarity /sɪmɪ`lærɪtɪ/ *n* сходство
site /saɪt/ *n* место
skeletal muscle /`skelətəl mʌsl/ скелетная мышца
skeleton /`skelɪtən/ *n* скелет
skill /skɪl/ *n* умение, навык
skin /skɪn/ *n* кожа
skull /skʌl/ *n* череп
sleeplessness /`sli:pləsnəs/ *n* бессоница
slide /slaɪd/ *n* слайд, предметное стекло *(микроскопа)*; *v* скользить
slow twitch fibre /sləu twɪʧ `faɪbə/ медленносокращающееся волокно
smallpox /`smɔ:lpɒks/ *n* оспа
smell /smel/ *v* пахнуть, нюхать
smooth /smu:ð/ *adj* гладкий, ровный
smooth muscle /smu:ð mʌsl/ гладкая мышца
snack foods закуски
sneeze /sni:z/ *v* чихать
socket /`sɑkɪt/ *n* ямка, углубление
sodium /`səudɪəm/ *n* натрий
soil /sɔɪl/ *n* почва
sole /səul/ *n* подошва, ступня
solely /`səullɪ/ *adv* исключительно, только
solid /`sɑlɪd/ *adj* твердый
soluble /`sɑljubl/ *adj* растворимый
solution /sə`lu:ʃən/ *n* раствор
sound /saund/ *adj* здоровый, крепкий
source /sɔ:s/ *n* источник
soybeans /`sɔɪbi:nz/ *n pl.* соевые бобы
space /speɪs/ *n* пространство, космос
specimen /`spesəmɪn/ *n* образец
sphygmomanometer /ˌsfɪgməmæn`ɑmɪtə/ *n* сфигмоманометр *(прибор для измерения кровяного давления)*
spinal column /`spaɪnəl `kɑləm/ позвоночный столб
spindle-shaped /`spɪndlʃeɪpt/ *adj* веретенообразный
spine /spaɪn/ *n* позвоночник
spirit /`spɪrɪt/ *n* спирт, алкоголь
spleen /spli:n/ *n* селезенка
sprain /spreɪn/ *n* растяжение
squeeze /skwi:z/ *v* сжимать, выдавливать
starchy /stɑ:ʧɪ/ *adj* содержащий крахмал

stem cell стволовая клетка
stick /stɪk/ *v* прилипать, приклеиваться
stomach /'stʌmək/ *n* желудок
storage /`stɔːrɪʤ/ *n* хранение
storage area место для хранения *(лекарственных средств в аптеке)*
store /stɔː/ *n* запас; *v* хранить
strain /streɪn/ *n* натяжение
strand /strænd/ *n* жила, прядь
stranger /`streɪnʤə/ *n* незнакомец; посторонний человек
streak /striːk/ *v* полоска, прожилка
strength /streŋθ/ *n* сила, эффективность
strengthen /`steŋθən/ *v* усиливать, укреплять
stretch /stretʃ/ *n* вытягивание; *v* растягиваться
striated /strɪ`eɪtɪd/ *adj* бороздчатый, полосатый
striking /`straɪkɪŋ/ *adj* поразительный
string /strɪŋ/ *n* веревка
stripy /`straɪpɪ/ *adj* полосатый
stroke /strəuk/ *n* инсульт
stubborn /`stʌbən/ *adj* упрямый
subclavian /səb`kleɪvɪən/ *adj* подключичный
sublingual /səb`lɪŋgwəl/ *adj* подъязычный
subsequent /`sʌbsɪkwənt/ *adj* последующий
suffer /`sʌfə/ *v* страдать
sufficient /sə`fɪʃənt/ *adj* достаточный
suggest /sə`ʤest/ *v* предложить
sunflower /`sʌnflauə/ *n* подсолнечник
supplement /`sʌplɪmənt/ *n* добавка; *v* добавлять
supply /sə`plaɪ/ *v* снабжать
support /sə`pɔːt/ *v* поддерживать
suppose /sə`pəuz/ *v* предположить
suppository /sə`pɑzɪtrɪ/ *n* суппозиторий, свеча surface
surgeon /`sɜːʤən/ *n* хирург
surgery /`sɜːʤərɪ/ *n* хирургия; кабинет врача; приемные часы
surround /sə`raund/ *v* окружать
survive /sə`vaɪv/ *v* выживать
suspect /sə`spekt/ *v* подозревать
suture /`sjuːtʃə/ *n* шов
swallow /`swɑləu/ *v* глотать
sweets /swiːts/ *n pl.* сладости
swell /swel/ *v* отекать
swelling /`swelɪŋ/ *n* отек
symptom /`sɪmptəm/ *n* симптом, признак болезни *(субъективный)*
syringe /sɪ`rɪnʤ/ *n* шприц
syrup /`sɪrəp/ *n* сироп

T

take off /teɪk ɔf/ *v* развиваться стремительно
tarsals /`tɑːsəlz/ *n pl.* предплюсневые кости
temple /`templ/ *n* висок
temporary /`tempərərɪ/ *adj* временный
temporomandibular /ˌtempərəmən`diːbjulə/ *adj* височно-челюстной
tendon /`tendən/ *n* сухожилие
tension /`tenʃən/ *n* напряжение, натяжение
term /təːm/ *n* термин; *v* давать название
test tube /test tjuːb/ пробирка
therapeutic /ˌθerə`pjuːtɪk/ *adj* лечебный, терапевтический
therefore /`ðeəfɔː/ *adv* следовательно
thermometer /θə`mɑmɪtə/ *n* градусник, термометр
thiamine /`θaɪəmiːn/ *n* тиамин, витамин B_1
thigh /θaɪ/ *n* бедро, бедренная кость
thoracic /θə`ræsɪk/ *adj* грудной
throat /θrəut/ *n* горло
thrombocyte /`θrɑmbəsaɪt/ = platelet /`pleɪtlət/ *n* тромбоцит, кровяная пластинка
through /θruː/ *prep* через, сквозь
thumb /θʌm/ *n* большой палец руки
thymus (gland) /`θaɪməs (glænd)/ *n* вилочковая железа
tibia /`tɪbɪə/ *n* большая берцовая кость
tie /taɪ/ *v* завязывать, связывать
tincture /`tɪŋktʃə/ *n* настойка, тинктура
tiny /`taɪnɪ/ *adj* маленький, крошечный
tire /taɪə/ *v* утомлять, уставать
tissue /`tɪsjuː/, /`tɪʃuː/ *n* ткань
tocopherol /tɑ`kɑfəˌrɑl/ *n* токоферол, витамин E
toddler /`tɑdlə/ *n* ребёнок, начинающий ходить
toe /təu/ *n* палец ноги
tolerate /`tɑləreɪt/ *v* переносить, выносить
tongue /tʌŋ/ *n* язык
tonsil /`tɑnsəl/ *n* миндалина, миндалевидная железа
tough /`taf/ *adj* сложный, жесткий
tongue /tʌŋ/ *n* язык
trade name /treɪd neɪm/ фирменное название, торговое название
trademark /`treɪdmɑːk/ *n* товарный знак, фабричная марка
trans fats /`trænsˌfæts/ *n pl.* транс-изомеры жирных кислот (ТИЖК)
transfusion /træns`fjuːʒən/ *n* переливание крови
transliterate /trænz`lɪtereɪt/ *v* транслитерировать, передавать буквами другого алфавита
transmit /trænz`mɪt/ *v* передавать
trauma /`trɔːmə/ *n* травма
track /træk/ *v* отслеживать
treat /triːt/ *v* лечить

treatise /ˋtriːtɪz/ *n* трактат, научный труд
treatment /ˋtriːtmənt/ *n* лечение
trunk /trʌŋk/ *n* туловище
tryptophan /tripˋtɑfən/ *n* триптофан *(аминокислота)*
tuberculosis /tjuˌbɜːkjuˋləusɪs/ *n* туберкулёз
tubule /ˋtjuːbjuːl/ *n* каналец
tumour /ˋtjuːmə/ *n* опухоль
tuna /ˋtjuːnə/ *n* тунец *(рыба)*
turn /təːn/**: in turn** в свою очередь
twist /twɪst/ *v* скручивать, изгибаться

U

ulcer /ˋʌlsə/ *n* язва
ulna /ˋʌlnə/ *n* локтевая кость
ultrasound /ˋʌltrəsaund/ *n* ультразвук
ultrasound investigation /ˋʌltrəsaund ɪnˌvestɪˋgeɪʃən/ ультразвуковое исследование
umbilicus /ʌmˋbɪlɪkəs/ *n* пуп, пупок
unbalanced diet /ʌnˋbælənst daɪət/ несбалансированное питание
unconscious /ʌnˋkʌnʃəs/ *adj* без сознания
undergo /ˌʌndəˋgəu/ *v irreg.* подвергаться
undesirable /ˌʌndɪˋzaɪərəbl/ *adj* нежелательный
unicellular /ˌjuːnɪˋseljələ/ *adj* одноклеточный
unit /ˋjuːnɪt/ *n* единица; раздел
universe /ˋjuːnɪvəːs/ *n* Вселенная
unsaturated /ʌnˋsætjureɪtɪd/ *adj* ненасыщенный
unstriated /ʌnstrɪˋeɪtɪd/ *adj* гладкий *(о мышцах)*
upper /ˋʌpə/ *adj* верхний
up-to-date /ˌʌptəˋdeɪt/ *adj* современный
urea /juəˋriːə/ *n* мочевина
urgent /ˋɜːʤənt/ *adj* срочный
urine testing /ˋjuərɪn ˋtestɪŋ/ анализ мочи

V

vacuole /ˋvækjuəul/ *n* вакуоль, небольшая полость *(в ткани)*
valuable /ˋvæljubl/ *n* важный
value /ˋvæljuː/ *n* ценность, важность
vein /veɪn/ *n* вена
vertebra (*pl.* vertebrae) /ˋvəːtɪbrə (ˋvəːtɪbriː)/ *n* позвонок
vessel /ˋvesəl/ *n* сосуд
victim /ˋvɪktɪm/ *n* жертва, пострадавший
violate /ˋvaɪəleɪt/ *v* нарушать
viscous /ˋvɪskəs/ *adj* вязкий
vision /ˋvɪʒən/ *n* зрение
vital /ˋvaɪtəl/ *adj* жизненно важный
vitamin /ˋvɪtəmɪn/ *n* витамин
volume /ˋvɑljuːm/ *n* объём
voluntary /ˋvɑləntrɪ/ *n* произвольный
vomit /ˋvɒmɪt/ *v* рвать *(о пище)*
vomiting /ˋvɑmɪtɪŋ/ *n* рвота

W

waiting area /ˋweɪtɪŋ ˋeərɪə/ место для ожидания *(в аптеке)*
wall /wɔːl/ *n* стена, стенка
ward /wɔːd/ *n* палата
ward round /wɔːd raund/ обход палат
warning /ˋwɔːnɪŋ/ *n* предостережение
warrant /ˋwərənt/ *v* оправдывать, служить основанием
waste (product) /weɪst (ˋprɑdʌkt)/ *n* продукты выделения
water-soluble /ˋwɔːtəˌsɑljubl/ *adj* водорастворимый
weaken /ˋwiːkən/ *v* ослаблять
weight /weɪt/ *n* вес
wholegrain /ˌhəulˋgreɪn/ *adj* цельнозерновой
wire /weɪt/ *n* проволока, провод
wonder /ˋwʌndə/ *n* чудо; *v* хотеть знать, интересоваться
World Health Organisation (WHO) /wɜːld helθ ˌɔːgənaɪˋzeɪʃən / Всемирная организация здравоохранения (ВОЗ)
worn /wɔːn/ *adj* изношенный; изнуренный
wound /wund/ *n* ранение, травма
wrist /rɪst/ *n* запястье

TABLE OF TENSES

Active Voice

ASPECT		SIMPLE	CONTINUOUS	PERFECT	PERFECT CONTINUOUS
MEANING		a common aspect	a process	priority	priotiry + process
		When?	*At what time?*	*By what time?*	*Since what time? How long?*
Period of time		*usually, often, always, seldom, every day (week, month, year)*	*now, at the moment, at present*	*ever, never, just, already, yet, by 3 p.m., lately, recently*	*since 3 p.m., for a long time, for a month*
Present	+	V, Vs	am / is + Ving / are	have / has + Ved, V_3	have / has +been + Ved, V_3
	?	do / does … V	inversion	inversion	inversion
	-	do / does +not +V	am / is + not + Ving / are	have / has +not + Ved, V_3	have / has + not + been + Ving
Period of time		*yesterday, last week (month, year), long ago, in 2014*	*yesterday at 3 p.m., yesterday from 6 to 7, when you came, while*	*yesterday by 3 p.m., before something happened*	*since 3 p.m., for some time in the past*
Past	+	Ved, V_2	was / were + Ving	had + Ved, V_3	had + been + Ving
	?	did … V	inversion	inversion	inversion
	-	did + not +V	was / were + not + Ving	had +not +Ved, V_3	had + not + been + Ving
Period of time		*tomorrow, nex wekk (month, year)*	*tomorrow at 3 p.m., tomorrow from 6 to 7, when you come, while*	*tomorrow by 3 p.m., by some time in the future*	*tomorrow by 3 p.m., by some time in the future*
Future	+	will + V	will + be + Ving	will + have + Ved, V_3	will + have + been + Ving
	?	inversion	inversion	inversion	inversion
	-	won't +V	won't + be + Ving	won't + have + Ved, V_3	won't + have + been + Ving

Passive Voice

ASPECT		SIMPLE	CONTINUOUS	PERFECT
Present	+	am / is / are + Ved, V_3	am / is / are + being + Ved, V_3	have / has + been + Ved, V_3
	?	inversion	inversion	inversion
	-	am / is / are + not + Ved, V_3	am / is / are + not + being + Ved, V_3	have / has + not + been + Ved, V_3
Past	+	was / were + Ved, V_3	was / were + being + Ved, V_3	had + been + Ved, V_3
	?	inversion	inversion	inversion
	-	was / were + not + Ved, V_3	was / were + not + being + Ved, V_3	had + not + been + Ved, V_3
Future	+	will + be + Ved, V_3	-	will + have + been + Ved, V_3
	?	inversion		inversion
	-	won't + be + Ved, V_3		won't + have + been + Ved, V_3