

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ
ФГАОУ ВО «Крымский федеральный университет
имени В. И. Вернадского»
Институт иностранной филологии
(структурное подразделение)

ИНОСТРАННЫЙ ЯЗЫК

УЧЕБНО-МЕТОДИЧЕСКОЕ ПОСОБИЕ

для обучающихся по направлениям подготовки:

*31.05.01 Лечебное дело,
31.05.02 Педиатрия,
31.05.03 Стоматология,
33.05.01 Фармация*

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И XX Иностранный язык. Учебно-методическое пособие для обучающихся по направлениям подготовки: 31.05.01 Лечебное дело, 31.05.02 Педиатрия, 31.05.03 Стоматология, 33.05.01 Фармация / Под редакцией Л.В. Ягенич – Симферополь, 2020. – 232 с.

Предназначено для обучающихся медицинских направленностей, а также для всех, кто стремится совершенствовать свои умения и навыки в иностранном языке в сфере медицины.

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ВВЕДЕНИЕ

В современных условиях повышается роль англоязычной подготовки специалиста в связи с непрерывным развитием медицинской науки, расширением информационного пространства и роли английского языка в мире. Иностранный язык является важным компонентом подготовки будущего врача на додипломном этапе. Совершенствование учебного процесса требует перехода от информационно-сообщающих к активным формам обучения. Необходимость формирования у будущих врачей иноязычной коммуникативной компетенции в профессиональной сфере способствует интенсификации учебного процесса.

Основной целью курса «Иностранный язык» является формирование компетенций, обозначенных во ФГОС 3+ для обучающихся медицинских вузов. Владение будущими педиатрами английским языком необходимо для успешной межкультурной коммуникации; это предполагает овладение устными и письменными формами общения на иностранном языке. Изучение иностранного языка призвано также обеспечить:

- повышение уровня учебной автономии, способности к самообразованию;
- развитие когнитивных и исследовательских умений;
- развитие информационной культуры;
- расширение кругозора и повышение общей культуры обучающихся;
- воспитание толерантности и уважения к духовным ценностям разных стран и народов.

Именно для достижения данных целей и был создан «Иностранный язык», курс английского языка для обучающихся первого курса по направлениям подготовки: 31.05.01 Лечебное дело, 31.05.02 Педиатрия, 31.05.03 Стоматология, 33.05.01 Фармация. Курс состоит из 64 контактных часов. Он обеспечивает формирование навыков и развитие коммуникативных умений в говорении, чтении, письме и аудировании, необходимых для успешного общения на английском языке как в устной, так и в письменной формах.

Курс состоит из 34 уроков (Units). Каждый урок обеспечивает усвоение базового языкового материала по предложенным темам, необходимым для обучающихся медицинских факультетов в вузах Российской Федерации. В соответствии с рабочей программой, каждый урок (Unit) рассчитан на 2 часа практических занятий, в целом обеспечивая необходимый материал для 64 часов контактной работы.

Пособие имеет следующую структуру уроков, которые включают такие разделы:

Warm-up (Речевая разминка). Организационная часть урока представлена заданиями по видео материалу, что приближает данный этап урока к естественной речи на иностранном языке, таким образом активизируя словарный запас обучающихся и одновременно представляя им новую тему.

Reading (Чтение). Этот раздел включает учебный текст, содержащий новый лексико-грамматический материал по теме урока. Предложенные тексты взяты из аутентичных источников.

Top Margin (Верхнее поле страницы) содержит цитаты. Это дополнительный материал, который внесет разнообразие в урок и будет интересен продвинутому обучающимся, которые усваивают материал быстрее остальных.

Vocabulary Practice (Активизация лексики). Этот раздел содержит упражнения, направленные на работу с новыми словами и словосочетаниями, введенными в тексте. Обучающиеся активизируют лексику, подбирая синонимы и антонимы, однокоренные слова, используя слова в контексте и т.д.

Language Development (Развитие навыков владения языком). Данный раздел развивает навыки владения языком, консолидируя практическое занятие и самооценку студента. Упражнения разработаны таким образом, что при их выполнении студент должен использовать активную лексику урока, грамматические конструкции в своей устной и письменной речи.

Grammar in Use (Практическая грамматика). Раздел презентует грамматический материал и закрепляет его в разнообразных грамматических упражнениях.

Checklist (Проверьте себя). Раздел позволяет обучающимся проверить, насколько успешно они усвоили изученный материал.

Key Words (Ключевые слова). Раздел содержит активные для данного урока лексические единицы, обязательный для запоминания и употребления вокабуляр по изучаемой теме. Каждый обучающийся может дополнить перечень новых слов другими лексическими единицами, которые он считает полезными и необходимыми именно для него (в конце каждого урока отведено специальное место для заметок).

Пособие также снабжено словарем, включающим как активную лексику уроков, так и дополнительные слова и словосочетания, встречающиеся в пособии, таблицу неправильных глаголов (в алфавитном порядке), таблицу времен, представляющую английские глагольные формы в активном и пассивном залоге, модели управления наиболее распространенных глаголов английского языка.

В пособии также представлены вопросы к зачету для самоконтроля и материалы для подготовки к зачету по завершении курса.

Литература включает список использованной литературы и другие источники, которые могут быть рекомендованы обучающимся для углубления знаний по английскому языку.

LET'S GET ACQUAINTED



Students have come to study at the Medical Academy named after S. I. Georgievsky from different places of our country. You don't know anybody else in your group, so, of course, it would be your responsibility to **introduce yourself** to everybody else. The challenge is that you will be given only 1 minute to do that!

Let's get acquainted
Better and better acquainted

The month of your birthday tells you the **order to speak** – the first academic month is September. So, follow the order in speaking: students whose birthday is in

- 1) September, October, November,
- 2) December, January, February,
- 3) March, April, May,
- 4) June, July, August.

There are some things about you **everyone would be pleased to know**:

- your name, age (the date of birth), **marital status**;
- your native place;
- your address, email address;
- details about your education and your favourite education activities;
- your likes and dislikes;
- your free time and hobbies.

If you want to **ask** your classmates for personal details, you can put questions, using:

1. Question words

- Who** (to ask for a name or person)
- Whose** (to ask about the owner)
- Why** (to ask for a reason)
- Where** (to ask for a place)
- What** (to ask about a thing or a concept)
- Which** (to ask about a thing)
- When** (to ask for a time)
- How** (to ask about the way something happens)
- How much / How many** (to ask about quantity)
- How long** (to ask about duration)
- How often** (to ask about frequency.)

2. Correct word order of questions:

1. Question word – optional
 2. Auxiliary do / does; verb to be
 3. Subject
 4. Verb + complement
- (1)Where (2)do (3)you (4)live?
(1)What (2)is (3)your name?
(2)Do (3)you (4)like reading?

If there is no question word, the question starts with the auxiliary. The answer to a question like this is “yes” or “no”.

Video Activity

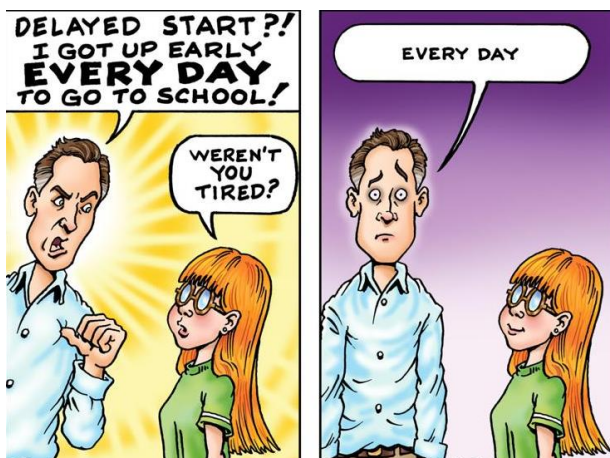
Preview

1. Culture



In many countries, school calendar reform is gaining popularity with more schools experimenting with year round calendars, four-day school weeks, balanced calendars and later start times in an attempt to increase student achievement, cut costs, or improve the overall educational environment for teachers and students. Alternative start times are also in consideration in middle and high schools where teenage students need more sleep than younger students.

1. How many hours of sleep per night do adolescents require for optimum health?
2. Do early school start times prevent teens from obtaining sufficient sleep?
3. What time did your school start?



2. Vocabulary

Match the pictures with the following words:

1. Body clock
2. To override nature
3. Stropy
4. Hypothalamus



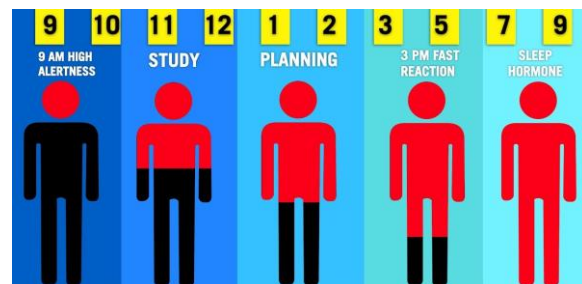
A.



B.



C.









D.

Watch the Video: Schools for tired teens – BBC News






(<https://www.youtube.com/watch?v=pJY0mBWHPw4>)

3. Check (✓) all correct answers.

	 Speaker 1	 Speaker 2	 Speaker 3	 Speaker 4	 Speaker 5	 Speaker 6
He(she) goes to school.						
He(she) works at school.						
He(she) doesn't like new start times for school.						
He(she) doesn't think it's natural to wake up early.						

Whatch for details

4. Check (✓) True or False. Then correct the false statements. Compare with a partner.

	S t a t e m e n t	True	False	C o r r e c t i o n
 1	She is pleased when her mom wakes her up.			
 2	She doesn't see her daughter looking tired now.			
 3	Overriding nature is necessary to succeed at school.			
 4	Nothing is responsible for all our 24-hour timing systems in the human body.			
 5	In adolescence the brain doesn't continue to grow.			

Follow-up Activities

5.A. Small-group work.

Make a list of questions on specified matters and interview 2 groupmates and complete the chart.

Your questions	Groupmate 1	Groupmate 2
1. (about his(her) school location)		
2. (start time for school)		
3. (time of awakening)		
4. (possibility of coming later to school)		
5. (duration of his(her) school day)		
6. (if he(she) was tired in the morning)		
7. (feelings in the morning)		

5.B. Group work.

Compare answers as a group.

Language Close-up

6. **WHAT COULD THEY SAY?** Watch the video and complete the conversation. Then practice it.

1. _____
 _____ ?
 - In my old school timetable I felt kind of grumpy in the morning.
 _____ ?
 - Now it's just I'm feeling good all around.
 _____ ?
 - Because I've got good sleep and good quality of sleep.

2. - What time for an adult is a seven o'clock start time for a teenager equivalent to?

 - How long does it sometimes take you to concentrate and just to focus on the work that you have to do?

 - What range of issues do schools on a day-to-day basis sometimes deal with?

3. _____ ?
 The decisions based on more than 20 years of research into the teenage body clock _____ ?
 No, it's too early to say if the changes here will mean students do better in their exams.
 _____ ?
 A wider study by Oxford University will help other schools to decide whether to change their timetable.

ENTRY TESTS

I. Listening: The university of life

http://downloads.bbc.co.uk/learningenglish/features/tews/160705_tews_university_of_life_download.mp3

Are the sentences true or false? Listen to the text. For statements (1-5) choose "T" if the statement is true according to the text, "F" if it is false. Write your answers on the separate answer sheet. You will listen to the text twice.

	True	False
1. Feifei is relaxed about her exams.		
2. Rob knows a lot about preparing for exams because he studied at the university.		
3. The university of life isn't in London.		
4. Rob is sure that none should worry about exams.		
5. If you learn something in the school of hard knocks, you learn it as a result of difficult or unpleasant experiences.		

Maximum: "5" (1 x 5)	Your marks:
-------------------------	-------------

II. Use of English

6. I found the way to her house quite easily, because Jill ____ it to me very well.

- A. had described
- B. described
- C. had been describing
- D. was describing

7. Your mom is waiting for you. You ____ better go.

- A. should
- B. would
- C. had
- D. will

8. I don't mind driving. I can take you ____ you want to go.

- A. wherever
- B. whichever
- C. whatever
- D. whenever

9. I am right, ____ I?

- A. aren't
- B. amn't
- C. am not
- D. don't

10. They spent their vacation on ___ Bahamas.

- A. –
- B. an
- C. a
- D. the

11. In 1912 the Titanic ___ an iceberg on its first trip across the Atlantic, and it sank four hours later.

- A. had hit
- B. hit
- C. had been hitting
- D. was hitting

12. You can begin your work ___ you want, as long as it's finished on time.

- A. wherever
- B. whichever
- C. whatever
- D. whenever

13. Is there ___ pharmacy nearby?

- A. –
- B. an
- C. a
- D. the

14. I ___ tell anyone about it, I promise.

- A. can't
- B. 'm not going to
- C. won't
- D. wouldn't

15. The hills here are covered with wildflowers ___ early spring.

- A. on
- B. in
- C. at
- D. by

16. If we ___ to the radio, we would have heard the news.

- A: listened
- B: has listened
- C: had listened
- D: would listen

17. Maria and Anthony were heard ___ after the airplane crash.

- A: survived
- B:to survive
- C:have survived
- D: survive

18. My big grey cat Fluffy is good ___ mice.

- A:to catch
- B:at catching
- C:catch
- D:will catch

19. In this hospital small injuries ___ by assistant doctors.

- A:is treated
- B:treated
- C:are treated
- D:treat

20. English _____ in many countries all over the world.

- A:speak
- B:speaks
- C:is speak
- D:is spoken

Maximum: "15" (1 x 15)	Your marks:
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TOTAL

Maximum: "20" (1 x 20)	Your marks:
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UNIT 1.1. BEING A STUDENT

In this unit

- talking about studying at a higher medical school
- spelling and reading rules
- using *to be* and *to have*
- plurals of nouns
- personal pronouns and possessives

Warm up

Do you agree that knowledge is not deposited from a teacher to a student but is instead formulated through dialogue between them? Why/Why not?

Video Activity: A Day in the Life of a Medical Student

<https://www.youtube.com/watch?v=lfdaX3RbBOK>

I. Before you watch

Match the terms with the images.

1. Community-based learning
2. Workout
3. To get wrapped up in the books
4. Feedback
5. A tangible way to do



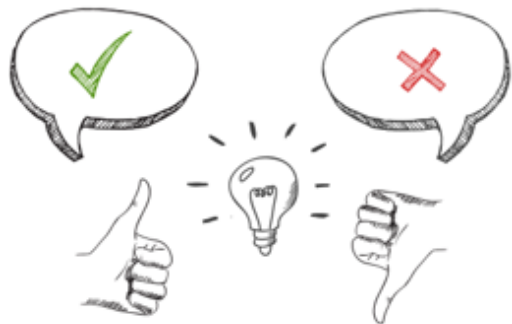
(A)



(B)



(C)



(D)



(E)

II. While you watch

Answer the questions about the main character.

1. Does she enjoy class activity?
2. Why does she compare her group to a family?
3. What helps students relax?
4. What is her ambition?

III. After you watch

Make up the dialogues:

- Group 1 – about your everyday activity;
- Group 2 – about your free time;
- Group 3 – about your hobbies and interests.

"A student is an empty container that a teacher fills with knowledge."

"I cannot teach anybody anything, I can only make them think." -
Socrates, Greek philosopher (469-399 BCE)

Reading



a) My name is Nick Ivanov. I am from Simferopol, the capital of the Crimea. I am a first-year student of the Medical Academy which is a part of Crimean Federal University. I live with my parents rather **far** from the university. It takes me 25 minutes to get to the university by minibus.

My classes usually start at 8 a.m. Every day I have one or two lectures and some practical classes. I **enjoy** being a student. We study a lot of **subjects** like anatomy, chemistry, medical biology, English, Latin, *etc.* My **favourite** subject is anatomy. Many think it is very difficult but for me it is really important as I want to become a **surgeon** in future. After classes I usually have lunch and then go home or to the library. There I **prepare** for my classes. Everyone knows it takes a lot of time and effort to study at the Academy but I really enjoy it.

b) This is Kate Smirnova. She is a friend of mine. We study in the same group. Kate is from Feodosiya. This is a resort town in the south-east of the Crimea, not far from Simferopol. Here she **rents** a room near the Salgir river. It is just a 10-minute walk from the Academy. Kate likes our city with its green parks and picturesque banks of the



Salgir river. Kate's dream is to **become** a **physician**. It is a difficult job but she likes working in a **caring profession**. She says that later she would like to specialize and perhaps be a **pediatrician**. She is **going to** return to her native town and work

there. "I love children and **looking after** them would be wonderful", she says.

1. Read three texts and answer the following questions:

- Where are the students from?
- Where do they live in Simferopol?
- How do they get to the University? How much time does it take them to get there?
- What are their plans for future?
- What do they like (dislike) about the Crimea, the Academy?

c) Look at these students. Their names are Redson and Kizito. They are 6th-year students from Nigeria.



They are also my friends. They live at a **hostel** of the Academy **campus**. It is quite **near** the Academy. It takes them 5 minutes to get to the university. Studies usually take 80% - 85% of the students' time. Still they find time on fun activities, sports and **socializing**. They try to combine studying and exploring of the Crimea with its culture and traditions, beautiful cities on the southern coast of the Black Sea. I often visit my friends at the hostel and help them to **overcome** language difficulties. We **communicate** much in English and Russian and this helps my friends to **master** the Russian language and me to **improve** my English. Redson and Kizito **entered** the Academy six years ago. This year they are **graduating** from the Academy. After the course they are going to work in Nigeria as **family doctors** but they don't know where yet.

Vocabulary Practice

1. Look at the words in bold type on p. 14 and explain them.

2. Fill in the correct word(s) from the list below, synonyms to which are given in the brackets.

<i>favourite</i>	<i>become</i>	<i>master</i>
<i>socialize</i>	<i>overcome</i>	<i>near</i>
<i>improve</i>	<i>graduating</i>	<i>hostel</i>
<i>rent</i>	<i>enter</i>	

1. Our group is very friendly. We _____ a lot outside our classes. (**communicate**)

2. Are you looking forward to _____ from the University? (**finishing the course of studies**)

3. What would you like to _____ after the University? (**be**)

4. If you want to be a physician, you have to _____ Anatomy and other medical subjects. (**be good at**)

5. What is your _____ subject? (**most liked**)

6. Some students of our group live at a _____, while others _____ a room. (**accommodation for students; to pay someone for the use of room**)

7. We go to the university on foot as we live _____ the University. (**close to**)

8. Physical Education gives the students the chance to _____ their skills and health. (**make better**)

9. He managed to _____ nervousness and passed his module testing. (**control**)

10. Every year many young people _____ the higher medical schools because they want to work in a caring profession. (**start the course in**)

3. Fill in the gaps with *do, make, take*, then use these word combinations in the sentences below.

1. _____ an exercise	6. _____ a break
2. _____ an exam	7. _____ notes
3. _____ an effort	8. _____ mistakes
4. _____ one's best	9. _____ a task
5. _____ part	10. _____ care

1. It is very important to _____ at the lectures as it helps to remember information better.

2. The students _____ to prepare for module testing.

3. At the English lessons the students learn new words, read texts and _____.

4. You must learn the rules well not to _____ in the exercises.

5. Between our lectures we usually _____ during which we have lunch in the buffet.

6. He _____ of his old parents.

7. Every year many students of our University _____ in different sports competitions.

8. Foreign students should _____ to learn the Russian language.

9. When the end of the semester comes, the students _____ in different subjects.

10. The teacher asked the students to _____ on the computer to check their knowledge.

4. Fill in the correct preposition, then choose any item and make a sentence.

to prepare _____ classes; to return _____ the city;
to take part _____ the conference; to return _____ home; to enter _____ the university; to go _____ bus;
to go _____ foot; to communicate _____ English;
to graduate _____ the university; to live _____ a hostel; far _____ the hostel; to spend time _____ smth; to speak _____ English.

E.g. Students spend a lot of time on scientific work in students' scientific society.

5. Make up sentences using the table.

1. A physician	specializes in is a specialist is a person	a surgical diseases
2. A surgeon		b children's diseases
3. A family doctor		c diagnosis and medical treatment
4. A pediatrician		d who looks after other people
5. A care professional		e who treats patients with not serious diseases or refers them to a hospital
6. A patient		f receiving a medical treatment

6. Make up sentences using the following table.

	me		to prepare for classes
	my friend	... min.	to deliver a lecture
It takes	the doctor	... hours	to cook dinner
	the lecturer		to get to the University
	my mother		to learn about ten English words
			to make an operation

Using the table make up short dialogues according to the module.

E.g.	A:	<i>How much time does it take you to prepare for classes?</i>
	B:	<i>It takes me about 5 hours to prepare for my classes.</i>

7. Fill in the table with the missing words.

No	Verb	Noun	Adjective
1.			communicable
2.		speciality	
3.			graduated
4.		enjoyment	
5.			careful
6.		society	
7.			improvable

8. Add as many words to the following groups as possible.

University subjects	
Classroom activities	doing exercises, ...
Medical specialities	
Transport	
Fun activities	

9. Using the structure *to have got*,

a) tell your classmates which of the following things you've got or haven't got:

E.g. *I've got a bicycle but I haven't got a car.*

b) ask yourclassmate which of the following things he/she has got:

E.g. A. *Have you got a bicycle?*

B. *Yes, I have. (No, I haven't).*

a computer, a camera, a notebook, a motorbike, an iPad, a medical encyclopedia, roller skates, any pets, an English-Russian dictionary, a smartphone, a videocamera.

Language Development

1. Look at the following statements about the students in the text on p. 7. Which are true? Which are false? Correct the false statements.

- All the students are in the first year. **F**
- All the students live at a hostel near the University and go there on foot. _____
- They all want to become surgeons. _____
- They are very busy studying all the time, so they practically don't have free time. _____
- Nigerian students socialize with Russian students a lot. _____
- They all enjoy sightseeing around the Crimea. _____
- Both Nick and Kate often visit their foreign friends to practice their English. _____
- It takes Redson and Kizito 10 minutes to get from the hostel to the University. _____
- Redson and Kizito will be graduates this year. _____
- Redson and Kizito are going to stay in Russia for their future career. _____

2. Retell the text speaking about:

- Nick Ivanov; b) Kate Smirnova;
- Redson and Kizito.

3. Match the questions and the answers.

- Who are you?
- Where are you from?
- What are you?
- Where do you study?
- How far is your home from the University?
- How do you come to the University?
- Why are you learning English?

- I'm a student.
- About 15-minute walk.
- Russia.
- In Simferopol
- Because I need it for my job.
- Pete.
- By bus

4. What would you say under such circumstances? Provide 5-7 sentences.

- You are at the International Students' Conference. Introduce yourself and tell some words about the University you are from.
- Your pen-friend wants to know how training is organised at your university. Tell him/her about your everyday routine.
- A group of scientists make research as to whether the students' years are the best time in one's life. Say what you like/don't like about your university. Is it really good to be a medical student?

5. Match the idioms with their definitions.

1	learn by heart	a	read with great concentration
2	learn one's lesson	b	learn sth after making a mistake
3	learn the hard way	c	there's always sth you haven't experienced before
4	you are never too old to learn	d	learn sth (unpleasant) by experiencing it
5	read sb like a book	e	memorise smth
6	have one's nose in a book	f	understand sb's thoughts, ideas clearly

Now finish the statements using one of the idioms in the proper form.

- The oldest world's student is 86 years old. This is Galina Chernova from Simferopol. In 2012 she graduated from the Crimean Institute of Economics and Law.
_____.
- My friend knows a lot about everything. Every time I see him he _____.
- Do not try to cheat at the University. Your lecturers _____.
- If you want to speak English correctly it's better to _____ grammar rules _____.
- After failure most people start working hard. They _____.
- When babies start walking they fall a lot. They _____.

6. Make up a story about yourself using the following questions.

- Who are you? What are you?

- Where are you from?

- Have you got a family?

- Have you got a job?

- Where do you study?

- Do you enjoy your course?

- When do your classes begin? finish?

- How many lectures and classes do you have a day?

- What is your favourite subject?

- What do you do after classes?

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Plural Nouns

	Singular	Plural
A.	a surgeon a day	surgeons days (compare with C.)
B.	a campus a class a lash a match	campuses classes lashes matches
C.	a difficulty	difficulties
Exceptions		
D.	a person a child a man a woman a tooth a foot	people children men women teeth feet

2. Write the plural form.

Singular	Plural
an address	
a minibus	
a paediatrician	
a child	
a university	
a businessman	
a sportswoman	
a way	
a person	
a church	

3. Rewrite these sentences in plural making the necessary changes.

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

- She is a businesswoman.

- A paediatrician is a doctor for a child.

- Our university is rather big.

- A student was at the campus.

- He is a good person.

- I am a future surgeon.

Personal Pronouns and Possessive Adjectives

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

4. **Underline** the pronouns and possessive adjectives in these sentences. Determine their type.

- I live with my parents.
- Our mother is a paediatrician. Her job is difficult but interesting.
- They are friends of ours.
- I have a new car. Its colour is blue.
- It takes me 5 minutes to get to my hostel.

5. **Complete the sentences with the correct pronoun or possessive adjective.**

- James has two friends. ... goes to the library with ... every Monday.
- That's my Latin workbook. Can I have ... back, please?
- Our new professor is Mr Lagunov. ... like ... and ... lectures a lot.
- This book isn't My book has a different cover.
- We like ... city with ... picturesque parks and busy streets.
- Who are those people? Do you know ... names?
- Rose and I are good students. ... like our teacher Ms Smith and ... likes
- My father met Jim 30 years ago. He is an old friend of
- Jane and Jack live not far from the University. ... takes ... 5 minutes to get there.
- She loves children and looking after ... would be wonderful.

**Have and have got to express possession
The verb 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. Use the proper forms of *have* or *do* in the following sentences.

- What problems ____ you have speaking English?
- Every day I ____ two or three lectures.
- I ____ got a comfortable room in the hostel.
- ____ you got any friends from foreign countries?
- She ____ not have any problems with anatomy.
- ____ he got any books on chemistry?
- We ____ not have lectures on biology on Monday.
- My friends ____ got three brothers.

7. Use the proper form of *have got* instead of *have* where possible.

1. After classes I have lunch at the café.

2. Our dog has long ears.

3. Do you have any lectures on Saturday?

4. Jim has a lot of friends among surgeons.

5. Does he have any sisters?

**Verb 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	will	be	in London tomorrow.
We / You / They	(won't)		

8. Complete the sentences. Use the verb to be in the correct form.

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

**Verb 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?

9. Say whether the sentences are true or false.

Correct the false sentences.

E.g. My friend's name is Peter. -

No, it isn't. My friend's name is Jim.

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

10. Complete the questions with the correct form of the verb to be.

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. Read three conversations from a day of a first-year foreign student at MA. Fill in the gaps with *are, is, am, have*.

Match the places and the conversations.

- The Anatomy department
- The Internet café
- The canteen

I. S Hello! How much does it cost to use a computer for half an hour?

B _____ you a 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.

II. 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.

Now practise the conversations with your partner

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- 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

be going /ˈgəʊɪŋ/ to

become *v irreg.* /bɪˈkʌm/

campus *n* /ˈkæmpəs/

caring profession /ˈkeərɪŋ prəˈfeɪʃn/

communicate *v* /kəˈmjuːnɪkeɪt/

enjoy *v* /ɪnˈdʒɔɪ/

enter *v* /ˈentə/

family doctor /ˈfæmɪli ˈdɒktə/

far /fɑː/

favourite *adj* /ˈfeɪvərɪt/

graduate *v* /ˈgrædʒueɪt/

n /ˈgrædʒuət /

hostel *n* /ˈhɒstəl/

improve *v* /ɪmˈpruːv/

it takes ... to do smth

look after /lʊk ˈɑːftə/

master *v* /ˈmɑːstə/

near *prep* /nɪə/

overcome *v* /əʊvəˈkʌm/ (overcame /əʊvəˈkeɪm/, overcome)

paediatrician *n* /ˌpeɪdɪəˈtriʃən/

patient *n* /ˈpeɪʃənt/

physician *n* /fɪˈzɪʃən/

prepare *v* /prɪˈpeə/

rent a room

socialise *v* /ˈsəʊʃəlaɪz/

subject *n* /ˈsʌbdʒekt/

surgeon *n* /ˈsɜːdʒən/

Look back through this unit. Find other words and expressions that you think are useful and worth learning.

UNIT 1.2. HIGHER MEDICAL SCHOOL

In this unit

- talking about higher medical school in which I study
- using *Present Simple* and *Present Continuous*
- making general and special questions
- word order in the sentence
- dates



Warm up

What are the reasons to name our establishment “Academy without borders”?

Video Activity: Why Crimea Federal University Medical Academy is good for Medical Students

(<https://www.youtube.com/watch?v=najB2pwC-k0>)

I. Before you watch

Match the terms with their definitions.

1. Confidence
2. Powerful team
3. Dormitory

A. A building primarily providing sleeping and residential quarters for large numbers of people such as boarding school, high school, college or university students.

B. A group of people having both a clear understanding of their goal and a belief that achieving it will produce an important result.

C. Feeling sure of yourself and your abilities — not in an arrogant way, but in a realistic, secure way.

II. While you watch

Answer the question

What does *1931* which was mentioned in the video refer to?

III. After you watch

Make up the dialogues about your academy. You can use the following

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.
- **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. You are going to read the text about Medical Academy. Choose from the list the statements A-G which best summarise each part (1-6) of the text. There is one extra statement which you do not need to use. There is an example at the beginning (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 **internship** or 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 languages 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. Look at the words in bold type on p. 22 and explain their meaning.

2. Fill in the correct word(s) from the list below, synonyms to which are given in the brackets.

complete	internship	memorise
refresher courses	curriculum	choose
	is situated	revise

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

3. Fill in the correct word(s) from the list below. Use the words only once.

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

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

Make up sentences using some of the above word combinations:

4. Fill in the gaps with the correct derivatives formed from the words on the right with the help of suffixes *-ian*, *-ist*, *-eon*.

1. He always wanted to be a _____.	NEUROLOGY
2. She is studying to become a _____.	CHEMISTRY
3. The profession of _____ 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 _____.	PSYCHIATRY
8. Is it difficult to become an _____?	OBSTETRICS

5. Fill in the gaps using different numbers.

- There are _____ departments at MA.
- The academic staff of MA includes _____ professors and _____ associate professors.
- The students study _____ years at the First and Second medical faculties.
- The course of studies at the faculty of Dentistry lasts _____ years.
- The graduates study at the internship for _____ years.
- The list of medical specialities at the faculty of Postgraduate training includes _____ specialities.
- The tuition fee at our Academy is _____.
- There are _____ computer labs at the Academy.

6. Supply definitions to the following words and word combinations.

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. Look through the text and answer the following questions:

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. Talking points

a. Look at the statements before the text and retell the text according to this plan.

b. Talk about the main stages of becoming a medical specialist in Russia.

c. Using the following prompts, talk about the main challenges of being a medical student and a doctor.

- 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. Look at the list of qualities below. Which qualities do you think a good student should have?

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.

Describe the personality of your friend. Is he/she a good fellow student? _____

3. Hellen, a medical student from UK, describes her course.

a. Read and compare it with the course at your medical academy.

I'm just finishing my first year of Medicine. What I like about this course is that you're with patients from the very beginning. Even in our first year, we spend time in hospital.

Much of the course is PBL (problem-based learning). We have two 2-hour sessions a week where we work in groups of eight to ten solving clinical problems. We decide together how to solve the problem, look up books and online sources, make notes and discuss the case together. It's a great way of learning and getting to know the other students.

In the past, medical students had lectures with the whole class taking notes from lecturers from 9.00 to 5.00, but now it's mainly a group work, although we do have some lectures and **seminars** where we work in small groups with a tutor.

I like all of it! Even the **dissection**. We get to cut up **cadavers** from the second month of the course.

b. Put questions to the following sentences:

1. I'm just finishing my first year of Medicine.

What year student are you? or

What course are you taking?

2. We spend time in hospital.

3. We work in groups of eight to ten solving clinical problems.

4. We look up books and online sources, make notes and discuss the case together.

5. We don't have lectures from morning till late in the afternoon.

6. We have some lectures and seminars where we work in small groups

7. I like making dissections.

8. We cut up cadavers from the second month of the course.

4. Writing Letters.

a. Whether you are in your home country or in the UK, you may want to find an English-speaking friend to write . This sort of friend is known as a *penfriend* (American English: *penpal*).

Some people prefer to correspond using letters (sometimes called "snail mail" because it is slower), while others prefer to use e-mail (sometimes this kind of penfriend is also called a *key pal* or an *e-pal*)

b. Look at the plan of a letter to a pen-friend. Usually the informal letter has the following parts:

Plan

Dear (your pen-friend's first name),

Introduction

Para 1: name, where from, place you live in, family

Main Body

Para 2: age, university you go to, your future profession

Para 3: what you like/what you don't like about your studies

Para 4: what you do in your free time

Conclusion

Para 5: ask him/her to write back and send you his/her picture

*Best wishes,
(your first name),*

c. Now write a similar letter to a pen friend. His address was on one of the Internet sites, and he wants to study medicine. You decided to describe Medical Academy to him. Include the following information:

Where is the Academy situated?

What facilities are there at the Academy?

Where do the foreign students study?

What can you say about students' leisure activities?

Why is it interesting to be a medical student?

Mind the structure of the letter. Use the letter from exercise 8 (grammar section) as a model.

Project Work

Do the project according to the theme of the unit.

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		

Signal words: always, often, regularly, every day, from time to time, on Mondays, usually, in general, sometimes, seldom, never

Basic uses:

- 1 Permanent truths: *The sun rises in the east.*
- 2 Habitual actions: *I take wushu classes on Tuesday and Friday.*
- 3 Future reference (for timetables): *The exam starts at 8 a.m. next Wednesday.*

4. Complete the sentences with the proper form of the verb in the Present Simple.

1. Jane ... (to want) to become a neurologist.
2. ... you ... (to get) to the Academy by minibus?
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. About 400 foreign students ... (to come) to study at our University every year.
7. The first-year curriculum ... (not to include) Russian literature or geography.
8. What departments ... the fourth-year students ... (to attend)?

5. Use the Present Continuous in the sentences below.

1. I can't come now. I ... (to work) on the project on philosophy.
2. 'Where's Boris?' 'He ... (to play) badminton in the sports facilities.'
3. '... George and Bill ... (to revise) for their exams?' 'Oh, no. They ... (to prepare) for the concert to the Day of the First Medical Faculty.'
4. 'Where's Dan? He ... (not to swim) with us.'
5. In May all of us are very busy. We ... (to take) external standardised testing.
6. Shhhh... I ... (to talk) to the Rector!
7. Oh dear! We ... (to have) five module tests next week!

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	

Signal words: now, at present, at the moment, still, while (at present)

Basic uses:

- 1 Actions in progress at the moment of speaking: *She's surfing the Internet now.*
 - 2 Temporary actions/situations: *My friends are studying Dentistry at MA.*
 - 3 Planned actions (+tomorrow, next year/month, etc.): *We're spending next holiday in England*
- Stative verbs** are not normally used in continuous forms:

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

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

6. Ask the questions to get the missing information. Give sample answers.

- e.g. *I am going to _____ tonight.*
Where are you going to 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?
 8. I am so happy because _____.
Why _____?

7. Read Natalya's letter to her pen friend. Use the verbs in brackets in the correct form.

Dear Miguel,

Thanks a lot for your address in Brazil.

My name _____ (to be) Natalya. I

_____ (to be) 18 years old.

I _____ (to live) in Russia. My city,

Simferopol, _____ (to be) situated in the

Crimea, not far from the Black Sea. I _____ (to like) it very much.

At present I _____ (to take) the course of medicine at Crimean State Medical University. I _____ (to be) in my first year. I

_____ (to work) hard because it _____ (to be) difficult to study medicine.

Usually we _____ (to start) learning at 8 in the morning. We _____ (to have) several lectures and seminars every day. But after classes I _____ (not to go) home! I _____ (to hurry) to the reading hall, or the computer lab, or to the anatomy department. Imagine, today we _____ (to cut) up a cadaver!

In my free time (though I _____ (not to have) much free time) I _____ (to go) running or _____ (to take) kudo classes. I also _____ (to read) a lot. Now I _____ (to read) ... an atlas of human anatomy!

By the way, if you _____ (to be) interested in medicine you may join our university, too. We _____ (to have) a lot of students from abroad, and our lecturers _____ (to teach) in both Russian and English.

Well, what about you? _____ you _____ (to go) to the university? What course _____ you _____ (to take)? What _____ you _____ in your free time?

I _____ (to look) forward to your answer.

Your pen friend, Natalya.

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- 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`tʃi:v/

achievement *n* /ə`tʃi:vmənt/

associate professor /ə`səʊsiət prə`fesə/

attend *v* /ə`tend/

be allowed /ə`laud/ to do smth

be situated /`sɪtʃuətɪd/

career *n* /kə`rɪə/

choose *v* /tʃu:z/

citizen *n* /`sɪtɪzən/

complete *v* /kəm`pli:t/

curriculum *n* /kə`rɪkjuləm/

department *n* /dɪ`pɑ:tmənt/

entrant *n* /`entrənt/

faculty *n* /`fækəltɪ/

Faculty of Postgraduate Training

festive event /`festɪv ɪ`vent/

for free

gynaecology *n* /gəɪnə`kɒlədʒɪ/

histology *n* /hɪs`tɒlədʒɪ/

include *v* /ɪn`klu:d/

internship *n* /`ɪntɜ:nʃɪp/

memorise *v* /`meməraɪz/

neurologist *n* /njuə`rɒlədʒɪst/

obstetrics *n* /ɒb`stetɪks/

philosophy *n* /fɪ`lɒsəfɪ/

postgraduate *n* /pəʊst`grædʒuət /

practical skills

professor *n* /prə`fesə/

psychiatrist *n* /saɪ`kaɪətrɪst/

psychiatry *n* /saɪ`kaɪətrɪ/

psychology *n* /saɪ`kɒlədʒɪ/

refresher courses /rɪ`freʃə`kɔ:sɪz/

revise *v* /rɪ`vaɪz/

tuition fee /tju:`ɪʃən`fi:/

universal state exam /juːni`və:səl steɪt ɪg`zæm/

Look back through this unit. Find other words and expressions that you think are useful and worth learning

UNIT 1.3. MEDICAL EDUCATION

In this unit

- talking about medical education in the USA and UK
- comparing and contrasting medical education of Russia and English-speaking countries.
- using *there is/are*, prepositions of place
- some/any, much, many, a lot (of), little, few
- the comparison of adjectives and adverbs



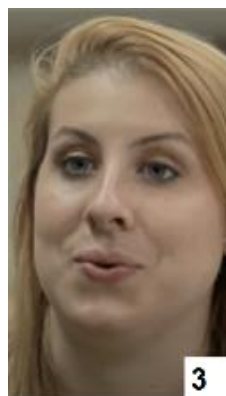
Warm up

Do you agree that Aristotle quote is true for medical students? Why/Why not?

“The roots of education are bitter, but the fruit is sweet.”



I think what's most important to think about when preparing for your first test is not to freak out too much and that'll be just fine and that you should go to the review session afterward and try to retain things for as long as you can.



The incoming class about balancing school and social life is that it's really important to make time for your friends my friends here are my biggest supporters and without them I don't know how I would have gotten through first year.

Video Activity:

Advice for First-Year Medical Students

(<https://www.youtube.com/watch?v=dAaZ3jLmS-U>)

I. Before you watch

Match the terms with their definitions.

1. Mentor
2. To face the challenges
3. Top dog
4. To be not the case
5. To freak out

- A. The most important person or organization in a particular situation
- B. To feel extremely surprised, upset, angry, or confused
- C. To have problems
- D. A person who gives a younger or less experienced person help and advice over a period of time, especially at work or school
- E. To be neither true or correct

II. While you watch. What does the speaker mean when (s)he says...?



1. Some of the challenges that I faced during my first year here was really feeling like I had to be the number one top dog in the class which definitely isn't the case you can just be yourself and know that you're learning for your

own purposes.

III. After you watch

Exchange your points of view on how to study at our academy.

Reading

You are going to read the text about medical education in the USA. Choose from the list the questions A-G which best summarise each part (1-7) of the article. There is one extra question which you do not need to use. There is an example at the beginning (0).

- A. What do students do during the final years?
- B. Why are medical schools so tough?
- C. What skills are necessary to succeed at medical school?
- D. What is the cost of medical education in the USA?
- E. What subjects do medical students take during the first two years?
- F. May I work as a doctor just after graduation from medical school?
- G. When do medical students get their M.D. degree?

A doctor must work eighteen hours a day and seven days a week. If you cannot console yourself to this, get out of the profession.
Martin H. Fisher

Reading

Being a Tomorrow's Doctor

(What to Expect if You Choose a Medical Career in the USA)

0. What does it take to become a doctor?

Becoming a doctor requires a serious educational **commitment**. It takes from 11 to 16 years to complete your education, including four years of **undergraduate** school, four years of medical school, and from three to eight years of **residency** training in a chosen specialty.



1.

Medical school is **challenging** for a reason: if you plan to take **responsibility** for people's health and well-being, you must be **committed** to learning.

2.

During the first two years you will study the basic sciences—**anatomy**, **biochemistry**, **physiology**, **microbiology**, **pathology**, and **pharmacology**—as well as behavioural sciences. You'll also begin learning how to take a **medical history** and to examine patients.

3.

You'll go into the hospital and various clinics to **observe** and work with **experienced** doctors and begin to learn how to **take care** of patients. At this time you'll begin to explore medical careers, such as family practice, internal medicine, surgery, psychiatry, obstetrics and gynaecology, and paediatrics. During your final years you continue your contact with patients and doctors and take **elective** courses.

4.

After medical school you will spend three to seven years in a residency, where you will gain further **experience** and training in the chosen specialty. You already may have an idea of which specialties interest you; however, it's good to keep an open mind until your third year of medical school.

5.

Medical school is tough. You must learn a lot, and you must learn fast. You will need good study habits and time management **skills** as well as a strong academic **background**. But you must also remember that medical school faculty and staff are ready to help you **succeed**. Medical schools are committed to their students and their education. In general, more than 96 percent of all students **enrolled** succeed in earning their M.D. degree.

6.

Annual **tuition fees** at state medical schools in 2014-2015 averaged approximately \$25,000 for state residents and \$48,000 for non-residents. At private schools, tuition fees averaged \$42,000 for residents and \$43,000 for non-resident students. These figures do not include **housing** or living expenses.



Vocabulary Practice

1. Look at the words in bold type on p. 29 and explain their meaning.

2. Supply definitions to the following words:

1. undergraduate education	a. the doctors take it to become Gps or consultants
2. postgraduate training	b. the course which you can choose to study
3. residency	c. four or five years of medical school
4. elective course	d. money you pay to be taught in a college or university
5. tuition fee	e. a period of specialized medical training in a hospital
6. a continuing professional development	f. the doctors take it throughout their working lives to keep up to date
7. M.D. degree	g. governing body of the medical profession
8. General Medical Council	h. Doctor of Medicine, a doctoral degree for physicians

3. Match the words to the nouns:

require	experience
complete	care
examine	a patient
take	education
keep	commitment
gain	an open mind

4. Match the words to the synonyms:

commitment	student
undergraduate	obligation
housing	professional charge
tuition fees	education
background	accommodation
observe	case history
medical history	duty
tough	difficult
responsibility	watch

5. Circle the correct word:

1. Annual _____ at state medical schools averages \$25,000.

- a) fees b) food and clothing c) housing

2. After medical school you will spend 3 or 7 years in _____.

- a) elective course b) residency c) internship

3. You need a strong academic background to _____ at medical school.

- a) cost b) complete c) succeed

4. You'll go to the hospital to observe and work with _____ doctors.

- a) experienced b) honoured c) family

5. If you plan to take _____ for people's health, you must be committed to learning.

- a) residency b) responsibility c) management

6. Complete the following sentences:

1. Becoming a doctor requires a serious educational _____.

2. During the first two years you'll study the basic sciences such as _____.

3. You will work with experienced doctors and begin to learn how to _____.

4. During the final years you'll explore medical careers such as _____.

5. It's good to keep an open mind until _____.

7. Make special questions to the following answers:

1. _____

It takes 11-16 years to complete education in the USA.

2. _____

Students study basic sciences – anatomy, biochemistry, physiology, microbiology.

3. _____

After medical school you will spend up to seven years in residency.

4. _____

You will need good study habits and time management skills to study at medical school.

5. _____

More than 96 percent of all students enrolled succeed in earning their M.D. degree.

6. _____

You will gain further experience and training in the chosen speciality in residency.

Language Development

1. The following words are the names of places at the university. Choose the necessary word and insert it into the gap:

classroom	gym	staffroom	dissecting
library	lab	cloakroom	room
canteen	hostel	playground	palace of culture

1. There is a blackboard, several tables and many chairs in each _____.

2. We often have classes in Anatomy in the _____.

3. We leave our coats and raincoats in the _____.

4. The _____ is for teachers only, the students are not allowed to go in there.

5. We have a very good _____ at our University, as a rule I have lunch there.

6. We usually have Physical Education in the _____, but some sports competitions take place on the _____.

7. Some of my fellow students live at the _____ and some of them rent a room.

8. Our University has 12 computer _____ where students prepare for classes.

9. It is always quiet in the _____ and there is a lot of scientific literature there.

10. All great holidays and important events at the University are celebrated at our _____.

2. Fill in the correct word:

1. Anatomy is my favourite _____ but today's _____ was particularly interesting. **(lesson/subject)**

2. Five _____ of our school have entered the University this year. Now they are 1st-year _____ of the medical faculty. **(students/pupils)**

3. We finish the _____ of the Anatomy at the end of this _____. **(term/course)**

4. At the module testing I got 40 _____. It is the highest _____ for the module. **(points/mark)**

5. Prof. Ivanov is the _____ of the medical faculty, but some years ago he was the _____ of the therapy department. **(dean/head)**

3. Your friend wants to enter MA and asks you about the facilities of the University. Answer his questions.

e.g. A. Is there a hostel at the University?

B. Yes, sure. There are 5 comfortable hostels at the Campus.

(Internet café, bank, study rooms, kitchen, laundry facilities, billiard rooms, call centre, etc)

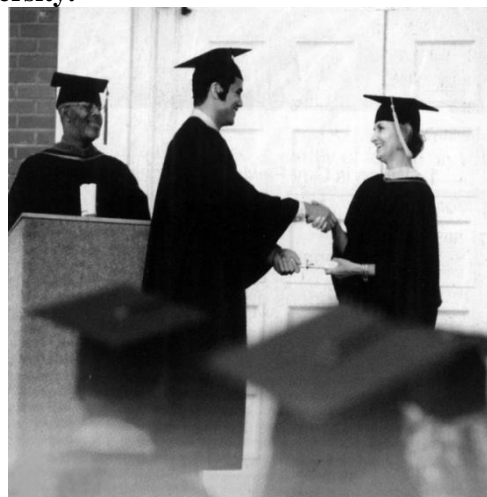
4. Think of three things that were different when you were a small child, or when your parents were children. Begin with *There was (wasn't)...* or *There were(weren't)...*

e.g. *There weren't any iPads in my childhood.*

Think of three things that will be different in 100 years. Begin with *There will/won't be*

e.g. *There won't be clean rivers and green forests in 100 years.*

5. Read the following description of the graduation ceremony. Make up a similar story about the graduation ceremony at your University.



Graduation Ceremony

Graduation Day at Keele University takes place in July. The Town Hall is used for the ceremony. This occasion is formal and traditional in order to celebrate the achievements of the students. The graduates wear black caps and gowns. There are a lot of flowers in the hall this day. The guests invited to the ceremony prepare speeches to honour the graduates. The Dean and the lecturers are already there. Then the ceremony begins. The graduates are called one by one to receive their degrees. The Dean shakes students' hands and congratulates them as everyone applauds. All the graduates look sophisticated in their black caps and gowns as proud parents take photos of them. An informal dinner party follows the ceremony where the professors have the chance to congratulate the graduates. Graduation day is a special occasion in a student's life. It is the time to feel pleased about reaching a very important goal.

6. Read the text, be ready to answer the following questions:

- At what age do students start medical education in UK?
- Is medical education free of charge in UK?
- How long does the medical education last?
- What is a continuing professional development?

Medical Education in UK

Physicians in Great Britain are trained either in medical schools or faculties of Universities. There are thirty-two medical schools in the United Kingdom which are recognised by the General Medical Council and lead to a medical degree of a British university.

In the United Kingdom students generally start their medical studies at the age of eighteen or nineteen. This contrasts with the U.S. system, where a preliminary bachelor's degree is required for entry to medical school. Entry to British medical schools is very competitive. Candidates must pass entrance examinations on chemistry, physics and biology or mathematics.

In Great Britain all students pay for training, but most of them receive grants, which cover their expenses or a part of them.

In GB the undergraduate education takes 5 years (two years of basic sciences and three years of clinical work). During the first two pre-clinical years students study human anatomy and biology,

physics, organic and biological chemistry, physiology and histology, statistics and genetics..

They attend lectures and do practical work in labs.

From the third year the students study the methods of clinical examinations and history taking, general pathology, microbiology, pharmacology and community medicine, therapy, surgery, gynaecology, obstetrics, ophthalmology and others.

Senior students have a lot of practical work with patients at a teaching hospital. After the three years of clinical practice the students obtain degrees of Bachelor of Medicine and Bachelor of Surgery. These degrees give the right to register as a medical practitioner.

After the finals graduates work in hospitals for a year. This period is called internship. After this period a young doctor obtains a «Certificate of Experience» and he or she may work as a medical practitioner.

In Great Britain only medical practitioners may obtain further specialization, training in residency. It takes for 2 years of working in a hospital in some field. Residency trains highly qualified specialists in different fields: gynaecologists, urologists, neurologists and others.

Upon the whole, the doctor's education never completes. There is a **continuing professional development** in the form of courses and seminars which doctors take during their whole life to keep up to date.

7. Using information of the texts on education in the USA, the UK and Russia find common features and differences in their systems:

	Russia	GB	USA
1. When can candidates enter medical school?			
2. What are the entrance exams?			
3. What is the tuition fee, if any?			
4. How long does the course last?			
5. How is the course arranged? What does it include?			
6. What does postgraduate training include?			

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Quantifiers

We use quantifiers when we want to give someone information about the number of something: **how much** or **how many**.

Certain quantifiers can be used with **countable nouns** (friends, cups, people), others with **uncountable nouns** (sugar, tea, money) and still others with all types of nouns.

Countable and Uncountable Nouns

Countable	Uncountable
We can count them <ul style="list-style-type: none"> • have plural form • can have <i>a, an</i> or a number before them <i>a student – students; an idea – ideas</i>	We cannot count them <ul style="list-style-type: none"> • have no plural • cannot have <i>a, an</i> or a number before them <i>water, blood, love, hair, money, advice</i>
Expressions of quantity	
a lot of/lots of – in statements some – in statements any - in negative sentences and questions	
many	much
few (not enough)	little (not enough)
a few (not many, but enough)	a little (not much, but enough)

1. Put *some/any* into each gap.

- Every day I have _____ practical classes.
- Introduce yourself and say _____ words about the University you study at.
- I don't have _____ free time today. Sorry.
- _____ of the departments are situated at the hospitals.
- Do you have _____ problems with choosing the specialty?
- She's got _____ interesting ideas.
- If you find _____ mistakes, please tell me.

2. Insert *(a) little* or *(a) few* into each gap.

- "Never before have we had so _____ time in which to do so much". (*Franklin Roosevelt*)
- There is _____ time left, be in a hurry.
- Could you give me _____ help?
- I only need _____ to get ready.
- This task is very difficult, only _____ students can understand it.
- Men of _____ words are the best men. (*William Shakespeare*).
- I have _____ problems to solve today.

3. Complete the sentences using *much, many a lot of*.

- MA trains doctors for _____ countries of Asia, Africa and Latin America.
- How _____ time does it take you to get to the University?
- You must learn _____, and you must learn fast.
- How _____ people speak English nowadays?

There + to be

There is/are

There	is	a book	on the table.	
	are	books		
Is	there	any book	on the table?	Yes, there is
Are		any books		Yes, there are
There	isn't	any book	on the table.	
	aren't	any books		

There is/are	There was/were	There will be
--------------	----------------	---------------

e.g. *There is a lecturer and students in the classroom.*

There are students and a lecturer in the classroom.

Are there any students in the classroom? – Yes, there are. (No, there aren't.)

Prepositions of place: on, in, at, near, next to, in front of, behind, opposite, above, below

4. Complete the sentences using *some/any, much/many, a lot of, a few/a little*. More than one variant is possible.

- I don't have _____ lectures today.
- During the first two years students study _____ basic sciences.
- I have _____ problems to solve today.
- Do you have _____ trouble with English?
- I don't have _____ trouble speaking, but I have _____ of difficulty writing.
- Take as _____ as you like.
- We get there without _____ difficulty.
- There are too _____ students here.
- At hospitals students explore _____ medical careers.
- It takes _____ time to succeed in getting MD degree.
- Are there _____ variants in the English language?

5. Choose the necessary form of the verb *to be*.

- There _____ a new professor at our department.
- There _____ a students' conference next week.
- There _____ a lot of medical literature in English at our library.
- There _____ a lot of students at the lecture as the lecture was very interesting.
- There _____ an external testing at schools in June.
- There _____ a basketball competition in the gym this Saturday.

6. Ask and answer questions about the University.

e.g. cloakroom

A. Is there a cloakroom in the Academy?

B. Yes, there is. It's on the ground floor of the main building.

(Director's office, dissecting-room, sports facilities, library, canteen, hostel, the Biology department, palace of culture, university clinic, computer lab)

7. Ask the questions *How many? How much?* to the sentences to get the necessary information.

1. There are _____ departments at MA.
2. There are _____ computer labs at the University.
3. There are _____ subjects in the curriculum of MA.
4. There is _____ information in the new journal.
5. There are _____ specialties to choose at the Faculty of Postgraduate Training.

Degrees of Comparison

	comparative	superlative
fast	faster	fastest
early	earlier	earliest
competitive	more competitive	most competitive
good	better	best
bad	worse	worst
far	farther/further	farthest/furthest
little	less	least
much many	more	most

8. Form the comparative and superlative of the following adjectives.

e.g. strong - stronger - strongest

- tough _____
 favourite _____
 interesting _____
 easy _____
 serious _____
 high _____
 useful _____

9. Use *as* or *than* into each gap.

1. He is more ambitious _____ his brother.
2. She is as talented _____ her mother.
3. They are more aggressive _____ tigers.
4. Students are as noisy _____ two skeletons dancing on a tin roof.
5. He is as poor _____ a church mouse.

10. Write the comparative/superlative of a word from the box for each blank.

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

1. English is the _____ language in the world.
2. Now I live _____ from the University 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 University.
7. This year is the _____ in my life.
8. If you want to succeed you should work _____.

11. Complete the following sentences using an opposite adjective in its comparative or superlative form.

e.g. The weather today is colder than yesterday. – No, it is not. It is warmer.

1. The lecture today is more interesting. No, it isn't. It is _____.
2. Nick arrived later than Ann. No, he isn't. He arrived _____.
3. My friend feels more depressed today. No, he isn't. He looks _____.
4. My new roommate is more aggressive. No, she is _____.
5. Modern young people are more sociable. No, they aren't. They are _____.

12. Complete the second sentence so that it has a similar meaning to the first. Use the word in brackets.

e.g. This hostel is more convenient than all the others. (most) - This hostel is the most convenient.

1. The library and the reading hall are the same size. (big)
The library _____ the reading hall.
2. This test is the easiest. (difficult)
This test is _____.
3. I have never read a more interesting article. (most)
It's _____.
4. He is the laziest student in the group. (hardworking)
He is _____.
5. Our laboratory has more modern equipment than all the others. (most)
Our laboratory has _____.

8. Read the text below and fill in the gaps with the necessary word.

Should I study Abroad?

Every year thousands and thousands of people leave their homes to study abroad. But living and studying in another country can have its problems. Almost everyone experiences some **1.** _____ And some people go home earlier because living in another country is **2.** _____ from what they expected.

Studying abroad can be hard. You will probably miss your family, friends, food, and everything you love. It will take some time to adjust to a new way of life.

Studying abroad can be expensive. It takes money to study abroad. It can be from expensive to very expensive. Most places don't allow international students to work. You will need the money before you arrive **3.** _____ the country. Can your family afford it?

Studying abroad may have some advantages. You will get to know the **4.** _____ of the country. You will get to know classmates from all over the world. Living in another country will teach you doing such things as cooking, cleaning, shopping, washing clothes, paying phone bills and others. Many international students go home proud that they have become very self **5.** _____.

One of the greatest things that happens when you live in another country is - *you become a changed person*- your outlook on life is different.

1
A. homesickness B. sickness C. airsickness

2
A. difficult B. different C. the same

3
A. in B. at C. on

4
A. passengers B. foreigners C. natives

5
A. sufficient B. insufficient C. assured

b. Speak about advantages and disadvantages of studying abroad.

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- I can talk about medical education in the USA and the UK
- I can compare and contrast the features of medical education in Russia and English-speaking countries (the USA and UK).
- I can use *there is/are*, prepositions of place.
- I can form and use the comparison of adjectives and adverbs.
- I can use expressions of quantity *some/any, much, many, a lot (of), little, few*

Key Words

background *n* /ˈbækgraʊnd/
be committed /kəˈmɪtɪd/
case history /keɪs ˈhɪstəri/
challenging *adj* /ˈtʃælɪndʒɪŋ/
commit *v* /kəˈmɪt/
commitment *n* /kəˈmɪtmənt/
elective course /ɪˈlektɪv kɔ:s/
enrol *v* /ɪnˈrəʊl/
experience *n* /ɪkˈspɪəriəns/
medical history /ˈmedɪkəl ˈhɪstəri/
observation *n* /ˌɒbzəˈveɪʃən/
observe *v* /əbˈzɜ:v/
residency *n* /ˈrezɪdənsɪ/
responsibility *n* /rɪˈspɒnsɪbɪlɪti/
responsible /rɪˈspɒnsɪbl/
skill *n* /skɪl/
succeed *v* /səkˈsi:d/

Look back through this unit. Find other words and expressions that you think are useful and worth learning.

UNIT 1.4. MEDICAL SPECIALTIES

In this unit

- talking about medical specialties
- describing daily routine of physicians
- describing specific jobs of different specialists
- using *Future Simple/going to* and *Future Continuous*
- speaking about my future specialty



Warm up

Do you agree that any medical specialist should “do as much as possible **for** the patient, and as little as possible **to** the patient” (Dr Bernard Lown)? Why/Why not?

Video Activity: Difference between family medicine and internal medicine

(<https://www.youtube.com/watch?v=PjfuQj5LnV0>)

I. Before you watch

Look at the pictures above and answer the questions.

- What specialists can you see in the pictures? What are they doing?
- What uniform are the physicians wearing?
- What other medical specialties can you name?
- What is your future specialty? Have you made up your mind yet?

II. While you watch

Saju Mathew, MD Primary Care Physician, tells us the difference between medical specialities.

II.1. Match the terms with their definitions.



1. Pediatrician

2. Family medicine doctor

3. Internal medicine doctor

- (A) A physician who takes care of adults
(B) A physician who takes care of kids
(C) Basically pediatricians and internal medicines combined into one specialty

II.2. Answer the question.

What specialist does Dr Saju Mathew mean when he says: “We see kids and we do a lot of GYN, you know women's health, ...the entire family. So they'll see the mom they'll see the dad, maybe the grandparents, maybe the daughter-in-law.”?

III. After you watch

Make up the dialogues about pediatricians, family medicine and internal medicine doctors.

Reading

Here are five statements about medical specialties. Which statement goes with which specialty? Read the text below and add the missing sentences to the text.

1. They are trained in the diagnosis and treatment of cancer, infections, and diseases of internal organs.
2. Special emphasis is placed on prevention and the primary care of entire families, using consultations and community help when necessary.
3. Practitioners take care of women of all ages and all conditions, as well as during pregnancy, labour and delivery.
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

Choosing Your Medical Speciality

All graduates must attend internship in a **particular** medical specialty, and many practising physicians go on to specialise in a particular area of medicine. The most frequently entered specialties are listed below.

Emergency medicine

An **emergency** physician focuses on the **immediate** decision making and action necessary to **prevent death** or any further problems both in the prehospital setting and in the emergency department. He/she **provides** immediate **diagnosis** and **care** of **adult** and paediatric patients in response to **acute illness** and **injury**.

Family practice

A family physician is concerned with the total health care of the individual and the family and is trained to **diagnose** and **treat** a wide variety of illnesses in patients of all ages. The family physician's training includes **internal** medicine, paediatrics, obstetrics and gynaecology, psychiatry, and **geriatrics**. [A] _____

_____.

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] _____

_____.

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**. [C] _____

_____.

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.

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. [D] _____

_____.

Obstetrics-gynaecology

Obstetrics and gynaecology is a specialty that needs both medical and surgical skills to care for women's **health** during the female life cycle. [E] _____

_____.

Psychiatry

A psychiatrist specialises in the prevention, diagnosis, and treatment of mental, addictive, and emotional illnesses. The psychiatrist can understand the biologic, psychological, and social components of illness and, therefore, is uniquely prepared to treat the whole person.

Vocabulary Practice

1. Look at the words in bold type on p. 37 and explain their meaning.

2. Word formation.

a. Form the names of specialists from the names of specialties.

specialty	specialists	rule
neurology	neurologist	-ology → ist -ics → an Exception: anaesthetics → anaesthetist
cardiology		
geriatrics	geriatrician	
optics		
traumatology		
obstetrics		
pediatrics		
rheumatology		
gynaecology		
pathology		
technics		

b. Complete the table with the missing words.

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

3. Match the verbs with the nouns, then use these word combinations in the sentences below.

1. provide	a. a diagnosis
2. make	b. care
3. foster	c. difficulties
4. ease	d. healthy lifestyle
5. reduce	e. internship
6. control	f. death
7. get	g. an idea
8. treat	h. infections
9. attend	i. mortality
10. prevent	j. a disease

1. A surgeon _____ and _____ the preoperative, operative and postoperative _____.

2. Pediatricians work to _____ and foster healthy lifestyle, and _____ day-to-day _____.

3. All physicians must _____ in a particular medical specialty in a particular area of medicine.

4. An emergency physician focuses on the immediate decision to _____.

5. General physicians _____ about an understanding of disease prevention.

4. Make up word combinations with the following words and add your own examples.

to provide: care, treatment, diagnosis, ...

to control: disease, infection, function, ...

internal (= inner): medicine, organs, structures, ...

lifestyle: (un)healthy, busy, to change lifestyle, to provide lifestyle, ...

health: healthy (=well, fit), unhealthy (= unwell, unfit), to be in good (poor) health.

5. Fill in the correct word(s) from the list below, synonyms to which are given in the brackets.

<i>elderly</i>	<i>prevention</i>	<i>particular</i>
<i>adolescents</i>	<i>mortality</i>	<i>care</i>
<i>entire</i>	<i>reduce</i>	<i>diagnosis</i>

1. An emergency physician provides _____ (**recognition**) and _____ (**treatment**) of the patients.

2. All physicians must attend internship 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. Fill in the correct word(s) from the list below. Use the words only once.

<i>acute</i>	<i>mental</i>	<i>life</i>
<i>internal</i>	<i>effective</i>	<i>genetic</i>
<i>primary</i>	<i>common</i>	<i>comprehensive</i>
<i>entire</i>	<i>reproductive</i>	<i>infectious</i>

1. _____ disease 7. _____ management

2. _____ care 8. _____ treatment

3. _____ defect 9. _____ family

4. _____ cycle 10. _____ health

5. _____ organ 11. _____ medicine

6. _____ problem 12. _____ illness

Make up sentences using some of the above word combinations:

Language Development

1. Supply definitions to the following words and word combinations.

1. genetic defects	a. branch of medicine concerned with the diseases and care of old people
2. mortality	b. the state of being healthy
3. wellness	c. a disease connected with abnormality in person's DNA
4. geriatrics	d. the number of deaths in a particular period of time
5. management	e. the act of dealing with people or situations in a successful way
6. obstetrics	f. the use of drugs or alcohol that may lead to social, occupational, psychological, or physical problems.
7. substance abuse	g. the branch of medicine concerned with the birth of children

2. Write sentences to describe the work of the specialist in each branch of medicine. Use the expressions *specialize in, is a specialist in, deals with*.

e.g. *dermatology*

A dermatologist specializes in diseases of the skin.

1. Surgery _____
2. Traumatology _____
3. Paediatrics _____
4. Obstetrics _____
5. Family medicine _____
6. Psychiatry _____
7. Therapy _____

3. Work on your own. Think about each question and write down the name of a job. Then compare your answers with a partner, discussing your reasons for each one.

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? _____

4. Read the text about Jill Mathews and say why she likes the idea to be a pediatrician.

Choosing Specialty

Jill Mathews has just graduated from medical school and is talking about her future. "I haven't decided what to specialize in yet. I need more experience before I decide, but I'm quite attracted to the idea of paediatrics because I like working with children. I'd certainly prefer to work with children, say, elderly patients – so I don't fancy geriatrics. I was never very interested in detailed anatomy, so the surgical specialties like neurosurgery don't really appeal. You have to be good with your hands, which I don't think is a problem for me – I've assisted at operations several times, and I've even done some minor ops by myself – but surgeons have to be able to do the same thing again and again without getting bored, like tying off cut arteries and so on. I don't think that would be a problem for me, but they need to make decisions fast and I'm not too good at that. I like to have time to think, which means surgery's probably not for

a. Make the list of qualities she thinks are needed to be a good surgeon.

b. Make a similar list of qualities for

a physician	a pediatrician	a family doctor

c. Tell the class which branch of medicine you have the qualities for.

5. Insert the correct prepositions into the following word combinations. Then use these word combinations to complete the sentences.

good _____	specialize _____
work _____	interested _____

1. A pathologist _____ diagnosing disease through examining cells and tissues.
2. A pediatrician must enjoy _____ children.
3. An oncologist is _____ the diagnosis and treatment of cancer.
4. A psychiatrist must be _____ at consulting.
5. A neurosurgeon must be _____ their hands.

6. Match up the persons with the correct description of their work and write your answers in the box. The first sentence is done for you as an example.

1. They provide immediate recognition, evaluation, care.
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, addictive 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. emergency physicians
- i. surgeons
- j. plastic surgeons

1	2	3	4	5	6	7	8	9	10
h									

7. Look through the text and answer the following questions:

1. How many medical specialties are there? What medical specialties do you know?

2. What does any graduate need to do to get a medical specialty?

3. What is a family physician concerned with?

4. What diseases can a physician diagnose?

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 kind of treatment does a general physician provide?

10. Where does a general physician consult patients?

11. Why is the profession of a psychiatrist so difficult?

12. What profession would you like to choose? Why?

8. A Bit of Humour

I Don't Want To Be A Doctor For The Following Reasons

- I think paediatrics is child's play.
- I haven't got the heart to be a cardiologist.
- I must be crazy to become a psychiatrist.
- I'm too old to be a gerontologist.
- Anaesthesiology will put me to sleep.
- If I want to be a biologist I'll be in jeans all the time.

Project Work

Do the project according to the theme of the unit.

Grammar in Use

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?

Basic uses:

1. A decision at the moment of speaking

A: 'I'm cold'

B: 'I'll close the window.'

2. Prediction based on opinion.

I think I'll **get** the maximum score at the module test.

3. A future fact.

The operation **will start** at 7am.

4. Promises / requests

I'll **help** you with your homework.

I **will give up** smoking!

1. Make decisions or predictions.

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 pregnant women.
I think / she / become / an obstetrician

_____.

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?

Basic uses:

1. An action in progress in the near or distant future

At this time tomorrow, **the surgeon will be making** endoscopy.

2 Planned action (=Present Continuous, basic use 3)

We're spending holiday at home.

We'll be spending holiday at home.

Going to

There is one more way to speak about planned action and predictions: '**going to**' future. We use '**to be**' + '**going to**' + verb to form it.

We're going to spend holiday at home.

Look out! She's going to faint!

2. Use Future Continuous instead of the verbs in brackets. Put a tick (✓) if we can also use Present Continuous and 'going to' Future in the sentence and a cross (✗) if we can't.

e.g. We _____ (to learn) new topics on psychiatry tonight

We'll be learning new topics on psychiatry tonight.

1. Don't come after 3. 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. Read the sentences about the past. Make negative sentences about the future.

e.g. *I got a new car last year.
I'm not going to get a new car this year.*

1. We studied microbiology last year.
_____.
2. My colleague attended a refresher course on genetic disorders last month.
_____.
3. I attended training on decision-making three weeks ago.
_____.
4. The psychiatrist spoke to this patient yesterday.
_____.
5. Paul didn't pass his module test last year.
_____.
6. The gynaecologist made an endoscopy to this woman yesterday.
_____.

5. "Fortune Telling"

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**.

4. Respond to each statement with a question. Use the words given and *going to*.

e.g. *I think it's really cool to save people's lives. – you / to work as an emergency physician? – Are you going to work as an emergency physician?*

1. I want to take care of patients.
you / get to a med school?
_____.
2. Jane wants to learn everything: internal medicine, paediatrics, obstetrics, psychiatry, geriatrics.
she / become a family physician?
_____.
3. They know medical school is very challenging.
they / work hard?
_____.
4. Tuition fees are rather high.
Who / to pay for your education?
_____.
5. My mother's got some problems with her back.
she / to see a surgeon?
_____.

Now read about it in the chart and learn about your future. Tell other students about your future.

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.*
Would you like it to be true?

	Who will you become?	What will you have?	What will happen to you in future?	What will you be doing in 10 years' time?
1	a rich surgeon	a lot of money	specialise in treating traumas	take part in the World Conference of Surgeons
2	a happy paediatrician	lots of friends	advocate little patients in difficult situations	work on the project <i>Happy Healthy Children</i>
3	a clever family doctor	long life	organise a private clinic of family medicine	foster healthy lifestyles in a TV show
4	a famous anatomist	a well-paid job	become the Dean of the Medical Faculty	make a 3D Atlas of Human Anatomy
5	a successful psychiatrist	five children	take a course on psychotherapy in the UK	work on a new method of treatment of schizophrenia
6	a serious physiologist	a yacht	become a professor	work on a new diagnostic technique
7	a popular biochemist	a plane	become the Minister of Public Health of Russia	look for a medicine for cancer
8	a responsible obstetrician	two cars	take care of pregnant women	organise courses for future mothers
9	a lucky emergency physician	lots of dogs	get the Nobel Prize	introduce a new method of treating brain traumas

6. Fill in the gaps with the proper form of the verb in brackets (Present Simple, Present Continuous, Future Simple, Future Continuous, going to Future).

1. Lecturer: Hello! Today we ¹ _____ (to start) a new module, *Anatomical Terminology*. We ² _____ (to discuss) the rules of formation of anatomical terms in Latin. It ³ _____ (to be) very important for your future career because these terms are used in all fields of medicine. In four months you ⁴ _____ (to know) more than 300 anatomical terms. I hope that you ⁵ _____ (to use) them correctly in your Anatomy classes.

2. Professor: Today I ⁶ _____ (to have) a busy day. From 8 to 9 I ⁷ _____ (to discuss) the most interesting cases with my colleagues. From 9 to 11 my assistant and I ⁸ _____ (to make) an operation to patient N. After that my students ⁹ _____ (to come) and I ¹⁰ _____ (to deliver) a lecture on using an endoscope in modern surgical practice. From 1 to 2 I ¹¹ _____ (to have) lunch. Usually after lunch I ¹² _____ (to take) care of some postoperative patients. But today I ¹³ _____ (to write) an article for *British Journal of Surgery*. Oh, I really ¹⁴ _____ (to have) a lot to do. I think in the evening I ¹⁵ _____ (to invite) my wife to a nice restaurant to relax a little.

3. Two graduates talking at the Graduation Ball.

A.: So, what ¹⁶ _____ you _____ (to do) after graduation?

B.: Of course, I ¹⁷ _____ (to start) with internship. As I ¹⁸ _____ (to become) a family physician, it ¹⁹ _____ (to take) me 2 years. And you? What specialty ²⁰ _____ (to be) your choice?

A.: I ²¹ _____ (to be) interested in scientific research. I ²² _____ (to like) biochemistry most of all. So after internship, I ²³ _____ (to plan) to take post-graduate courses and write a dissertation.

B.: I ²⁴ _____ (to hope) our plans ²⁵ _____ (to come) true. What ²⁶ _____ we _____ (to do) in ten years' time, I wonder?

A.: I ²⁷ _____ (to teach) students at Oxford University, and you ²⁸ _____ (to write) a bestseller *How to Be Healthy Forever*.

B.: Good idea! Let's see each other in ten years!

A.: Surely! But now I ²⁹ _____ (not to want) to think about future. I ³⁰ _____ (to drink) Champaign and celebrate our graduation!

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- 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

acute *adj* /əˈkju:t/
 adult *n, adj* /ˈædʌlt, əˈdʌlt/
 adolescent *n, adj* /ædɔːlesənt/
 care *n, v* /keə/
 cancer *n* /ˈkænsə/
 control *v* /kənˈtrəʊl/
 death *n* /deθ/
 defect *n* /dɪˈfekt/
 diagnosis *n* /daɪəgˈnəʊsɪs/
 dysfunction *n* /dɪsˈfʌŋkʃən/
 emergency *n* /ɪˈmɜ:dʒənsɪ/
 elderly *adj* /ˈeldəli/
 genetic *adj* /dʒəˈnetɪk/
 health *n* /helθ/
 illness *n* /ˈɪlnəs/
 infant *n* /ˈɪnfənt/
 injury *n* /ˈɪndʒəri/
 internal *adj* /ɪnˈtɜ:nəl/
 immediate *adj* /ɪˈmi:diət/
 manage *v* /ˈmænɪdʒ/
 management *n* /ˈmænɪdʒmənt/
 primary *adj* /ˈpraɪməri/
 particular *adj* /pəˈtɪkjulə/
 prevent *v* /prɪˈvent/
 prevention *n* /prɪˈvenʃən/
 provide *v* /prəˈvaɪd/
 reduce *v* /rɪˈdju:s/
 reproductive *adj* /ˌri:prəˈdʌktɪv/
 substance abuse /ˈsʌbstəns əˈbju:s/
 tumour *n* /ˈtju:mə/
 treat *v* /tri:t/
 treatment *n* /ˈtri:tmənt/

Look back through this unit. Find other words and expressions that you think are useful and worth learning.

UNIT 1.5. TO BE OR NOT TO BE A DOCTOR

In this unit

- talking about what it is like to
-
- be a doctor
- other ways of expressing future actions



Warm up

Can we describe the job of any doctor as trying to balance so much information and integrate information that matters for life or death; trying to get information from people who don't always want to give it to you and all in 15 minutes; trying to balance what each patient wants; they each think that they are your only patient? Why/Why not?

Video Activity: Things I Wish I Knew Before Becoming A Junior Doctor

(https://www.youtube.com/watch?v=6GBq1qqq_o&t=41s)

I. Before you watch

Match the terms with the definition.

1. Feces
2. Urine
3. Sputum
4. Snot

(A) Matter expectorated from the respiratory system and especially the lungs that is composed of mucus but may contain pus, blood, fibrin, or microorganisms (such as bacteria) in diseased states.

(B) Waste material that is secreted by the kidney in vertebrates, is rich in end products of protein metabolism together with salts and pigments, and forms a clear amber and usually slightly acid fluid in mammals but is semisolid in birds and reptiles.

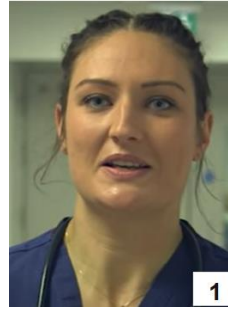
(C) Nasal mucus.

(D) Bodily waste discharged through the anus.

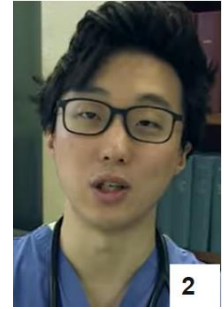
II. While you watch

Answer the question about the doctors.

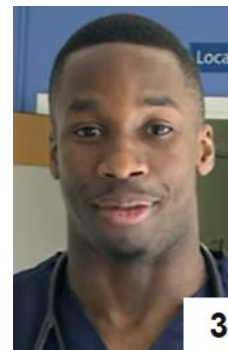
Why do they find themselves in the following situations?



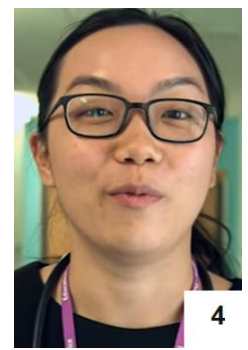
I just step outside my body and just see myself - I've got my finger in someone's bum.



You can't really switch off: a little sleep, food and lack of time. I'd have for friends and family.



You're gonna have to sacrifice sleep and trade them hours of sleep for cups of coffee. I didn't like coffee before I was a doctor. Now I love it.



It is a very dirty job and when I say dirty I mean that I'll be dealing with feces, urine, blood, sputum, snot on a daily basis.

III. After you watch

Make up the dialogues about your ambitions.



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**.

1. 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**.

2. 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.

3. 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.

4. 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.

1. 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.

2. 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.

3. 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.

4. 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 practised it

3. Закончите предложения, используя активную лексику урока.

- Physicians _____ patients with drugs and medications, while surgeons _____ traumas.
- 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".
- Have you ever heard about emotional _____, the ability to understand and listen to yourself and others?
- The man opened fire in an Oklahoma restaurant and _____ several people.
- Nowadays, patients feel no _____ during the operations.
- Working-class people are _____ because they can't make as much money as they want.
- Being a medical professional is really _____, but it's also one of the most _____ careers in the world.

4а. 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?

4б. Приведите ваши собственные примеры интернационализмов.

English word	Russian equivalent

Составьте с двумя из них предложения.

- _____
- _____

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.

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Other Ways of Expressing Future Actions Present Simple и Present Continuous для описания действий в будущем

Помимо будущих времен и выражения *going to*, мы можем использовать настоящие времена, чтобы говорить о будущем.

Present Simple употребляется:

1) для описания действий, которые происходят по расписанию.

e.g. *The train **arrives** at midnight.* - *Поезд **прибудет** в полночь.*

2) после *when, while, before, after, as soon as, till, until, if, unless.*

e.g. *I'll call you **as soon as** the results of your tests **are** ready.* – *Я позвоню вам, **как только** результаты ваших анализов **будут** готовы.*

Present Continuous употребляется для описания запланированных действий в будущем, обычно при наличии договоренностей.

e.g. *Mark **is helping** his grandmother tomorrow.* – *Марк поможет своей бабушке завтра.*

1. Выберите Present Simple или Present Continuous в следующих предложениях.

1. Tomorrow the sun **rises / is rising** at 6.44 and it sets / is setting at 18.33.

2. I **don't do / am not doing** anything tonight. I want to relax.

3. What time **do you meet / are you meeting** John on Sunday?

4. This year the school **ends / is ending** on 28 June.

5. After the reconstruction the supermarket **opens / is opening** on Monday again.

6. I can't help you. I **see / am seeing** the doctor this afternoon.

7. The piano concert **doesn't start / is not starting** at 8 o'clock. It is cancelled.

2. Составьте предложения из данных слов, поставив глагол в Present Simple или Present Continuous.

1. to the dentist | go | I | tomorrow

2. tonight | with | have | our business partner | we | dinner

3. on | my holiday | July | begin | 10th

4. depart | the train | at 11.30 | platform 5 | from

5. to Africa | you | when exactly | fly

_____?

_____?

6. end | when | the art exhibition

_____?

_____?

7. at 9.45 | as usual | the plane | take off

_____?

_____?

3. Завершите предложения, поставив глагол в скобках в Future Simple, Present Continuous или используя форму *going to*.

1. 'I hope Ben _____ from his illness sooner or later (recover).

2. I've already decided. I _____ him any money (lend).

3. I can see your luggage is quite heavy. I _____ it (take).

4. _____ anything tonight? We could go to the cinema (do).

5. The weather forecast says it _____ up soon (warm).

6. Sorry, I can't go out with you tonight. Jim and I _____ at the café (meet).

7. Do you need a nurse, because you _____ a new clinic?

8. Hurry up. We _____ by the 10.15 train (leave).

9. Please, put the vase back on the table or you _____ it (break).

10. I've bought this old house, because I _____ it (reconstruct).

11. Dad can't take you to school. He _____ an appointment at the dentist's at 8.30 (have).

12. Where are you going? - To Ward 6. I _____ patient N. (examine).

4. Употребите глаголы в скобках для описания действий в будущем, используя все известные вам формы и времена.

1. When I _____ you tomorrow you _____ 18 years old (see, be).

2. Our plane _____ at 9.30. Don't forget your passports, please! (leave).

3. We _____ to London next week. Our new flat is fantastic! (move).

4. As soon as we _____ at the airport, we _____ for a taxi (arrive, call).

5. It's hot. _____ the window? (open).

6. My grandmother _____ to New York next week (come).

7. The burglars _____ over the wall as soon as it _____ dark (climb, get).

8. I'm firmly believe I _____ rich one day (be).

9. Lucy _____ a hundred dollars from the bank when it _____ (get, open).

Checklist

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

- I can use *Present Simple* and *Present Continuous* to talk about future

Key Words

access *n* /ək`ses/

applicant *n* /`aplikənt/

challenge *v* /`tʃalɪndʒ/

deal with *v* /`di:l/

divorce *n* /di`vɔ:s/

drug *n* /drʌg/

expect *v* /ɪks`pekt/

frustrated *adj* /`frʌ`stretɪd/

heal *v* /hi:l/

injure *v* /`ɪndʒə/

intelligence *n* /ɪn`telɪdʒəns/

opportunity *n* /ɔpə`tju:nɪti/

pain *n* /peɪn/

physician *n* /fɪ`zɪʃən/

reason *n* /`ri:zən/

require *v* /rɪ`kwɪə/

rewarding *adj* /rɪ`wɔ:dɪŋ/

skill *n* /skɪl/

surgeon *n* /`sɜ:dʒən/

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 2.1. HEALTH CARE IN GB AND THE USA

In this unit

- talking about healthcare system in the UK and the USA
- comparing and contrasting healthcare systems in Russia and English-speaking countries
- using *Past Simple* and *Past Continuous*



Warm up

Do you agree with this quote? Why/Why not?

Video Activity: UK applauds the NHS and other key workers - BBC News

<https://www.youtube.com/watch?v=0AkkR3BWw>

I. Before you watch

People across the UK have taken part in a second "Clap for Carers" tribute, saluting **NHS staff** and **other key workers** dealing with the coronavirus pandemic.

Match the terms with the definitions.

1. Carer
 2. Key worker
 3. Ramp up
 4. Frontline
- (A) Used to describe an employee who deals with customers
- (B) To increase in activity or in level of something
- (C) Someone who does a job that is important for society, for example, a nurse, doctor, teacher, or police officer
- (D) Someone who takes care of a person who is young, old, or sick



II. While you watch

Answer the questions and match numbers with letters.



1. What does *Matt Hancock MP, Health Secretary*, mean when he says "We've hit the goal of having 10,000 tests a day by the end of March and today I've set the goal of a hundred thousand tests a day by the end of this month"?



2.

2. What does he mean: "This is the antigen test"?



3.

3. What does he mean: "This is an antibody test"?

(A) The test showing whether you currently have the virus and may spread it.

(B) We're ramping up testing.

(C) The test which shows if you've had it maybe without realizing and could now have immunity.

III. After you watch

Make up the dialogues. Ask and answer the questions about the Russian Public Health Service.



Reading

The National Health Service

Foreign health economists think that the **National Health Service** (Great Britain) is one of the best health services among industrialised countries. Most of all, they admire GP (**general practitioner**) system. GPs **refer** patients to hospitals and control vaccination and immunisation. They also admire the NHS for its treatment for all, regardless of the ability to pay. They think the Service is rather efficient - a characteristic that would surprise the patients in most British waiting rooms. But when did the NHS appear? What was the **purpose** of it? How does it function now? Can anyone see a doctor for free?

The Birth of the NHS

The National Health Service started functioning in 1948. Its main purpose and a very ambitious plan was to provide good health care to all. For the first time, hospitals, doctors, **nurses**, pharmacists, opticians and dentists were united under one umbrella organisation to provide services that were free for all.

The central principles were clear: the health service was **available** to all and financed entirely from taxation, *i.e.* people paid into it according to their means.

Not everything is the same now. Not only taxes but also National **Insurance** contributions make the NHS budget at present. Not all patients will get medical help as soon as they ask for it. However, the NHS is still working and can boast quite a good system of professional care.

General Practitioners

GP is another term for a family doctor. Your local GP **surgery** provides a wide range of family health services, including:

- **advice** on health problems,
- vaccinations,
- **examinations** and treatment,
- **prescriptions** for medicines, and
- **referrals** to other health services and social services.

Most GPs have about 2,000 people on their **register**. On a normal day a GP sees 35 patients in surgery, and makes up to 10 visits to those who feel too ill to attend surgery. The strength of the system lies in a good working knowledge of the families and individuals in the area, their housing, lifestyle and employment conditions.

Almost all GPs now operate in small groups of three or more, employing nurses and other professionals such as physiotherapists or dieticians to offer a wider service.

A&E Departments

There are over 20 million attendances at **accident and emergency (A&E) departments** each year. A&E departments **assess** and treat patients with serious injuries or illnesses. Generally, you should visit A&E or call 999 for **life-threatening** emergencies.

Temporary residents of the UK such as tourists can get emergency care for free.

NHS Hospital Services

If a patient needs specialist care, he first gets referral from his GP, dentist and optician to see the specialist in hospital. Treatment at NHS hospitals is free. The patient may choose from any hospital in England that offers treatment at NHS standards.

Earlier, the patients had sometimes to wait for months and even years to get the necessary help. Now, according to the NHS Constitution, of January 1, 2009 nobody should wait more than 18 weeks from the time they got referral from their GP to the start of their treatment unless it is clinically appropriate to do so or they choose to wait longer.

NHS Dentists

Everyone should be able to access good-quality NHS dental services. There is no need to register with a dentist. Simply find a **practice** that's convenient for you, whether it's near your home or work, and phone them to see if any appointments are available.

Dental services are not completely free. You will pay for your treatment from £17.50 for initial diagnosis and x-ray (if necessary) or **urgent** treatment to £209.00 if you need dentures or crowns.

Pharmacists and Chemists

Pharmacists and chemists play a key role in providing quality healthcare to patients. They use their clinical **expertise** together with their practical knowledge to **ensure** the safe **supply** and use of medicines by patients. 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. Look at the words in bold type on p. 51 and explain their meaning.

2. Form the nouns from the following verbs.

examine -	_____	appoint -	_____
refer -	_____	threaten -	_____
prescribe -	_____	insure -	_____
contribute-	_____	register -	_____
vaccinate	_____	immunize-	_____
advise -	_____	assess -	_____

3. Make up the word combinations with the following verbs and memorize them.

provide	a. health care b. (a wide range) services
make	a. an appointment b. a visit c. a referral
offer	a. service b. treatment c. advice
attend	a. a surgery b. a clinic
assess	a. a patient b. a condition/situation c. a service
control	a. immunization b. vaccination
choose	a. a hospital b. a specialist

4. Fill in the correct word(s) from the list below. Use the words only once.

working	initial
life-threatening	urgent
temporary	serious
hospital	common
convenient	clinical

1. _____	emergency
2. _____	knowledge
3. _____	treatment
4. _____	problem
5. _____	services
6. _____	injuries
7. _____	residents
8. _____	diagnosis
9. _____	practice
10. _____	expertise

Make up sentences using some of the above word combinations.

5. Supply definitions to the following words and word combinations.

1. emergency	a. the act of sending sb who needs professional help to a person or place that can provide it
2. taxation	b. a formal arrangement to visit sb at a particular time
3. insurance	c. a sudden and dangerous event which needs immediate action
4. confidence	d. money that has to be paid as taxes
5. appointment	e. an arrangement with a company in which you pay money regularly and they will pay if you are ill
6. referral	f. the feeling that you are certain about sth
7. register	g. the business of a practicing physician or group of physicians, including facilities and customary patients.
8. practice	h. an official list or record of names of patients with a certain doctor

Note: 1. The noun **practice** has the following meanings:

- the carrying out or exercise of the profession of medicine.
He left his medical practice for writing novels.
- the business or premises of a doctor
Dr. Weiss has a practice in Essex

2. The noun **surgery** has three meanings:

- the buildings where Gps work
The practice has moved to a new surgery on the High street.
- the time when Gps see patients
Morning surgery is from 8.30 to 12.30
- the work of surgeons
The patient needs urgent surgery on a burst appendix.

6. What nouns can go with the following adjectives. Give as many examples as possible. e.g. **ambitious**: person, plan, personality, work

serious _____

practical _____

life-threatening _____

urgent _____

7. Make up word combination using the following nouns and explain their meaning.

a.

problem	condition	contribution
quality	insurance	employment
health	healthcare	department
smoking	stopping	emergency

e.g. *health problem*

b. Mind word combinations with the noun "ache".

Headache, heartache, toothache, stomachache, earache, boneache.

8. Fill in the correct word(s) from the list below, synonyms to which are given in the brackets.

A&E department	life-threatening	advice
surgery	common	purpose
available	register	assess
referral	examination	

- If a patient needs specialist care, he first gets _____ (the directing of a patient to a medical specialist) from his GP.
- There is no need to _____ (record) with a dentist.
- _____ (department specialising in acute care of patients) of most hospitals operate 24 hours a day providing initial treatment for serious injuries or illnesses.
- If a patient can't leave his home or is too ill to attend _____ (GP's consulting room), a GP makes home visit to such a patient.
- The main _____ (task) of emergency departments in the UK nowadays is to _____ (evaluate) and treat patients within four hours of arrival, with referral and assessment by other departments if necessary.
- The emergency care is _____ (accessible) for citizens and noncitizens of the UK for free.
- On my doctor's _____ (recommendation) and also by my own decision, I will stop smoking and choose a healthy lifestyle.
- The work of the emergency services is of great importance as they deal with _____ (almost fatal) situations.
- After _____ (investigation or inspection) of the patient, the GP made a prescription for some drugs.
- A cold is the most _____ (usual) disease in winter affecting nose and throat.

Language Development

1. Look at the following statements about the students in the text on p. 41. Which are true? Which are false? Correct the false statements.

- Foreign visitors can't get medical care from the NHS in the UK. **F**
- All citizens of the UK will get medical help as soon as they ask for it. _____
- If you want to get dental service you need to register with a dentist. _____
- Every GP works alone and has a surgery of his own. _____
- If you want to make an appointment with your GP, you have to call 999. _____
- If a patient needs specialist care, he/she can choose only his local hospital. _____
- Patients pay for dental services only if it is urgent treatment. _____
- Usually GPs have about 200 patients on their register, not more. _____
- Normally a GP sees 10-15 patients in surgery and makes 2-3 home visits. _____
- You will pay about £200 for the initial diagnosis in dentistry. _____

2. Finish the following sentences using the information from the text about the NHS.

- The main purpose of NHS is _____.
- Primary care is provided by _____.
- If a person wants to see his GP, he needs to _____.
- GP provides a number of health services such as _____.
- GPs refer patients to hospitals if the patients _____.
- Pharmacists give advice on common problems such as _____.
- A&E department is responsible for _____.
- Cough, headache, temperature are the symptoms of _____.
- Dental services are not _____.
- After the patients get referral to the hospital, they don't need _____.
- Almost all GPs work in groups including _____.

3. Look through the text and answer the following questions.

1. When was the NHS founded?

2. What is the main purpose of the NHS activity?

3. How is the NHS financed?

4. Who provides primary healthcare?

5. What services do GPs provide?

6. What kind of services does A&E department provide?

7. When does a person go to the hospital?

8. What hospital does a patient choose?

9. Are dental services free in the UK?

10. What is the role of pharmacists and chemists in healthcare of patients?

11. Is healthcare accessible to every person in the UK?

12. What do people think about the NHS?

4. You are going to read the text about a working day of a GP in the UK. Be ready to describe it.

A GP's Day

Dr. Stuart works in a practice in a small market town with three other family doctors. The surgery is in the centre of the town and is shared by three practices. This is a typical working morning when she is not the **duty doctor**, responsible for emergencies and urgent problems.

a. Analyse the diary for Dr. Stuart's morning.

8.00	arrive at the surgery check for urgent and non-urgent messages
8.30	check emails from the health boards and partners prepare for surgery
8.30 – 10.50 a.m.	morning surgery (12 ten-minute appointments)
10.50 -10.55 a.m.	check with reception for messages sign prescriptions and deal with repeat prescription requests
11.00 – 11.20	coffee break in the conference room with colleagues
11.20 - 11.30	check home visit requests and divide up visits with colleagues
11.30 – 1.00 p.m.	home visits

b. Complete the diary for Dr. Stuart's afternoon. Look at the words in the exercise above.

1.00 – 2.00 p.m.	Practice team meeting over sandwich lunch
2.00 – 4.00 p.m.	Afternoon ¹ _____
4.00 – 4.20 p.m.	12 ten-minute ² _____ coffee break check with ³ _____ for messages. Deal with home ⁴ _____ and repeat ⁵ _____ requests. paper work, e.g., ⁶ _____
5.00 -6.00 p.m.	to secondary care, admin tasks, telephone calls to patients, private medical examinations
6.00 .pm.	leave home

c. Describe a typical day for a GP in your country.

Project Work

Do the project according to the theme of the unit.

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?

Signal words: yesterday, the day before yesterday, last week (month, year), a month (a year, 5 years) ago, in 1999 (1917, 2000)

Note: We add **-ed** to form Past Simple of regular verbs (to treat – treated). You should memorise Past Simple of irregular verbs (see Appendix).

Basic uses:

1 Actions which happened in the past and are now finished: Last Friday I **talked** to my pharmacist.

2 Past habits: This patient **smoked** 40 cigarettes a day before the operation on the heart.

1. Fill in the table with the proper forms of the irregular verbs. Memorise these verbs.

Infinitive	Past Simple
	was, were
begin	
	bought
do	
drink	
	ate
feel	
give	
	went
have	
hear	
	knew
leave	
make	
	met
see	
speak	
	taught
	thought
understand	

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	

Signal words: while, as long as, at 7 p.m. yesterday, the whole (all) evening yesterday

Basic uses:

1 Actions which were in progress when something else happened: *The dentist **was making** an x-ray when the phone rang.*

2 Actions in progress at the same time: *While I **was examining** a patient, the nurse **was making** notes.*

3 Temporary actions in progress in the past: *What **were** you **doing** yesterday at 9? – I **was talking** to my dietician.*

2. Supply the past forms of the underlined verbs. The first one is made for you.

1. I often see Professor Martins. I saw him again yesterday.

2. I _____ nothing about flu vaccines. Did you know anything about them?

3. Usually a GP sees about 20 patients a day. But yesterday Dr Hills _____ 40 (!) patients.

4. If you are ill with the flu, you should drink a lot of water. But you _____ only half a litre yesterday.

5. Normally the surgeons make one or two operations per day. But last Monday they _____ four operations.

6. When did you last speak English in public? – I _____ English at the International Conference last year. I made a report.

7. When did you last have a cold? – I _____ a cold just a week ago.

3. Use the Past Continuous in the sentences below.

1. It _____ (to rain) all night.
2. What _____ you _____ (to do) yesterday when I called you?
3. While the physician _____ (to examine) the patient, the students _____ (watch) him.
4. All afternoon I _____ (to talk) to the patient with a severe cough.
5. While the dentist _____ (to install) me a tooth crown, I _____ (to watch) a TV show.
6. While Mr Gold _____ (to use) this medicine, he _____ (not to feel) any pain at all.
7. Dr Watson _____ (to employ) a new physiotherapist, when his colleague returned.

4. Say whether the sentences are true or false. Correct the false sentences.

*e.g. Yesterday I learned physics.
- No, I didn't. I learned Latin yesterday.*

1. I was trying to make an appointment with my dentist all morning yesterday.
_____.
2. During this month my friend visited an optician.
_____.
3. My parents were in the third year of the Medical University when they first met.
_____.
4. The pharmacist recommended me Aspirin for my cough.
_____.
5. The NHS started functioning in 1958.
_____.
6. The patient waited for the operation for five months.
_____.
7. I was having dinner when my friend came to see me yesterday.
_____.
8. My friend and I were surfing the Internet the whole evening yesterday.
_____.

5. Ask the questions to get the missing information. Give sample answers:

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 _____?
_____?

6. Complete the sentences with the proper forms of the verbs in the Past Simple or the Past Continuous.

1. While the nurse _____ (to give) a vaccine to the little boy, the GP _____ (to talk) to his parents.
2. My grandfather _____ (to have) new dentures 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. Read the article about a ‘TV doctor’ working at one of the hospitals in the USA. Use the proper forms of the verbs in brackets (Present, Past or Future Simple or 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 _____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.

What do you think about ‘telemedicine’? Would you like to be a ‘TV doctor’? a ‘TV patient’?

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- I can talk about healthcare system in the UK and the USA
- I can compare and contrast the features of healthcare system in Russia and English-speaking countries
- I can use *Past Simple* and *Past Continuous*
- I can describe the GP’s working day in our country and in the UK

Key Words

accident and emergency (A&E) department / ˈæksɪdənt ənd ɪˈmɜːdʒənsɪ drɪˈpɑːtmənt /
 ache *n* /eɪk/
 advice *n* /ədˈvaɪs/
 appointment *n* /əˈpɔɪntmənt/
 assess *v* /əˈses/
 available *adj* /əˈveɪləbl/
 cold *n* /kəʊld/
 common *adj* /ˈkɒmən/
 confidence *n* /ˈkɒnfɪdəns/
 cough *n* /kɒf/
 ensure *v* /ɪnˈʃʊə/
 examination *n* /ɪgˌzæmɪˈneɪʃən/
 examine *v* /ɪgˌzæmɪn/
 expertise *n* /ˌekspɜːˈtiːz/
 general practitioner (GP) /ˈdʒenərəl prækˈtɪʃənəl/
 insurance *n* /ɪnˈʃʊərəns/
 life-threatening *adj* /ˈlaɪf.θretənɪŋ/
 make an appointment
 National Health Service (NHS) /ˈnæʃənəl ˈhelθ ˈsɜːvɪs/
 nurse *n* /nɜːs/
 pain *n* /peɪn/
 practice *n* /ˈpræktɪs/
 prescribe *v* /prɪˈskraɪb/
 prescription *n* /prɪˈskrɪpʃən/
 refer *v* /rɪˈfɜː/
 referral *n* /rɪˈfɜːrəl/
 register *v* /ˈredʒɪstə/
 supply *v* /səˈplaɪ/
 surgery *n* /ˈsɜːdʒəri/
 symptom *n* /ˈsɪmptəm/
 temporary *adj* /ˈtempərəri/
 urgent *adj* /ˈɜːdʒənt/

Look back through this unit. Find other words and expressions that you think are useful and worth learning

UNIT 2.2. MEDICAL ETHICS

In this unit

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

Warm up



Hippocratic Oath
XII century

Read the extract from Hippocratic Oath. How do you understand the following statements?

"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 ..."

Video Activity: BBC News report | Animals containing human material

<https://www.youtube.com/watch?v=GrSFxJEUb2w>

In this clip, BBC News summaries the Academy of Medical Sciences' report on "Animals containing human material" in scientific research".

I. Before you watch

Match the terms with the definitions.

1. Chromosome
2. Gene
3. Cell
4. Dementia
5. Parkinson's disease
6. Cancer

(A) A condition where cells in a specific part of the body grow and reproduce uncontrollably.

(B) A brain disorder that leads to shaking, stiffness, and difficulty with walking, balance, and coordination.

(C) In the nucleus of each cell, the DNA molecule is packaged into thread-like structures.

(D) The basic structural, functional, and biological unit of all known organisms.

(E) The basic physical and functional unit of heredity.

(F) A syndrome in which there is deterioration in memory, thinking, behaviour and the ability to perform everyday activities.

II. While you watch

Check (✓) True or False. Then correct the false statements. Compare with a partner.

Statement	True	False
1. Mice are entirely normal.		
2. The public consultation was necessary before the experiments.		
3. The public accepted the need for experiments putting human DNA into animals.		
4. The brain of animals was modified.		
5. Experiments were useless.		

III. After you watch

Discuss the problem: Is it ethically to use animals as test subjects in medicine?

Reading

You are going to read the text about medical ethics. Be ready to retell the text according to the plan.

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

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

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. Look at the words in bold type on p. 59 and explain their meaning.

2. Word formation. Form new words from the given below using prefix *re-* and explain the meaning of new words.

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. Supply definitions to the following words and word combinations.

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. Fill in the correct word(s) from the list below. Use the words only once.

<i>surrogate</i>	<i>confidential</i>	<i>moral</i>
<i>frozen</i>	<i>ethical</i>	<i>human</i>
<i>infertile</i>	<i>social</i>	<i>customary</i>
<i>genetic</i>	<i>professional</i>	<i>essential</i>

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

5. Fill in the correct word(s) from the list below, synonyms to which are given in the brackets.

<i>issues</i>	<i>preserve</i>	<i>protect</i>
<i>violation</i>	<i>consent</i>	<i>requirement</i>
<i>bring about</i>	<i>maintained</i>	<i>determine</i>

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

6. Make up word combinations with the word *ethical* and use some of them in sentences of your own.

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

7. Choose the synonyms to the words in bold.

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. Look through the text about medical ethics and answer the following questions.

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. Retell the text according to the plan in ex. 3 of Lead-in.

3. Which of the guidelines of a medical profession stated in the text are violated in each of the following cases?

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. Read the following article from a journal, be ready to discuss it. But first get acquainted with the new words:

a.

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.

b. Answer the questions on the text?

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. What is your opinion on assisted dying?

3. Match each headline to an opening line from a newspaper report.

1.

66-year-old becomes oldest mother

2.

Frozen embryo case to go to Europe

3.

Surrogate mother sued by couple

4.

Embryo cloning – where will it take us?

5.

Using body parts without consent

6.

UK full face transplant search on

7.

“Designer baby” rules are relaxed

8.

Doctors support infant mercy killing

- a. A woman of 30 who agreed to bear a child for a childless couple then refused to part with the child has been ...
- b. A surgeon was accused of removing organs from patients without their knowledge
- c. Three-quarters of Belgian doctors are willing to assist in the death of critically ill babies to end their suffering.
- d. A woman hoping to stop the destruction of six embryos created with her eggs and her ex-partner's sperm launched a case at the European Court of Human Rights ...
- e. A woman gave birth in Romania following IVF treatment.
- f. Consultant plastic surgeon Dr. Peter Butler was given the go-ahead by a hospital ethics committee to find a patient who meets selection criteria for a full face transplant.
- g. If your favourite pet dies, it is technically possible to produce exact replicas – but what about humans?
- h. It is now legal to select embryos to provide blood cells transplants for sick siblings.

4. Task: “Make the Right Decision”.
The following stories describe difficult cases of medical ethics. Read them and answer the questions.

a. Treatments now exist which can decide the sex of a baby according to the parents' wishes, but most doctors continue to feel that whether a child is a boy or a girl is a decision best left to nature. Mr. and Mrs. Schwarz are a married couple in their late thirties. They have five healthy children – all boys – and are a happy unified family. They are now planning a sixth child, but they are desperate to have a girl this time. Mrs. Schwarz says she would rather have an abortion than have another son. Mr. Schwarz also wants only a girl. “What possible harm can there be in granting us our dearest wish to have a daughter?” he asks. However, allowing parents to choose the sex of their children could affect the delicate balance of the sexes. It is determined that 65% of parents in the West would prefer a girl.

Question: Should the Schwarzes be given the right to choose the sex of their child? Should nature take its course?

b. Scientists at the University of Texas (USA) believe they have discovered the key to stopping the ageing

process – a simple chemical called telomerase which is produced naturally by the human body. Telomerase enables human cells to divide and replace themselves, but after a certain age the body stops producing it and begins to age. An American drug company wants to get a licence to produce a drug containing large quantities of telomerase which, they state, will enable takers to live for up to 150 years. The laboratory tests lasted 5 years, they showed no harmful side-effects. But some scientists are afraid there may be a small risk of cancer. With sixteen percent of population of the USA already over 60 years old, the consequences for the worlds of health and work are enormous.

Question: Do you allow the drug company to produce the drug Telozan?

- c. Give the title to each story.
- d. Choose one story which interests you. Look at the questions at the end of the story and make notes under the following headings:

arguments for	arguments against

Project Work

Do the project according to the theme of the unit.

Grammar in Use

The Modal Verbs

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. live a happy life.
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? live a happy life?

All modal verbs have two meanings. One meaning is to express ability, obligation, permission, etc. Another use is to express possibility or probability. In this unit we are speaking about the **first meaning of the modal verbs**.

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	-	-

We use the modal verbs to express:

Ability:

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

Permission:

Can/May we smoke in here? = **Are** we **allowed to** smoke in here?

I **was not allowed to** examine the patient myself.

Can/Could/May I leave earlier today?

You **may not** take the exam if your score is less than 76.

Obligation:

Students **must** do their homework.

We **have to** wear uniform at work.

I **had to** work late last night.

Advice:

Doctors **should** follow ethical standards.

You **shouldn't** eat so much.

Requests:

Can/Could I ask you a question?

1. Make as many sentences as you can using the words from the grammar table.

Explain the meaning of each sentence.

2. Underline all the modal verbs in the text, explain their meaning. Can we use other modals instead of these?

3. Use *can('t)*, *could(n't)*, or *be (not) able to* to express ability in the following sentences.

1. _____ you recite the Hippocratic Oath now? – Yes, I _____.

2. _____ you recite the Hippocratic Oath when you were 10? – No, I _____.

3. He's amazing, he _____ speak five languages, including Chinese.

4. I _____ make a report on IVF next Monday.

5. _____ the patient _____ to speak to the surrogate mother next week? – I hope so.

4. Now, tell your group about five things you can do now, you could do when you were 3 years old, and you will be able to do in 10 years' time.

e.g. I can explain the difference between the clavicle and the scapula. – I could read (a little) when I was three. – I'll be able to make kidney transplantation in 10 years' time.

5. Study the examples. Then use *may (not)*, *can*, *could*, *be allowed to* to express permission or prohibition in the following sentences. Use more than one modal verb where possible.

e.g. May/Can/Could I take your stethoscope? – Yes, of course. /I'm afraid, you may not. I need it right now.

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

1. We _____ see patients beginning with the second year.

2. _____ I take an exam next week?

3. You _____ take books from the university library for free.

4. _____ we use the electronic reading hall in summer?

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

6. _____ a person treat people without medical education?

6. Study the examples. Mind the difference between *must* and *have to* in negative sentences. Then use *must* or *have to* in the proper form in the following sentences.

e.g. Must we come at 8 tomorrow? – Yes, you must. / No, you don't have to. (You may, but it's not obligatory). – No, you mustn't. (You are not allowed to come, it's forbidden)

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

2. _____ patients do everything their doctors tell them to do? – Yes, they _____.

3. Next week I _____ write an article on euthanasia.

4. You _____ not smoke if you want to keep fit.

5. Medical professionals _____ preserve patients' privacy.

7. Read the following stories. Answer the questions using modal verbs.

a. Martin Thomas lives with his mother (85). He is offered a job abroad, which he really wants. He cannot take his mother with him, so he looks for a care home for her.

They don't have the money for a private care home. The government run care home is free, but understaffed and depressing. When Mr Thomas visits the care home, he sees the residents all sitting in silence around the TV set.

1. Should Mr Thomas give up his plans and stay at home to take care of his mother?

2. Is it wrong that people with money should get better health care than those who are poor?

b. Frank Davis (77) has been a smoker and heavy drinker all his life. He has heart disease and high blood pressure and needs life-saving surgery immediately or he will probably die.

However, there is a long list of patients waiting for surgery, some of whom are young.

1. Should Mr Davis go to the front of the queue?

2. Should people who smoke and drink heavily get the same treatment as those who don't?

3. Is it better to spend more money treating young people than treating old people?

c. Edna Wilson (89) has had a fall and fractured her hip. She says she doesn't want surgery and physiotherapy. She wants her daughter to look after her at home.

Mrs. Wilson's daughter is not happy about this. She says her mother is not thinking clearly. She doesn't want to care for her mother 24 hours a day and wants her to have surgery for her own good.

1. What should Mrs. Wilson's doctor advise?
2. Should people be forced to have medical treatment when they don't want it?

8. Use the modal verbs or their equivalents in the following sentences. Say where more than one variant is possible.

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.

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- 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* /baɪəʊ`eθɪks/
 bring about *v* /brɪŋ ə`baut/
 consent *n* /`kɒnsənt/
 determine *v* /dɪ`tɜ:mɪn/
 dignity *n* /`dɪgnɪti/
 embryo *n* /`embriəʊ/
 ethics *n* /`eθɪks/
 euthanasia *n* /ju:θə`neɪzə/
 fertility *n* /fə`tɪlɪti/
 fertilisation *n* /,fɜ:tɪlaɪ`zeɪʃən/
 freeze *v* /fri:z/
 genetic makeup /dʒə`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* /,aʊtəv`deɪt/
 outdated *adj* /aʊt`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:mɪnəli ɪl/
 transplant surgery /træn`splɑ:nt `sɜ:dʒəri/
 up-to-date *adj* /,ʌptə`deɪt/
 violate *v* /`vaɪəleɪt/

Look back through this unit. Find other words and expressions that you think are useful and worth learning

UNIT 2.3. WORLD HEALTH ORGANIZATION (WHO)

In this unit

- talking about the main goals and tasks of WHO
- describing the role of WHO in fighting against communicable diseases
- using *the article*



Obviously, **education** is hugely important, along with **healthcare**. They're the **basics** and you're hurting your own country if you don't **pour money into them**.

Kelly Reilly

Warm up

Do you agree with the quote? Why/Why not?

Video Activity: WHO: Universal Health Coverage - What does it mean?

(<https://www.youtube.com/watch?v=pZHilGFLN8Y>)

Universal Health Coverage (UHC) aims to ensure everyone receives the quality services they need, without suffering financial hardship. It's a way of reducing poverty and increasing health security, so that no-one is left behind.

I. Before you watch

Match the terms with the images.

1. WHO
2. Health care coverage
3. Falling ill
4. Health worker



II. While you watch

Answer the question.

Can we say that Universal Health Coverage is a way of reducing poverty and increasing health security, so that no-one is left behind? Why/Why not?

III. After you watch

Make up the dialogues on health insurance in Russia, mention the following problems:

- similarity to other systems elsewhere in Europe;
- both state and private health insurance;
- registration by your employer for OMI and making monthly contributions



Reading

Read the text about WHO. Choose from the list the questions A-F which best summarise each part (1-6) of the text.

- A. When was the WHO founded?
- B. Why was the WHO founded?
- C. What is the main objective of the WHO activity?
- D. What are the current priorities of this organization?
- E. What is the object of the WHO researches?
- F. Who finances this organization?



1.

The **World Health Organization (WHO)** is a specialized agency of the United Nations (UN) that is concerned with international public health. It was **established** on April 7, 1948, the day which became the World Health Day.

Headquarters are located in Geneva, Switzerland. Today there are 194 member states in the organization. All countries which are members of the United Nations may become members of WHO by accepting its Constitution.

2.

The 19th century was marked by great increase in trade and travel with the East. It led to **outbreaks of cholera** and other **epidemic** diseases in Europe. Thus cholera epidemics in 1830 and 1847 killed tens of thousands people in Europe. In response to that, the first International Sanitary Conference was **held** in Paris in 1851. It was the first attempt to establish the international cooperation with the purpose to fight against such diseases as cholera and **plague**.

But only after the World War II the efforts of the international community succeeded in establishing a new international health organisation, World Health Organisation, with its own Constitution.

3.

The WHO's constitution states that its objective is the achievement by all people of the highest possible level of health. Its major task is to combat diseases, especially key infectious diseases, and to promote the general health of the people of the world.

4.

The WHO's **current priorities** include **communicable diseases**, in particular, **HIV/AIDS**, **SARS**, **malaria**, **tuberculosis**, swine flu, avian flu. The WHO also sponsors programs to prevent and treat such diseases. It supports the development and

distribution of safe and effective vaccines and drugs. The WHO fought **smallpox** for two decades; in 1980 the disease was **eradicated** - the first disease in history eliminated by human effort. The WHO aims to eradicate **polio** within the next two years.

In 2009 the world faced a new **pandemic** influenza called the "H1N1 influenza", or "Swine Flu". The disease killed 294,500 people, it was particularly **dangerous** for children and young adults. But this number could be much higher. The WHO helped countries protect people from developing **severe** disease. It worked on vaccine development, coordinated the distribution of pandemic influenza vaccines to many countries, ensured a sufficient supply of safe vaccines. This work **achieved encouraging** progress and in 2010 the H1N1 influenza event moved into the post-pandemic period.

5.

In addition to its work on eradicating diseases the WHO also **carries out** different health-related campaigns, e.g., to **encourage** the **consumption** of fruit and vegetables worldwide and to discourage tobacco use. The WHO also conducts health research in communicable and noncommunicable conditions and injuries, e.g., long-term studies on ageing to determine if the additional years we live are in good or poor health, and whether the electromagnetic field surrounding cell phones has a **harmful effect** on health, etc.

6.

The WHO is financed by contributions from member states and from donors, among which there is pharmaceutical industry, as well as other foundations such as Bill and Melinda Gates Foundation and the Rockefeller Foundation.

The production and distribution of health statistics for health action at a country, regional and global level is one of the priorities of WHO activity.



Vocabulary Practice

1. Look at the words in bold type on p. 67 and explain their meaning.

2. Decode the following abbreviations.

NHS, WHO, UNO, HIV, TB, GP, AIDS, SARS, A&E, e.g., etc.

3. Read the names of diseases according to the transcription, guess the meaning of these words.

cholera	/ˈkɒləərə/
plague	/pleɪg/
malaria,	/məˈleəriə/
tuberculosis	/tjuːbɜːkjuːˈləʊsɪs/
smallpox	/ˈsmɔːlpɒks/
polio(myelitis)	/pəʊliəʊ(maɪəˈleɪtɪs)/
diarrhoea	/ˌdaɪəˈrɪə/
pneumonia	/njuːˈməʊniə/
swine flu	/swaɪn fluː/
tetanus	/ˈtɛtənəs/
measles	/ˈmiːzlz/

Note:

endemic – (of disease) regularly found among particular people or in a certain area:

There are areas where malaria is endemic.

epidemic – a disease outbreak affecting a significantly large number of people at the same time.

a flu epidemic

pandemic - a widespread epidemic that affects whole countries or the entire world.

In the past 200 years there were seven cholera pandemics.

4. Make up the nouns from the given verbs.

achieve	
consume	
distribute	
eradicate	
infect	
diagnose	
protect	

Rewrite the sentences below changing the verbs to nouns.

e.g. *I **diagnosed** that the patient had a heart condition. - My **diagnosis** was that the patient had a heart condition.*

1. We found that the body was **infected**.

We found an _____.

2. My friends **achieved** great success in learning English.

The _____.

3. It took a great effort to **eradicate** the smallpox epidemic.

The _____.

4. It was necessary to **distribute** vaccines to many countries in order to eradicate the pandemic.

The _____.

5. It is advisable to **consume** a lot of vegetables and fruit to be healthy.

The _____.

6. Doctors use vaccination to **protect** people against communicable diseases.

Doctors use vaccination as _____.

5. Match the adjectives with the nouns:

health-related	progress
epidemic	influenza
international	priorities
current	community
pandemic	diseases
encouraging	campaign
safe	vaccine

6. Match the verbs with the nouns:

combat	tobacco use
lead to	research
carry out	consumption
discourage	distribution
conduct	campaign
encourage	outbreaks
support	diseases

7. Fill in the gaps with word combinations of ex.5-6.

1. In its fight against global tobacco epidemic the WHO _____ anti-smoking _____ among children.

2. _____ of tobacco-related _____ kills up to half of tobacco users.

3. The increase of tobacco prices _____, particularly among young people and poor people.

8. Fill in the gaps with the necessary preposition:

with	of	by	in	on	against	for	out
------	----	----	----	----	---------	-----	-----

1. The WHO is concerned _____ international public health.

2. The WHO was established _____ April 7, 1948.

3. Headquarters of the WHO are located _____ Geneva.

4. The 19th century was marked _____ a number of very severe and dangerous epidemics.

5. The pandemic _____ swine flu was particular dangerous _____ children and young people.

6. The WHO tried to establish the cooperation with many countries in the fight _____ communicable diseases.

7. The scientists carried _____ numerous researches to find vaccines against communicable diseases.

Language Development

1. Finish the sentences using the information from the text about the WHO.

- The WHO was founded to _____.
- The most severe epidemics of the 19th century were _____.
- The examples of communicable diseases are _____.
- To protect people from pandemic influenza in 2009, the WHO _____.
- The first epidemic disease eradicated by human effort was _____.
- Apart from work on eradicating diseases the WHO conducts health research in _____.
- The main goal of WHO activity is _____.

2. Make special questions to the following answers:

- _____.
The first International Sanitary Conference was held in Paris in 1851.
- _____.
WHO supports the development and distribution of safe and effective vaccines.
- _____.
The work on pandemic influenza vaccine development achieved encouraging progress.
- _____.
Most clinical experiments were focused on healthy adults.
- _____.
WHO is financed by contributions from member states and from donors.

3. Look through the text about the WHO and answer the following questions.

- When was the WHO established?

- Why was the WHO founded?

- What is the main objective of the WHO activity?

- What are the current priorities of this organization?

- What is the object of the WHO researches?

- Who finances this organization?

4. a. Read the following text and fill in the gaps with words derived from the words in brackets.

Apart from fight against ¹ _____ (communicate) diseases there is a growing concern of the WHO for the ecological state of our planet. There are many problems which ² _____ (threat) our natural environment. Acid rain, _____ (globe) warming and air and water ⁴ _____ (pollute) are among the most serious ones. There are several ways to help improve the situation. Firstly, we should encourage ⁵ _____ (recycle) because it is the ⁶ _____ (produce) of new materials which causes the most damage. We must learn to reuse things like plastic bags and glass jars. Secondly, driving an environmentally-friendly car is also ⁷ _____ (help). Moreover, joining an ⁸ _____ (organise) which plants trees or cleans up beaches would be ⁹ _____ (prove) that you are really ¹⁰ _____ (concern) about the environment. Lastly, supporting groups such as Greenpeace, which try to prevent many ¹¹ _____ (environment) disaster would help to ensure that our planet will be clean and safe for future generations. "It is high time for governments and their people to face the problem and take ¹² _____ (responsible) for the policies that cause the environmental damage", states WHO.

b. Using the following table name the ecological problems which we face in our life and describe methods of their solution.

problems	solution
air pollution	<i>e.g. encourage industries to use cleaner methods of production</i>
global warming	
acid rains	
destruction of ozone layer	
deforestation	
pollution of river and sea water	
radiochemical contamination	
disappearance of many species	

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Articles

The Indefinite Article *a/an*

a/an is used with singular countable nouns. We put **a** before a consonant sound (e.g., *a physician, a year, a heart*); we put **an** before a vowel sound (e.g., *an obstetrician, an eye, an hour*).

Basic uses:

1. when we refer to a thing or an idea for the first time:

*There is **a** hospital not far from here.
I'm reading **an** interesting article.*

2. with professions:

*He's **a** surgeon.
I'm **a** future paediatrician.*

3. with some expressions of quantity:

***a pair of** (jeans) **a little**
a few **a hundred** **a thousand**
three times a day
forty miles an hour*

4. with these illnesses:

a cold, a sore throat, a headache

There is **no article**:

1. with plural and uncountable nouns when talking about things in general:

*They are **physicians**.
He likes **biology**.*

2. with the names of countries, towns, streets, languages, magazines, meals, airports, hospitals, and stations:

*Usually they have lunch at 1 p.m.
Toronto General Hospital is one of the biggest in Canada.
I don't speak **Japanese**.*

3. with most illnesses and conditions:

*measles, mumps, (high) blood pressure, flu (sometimes **the** flu), hepatitis, toothache, backache*

4. with the following expressions:

at home, at/to work, at/to school, in hospital, by bus, by plane, by car, on foot, to/in bed

5. with titles:

Mrs Smith, Miss Betty, Mr Stone, Ms Collins, Dr Wright, Sir Elton John, Lady Godiva

1. Write out names of diseases from the Lead-In section and the text. Are they used with articles.

HIV/AIDS	

2. Supply *a/an* where necessary.

1. I think Michael's got _____ flu.

2. I'm going to _____ bed. I've got _____ headache

The Definite Article *the*

the is used with both countable and uncountable singular and plural nouns. We pronounce **the** [ðə] before a consonant sound (e.g., *the physician, the year, the heart*); we pronounce **the** [ði] before a vowel sound (e.g., *the obstetrician, the eye, the hour*).

Basic uses:

1. when we refer to a thing or an idea which is already known:

*There is a hospital not far from here. **The** hospital is quite new.*

*I'm reading an interesting article. – In which journal is **the** article?*

2. with seas, rivers, hotels, theatres, museums, and newspapers, and journals:

***the** Black Sea **the** British Museum
the Times **the** Hilton*

3. if there is only one:

***the** sun **the** President*

4. with superlative adjectives and ordinal numerals:

*He's **the** best surgeon I know.*

*Smallpox is **the** first disease in history eliminated by human effort.*

3. I didn't sleep the whole night because of _____ toothache.

4. The children are in _____ bed with _____ measles.

5. Mind you don't catch _____ cold.

6. Don't come near me. I've got _____ sore throat.

7. This patient often complains of _____ backache.

8. The WHO is fighting against _____ polio.

9. _____ TB can be really dangerous.

3. Put *a/an* or *the* only where necessary.

HERE'S HEALTH!

'I think that's all, _____ Mrs Grant,' _____ Dr Grey said as he gave her _____ list of prescriptions. _____ list was very long and _____ Mrs Grant almost fainted when she tried to read it. She had _____ headache and _____ cold and felt as if she was going to have _____ flu. And one of her children was in _____ bed with _____ mumps.

'I'm prescribing some pills for _____ high blood pressure as well,' _____ Dr Grey said. 'How many do I have to take – _____ pill _____ day?' 'No. One pill with each meal. Three pills _____ day.' Mrs Grant thanked _____ doctor and walked out of her surgery.

She was very weak when she came to _____ nearest chemist's and gave _____ long prescription list to _____ Mr Burt, _____ chemist. _____ Mr Burt was very happy. 'Good morning, _____ Mrs Grant,' he said looking at _____ list. 'What a list! I am sure you are keeping well!'

4. Use the proper article where necessary.

Explain your choice. Then answer the questions:

1. What is _____ most dangerous disease in _____ world now?
2. Which _____ diseases can be eradicated with the help of _____ vaccines?
3. How many cases of _____ TB are registered _____ year?
4. Was _____ WHO organised before or after _____ World War II?
5. Why is it necessary to eat _____ fruit and _____ vegetables?
6. Is there _____ emergency department at _____ Crimea Republic Children Clinical Hospital?
7. How many times _____ day do you drink _____ warm milk if you have _____ sore throat?
8. Who is _____ Head of _____ department of _____ anatomy at our university now?
9. Do you read _____ *New England Journal of Medicine* or *Cosmopolitan*?
10. Would you like to become _____ plastic surgeon?

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- I can talk about the main goals and tasks of the WHO
- I can describe the role of WHO in fighting against communicable diseases
- I can talk about the role of WHO in solving ecologic problems
- I can use *the article*

Key Words

carry out /ˈkæri aut/
cholera *n* /ˈkɒlərə/
communicable diseases /kəˈmjʊ:nɪkəbl dɪˈzi:zɪz/
consumption *n* /kənˈsʌmpʃən/
current *adj* /ˈkʌrənt/
dangerous *adj* /ˈdeɪndʒərəs/
discourage *v* /dɪsˈkʌrɪdʒ/
distribution *n* /dɪstrɪˈbjʊ:ʃən/
effect *n* /ɪˈfekt/
encourage *v* /ɪnˈkʌrɪdʒ/
encouraging *adj* /ɪnˈkʌrɪdʒɪŋ/
epidemic *n, adj* /epɪˈdemɪk/
eradicate *v* /ɪˈrædɪkeɪt/
establish *v* /ɪˈstæblɪʃ/
harmful *adj* /ˈhɑ:mfəl/
headquarters *n* /ˌhedˈkwɔ:təz/
HIV/AIDS /ˌeɪtʃ aɪˈvi:əɪdz/
hold (held, held) *v* /həʊld (held)/
malaria *n* /məˈleəriə/
outbreak *n* /ˈaʊtbreɪk/
pandemic *n, adj* /pænˈdemɪk/
plague *n* /pleɪg/
polio(myelitis) *n* /pəʊliəʊ(maɪəˈlaɪtɪs)/
priority *n* /praɪˈɔrɪtɪ/
safe *adj* /seɪf/
severe *adj* /sɪˈvɪə/
smallpox *n* /ˈsmɔ:lˌpɒks/
tuberculosis *n* /tjuːˌbɜ:kjuːˈləʊsɪs/
World Health Organisation (WHO) /wɜ:ld helθ ˌɔ:gənəɪˈzeɪʃən /

Look back through this unit. Find other words and expressions that you think are useful and worth learning

UNIT 2.4. HOSPITALS

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*



Warm up

Do you agree with the quote? Why/Why not?

“The hospital that feeds you refined sugar, white bread, canned soup, bouillon cubes, and frozen vegetables should be closed by the health department as a menace to the public health.”

David Reuben

Video Activity:

Inside Royal London Hospital - BBC

(<https://www.youtube.com/watch?v=w6Pta7CVI78>)

I. Before you watch

Read the information about the hospital in the video.



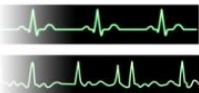
The **Royal London Hospital** is a large teaching hospital in London. The Royal London was founded in September 1740

and was originally named the **London Infirmary**.

II. While you watch

Answer the questions.

1. What medical specialities are mentioned?
2. What other problems are they speaking about besides those shown in the pictures below?



Atrial Fibrillation



a laceration to armpit



Chronic obstructive pulmonary disease (**COPD**)



a broken bone



an aneurysm



PIPPA HARTRIDGE
Senior Nurse

3. Why does she say, “I probably need get a new pair but comfiest footwear... I do about 10 km a day”?

III. After you watch

Make up the dialogues on hospitals in your cities/towns/villages.

Reading

First read the text “Hospitals” then its summary (below) and underline the correct word.

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**.

“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 orthopaedic 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. Look at the words in bold type on p. 73 and explain their meaning.

2. Word formation. Form nouns from the given verbs.

Verb	Noun
admit	
assess	
discharge	
operate	
refer	
treat	
arrange	

3. Match each word in column A with its opposite in column B.

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. Match the synonyms to the words in the first column.

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. Fill in the correct word(s) from the list below. Use the words only once.

psychiatric	intensive	regular
specific	geriatric	urgent
nursing	medical	plastic

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

Make up sentences using word combinations from exercises 3-5.

6. Fill in the correct word(s) from the list below, synonyms to which are given in the brackets.

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

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

7. Match the verbs with the nouns and insert the word combinations into the sentences.

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

- The patient's condition wasn't critical, so he was _____ for heart transplantation.
- It took the nurse several minutes to _____ from my wound.
- The GP may _____ for his patients by telephone.
- In case of acute pain in your injured arm it is necessary to _____ of painkiller.
- Twice a week the patient goes to the outpatient department to _____ on the wound.
- Elderly people should _____ regularly.
- 8. Make up word combinations using nouns in the box.**

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

e.g. health care facility

9. Complete the descriptions of jobs with verbs below, and match each one with a job from Lead-in (ex. 3).

treats	performs	prepares
gives	examines	takes
supports	specializes	delivers
administers	checks	

e.g. A *paediatrician* treats children.

- A _____ attends births and _____ babies.
- A _____ _____ in illnesses of the heart and blood vessels.
- A _____ _____ x-rays and other images.
- A _____ _____ surgeons in the operating theatre.
- A _____ _____ medicines to give to medical staff or patients.
- A paramedic responds to emergencies and _____ first aid.
- A _____ _____ operations.
- A _____ _____ samples and tissues under a microscope.
- An _____ _____ anaesthesia to pre-operative patients.
- A _____ _____ pulse rate, blood pressure and temperature of patients in the ward.

10. Fill in the gaps with the correct words from the box.

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

- A patient who is well enough to go home will be _____.
- Every day the doctor will speak to the patients during the _____.
- 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 _____.
- People in hospital with some form of illness are known as _____.
- When patients first arrive at hospital, a doctor or nurse _____ them and shows them to a bed in a _____.
- There may be the letter of _____ from another doctor explaining the history.
- A vehicle with special equipment, used for taking sick or injured people to a hospital is an _____.
- _____ determined that this drug is very toxic.

Language Development

1. Look through the text about hospitals and answer the following questions.

- What is a hospital?

 - What types of hospital do you know?

 - What diseases do general hospitals deal with?

 - What types of specialized hospitals can you name?

 - What is the difference between hospital and clinic?

 - What departments does a large hospital have?

 - What do doctors do during their ward rounds?

 - What are the duties of the nurse in hospital?

2. Which hospital departments would be most appropriate for the following patients?
- a man with a foreign body in the eye
 - a woman in diabetic coma
 - a woman with a threatened abortion
 - a patient with acute appendicitis
 - a patient with acute pain in the heart
 - a boy who had a fall and injured his leg.

3. “Hospital procedures”

a. New words

go into hospital - go for treatment and stay there.

go to hospital - go there for treatment, but not stay in.

a specialist - a person who knows a lot about a particular subject, e.g. a heart specialist. In the hospital this person is often called a **consultant**.

b. Put the hospital procedures in the correct order.

1. The doctor is concerned about you.
2. The operation is successful. When you are well enough, you can go home to recover.
3. He sends you to a specialist.
4. You can have the operation immediately if it is urgent.
5. You may have tests, X-rays, or scans.
6. The surgeons explain the benefits and risks to the patient.
7. After the operation you return to the ward, where the nurses care for you.
8. The specialist decides how to treat you.

c. Circle the correct answer.

1. The *patient/surgeon* performs the operation.
2. The *consultant/patient* goes into hospital.
3. The *patient/nurse* works on the ward.
4. The *specialist/patient* gets over the illness.
5. The *surgeon/patient* explains the benefits of the treatment.
6. The *specialist/patient* may need treatment urgently.
7. The *consultant/patient* may have an X-ray.
8. The *specialist/patient* orders the scan.

4. Read the following text, be ready to discuss it.

a. But first get acquainted with the new words:

a junior doctor, or a house officer	a newly qualified doctor in the first year of postgraduate training
a senior house officer (SHO)	a doctor in the second year of postgraduate training
a specialist registrar (SpR)	a senior doctor who is training in one of the medical specialties
a consultant	a fully qualified specialist
patient record	the case history of a medical patient
clerking	taking patient's medical history

It's My Job

Dr Franco Carulli is speaking about medical careers and duties of the hospital staff: 'I am newly qualified. I work as a junior doctor at Alderby General Hospital as part of a medical team. I work with two other junior doctors also in the first year of postgraduate training. Our main aim is to learn as much as possible from our seniors. The first people we turn to are two doctors in their second year of training. They **supervise** any practical **procedures** we do and help us when we have problems.

'Above these senior doctors there are specialist registrars. They **are** usually **in charge of** daily ward rounds. They also work in outpatient clinics, deal with inpatient referrals, teach, and make procedures and operations. They give us instructions about what **investigations** need to be performed (like **CBC** (complete blood count), x-ray, **ultrasound**, endoscopy, **ECG** (electrocardiography), etc.) If nobody at these two levels is available, we refer to the consultants.

'We see each consultant when they do their weekly ward rounds. These rounds are the tensest and most hectic times each week, as we have to make sure all the **patient records** are up to date and present patients to the consultant.

'My job also includes a wide range of duties from clerking patients, keeping the patient lists in order, requesting investigations, doing practical procedures, administrative tasks like rewriting **drug charts**, and doing **TTOs** ('To Take Out : drugs which are given to patients after discharge from hospital).

'We have to keep our knowledge up-to-date and keep records of all the special procedures we learn and cases we see. We also have to find time to **present** cases to our colleagues. I also find time to talk to the patients and their families!

'Though my job is quite tough and challenging, I am really proud of being a doctor.'

c. Answer the questions to the text.

1. Who is the text about?
2. What is Dr Franco Carulli? Where does he work?
3. What is the main aim of his work?
4. What are Dr Franco's duties in the hospital?
5. What investigations are performed by inpatients?

d. Read about Dr Franco Carulli. Find:

1. who supervises the practical procedures junior doctors perform
2. who leads the daily ward rounds
3. who deals with patient referrals

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Numerals

Cardinal numbers	Ordinal numbers
0 (nought/zero/oh)	-
1 one	1 st first
2 two	2 nd second
3 three	3 rd third
4 four	4 th fourth
5 five	5 th fifth
6 six	6 th sixth
7 seven	7 th seventh
8 eight	8 th eighth
9 nine	9 th ninth
10 ten	10 th tenth
11 eleven	11 th eleventh
12 twelve	12 th twelfth
13 thirteen	13 th thirteenth
14 fourteen	14 th fourteenth
15 fifteen	15 th fifteenth
16 sixteen	16 th sixteenth
17 seventeen	17 th seventeenth
18 eighteen	18 th eighteenth
19 nineteen	19 th nineteenth
20 twenty	20 th twentieth
21 twenty-one	21 st twenty-first
30 thirty	30 th thirtieth
32 thirty two	32 nd thirty-second
40 forty	40 th fortieth
43 forty-three	43 rd forty-third
50 fifty	50 th fiftieth
60 sixty	60 th sixtieth
70 seventy	70 th seventieth
80 eighty	80 th eightieth
90 ninety	90 th ninetieth
100 one hundred	100 th one hundredth
101 one hundred and one	101 st one hundred and first
200 two hundred	200 th two hundredth
1,000 one thousand	1,000 th one thousandth
1,234 one thousand two hundred and thirty-four	1,234 th one thousand two hundred and thirty-fourth
100,000 one hundred thousand	100,000 th one hundred thousandth
1,000,000 one million	1,000,000 th one millionth

Notes:

1. 0 is pronounced: **oh (or nought)** in telephone numbers, bank account numbers and other 'long' numbers: 25-06-08 *two five oh six oh eight*, or **zero** in scientific context: -20°C *twenty degrees below zero*.

2. In numbers 1,000 and more we use commas.

Mathematical symbols, fractions, decimals

% (the percentage sign):

3% - *three per cent*

100% - *one hundred per cent*

Fractions:

$\frac{1}{2}$ - *a/one half*

$\frac{1}{3}$ - *a/one third*

$\frac{1}{4}$ - *a/one quarter or one fourth*

$\frac{5}{16}$ - *five and nine sixteenths*

Decimals:

23.674 - *twenty three point six seven four*

0.0023 - *(nought) point nought nought two three*

Powers and roots

x^2 - *x squared / x (raised) to the power two*

x^3 - *x cubed*

x^4 - *x to the fourth / x to the power four*

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*

$\sqrt[n]{x}$ - *nth root (of) x*

Chemical formulas

H₂O - pronounced 'aitch-two-oh'

H₂S - pronounced 'aitch-two-ess'

HCl - pronounced 'aitch-see-ell'

1. Read the following cardinal numbers, then form the ordinal ones.

13 31 1,093 45 222 0
52 673 91 588 1,000,001

2. Read correctly the following.

1) telephone numbers:

+38 -050-122-43-57

+38-0652-55-77-00

your telephone number

2) fractions and decimals:

$\frac{1}{2}$ $\frac{555}{11}$ $\frac{3}{8}$ $10\frac{1}{7}$ $17\frac{17}{18}$ $67\frac{6}{7}$

0.12 34.056 0.0075 1,001.001 56.907865

3) powers and roots, percentage:

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

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

Time expressions

Saying a date:

1/9/12(BrE) - **the first of** September, twenty twelve

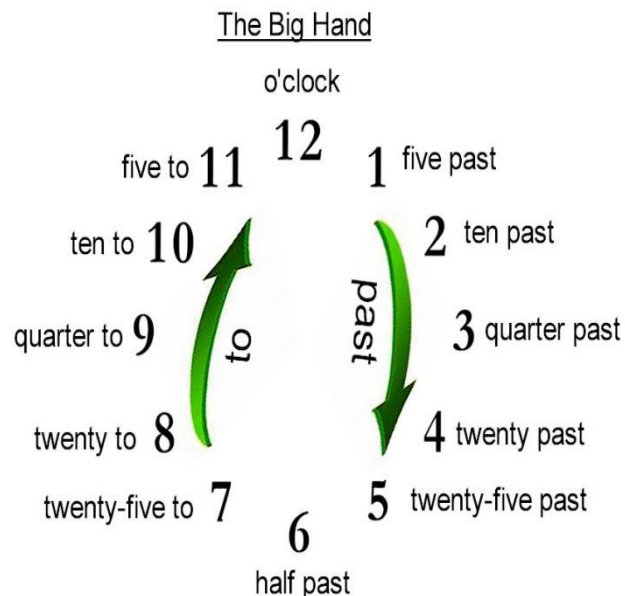
September **the first**, twenty

twelve

1/9/12 (AmE) – the ninth of January, twenty twelve

January the ninth, twenty twelve

Telling the time:



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

Prepositions of time

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

3. Use the proper preposition or nothing in the following sentences.

- My friend was born _____ two o'clock _____ the morning _____ Wednesday, the twenty-fifth of January, 1995.
- Mrs Brown is going to see her dentist _____ tomorrow morning.
- We have hols (holidays) twice a year, _____ winter and _____ summer.
- Normally, clinics are closed _____ the weekends.
- There are ward rounds _____ Tuesday and _____ Thursday.
- 'You will be discharged from hospital _____ next Wednesday, _____ March 7'.
- What is square root _____ one hundred?
- We pronounce 16^4 so: sixteen _____ the fourth power.
- This woman will be operated on _____ ten weeks' time.
- Usually I am the happiest _____ Monday morning.
- Junior doctors will be allowed to make practical procedures themselves _____ a year.
- The x-ray department opens _____ 8 _____ the morning.

4. Solve the tasks and write the numbers as English words.

e.g. $67 + 34 =$ _____

$67 + 34 =$ *one hundred and one*

1. $38 + 41 =$

2. $2,000 - 340 =$

3. $20 : 100 =$

4. $15 : 60 =$

5. $555,555 + 555,555 =$

6. $12 : 36 =$

7. $23 : 1,000 =$

8. $18 \times 1,000,000 =$

9. $100 - 330 =$

10. $\sqrt{64} =$

11. $123 - 123 =$

5. Answer the following questions:

1. When is your birthday?
2. What is your date of birth?
3. What days are national holidays in your country?
4. When do you have your first exam?
5. When does your holiday start?
6. When is the Day of Medical Professionals in your country?
7. What time do you usually wake up?
8. What time do you leave for university?
9. What time do you have lunch?
10. What time are you going home today?
11. When do you do your homework?
12. When do you play sports?
13. When did you last attend a lecture?
14. When did you last clean your teeth?
15. When did you last learn histology?
16. What is the chemical formula of water?
17. How many people live in Russia? in the Crimea?
18. What is the telephone number of your best friend? of your family physician?
19. What is the number of your credit card?
20. How many per cent of students in your group are girls? are 18 years old? have part-time jobs?

Now ask your partner 3-5 similar questions, and tell the group about him/her.

6. Write in numbers:

1. twenty third _____
2. two thirds _____
3. nought point nought nought two three _____
4. nought point seven per cent _____
5. three million five hundred and three thousand seventy eight _____
6. plus three eight oh nine five seven double seven three four double two _____
7. ninety cubed _____
8. ten to the power minus seventeen _____
9. one thousand and three quarters _____
10. see two aitch five oh aitch _____

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- 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`kʌmpəni/
admit *v* /əd`mit/
ambulance *n* /`æmbjuləns/
bioassay laboratory /baɪə`æseɪlə`bɔrətɪ/
CBC (complete blood count) /kəm`pli:t blʌd kaunt/
change dressing /tʃeɪndʒ `dresɪŋ/
discharge *v* /dɪs`tʃɑ:dʒ/
doctor on duty /`dʒu:tɪ/
drug chart /drʌg tʃɑ:t/
ECG (electrocardiography) /ɪ,lektərə,kɑ:di`nɔgrəfi/
geriatric *adj* /,dʒeri`ætrɪk/
give injection /ɪn`dʒekʃən/
hospital *n* /`hɔspɪtəl/
in charge /tʃɑ:dʒ/ of
inpatient *n* /`ɪnpeɪʃənt/
institution *n* /ɪnstɪ`tju:ʃən/
intensive care unit (ICU) /ɪn`tensɪv kə`ju:nɪt/
investigation *n* /ɪn,vestɪ`geɪʃən/
outpatient *n* /`aʊtpeɪʃənt/
patient record /`peɪʃənt `rekɔ:d/
present *v* /pri`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* /`ʌltrəsaʊnd/
ward *n* /wɔ:d/
ward round /wɔ:d raʊnd/

Look back through this unit. Find other words and expressions that you think are useful and worth learning

UNIT 2.5. 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 *Simple Passive*

Warm up

Do you agree with *Sir Dominic J. Corrigan* saying? Why/why not?

“The trouble with doctors is not that they don’t know enough, but that they don’t see enough.”

Video Activity:

The University Health Network showed us what happens in emergency rooms asking if people have COVID-19.

What it's like to get tested for COVID-19

<https://www.youtube.com/watch?v=14mRmD8zHOk>

I. Before you watch

Match the terms with the images.



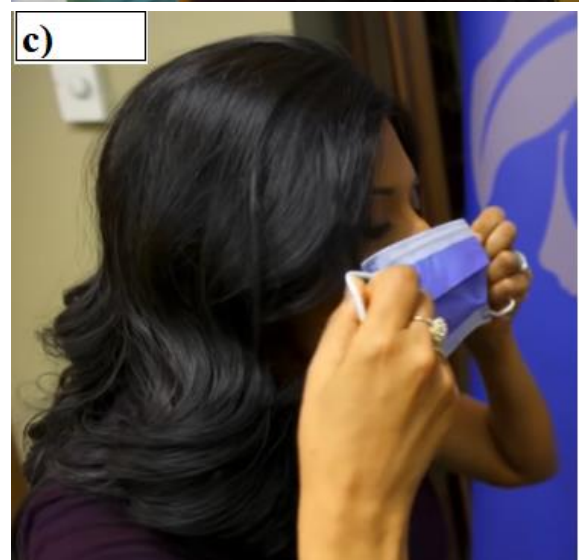
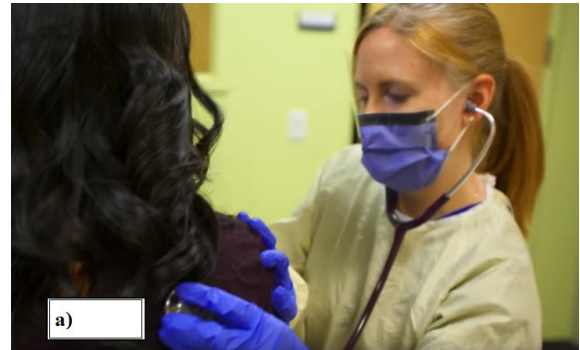
- A. Gloves B. Respiratory Mask
D. Gowns C. Protective Goggles

II. While you watch

II.1. Describe the picture.



II.2. Put the pictures in the correct order. Write 1-5 in the boxes.



III. After you watch

Make up the dialogue: “At the airport”. Person A is a nurse, Person B is an ER doctor (an *emergency room doctor*) and Person C is a patient.

"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

Palpation



Percussion technique

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.

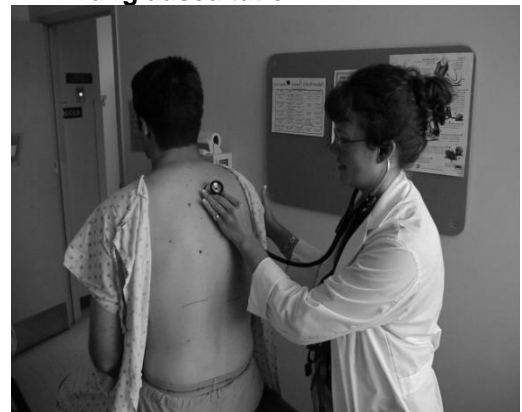
The examination will cover most of the basic systems of the body, including the heart system, lung system, gastrointestinal system and nerve system examination.

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 **radiography** (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. Look at the words in bold type on p. 71 and explain their meaning.

2. Decode the following abbreviations. ICU, A&E, EEG, MRI, CT, ECG;

3. Supply the definitions to the following words and word combinations.

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. Match the synonyms to the given words

information	
investigations	
symptom	
radiography	
touch	
gut system	

5. Make up word combinations *Verb – Adj – Noun*

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

6. Word formation. Make up as many words with the root *-graphy* as possible.

e.g. angiography

7. Fill in the correct word(s) from the list below, synonyms to which are given in the brackets.

causes	sign	chronic
involves	palpate	confirm
specimens	auscultation	suspects
initial		

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

8. Find the odd word out.

- specimen, illness, pattern, sample, example
- chronic, acute, constant, permanent, continual
- involve, consist of, include, contain, study
- initial, first, primary, final, elementary
- investigate, examine, research, explore, remain

9. Complete the sentences forming present or past participle from the verbs in brackets.

- The initial diagnosis is _____ (confirm) by laboratory findings.
- I went to the lecture but I felt _____ (bore).
- It was very _____ (disappoint) not to get the results of blood testing in time.
- When the surgeon performed his first operation he felt _____ (frighten).
- Doctors who are directly _____ (involve) in the care of patients have four fundamental tasks.
- Radiography and ultrasound investigation are _____ (include) in imaging studies.
- The result of biopsy test was _____ (surprise).

Language Development

1. Finish the following sentences.

1. The main tasks of every physician involved in patient 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. Read the following sentences, make up questions to the words in italics.

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 consultant asked to make biopsy of the injured organ* in this patient.

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

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

3. Answer the questions to the text "Clinical Examination".

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

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

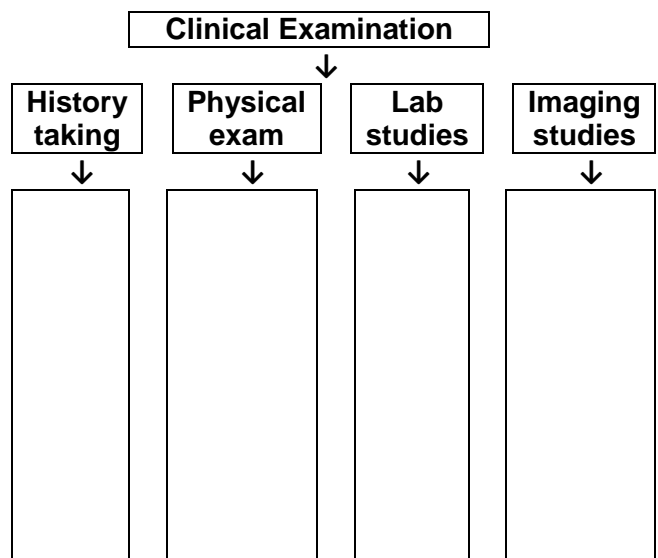
3. What is the sequence of these methods?

4. What is the initial diagnosis confirmed by?

5. What are the most common laboratory procedures?

6. What do imaging studies include?

4. Fill in the table and retell the text according to the scheme.



5. Read the following dialogue, explain the new words in it.

a.

A Physical Examination

Doctor: When did you last come in for a physical exam?

Patient: I had my last physical two years ago.

Doctor: Have you had any other exams recently? Blood work, an ECG or an ultrasound?

Patient: Well, I had a few X-rays at the dentist's.

Doctor: How have you been feeling in general?

Patient: Pretty well. No complaints, really.

Doctor: Could you roll up your left sleeve? I'd like to take your blood pressure.

Patient: Certainly.

Doctor: 120 over 80. That's fine. You don't seem to be overweight, that's good. Do you exercise regularly?

Patient: No, not really. If I run up a flight of stairs, it takes me a while to get my breath back. I need to get out more.

Doctor: That would be a good idea. How about your diet?

Patient: I think I eat a pretty balanced diet. You know, I'll have a hamburger from time to time, but generally I have well-balanced meals.

Doctor: That's good. Now, I'm going to listen to your heart.

Patient: Ooh, that's cold!

Doctor: Don't worry it's just my stethoscope. Now, breathe in and hold your breath. Please pull up your shirt, and breathe deeply...

Everything sounds good. Let's take a look at your throat. Please open wide and say 'ah'.

Patient: 'ah'

Doctor: OK. Everything looks ship shape. I'm going to order some blood work and that's about it. Take this slip to the front desk and they'll arrange an appointment for the tests.

Patient: Thank you doctor. Have a nice day.

b. New words

blood work = blood testing

to roll up sleeves

overweight - underweight

balanced diet

well-balanced meals

to breathe in

to breathe deeply

breath

to hold one's breath

to pull on one's shirt

to look shipshape - in good order (state);

slip

front desk

to arrange an appointment

c. Quiz

1. Has the patient had any other exams recently?

a. No

b. Yes, for dental work

c. Yes, for a broken bone

2. How has the patient's health been in general?

a. Poor

b. Fine

3. Which might be a problem for the patient according to the physical exam?

a. weight

b. lack of exercise

c. high blood pressure

4. Which action bothers the patient a little?

a. The use of the stethoscope

b. Taking his blood pressure

c. Taking a look at his throat

5. What does the doctor ask him to do?

a. Lose weight

b. Take a ship

c. Have some blood work done

d. Reproduce the dialogue in pairs.

e. Make up a dialogue on the situation:

You have a sore throat and a headache. Your temperature is not high but you feel unwell. So you have decided to go to the outpatient department to consult a doctor.

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Simple 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	

4. Rewrite these sentences in the passive. The first one is made for you:

e.g. They **organise** a meeting every month. –
A meeting **is organised** every month.

1. They usually make an initial diagnosis after the physical examination.

2. One described principles of ultrasound to the students yesterday.

3. Someone will invent the time machine in future.

4. They did the first patient's brain-scan on 1 October, 1971.

5. They always ask a patient about his biographical data and chief complaints.

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?

Basic uses:

1. When we don't want to take responsibility for something: *The patient **will be examined** during the ward round.*

2. When we want to focus on the happening: *The MRI **was performed** last Monday.*

3. When we don't want to use subjects like *one, someone, they, etc.*: *In what order **are** patients **seen** in the Emergency Department?*

5. Use the proper form of the simple passive instead of the verbs in brackets.

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 Wednesday.

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.

6. In each pair of sentences use one of the verbs in the active form, another in the passive form.

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.

5. *to remove*

I remember well when I _____ sutures myself for the first time.
Don't worry. All the sutures _____ next Monday.

7. Write 5-7 sentences about what takes place during a patient's visit to a doctor. Use the following verbs in the passive form only! You may connect the ideas with the help of such words: at first, then, after that, in the beginning, in the end, at last.

to ask	to listen	to look at
to use	to feel	to take
to determine	to make	to establish

e.g. After the examination, the initial diagnosis is made.

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- I can talk about the procedure of clinical examination of patients
- I can 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 /bɪˈlʌd`testɪŋ/
 cause *n, v* /kɔːz/
 chronic *adj* /`krɒnɪk/
 complain *v* /kəm`pleɪn/
 complaint *n* /kəm`pleɪnt/
 computed tomography (CT) /kəm`pjʊ:tɪd tə`mɒgrəfi/
 confirm *v* /kən`fɜ:m/
 electroencephalography (EEG) /ɪˌlektərəɪnˌsefə`lɒgrəfi/
 follow *v* /`fɒləʊ/
 history taking /`hɪstəri`teɪkɪŋ/
 imaging studies /`ɪmɪdʒɪŋ`stʌdɪz/
 initial *adj* /ɪ`nɪʃəl/
 inspection *adj* /ɪn`spekʃən/
 investigate *v* /ɪn`vestɪgeɪt/
 involve *v* /ɪn`vɒlv/
 laboratory findings /lə`bɒrətɪ`faɪndɪŋz/
 magnetic resonance imaging (MRI) /mæg`netɪk`rezənəns`ɪmɪdʒɪŋ/
 palpation *n* /pəl`peɪʃən/
 percussion *n* /pə`kʌʃən/
 physical examination /`fɪzɪkəl ɪgˌzæmɪ`neɪʃən/
 radiography (X-ray) /ˌreɪdɪ`ɒgrəfi/
 sign *n* /saɪn/
 suspect *v* /sə`spekt/
 ultrasound investigation /`ʌltrəsʌʊnd ɪnˌvestɪ`geɪʃən/
 urine testing /`juərɪn`testɪŋ/

Look back through this unit. Find other words and expressions that you think are useful and worth learning

UNIT 2.6. FIRST AID

In this unit

- talking about first aid
- describing how to deal with an emergency
- understanding and giving instructions

Warm up



Answer the question.

Why is first aid training in the workplace so significant?

Video Activity:

How to Give the Heimlich Maneuver

(<https://www.youtube.com/watch?v=7CqtlgSyAiU>)

I. Before you watch

Match the terms with the definitions.

- | | |
|-----------------|---------------|
| 1. Choking | 6. Pinky |
| 2. To breathe | 7. Fist |
| 3. To attack | 8. Knuckle |
| 4. To wrap | 9. Thumb |
| 5. Belly button | 10. To thrust |

- (A) To deal with something quickly and in effective way
- (B) To move air into and out of the lungs
- (C) It occurs when breathing is impeded by a constricted or obstructed throat or windpipe
- (D) A navel
- (E) To cover or surround smth/smb with arms, cloth, or others
- (F) The short finger that is at the angle to the other fingers
- (G) One of the joints of the finger
- (H) A little finger
- (I) A hand with the fingers and thumb held tightly in
- (J) To push suddenly and strongly

II. While you watch

Match the images (1-4) with the activities (A-D).



- A. Oftentimes, the international sign for choking is this. I can't breathe.
- B. What you're going to do is, you're going to stand behind them and you're going to wrap your arms all away around.
- C. Make a fist. Put the pinky on the belly button, then roll it up so the knuckle of your thumb is right there and then you thrust.
- D. Don't go crazy like in the movies and start slapping their back and wrestling.

III. After you watch

Explain what to do when someone's choking.

Reading

You are going to read the text about different medical emergencies. Be ready to speak on the following items:

1. What types of medical emergencies do you know?
2. What is the first aid in case of bleeding? shock? bone fractures? dislocations and sprains?

When a medical emergency strikes – saving your life can be a race against the clock.

*Whether it's a minor situation or something more serious, first aid knowledge will give you the confidence to act. You could be **the difference between life and death.***

St John Ambulance

First Aid

First aid is emergency care and treatment of an injured or ill person before professional medical and surgical treatment is available. It is usually performed by non-expert, but trained personnel to a sick or injured person. It generally consists of a series of simple and in some cases, potentially **life-saving techniques** that an individual can be trained to perform with minimal equipment.

Conditions Requiring First Aid

There are a lot of conditions which may require first aid, from a little **scratch** to severe shock. The list of the most common conditions where first aid is needed also includes **bone fractures, burns, cardiac arrest, choking, cramps** in muscles, **drowning, bleeding, poisoning, stroke, childbirth**, and others.

Here are some recommendations as to **rendering** first aid in several critical conditions. But remember, that to be effective and be able to really save lives, you should take first aid courses and have extensive practice.

Bleeding

Major bleeding may be a life-threatening condition requiring immediate attention. Bleeding may be external or internal. Bleeding may be from an artery, a vein or a capillary.

How to Control Bleeding

- **Apply** direct **pressure** on the wound. Use a dressing, if available. If a dressing is not available, use a rag, towel, piece of clothing or your hand alone.
- If bleeding continues, and you do not suspect a fracture, elevate the wound above the level of the heart and continue to apply direct pressure.
- If the bleeding still cannot be controlled, the next step is to apply pressure at a pressure point.

The final step to control bleeding is to apply a pressure **bandage** over the wound. After the bandage is in place, it is important to check the pulse to make sure **circulation** is not interrupted.

Shock

Shock is common with many injuries, regardless of their severity. The first hour after an injury is most important because it is during this period that symptoms of shock appear. If shock is not treated, it can progress to cause death! Any type of injury can cause shock.

Shock is a condition when the heart is unable to supply enough blood to the vital organs of the body, namely the heart, **lungs** and **brain**.

Treatment for Shock

- Put a **victim** in a lying-down position to improve circulation.
- If the victim is not suspected of head or neck injuries, or leg fractures, **elevate** the legs.
- If you suspect head or neck injuries, keep the victim lying flat. If the victim **vomits**, turn on their side.
- If victim is having trouble **breathing**, place them in a semi-reclining position. **Maintain** the victim's body temperature, but do not overheat.

Fractures, Sprains and Dislocations

Fractures, **sprains** and **dislocations** may be hard for the lay person to differentiate between. For this reason, first aid treatment of any of these conditions is rendered as though the injury was a fracture.

First aid for any of these conditions should be as follows:

- control bleeding, if present
- care for shock
- splint affected area to prevent further movement
- apply cold packs to **reduce** pain and **swelling**

Victims with traumatic injuries, such as those caused by automobile accidents, falls, etc. should not be moved except by trained rescue workers. Head, neck and back injuries are serious and require special care for movement and transport of victims with these conditions. In exceptional circumstances, such as when a victim is at risk of further injury unless moved, the victim's head and neck should be stabilized and the body moved with minimal flexing of the head, neck or spinal cord.

Vocabulary Practice

1. Look at the words in bold type on p. 88 and explain their meaning.

2. Fill in the correct word(s) from the list below, synonyms to which are given in the brackets.

prevent	maintain	elevated
reduces	rendered	suspected
save	applied	vomit

- It was too late for the doctor to _____ (**rescue**) her life and she died that night.
- They _____ (**gave**) assistance to the disaster victims.
- The pressure _____ (**used**) to the wound will stop the bleeding.
- The drug is _____ (**supposed**) of causing over 100 deaths.
- It is important that the injured leg should be _____ (**lifted**).
- The government managed to _____ (**keep on the same level**) prices.
- Giving up smoking _____ (**decreases**) the risk of heart disease.
- Nothing would _____ (**stop**) him from speaking out against injustice.
- The smell made her _____ (**feel sick**).

3. Match the verb with the noun or word combination.

1. render, require	a. swelling
2. apply	b. future movement
3. suspect	c. affected area
4. elevate	d. temperature
5. interrupt	e. first aid
6. maintain	f. life
7. prevent	g. circulation
8. reduce	h. wound
9. save	i. pressure
10. splint	j. stroke
11. suffer from	k. fracture

4. Fill in the correct word(s) from the list below.

Use the words only once.

life-saving	direct	vital
severe	semi-reclining	affected
cardiac	life-threatening	minimal
extensive	trouble	little

1. _____ arrest	7. _____ techniques
2. _____ scratch	8. _____ area
3. _____ shock	9. _____ breathing
4. _____ equipment	10. _____ organs
5. _____ practice	11. _____ position
6. _____ bleeding	12. _____ pressure

5. Match up the definition with the correct term.

- A break in a bone a
- A shift in two bone ends out of their normal position _____
- An injury to a ligament causing pain and swelling but not dislocation _____
- An injury caused by the sun, heat, fire, acid _____
- Inability to breathe because the airways are blocked _____
- A sudden painful involuntary contraction of muscle or muscles _____
- Death through immersion in water or other fluid and inability to breathe there _____
- The state of having swallowed or absorbed toxic substance _____
- The process of giving birth to a baby _____
- A sudden serious illness when blood circulation in the brain is damaged _____
- To eject food from the stomach through the mouth _____
- The process of losing blood _____

a. fracture	g. cramp
b. childbirth	h. choking
c. stroke	i. burn
d. poisoning	j. vomit
e. bleeding	k. dislocation
f. drowning	l. sprain

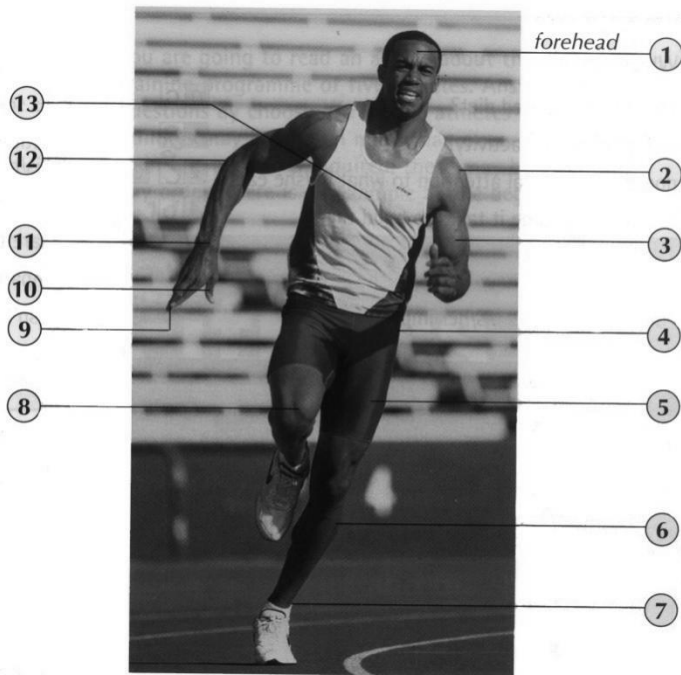
6. Complete the sentences using the words from exercise. 5.

- Press firmly on the wound to stop _____.
- Protect your skin, it will _____ easily in the sun.
- You should not exercise so much or you will get _____ in your muscles.
- Use artificial respiration to rescue the _____ man.
- Old people should eat food rich in calcium, because their bones are more prone to _____.
- Patients with second - and third-degree _____ were admitted to the emergency department.
- Be care ful! There are a lot of snakes in this region. Their bites may cause _____!
- _____ is one of the symptoms of food poisoning.

7. Find the odd word out.

- lung, brain, blood, heart, tongue, eye
- aid, help, support, assessment, assistance
- bandage, dressing, gauze, syringe, cotton wool
- accident, cardiac arrest, shock, poisoning, stroke
- injury, fever, hurt, harm, damage

8. "Parts of the Body"



a. Look at the words in the box, which describe the parts of the body. Which are:

- inside the body?
- limbs?
- joints?
- others?

Which could you break? Which could you sprain?

Which could you dislocate?

wrist thumb toe heart leg muscle ankle
 elbow
 knee arm vein forehead lung thigh calf
 shoulder finger hip chest tongue stomach

b. Label the man in the photo above choosing words from the box in ex. 8.1, as in the example.

c. Read these sentences. Which other parts of your body can ache? Which can hurt or be sore?

1. I went to aerobics last Thursday and my legs are still aching.
2. My feet are hurting. Can we stop for a rest?
3. My eyes are sore from sitting at the computer too long.

d. Talk to a partner.

Look at the picture on the right and tell what the treatment is in case of broken, sprained, bruised, cut or dislocated part of your body.

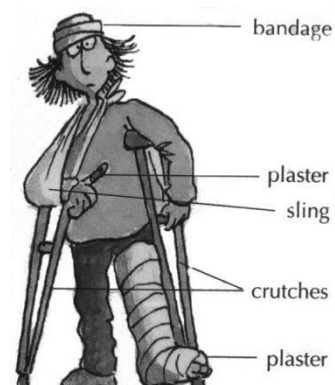
e.g. When I broke my leg last summer I walked with the help of crutches for three months.

e. Underline the correct word in each pair.

1. A sore throat and a headache are signs/symptoms of flu.
2. You'd better go to bed. You've got a temperature / fever of 38°C !
3. My friend injured/wounded his shoulder when he was playing football.
4. He is complaining of a sharp ache/pain in his chest.
5. The best way to treat a sprained ankle is to put a tight bandage round the wound/injury.
6. My sister is in bed with a chest disease/infection.
7. Did you know that herbal therapists use poisonous plants to cure/heal headaches?
8. It takes time to cure/recover from an operation.
9. Flu cannot be treated/operated with antibiotics.
10. Quick! Stop the car! I'm going to be ill/sick!

9. Give the definitions to the following words

1. stroke	a. A serious situation e that happens unexpectedly and demands immediate action.
2. breathing	b. the breaking of a bone or cartilage
3. fracture	c. the state of being poisoned.
4. poisoning	d. any acute clinical event, related to impairment of cerebral circulation, that lasts more than 24 hours
5. emergency	e. inhalation and exhalation of air or gaseous mixtures.



Language Development

1. Say whether the following statements are true or false. Correct the false statements.

1. Not all medical emergencies require medical attention. F
2. First aid in emergency is rendered only by professional personnel. _____
3. Shock is common only for severe injuries. _____
4. A victim suffering from shock should be given lots of liquid. _____
5. If an artery bleeds, direct pressure should be applied below the place of bleeding. _____
6. You shouldn't move limbs in case of bleeding. _____
7. First aid in case of fracture is applying splints to limbs. _____

2. Look through the text about first aid and answer the following questions.

1. What is first aid?

2. Who renders help in medical emergencies?

3. What emergencies require first aid?

4. Why does major bleeding require immediate attention?

5. What types of bleeding do you know?

6. What are the methods to control bleeding?

7. What is shock?

8. What is the treatment for shock?

9. What is the treatment in case of fractures, sprains and dislocations?

3. Match the beginning and ending of the sentences?

1. Check that	a. warm
2. Shall I bandage	b. some painkillers.
3. Take	c. move the patient's head and neck, it's dangerous.
4. Don't	d. apply more pressure on the vessel.
5. You should	e. the patient's pulse again.
6. Give	f. the wound now?
7. Keep the patient	g. the patient is breathing

4. Work in pairs. Think of three emergencies a member of the public might have to deal with. For each one, write three instructions to help them. Tell your instructions to other students. They should guess the emergency.

*e.g. (a patient is unconscious)
Don't move the person.
Make sure he is still breathing.
Keep the person warm until medical help arrives.*

5. Read the following text, be ready to discuss it.

It's My Job

I'm Tom Oliver. I'm 24 years old. I decided to become a paramedic when I saw two of them treating a driver at a scene of an accident when I was a boy.

I started as a trainee ambulance technician, and trained for two and a half years to become a qualified paramedic. Now I administer life-saving procedures myself. It's part of my everyday work to defibrillate the heart of a cardiac arrest, to apply splints to limbs, and to dress wounds, and to set up drips.

I have to make quick decisions – it's an important part of giving emergency treatment. So is communicating clearly and keeping a clear head in some difficult situations. And situations are often very difficult, especially when we have to deal with people under the influence of drugs and

alcohol. But paramedics don't think twice – we are always first at the scene when there is a suicide, a road accident, or a fire. When you save the life, it's the best job in the world.

a. Are there any new words in the text? How do you understand them?

b. Join these word combinations used in the text.

1. become	a. a life
2. deal with	b. as a trainee
3. give	c. a qualified paramedic
4. make	d. treatment
5. save	e. people
6. start	f. decisions

c. Answer the questions.

1. When did Tom decide to become a paramedic?
2. How long did he train for the job?
3. What things do you have to be good at to do Tom's job?
4. Who makes Tom's job difficult?
5. Why does Tom like his job?
6. Would you like to do Tom's job? Why? Why not?

6. Read the following article from the magazine "Life" and be ready to ask questions on the described accident.

a. New words

cadet – a young person training to become a police officer or an officer in the armed forces.

slap – hit someone with the palm of one's hand

thrust - push someone suddenly or violently

Choking Child Saved by Quick-Thinking Cadet

Rachel Prossor, an 11-year-old St. John Ambulance cadet in Wittshire used her first aid skills this summer to save the life of a choking child.

Rachel was playing in the garden with her father when a friend who was staying with the family came rushing out of the house. Her little daughter Lilly, aged 20-month-old, was eating a cracker when she started choking. Her mother slapped her on the back several times to move the cracker from the throat which was about the size of a £2 coin. Lilly was struggling to breathe and began to turn blue.

As Lilly's mother called an ambulance Rachel took the child and delivered five back blows and two abdominal thrusts, successfully clearing cracker from Lilly's airway.

"I'm so grateful to Rachel, and I'll never forget what she did," says Lilly's mother. I was never so afraid in my life, and my daughter would probably not be alive today if it weren't for Rachel being there.

"It was great to be able to help my friends out, and I'm proud to have used my first aid skills in a real-life situation," says Rachel.

She was nominated for a Young Achievers Award in recognition of her actions. "If you keep calm and remember what you have been taught, then you really can save a life.

b. Ask the questions to the following answers.

1. _____

Rachel is a St. John Ambulance cadet.

2. _____

She is an 11-year-old girl.

3. _____

Rachel was playing in the garden when Lilly began to choke.

4. _____

Lilly's mother failed to help her child.

5. _____

Rachel took the child and delivered five back blows.

6. _____

Rachel's actions were successful.

7. _____

Lilly's mother was so greatful to Rachel.

8. _____

"I'm proud to have used my first aid skills in a real-life situation

9. _____

Rachel got a Young Achievers Award for her actions.

Project Work

Do the project according to the theme of the unit.

Grammar in Use

The Imperative Mood

Positive	
Take some blood for a test.	
Be a nice boy.	
Look!	
Wash your hands.	
Negative	
Don't	take blood for a test.
	be silly!
	look at the skeleton!
	forget to complete drug charts.

We may use **always** and **never** + imperative to make an instruction stronger.

e.g. **Always** wash your hands.

Never forget to complete drug charts.

Basic uses:

1. Giving orders and instructions: **Elevate** the patient's leg immediately. **Open** your mouth.

1. Mark the sentences in the imperative with 'I'.

- Apply direct pressure on the wound. _____
- Do you work as a psychiatrist? _____
- Do as you are told. _____
- Do the victims of fire require first aid? _____
- Take first aid courses if you really want to save lives. _____
- Don't give injections to this patient today. _____
- Don't you go to university? _____
- Do you usually put a victim into a lying down position in case of shock? _____
- Have a nice day! _____
- See you later! _____
- Help yourself! _____
- Never say never again. _____

When do we use phrases 9-12? Give examples.

2. Offering: **Have** another sandwich.

3. Directing: **Take** the next turning left and you'll see a laboratory.

4. Prohibiting: **Don't move** victims with traumatic injuries unless it is absolutely necessary.

To make an imperative more polite, especially when we address a patient or a colleague, we may change it in the following ways:

A. **Open your mouth for me, please.**

B. **Please, open your mouth.** = *Open your mouth, please.*

C. **Can (Could) you just open your mouth?**

D. **I'd like you to open your mouth.**

E. **Just open your mouth.**

2. Make the following sentences sound more polite. Use more than one variant.

1. Stand up.

2. Apply a splint to the right leg of this patient.

3. Turn left.

4. Remove sutures in Mr Mitchell.

5. Make sure the results are received.

3. Use the verb in brackets in the proper form. You may use any form of Simple Active, Simple Passive, Continuous Active or Imperative.

1. When the little girl _____¹ (to eat) a biscuit, she _____² (to start) choking.
2. You _____³ (to have) a test at 10 a.m. tomorrow. _____⁴ (not to eat) for 4-6 hours before the test.
3. First aid _____⁵ (to need) in a number of conditions, such as burns, choking, drowning, etc.
4. When the nurse _____⁶ (to give) an injection, the patient suddenly _____⁷ (to faint).
5. Always _____⁸ (to remember) what you _____⁹ (to teach), _____¹⁰ (to be) responsible, _____¹¹ (to respect) your colleagues and patients, and you _____¹² (to make) a wonderful doctor.

Dr Omar Noori

My name _____¹ (to be) Omar Noori and I _____² (to work) as a phlebotomist in central England. I _____³ (to come) from Afghanistan. I _____⁴ (to educate) there so I have to go through re-qualification known as the Professional and Linguistic Assessment Board (PLAB). It _____⁵ (to administer) by the General Medical Council (GMC) of the United Kingdom.

I _____⁶ (not to work) as a doctor now. But I _____⁷ (to hope) that I _____⁸ (to pass) the PLAB next year and _____⁹ (to allow) to take this career.

Now I _____¹⁰ (to work) as a phlebotomist. Last year I _____¹¹ (to follow) a course including safety guidelines, infection control, documentation and other issues. I _____¹² (to practise) a lot on outpatients and on the wards. I _____¹³ (to assess) by the Commission.

On the job itself, I _____¹⁴ (to communicate) a lot, and it _____¹⁵ (to improve) my speaking skills. There _____¹⁶ (to be) no time to think in Dari or Pushto, my main languages. If you _____¹⁷ (not to react) quickly and politely, the job _____¹⁸ (to be) really hard. It _____¹⁹ (to be) good training for my work as a doctor in future.

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- I can talk about different types of medical emergencies
- I can talk about first aid procedures
- I can instruct somebody how to give first aid
- I can give orders, commands, instructions

Key Words

- apply *v* /ə`plai/
- bandage *n, v* /`bændidʒ/
- bleeding *n* /`bli:diŋ/
- brain *n* /brein/
- breathe *v* /bri:ð/
- burn *n* /bɜ:n/
- cardiac arrest /`kɑ:diæk ə`rest/
- childbirth *n* /`tʃaɪldbɜ:θ/
- choking *n* /`tʃəukiŋ/
- circulation *n* /,sɜ:kju`leiʃən/
- cramps *n* /kræmps/
- dislocation *n* /di:sləu`keɪʃən/
- drowning *n* /`drauniŋ/
- elevate *v* /`elivert/
- equipment *n* /i`kwɪpmənt/
- first aid /fɜ:st eɪd/
- fracture *n* /`fræktʃə/
- life-saving technique /`laɪf seɪvɪŋ tek`ni:k/
- lung *n* /lʌŋ/
- maintain *v* /meɪn`teɪn/
- poisoning *n* /`pɔɪzənɪŋ/
- pressure *n* /`presə/
- reduce *v* /rɪ`dju:s/
- render *v* /`rendə/
- scratch *n* /skrætʃ/
- shock *n* /ʃɒk/
- sprain *n* /spreɪn/
- stroke *n* /strəuk/
- swelling *n* /`swelɪŋ/
- victim *n* /`vɪktɪm/
- vomit *v* /`vɒmɪt/

Look back through this unit. Find other words and expressions that you think are useful and worth learning

UNIT 2.7. THE PATIENT'S HISTORY

In this unit

- talking about the parts of the patient's history
- describing the rules of obtaining the patient's history
- using *Present and Past Perfect Continuous*

Warm up

Do you agree with the motto? Why/Why not?
"First, do no harm."

Video Activity:

How Long Does Patient-Centered Communication Take?

(<https://www.youtube.com/watch?v=xGQ0hCdNDjU>)

I. Before you watch

Answer the questions.

1. What is the doctor doing in Pic. 1/2 and the nurse – in Pic. 3?
2. How long does it take him/her to do it?



1



2



3.

II. While you watch

Answer the questions

According to Co-Director of Center for Collaboration, Motivation and Innovation Cornie Davis, a nurse practitioner (NP):

1. How long does it take to ask start questions ("Ask, Tell, Ask") before the doctor gives information or advice?
2. How long can a simple brief action plan take?

III. After you watch

Make up the dialogues to fill the patient's history. Student A is a doctor, Student B is a patient.

Example Medical History Form

Personal details	
First name: _____	Last name: _____
Address: _____	
Tel: h _____ w _____	mobile _____
Gender: M F (please circle)	Date of birth: _____
Emergency contact	
First name: _____	Last name: _____
Address: _____	
Tel: h _____ w _____	mobile _____
Relationship: _____	
Health care details	
Doctor's name: _____	Tel: _____
Dentist's name: _____	Tel: _____
Medicare number: _____	
Medical details	
Blood group: _____ Do you object to transfusions? yes / no (please circle)	
Have you received a medical clearance from your doctor? yes / no (please circle)	
Do you have any allergies? yes / no (please circle)	
If yes, please list: _____	
Please list any medical conditions that you have (for example, asthma, diabetes, epilepsy):	

Please list any regular medications you require (include dosage):	

Reading

The Patient's History

When a new patient is admitted to the hospital **ward**, his medical problems will be worked up by the ward team and he will be kept in the hospital only as long as hospital care is required. The initial work-up will consist of the following: the patient's medical history, a complete physical examination, documentation of this information in the patient's chart, an **assessment** of the patient's problems, and writing hospital orders.

Medical diagnosis, the determination of the nature and cause of an illness, begins with a patient's history. This includes the history of the present illness (HPI) with a description of symptoms, a past medical history, and a family and a social history.

The history of the present illness (HPI) begins with a statement of the patient's age, race, sex, occupation, and chief complaint. For the latter use the patient's own words. Find out and describe when (prior to admission) the patient was last in his usual state of health. Then describe what **complaints** he developed thereafter. In this description include the location, the **intensity**, the quality, the **duration**, any **radiation**, and any **frequency** of these complaints. Determine what seemed to precede these complaints, what **exacerbated** them, and what **alleviated** them. Ask about any associated symptoms.

Ask about the family history as well as about environmental and social habits that might be of relevance to the chief complaint. Finally, find out why the patient came to see you today. Next, obtain and document the following systematic data:

- Does the patient have any known allergies to drugs or possibly to other materials?
 - What are the patient's **harmful habits** like smoking or **drug-addiction**?
- Also list all medications presently being taken. Inquire about taking the **pill** in a female patient.

Past medical history (PMH): find out about major acute and chronic illnesses that the patient has had, including operations, major injuries, unusual childhood illnesses (e.g., poliomyelitis, rheumatic fever).

Family history (FH): ask about any chronic illnesses of the immediate family, report the **circumstances** surrounding the death of an immediate family member.

Social history (SH): determine the patient's **marital status**, the number of children, and his education.

Review of systems (ROS): the history is taken of the main symptoms of the major bodily systems.

To **obtain** a good history, a set of the following practical **tips** has been developed:

- Show the patient your attention.
- Start by eliciting the presenting complaints.
- Let the patient tell the story in their own words.
- Try not to **interrupt**.
- Use the language which the patient understands.
- Summarize the story for the patient to check, correct and add more relevant details.
- Obtain the patient's history also from other sources of information.

Having completed history taking, the doctor will perform the next stage of clinical examination which is physical examination.

Vocabulary Practice

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

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

harmful	associated
chief	female
immediate	hospital
patient's	physical
1. _____	ward
2. _____	complaint
3. _____	symptoms
4. _____	habits
5. _____	patient
6. _____	family
7. _____	examination
8. _____	chart

Составьте предложения с несколькими словосочетаниями:

3. Соотнесите симптомы и системы, нарушения в работе которых их вызывают.

1. Cardiovascular system (CVS):	A. shortness of breath, cough, sputum, wheeze, haemoptysis.
2. Gastrointestinal system (GIS):	B. nocturia, frequency, incontinence, change in colour/smell of urine, menstrual difficulties.
3. Respiratory system (RS):	C. nausea, vomiting, indigestion, abdominal pain, heartburn, change in bowel habit.
4. Genitourinary system (GUS):	D. headaches, weakness, dizziness, fits, faints, vertigo.
5. Central nervous system (CNS):	E. chest pain, palpitations.

Language Development

1. Просмотрите текст еще раз и ответьте на вопросы.

1. What are the main components of clinical examination?

2. What is the initial part of clinical examination?

3. What does patient's history consist of?

4. What information is included in the

- history of the present illness?

- past medical history?

- family and a social history?

5. What recommendations should be followed to get accurate information?

—

6. What is crucial in history taking?

—

7. Is it necessary to obtain patient's history from different sources of information?

—

—

2. а) Изучите историю болезни Кевина Холла.

Surname (1st)	Hall	Surname (2nd)	First name: Kevin
Age: 32	Sex: M	Marital Status: M	
Occupation	Truck driver		
Present complaint	Frontal headaches ^{3/12} ^a . Worse in a.m. "Dull" ^b , "throbbing" ^c Relieved by lying down. Also c/o ^d progressive deafness.		
O/E^e General condition:	Obese, 1.65 m tall, 85 kg weight		
ENT^f	Wax ^g ++, both sides		
RS^h	NAD ⁱ		
CVS^j	P ^k 80/min reg ^l , BP ^m 180/120, HS ⁿ Normal		
GIS^o			
GUS^p			
CNS^q	Fundi ^r normal		
Immediate past history	Weight gain		
Points of note	None		
Investigations^s: Urine -ve ^t for sugar and albumin Retinoscopy			
Diagnosis	Hypertension		
Management			
Date: 26/03/2019	Signature: Peter Weiss MD		
a - ^{3/12} - For 3 months (similarly, ^{6/52} 6 weeks and ^{4/7} 7 days b - <i>Dull</i> "A dull sort of ache". Not felt distinctly. Not sharp. c - <i>Throbbing</i> Beating more rapidly than usual. d - <i>c/o</i> Complains of. e - <i>O/E</i> On examination. f - <i>ENT</i> Ear-nose-throat g - <i>Wax</i> Wax within the external auditory canal h <i>RS</i> -respiratory system i – <i>NAD</i> - Nothing abnormal detected	j – <i>CVS</i> -cardiovascular system k – <i>P</i> -Pulse l – <i>reg</i> - Regular m – <i>BP</i> - Blood pressure n – <i>HS</i> – Heart sounds o – <i>GIS</i> -gastrointestinal system p – <i>GUS</i> – genitourinary system	q – <i>CNS</i> –central nervous system r – <i>Fundi</i> – equivalent to "found" s - <i>Investigation Tests</i> t -ve – negative (+positive)	

б) В паре составьте диалог между врачом и пациентом. Какие вопросы должен был задать врач, чтобы заполнить эту форму?

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Present Perfect Continuous

Утвердительная форма			
I / We / You / They	have		been breathing.
He / She / It	has		
Отрицательная форма			
I / We / You / They	haven't		been breathing.
He / She / It	hasn't		
Вопросы			
(Why)	have	I / we / you / they	been breathing?
	has	he / she / it	

Сигнальные слова: **all day/morning/afternoon (long)** (весь день/утро/вечер), **the whole day/month** (целый день/месяц), **for 10 years/2 hours** (в течение 10 лет/2 часов), **since 1998/5 o'clock** (с 1998 года/с 5 вечера), **how long?** (как долго?)

Present Perfect Continuous используется, чтобы описать:

1 Действия, которые начались в прошлом и продолжаются до настоящего момента (фокус внимания на действии):*
*e.g. The surgeon **has been operating** for 8 hours already.* - Хирург **оперировал** уже 8 часов.

* **NB:** В таком случае мы можем также использовать Present Perfect Simple, но существуют отличия:

*e.g. The surgeon **has operated** for 8 hours. Now the patient is at ICU.* - Хирург **оперировал** 8 часов. Сейчас пациент в отделении интенсивной терапии (Важен результат.) – *The surgeon is very tired now. He **has been operating** for 8 hours.* – Хирург **очень уставший**. Он **оперировал** 8 часов. (Акцент на действии.)

2 Действия, которые начались в прошлом, но еще не завершены (фокус внимания на действии):**
*e.g. I've **been examining** patients since 9.* – Я **осматриваю/осматривал** больных с 9.

Past Perfect Continuous

Утвердительная форма			
I / We / You / They / He / She / It	had		been breathing.
Отрицательная форма			
I / We / You / They / He / She / It	hadn't		been breathing.
Вопросы			
(Why)	had	I / we / you / they / he / she / it	been breathing?

Сигнальные слова = сигнальные слова для Present Perfect Continuous.

Мы используем Past Perfect Continuous аналогично тому, как мы используем Present Perfect Continuous, но в контексте прошедшего времени:

*e.g. The surgeon was very tired now. He **had been operating** for 8 hours.* – Хирург был очень уставшим. Он **оперировал** 8 часов.

1. Употребите глаголы, данные в скобках, в Present Perfect Continuous или the Past Perfect Continuous.

1. The lecturer _____

(to describe) the respiratory system for an hour already.

2. The patient _____ (to smoke) heavily before he gave up a year ago.

3. Oh, I see you don't feel very well. How long _____ (to cough)?

4. The oldest university lecturer _____ (to teach) for 60 years before he retired.

5. Mr Black _____ (to wait) for an operation since September.

2. Ответьте на вопросы. Обратите внимание на употребление времен:

1. How long have you been learning English?
2. How long had you been learning biology, chemistry and Russian before you entered the medical university?
3. Have you ever spoken to a foreigner in English? How was it?
4. How long have you been going to the University? How many modules have you passed up to now?
5. How long has your lecturer been explaining the Perfect Continuous to you? It is clear now? WHY NOT? Read the rules again, please!

3. а. Составьте вопросы, начиная со слов *How long...?* Используйте Present Perfect Continuous. e.g. *I live in Simferopol. – How long have you been living in Simferopol?*

1. I go to university.
How long _____?
_____?
2. I work at the surgical department.
How long _____?
_____?
3. I teach chemistry to schoolchildren.
How long _____?
_____?
4. I go on holiday to Koktebel.
How long _____?
_____?
5. I jog every morning.
How long _____?
_____?

б. Напишите о себе, употребляя те же глаголы. В парах задайте друг другу вопросы, начиная с *How long...?* и ответьте на них.

Checklist

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

- I can talk about alternative and complementary medicine
- I can compare and contrast different alternative practices
- I can use *Perfect Continuous (Past and Present)*

Key Words

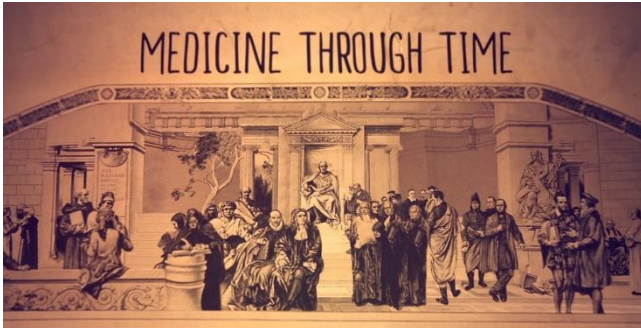
alleviate *v* / ə'li:vieɪt /
assessment *n* / ə'sesmənt /
circumstance *n* / 'sə:kəmst(ə)ns /
complaint *n* / kəm'pleɪnt /
drug-addiction
duration *n* / djʊ'reɪʃ(ə)n /
exacerbate *v* / ɪg'zæsəbeɪt /
frequency *n* / 'fri:kw(ə)nsi /
harmful habits /
intensity *n* / ɪn'tensɪti /
interrupt *v* / ɪntə'rʌpt /
marital status
obtain *v* / əb'teɪn /
pill *n* / pɪl /
radiation *adj* / reɪdɪ'eɪʃ(ə)n /
tip *n* / tɪp /
ward *n* / wɔ:d /

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

UNIT 2.8. HISTORY OF MEDICINE

In this unit

- describing the main stages of history of medicine
- talking about the famous doctors and scientists
- contrasting *Perfect Simple* and *Perfect Continuous*



Warm up

Do you agree with a quote? Why/Why not?

"The history of medicine is the history of the unusual."

Robert M. Fresco.

Video Activity:

The hidden history of hand-washing

(<https://www.youtube.com/watch?v=w04gTXu1mHM>)

I. Before you watch

Match the images with the definitions.



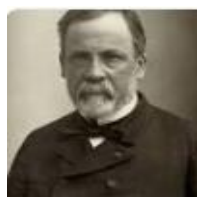
1. Ignaz Semmelweis



2. Joseph Lister



3. Robert Koch



4. Louis Pasteur

- A. Founder of antiseptic medicine
- B. German physician and one of the founders of bacteriology
- C. Father of handwashing and infection control
- D. French biologist, microbiologist and chemist renowned for his discoveries of the principles of vaccination, microbial fermentation and pasteurization

II. While you watch

Choose from (A-D) the one which best fits each space (1- 4). Write your answers.

1. Ignaz Semmelweis, a doctor in Vienna, was very frustrated by the situation
2. He discovered that
3. When he asked doctors and medical students to practice hand hygiene,
4. It was many decades

(A) what doctors were doing it was that they would perform autopsies in one part of the hospital and then run to deliver babies in a ward next door without washing hands.

(B) where healthy women would go into the hospital to have a baby and almost one out of five of them died from childbirth fever.

(C) before it became institutionalized as an approach to medicine in terms of hand sanitizing, washing hands before surgery.

(D) the death rate dropped from 18% to about 1%.

III. After you watch

Use the following ideas and **make up the dialogues.**

Clean hands protect against infection

Protect yourself

Clean your hands regularly.

Wash your hands with soap and water, and dry them thoroughly.

Use alcohol-based handrub if you don't have immediate access to soap and water.



Reading

History of Medicine

Medical care is one of the oldest professions in the history of **mankind**. In **ancient** times people believed that diseases were caused by the evil spirits or due to the anger of the _____.¹ So the earliest "cures" were prayers and use of magic.

Some medical discoveries of curative value were made by **prehistoric** and ancient people. As far back as 10,000 years ago, prehistoric _____² performed trepanning, in which a hole was cut in the patient's _____³ to relieve pressure on the brain.

Fragments of pre-Christian Egyptian writing describe a routine scheme from the patient's symptoms to physical examination and then to suggested therapy and prognosis. The Babylonian Code of Hammurabi, dated 2040 B.C., contains statements about the proper conduct of physicians and prescribes **punishments** for **malpractice**.

In India, early medical people discovered the relationship between malaria and mosquitoes, the discovery of more than 700 medicinal plants and the _____⁴ of more than 100 surgical instruments were done in ancient times. In China, _____⁵ has been a part of Chinese medicine since ancient times. Originally it was used to treat diseases; nowadays acupuncture's effectiveness in _____⁶ chronic pain has become more widely used.

Hippocrates, the ancient physician commonly considered the _____⁷ of medicine, was born in 460 B.C. He was the first to **separate** art and science of medicine from the practice of _____⁸.

The **Middle Ages** date from about 500 A.D. to about 1500 A.D. During the Middle Ages many hospitals were built in Europe.

In the middle of the 14th century the bubonic **plague** _____⁹ one-fourth of the European population and the scientists became more determined to search for practical, effective methods of dealing with medical problems. This marked the beginning of the scientific _____¹⁰ to medicine.

During the **Renaissance**, _____¹¹ forbidding the dissection of **cadavers** were relaxed and as a result, the first accurate textbook on human anatomy was published. Dissection **enabled** physicians to identify the heart and its _____¹² system, the major nerves, the stomach and other digestive organs.

In 1545, the first **pharmacy** was opened in London. **Prescription** of medicines had been administered prior to this time, but the **establishment** of this shop indicated means of treating a disease. Today, many thousands of drugs are used to treat illnesses.

The microscope was invented in 1590. **Laboratory technicians** use it regularly to analyze _____¹³ of blood, urine and **tissue**. Their reports help physicians to make the diagnosis of a disease.

In the early 1600s, English physician William Harvey discovered how blood circulates in the body and published the first medical book describing this circulation and the role of the heart. In 1667, the first blood _____¹⁴ was performed. In 1699, a law to control **communicable** diseases was enacted in the American colony of _____¹⁵.

Vocabulary Practice

1. При чтении текста заполните пробелы недостающими словами, данными в таблице.

approach	acupuncture	laws
killed	invention	specimens
father	skull	Massachusetts
religion	healers	transfusion
controlling	gods	circulatory

2. Прочитайте текст. Дополните предложения однокоренными словами, образованными от слов, данных в скобках.

Medicine in the 19th and 20th centuries

In the 19th century, modern _____ (**surgeon**) was made possible by two revolutionary discoveries: the _____ (**invent**) of safe methods of anaesthesia and the control of wound infection by the use of antiseptics and sterile _____ (**equip**). Besides, a set of diagnostic procedures, requiring a complete case history and a thorough physical _____ (**examine**), became common medical practice. In 1895, Roentgen discovered the x-ray to detect _____ (**abnormal**) inside the body.

The 20th century has brought medical advances in nearly every area of medicine. Open-heart surgery has been developed. Organ transplants are often _____ (**success**). Vaccines (infectious agents given to patients to establish _____ (**resistance**) to particular diseases) have almost eliminated the threat of poliomyelitis. The electrocardiogram (EKG), electroencephalogram (EEG) and computed tomography (CT) help _____ (**physical**) to detect heart and brain malfunctions.

Due to early diagnosis and more effective _____ (**treat**) more and more cancer victims are surviving. X-ray examination helps to make more accurate diagnosis and more effective treatment. Lasers become very _____ (**help**) in surgery. As people change their lifestyles and their _____ (**environ**) new diseases appear. That's why health _____ (**work**) always search for better medical care.

Language Development

2. Просмотрите текст еще раз и ответьте на вопросы.

1. What methods were used in the past to prevent illnesses?

2. Who is called the "father of medicine"?

3. What is acupuncture? What country is famous for using it in ancient times?

4. Why is the study of human anatomy important for physician's work?

5. How were diseases treated in early societies?

6. What country were medicinal plants traditionally used in?

7. When were many hospitals built in Europe?

8. What helped to publish the first accurate textbook on human anatomy?

9. When was the first pharmacy opened?

10. How did the invention of microscope helped the physicians to make accurate diagnosis of a disease?

11. Who discovered the role of the heart and blood circulation?

12. When was the first blood transfusion performed?

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Perfect Simple и Perfect Continuous в сравнении

1. **Perfect Simple** выражает завершенное действие:

e.g. *I am afraid Sam **has caught** measles.* – Боюсь, что Сэм подхватил корь.

Perfect Continuous выражает действие, длящееся в течение какого-то периода времени:

e.g. *The nurse is tired. She **has been giving** injections since morning.* – Медсестра устала. Она **делает/делала** уколы с утра.

2. Мы используем **Simple Perfect**, если в предложении указано количество, а **Perfect Continuous** в таком контексте не используют:

e.g. *The lab assistant **has been examining** blood samples all day. She **has examined** 15 samples.* – Лаборант **исследовала** пробы крови весь день. Она **изучила** 15 проб.

3. **Perfect Continuous** часто используется с глаголами, которые подразумевают некую протяженность во времени (*wait, work, try, learn, rain, etc.*):

e.g. *Ms Goldsmith retired after she **had been working** as an epidemiologist for 20 years.* – Миссис/Мисс Голдсмит ушла на пенсию после того, как **проработала** эпидемиологом 20 лет.

Perfect Simple часто употребляется с глаголами, которые предполагают «короткое» действие (*find, start, die, stop, lose, catch, etc.*):

e.g. *All we can do is just to offer our sincere condolences. Peter **has died**.* – Всё, что мы можем сделать, – это лишь выразить наши самые искренние соболезнования. Питер **умер**.

Важно помнить, что мы в норме не употребляем **статические глаголы** в форме Continuous. Вместо Perfect Continuous мы используем Perfect Simple.

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

e.g. *I know Jack well.* – How long **have** you **known** Jack? – Я хорошо знаю Джека. – Как долго ты его **знаешь**?

*We got married when we were 25. We **had known** each other for 5 years by then.* – Мы поженились, когда нам было 25. К тому моменту мы **знали** друг друга уже 5 лет.

1. Прочитайте предложения. Что в них странного? Как следует их изменить?

1. Ouch! I've been cutting my finger!

2. I've learned Topographic Anatomy this afternoon. It was a nice little read.

3. 'Why are you tired?' 'I've swum.'

4. I am terribly sorry. I've been dropping your stethoscope.

5. Oh, he might get ill with some infectious disease. He has been touching contaminated blood.

2. Закончите предложения, употребив глаголы в скобках в Present Simple, Present Perfect Simple или Continuous или Past Perfect Simple или Continuous tenses.

1. When the dean came into the lecture hall the professor _____ (to deliver) a lecture for half an hour.

2. It's 11 o'clock already. The professor _____ (to consult) patients since 9. He _____ (to examine) seven patients.

3. By midnight I _____ (to do) my homework and fell asleep.

4. I _____ (to do) my homework and by midnight I hadn't finished it yet.

5. How long _____ you _____ (to wait) here? – Oh, not long. I _____ just _____ (to arrive).

6. You're out of breath. _____ you _____ (to run)?

7. In the afternoon the surgeon was very tired. He _____ (to work) since early in the morning. He _____ (to make) three operations.

8. _____ you _____ (to know) Mr Brick? – Oh, yes. I _____ (to know) him since my childhood.

3. Вспомните сигнальные слова для Present Continuous и Present Perfect Continuous.

Убедитесь, что вы понимаете их значение.

Затем заполните таблицу:

at present; since yesterday; while; Look!; Listen!; for seven months; now; right now; still; how long?; since I was ten

Signal Words	
Present Continuous	Present Perfect Continuous
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Подчеркните сигнальные слова. Выберите правильный вариант ответа:

1. John _____ case-histories since he came in the morning.

A was typing	B is typing	C has been typing
---------------------	--------------------	--------------------------

2. Look! The professor _____ my paper. Oh, I hope I'll pass!

A has been checking	B is checking	C checks
----------------------------	----------------------	-----------------

3. The pain-killer I _____ to this patient a week ago is very effective.

A was prescribing	B has prescribed	C prescribed
--------------------------	-------------------------	---------------------

4. We _____ in London since 2000.

A were working	B have been working	C worked
-----------------------	----------------------------	-----------------

5. We _____ hard all day, and now we are exhausted.

A were working	B have been working	C worked
-----------------------	----------------------------	-----------------

6. While the students _____ complications of mumps, their tutor was checking their papers.

A have been discussing	B are discussing	C were discussing
-------------------------------	-------------------------	--------------------------

4. Повторите правило согласования времен.

Трансформируйте данные предложения в косвенную речь:

1. The child said: "I have a rash all over my body."

_____.

2. My friend said: "This professor has been making endoscopic operations successfully for ten years already."

_____.

3. The physician said: "Patient B. has been coughing for two weeks."

_____.

4. The student said: "I hope I will have filled in all five case-histories by noon."

_____.

5. The school nurse said: "All the pupils of our school have been vaccinated according to the Immunization Scheme."

_____.

6. The patient said: "I had been climbing up the hill for half an hour before the attack of chest pain."

_____.

7. The patient said: "After I started taking *Notta* I've been sleeping much better."

_____.

8. Our lecturer said: "You're the nicest group I've ever had."

_____.

5. Соотнесите результат и причину.

1. earache	a. to work on the computer for a long time
2. diarrhoea	b. to develop bronchitis
3. rash	c. to swim for 3 hours
4. eyes hurt	d. to catch chickenpox
5. back hurts	e. to buy a lot of expensive drugs
6. cough	f. to lift a very heavy bag
7. headache	g. to eat undercooked seafood
8. chills	h. not to sleep well for two weeks
9. no money	i. to have a high temperature

Запишите короткие диалоги врачей, обсуждающих своих пациентов. Внимание! В ответах можно употреблять Present Simple, Present Perfect или Present Perfect Continuous. Первое предложение выполнено для вас в качестве примера. Первое предложение выполнено для вас в качестве примера:

1. Why does the patient have an earache? – He has been swimming for 3 hours.

2. _____

3. _____

4. Why do the patient's eyes hurt? –

5. _____

6. _____

7. _____

8. _____

9. _____

Checklist

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

- I can describe the main stages of history of medicine
- I can talk about the famous doctors and scientists
- I can differentiate between *Perfect Simple and Perfect Continuous*

Key Words

- ancient *adj* / 'eɪnʃ(ə)nt /
 cadaver *n* / kə'deɪvə /
 communicable *adj* / kə'mju:nɪkəb(ə)l /
 enable *v* / ɪ'neɪb(ə)l /
 establishment *n* / ɪ'stæblɪʃm(ə)nt /
 laboratory technician *adj* / læ'bɒrə,t(ə)rɪ
 tek'nɪʃ(ə)n /
 malpractice *n* / mal'præktɪs /
 mankind *n* / man'klaɪnd /
 Middle Ages
 pharmacy *n* / 'fɑ:məsi /
 plague *n* / pleɪg /
 prehistoric *adj* / pri:hi'stɒrɪk /
 prescription *n* / prɪ'skrɪpʃ(ə)n /
 punishment *n* / 'pʌnɪʃm(ə)nt /
 Renaissance *n* / rɪ'neɪs(ə)ns /
 separate *v* / 'sep(ə)rət /
 tissue *n* / 'tɪʃu:/ / 'tɪsju: /

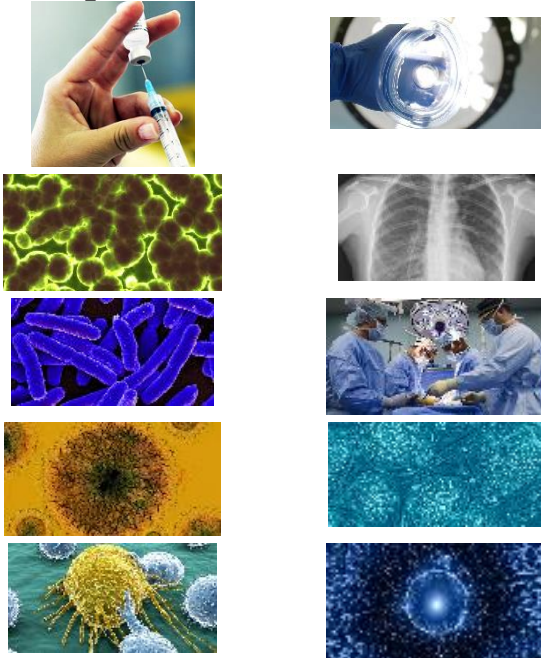
Просмотрите еще раз материал урока. Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT 2.9. MEDICAL ACHIEVEMENTS

In this unit

- talking about advances in modern medical science
- describing the most impressive achievements in medicine
- *Reported Statements and Questions*

Warm up



A



B



C



D

II. While you watch Answer the questions.

What can you add to the list of the top 10 medical advances in history?

- Vaccines (1796)
- Anaesthesia (1846)
- Germ theory (1861)
- Medical imaging (1895)
- Penicillin (1928)
- Organ transplants (1954)
- Antiviral Drugs (1960s)
- Stem cell therapy (1970s)
- Immunotherapy (1970s)
- Artificial intelligence (21st century)

Video Activity: Global coronavirus outbreak spurs invention and innovation

<https://www.youtube.com/watch?v=haoMEemKaiU8>

I. Before you watch

Match the terms with the images.

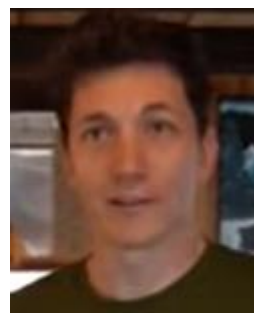
1. A baby safety pod
2. A 3D printed face mask
3. A snorkel all face mask
4. A field flexible chamber for COVID 19 patients



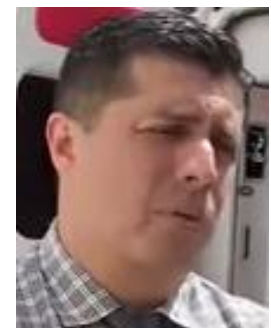
1. What is his baby safety pod modified from?



3. What are the positive features of their modified snorkel all face mask?



2. How long does it take to print out one face mask?



4. What's the purpose of the field flexible chamber?

III. After you watch

Make up the dialogue on "Medical Achievements in my country".

Reading

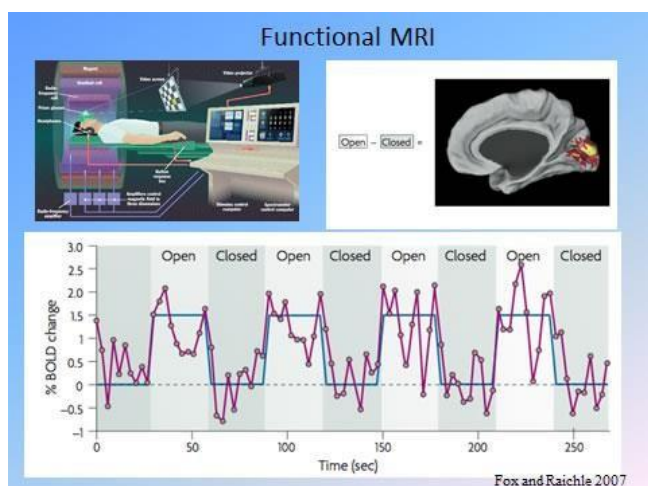
Medical Advances

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 up** things 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.

<i>to write down information</i>	<i>to double-check to look up</i>
<i>associate</i>	<i>to practice</i>
<i>to remove memory</i>	<i>cancer</i>
	<i>to metabolize</i>

- _____ technology
- _____ medicine
- _____ the topic
- _____ references
- _____ professor
- _____ details
- _____ a kidney
- _____ surgeons
- _____ disorder
- _____ 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 (Т)? 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??

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Reported Statements and Questions

'Say', 'tell' и 'ask'

Самые распространенные глаголы, которые вводят речь, это: *say*, *tell* (для утверждений) and *ask* (для вопросов).

Следует всегда использовать дополнение после глагола *tell* (сказать **кому-либо**):

e.g. He **told me** he was tired.

Мы можем использовать *to me*, etc. после глагола *say*, но это не обязательно:

e.g. "You're late", he **said (to me)**.

Мы можем использовать *me*, etc. после глагола *ask*, но это не обязательно:

e.g. "Are you OK?" he **asked (me)**.

1. Выберите правильный глагол из данных в скобках, чтобы закончить предложения.

1. "Don't do that!" she _____ to them. (said/ told/ asked)

2. "They've finished the operation", he _____ (said/ told/ asked)

3. "How are you today, Mr Proper?" the physician _____ . (said/ told/ asked)

4. I _____ that I didn't know what to do. (said/ told/ asked)

5. "Does Mr Groove need anything else?" the nurse _____ me. (said/ told/ asked)

6. May I _____ a question? (say/ tell/ ask)

7. Look at this nice green uniform! I wonder whether it is expensive. Let's _____ the price. (say/ tell/ ask)

8. Yesterday I was introduced to Professor Babanin. And he _____ a few words to me. (said/ told/ asked)

9. This boy is only three, but he can _____ the time already. (say/ tell/ ask)

10. She _____ that she has understood this topic at last. (says/ tells/ asks)

11. "You were right. Our teacher will never put us an excellent mark!" "I _____ you so!" (said/ told/ asked)

Косвенные утверждения

Если глагол, вводящий косвенную речь, стоит в **настоящем времени**, мы используем те же времена, что и в прямой речи. Так часто бывает, когда мы передаем только что сказанные слова:

e.g. **A:** 'I've typed those letters.' **B:** 'Pardon?' **C:** She says (that) she has typed those letters.

Если глагол, вводящий косвенную речь, стоит в **прошедшем времени**, мы обычно используем прошедшие времена. Мы «сдвигаем» глаголы «на один шаг» назад.

Местоимения меняются (или нет) в зависимости от того, кто именно передает чужую речь:

'I'll prescribe you aspirin, Mr Darcy.' (слова, сказанные д-ром Моррисом)
Dr Morris told Mr Darcy that he would prescribe him aspirin. (передано кем-то другим)
Dr Morris told me/said that he would prescribe me aspirin. (передано м-ром Дарси)
I told Mr Darcy that I would prescribe him aspirin. (передано д-ром Моррисом)

2. Трансформируйте данные предложения, употребляя косвенную речь вместо прямой.

1. 'The heart pumps oxygenated blood through the aorta at about 1 mile per hour.' – The author of the article says (that) _____

2. 'I've been increasingly tired for the last two months.' – The patient said (that) _____

3. 'I must examine the patient again.' – The professor says (that) _____

4. 'I'm good at drawing cells and their structures.' – The student said (that) _____

5. 'Next time I'll tell you about the pulmonary circulation.' – The lecturer promised (that) _____

6. 'I can give intravenous injections.' – My friend boasted (that) _____

7. 'I'm preparing for the tests.' – David says _____

Косвенные вопросы

Изучите данные примеры, определите типы вопросов и объясните, какие изменения происходят, когда мы трансформируем вопросы разных типов из прямой речи в косвенную.

Actual Question Spoken	Reported Question
<p><i>Is heart failure diagnosed by echocardiogram?</i></p> <p><i>Do you have any problems with your heart?</i></p>	<p>The professor asked if (whether) heart failure was diagnosed by echocardiogram.</p> <p>The doctor wondered if (whether) the patient had any problems with his heart.</p>
<p><i>Is heart failure diagnosed by echocardiogram or by x-ray?</i></p> <p><i>Do you have any problems with your heart or with your bowels?</i></p>	<p>The professor asked if (whether) heart failure was diagnosed by echocardiogram or by x-ray.</p> <p>The doctor wondered if (whether) the patient had any problems with his heart or with his bowels.</p>
<p><i>How is heart failure diagnosed?</i></p> <p><i>What kind of problems do you have?</i></p>	<p>The professor asked how heart failure was diagnosed.</p> <p>The doctor wondered what kind of problems the patient had.</p>
<p><i>What is diagnosed by echocardiogram?</i></p> <p><i>Who has any problems with your heart?</i></p>	<p>The professor asked what was diagnosed by echocardiogram.</p> <p>The doctor wondered who had any problems with his heart.</p>
<p><i>Heart failure is diagnosed by echocardiogram, isn't it?</i></p> <p><i>You have some problems with your heart, don't you?</i></p>	<p>The professor asked if (whether) heart failure was diagnosed by echocardiogram.</p> <p>The doctor wondered if (whether) the patient had any problems with his heart.</p>

3. Прочитайте правила образования косвенных вопросов. Подчеркните верную информацию.

- We *use/don't use* quotation marks or question marks in indirect questions.
- The word order in indirect questions is like that in *statements/direct questions*.
- We use **if/whether** when we report all types of questions except *special (question-word) questions, yes-no questions, alternative questions, question tags*.
- If the reporting verb is *in the past/in the present* we use the rule: 'present becomes past and past becomes past perfect.' (Sequence of Tenses rule)
- The reporting verbs for indirect questions are: *say/ ask/ tell (me)/ wonder*.
- Pronouns/question words* change (or not) depending on the view of the reporter.

4. Трансформируйте вопросы, заданные врачом, в косвенную речь. Обращайте внимание на местоимения.

- 'What's your normal blood pressure?'
She asked me _____
_____.
- 'Have you had any pain in your back recently?'
I asked her _____
_____.
- 'Is your pulse rate normal or elevated?'
He asked me _____
_____.
- 'How many miles can you run without stopping?'
I asked him _____
_____.
- 'Who's your GP?'
She asked me _____
_____.

5. Трансформируйте данные предложения, употребляя косвенную речь вместо прямой.

1. 'My son has a whooping cough.' – Mother told the doctor (that) _____
_____.

2. 'I haven't taken any prescribed drugs.' – The patient admitted (that) _____
_____.

3. 'I was waiting for you.' – My friend says that _____
_____.

4. 'Our students received 20 diplomas with honours last year.' – The rector said that _____
_____.

5. 'I should go to the dentist.' – Sue said that _____
_____.

6. 'On examination the patient was short of breath.' – The cardiologist mentioned that _____
_____.

7. 'I can't speak. I'm being examined now.' – Frank told me that _____
_____.

8. 'You'll be able to go home tomorrow.' – My doctor promises that _____
_____.

9. 'You'll be able to go home tomorrow.' – My doctor promised that _____
_____.

10. 'I must return books to the library today.' – Jane said that _____
_____.

11. 'Mrs Collins has murmurs heard best at the apex.' – On examination it was noted that _____
_____.

12. 'Yesterday Bill's blood pressure was 140/90.' – The nurse said that _____
_____.

Checklist

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

- I can talk about advances in modern medical science
- I can describe the most impressive achievements in medicine
- I can report statements and questions

Key Words

blood /blʌd/

decision *n* /dɪ'sɪʒ.ən/

disorder *n* /dɪ'sɔː.dəʃ/

exploit *v* /ɪk'splɔɪt/

incision *n* /ɪn'sɪʒ.ən/

increase *v* /ɪn'kriːs/

interaction *n* /,ɪn.tə'ræk.ʃən/

invasive *adj* /ɪn'veɪ.sɪv/

level *n* /'levəl/

look up *v* /lʊk ʌp /

magnification *n* /,mæɡnɪfɪ'keɪ.ʃən/

means *n* /miːnz/

navel *n* /'neɪ.vəl/

psoriasis *n* /sə'reɪəʊsɪs /

recovery time /rɪ'kʌvəri taɪm /

reference *n* /'refərəns/

research *n* /rɪ'sɜːtʃ/

review *v* /rɪ'vjuː/

reward *n* /rɪ'wɔːd/

scar *n* /skɑːʃ/

take off *v* /'teɪk.ɒf/

track *v* /træk/

valuable *adj* /'væljuəbəl/

Просмотрите еще раз материал урока.

Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT 2.10. ALTERNATIVE MEDICINE

In this unit

- talking about alternative and complementary medicine
- comparing and contrasting different alternative practices
- using *Reported Orders, Requests and Commands*
- *Impersonal Sentences*

Warm up

WHY DO THEY CALL IT

“ALTERNATIVE MEDICINE”

WHEN IT IS THE ORIGINAL

MEDICINE THAT HUMANS HAVE BEEN USING FOR THOUSANDS OF YEARS?

What is **your answer** to this question?

Video Activity: Complimentary and Alternative medicine - Aura Cleansing - BBC

<https://www.youtube.com/watch?v=3qdUiUP7XDc>

I. Before you watch

Match the images (1-8) with the terms (a-h).



- | | |
|----------------|-------------------|
| A. Relaxation | E. Detoxification |
| B. Naturopathy | F. Aroma therapy |
| C. Homeopathy | G. Chiropractic |
| D. Acupuncture | H. Hypnosis |

II. While you watch

Choose from (A-D) the one which best fits each space (1- 4). Write your answers.

1. In recent years, the number of complementary therapists practicing has soared the reputation of Holly Street insights
2. There is a change in the landscape in terms of both medical and complementary therapy
3. Dan believes the body is surrounded by spinning energy fields and
4. Dan treats anything

(A) from diarrhea to depression at a set fee of 80 pounds an hour.

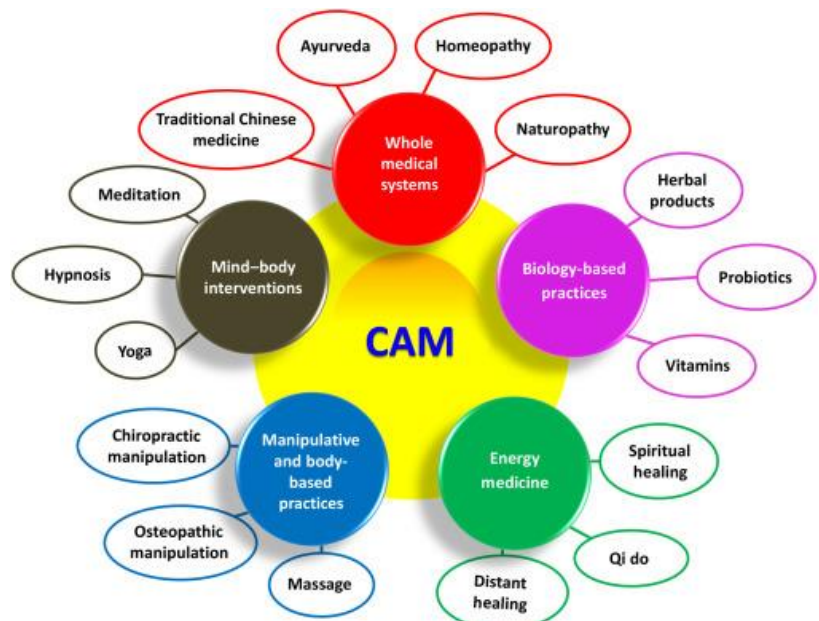
(B) when they spin the wrong way, we get ill.

(C) that you get the best meds or the worst cracks supposing one says.

(D) where it's becoming more accepted.

III. After you watch

Use the diagram and **make up the dialogues (CAM – Complimentary and Alternative medicine).**



Natural forces within us are the true healers of disease.

Hippocrates

Reading

Alternative Medicine

The World Health Organization defines complementary and alternative medicine as a broad set of health care practices that are not part of that country's own tradition and are not integrated into the dominant health care system.

Complementary and alternative therapies include five major groups, which have some **overlap**:

1. Traditional Chinese medicine, **naturopathy**, **homeopathy**, and **ayurveda**.
2. Mind-body medicine: takes a holistic approach to health that explores the interconnection between the mind, body, and spirit. It works under the **premise** that the mind can affect "bodily functions and symptoms".
3. Biology-based practices: use substances found in nature such as herbs, foods, vitamins, and other natural substances.
4. Manipulative and body-based practices: feature manipulation or movement of body parts, such as is done in **chiropractic** and **osteopathic** manipulation.
5. Energy medicine: is a **domain** that deals with **putative** and **verifiable** energy fields.

Complementary or "alternative" therapies have boomed in recent years, with more and more patients willing to try a range of therapies developed outside conventional western medicine. It is only during past 20 years that these therapies have come complementary, that is, methods of treatment that can be used as supplements to, or substitutes for, conventional procedures. Before that time, such systems were regarded by the medical establishment as ineffective and sometimes dangerous.

The purpose of therapeutic interventions to restore balance and facilitate the body's own healing responses rather than to target individual disease processes or stops troublesome symptoms. They may therefore prescribe a package of care, which could include modification of lifestyle, dietary change, and exercise as well as a specific treatment. Thus, a medical herbalist may give counseling, an exercise regimen, guidance on breathing and relaxation, dietary advice, and a herbal prescription.

What are the risks?

The greatest risk is that you may use these treatments instead of going to your regular doctor. Complementary medicine should be in addition to treatment from your doctor. Otherwise you may miss important treatment that could save your life.

Sometimes complementary medicines can be dangerous when they are combined with another medicine you are taking. Diet supplements, for example, are complementary. And they can vary widely in how strong they are and in how they react to other medicines. Also, complementary medicine isn't controlled as much as standard medicine. This means you could become a victim of **fraud**.

What are the benefits?

One benefit is that many people who practice complementary medicine take a "whole person," or holistic, approach to treatment. They ask you about your lifestyle, habits, and background. This makes many people feel better about the treatment, the person giving the treatment itself, and the condition.

It seems that alternative medicine has as many advantages as negative aspects. The decision whether to treat yourself in public clinic or find some unusual way of medication remains a matter of personal choice.

Vocabulary Practice

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

2. Соотнесите слова и их определения.

1. <i>fraud</i>	A. extend over so as to cover partly.
2. <i>apparent</i>	B. person or thing acting or serving in place of another.
3. <i>verifiable</i>	C. clearly visible or understood; obvious.
4. <i>domain</i>	D. able to be checked or demonstrated to be true, accurate, or justified.
5. <i>substitute</i>	E. cheating
6. <i>overlap</i>	F. an area of knowledge or activity.

3. Образуйте

а) существительные от глаголов.

1. organize	
2. define	
3. interconnect	
4. approach	
5. restore	
6. heal	
7. modify	

б) прилагательные от существительных.

8. osteopathy	
9. complement	
10. convention	
11. verification	
12. trouble	
13. danger	
14. habit	

Language Development

3. Просмотрите текст еще раз и ответьте на вопросы.

1. What is complementary and alternative medicine?

2. What the major groups do alternative therapies include?

3. What is the purpose of therapeutic interventions according complementary practitioners?

4. What are the risks of complementary therapies?

5. What are the benefits of alternative medicine?

6. What are advantages and disadvantages of alternative medicine?

7. Why was alternative medicine regarded by the medical establishment as ineffective and dangerous?

8. What is mind-body medicine?

9. What do you know about biology-based practices?

10. What are manipulative and body-based practices?

11. What does energy medicine deal with?

12. What is your attitude to alternative medicine?

2. Read the dialogue with Alex Peterson, a doctor of the National Homeopathic Center.

- *Nowadays holistic medicine becomes more and more popular. What does holistic mean?*
- Holistic means 'whole'. It takes into account not only the symptoms, but also the age, habits emotions and life-style of the individual, and tries to build an overall picture. Being healthy means there is a balance between your mind and your body.
- *And how does it differ from a Western approach?*
- Modern medicine treats patients as a series of parts that are isolated- a bit like a mechanic repairing a car. Modern medicine treats the symptoms and not the cause of the illness.
- *If holistic medicine doesn't prescribe drugs, how does it treat illness?*
- Holistic medicine tries to prevent illness. A good diet, with lots of fresh food is essential; healthy life-style, lots of exercise and rest will prevent illness.
- *Well, that's the theory, what about the practice?*
- We use acupuncture in our practice to treat migraine, arthritis, insomnia, coughs, drug addiction, and high blood pressure.
- *What do doctors think of this?*
- They are slowly beginning to accept us. People complain that the doctors don't listen to the patients more than 5 minutes and almost write the prescriptions. We try to get the best health treatment by marrying Eastern and Western approaches.

3. Look through the dialogue again and reproduce it in the monologue.

4. Complete the chart with some of the differences between Western and holistic medicine.

Western medicine	Holistic medicine

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Reported Orders, Requests and Commands

Мы переводим предложения в повелительном наклонении в косвенную речь с помощью подходящих глаголов и инфинитива с частицей *to*. Глагол, который вводит косвенную речь, соотносится по значению с глаголом в повелительном наклонении (*просьба, совет, приказ, и т.д.*). Чаще всего мы используем такие глаголы: *ask, advise, allow, forbid, invite, order, remind, tell, warn, etc.*

e.g. Remember to bring the journal. – He reminded me to bring the journal. – Не забудь принести журнал. – Он напомнил мне принести журнал.

Когда мы переводим в косвенную речь отрицательную форму глагола в повелительном наклонении, мы *not* или *never* перед инфинитивом с частицей *to*.

e.g. Don't wait for me. – He asked me not to wait for him. – Не ждите меня. – Он попросил его не ждать.

1. Какие глаголы следует использовать для перевода в косвенную речь данных предложений? Укажите номера от 1 до 5.

- invite ask prohibit
warn remind

Трансформируйте предложения в косвенную речь, употребляя выбранные глаголы.

1. 'Could you lie down on the coach, please?' the physician said to the patient.
_____.
2. 'Remember to take Ann's pressure later, please,' the physician said to the nurse.
_____.
3. 'Don't go into the operating theatre,' the surgeon said to the parents.
_____.
4. 'Never drive after drinking,' the policeman said to young drivers.
_____.
5. 'Come to my party, will you?', my friend told me.
_____.

2. Прочитайте историю *a* и напишите, что на самом деле было сказано, в диалоге *b*.

a. The doctor asked Mrs Smith whether she smoked. She said that she did. Then the doctor wanted to know how many cigarettes she smoked a day. She told him that she normally smoked 20 cigarettes a day. Then the doctor asked when Mrs Smith had started smoking and she answered that she had had her first cigarette when she had been fifteen. The doctor wondered if she had ever stopped. Mrs Smith told him that she had. She added that she had stopped smoking for at least 20 times. And then the doctor asked when the last time had been. His patient answered that it had been just a few weeks before. The doctor mentioned that at the moment it was absolutely necessary for her to stop smoking because her health was rather poor. Mrs Smith said that she would like to but she felt that she didn't know what to do about it. Then the doctor advises her to see Dr Smoke-Free, a famous therapist. The patient said that she had heard about this specialist earlier and would surely go to see him soon. Then she thanked the doctor and left.

b. Doctor (D): Do you smoke, Mrs Smith?
Mrs Smith (S): Yes.

D: How many _____?

S: _____.

D: When _____

_____?

S: _____.

D: _____

_____?

S: _____.

_____ 20 times.

D: When _____

_____?

S: _____.

D: It's _____.

S: _____.

D: I think you should _____.

S: _____.

_____.

3. Трансформируйте предложения в косвенную речь, употребляя подходящие по смыслу глаголы.

1. 'I won't be able to come for ECG today', Mr Jones told Nurse Burges.

2. 'Ahmed, could you tell me how this is done in your home country?' asked Dr Ono.

3. 'It would be better to give up eating red meat like pork and beef,' said Dr Sind.

4. 'What is his temperature?' asked the nurse.

5. 'I left my appointment card at home', said Mr Brown.

6. 'I'm not sure how to pronounce your name', the doctor told Mr Artagnan.

7. 'Have you tried to diet before?' the physician asked Jane.

8. 'Dr Murdock is still doing her rounds,' said Nurse Kilpatrick.

9. 'I had myocardial infarction when I was 56', said Mr McCartney.

10. 'I'll call you tomorrow,' she told me.

Impersonal Sentences

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 alternative and complementary medicine
- I can compare and contrast different alternative practices
- I can use Reported Orders, Requests and Commands
- I can use Impersonal Sentences

Key Words

affect *v* / ə'fekt /

apparent *adj* / ə'pær(ə)nt /

Ayurveda *n* / ˌɑːjʊə'viːdə /

background *n* / 'bækgraʊnd /

chiropractic *adj* / ˌkɪrə(ʊ)'præktɪk /

conventional *adj* / kən'venʃ(ə)n(ə)l /

herb *n* / hɜːb /

holistic *adj* / həʊ'lɪstɪk /

homeopathy *n* / hɒmɪ'ɒpəθi /

miss *v* / mɪs /

naturopathy *n* / ˌneɪtʃə'rɒpəθi /

osteopathic *adj* / ˌɒstɪə'pæθɪk /

otherwise *adv* / 'lðəʊwɪz /

overlap *n* / əʊvə'lap /

range *n* / reɪn(d)ʒ /

substitute *n* / 'sʌbstɪtju:t /

verifiable *adj* / 'vɛrɪfɪəb(ə)l /

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

UNIT 3.1. 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
- *Final Test – Part I*

Warm up

Video Activity: Rick visits the chemist – BBC

(<https://www.youtube.com/watch?v=btiP7s4Zyqo>)

I. Before you watch

I.1. Analyze the groups of the words (1-3). Do they have the same meaning?



1) pharmacy → chemist's (shop) → drugstore



2) a pharmacist → a chemist → a druggist



3) medicine → drug → remedy → preparation

I.2. Learn the symbol.



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

Today, when a medical practitioner writes a prescription beginning with "Rx", he or she is completing the command.

II. While you watch

Answer the questions.

1. Who does the man buy medicine for?
2. What is the problem?
3. What are the symptoms?
4. Why does the man say, "I didn't come in here for lifestyle tips. I just want some proper medicine"?
5. What does the man think about the homeopathic treatment?

III. After you watch

Make up the dialogues: "At the chemist's".

Reading

Read the text and discuss it according to the plan.

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

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.

<i>side effects</i>	<i>dose</i>	<i>interacts</i>
<i>pills</i>	<i>druggist</i>	<i>capsule</i>
<i>chemist's</i>	<i>suppository</i>	<i>overdose</i>

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.

<i>safe</i>	<i>external</i>
<i>fundamental</i>	<i>injectable</i>
<i>potential</i>	<i>non-prescription</i>
<i>counselling</i>	<i>common</i>
<i>potent</i>	<i>radioactive</i>

- _____ dosage
- _____ preparation
- _____ drug
- _____ use
- _____ area
- _____ medicine
- _____ drug interaction
- _____ role
- _____ material
- _____ use

7. С какими существительными могут употребляться данные группы слов?

<i>Area, pharmacies, drugs</i>		
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 manufacturer'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. Составьте ваш собственный рецепт. Выберите препарат, действие и предназначение которого вам известны. Уточните информацию в фармакологическом справочнике.

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: _____

Project Work

Do the project according to the theme of the unit.

Final test – Part I

1. He _____ want to go to the movies.
A doesn't B don't C isn't D hasn't
2. _____ they coming over for dinner?
A Are B Is C Am D Do
3. In the first ---- months of life, an infant learns how to lift its head, how to smile and how to recognize its parents.
A much B many C few D little
4. He is _____ guy I know.
A more weird B weirder C most weird D the weirdest
5. It _____ snow tomorrow.
A snows B will snow C is snowing D will be snowing
6. At noon tomorrow, I _____ on a beach somewhere.
A will relax B will be relax C will be relaxing D relax
7. I am hot. I _____ to take a shower.
A will B was C have D am going to
8. Alex _____ work last weekend.
A did B was C does D didn't
9. My brother and sister _____ playing tennis at 11am yesterday.
A were B are C did D is
10. The equipment _____ delivered tomorrow afternoon.
A will been B will being C will D will be
11. Mark was _____ to hospital in an ambulance.
A taken B took C take D takes
12. Police _____ been informed about the accident.
A has B will C is D have
13. Many cars _____ made in Japan.
A were B have C are D is
14. _____ talk to John: he is busy.
A Not B No C Don't D Do
15. Don't _____ anyone. It's a secret.
A to tell B telling C told D tell
16. He said there _____ an accident outside the supermarket.
A was B has been C had been D would
17. Tom said he _____ going to London the following day.
A was B is C will be D has

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

Key Words

capsule *n* /ˈkæpsju:l/
chemist BE *n* /ˈkemɪst/ = druggist AE *n* /ˈdrʌgɪst/
dispensary *n* /dɪsˈpensəri/
dispense *v* /dɪsˈpens/
distribute *v* /dɪˈstrɪbjʊ:t/
dosage *n* /ˈdəʊsɪdʒ/
dosage form /ˈdəʊsɪdʒ fɔ:m/
drug cabinet /drʌg ˈkæbɪnət/
elixir *n* /ɪˈlɪksɪə/
interaction *n* /,ɪntəˈreɪkʃən/
liquid *n, adj* /ˈlɪkwɪd/
medicine dropper /ˈmedɪsən ˈdrɑ:pə/
nuclear *adj* /ˈnju:kliə/
ointment *n* /ˈɔɪntmənt/
overdose *n* /ˈəʊvədəʊs/
over-the-counter (OTC) drug /,əʊvəðəˈkaʊntə drʌg/
pharmacist *n* /ˈfɑ:məsɪst/
pharmacy /ˈfɑ:məsi/ = chemist's (shop) BE /ˈkemɪsts (ʃɑ:p)/ = drugstore AE /ˈdrʌgstɔ:/
pill *n* /pɪl/
semisolid *n, adj* /,semiˈsəlɪd/
side effect /saɪd ɪˈfekt/
solid *n, adj* /ˈsəlɪd/
solution *n* /səˈlu:ʃən/
spirit *n* /ˈspɪrɪt/
storage *n* /ˈstɔ:rɪdʒ/
store *v, n* /stɔ:/
suppository *n* /səˈpɔzɪtrɪ/
syrup *n* /ˈsɪrəp/
thermometer *n* /θəˈmɒmɪtə/
tincture *n* /ˈtɪŋktʃə/

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

UNIT 3.2. MEDICATION

In this unit

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



Warm up

Do you agree with the quote? Why/Why not?
“It’s okay to need medication. It’s okay to need therapy. You deserve to heal.”

Video Activity:

How the Body Absorbs and Uses Medicine

(<https://www.youtube.com/watch?v=IOf-z0D1mHK>)

I. Before you watch

Match the terms (1-6) with the definitions (A-F).

- | | |
|--------------------|---------------|
| 1. Bloodstream | 4. Metabolism |
| 2. Absorption | 5. Enzymes |
| 3. Bioavailability | 6. Prodrugs |

(A) In pharmacology, a subcategory of absorption and the fraction (%) of an administered drug that reaches the systemic circulation.

(B) Proteins that act as biological catalysts.

(C) The blood that circulates the body in humans and animals.

(D) The process by which your body converts what you eat and drink into energy.

(E) A medication or compound that, after administration, is metabolized into a pharmacologically active drug.

(F) Extracting a solute from one liquid phase to another without a chemical reaction.

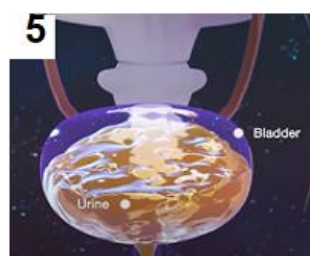
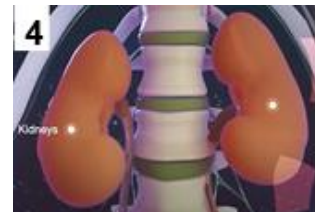
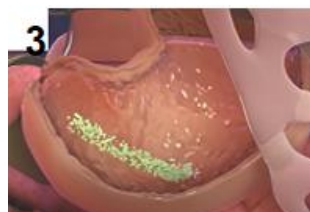
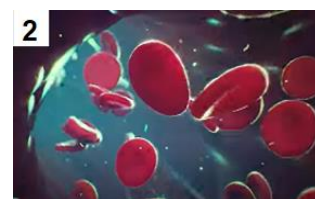
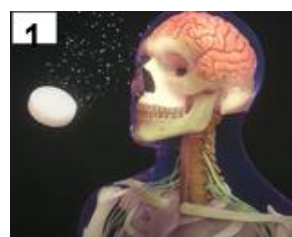
II. While you watch

Answer the questions.

1. Can the level of absorption affect the speed and the quantity of the drug at the site of action?
2. What are common formulations of drugs?
3. Many factors including intake of specific foods and other drugs can increase or decrease the speed at which drugs are broken down, can't they?

II. While you watch

Make up your report on how the body absorbs and uses medicine. Use the information from the video and the plan.



Plan

1. Drugs
2. Drug absorption
3. Bioavailability
4. Elimination of drugs by kidneys
5. Elimination by the urine

Reading

Read the text and discuss it according to the plan.

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

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, Topicalaine, 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.а. Словообразование. Запомните значение данных терминологических элементов.

Word Part	Meaning	Example
PREFIXES		
anti-	against	anti-inflammatory anti-infectious
contra-	against	contraindication contraceptive
counter-	opposite	counterpoison counterdepressant
SUFFIXES		
-lytic	dissolving reducing loosening	anxiolytic – agent reducing anxiety
-tropic	acting on	inotropic – acting on the force of muscle contraction (<i>in/o</i> means <i>fiber</i>)
ROOTS		
alg/o, algio algesi/o	pain	algesic - painful
chem/o-	chemical	chemotherapy – 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

б. 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, <i>ante cibum</i>)
pc	after meals (L., <i>post cibum</i>)
bid	twice a day (L., <i>bis in die</i>)
tid	three times per day (L., <i>ter in die</i>)
qid	four times a day (L., <i>quarter in die</i>)
qd	every day (L., <i>quaque die</i>)
qh	every hour (L., <i>quaque hora</i>)
1-4h	every 4 hours
prn	as needed, as required (<i>pro re nata</i>)
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 нужном 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	a. relieving nausea
2. antiemetic	b. an instrument for injecting fluid
3. antineoplastic	c. a mixture of liquids
4. psychotropic	d. a small glass container for liquid medicine
5. syringe	e. causing relaxation
6. ampule	f. agent that destroys cancer cells
7. emulsion	g. acting on the mind

7. Тест. Выберите наиболее подходящий ответ:

1. Another term for trade name is:

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

2. An analgesic is used to treat:

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

3. A drug that is administered cutaneously is:

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

4. Drug administered by injection is described as:

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

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.



1	2	3	4	5	6	7	8	9	10	11	12	13	14
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

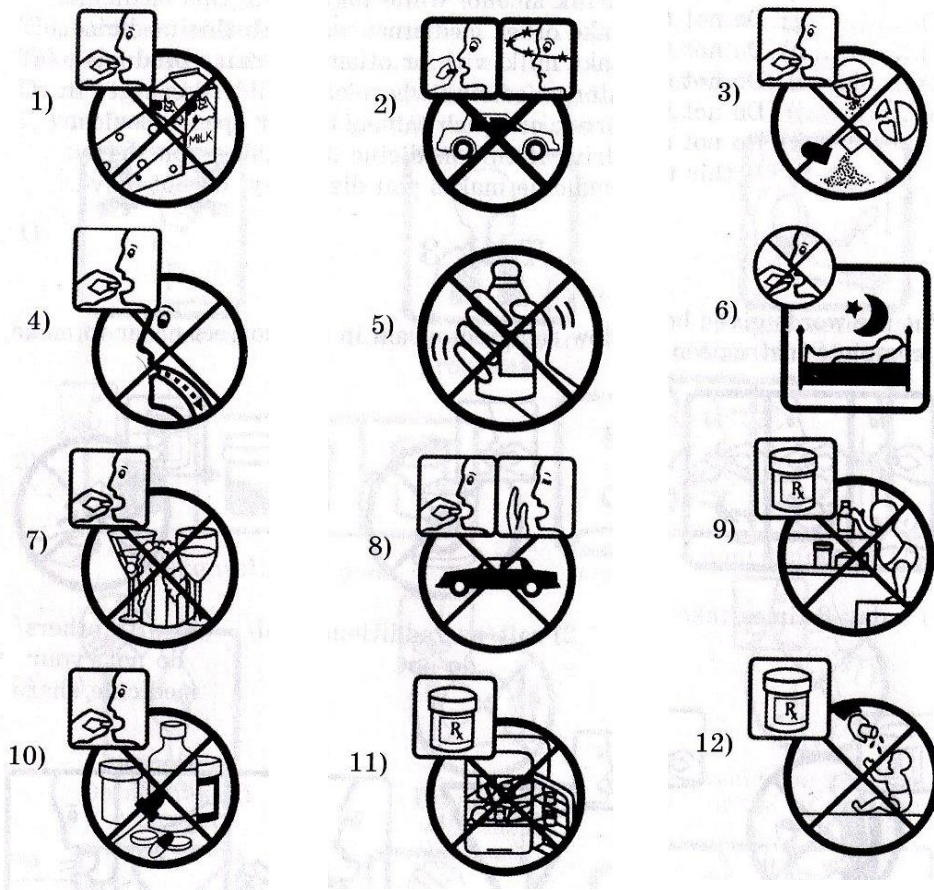
4. Закончите предложения, используя названия групп препаратов из таблицы.

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 _____

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Infinitive and Its Functions

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

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* /,ænəl`dʒi:zɪk/

anaesthetic *n, adj* /,ænəs`θetɪk/

anticoagulant *n, adj* /,æntɪkəu`ægju:lənt/

antiemetic *n, adj* /,æntɪɪ`metɪk/

antihistamine *n, adj* /,æntɪ`hɪstəmi:n/

antihypertensive *n, adj* /,æntɪ,haɪpə`tensɪv/

anti-infective *n, adj* /,æntɪɪn`fektɪv/

anti-inflammatory *n, adj* /,æntɪɪn`flæmətri/

antineoplastic *n, adj* /,æntɪ,ni:əu`plæstɪk/

cutaneous *adj* /kju`teɪniəs/

diuretic *n, adj* /daɪjuə`retɪk/

eliminate *v* /ɪ`lɪmɪneɪt/

generic name /dʒə`nerɪk neɪm/

hypnotic *adj* /hɪp`nɒtɪk/

intramuscular *adj* /ɪntrə`mʌskju:lə/

intravenous *adj* /ɪntrə`vi:nəs/

nausea *n* /`nɔ:ziə/

orally *adv* /`ɒrəli/

painkiller *n* /`peɪn,kɪlə/

psychotropic *n, adj* /saɪkə`trɒpɪk/

rectal *adj* /`rektəl/

relieve *v* /rɪ`li:v/

sedative *n, adj* /`sedətɪv/

side effect /saɪdɪ`fekt/

sublingual *adj* /səb`lɪŋgwəl/

trade name /treɪd neɪm/

vomiting *n* /`vɒmɪtɪŋ/

Просмотрите еще раз материал урока.

Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT 3.3. VITAMINS

In this unit

- talking about different groups of vitamins
- describing the main sources of vitamins
- discussing the functions of vitamins in the body
- describing conditions resulting from vitamin deficiencies
- *Present Perfect*

Warm up

Do you agree with the quote? Why/Why not?

“Without a daily supply of proteins, vitamins, and minerals, no matter how much energy we get in the form of calories, our bodies and minds deteriorate because we are not able to fully replace the dying cells in our internal and external organs.”

Paul Zane Pilzer

Video Activity: Do You NEED Vitamin Supplements - BBC

(<https://www.youtube.com/watch?v=ieuvbjmuEks>)

I. Before you watch

Match the image of the source of the vitamin (1-6) with the vitamin (A-F).



1



2



3



4



5



6

A. A B. B C. C D. D E. E F. K

II. While you watch

Choose from (A-D) the one which best fits each space (1- 4). Write your answers.

1. It's surprising
2. Crisps and fries preserve the high levels of vitamin C in potatoes
3. We take about 600 million tablets of pure vitamin C every year and a lot more in multivitamins to see
4. Before I even took the pill
5. Your urine contained over 530 milligrams of vitamin C; so you've passed the tablet and a little bit more

- A. if it's doing me any good.
- B. how many vitamins are actually hidden in there with the breakfast.
- C. my normal diet was providing me with all the vitamin C my body needed.
- D. when fried quickly actually.
- E. which is probably what you've taken in your diet.

III. After you watch

Discuss the result of the experiment:



Basically my body was full of as much vitamin C as it can hold and anything else I put in I just pee.

Reading

Read the text “Vitamins” and be ready to speak on the following topics:

- What are vitamins?
- Classification of vitamins
- Functions of vitamins
- Vitamin deficiencies

Vitamins

Vitamins are vital substances (from the Latin *vita* = life) required by organism as a **nutrient** in very small amounts. Your body needs them to grow and develop normally.

Until the 1900s, vitamins were obtained solely through **food intake**. **The sources of vitamins** are leafy green and yellow vegetables, fruits, liver, and other glandular organs, beans, nuts, cereals, eggs, milk, fish, and poultry. Many food **sources** contain different ratios of vitamins. That is why, if the only source of vitamins is food, changes in diet will alter the types and amounts of vitamins **ingested**.

Nowadays there are also manmade vitamins which are synthesized in the laboratory. Hence, these are called *synthetic vitamins*. These synthetic vitamins are mostly used for therapeutic purposes. An individual who eats a well-balanced meal does not need synthetic vitamins because he is assured of the normal intake of vitamins from food sources.

Vitamins are classified as water-soluble and fat-soluble. In humans there are 13 vitamins: four fat-**soluble** vitamins (A, D, E and K), and nine water-soluble vitamins (eight B vitamins and vitamin C). Water-soluble vitamins **dissolve** easily in water and are readily **excreted** from the body with urine, that is why their consistent daily intake is important. Fat-soluble vitamins are **absorbed** through the **intestinal tract** with the help of lipids and more likely to **accumulate** in the body.

Multiple vitamins are essential for normal metabolism, development and growth of the organism and cellular regulation. But each vitamin has its specific job.

Vitamin A (retinol) is important for normal vision especially for normal night vision, normal bone and skeletal growth and in establishing the cells of both the **nervous** and **reproductive** systems.

Vitamin D (calciferol) promotes bone and teeth development because it facilitates absorption of calcium and phosphorus.

Vitamin E (or tocopherol) is important for cellular **respiration** and the prevention of **anaemia** of the red blood cells.

Vitamin K is needed in the proper coagulation of blood.

Vitamin C (or ascorbic acid) is needed in holding cells together. It maintains the integrity of the cells. It builds body resistance to infection. It improves iron absorption and helps in the healing of wounds and bone fractures. It aids in metabolism.

Vitamin B, (or thiamine) helps maintain good appetite, good muscle tone, and normal function of the nerves.

Vitamin B₂ (or riboflavin) is essential for protein, fat, and carbohydrate metabolism. It maintains the health of the skin, tongue, mouth, and normal vision. It is needed for proper growth and development.

Vitamin B₃ better known as niacin is important in energy metabolism. It also aids in photosynthesis in plants.

Vitamin B₆ (pyridoxine) is important in amino **acid** metabolism. It catalyzes urea production, the synthesis of essential fatty acids.

If you have low levels of certain vitamins, you may develop a **deficiency** disease (*avitaminosis*). For example, if a baby doesn't get enough vitamin D, it could develop **rickets**. The best way to get enough vitamins is to eat a **balanced** diet with a variety of foods. In some cases, you may need to take a daily multivitamin for optimal health. However, high doses of some vitamins can cause allergic reactions and make you sick (*hypervitaminosis*). This is especially true with fat-soluble vitamins.

Vocabulary Practice

1. Look at the words in bold type in the text and explain them.

2. Complete the chart with missing data.

Vitamin	Important in	Disease
B9	Synthesis of DNA, RNA, cell division	Anaemia
A	Normal vision, bone, skeletal growth	
	Bone and teeth development	Rickets
C	Integrity of the cells, iron absorption	
	Good appetite, muscle tone, normal function of nerves	Beriberi
	Energy metabolism, photosynthesis in plants	Pellagra
E		Nerve damage

3. Use the words from the box and make up sentences:

Scurvy, night blindness, beriberi, anaemia, pellagra, rickets, nerve damage

e.g. Rickets can be caused by the deficiency of vitamin D.

4. Fill in the correct word from the list below. Use the word only once.

<i>synthetic</i>	<i>specific</i>
<i>therapeutic</i>	<i>optimal</i>
<i>well-balanced</i>	<i>ascorbic</i>
<i>normal</i>	<i>reproductive</i>
<i>intestinal</i>	<i>cellular</i>

1. _____ system
2. _____ acid
3. _____ health
4. _____ job
5. _____ regulation
6. _____ tract
7. _____ intake
8. _____ meal
9. _____ purpose
10. _____ vitamin

Complete the description of vitamins with the words below.

teeth	skin
sunlight	eyes
nervous system	

1. **Vitamin C** is needed to help the _____ repair itself when it is cut or damaged. It is found in fruit, especially citrus fruit like oranges and grapefruit.

2. **The B-vitamins** keep the _____ healthy and help reduce stress. They are found in foods like wholegrain bread and cereals.

3. **Vitamin A** keeps the _____ healthy and is important for good vision. It is found in fatty foods like butter, cheese, whole milk and yoghurt.

4. **Vitamin D** is needed for healthy bones and _____ because it helps the body absorb calcium. Our body makes vitamin D when our skin is exposed to _____.

5. Match the synonyms:

1. nutrient	a. consumption
2. food intake	b. store
3. ingested	c. proportional
4. accumulate	d. breathing
5. respiration	e. a lack or shortage
6. balanced	f. nourishing substance
7. deficiency	g. swallowed

6. Fill in the word from ex.5 that best fits each gap.

1. Avitaminosis is a _____ disease when a person has low levels of certain vitamins.

2. Fats tend to _____ around the hips and thighs.

3. The plants absorb _____ from the soil.

4. Try to reduce your _____ of carbohydrates.

5. Once vitamin D is _____, it is stored in the body, while vitamin B₃ is not stored for a long time.

6. _____ diet is healthy because it contains the right foods in the right amount.

Language Development

1. Read the text, be ready to answer the questions.

Vitamin C

Vitamin C is a water-soluble vitamin used to treat and prevent a wide variety of conditions. Often, people use it to prevent or treat the common cold. However, there are other uses of vitamin C as well, such as for reducing the risk of heart disease.

The vitamin has several different effects in the human body, such as:

Antioxidant -- As an antioxidant, it helps prevent the formation of free radicals, damaging molecules or atoms. Free radicals play a role in various age-related conditions, such as cancer and heart disease.

Immune function -- There are numerous different mechanisms by which vitamin C may improve immune function. At this time, it is not entirely clear how the vitamin stimulates the immune system.

Iron absorption -- Vitamin C aids in the absorption of iron from the digestive tract into the body.

Various metabolic and synthesis processes

-- It is important for many different crucial processes in the body, including forming cartilage and proteins, building numerous compounds or tissues in the body. Vitamin C may be effective for several different uses. However, there is much controversy about some uses, such as for the common cold.

Most people do not experience side effects with vitamin C (at normal doses). However, some people may experience side effects (especially with high doses), including nausea, vomiting, heartburn or indigestion, insomnia, kidney stones. Normal doses are probably safe for most people, but high doses can cause problems.

1. As an antioxidant Vitamin C can be used to treat _____ .

- a. hepatitis
- b. heart disease
- c. common cold
- d. all of these

2. Vitamin C plays an important part in the processes of _____ .

- a. iron absorption
- b. cartilage formation
- c. protein synthesis
- d. all of these

3. The mechanism of by which Vitamin C fights

common cold is _____.

- a. entirely clear
- b. has been proved
- c. debatable
- d. its antioxidant effects

4. Which of the following is NOT true?

- a. It is believed that Vitamin C reduces the risk of heart disease.
- b. Antioxidant effects of Vitamin C result in its numerous uses in prevention and treatment of diseases.
- c. High doses of Vitamin C can be safe for most people.
- d. Vitamin C can strengthen the body's defence against diseases.

5. Which one is NOT a side effect caused by vitamin C?

- a. bringing up food
- b. sleeplessness
- c. nephrolithiasis
- d. malnutrition

2. Look through the text "Vitamins" and answer the following questions.

1. What are vitamins?

2. How are vitamins classified?

3. What are the functions of vitamins in the body?

4. What are the sources of vitamins?

5. Why are vitamins so important in our life?

6. What conditions may occur due to vitamin deficiencies? due to high doses of vitamins?

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Present Perfect

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

Signal words: before (now), ever, never (before), up till now, so far, since/for; just, yet, recently, lately.

Basic uses:

1 Actions beginning in the past and continuing up to the present moment:
e.g. *Vitamin D **has accumulated** since birth.*

2 Actions which happened at an unspecified time in the past:
e.g. ***Have** you **taken** the pill yet?*

1. Fill in the table with the proper forms of the irregular verbs. Memorise these verbs.

Infinitive	Past Simple	Past Participle
	bought	
break		
		chosen
	cut	
find		
	froze	
grow		
		kept
	let	
mean		
		slept
	stood	
swim		
		written

2. Complete the sentences with the proper form of the verb in the *Present Perfect*.

- How many module tests _____ the first-year students _____ (to pass) up till now?
- _____ you ever _____ (eat) beans?
- My friends _____ never _____ (to read) about scurvy before.
- 'My tea isn't sweet.' 'Mix it again. Sugar _____ not _____ (to dissolve) yet.'
- 'Congratulations! I know your son _____ (to write) the best essay on bioethics.'

3. Fill in the table with the signal words. The first line is made for you:

before, the day before yesterday, recently, ever, never, last weekend, up till now, last year, yet, so far, since 1998, in 1998, just, lately, yesterday, for 5 years, 5 years ago

Present Perfect	Past Simple
<i>before</i>	<i>the day before yesterday</i>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Now put the verbs in the following sentences into Present Perfect using the necessary signal words.

e.g. *Why **didn't** you **attend** the lectures **yesterday**? – Why **haven't** you **attended** the lectures **since Monday**?*

- Ms Forsyte became a professor last week.

- The boy cut his finger 5 minutes ago.

- Last time my mother grew vegetables in 2005.

- Dr Watson didn't publish his article last month.

4. Say whether the sentences are true or false.

Correct the false sentences.

e.g. *Scientists have synthesized Vitamin C for more than a century. – No, they haven't. They have synthesized Vitamin C since 1932.*

1. Physicians have used antibiotics for 200 years already.

2. My parents have just bought a new Range-Rover for me.

3. Up to now I've visited ten countries.

4. I have never eaten poultry.

5. Our teacher has promised to put excellent marks to all of us.

6. I haven't been home since last Sunday.

7. I have never taken any drugs.

5. Complete the sentences with the proper forms of the verbs in Present Perfect or 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. The students _____ (to finish) five experiments so far.

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

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

8. I _____ (to live) with my parents when I was 16.

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- I can talk about different groups of vitamins
- I can describe the main sources of vitamins
- I can describe the functions of vitamins in the body
- I can describe conditions resulting from vitamin deficiencies
- I can use *Present Perfect*

Key Words

absorb *v* /əb`zɔ:b/

accumulate *v* /ə`kjʊ:mjuleɪt/

allergic *adj* /ə`lə:dʒɪk/

anaemia *n* /ə`ni:mɪə/

avitaminosis *n* /,ævɪ`temɪ`nəʊsɪs/

balanced diet /`bælənst daɪət/

deficiency *n* /dɪ`fɪʃənsɪ/

dissolve *v* /dɪ`zɔlv/

excrete *v* /ɪk`skri:t/

fat-soluble *adj* /fæt,səljuəbəl/

food intake /fu:d`ɪnteɪk/

ingest *v* /ɪn`dʒest/

ingestion *n* /ɪn`dʒestʃən/

intestinal tract /ɪn`testɪnəl trækt/

nervous system /`nə:vəs`sɪstəm/

night blindness /naɪt`blaɪndnəs/

nutrient *n* /`nju:triənt/

reproductive system /,ri:prə`dʌktɪv/

respiration *n* /,respɪ`reɪʃən/

rickets *n* /`rɪkɪts/

scurvy *n* /`skə:vɪ/

soluble *adj* /`səljuəbəl/

source *n* /sɔ:s/

unbalanced diet /ʌn`bælənst daɪət/

vitamin *n* /`vɪtəmɪn/

water-soluble *adj* /`wɔ:tə,səljuəbəl/

Look back through this unit. Find other words and expressions that you think are useful and worth learning.

UNIT 3.4. 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
- *Past Perfect* and *Future Perfect*

Warm up

Do you agree with an English proverb

“An apple a day keeps the doctor away”?

Why/Why not?

Video Activity: Can eating fruit be bad for you
- Trust Me, I'm A Doctor- BBC

(<https://www.youtube.com/watch?v=zhUzxcg04IM>)

I. Before you watch

Answer the questions:



- 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?
- 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?



II. While you watch

Answer the questions.

1. What do these quantities refer to?

- seven to eight teaspoons of sugar;
- four teaspoons of sugar;
- two apples;
- one glass of juice or smoothie.

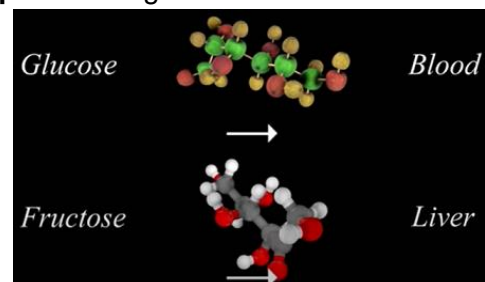


2. What forms does sugar come in?

3. Why shouldn't we neglect veg?

III. After you watch

1. Explain this figure.



2. Make up dialogues on healthy food.

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

- Daily consumption of water depends _____ your size and activity level.
- Fats play an important role _____ cholesterol level.
- Our generation suffers _____ heart and liver diseases because of unhealthy food.
- Vitamins and different minerals should be supplied _____ our diet.
- 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. Dieticians 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. Выберите правильный вариант *a*, *b*, или *c* и закончите предложения.

1. **Calcium** is needed for children's _____ and teeth to grow . It is found in foods like milk, cheese and yoghurt.

2. **Iron** helps your blood carry oxygen. If you do not get enough iron, you will be pale and tired and you may get _____. Iron is found in red meats, especially liver.

3. **Zink** makes your _____ stronger so that you can fight colds and infections. It is found shellfish, nuts, and seeds.

4. **Omega-3** is an essential _____ which helps your brain function well. It is found in oily fish like mackerel, salmon, and tuna.

5. **Protein** builds up, maintains and replaces the tissues in your body. Your _____, your organs, and your immune system are made up mostly of proteins.

6. **Carbohydrates** are sugars which are broken down by _____, then stored in the cells as a source of energy. Grain products such as rice, bread, and pasta are sources of carbohydrates.

7. **Fats** fuel the body and help _____ some vitamins. They are also the building blocks of hormones, and they insulate nervous system tissue in the body.

8. **Unsaturated fats**, found in oils and nuts, for example, are believed to protect the _____.

1	a. tissues	b. muscles	c. bones
2	a. obesity	b. anorexia	c. anaemia
3	a. immune system	b. muscular system	c. cardiovascular system
4	a. folic acid	b. fatty acid	c. ascorbic acid
5	a. blood	b. bones	c. muscles
6	a. enzymes	b. hormones	c. acids
7	a. excrete	b. absorb	c. dissolve
8	a. immune system	b. muscular system	c. cardiovascular system

3. а. Прочитайте статью “Secrets of a Long Life”.

A. A hundred years ago not many people lived in their seventies. Today, it is fairly common to do so in developed countries. But on the Japanese island Okinawa, people live longer than anywhere else in the world, with an average life expectancy of 81-82 years. Many people of Okinawa live to be over 100 years old. And they don't just live longer, they live better.

B. So what's the Okinawan secret? So far all the findings indicate that lifestyle, not genetic factors, is largely responsible.

C. Okinawans eat a traditional diet of soya, fruit, and vegetables. They consume a lot of fish, such as tuna, mackerel, and salmon, which are rich in omega-3 fatty acids, and help reduce the risk of heart disease and breast cancer. They don't eat a lot of red meat, and their diet is low in fats. Many elderly Okinawans live by the motto “Eat until you are 80% full”, and this helps them to control portion sizes.

D. Elderly Okinawans enjoy working, gardening, often work long after the usual age of retirement in Western countries. They are optimistic, adaptable, easy-going. They have strong religious beliefs and a valued role in society and the family. They are respected for their wisdom and experience of life.

б. Дополните этим предложением один из абзацев (A-D).

_____ Rates of osteoporosis, heart disease, strokes, cancer, and dementia are all low on Okinawa.

с. Как вы думаете, что нужно делать для долголетия и здоровья?

Project Work

Do the project according to the theme of the unit.

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.***

6. 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.

7. Задайте вопросы, используя глаголы в Past Perfect

1. _____ (you/go) there before we went together?
2. _____ (she/see) the film already?
3. _____ (he/forget) about the meeting?
4. _____ (it/be) cold all week?
5. _____ (I/read) the book before the class?
6. _____ (they/travel) by bullet train before?
7. _____ (John/meet) Lucy before they worked together?
8. _____ (you/do) your homework before I saw you?
9. _____ (I/pay) the bill before we left?
10. _____ (we/visit) my parents already that winter?
11. How _____ (he/manage) to fix the cooker?
12. _____ (my sister/be) sick for a long time?
13. How much _____ (she/study) before the exam?
14. What _____ (you/cook) for dinner that night?
15. When _____ (they/arrive)?
16. How many coffees _____ (she/drink) before the interview?

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.*

8. 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 _____
_____.

9. 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* /,kɑ:bəu`haɪdreɪt/

drinking water /`drɪŋkɪŋ `wɔ:tə/

fat *n* /fæt/

glucose *n* /`glu:kəʊs/

heartbeat *n* /`hɑ:tbɪ:t/

iron *n* /aɪən/

junk food /dʒʌŋk fu:d/

liver *n* /lɪvə/

magnesium *n* /mæg`nɪ:zɪəm/

muscle *n* /`mʌsl/

obesity *n* /əu`bɪ:sɪtɪ/

phosphorus *n* /`fɒsfərəs/

proper *adj* /`prɒpə/

protein *n* /`prəʊti:n/

saturated *adj* /`sætʃʊreɪtɪd/

store *n* /stɔ:/

suffer *v* /`sʌfə/

unsaturated *adj* /ʌn`sætʃʊreɪtɪd/

Просмотрите еще раз материал урока.

Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT 3.5. ANTIBIOTICS

In this unit

- talking about the discovery of penicillin
- discussing pros and cons of antibiotics
- using *gerund* in different contexts



Warm up

What do you think about such life experience?

"I grew up on antibiotics. Every ailment - sore throats, earaches, flus - warranted a trip to the doctor and in most cases some kind of prescription."

Carre Otis

Video Activity: Expert warns against over use of antibiotics - BBC

(<https://www.youtube.com/watch?v=DRgzhDPyAx0>)

I. Before you watch

Match the terms with the definitions.

1. Antibiotics
2. Bacteria (bug)
3. Cancer

- A. A type of biological cell.
B. A group of diseases involving abnormal cell growth with the potential to invade or spread to other parts of the body.
C. A type of antimicrobial substance active against bacteria.

II. While you watch

Answer the question.

What do people mean when they say the following?



1. Learning about bugs doesn't need to be dull.



2. Viruses can't be cured but bacteria can.



3. If he takes in much as in he'll become antibiotic resistant.



4. You must only use antibiotics if it's seriously necessary.



4. It is crucial that we stop treating antibiotics like sweets.



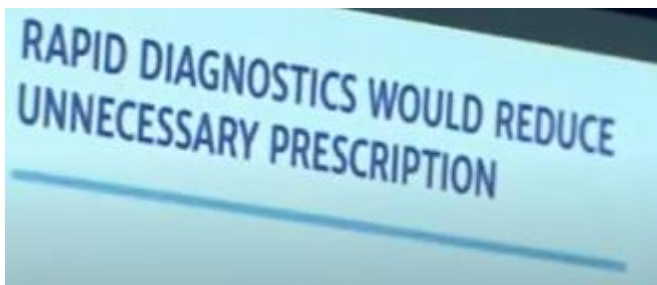
5. New antibiotics are desperately needed.

III. After you watch

Group work. Discuss the problems.

Group 1: Tackling drug-resistant infections globally

Group 2:



Widespread use of antibiotics promotes the spread of antibiotic resistance. Smart use of antibiotics is the key to controlling its spread.

A. P. J. Abdul Kalam

Reading

Antibiotics

Medicine has transformed considerably from the late 1950s. In a decade infections that had been feared as a source of **misery** and often death, became **curable**. The greatest reason was the ready **availability** of penicillin. Alexander Fleming made the initial discovery of the antibacterial **properties** of the penicillin mould at Mary's Hospital, London in 1928. About to discard a dish **contaminated** with *Penicillium* mould, he noticed that the bacteria which prospered elsewhere on the plate had either failed to grow at all or had died around the intrusion. Investigating the phenomenon, he discovered that the mould **exuded** a small amount of yellow liquid that affected bacteria. Fleming could not find a way to **purify** the yellow liquid in order to extract the active penicillin. In March 1940 the German biochemist Ernst Chain and his colleague Norman Heatley at Oxford University succeeded in producing a dry, still impure, material. A test on eight mice in May 1940 showed the **efficacy** of the chemical in saving animals from fatal infection.

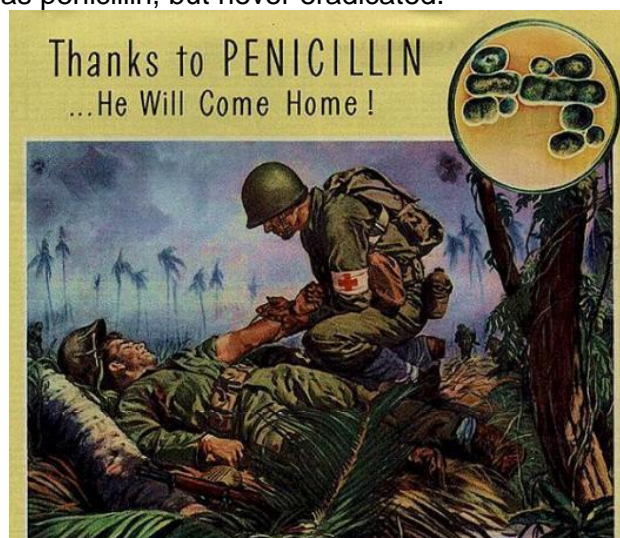
Medical promise and wartime need now transformed penicillin from academic curiosity to scientific obsession. In 1941 the team of Oxford scientists, under the leadership of Howard Florey, successfully showed the potential **value** of a human patient.

Howard Florey and Ernst Chain **shared** the Nobel Prize in Medicine with Alexander Fleming for the different roles in developing penicillin from an experiment in a Petri dish to a mass-produced drug. By the end of the war, enough penicillin was being produced to meet American, then British and soon European needs.

The hope of more effective products led to a huge **search** for new antibiotics. The families of the tetracyclines and products of the streptomycetes **confirmed** these hopes.

However, the 1950s saw the **emergence** of bacteria that appeared to be able to **resist** even the newer drugs. By 1960 methicillin, capable of resisting the dreaded *Staphylococcus aureus*, had been prepared and was quickly **launched**. Other ways of making new penicillin were soon developed, and such familiar products as ampicillin and amoxicillin were discovered and widely **disseminated**. Again, bacteria resistant to methicillin- methicillin-resistant *Staphylococcus aureus* (MRSA) were shortly discovered, but it was only in the 1990s that they became widespread.

It was soon clear that the attitude to penicillins as **wonder drugs**, and the abuse that had accompanied it, had **fostered** the growth of these feared organisms. It was also showed that infections could be managed by antibiotics such as penicillin, but never eradicated.



Advertisement for penicillin production from Life magazine, August 14, 1944.

Vocabulary Practice

1. Сопоставьте слова и их определения (синонимы).

1. to foster	A. to emit, discharge
2. wonder drug	B. to remove dirt or harmful substances
3. to exude	C. desire to know
4. to purify	D. an extreme interest
5. curiosity	E. to make a new product
6. obsession	F. to encourage the development of something
7. to contaminate	G. appearance
8. to launch	H. successfulness
9. emergence	I. to spread
10. efficacy	J. to pollute
11. to disseminate	K. panacea

2. Прочитайте текст. Дополните предложения однокоренными словами, образованными от слов, данных в скобках.

The First Days of Antibiotics

Alexander Fleming is usually described as the scientist who _____ (**discovery**) penicillin in 1928, but in fact at least two other scientists had noticed its antibiotic effect before he did. The antibiotic effects of penicillin had already been recorded in France by a Costa Rican _____ (**science**). Fleming _____ (**conduction**) experiments with penicillin, but later decided that it would not work as an antibiotic in humans. _____ (**luck**), other scientists continued with the research and were still making progress when the Second World War began in 1939. At that point they had not treated any patients.

A few years later, in 1942, Bumstead and Hess became the first doctors in the world to save a patient _____ (**use**) penicillin. At this point, Dorothy Hodgkin had described the _____ (**chemistry**) structure of penicillin, so it was now possible for penicillin to be produced in large _____ (**quantify**). Penicillin is still used to treat many _____ (**infect**). However, in 1940s, the first cases of _____ (**resist**) to the drug were reported. Because bacteria can change, they grow resistant to antibiotics, and scientists have not yet found a _____ (**solve**) to this problem.

Language Development

4. Просмотрите текст еще раз и ответьте на вопросы.

1. Who made the initial discovery of the antibacterial properties of the penicillin?

2. What did the mould exude that affected bacteria?

3. Could Fleming extract the active penicillin?

4. What are the names of scientists who succeeded in producing a dry material?

5. When did the scientists show the potential value for a human patient?

6. Who shared the Nobel Prize in Medicine for developing penicillin?

7. When was penicillin produced in sufficient quantities?

8. What antibiotics can resist to staphylococcal infection?

9. Do you think penicillin is a "wonder drug"?

10. What antibiotics do you know?

11. Have you ever been treated with antibiotics?

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Gerund

'-ing' форма: введение

Мы используем '-ing' форму в трех случаях:

1. Мы используем '-ing' форму для образования времен **continuous** или самостоятельно (**причастие**):

e.g. *Yesterday at 7 she was **sleeping**.* –

*Вчера в 7 она **спала**.*

***Listening** to the patient's heart, the doctor revealed cardiac murmur.* – **Выслушивая** сердце пациента, врач выявил шумы.

2. Мы используем '-ing' форму в роли прилагательного:

e.g. *I need some **hot** water.* – *I need some **boiling** water.* – *Мне нужна **горячая** вода.* – *Мне нужна **кипящая** вода.*

3. Мы используем '-ing' форму в роли существительного (**герундий**):

e.g. *I like **medicine**.* – *I like **reading**.* –

*Мне нравится **медицина**.* – *Мне нравится **чтение** (**читать**).*

На русский язык герундий переводится как существительными, так и инфинитивами.

Формы герундия

	Active	Passive
Simple	<i>treating</i>	<i>being treated</i>
Perfect	<i>having treated</i>	<i>having been treated</i>

Глаголы, которые употребляются только с '-ing' формой

1. Некоторые глаголы могут употребляться только с '-ing' формой, но не с инфинитивом, e.g., **avoid, consider, dislike, enjoy, finish, hate, can't help, it involves, keep, like, love, mind, postpone, practise, prefer, prevent, risk, suggest**, etc. [См. список глаголов: Appendix 3].

*We postponed **making** a decision.* – *Мы отложили **принятие** решения.*

2. После глаголов **come** и **go** мы часто употребляем '-ing' форму, когда говорим о на воздухе, например, о рыбной ловле, занятиях спортом, походе за покупками, etc.

e.g. *Why don't you go **climbing** with us?*

The Crimean Mountains are fantastic! – *Почему бы тебе не **отправиться** с нами в горы?* *Крымские горы просто потрясающие!*

3. '-ing' форма может употребляться после **need, require** и **want**, чтобы показать, что нечто представляет большую важность, а не просто желательно:

e.g. *This patient **needs encouraging**.* –

*Этому больному **необходима поддержка**.*

1. Закончите предложения, образовывая герундий от глаголов в скобках. Затем соотнесите знаки с их описаниями и ответьте на вопросы.

a. Patients are susceptible to germ attack. They should be treated in a clean and hygienic environment for fast _____ (heal). ____

b. A psychological study suggests that these signs have an 'ironic effect' and increase people's _____ (crave) for tobacco. Without _____ (know) it, they react to the signs by _____ (think) of and _____ (want) cigarettes. ____

c. Hospitals generally try to be professional and informative. When this fails, they sometimes end up _____ (be) funny. ____

d. Keep traffic _____ (move) and pedestrians safe with these signs. By clearly _____ (label) this zone, you prevent drivers from _____ (park) here and keep the area clear for workers. ____

e. These signs show compassion towards women employees or visitors by _____ (reserve) a _____ (park) spot for pregnant women only. ____

f. Patients and doctors need a peaceful environment for treatment. These signs are effective in _____ (maintain) a noise-free zone. ____



Which of these signs can be found inside the hospital? outside the hospital? Where exactly? Do you have similar signs in your country? How would you render them into your native language?

2. В таблице перечислены виды деятельности, которые студентам приходится выполнять во время обучения. Какие из них вам нравятся/не нравятся?

learn new Latin terms	take notes of lectures
solve tasks in physics	take tests
speak in public	do physical exercises
wear uniform	buy lots of books
take blood for analysis	attend all the classes
take blood pressure	go to parties
communicate with patients	rework the classes you've missed
deliver presentations	go on holiday

- I like _____.
- I enjoy _____.
- Well, I don't mind _____.
- However, I really hate _____.
- I also dislike _____.
- Besides, I can't stand _____.

3. В следующих предложениях может быть использовано два глагола из трех. Зачеркните глагол, который *нельзя* употребить.

1. The hospital _____ removing the feeding tube.

a. considered	b. suggested	c. offered
---------------	--------------	------------

2. She _____ locomoting in a wheelchair.

a. practised	b. decided	c. risked
--------------	------------	-----------

3. I _____ working as a nurse two years ago.

a. wanted	b. finished	c. didn't mind
-----------	-------------	----------------

4. Look at the state of those windows. They really _____ repairing!

a. need	b. must	c. want
---------	---------	---------

5. He _____ having taken my stethoscope.

a. denies	b. admits	c. can't
-----------	-----------	----------

6. I _____ going on long walks.

a. don't want	b. can't stand	c. enjoy
---------------	----------------	----------

Checklist

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

- I can talk about the discovery of penicillin
- I can explain pros and cons of antibiotics
- I can use gerund in different contexts

Key Words

availability *n* / ə'veɪlə'bɪləti /
 confirm *v* / kən'fə:m /
 contaminate *v* / kən'tamɪneɪt /
 curable *adj* / 'kjʊərəb(ə)l /
 disseminate *v* / dɪ'semɪneɪt /
 emergence *n* / ɪ'mə:dʒ(ə)ns /
 exude *v* / ɪg'zju:d /
 foster *v* / 'fɒstə /
 launch *v* / lɔ:n(t)ʃ /
 misery *n* / 'mɪz(ə)ri /
 property *n* / 'prɒpəti /
 purify *v* / 'pjʊərfaɪ /
 resist *v* / rɪ'zɪst /
 search *v* / sɜ:tʃ /
 share *v* / ʃeɪ /
 value *n* / 'vælju:/
 wonder drug

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

UNIT 3.6. MEDICINAL PLANTS

In this unit

- describing the role of medicinal plants
- explaining therapeutic properties of certain herbs
- using *participles* and *participle constructions*



C

Warm up

As far as medicinal plants are concerned, 8000 plant species have some or the other medicinal uses. **Do you agree** that they are important in our life? Why/Why not?

Video Activity: An Intro to Medicinal Plants

(<https://www.youtube.com/watch?v=1TuiFVGIWp8>)

I. Before you watch

Match the terms with the images.

1. Willow bark
2. Madagascar periwinkle
3. Kava plant



A



B

II. While you watch

II.1. Check (✓) True or False. Then correct the false statements. Compare with a partner.

Statement	True	False
1. Plants haven't been traditionally used in religion and social life.		
2. Don't eat anything or even taste it unless you know it's healthy and consumable.		
3. Stay away from eating anything that you're not sure of.		

II.2. Answer the question. According to the video, what diseases can be treated by medical plants?

III. After you watch

Discuss the matter:

Many of our medicines come from amazing plants.



We challenge you to research online at least 3 plant chemicals that are used as medicines.

The art of healing comes from nature and not from the physician. Therefore, the physician must start from nature with an open mind.

Paracelsus

Reading

Medicinal Plants

A **medicinal plant** is the term referring to any plants used for medicinal purposes. Medicinal plants have always been considered a healthy source of life for all people.

Many of the modern medicines are produced indirectly from medicinal plants, for example, aspirin. Plants are directly used as medicines by a majority of cultures around the world. There are a few drugs of ancient origin that are still used.

Opium preparations have a very long history, both for their pain-relieving and mind-altering properties.

Quinine was introduced in Europe in the 17th century as very useful in afflictions of the heart.

Garlic was prescribed for all lung and intestinal diseases.

Medicinal plants are still resources of new drugs. It is **estimated** there are more than 250, 000 flower plant **species**. Studying medicinal plants helps to understand plant **toxicity** and protect human and animals from natural poisons.

Therapeutic properties of medical plants are very useful in healing various diseases and the advantage of these medicinal plants is being 100% natural.

Plants can be prepared in a variety of forms depending on their purpose: juice, powder compressed into a pill, tincture, liniment, ointment, syrup, oil, hot **infusion** (like hot tea). Different parts of the plant may be used for medicinal purposes: the **seeds, berries, leaves, barks, roots, fruits, or other parts** of a plant.

Throughout history, the most common medicinal plants used have been the follows:

Parsley (*Petroselinum crispum*) is beneficial with health concerns regarding urination – kidney stones, urinary infections, and bladder stones to name a few.

Nettle (*Urtica dioica*) is one of the wonder plants with its expectorant, tonic, anti-inflammatory, diuretic properties and as an important source of beta-carotene, vitamin A, C and E, iron, calcium, phosphates and minerals. It is a powerful remedy against hepatic, arthritic or rheumatic conditions, allergies, anaemia and kidney diseases.

Aloe Vera is called "the elixir of youth" by the Russians, "the herb of immortality" by the old Egyptians. It is the medicinal **herb** most widely known for its noticeable **impacts** on health and at the same time the ingredient most widely used in the cosmetic industry.

Peppermint (*Mentha piperita*) leaf tea has been known for ages to cure an upset stomach. A complex oil has been suggested to calm the muscles in the digestive track.

Basil (*Ocimum basilicum*) is used to make tea, which calms the stomach, helping those with digestive issues. But a unique property that basil holds is its ability to clear acne. Simply rub the basil leaves on your face, and you'll be surprised how clear your face will get.

Lavender (*Lavandula angustifolia*) is popular because of its anti-fungal, anti-inflammatory, anti-depressant properties.

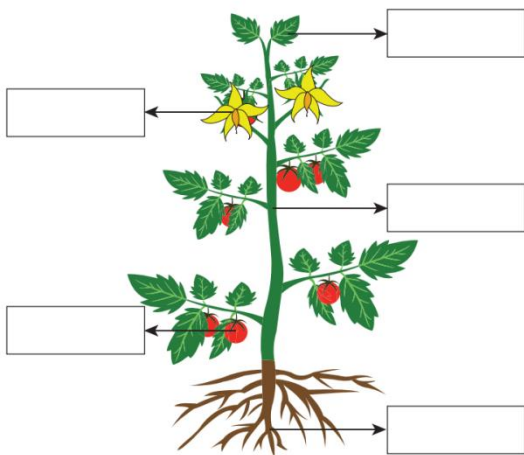
Vocabulary Practice

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





2. Обозначьте на рисунке части растения.

Parts of a Plant

Label the parts of the plant .



3. Назовите данные растения и опишите их лечебные свойства.

Picture	Name and Properties
	
	
	
	

Language Development

5. Просмотрите текст еще раз и ответьте на вопросы.

1. What is a medicinal plant?

2. What drugs of ancient origin are still used?

3. Why is it important to study medicinal plants?

4. Which parts of the plant may be used for medical purposes?

5. What medicinal plants are most commonly used?

6. What plant is an important source of beta-carotene, vitamin A, C, E, iron, calcium and minerals?

7. What are the benefits of nettle?

8. What plant is called "elixir of life"?

9. What properties does parsley have?

10. What plant is most widely used in the cosmetic industry?

11. What medicinal plants, which not mentioned in the text, do you know? Have you ever used them to treat medical conditions?

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Participle

Хотя герундии и причастия имеют одинаковые формы, мы используем другую терминологию, когда говорим о причастиях. Итак, различают:
present participle (*treating, giving*)
past participle (*treated, given*)
perfect participle (*having treated, having given*).

Причастные обороты (придаточные предложения)

Когда мы употребляем причастные обороты, подлежащее предложения в целом и подлежащее причастного оборота могут либо совпадать, либо не совпадать. В последнем случае, мы ставим подлежащее в начало причастного оборота:

Cf.: Being ill, the professor could not deliver the lecture. (Будучи больным, профессор не смог прочитать лекцию. (подлежащие совпадают))

The professor being ill, the Associate Professor had to deliver the lecture. (Так как профессор был болен, доценту пришлось прочитать лекцию (подлежащие не совпадают))

И в начале, и в конце предложения причастный оборот выделяется запятой.

На русский язык причастные обороты переводятся придаточными предложениями. Если причастный оборот стоит в начале, придаточное предложение вводится предлогами **так как, после того как, в то время как** и т.п. Если причастный оборот стоит в конце, придаточное предложение вводится предлогами **при этом, однако** и т.п.

e.g. The Rector having finished his speech, all the parents and students applauded. – После того как ректор завершил выступление, все родители и студенты зааплодировали.

All the exams having been passed, we organized a party. – Так как все экзамены были сданы, мы организовали вечеринку.

In general, otitis is caused by a bacterium, fungi triggering the disease as well. – Чаще всего отит вызывается бактериями. Однако иногда заболевание провоцирует грибок.

1. Подчеркните подходящую форму причастия.

- A:** Have you read that book yet.
B: Only some of it. It is very **bored / boring**.
- A:** Did you enjoy your holiday?
B: Oh, yes. It was very **relaxed / relaxing**.
- A:** I am going to the *Inspiration* club tonight. Do you want to come?
B: No, thanks. I'm not **interested / interesting** in poetry.
- A:** Did you hurt yourself when you fell?
B: No, but it was very **embarrassed / embarrassing**.
- A:** How do you feel today?
B: To tell the truth, I still feel very **tired / tiring**.
- A:** What type of country is France according to the Country Classification System?
B: Well, I'm sure France is a **developed / developing** country.

2. Трансформируйте предложения, используя причастия.

- The patient was looking at the eye chart and was answering the doctor's questions.
_____.
- The photographs, which were taken at the graduation ball, were blurred.
_____.
- Because John was depressed, he made an appointment with a therapist.
_____.
- After the ophthalmologist had looked for squint and lid lag, she examined the patient's pupils.
_____.
- The lecturer who is delivering a presentation for first-year students now is Professor Nichols.
_____.
- Because George was near-sighted, he wore glasses.
_____.

3. Трансформируйте предложения, употребляя причастные обороты вместо придаточных предложений.

e.g. The weather was very nice, so the patient was allowed to go for a short walk. – The weather being nice, the patient was allowed to go for a short walk.

1. The ear changes sound into electrical signals, so the brain can interpret it.

_____.

2. Although our brain is not the largest among animals, it gives us the power to speak, imagine and problem solve.

_____.

3. Your brain is made of approximately 100 billion nerve cells. They are called neurons.

_____.

4. Neurons have the same makeup as other cells, but the electrochemical aspect lets them transmit signals over long distances.

_____.

5. Myelin is made of fat and protein, and it helps to speed transmission of a nerve impulse down a long axon.

_____.

6. Myelinated neurons are typically found in the peripheral nerves, while non-myelinated neurons are found in the brain and spinal cord.

_____.

7. When the doctor taps the right spot on your knee with a rubber hammer, receptors send a signal into the spinal cord.

_____.

8. The brain stem consists of the medulla, pons and midbrain. It stem controls the reflexes.

_____.

Checklist

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

- I can describe the role of medicinal plants
- I can explain therapeutic properties of certain herbs
- I can use the participle and the participle constructions

Key Words

aloe vera / ,aləʊ 'viərə /
bark *n* / bɑ:k /
basil *n* / 'bɑz(ə)l /
berry *n* / `beri /
estimate *v* / 'estimeɪt /
garlic *n* / 'gɑ:lɪk /
infusion *n* / ɪn'fju:ʒ(ə)n /
lavender *n* / 'lav(ə)ndə /
medicinal plant / mɪ'dɪsɪn(ə)l plɑnt/
nettle *n* / `netl /
parsley *n* / `pɑ:sli /
peppermint *n* / `pɛpəməɪnt /
quinine *n* / kwɪ'ni:n /
seed *n* / si:d /
species *n* / 'spi:ʃɪz / 'spi:si:z /
toxicity *n* / tɒk'sɪsɪti /

Просмотрите еще раз материал урока.

Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT 4.1. THE HUMAN BODY

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*

Warm up

Do you agree with the quote? Why/Why not?
"Before you worry about the beauty of your body, worry about the health of your body."

Amit Kalantri

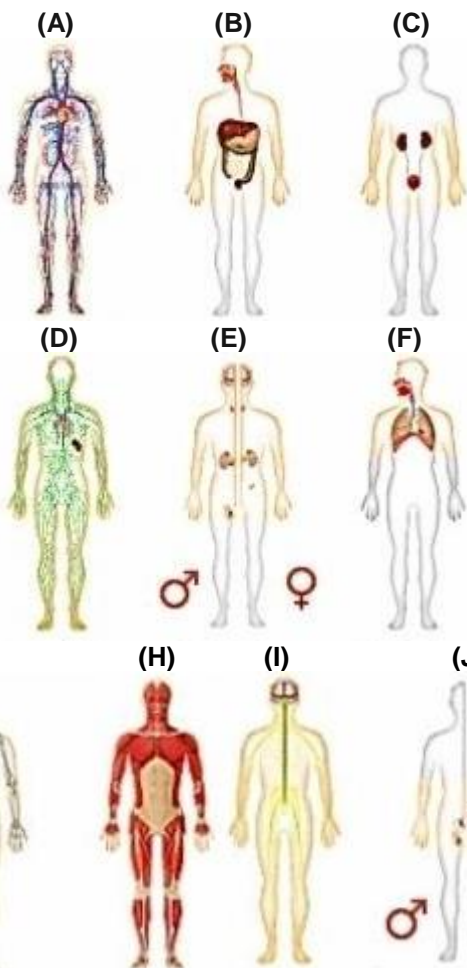
Video Activity: Human Body

(<https://www.youtube.com/watch?v=Ae4MadKPJC0&t=132s>)

I. Before you watch

Match the names of the systems (1-10) with the images (A-J).

- | | |
|----------------|------------------|
| 1. Skeletal | 6. Lymphatic |
| 2. Muscular | 7. Respiratory |
| 3. Circulatory | 8. Digestive |
| 4. Nervous | 9. Urinary |
| 5. Endocrine | 10. Reproductive |



II. While you watch

Choose from (A-D) the one which best fits each space (1- 4). Write your answers.

1. The human body is a complex network of cells, tissues and organs
2. The skeletal, muscular, cardiovascular and nervous systems in particular create an infrastructure
3. The nervous system is a communication network of nerve cells
4. The endocrine system is a series of glands
5. The digestive system is an approximately 30 foot series of organs

- (A) that facilitates the other systems.
 (B) that use information carried by the nervous system to help regulate the body's processes.
 (C) that together make life possible.
 (D) that convert food into fuel.
 (E) that the body uses to transmit information and coordinate bodily functions.

III. After you watch

In groups of 3, make up the dialogues on human body.

Reading

Read the text and choose the title to each paragraph.

- 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**.

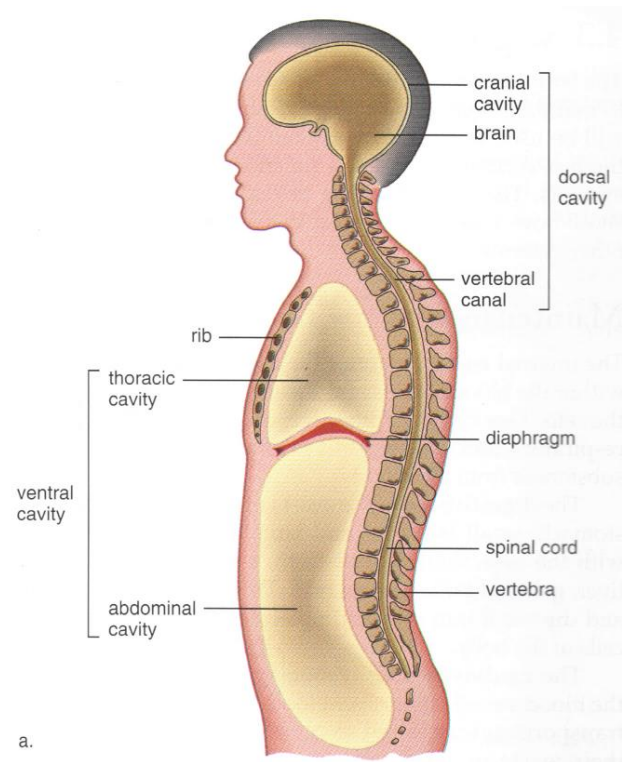
3.

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

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

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

3. Используя ваши знания по другим предметам, запишите общепотребительные эквиваленты к данным анатомическим терминам.

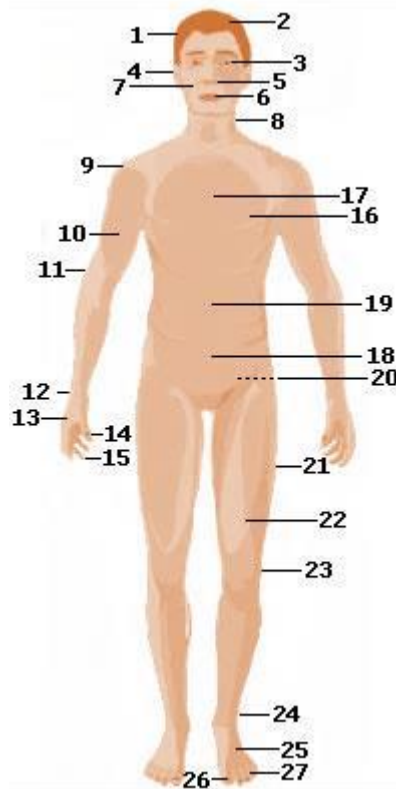
Anatomical term	Common word
abdomen	
axilla	
carpus	
coxa	
cubitus	
mamma	
nates	
patella	

4. 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.

5. 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.	

6. Составьте предложения о теле человека, используя данные слова и выражения:

Smth	include(s) is (are) included into consist(s) of contain(s) is (are) composed of is (are) connected with	smth
------	--	------

Language Development

1. Закончите предложения.

1. The parts of the face are _____
2. The oral cavity includes _____
3. The organs of the thoracic cavity are _____
4. The abdominal cavity includes _____
5. The upper extremity consists of _____
6. The lower extremity consists of _____

2. 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?

3. Распределите слова по группам.

Head	Trunk	Extremities

Face, abdominal cavity, skull, lower extremity, eye, foot, thoracic cavity, oral cavity, lungs, nose, finger, ankle, eyebrow, toe, wrist, calf, elbow.

4. 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.

5. Расскажите о строение тела человека по плану.

1. The head
2. The oral cavity
3. The trunk
4. The upper extremity
5. The lower extremity

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Sequence of Tenses

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 согласования 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* / ˈæbdəməɪn/

abdominal *adj* /æb`dəmɪnəl/

ankle *n* / ˈæŋkl/

breathe *v* /bri:ð/

calf (*pl. calves*) *n* /kɑ:f (kɑ:vz)/

cavity *n* / ˈkævɪtɪ/

compose *v* /kəm`pəuz/

elbow *n* / ˈelbəʊ/

extremity *n* /ɪk`stremɪtɪ/

eyebrow *n* / ˈaɪbraʊ/

eyelash *n* / ˈaɪlæʃ/

finger *n* / ˈfɪŋgə/

fingernail *n* / ˈfɪŋgəneɪl/

forearm *n* / ˈfɔ:rɑ:m/

forehead *n* / ˈfɔ:ɪd/, / ˈfɔ:hed/

gland *n* /glænd/

heel *n* /hi:l/

intestines *n* /ɪn`testɪnz/

joint *n* /dʒɔɪnt/

knee *n* /ni:/

limb *n* /lɪm/

nostril *n* / ˈnɔ:stri:l/

palate *n* / ˈpælət/

pelvic *adj* / ˈpelvɪk/

salivary *adj* /sə`laɪvəri/

shoulder *n* / ˈʃəʊldə/

skull *n* /skʌl/

sneeze *v* /sni:z/

socket *n* / ˈsɒkɪt/

sole *n* /səʊl/

temple *n* / ˈtempəl/

thigh *n* /θaɪ/

thoracic *adj* /θɔ: `ræsɪk/

thumb *n* /θʌm/

toe *n* /təʊ/

trunk *n* /trʌŋk/

urinary bladder / ˈjuəri nəri `blædə/

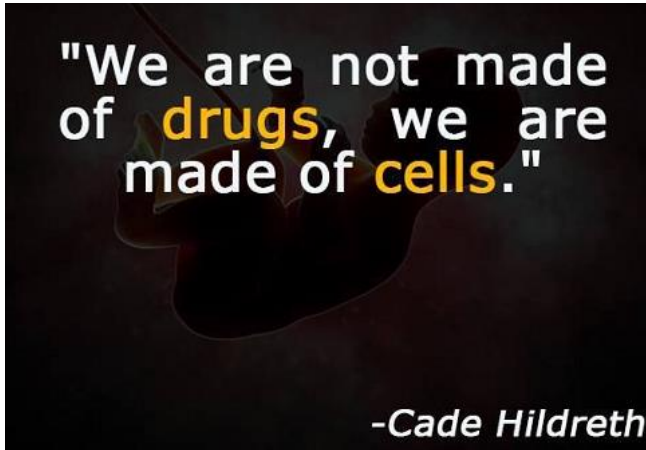
wrist *n* /rɪst/

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

UNIT 4.2. THE CELL

In this unit

- describing the structure and functions of the cell
- describing the chemical substances of the cell
- *relative clauses*



Warm up

Do you agree with the quote? Why/Why not?

Video Activity: Biology Components of an animal cell – BBC

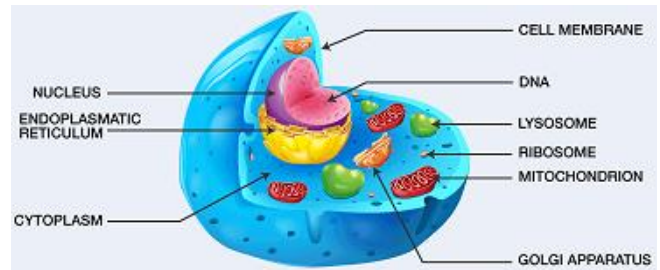
<https://www.youtube.com/watch?v=1rKy3Z5-QW8>

I. Before you watch

Read about some facts and answer the question: "What are the main points of the cell theory?"

- 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.

II. While you watch



Choose from (A-D) the one which best fits each space (1- 4). Write your answers.

1. A cell membrane
2. Cytoplasm
3. A nucleus
4. A red blood cell

(A) is all of the material within a cell, enclosed by the cell membrane, except for the cell nucleus.

(B) doesn't have a nucleus.

(C) controls what the cell does.

(D) holds the cell together, controls what goes into and out of the cell.

III. After you watch

Read the letter from the professor to the editor.

What could you answer if you were a professor?

"Why do I need to know about cells, I'm going to be a doctor?"

I actually had a BIOL 151 student stand in my office one day and say that to me one day. There was a clear disconnect between what they were learning in class and the actually physiology of their own bodies. The first topic that we talk about in BIOL 151 is in fact cells and what they are made out of. My hope has always been to inspire and fascinate students with how simple molecules can create structures (like themselves) which are so complex. Apparently I missed the mark with that student.

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.

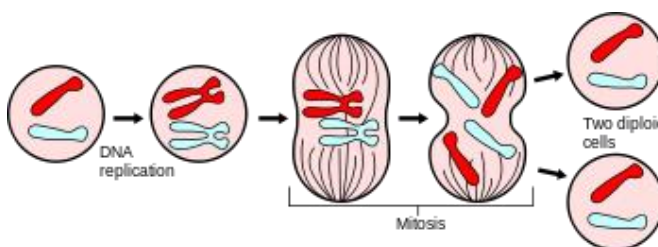
Thus **ribosomes** are the protein-making organelles. They are made of protein and ribosomal RNA where the protein synthesis occurs.

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)

- The basic unit of a living organism is a _____.
- The genetic materials that determine how all organisms grow and develop are _____.
- During _____ nucleus of a cell divides into two nuclei and the formation of two new daughter cells begins.
- _____ are tiny specialized structures within a cell that perform cell functions.
- 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.

- The science that studies cell is
 - cytology*
 - histology*
 - biology*
 - pathology*
- Cytology deals with
 - microorganisms*
 - classification of living things*
 - cells*
- Cells are
 - the smallest units of any substance*
 - the microscopic units of life*
 - tiny units of plants*
- The outer covering of a cell is the
 - cell wall*
 - organelle*
 - cell membrane*
 - mitochondria*
- The control centre of the cell is the
 - cytoplasm*
 - nucleus*
 - mitochondria*
 - nucleolus*
- Structures involved in the digestive activities of the cell are
 - lysosomes*
 - chromosome*
 - nuclear membrane*
 - endoplasmic reticulum*
- Protein factories in the cell are known as
 - mitochondria*
 - ribosomes*
 - endoplasmic reticulum*
 - cytoplasm*
- The network of passageways that transports proteins throughout the cell is known as the
 - nuclear membrane*
 - endoplasmic reticulum*
 - lysosomes*
 - ribosome*
- The scientist who was the first to observe the tiny structures in cells was
 - Gregor Mendel*
 - Robert Hook*
 - Charles Darwin*
- The number of cells in a human organism is
 - 100 million*
 - 100 billion*
 - 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.

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Relative Clauses

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 Mendeleev 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* /`krəʊməsəʊm/

controversy *n* /kən `trɒvəsi/

conventional *adj* /kən `venʃənəl/

cytoplasm *n* /`saɪtəʊplæzəm/

enable *v* /ɪ `neɪbl/

lysosome *n* /,laɪsə `səʊm/

malignancy *n* /mə `lɪgnənsɪ/

malignant *adj* /mə `lɪgnənt/

mitochondrion (*pl.* mitochondria) *n*

/,maɪtə `kændrɪən (,maɪtə `kændrɪə)/

mitosis *n* /maɪ `təʊsɪs/

multicellular *adj* /,mʌltɪ `seljələ/

nuclear envelope /`nju:kliə `envələʊp/

nucleus (*pl.* nuclei) *n* /`nju:kliəs (`nju:kliət)/

organelle *n* /ɔ:gənəl/

proceedings *n pl.* /prəʊ `si:diŋz/

ribosome *n* /,raɪbə `səʊm/

rough *adj* /rʌf/

smooth *adj* /smu:ð/

supplement *n* /`sʌplɪmənt/

tumour *n* /`tju:mə/

unicellular *adj* /,ju:nɪ `seljələ/

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

UNIT 4.3. 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*

Warm up

Do you agree that “adult stem cells are also problematic, as they are difficult to identify, purify and grow, and simply may not exist for certain diseased tissues that need to be replaced” (Eliot Engel)?

Video Activity:

Cloning Human Tissue – BBC News (0.00-02.18)
(<https://www.youtube.com/watch?v=51bps0cQ9Vs>)

I. Before you watch

Match the terms with the definitions.

1. To clone human tissue
2. Nerve cell
3. Embryo
4. Cartilage
5. To regenerate

(A) A resilient and smooth elastic tissue, a rubber-like padding that covers and protects the ends of long bones at the joints and nerves

(B) To combine a patient's body cell with an unfertilized egg cell from a donor

(C) An electrically excitable cell that communicates with other cells via specialized connections called synapses

(D) To grow again

(E) The early developmental stage of an animal while it is in the egg or within the uterus of the mother

II. While you watch

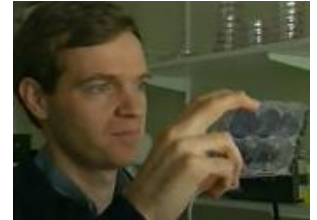
Choose from (A-E) the one which best fits each space (1- 5). Write your answers.



1. Researchers at Edinburgh university have already grown nerve cells



2. They believe that the techniques developed with animal cells



3. This could for example be used



4. I'm very clear as to why one would want to be able to develop cells



5. Researchers can already grow animal tissue from these embryonic cells; in a few years time it

(A) could be repeated using human embryos.

(B) could be human tissue.

(C) to regenerate the brains of people with Parkinson's disease.

(D) from the embryos of mice.

(E) to use our own cells to cure disease.

III. After you watch

Make up the dialogues on ethical aspects of cloning human tissue.

Reading

Read the text. Choose from (A-E) the one which best fits each space (1- 4).

- 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

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.

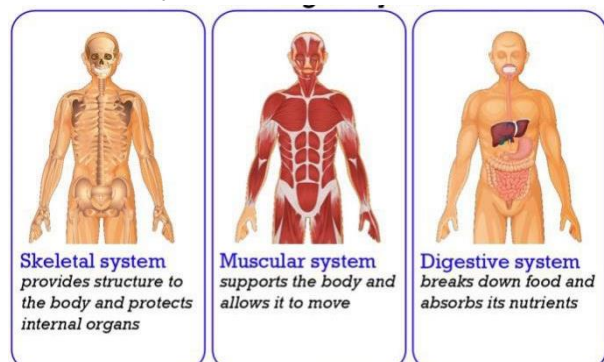
The study of tissue is known as **histology** or, in connection with disease, **histopathology**.

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.

<i>Tissue, skin, connective, muscle, walls, cells, impulses, organ, epithelial, protection, smooth, internal.</i>

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.

- This tissue contains two types of cells: neurons and glial cells. Its functions are to transmit messages in form of impulse.
- 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.
- This tissue is usually made of cells and extracellular fibres that hold structures together (tendons), protect them (cartilage), store energy (fat), or produce blood.
- 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.

- A group of similar cells that perform a similar function is called a(an)

a. tissue	c. organ system
b. organ	d. living thing
- A tissue that has ability to contract is

a. muscle tissue	c. connective tissue
b. nerve tissue	d. epithelial tissue
- Which type of tissue is blood?

a. muscle tissue	c. connective tissue
b. nerve tissue	d. epithelial tissue
- An organ made up of all four kinds of tissues is the

a. brain	c. heart
b. blood	d. spinal cord
- A tissue that protects the surface of the body is

a. muscle tissue	c. nerve tissue
b. connective tissue	d. epithelial tissue
- 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 типу 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. Подготовьте высказывания по следующим темам.

1. The four types of tissues in the body.
2. The relationship between cells, tissues, organs, and organ systems.

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Substitute

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	<i>See those two girls? Helen is the one on the left / the tall one.</i> <i>Let's fill in the case histories. The ones the lecturer has given you.</i>
that/those (formal)	person/ thing	<i>The curriculum here is like that in Cambridge.</i> <i>Skeletal muscles are those attached to the skeleton.</i>
do (do it, do so)	action	<i>Can you help me with this report? – I'll do it (= help you with this report) at once.</i>
there	place	<i>Are you going to the clinic today? – Yes. – Then I'll see you there.</i>

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 the students who like to learn.
the ones / those

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* /^ˈbæriə/
circulatory *adj* /,seɪkjəˈleɪtəri/
connective *adj* /kəˈnektɪv/
digestive *adj* /daɪˈdʒestɪv/
ectoderm *n* /^ˈektə,də:m/
endoderm *n* /^ˈendə,də:m/
epithelial *adj* /,epɪˈθi:liəl/
excretory *adj* /ɪkˈskri:təri/
fibrous *adj* /^ˈfaɪbrəs/
germ *n* /dʒə:m/
histology *n* /hɪsˈtɒlədʒi/
histopathology *n* /,hɪstəpəˈθɒlədʒi/
lining *n* /^ˈlaɪnɪŋ/
mesoderm *n* /^ˈmezə,də:m/
organ *n* /^ˈɔ:gən/
organism *n* /^ˈɔ:gənɪzəm/
reproductive *adj* /,ri:prəˈdʌktɪv/
respiratory *adj* /rɪˈspɪrətəri/
slide *v* /slaɪd/
smooth *adj* /smu:ð/
strand *n* /strænd/

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

UNIT 4.4. BONES

In this unit

- names of the main bones of the human body
- describing the processes of bone formation and growth
- *Perfect Passive*

Warm up

Video Activity:

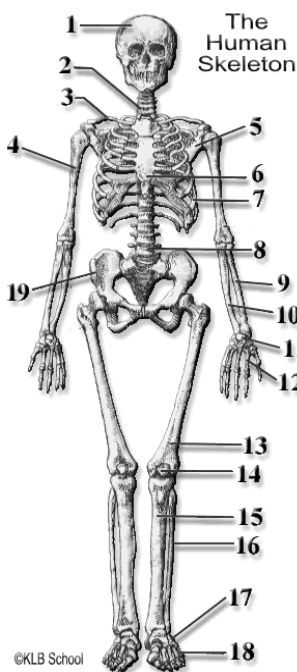
What Are Your Bones Made Of?

(<https://www.youtube.com/watch?v=4kd2ctxZwlc>)

I. Before you watch

Match the images with the terms.

The Major Bones of the Human Body



- A. Scapula ['skæpjulə]
- B. Knee cap ['ni: kəp]
- C. Tibia ['tibiə]
- D. Neck vertebra ['nek `və:tibrə]
- E. Tarsals ['ta:slz]
- F. Humerus ['hju:mərəs]
- G. Sternum (breastbone) ['stə:nəm]
- H. Lumbar ['lʌmbə] vertebra
- I. Clavicle ['klævɪkl]
- J. Radius ['reɪdjəs]
- K. Rib [rɪb]

- L. Wrist [rɪst] bones
- M. Pelvis ['pelvɪs]
- N. Skull [skʌl]
- O. Metacarpals [ˌmetə`kɑ:pəlz]

- P. Femur ['fi:mə]
- Q. Ulna ['ʌnə]
- Q. Fibula ['fi:bjulə]
- S. Metatarsals [ˌmetə`tɑ:slz]

II. While you watch

II.1. Match the materials (1-3) with the quality it can give the material (A-C).

1. collagen	(A) incredibly brittle
2. calcium phosphates	(B) rigid
3. combination of collagen and calcium	(C) incredibly tough and elastic

II.2. Choose from (A-C) the one which best fits each quality (1- 3).

1. brittle 2. rigid 3. tough and elastic



A



B



C

II. While you watch

Speak about the situation shown in each picture (A-C)

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?

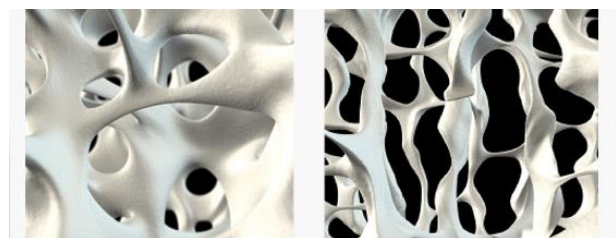
- **Support:** The skeleton keeps the human body in the correct **shape**, supporting many **internal** organs and the muscles of the body.
- **Protection:** Important and **delicate** organs are protected by bone. Examples include the skull protecting the brain and **eyeballs**, the ribs protecting 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

- _____ calcium phosphate
- _____ the heart and lungs
- _____ easily
- _____ oneself
- _____ the movement
- _____ together
- _____ internal organs
- _____ a long time

4. Подберите антонимы к словам из столбика А.

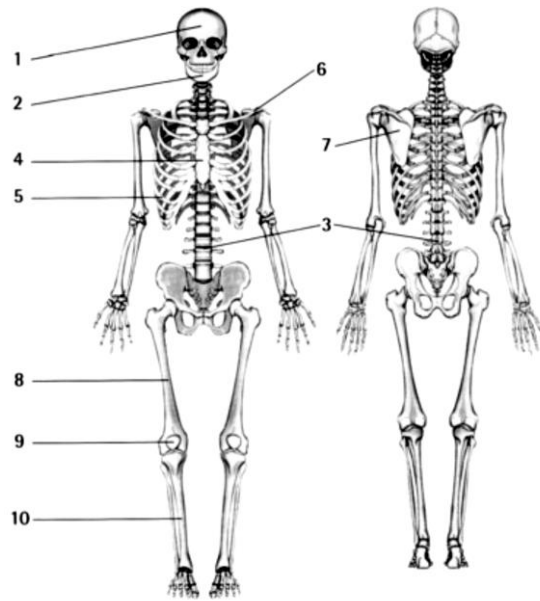
Column A	Column B
1. baby	a. non-elastic
2. elastic	b. repair oneself
3. flexible	c. firm
4. be broken	d. large
5. small	e. adult

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:

- What do/does ... consist of? = What is/are ... made up of?
- 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

- The chest is made up of the sternum and ribs _____ the heart and lungs.
- The bones develop _____ calcium phosphate.
- Muscles contract _____ one bone towards another.
- Cartilage is a firm but elastic material _____ the ear in the adult.
- Bone is a living material _____ itself when it is fractured.
- All the vertebrae of the spine are _____ into 5 regions.
- The coccyx is _____ of 4 to 5 fused vertebrae.
- 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 immovable 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. Опишите строение скелета человека, используя рисунок в разделе Lead-in.

4. Приведите три интересных факта о костях, которые вам известны из курса анатомии.

5. а. 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.

б. Найдите в тексте слова с таким значением:
broken bone _____
become less _____
appear _____
to be kept in bed for some time _____

с. Задайте вопрос к каждому абзацу текста. Ваш партнер должен на них ответить.

д. Составьте план текста, озаглавив каждый абзац. Перескажите текст по плану.

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Perfect Passive 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* /brɛstbəʊn/ = sternum *n* /ˈstɜːnəm/

cervical *adj* /ˈsɜːvɪkl/

coccyx *n* /ˈkɒksɪks/

cranial *adj* /ˈkreɪniəl/

cranium *n* /ˈkreɪniəm/ = skull *n* /skʌl/

delicate *adj* /ˈdelɪkət/

deposit *n, v* /dɪˈpɒzɪt/

embryo *n* /ˈembriəʊ/

eyeball *n* /ˈaɪbɔːl/

firm *adj* /fɜːm/

flexibility *n* /fleksɪˈbɪlɪti/

fuse *v* /fjuːz/

lumbar *adj* /ˈlʌmbə/

make up /meɪk ʌp/

ossification *n* /ˌɒsɪfɪˈkeɪʃən/

osteoporosis *n* /ˌɒstjəʊpəˈrəʊsɪs/

pelvic girdle /ˈpɛlvɪk ɡɜːdl/

sacrum *n* /ˈseɪkrəm/

shoulder girdle /ˈʃəʊldə ɡɜːdl/

skeleton *n* /ˈskelɪtən/

spinal column /ˈspaɪnəl ˈkʌləm/

spine *n* /spaɪn/

temporomandibular *adj* /tempərəmənˈdiːbjulə/

thoracic *adj* /θɔːˈræsɪk/

vertebra (vertebrae) *n* /ˈvɜːtɪbrə (ˈvɜːtɪbriː)/

Просмотрите еще раз материал урока.

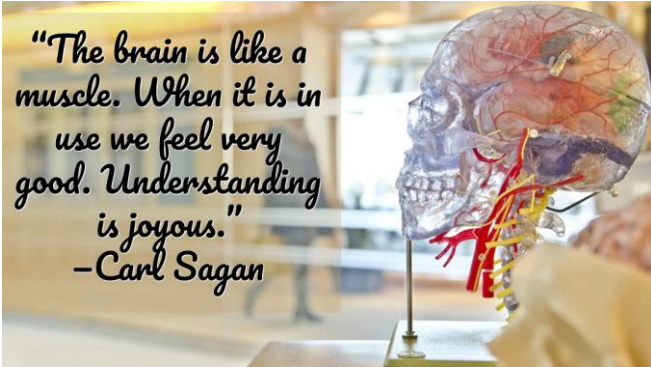
Запишите другие слова и выражения, которые могут оказаться для вас полезными, и выучите их.

UNIT 4.5. MUSCLES

In this unit

- names of muscles
- describing the growth of muscles
- derivatives of *some*, *any*, *no*, *every*

Warm up



Why is the brain compared to muscles?

Video Activity:

How your muscular system works

(<https://www.youtube.com/watch?v=VVL-8zr2hk4>)

I. Before you watch

Match the terms with the definitions.

1. Skeletal muscle
2. Tendons
3. Cardiac muscle
4. Smooth muscle
5. Intestines
6. Uterus

(A) It is an involuntary, striated muscle that constitutes the main tissue of the walls of the heart.

(B) Muscle that shows no cross stripes under microscopic magnification.

(C) Tissue that attaches a muscle to other body parts, usually bones.

(D) A long, continuous tube running from the stomach to the anus.

(E) A form of striate muscle tissue, which is under the voluntary control of the somatic nervous system.

(F) A hollow muscular organ located in the female pelvis between the bladder and rectum.

II. While you watch

Choose from (A-G) the one which best fits each space (1-7). Write your answers.

1. Each time you take a step,
2. This network of over 650 muscles covers the body...
3. These bundles receive signals from the nervous system...
4. Some of the only parts of the body whose motions aren't governed by the muscular system
5. Skeletal muscles form the bulk of the muscular system, make up about 30-40% of the body's weight,
6. Others may be less so, like the buccinator, a muscle...
7. Unlike the skeletal muscles, the body's cardiac and smooth muscles...
8. The muscular system may be largely invisible to us,

(A) are managed by the autonomic nervous system beyond our direct control.

(B) that contract the fibers, which in turn generates force and motion.

(C) 200 muscles work in unison to lift your foot, propel it forward, and set it down.

(D) and generate most of its motion.

(E) are sperm cells, the hair-like cilia in our airways, and certain white blood cells.

(F) that attaches your cheek to your teeth, or the body's tiniest skeletal muscle, a one-millimeter-long tissue fragment called the stapedius that's nestled deep inside the ear.

(G) and is the reason we can blink, smile, run, jump, and stand upright.

(H) but it leaves its mark on almost everything we do, whether it's the blink of an eye or a race to the finish line.

Reading

Read the text. Choose from (A-F) the one which best fits each space (1-4).

- 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.

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.

- Skeletal muscles are also known as
 - involuntary muscles
 - smooth muscles
 - voluntary muscles
- Cardiac muscle is found solely in the walls of
 - the heart
 - the esophagus
 - the bladder
- The small amount of muscle tension is known as
 - atrophy
 - muscle tone
 - hypertrophy
- Fast twitch fibres are used for powerful, fast movements but they
 - get tired quickly
 - get tired slowly
 - are highly resistant to fatigue
- People with larger muscles have
 - less fibres
 - more fibres
 - bigger fibres

4. Соотнесите вопросы и ответы.

- What are the three types of muscles?
- What are the three characteristics of skeletal muscles?
- Which type of muscle is unstriated?
- Which muscle types are involuntary?
- Where is smooth muscle found?
- What do muscle cells contain?
- What are muscles made of?

- walls of hollow organs and blood vessels.
- cardiac, smooth.
- smooth muscle.
- voluntary contractions, attached to bones, striated appearance.
- skeletal, smooth, cardiac.
- bundles of fibres.
- protein filaments.

1	2	3	4	5	6	7
e						

5. Дополните текст словами из таблицы.

<i>control, muscle, heart, smooth, walls, fatigue, skeletal, blood, voluntary, striated, direct</i>

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.*

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Derivatives of some, any, no, every

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*.

- I've got _____ in my eye.
- There is _____ in the waiting area.
- We haven't heard _____ about Peter of late. Is he ill?
- Has _____ seen my report?
- Does Jane live _____ in the centre?
- _____ wants to see you.
- My pencil won't write. Can I take _____'s pencil?
- I'm tired of holidays in Paris. I'd like to go _____ else.
- He told me _____ but I couldn't hear him well.
- So, there is a microscope, slides, samples of blood... But we need _____ else.

2. Закончите предложения, употребив глагол в правильной форме.

- _____ anyone _____ (to know) Kate's e-mail?
- No one _____ (to use) the laptop now so you may take it.
- _____ (to be) everyone ready for the module testing in anatomy?
- Can you imagine this? Someone _____ (to do) my homework for me!
- _____ everyone _____ (to participate) in the Students' Conference next spring?
- He is very stubborn. Nothing ever _____ (to change) his mind.
- Let me know if anything _____ (to happen).
- There _____ (to be) something unusual about his condition.
- 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* /ˈætrəfi/
 bundle *n* /ˈbʌndl/
 cardiac muscle /ˈkɑːdiæk mʌsl/
 endurance *n* /ɪnˈdʒʊərəns/
 esophagus *n* /ɪˈsɒfəgəs/
 fast twitch fibre /fɑːst twɪtʃ ˈfaɪbə/
 filament *n* /ˈfɪləmənt/
 force *n* /fɔːs/
 hypertrophy *n* /haɪˈpɜːtrəfi/
 involuntary *adj* /ɪnˈvɒləntri/
 motion *n* /ˈməʊʃən/
 muscle *n* /mʌsl/
 muscle tone /mʌsl təʊn/
 skeletal muscle /ˈskelətəl mʌsl/
 slow twitch fibre /sləʊ twɪtʃ ˈfaɪbə/
 smooth muscle /smuːð mʌsl/
 stretch *n, v* /stretʃ/
 striated *adj* /straɪˈeɪtɪd/
 tension *n* /ˈtenʃən/
 voluntary *n* /ˈvɒləntri/

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

UNIT 4.6. MUSCULOSKELETAL TRAUMAS

In this unit

- talking about musculoskeletal traumas
- differentiating between types of traumas
- using *modal verbs for deduction*



Warm up

Do you agree that “traumatized people chronically feel unsafe inside their bodies: The past is alive in the form of gnawing interior discomfort. Their bodies are constantly bombarded by visceral warning signs, and, in an attempt to control these processes, they often become expert at ignoring their gut feelings and in numbing awareness of what is played out inside. They learn to hide from their selves.” (Bessel A. van der Kolk)?

Why/Why not?

Video Activity: Ergonomic Risk Factors - Safety Training Video

(<https://www.youtube.com/watch?v=ov4WsLZYCYc>)

I. Before you watch

Match the terms (1-4) with the images (A-D).

MUSCULOSKELETAL TRAUMAS

Common causes

- 1. Materials handling**
Injuries due to repeated lifting, pushing and pulling
- 2. Workstation**
Furniture, layout, job design and keyboarding
- 3. Repetitive motion injuries**
Risk factors due to job design, awkward body motions, and tools
- 4. Inadequate job design**
Pace of work, production pressure, lack of sufficient time to recover from overwork



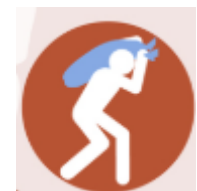
A



B



C



D

II. While you watch

Answer the questions.

1. Can musculoskeletal disorders be called cumulative trauma disorders or repetitive stress injuries?
2. What are the causes of musculoskeletal disorders?

III. After you watch

Use the information shown below and **make up the dialogues**. Student A is a doctor, Student B is a patient with the symptoms of MSDs.



Pain, joint stiffness, muscle tightness, redness, swelling of the affected area, numbness, “pins and needles” sensations, skin colour changes

Remember, the first four steps of first aid for injuries such as ankle sprains are known by the acronym "RICE," which stands for Rest, Ice, Compression, and Elevation:

Reading

Musculoskeletal Traumas

Any **injury** that occurs to a skeletal muscle, tendon, ligament, joint, or a blood vessel that services skeletal muscle and any related tissues is a musculoskeletal injury. The musculoskeletal system is the structural movement-generating component of the body. The capacity for movement is closely allied to the relationship between the musculoskeletal and the neuro-muscular systems, which is the interconnection between muscular movement and its control through nervous system impulses.

The most common cause of musculoskeletal injury is a combination of physical overloads. The research confirms that foot and ankle injuries are the most common of musculoskeletal injuries, constituting **approximately** 25% of these **occurrences**. Knee injuries of all types are the next most common, representing 22% of musculoskeletal **damage**. Back injuries are the next most prominent occurrence, at 11%. Injuries to the lower leg, thigh, hip, shoulders, and the hand/forearm structure each occur at frequencies of between 5% and 10%.

Normal bones are hard, dense tissue that **endures** great stresses. Children have more flexible bones than adults; their bones break less easily. When the calcium content decreases, bones become **frail**. This gradual weakening of bones is called osteoporosis.

The four basic types of injuries to muscles, bones, and joints are fractures, dislocations, strains, and sprains. They happened in the variety of ways.

A fracture is a complete break, or a crack in a bone. It can be caused by a fall, or a **blow**. Fractures are open or closed. Closed fractures are more common. Open fractures are more dangerous; they carry a risk of infection and severe bleeding.

Dislocations are usually more **obvious** than fractures. A dislocation is a movement of a bone at a joint away from its normal position.

A sprain is the partial or complete stretching or **tearing** of the special soft tissue bands that hold bones together at joint, called ligaments. Injuries to joints are usually sprains. Mild sprains may **swell** but usually heal quickly.

A strain is a stretching and tearing of muscles or tendons. Strains are often caused by lifting something heavy or working a muscle too hard.

Sometimes an x-ray is needed to determine the **extent** of the injury. Certain signals can give you a clue regarding whether the injury is severe.

Always suspect serious injury when the following signals are present:

- Significant deformity
- Bruising and swelling
- Inability to use the affected part normally
- The injured area is cold and numb
- Bone fragments sticking out of a wound.

You must keep the injured part from moving. If you are going to move or transport the victim, you must immobilize the injured part. In case of head and spine injuries, minimize movement, maintain an open airway, check **consciousness** and breathing control any external bleeding and call for an **ambulance**.

Vocabulary Practice

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

2. Соотнесите слова и их определения.

1. fracture	a. a physical injury
2. dislocation	b. a disorder that causes a loss and a weakening of bone tissue.
3. sprain	c. a stretching and tearing of muscles or tendons.
4. strain	d. a tearing of a ligament beyond its normal stretching range.
5. osteoporosis	e. a bone is forced out of its joint.
6. trauma	f. a break in a bone.

3. Закончите следующие предложения.

1. The most common injuries to the skeletal and muscular are _____

_____.

2. Always suspect serious injury when the following signals are present: _____

_____.

3. The main cause of osteoporosis is _____

_____.

4. The four basic types of injuries to muscles, bones, and joints are _____

_____.

5. Open fractures are more dangerous because of _____

_____.

6. If you are going to move or transport the victim,

_____.

Language Development

6. Просмотрите текст еще раз и ответьте на вопросы.

1. What is a musculoskeletal injury?

_____.

2. What is a musculoskeletal system?

_____.

3. What is the most common cause of musculoskeletal injury?

_____.

4. Name the most common of musculoskeletal injuries in the descending order of their occurrence.

_____.

5. What are the causes of osteoporosis?

_____.

6. What are four basic types of injuries to muscles, bones, and joints?

_____.

7. What is a fracture of a bone?

_____.

8. Why are dislocations more obvious than fractures?

_____.

9. What is the difference between sprains and strains?

_____.

10. What helps to determine the extent of an injury?

_____.

11. How can you suspect a serious injury?

_____.

12. What must you do in case of a serious injury before an ambulance arrives?

_____.

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Modal Verbs (2nd Meaning)

Мы можем использовать модальные глаголы, чтобы выразить, насколько, с нашей точки зрения, вероятно то или иное событие.

Модальный глагол	Вероятность события	Перевод
must	100% произойдет	должно быть
can't	100% НЕ произойдет	не может быть
might may could	30-50%	возможно; может быть

e.g. *Where is Julie? - She **must** be on the bus. – Должно быть, она в автобусе.* OR

*She **might** come soon. – Возможно, она скоро придёт.* OR

*She **can't** be at home. – Не может быть, что она сейчас дома.*

После модальных глаголов во **втором** значении используется инфинитив в одной из следующих форм.

Формы инфинитива

Инфинитив имеет 4 формы в активном и 2 в пассивном залоге.

	Active	Passive
Simple	(to) give	(to) be given
Continuous	(to) be giving	-
Perfect	(to) have given	(to) have been given
Perfect Continuous	(to) have been giving	-

Инфинитивы Simple и Continuous относятся к настоящему или будущему:

e.g. *He **could be taken** home tomorrow. (будущее) – Возможно, его заберут домой завтра.*

*The nurse **might be taking** the patients' BP now. (настоящее) – Возможно, медсестра измеряет давление у больных сейчас.*

Инфинитивы Perfect и Perfect Continuous используются для предположений о прошлом:

e.g. *She **must have returned** in time. (прошлое) – Должно быть, она вернулась вовремя.*

*They **may have been examined** by a very famous professor. (прошлое) – Возможно, их осмотрел очень известный профессор.*

1. Закончите предложения, используя модальные глаголы *must, might, may, could, can't*.

1. 'Whose bag is this?'

'It _____ be Mike's. It's on his desk.'

2. You _____ be hungry again - you've only just eaten!

3. You _____ be hungry - you haven't eaten since this morning.

4. 'What kind of bird is that?'

'I'm not sure. It _____ be an eagle but I can't see it very well.'

5. 'Where's Kim?'

'I'm not sure. Try her office - she _____ be in there.'

6. 'I haven't seen Jeff today. Is he ill?'

'He _____ be - I saw his car in the car park.'

7. 'Have you see Clara?'

'She's gone for lunch. She _____ be in the canteen.'

8. 'Is that Suzie's jacket?'

'No, it _____ be - it's too big.'

9. That man _____ be Tim's father - he looks just like him.

10. She's won prizes for her research. She _____ be really intelligent.

11. It _____ be him. He's on holiday until next week.

12. Hey guess what?! I _____ be getting a car for my birthday! It's not completely definite yet though.

13. I can't believe you've been waiting all this time! You _____ be really bored.

14. His car's not here. He _____ have gone out.

2. Инфинитивы (особенно в форме *Perfect*) часто употребляются после модальных глаголов во втором значении, чтобы описать то, что уже не может произойти. Закончите предложения, употребляя инфинитив в правильной форме.

*e.g. I think he passed the exam. – He must **have passed** the exam.*

1. I think she's dusting the computer.

2. I think his allergy is caused by pets.

3. I think he has been sneezing since morning.

4. I think she was given pricking testing yesterday.

5. I think her symptoms are worsening.

6. I think mosquito bites are very itchy.

7. I think he has just been admitted to hospital.

8. I think she will go to the conference in a week.

9. I think this topic will be explained to us next Monday.

10. I think tobacco smoke is a trigger for asthma attacks.

11. I think you are happy because you will be a doctor.

Checklist

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

- I can talk about musculoskeletal traumas
- I can differentiate between types of traumas
- I can use modal verbs in their second meaning with different tenses of the infinitives

Key Words

ambulance *n* / 'ambju:l(ə)ns /
approximately *adv* / ə'prɒksɪmətli /
blow *n* / bləʊ /
consciousness *n* / 'kɒnʃəsnɪs /
damage *v* / 'dæɪdʒ /
dislocation *n* / ,dɪslə(ʊ)'keɪʃ(ə)n /
endure *n* / ɪn'djʊə /
extent *n* / ɪks'tent /
fracture *n* / 'fræktʃə /
frail *adj* / freɪl /
injury *n* / ɪn(d)ʒ(ə)ri /
obvious *adj* / 'ɒbvɪəs /
occurrence *n* / ə'kʌr(ə)ns /
sprain *n* / spreɪn /
strain *n* / streɪn /
swell *v* / swel /
tear *v* / tɜː /

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

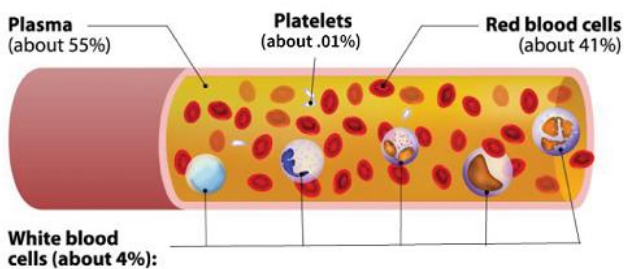
UNIT 4.7. BLOOD

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*

Warm up

COMPOSITION OF BLOOD



Video Activity: Blood Basics

<https://www.youtube.com/watch?v=8HhHsg8r03A>

I. Before you watch

Read some interesting information about the blood.

- 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.

II. While you watch

Answer the questions.

1. What do the information from blood tests provide?
2. If the numbers of certain components are off balance, it means something's not right, doesn't it?
3. What could you have if your white cell count is too high?
4. Where is blood made?
5. What is the part of of the immune system?

III. After you watch

Blood tests can be used in a number of ways, such as helping to diagnose a condition, assessing the health of certain organs or screening for some genetic conditions. **Discuss** some of them.

For reference: Full blood count (FBC), Blood cholesterol test, blood culture test, blood glucose (blood sugar) tests, cancer blood tests, coagulation tests

Reading

Read the text and discuss it on the following plan:

1. What is blood?
2. Blood plasma.
3. Blood cells:
 - erythrocytes
 - leukocytes
 - thrombocytes
4. Phagocytosis.

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.

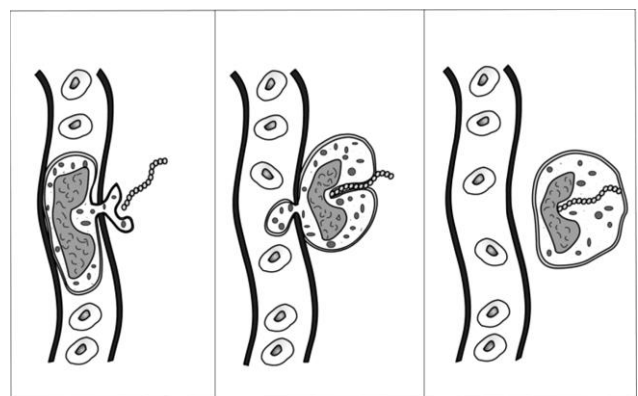
Leukocytes

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.

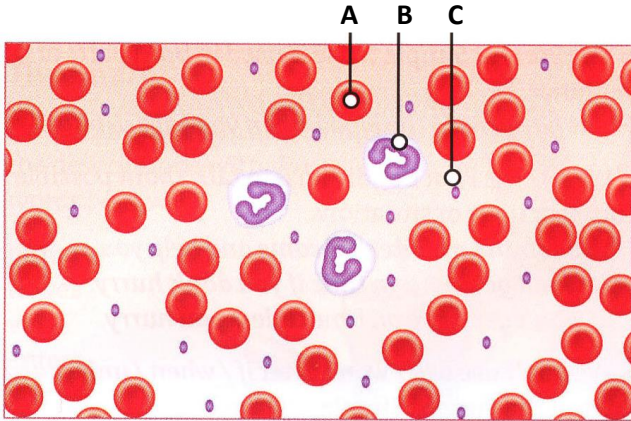
Задайте вопросы, чтобы получить недостающую информацию.

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

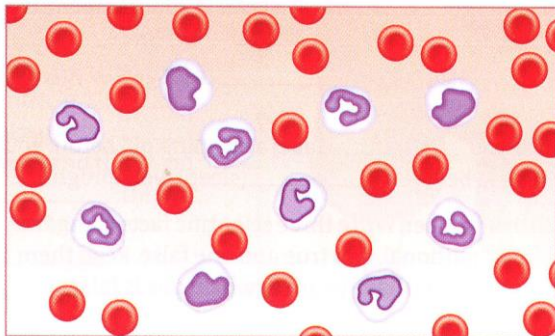


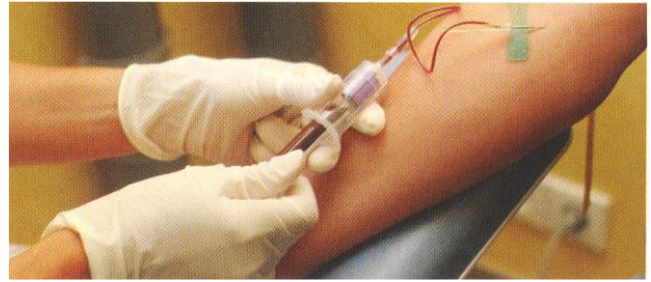
2. Найдите и исправьте еще 4 ошибки в этом описании.

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. а. 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.

б. 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. 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?

6. а. 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.

б. 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?

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Coordinating Double Conjunction

Двойные союзы соединяют два равных члена предложения или два равных придаточных предложения:

Double Conjunction	Example
both...and	<i>The professor explained to the students both the diagnosis of the patient and his management.</i>
either...or	<i>He knows nothing about either leucocytosis or phagocytosis.</i>
neither...nor	<i>She could give neither intravenous nor intramuscular injections.</i>
not only...but also	<i>This guy is not only a talented student, but also a very kind person.</i>

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*)

2. Прочитайте, объясните значение выделенных слов. Воспроизведите диалог в парах.

Anaemia

Anaemia is one of the commonest diseases of the blood. It may be due to:

- **bleeding** – loss of blood
- excessive destruction of blood cells
- low production, for example, if the diet is lacking, or deficient, in iron (Fe).

A medical student has examined an elderly patient with a very low level of haemoglobin and is discussing the case with his professor:

P: What's the **most likely** diagnosis in this case?

S: Most probably carcinoma of the bowel with **chronic blood loss**.

P: What's against that as a diagnosis?

S: Well, he hasn't had any change in his bowel habit, or lost weight.

P: What else would you include in the **differential diagnosis** of severe anaemia in a man of this age?

S: He might have leukaemia of some sort, or **aplastic anaemia**, but that's **rare** – it would be very unusual. Another cause is **iron deficiency**, but he seems to have an **adequate** diet.

P: OK. Now there's another cause of anaemia which I think is more likely.

S: Chronic bleeding ulcer?

P: Yes, that's right. We can't exclude it.

3. Спрашивайте и отвечайте на вопросы партнера, чтобы заполнить таблицу в разделе Lead-in на стр. 118.

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.

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* / ˈædəkweɪt/
 albumin *n* / ˈælbjʊmɪn/
 anaemia *n* / əˈniːmiə/
 blood loss /blʌd lɒs/
 bone marrow /bəʊn ˈmærəʊ/
 carbon dioxide / ˈkɑːbən daɪˈɒksaɪd/
 clotting factor / ˈklɒtɪŋ ˈfæktə/
 coagulation *n* /kəʊˈægjʊleɪʃən/
 complete blood count /kəmˈpliːt blʌd kaʊnt/ (CBC)
 deliver *v* /dɪˈlɪvə/
 differential diagnosis /ˌdɪfəˈrenʃəl daɪəgˈnəʊsɪs/
 enzyme *n* / ˈenzɑɪm/
 erythrocyte /ɪˈrɪθrəʊsaɪt/ = red blood cell (RBC)
 erythrocyte sedimentation rate /ɪˈrɪθrəʊsaɪt ˌsedɪmənˈteɪʃən reɪt/ (ESR)
 exclude *v* /ɪkˈskluːd/
 flexible *adj* / ˈfleksɪbl/
 haemoglobin *n* / ˌhiːməˈgləʊbɪn/
 haemostasis *n* / ˌhiːməˈsteɪsɪs/
 leukocyte / ˈljuːkəʊsaɪt/ = white blood cell (WBC)
 multiply *v* / ˈmʌltɪplaɪ/
 phagocytosis *n* / ˌfæɡəˈsaɪˈtəʊsɪs/
 plasma *n* / ˈplæzmə/
 rare *adj* /reə/
 thrombocyte / ˈθrɒmbəsaɪt/ = platelet *n* / ˈpleɪtlət/
 vessel *n* / ˈvesəl/
 waste (product) *n* /weɪst (ˈprɒdʌkt)/

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

UNIT 4.8. BLOOD TRANSFUSION

In this unit

- talking about blood types
- describing the mechanism of blood transfusion and indications for blood transfusion
- *emphatic structures*

**Sharing
is caring.
Donate
blood today.**



The average adult body has **10-12 pints** of blood. Healthy adults may give regularly because the body quickly replaces donated blood.
#WorldBloodDonorDay

Warm up

Do you agree with the quote? Why?/Why not?

Video Activity:

Health: Why do blood groups matter? BBC News

(<https://www.youtube.com/watch?v=qhDpU5zmHug>)

I. Before you watch

Answer the question.

There are main blood groups: A, B, AB, and O. Each type can be followed by + or -. Do you know your blood group?

II. While you watch

Choose from (A-G) the one which best fits each space (1-7). Write your answers.

1. Blood gives us life...
2. Each year millions of people donate a small amount to save the lives of others...
3. Back in 1900 a scientist discovered that ...
4. People in the same group can safely give blood to each other...
5. Blood groups differ...
6. People with blood group O are known...

7. Different blood groups are more common in certain parts of the world...

(A) but mix certain groups together and the patient could die.

(B) blood could be divided into groups.

(C) and there are about five liters of it pumping around our body.

(D) but you can't just give your blood to anyone.

(E) because the red blood cells have different kinds of molecules on their surface.

(F) but wherever you live though with someone in need of the perfect match one day it could even be you.

(G) as universal donors as their blood can be given to anyone.

III. After you watch

Use the information in the chart and **make up the dialogues.**

		DONOR							
		A-	A+	B-	B+	AB-	AB+	O-	O+
R E C E I V E R	A-	✓						✓	
	A+	✓	✓					✓	✓
	B-			✓				✓	
	B+			✓	✓			✓	✓
	AB-	✓		✓		✓		✓	
	AB+	✓	✓	✓	✓	✓	✓	✓	✓
	O-							✓	
	O+							✓	✓

Reading

Read the text and discuss it according to the plan:

1. Blood groups.
2. Blood transfusion.
3. Incompatible blood groups.
4. Blood banks.

80 million units of blood are donated every year worldwide.

Blood Type

The preceding text about blood cells may give the impression that blood in all individuals is **alike**. It is not. The most obvious differences are blood type and **Rh factor**. Every person has one of the following blood types: A, B, AB, or O. Also, every person's blood is either Rh-positive or Rh-negative. So, if you have type A blood, it's either A positive or A negative.

Blood Groups

Blood type is determined by the presence or absence of chemical molecules – **antigens** - on red blood cells. Red blood cells can have one, both, or neither of the two antigens named “A” and “B.”

- **Group A** – has only the A antigen on red cells (and B **antibody** in the plasma)
- **Group B** - has only the B antigen on red cells (and A antibody in the plasma)
- **Group AB** - has both A and B antigens on red cells (but neither A nor B antibody in the plasma)
- **Group O** - has neither A nor B antigens on red cells (and both A and B antibody in the plasma)

Blood Transfusion

Information about blood groups is very important for blood transfusion.

Blood transfusions are used to replace blood lost during surgery or a serious injury. A transfusion also might be done if your body can't make blood properly because of an illness.

There are very specific ways in which blood types must be **matched** for a safe transfusion. The blood used in a transfusion must work with your blood type. If it doesn't, antibodies (proteins) in your blood attack the new blood and make you sick.

Type O blood is **safe** for almost everyone. About 40 percent of the population has type O blood.

People who have this blood type are called *universal donors*. Type O blood is used for emergencies when there's no time to test a person's blood type.

People who have type AB blood are called *universal recipients*. This means they can get any type of blood.

If you have Rh-positive blood, you can get Rh-positive or Rh-negative blood. But if you have Rh-negative blood, you should only get Rh-negative blood. Rh-negative blood is used for emergencies when there's no time to test a person's Rh type.

Incompatible Blood Transfusion

Reactions between **incompatible** blood can be **severe**. If type A blood from one person is given to another person with type B blood, the blood will **clump**. This can lead to serious **consequences**, such as kidney dysfunction, **chills**, fever, and even death. For this reason, medical professionals compare blood type and Rh factor from a patient and a donor before starting a **transfusion**.

Blood Banks

Blood banks collect, test, and store blood. They carefully screen all donated blood for infectious agents (such as viruses) or other factors that could make you sick.

Blood banks also screen each blood **donation** to **detect** whether it's type A, B, AB, or O and whether it's Rh-positive or Rh-negative. Thus, blood banks carefully test donated blood.

Not all transfusions use blood donated from a stranger. If you're going to have surgery, and if it is surgery that you're able to schedule months in advance, your doctor may ask whether you would like to use your own blood, rather than donated blood.

If you choose to use your own blood, you will need to have blood drawn one or more times prior to the surgery. A blood bank will **store** your blood for your use.

Vocabulary Practice

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

2. Подберите антонимы к следующим словам.

donor	
compatible	
severe	
safe	
function	

3. Подберите синонимы к следующим словам.

detect	
severe	
fever	
adverse reaction	
donate	

4. Закончите следующие предложения.

1. If the bleeding stops	a. if a patient loses a lot of blood?
2. If we don't give the right blood for a transfusion	b. they clump
3. When the blood loss is severe	c. a transfusion is necessary
4. When we don't have the patient's blood type	d. blood pressure drops
5. If you mix different blood types,	e. we give him type O
6. There is a risk of disease,	f. if you use dirty needles.
7. When heart rate decreases	g. a patient won't need a transfusion.
8. What will happen	h. the patient will die.

5. Заполните пробелы в тексте словами из таблицы. Используйте словарь при необходимости.

slide	pipette
drop	test tube
vein	microscope
syringe	

Use a _____ to take some blood from a _____ in the patient's arm. Put the blood into a _____. Then use a _____ to put a _____ of the blood onto a _____. Examine it under a _____. What do you see?

6. Тест. Работа в парах.

Задайте вопросы, чтобы получить недостающую информацию.

1. You lose almost _____ in weight when you donate blood.
How much _____ ?

a. 1-2 kilos	b. 5 kilos	c. half a kilo
--------------	------------	----------------

2. _____ people entering hospital need a blood transfusion.
How many _____ ?

a. one in ten	b. every second	c. one in five
---------------	-----------------	----------------

3. You can give _____ in one donation of blood.
How much _____ ?

a. three quarters of a litre	b. half a litre	c. 200 grams
------------------------------	-----------------	--------------

4. It takes about _____ to make a blood donation.
How long _____ ?

a. 2 hours	b. half an hour	c. ten minutes
------------	-----------------	----------------

5. _____ of blood are donated every year worldwide.
How many _____ ?

a. 1 million units	b. 80 million units	c. 80 billion units
--------------------	---------------------	---------------------

6. Donated blood goes through _____ tests.
How many _____ ?

a. eleven	b. 1-2	c. 5
-----------	--------	------

7. You must wait _____ between each donation of blood.
How long _____ ?

a. a week	b. a month	c. 56 days
-----------	------------	------------

Language Development

1. Прочитайте следующий диалог о совместимости различных групп крови. Какие две группы крови смешаны на каждой картинке ниже? Какая группа крови используется при неотложных состояниях?

I = instructor; S₁/S₂ = students 1 and 2.

I: I want to show you what happens if you mix the wrong types of blood. Now, in front of you you've got test tubes with different types of blood in them. The blood in one test tube is type A. Now who can receive blood type A?

S₁: A patient with blood type AB.

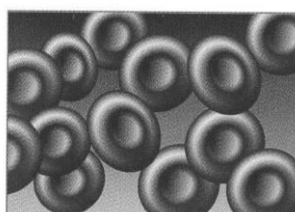
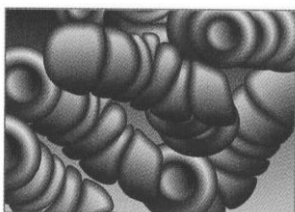
I: Right. So AB can receive type A. But can B receive A? What happens if you give type A to type B? Now there's some type B blood in the second test tube. If you add a drop of type A, you'll see how they react together. Now put a drop of blood on a slide and look at it through the microscope.

S₂: The red blood cells are joining together.

I: Yes, that's right. We call that "clumping". Now the blood stops moving if the red cells clump. And of course, if the blood stops moving, the patient dies. Now, if we put a little of blood type O into more type A, we'll see the difference.

S₁: The red blood cells are moving. The blood looks OK.

I: Right. You can give type O blood to all the other blood types. So, if we have an emergency, we usually use type O. It's the universal donor.



a = type ___ + type ___

b = type ___ + type ___

2. Просмотрите текст еще раз и ответьте на вопросы:

1. What are the main blood groups of humans?

2. What determines the blood group?

3. Which is the most common blood group in the ABO system?

4. What blood can people with type A blood (type B blood) donate and receive?

5. What happens if incompatible blood is mixed?

6. What should one remember while giving blood transfusion?

7. Who do we call *universal donors*?

8. Who do we call *universal recipients*?

9. What Rh type blood is used for emergencies?

10. What is the role of blood banks?

3. Задайте все возможные вопросы к следующим предложениям.

a. The surgeons are trying to find a donor with a compatible blood group.

b. The doctor held the wound for a few minutes to stop bleeding.

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Emphatic Structures: Cleft Sentences

Cleft means **divided**. In a cleft sentence information which could be given in one clause is divided into two parts, each with its own verb. This way you give extra emphasis to part of the sentence.

It cleft sentences:
**it + be + emphasised word/phrase +
that (who) clause**

Sentence	<i>The nurse gave analgesic to patient M. last night.</i>
Emphasis on the subject	<i>It was the nurse who gave analgesic to patient M. last night.</i>
Emphasis on the object	<i>It was analgesic that the nurse gave to patient M. last night.</i>
Emphasis on the adverbial	<i>It was last night that the nurse gave analgesic to patient M.</i>
Emphasis on the prep. phrase	<i>It was to patient M. that the nurse gave analgesic last night.</i>

N.B. If we want to emphasise the date of some event we use a little bit different construction:

*e.g. In 1874 William Ostler identified platelets. – **It wasn't until 1874 that** William Ostler identified platelets.*

1. Перепишите следующие предложения, выделяя подчеркнутую часть.

1. White blood cells protect the organism against foreign substances.

_____.

2. The presence of the red pigment haemoglobin makes the cells red.

_____.

3. Oswald Robertson set up the first blood bank in 1917.

_____.

2. Прочитав информацию в таблице, ответьте на вопросы. В каждом ответе используйте выделительную конструкцию.

In 1666, Robert Boyle reported about one of the first instances of blood transfusion between animals, in this case two dogs. In 1667, Richard Lower also performed the first transfusion of blood from a sheep into a human. Although Lower understood the usefulness of blood transfusions after injury or other blood loss, in humans it often caused severe and even fatal reactions. In 1677, it was banned by the Parliament. Over 200 years later an understanding of blood groups made routine blood transfusions possible.

*e.g. Richard Lower reported the first transfusion between animals, didn't he? – No, **it was** Robert Boyle **who** reported the first transfusion between animals.*

1. Did Robert Boyle make the first blood transfusion in 1655?

No, _____.

_____.

2. Did Richard Lower perform blood transfusion from a dog into a human?

No, _____.

_____.

3. When were blood transfusions effective?

_____.

_____.

4. Blood transfusions caused only mild side effects, didn't they?

No, _____.

_____.

5. When were blood transfusions banned by the Parliament?

_____.

_____.

6. What made routine blood transfusions possible?

_____.

_____.

3. а. Прочитайте информацию о дорожно-транспортном происшествии и обсудите предложенные проблемы.

Three people have been seriously injured in a car accident, and brought to hospital. In one car there was twelve-year-old **Sally Cook** and her 70-year-old grandfather **William Cook**. Sally has lost a lot of blood, and needs a transfusion. Her grandfather is unconscious, and needs a bed on ICU and a ventilator (= a breathing machine) to keep him alive.

Bill Ellis is 21 years old, and was driving the second vehicle. Police say Bill caused the accident. He has severe injuries, and he will need a ventilator and a bed on ICU.

b. Discuss the following problems in groups.

- Sally's parents belong to a religious group which is against organ and blood donation. They do not want their daughter to have someone else's blood. Should the hospital respect their wishes, or should they give her a transfusion?
- There is only one bed available on ICU. Who should have the bed, William or Bill?

c. Make up sentences on the text using emphatic structures:

e.g. It is Sally who should be given blood transfusion.

4. Задайте вопросы собеседнику, чтобы заполнить таблицу на стр. 118 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.

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- I can describe blood types in the ABO system
- I know the mechanism of blood transfusion and indications for blood transfusion
- I can use the emphatic structures

Key Words

alike adj /ə`laɪk/
 antibody n /`æntɪ,bɑdɪ/
 antigen n /`æntɪdʒən/
 blood bank /blʌd bæŋk/
 blood group /blʌd gru:p/
 chill n /tʃɪl/
 clump v /klʌmp/
 consequence n /`kɒnsɪkwəns/
 detect v /dɪ`tekt/
 donation n /dəu`neɪʃən/
 donor n /`dəʊnə/
 incompatible adj /,ɪnkəm`pætɪbl/
 match v /mætʃ/
 recipient n /rɪ`sɪpɪənt/
 Rh (rhesus) factor /,ɑ:r`etʃ (`ri:səs)`fæktə/
 safe adj /seɪf/
 severe adj /sɪ`vɪə/
 store v /stɔ:/
 transfusion n /træns`fju:ʒən/

Look back through this unit. Find other words and expressions that you think are useful and worth learning.

UNIT 4.9. LYMPH

In this unit

- talking about composition of lymph
- describing the functions of lymph
- *revision of question forms*

Warm up

Do you agree with the quote? Why/Why not?

“Move your lymph system. Lymph is like a sewage system that carries all of the toxins out of your body.”

V. Zelyaeva

Video Activity:

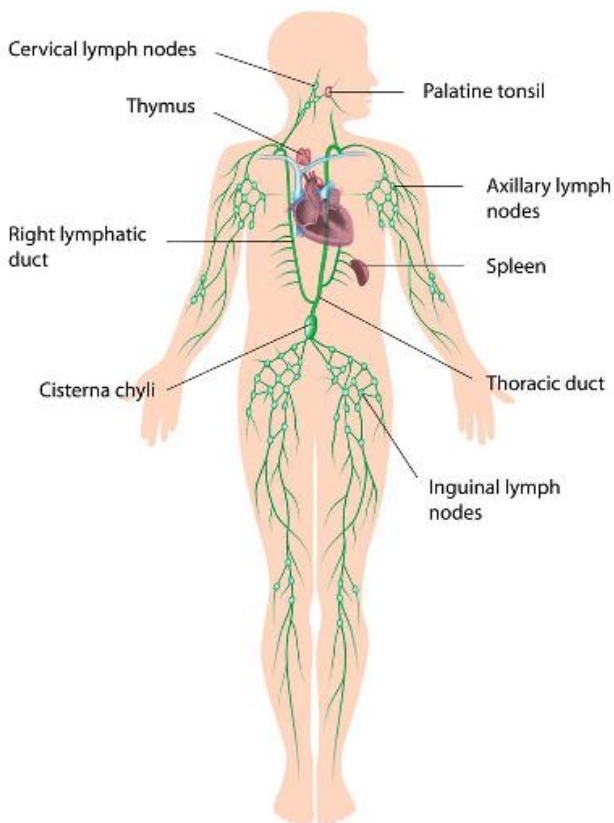
The lymphatic drainage system

(<https://www.youtube.com/watch?v=cnsty5BAD9k>)

I. Before you watch

Look at the diagram and answer the following questions:

Lymphatic system



- What is the lymph system like?
- What organs of the lymph system do you see in the diagram?
- What lymph nodes do you see?
- Where is/are spleen (thymus gland, tonsils) located?

II. While you watch

Choose from (A-D) the one which best fits each space (1- 4). Write your answers.

1. The lymphatic system helps our bodies get rid of toxins waste and other unwanted materials
2. You might be able to feel these in your neck, under your arm and in your groin but they are also throughout the body
3. Fluid passes from the blood into the body tissues
4. The glands filter the lymph

(A) taking out any harmful products.

(B) carrying food to the cells.

(C) including the chest abdomen and pelvis.

(D) including infections and cancer cells.

III. After you watch

Make up the dialogues to summarise 4 main functions of the lymphatic system and 6 lymphatic organs.

Reading

You are going to read the text about lymph. Choose from the list the statements A-F which best summarise each part (1-5) of the text. There is one extra statement which you do not need to use. There is an example at the beginning (0).

A. The lymphatic system

B. Functions of the lymphatic system

C. Lymph nodes

D. Organs of the lymphatic system

E. Comparison of the lymphatic system to other systems of the body

F. Lymph

There are about 500-700 lymph nodes spread throughout the body.

Reading

Lymph

0. A

The lymph system is a network of organs, lymph nodes, lymph ducts, and lymph vessels that produce and transport lymph from tissues to the **bloodstream**. Lymph vessels branch, like blood vessels, into all the tissues of the body. Lymph vessels are a lot like the veins that collect and carry blood through the body. But instead of carrying blood, these vessels carry lymph.

2.

The fluid carried in the lymphatic system is called **lymph**. Lymph is a clear yellowish watery fluid that exists around and between cells in the body tissues. It carries oxygen and other nutrients to these cells. Waste products like carbon dioxide can flow out of the cells and into lymph.

Lymph, which is about 95 percent water, enters the bloodstream mainly through one of two ducts.

Lymph drains from the lower part of the body and the upper left side into the **thoracic duct**, which travels upward through the chest and empties into the left subclavian vein near the heart. The **right lymphatic duct** drains the upper right side of the body and empties into the right subclavian vein.

Lymph is made of:

- White blood cells, especially lymphocytes, the cells that attack bacteria in the blood
- Fluid from the intestines called chyle, which contains proteins and fats

3.

The lymphatic system has three main functions. First, it returns excess fluid and proteins from the tissues to the bloodstream.

The second function of the lymphatic system is

the absorption of fats and fat-soluble vitamins from the digestive system and the subsequent transport of these substances to the venous blood.

The third and probably well known function of the lymphatic system is to protect the body from invading microorganisms and diseases. The lymph system is a major component of the body's immune system.

4.

Along the path of the lymphatic vessels there are small masses of lymphoid tissue, the **lymph nodes**. Lymph nodes are soft, small, round- or bean-shaped structures. They usually cannot be seen or easily felt. They are located in clusters in various parts of the body, such as the neck, **armpit**, **groin**, and inside the centre of the chest and abdomen.

Lymph nodes produce immune cells that help the body fight infection. They also filter the lymph fluid and remove foreign material such as **bacteria** and cancer cells. When bacteria are recognized in the lymph fluid, the lymph nodes produce more infection-fighting white blood cells, which causes the nodes to swell.

Most normal lymph nodes are about 1 cm in size (0.5 to 2.0 cm) but that size varies depending on the location of the node, and what activity is going on. Infections, cancer and many other conditions can cause it to expand as the immune system reacts to the problem.

5.

Other organs and tissues of the lymphatic system include the **tonsils** located in the throat, **adenoids** behind the nasal cavity, the **thymus gland** in the chest, and the **spleen** in the upper left region of the abdomen.

Vocabulary Practice

1. Look at the words in bold type in the text and explain them.

2. Match the words with their definitions.

1. lymph	a. The thin plasmalike fluid that drains from the tissues and is transported in lymphatic vessels
2. lymph node	b. A small mass of lymphoid tissue along the path of a lymphatic vessel that filters lymph
3. lymphatic system	c. The system that drains fluid and proteins from the tissues and returns them to the bloodstream.
4. right lymphatic duct	d. The lymphatic duct that drains fluid from the upper right side of the body
5. spleen	e. A large reddish-brown organ in the upper left region of the abdomen.
6. thoracic duct	f. The lymphatic duct that drains fluid from the upper left side of the body and all of the lower portion of the body
7. thymus gland	g. A gland in the upper part of the chest beneath the sternum. It functions in immunity
8. tonsils	h. Small masses of lymphoid tissue located in the region of the throat

2. Fill in the correct preposition(s), then choose any 3 items and make sentences.

Locate _____ the throat, empty _____ vein, enter _____ bloodstream, travel _____ the chest, protect _____ microorganisms, to absorb _____ digestive system, drain _____ duct, exist _____ cells.

3. Fill in the correct word(s) from the list below.

spleen	adenoids	tonsils
ducts	bloodstream	

1. Lymphocytes are the second most common white blood cells which are more often reside not in the _____ but in the lymph.

2. _____ are pieces of soft tissue Between the back of the nose and the throat, often making breathing and speaking difficult.

3. Either of two small organs at the sides of the throat near the root of the tongue are called _____ .

4. A large vascular lymphatic organ lying in the upper part of the abdominal cavity on the left side, between the stomach and diaphragm is _____ . It filters and destroys old red blood cells.

5. One of the two large lymph channels, through which lymph is carried is called _____ .

4. Transfer the following sentences into Passive Voice.

1. Lymph nodes produce immune cells to fight infection.

2. The lymphatic system carries lymph to the bloodstream.

3. Lymphocytes attack bacteria in the blood.

4. Lymph absorbs vitamins from the digestive system and carries them to the venous blood.

5. Lymph can also transport cancer cells in the body.

Language Development

1.a. Read the text on the right and choose the best title.

- a. Lymphoma.
- b. Lymphatic disorders
- c. Treatment of lymphomas.

b. Read the text again and complete it using words from below.

develop	enlargement	blood
involve	immune system	organs

c. Match the words (1-8) from the text with the correct definitions (a-h).

- 1. tumour
- 2. abnormal
- 3. lymphangiitis (also spelled as lymphangitis)
- 4. radiotherapy
- 5. lymphoma
- 6. chemotherapy
- 7. lymphedema
- 8. lymphadenitis

- a. any neoplastic disease of lymphoid tissue
- b. inflammation and enlargement of lymph nodes, usually as a result of infection
- c. Inflammation of lymphatic vessels as a result of bacterial infection. Appears as painful red streaks under the skin.
- d. swelling of tissues with lymph caused by obstruction or excision of lymphatic vessels
- e. swelling, lump, growth, neoplasm
- f. treatment of disease by means of chemical substances or drugs;
- g. use of electromagnetic or particulate radiation in the treatment of disease.
- h. pathological

d. Answer the questions about the text.

- 1. What disorders of the lymphatic system do you know?
- 2. What kind of disease is lymphoma?
- 3. What organs can be affected by lymphoma?
- 4. What is the difference between lymphomas and leukaemias?
- 5. Are lymphomas curable?

Changes in the lymphatic system are often related to infection and may consist of inflammation and _____ 1 of the nodes, called lymphadenitis, or inflammation of the vessels, called lymphangiitis. Obstruction of lymphatic vessels because of surgical excision or infection results in tissue swelling, or lymphedema. Any neoplastic disease involving lymph nodes is termed lymphoma. These neoplastic disorders affect the white cells found in the lymphatic system.

Lymphoma is a type of blood cancer that occurs when lymphocytes, white blood cells that form a part of the _____ 2 and help protect the body from infection and disease, begin behaving abnormally. Abnormal lymphocytes may divide faster than normal cells or they may live longer than they are supposed to. Lymphoma may _____ 3 in many parts of the body, including the lymph nodes, spleen, bone marrow, _____ 4 or other organs.

Typically, lymphoma presents as a solid tumour of lymphoid cells. Treatment might _____ 5 chemotherapy and in some cases radiotherapy and/or bone marrow transplantation. These malignant cells often originate in lymph nodes, presenting as an enlargement of the node (a tumour). It can also affect other _____ 6 such as the skin, brain, bowels and bone.

Lymphomas are closely related to lymphoid leukaemias, which also originate in lymphocytes but typically involve only circulating blood and the bone marrow and do not usually form static tumours. There are many types of lymphomas, and in turn, there is a broad group of diseases called haematological neoplasms.

Lymphomas can be curable. The efficacy of treatment depends on the histology, type, and stage of the disease.

2. Look through the text and answer the following questions:

1. What is the lymphatic system?

2. What is lymph?

3. What is lymph made of?

4. What is the function of lymph?

5. What are the three main functions of the lymphatic system?

6. What are lymph nodes?

7. Where are lymph nodes located?

8. What is the role of lymph nodes in the lymphatic system?

9. What is the normal size of lymph nodes?

10. In what case are lymph nodes enlarged?

11. What other organs of lymphatic system do you know?

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Revision of Question Forms

To make a general question, the **first** auxiliary verb is put at the beginning of the question.

These auxiliaries include:

- *am, is, are, was, were;*
- *have, has, had (≠ possess and ≠ must);*
- *can, could, may, might, must;*
- *will, would, shall, should.*

If there are no such auxiliaries, *do, does* or *did* is put at the beginning of the sentence.

N.B. Don't forget to change the pronouns, just as we do in Russian!

*e.g. My friend **is surfing** the Internet now.
– **Is your** friend surfing the Internet now?*

***I have had** this car for 5 years. – **Have you had** this car for 5 years?*

***My mother had to** (= must) undergo an operation last month. – **Did your mother have to** undergo an operation last month?*

To make a special question to any part, excluding the subject, we do the same, but also put on the question words **before** the auxiliary.

*e.g. **I have had** this car for 5 years. – **Have you had** this car for 5 years? – How long **have you had** this car?*

To make a special question to the subject, we change the subject (or the group of the subject) for one of the question words: *who, what, which*.

The verb should always be in **the third person singular**.

*e.g. **I have had** this car for 5 years. – **Who has had** this car for 5 years?*

1. Arrange the following words to make questions:

1. engulf / per second / How many / average / bacteria / macrophage / can / an / ?

2. fluid / What / vessels / carry / do / lymph / ?

3. giving / injection / is / patient / What / nurse / to / the / the / ?

4. best / in / your / you / the / Are / group / ?

2. Make questions to get the missing information.

1. Lymphoma consists of _____.
What cells _____?

2. The surgeon made the diagnosis when _____.
When _____?

3. The professor has already assessed the condition of _____?
Whose condition _____?

4. The operation on _____ had been finished by 4 p.m. yesterday.
Which operation _____?

5. The nurse is giving _____ to the patients right now.
What _____?

6. Patient S. has been treated at this hospital for _____.
How long _____?

7. In case of obesity, _____ diet is recommended to the patients.
What kind of diet _____?

8. Biologically active supplements have been included into his diet because _____.
Why _____?

9. I'll be working in _____ next week.
Where _____?

10. The functions of the lymphatic system are _____.
What _____?

11. The efficacy of treatment of lymphoma depends on _____.
What _____?

12. The blood type has to be confirmed because _____.
Why _____?

Checklist

Assess your progress in this unit. Tick (✓) the statements that are true.

- I can describe the composition of lymph
- I know the functions of lymph
- I know about different types of lymphatic disorders
- I can make general and special questions correctly

Key Words

armpit *n* / 'ɑ:mptɪ /

bacterium (*pl.* bacteria) *n* / bak'tɪərɪəm
(bæk'tɪəriə) /

bloodstream *n* / 'blʌdstri:m /

bone marrow / 'bəʊn məəʊ /

duct *n* / dʌkt /

groin *n* / grɔɪn /

leukaemia *n* / lu:'ki:mɪə /

lymph *n* / lɪmf /

lymph node / 'lɪmf nəʊd /

lymphadenitis *n* / lɪmfædɪ'næɪtɪs /

lymphangitis *n* / lɪmfæn'dʒaɪtɪs /

lymphedema *n* / lɪmfə'dɛmə /

lymphoma *n* / lɪm'fəʊmə /

spleen *n* / spli:n /

thoracic *adj* / θɔ:'ræstɪk /

thymus (gland) *n* / 'θaɪməs /

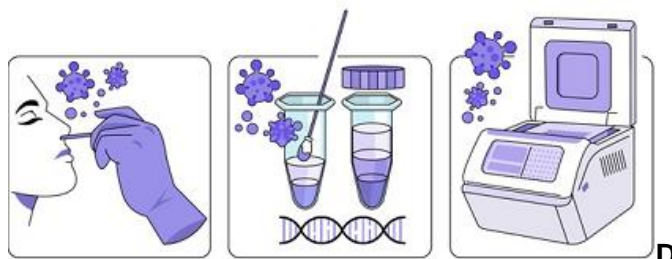
tonsil *n* / 'tɒns(ə)l /

Look back through this unit. Find other words and expressions that you think are useful and worth learning.

UNIT 4.10. LABORATORY TESTS

In this unit

- talking about preparation for laboratory tests
- speaking about different blood tests
- describing urinalysis
- *Conditional Sentences: Type I*



Warm up

Video Activity:

Today report on antibody testing - BBC

(<https://www.youtube.com/watch?v=MKrwY62InE0>)

I. Before you watch

Match the terms (1-4) with the images. (A-D).

1. Polymerase chain reaction (PCR) testing
2. Antibody (serology) testing
3. Wearing PPE (personal protective equipment)
4. Drive-through testing (drive-thru testing)



1 Collect blood sample



2 Add blood sample to sample well



3 Place 2-3 drops of buffer in sample well



4 Read results after 15 minutes

C

II. While you watch

Answer the questions.



1. Is Mark a key worker?
2. What does it mean if he has the antibodies?



3. What symptoms did Linzi have when she became unwell?
4. Was the loss of sense of smell and taste listed on the notifiable symptoms then?
5. Her tests came back positive, didn't they?

III. After you watch

Make up the dialogues on coronavirus 19 testing here.

For reference:

The research materials are:

- principal – nasal and pharyngeal swab;
- additional – testing of bronchial lavage water, (endo)tracheal, nasopharyngeal aspirate, sputum, biopsy or autopsy lung material, whole blood, blood serum, urine, feces.

Specific laboratory diagnostics (detection of SARS-CoV-2 RNA by PCR);

General laboratory diagnostics (clinical blood test, biochemical blood test, etc.);

Instrumental diagnostics.

Reading

Blood Tests

A blood chemistry study is a procedure in which a blood sample is checked to measure the amounts of certain substances released into the blood by organs and tissues in the body. An unusual (higher or lower than normal) amount of a substance can be a sign of disease in the organ or tissue that makes it.

A complete blood count (CBC) measures the size, number, and maturity of the different blood cells in a specific volume of blood. This is one of the most common tests performed.

- Red blood cells are important for carrying oxygen and fighting **anemia** and fatigue. The **hemoglobin** portion of the CBC measures the oxygen carrying **capacity** of the red blood cells while the **hematocrit** measures the percentage of red blood cells in the blood.
- White blood cells fight infection. Increased numbers of white blood cells, therefore, may indicate the presence of an infection. Decreased levels may indicate certain rheumatic diseases or reaction to medication.
- **Platelets** prevent the body from **bleeding** and **bruising** easily. It is usually performed to check for a blood infection.

An erythrocyte sedimentation rate (ESR) is a measurement of how quickly red blood cells fall to the bottom of a **test tube**. When **swelling** and **inflammation** are present, the blood's proteins clump together and become heavier than normal. Thus, when measured, they fall and settle faster at the bottom of the test tube. Generally, the faster the blood cells fall, the more severe the inflammation.

A fecal occult blood test (FOBT) is a test to check stool (solid waste) for blood that can only be seen with a microscope. Small samples of stool are placed on

special cards and returned to the doctor or laboratory for testing.

A hematocrit measures the number of red blood cells present in a sample of blood. Low levels of red blood cells (**anemia**) is common in people with inflammatory arthritis and rheumatic diseases.

Peripheral Blood Smear

During this procedure, a sample of blood is checked for **blast cells**, number and kinds of white blood cells, number of platelets, and changes in the shape of the blood cells.

Rheumatoid Factor (RF)

This blood test detects whether rheumatoid factor is present in the blood, an antibody found in most people with rheumatoid arthritis, as well as other rheumatic diseases.

An antinuclear antibody is a diagnostic test that measures blood levels of antibodies, which are often present in persons with rheumatic disease.

C-reactive protein (CRP) is a blood test to help detect the presence of inflammation or an infection.

A creatinine is a blood test to evaluate for **underlying** kidney disease.

Urinalysis is a laboratory examination of urine for various cells and chemicals, such as red blood cells, white blood cells, infection, or excessive protein. Urinalysis breaks down the components of urine to check for the presence of drugs, blood, protein, and other substances. Blood in the urine (**hematuria**) may be the result of a **benign** (noncancerous) condition, but it can also indicate an infection or other problem. High levels of protein in the urine (**proteinuria**) may indicate a kidney or cardiovascular problem.

Vocabulary Practice

1. Give the definition of the words in bold.

2. Practise the pronunciation of the following words. Transcribe them:

tissue	
fatigue	
bruising	
excessive	
procedure	
benign	
urine	
components	
erythrocyte	
rheumatic	
decreased	
measure	
anemia	
hemoglobin	
chemicals	

3. Fill in the gaps with the following words:

hemoglobin, blasts, proteinuria, hematocrit, platelet, hematuria

1. People with _____ have unusually high amounts of protein in their urine.
2. Generally, _____ is defined as the presence of 5 or more red blood cells (RBCs) per high-power field in 3 of 3 consecutive centrifuged specimens obtained at least 1 week apart.
3. _____ is made up of four protein molecules (globulin chains) that are connected together.
4. The normal _____ count is 150,000-350,000 per microliter of blood.
5. The term "_____" originated from English "hemato-" and Greek "krites."
6. In general, _____ are cells that have a large nucleus, immature chromatin, a prominent nucleolus, scant cytoplasm and few or no cytoplasmic granules.

4. Find the English equivalent of the following words and word combinations:

доброкачественный	
выделяемый	
ревматические заболевания	
процентное соотношение	
клинический анализ крови	
образец, проба	
воспаление	
мазок периферической крови	
скорость оседания эритроцитов	
пробирка	
скрытый	
С-реактивный белок	
усталость	
следовательно	
артрит	
ревматоидный фактор	



Language Development

1. Study the following:

	Value	Range	Unit
Full blood count			
Hemoglobin (HB)	143	115-165	g/L
Hematocrit (HCT)	0.224	0.37-0.47	L/L
Mean cell volume (MCV)	72.5	78.0-98.0	fL
White cell count (WCC)	7.4	4.0-11.0	10 ⁹ /L
Urea and electrolytes			
Urea	4.5	2.5-6.6	mmol/L
Creatinine	58	60-120	umol/L
Sodium (Na)	138	135-145	mmol/L
Potassium (K)	4.5	3.6-5	mmol/L
Liver function test (LFT)			
Bilirubin	7	3-16	umol/L
ALT	9	10-50	U/L
Alkaline Phosphatase	131	40-125	U/L

Terms used to describe lab results:

Norm	+	-
within normal limits	up	down
normal	elevated	low
unremarkable	raised	reduced
	high	

Unit abbreviation	Full form
g/L	gram per litre
L/L	litres per litre
10 ⁹ /L	times ten to the power nine per litre
fL	femtolitres
mmol/L	millimols per litre
umol/L	micromols per litre
U/L	units per litre

2. Complete the sentences describing the results of the report:

- Hemoglobin is _____, one hundred and forty-three _____ per litre.
- Creatinine is slightly _____, fifty-eight _____ litre.
- Alkaline Phosphatase is _____, one hundred and thirty-one _____.
- ALT is slightly reduced, nine _____.
- Bilirubin is _____, seven _____.

3. Write full descriptions of the following results from a case history:

Na 138, K 4.5, WCC 12.2, HCT 0.224, MCV 72.5, Alk. Phos. 72, ALT 9.

4. Read the dialogue:

N- nurse, P-patient
N How do you feel?

P Tired all the time, really – I 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 shape and size, 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.

5. Answer the following questions to the dialogue:

1. How much blood is the nurse going to take?
2. What problem does the test result show?
3. How many million red blood cells per microlitre does it show?
4. How can the patient correct the problem?
5. How is the patient's white blood cell count?
6. How are her platelets?

6. Answer the following questions to the text:

1. What is a blood chemistry study?

2. What does a complete blood count measure?

3. What does the hemoglobin portion of the CBC measure?

4. What does the hematocrit measure?

5. What may decreased white cells indicate?

6. What may increased white cells indicate?

7. What is ESR?

8. What is FOBT?

9. What do platelets prevent the body from?

10. What is peripheral blood smear?

Project Work

Do the project according to the theme of the unit.

11. What is RF?

12. What is sedimentation rate?

13. What is an antinuclear antibody?

14. What is CRP?

15. What is a creatinine?



Grammar in Use

Conditional Sentences: Type I

Мы используем условные предложения I типа, когда мы описываем **реальные** возможности (возможное условие и вероятный результат). Условные предложения I типа обычно строятся по такому принципу:

if + Present Simple + will

e.g. *If the pain gets worse, you'll need to come back in.* – **Если боль усилится, вам придется вернуться.**

В условных предложениях I типа мы можем употреблять не только Present Simple, но и другие настоящие времена.

e.g. *If she has finished work by 4 o'clock, she will go home.* (if + Present Perfect + will) – **Если она завершит работу к 4 часам, она пойдет домой.**

If she's flying to the USA next June, I'll go with her. (if + Present Continuous + will) – **Если она полетит в США в следующем июне, я поеду с ней.**

Если мы не чувствуем 100%-ной уверенности, мы можем использовать не **will**, а другие модальные глаголы. Употребляется в таких предложениях и повелительное наклонение:

e.g. *If we prolong this treatment, his condition may actually deteriorate.* – **Если мы продолжим это лечение, его состояние может ухудшиться.**

If you cannot cope with the procedure yourself, seek help. – **Если ты не сможешь выполнить эту процедуру сам, обратись за помощью.**

NB: В русском языке глаголы и в главном, и в придаточном предложениях стоят в будущем времени.

Условные предложения могут быть утвердительными, отрицательными и вопросительными. Предложение с союзом *if* может стоять в начале (тогда мы ставим запятую после него) либо после главного предложения (запятая не ставится).

Утвердительные предложения

If I find your English workbook, I'll let you know.

Отрицательные предложения

You won't pass the exams if you don't revise.

Вопросы

If the patient doesn't feel better, what will you do?

1. Закончите предложения, употребляя глаголы в скобках в соответствующей форме. В главном предложении используйте *will* или другие модальные глаголы (*can, may, must, should, etc.*).

1. If the patient _____ (be) no better tomorrow, we _____ (refer) him to a consultant.
2. You _____ (stay) at home if your pain _____ (not relieve).
3. If you _____ (not understand) the topic, _____ (ask) your friends to explain it to you.
4. What _____ (happen) if you _____ (not administer) Patient N. antibiotics?
5. _____ (let) them know if you _____ (not come).
6. If the child _____ (not examine) next week, he _____ (develop) complications.
7. I think Kate _____ (buy) a new stethoscope if she _____ (not find) her old one.
8. In the UK you _____ (call) the NHS 111 service if you _____ (need) medical help fast.
9. What _____ a nurse _____ (do) if the patient _____ (cancel) an appointment?
10. If you _____ (forget) to phone, they _____ (go) without you.
11. If he _____ (stop) smoking, he _____ (not cough) so much.
12. The child _____ (become) dehydrated if she _____ (not drink) plenty of water.
13. If I _____ (go) to England, I _____ (speak) English in no time.

2. Работа в парах. Задайте друг другу следующие вопросы и ответьте на них.

1. What should a student do if he doesn't know the answer to the professor's question at the exam?
2. What will you do if you get food poisoning while travelling abroad?
3. How will you feel if you are late for a job interview?
4. What will you do if you lose a book taken from the library?
5. What will you say if you are offered an interesting and well-paid job in India?
6. What will happen if a child has eaten 10 cakes?
7. How will you react if you are invited to an international medical conference as an interpreter?
8. What specialist will you become after the university if you are given a choice?
9. What will happen if you have missed seven English classes without a good reason?
10. Who will help you if you cannot memorise new anatomical terms in Latin?
11. What will you say to the patient if he is very angry?
12. What will you do if someone asks you to marry him (her) right now?

Трансформируйте в косвенную речь самые интересные ответы вашего собеседника.

*e.g. Nastya told me that if she **didn't know** the answer to the professor's question at the exam, she **would** say a joke.*

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

3. Закончите предложения, употребляя глаголы в скобках в Present Simple, Present Continuous, Future Simple или Imperative.

An Urgent Case

The family party was in full swing when the phone rang. Dr Craig answered it. He listened carefully for a moment, then said, 'I _____ (come) right away.' 'Do you have to go out?' his wife asked. 'If it _____ (be) an urgent case, I have to go,' Dr Craig answered. 'If I _____ (be) late, please _____ (not wait) up for me.' Dr Craig drove into the night. 'If I _____ (not hurry)', he thought, 'I _____ (be) late.' The thought made him drive faster. An hour later, he arrived at a house. All the lights were on. 'If no one _____ (sleep) the situation must be serious.'

A woman opened a front door immediately. 'Thanks God, you've come, doctor,' she cried. 'It _____ (be) my daughter.' A sleepy child of about six appeared in a nightdress. Her mother said, 'I told her, "If you _____ (not go) to bed, I _____ (call) the doctor". _____ (see),' she shouted at the child. 'I've done it. Here _____ (be) the doctor!'

4. Прочитайте историю из Интернет-блога. Употребите глаголы в скобках в соответствующей форме.

Why Nurses Should Rule the World

My 5-year-old son _____ 1 (complain) of a stomach-ache for five days. When we _____ 2 (visit) a paediatrician, she _____ 3 (refer) us to a specialist working at a hospital two hours away from home.

Nurse: "These _____ 4 (be) all the contact numbers you should need."

My Son: "I _____ 5 (not want) to go there."

Nurse: "What _____ 6 (be) the matter?"

My Son: (visibly getting upset) "I _____ 7 (be) scared."

Nurse: "But you _____ 8 (be) so brave up to now! How about this: if you _____ 9 (go) to see the new doctor, I _____ 10 (give) you my phone number and you can call me if you _____ 11 (get) too upset, okay?"

The nurse _____ 12 (write) down her cell phone number on a piece of paper and added: " _____ 13 (feel) free to call if you _____ 14 (have) any problems or questions."

My son _____ 15 (be) calm all the way to the hospital and through the appointment with the specialist until we were told he _____ 16 (need) a GI endoscopy. Crying and upset, he _____ 17 (ask) me to call the nurse from the clinic.

Me: (on the phone) "I'm so sorry to bother you, I _____ 18 (know) you _____ still _____ 19 (work), but he says he will do nothing if he _____ 20 (not talk) to you."

(I put the phone on speakerphone so my son, crying on the exam table, could hear.)

Nurse: "Hey dear! What _____ 21 (be) wrong?"

My Son: (crying) "The doctor here _____ 22 (want) to give me endoscopy!"

Nurse: "There's nothing wrong with that. It _____ 23 (help) understand the problem and _____ 24 (make) your tummy better."

My Son: "But I _____ 25 (be) scared! It's going to hurt!"

Nurse: "Of course it's not going to hurt. That nice doctor _____ 26 (not hurt) you!"

My Son: "_____ you _____ 27 (have) endoscopies?"

Nurse: "Yeah kiddo, a few."

My Son: "And you came back to life?"

Nurse: "Every single time."

My Son: "Promise?"

Nurse: "Swear."

(My son _____ 28 (calm) down.)

My Son: "...Okay..."

Nurse: "See? I knew you _____ 29 (be) brave."

My Son: "Thank you! Love you!"

Nurse: (laughing) "Love you, too."

(I _____ 30 (thank) the nurse a thousand times. She _____ 31 (ask) me to call her after the procedure. Later that day, she

_____ 32 (text) us a picture of herself and her family with a 'GET WELL SOON' sign they

_____ 33 (make) for my son!)

Checklist

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

- I can speak about blood tests
- I can describe urinalysis
- I can use *Conditional Sentences: Type I*

Key Words

anemia [ə'ni:.mi.ə]
 arthritis [ɑ:'θraɪ.tɪs]
 benign [bi'nain]
 bruising ['bru:.zɪŋ]
 capacity [kə'pæsəti]
 complete blood count [kəm'pli:t blʌd kaunt]
 C-reactive protein [si ri'æk.tɪv 'prəʊ.ti:n]
 creatinine [kri'atɪni:n]
 decreased /di:'kri:st/
 erythrocyte sedimentation rate [ɪ'riθ.rəʊ.sæt
 sedi'men'teɪʃn reɪt]
 fatigue [fə'ti:g]
 fecal occult blood test ['fi:kəl ə'kʌlt blʌd test]
 hematocrit / 'himətoukri:t/
 hematuria / himə'tjʊəriə/
 hemoglobin / ,hi:mə'gləʊbɪn/
 increased /ɪn'kri:st/
 maturity [mə'tjʊə.rɪ.ti]
 percentage [pə'sen.tɪdʒ]
 procedure [prə'si:dʒə(r)]
 proteinuria | ,prəʊti:'njʊəriə|
 released [ri'li:st]
 rheumatic [ru:'mæ.tɪk]
 sample ['sæmpl]
 test tube /test tju:b/
 underlying [,ʌn.də'laɪ.ɪŋ]
 urinalysis [,jʊ(ə)rɪ'næli'sɪs]

Look back through this unit. Find other words and expressions that you think are useful and worth learning.

UNIT 4.11. IMAGING STUDIES

In this unit

- talking about X-rays and nuclear scans
- describing CT and ultrasound
- speaking about MRI
- talking about a radiographer's job
- using *Conditional Sentences: Type II*

Warm up

Do you agree with the saying? Why/Why not?

*“Effective, safe, and high quality **imaging** is **important** for much medical decision-making and can reduce unnecessary procedures.”*

Video Activity: What's the Difference Between an MRI and a CT?

<https://www.youtube.com/watch?v=aQZ8tTznQ8A>

I. Before you watch

I.1. Answer the question: “What does it stand for?”

1. X-ray
2. MRI
3. CT

(A) A new form of radiation (unknown beams).

(B) Computed tomography (a medical imaging procedure that uses computer-processed combinations of many X-ray measurements taken from different angles to produce cross-sectional (tomographic) images (virtual "slices") of specific areas of a scanned object, allowing the user to see inside the object without cutting).

(C) Magnetic resonance imaging (a test that uses powerful magnets, radio waves, and a computer to make detailed pictures of the inside of your body).

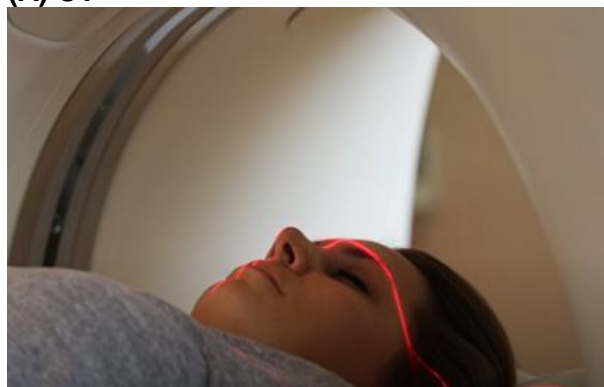
II. While you watch

Match the descriptions (1-2) with the images(A-B).

1. It images the water molecules in the body and it does that with a very strong magnetic field which is the big round cylindrical tube, that's the magnetic field in there. We would place patient's shoulder into that coil and between the radio frequency, the strong magnetic field, and the coil, which acts as an antenna. We are going to produce images of the soft tissue and the bone. A typical procedure is going to take at least 30 minutes.

2. It's an X-ray machine hooked up to a computer. CT uses a thin, pencil-thin beam to take cross-sectional images of the patient's body. The beam rotates around the patient's body and we slice the patient's body like a loaf of bread. A typical procedure is going to take 5 minutes.

(A) CT



(B) MRI



III. After you watch

Discuss your practice at the roentgenologic, radiological and ultrasound departments of the “Clinical hospital named after N. I.Semashko”.

For reference: students study traditional radiodiagnostics, bases of angiography, computerized axial tomography (CAT), interventional radiology, radionuclide and ultrasound diagnostics, magnetic resonance imaging (MRI) and bases of radiation therapy.

Reading

Diagnostic **imaging** lets doctors look inside your body for clues about a medical condition. A variety of machines and techniques can create pictures of the structures and activities inside your body. The type of imaging your doctor uses depends on your symptoms and the part of your body being examined. They include X-rays, CT scans, nuclear scans, MRI scans, ultrasound.

X-rays are a type of radiation called electromagnetic waves. X-ray imaging creates pictures of the inside of your body. The images show the parts of your body in different shades of black and white. This is because different tissues absorb different amounts of radiation. Calcium in bones absorbs x-rays the most, so bones look white. Fat and other soft tissues absorb less and look gray. Air absorbs the least, so lungs look black. The most familiar use of X-rays is checking for fractures (broken bones), but X-rays are also used in other ways. For example, chest X-rays can spot **pneumonia**. **Mammograms** use X-rays to look for **breast cancer**. When you have an X-ray, you may wear a lead apron to protect certain parts of your body. The amount of radiation you get from an X-ray is small. For example, a chest X-ray gives out a radiation dose similar to the amount of radiation you're naturally exposed to from the environment over 10 days.

Nuclear scans use radioactive substances to see structures and functions inside your body. They use a special camera that detects radioactivity. Before the test, you receive a small amount of radioactive material. You may get it as an **injection**. Sometimes you swallow it or inhale it. Then you lie still on a table while the camera makes images. Most scans take 20 to 45 minutes. Nuclear scans can help doctors **diagnose** many conditions, including cancers, injuries, and infections. They can also show how organs like your heart and lungs are working.

Magnetic resonance imaging (MRI) uses a large magnet and radio waves to look at organs and structures inside your body. Health care professionals use MRI scans to diagnose a variety of conditions, from torn **ligaments** to **tumors**. MRIs are very useful for examining the brain and **spinal cord**. During the scan, you lie on a table that slides inside a tunnel-shaped machine. Doing the scan can take a long time, and you must stay still. The scan is painless. The MRI machine makes a lot of noise. The technician may offer you earplugs.

An **ultrasound** is an imaging test that uses sound waves to create a picture (also known as a **sonogram**) of organs, tissues, and other structures inside the body. Unlike x-rays, ultrasounds don't use any radiation. An ultrasound can also show parts of the body in motion, such as a heart beating or blood flowing through blood vessels. There are two main categories of ultrasounds: **pregnancy ultrasound** and **diagnostic ultrasound**. Pregnancy ultrasound is used to look at an unborn baby. The test can provide information about a baby's growth, development, and **overall health**. Diagnostic ultrasound is used to view and provide information about other internal parts of the body.

Computed tomography (CT) is a type of imaging. It uses special X-ray equipment to make cross-sectional pictures of your body. Doctors use CT scans to look for fractures, cancers, **blood clots**, signs of heart disease, **internal bleeding**. During a CT scan, you lie still on a table. The table slowly passes through the center of a large X-ray machine. The test is painless. During some tests you receive a contrast dye, which makes parts of your body show up better in the image.

Vocabulary Practice

1. Give the definition of the words in bold.

2. Practise the pronunciation of the following words. Transcribe them:

through	
dye	
breast	
pneumonia	
contrast	
tunnel	
calcium	
variety	
techniques	
spinal	
diagnose	

3. Fill in the gaps with the following words:

pregnancy ultrasound, computed tomography, blood clot, diagnostic ultrasound, ligaments, mammograms, internal bleeding, MRI.

- _____ occurs when damage to an artery or vein allows blood to escape the circulatory system and collect inside the body.
- _____ is an imaging modality that utilizes x-ray photons for image production, with digital reconstruction.
- A _____ is a clump of blood that has changed from a liquid to a gel-like or semisolid state.
- _____ is best known for its use during pregnancy as the primary method to visualize fetuses developing in the womb.
- _____ can be further subdivided into anatomical and functional ultrasound.
- _____ is a non-invasive imaging technology that produces three dimensional detailed anatomical images.
- Regular _____ are the best tests doctors have to find breast cancer early, sometimes up to three years before it can be felt.
- _____ are similar to tendons as they are all made of connective tissue .

4. Match the two parts of the sentences:

- MRI provides more detailed information than CT because
- MRI is not approved for use in
- MRI is safer than x-rays because
- MRI allows imaging on many planes

- there is no radiation
- unlike CT
- of high contrast sensitivity
- the first three months of pregnancy

5. Complete the radiographer's instructions with the following words:

sideways, take, hold, facing, out, push, still

Please stand _____ this board. Put your hands on the back of your hips and your elbows forward. I'll help you. _____ your elbows _____. Keep _____. In a moment I'll ask you to _____ a deep breath in and hold it. Breathe in, _____ it. That's it. Fine. You can breathe out now. Thank you. I'll need to check the film. Now I'm going to take a side view. Can you stand _____ with your right side close to the machine and your arms raised?

6. Fill in this table:

Noun	Adjective
magnet	
	diagnostic
	medical
	spinal
computer	
	radioactive

7. Match the following:

diagnostic	dose
radiation	apron
lead	imaging
computed	cancer
blood	bleeding
breast	health
internal	tomography
overall	clots

LanguageDevelopment

1. Answer the following questions to the text:

1. What does the type of imaging the doctor uses depend on?

2. Why do the x-ray images show your body in different shades of white and black?

3. What is the most familiar use of x-rays?

4. Is radiation you get from x-ray dangerous?

5. What do nuclear scans show?

6. What do you receive before nuclear scanning?

7. What does MRI use to look at organs and structures inside your body?

8. Describe how MRI is taken.

9. What is a sonogram?

10. What are two main categories of ultrasound? What is the difference between them?

11. Name indications for computed tomography.

12. Describe the procedure of taking a CT scan.

2. Work in pairs. What do you think the job of a radiologist involves? How has the radiologist's work changed in the last half century?

3. Read the text:

Matthew Jenkins

My name is Matthew Jenkins and I am a radiologist at a hospital in Manchester. My function as a radiologist is to help confirm a diagnosis, exclude something important, define the extent, and monitor the progress of a disease. Most of the requests for X-rays that we receive in the department now come though electronically rather than face-to-face with a clinician.



It is therefore important that all relevant clinical information including the mechanism of the injury with the side involved, blood tests, recent radiological findings, and suspected clinical diagnosis is given on the request form. Without the benefit of being able to examine the patient, all of this detail is crucial.

Forms should also state how the investigation will help resolve the clinical problem facing the doctor and state any investigations on the request form if the doctor thinks they will take place.

Each day my schedule is full as I try to balance the needs of different departments.

4. Work in groups. Do you think the radiologist's job will become less or more complex in the future? Give reasons and examples.

Project Work

Do the project according to the theme of the unit.

Grammar in Use

Conditional Sentences: Type II and Type III

Мы используем условные предложения II типа, описывая ситуацию, которая едва ли возможна или вообще невозможна. Условные предложения II типа обычно строятся так:

if + Past Simple + would

e.g. *If she had more money, she would go to China to study acupuncture.* – **Если бы у нее было больше денег, она бы поехала в Китай изучать акупунктуру.**

Мы можем использовать **were** вместо **was** после **if** для всех лиц:

e.g. *If she were older, she would be allowed to go there.* – **Если бы она была старше, ей бы разрешили поехать туда.**

Мы используем **If I were you** или **If I were in his/her/your position** (**На моем/вашем месте**), чтобы дать совет:

e.g. *If I were you, I would specialise in paediatrics.* – **На вашем месте я бы специализировался в педиатрии.**

Мы часто используем условные предложения III типа, чтобы выразить сожаление по поводу того, что уже не может произойти. Мы строим условные предложения III типа так:

if + Past Perfect (or could have) + would have

e.g. *If I had lived in the 19th century, I would have invented antibiotics.* – **Если бы я жил в 19-м веке, я бы изобрел антибиотики.**

Какой тип условных предложений использовать?

Условные предложения I, II и III типа относятся к настоящему или будущему времени.

Условные предложения I типа реальны и возможны. Условные предложения II типа описывают ситуации, которые, возможно, и не произойдут (но все-таки **могут** произойти!).

e.g. *If I lose my job, I'll apply to some company abroad.* – **Если я потеряю работу, я буду устраиваться в какую-нибудь компанию за границей.** (Дела в моей компании плохи. Я реально могу потерять работу)

e.g. *If I lost my job, I'd apply to some company abroad.* – **Если бы я потерял работу, я бы устраивался в какую-нибудь компанию за границей.** (Все в порядке. Я размышляю.)

Условные предложения III типа относятся к прошлому. Изменить уже ничего нельзя.

e.g. *If medicine would have been more advanced in the 19th century, Pushkin might have lived for another fifty years.* – **Если бы медицина была более развитой в 19-м веке, Пушкин мог бы прожить на 50 лет дольше.**

1. Образуйте условные предложения II типа по образцу.

1. I don't know this topic. I can't help you.
If I knew this topic, I could help you.

2. She doesn't have her stethoscope. She can't examine the patient.

3. He doesn't eat balanced diet. He has stomach-ache.

4. They are not our lecturers. They can't answer our questions.

5. You don't have stomach ulcer. You don't have a burning pain in the upper abdomen, heartburn and indigestion.

6. We don't have free time. We can't attend extra classes in English.

2. Работа в парах. Спросите своего собеседника, как бы он поступил в таких ситуациях.

1. You can't give IV injections.
e.g. *What would you do if you couldn't give IV injections? I would ask Jane to show me how to do it.*

2. You are going to take part in the International Medical Congress.

3. You are the Rector of Crimean State Medical University.

4. You are the Head of the World Health Organization.

5. You can donate one million hryvnias to some charity.

6. You can speak perfect English.

7. You can choose any topic for your scientific research.

3. Прокомментируйте данные ситуации (выразите сожаление и т.п.). Употребите условные предложения III типа.

1. John ate too much birthday cake so he was sick.

If John hadn't eaten too much birthday cake, he wouldn't have been sick.

2. The patient didn't take the prescribed medicines so he didn't feel better.

3. The woman survived because the ambulance arrived immediately after the accident.

4. The surgeon performed an operation as peritonitis was diagnosed.

5. The physician didn't suspect gastritis so he didn't administer a breath test for *H. pylori* infection.

6. The physician didn't examine the abdomen carefully, so he didn't suspect internal bleeding.

4. Прочитайте предложения. Определите, описывают ли они то, что может произойти (1), то, что маловероятно, но возможно (2) или то, что невозможно (3). Подчерните глаголы, которые употреблены вместо *will/would* в главном предложении. Как они изменяют смысл предложения?

1. If you get the patient to relax, it'll be easier to carry out the procedure. (___)

2. If I had been told last week that she was ill, I could have visited her. (___)

3. If I were a physician, I could help you with your problem. (___)

4. If he had fastened his seatbelt, he mightn't have been hurt. (___)

5. If you give your child the solution in little sips, it may help stop him from bringing it up. (___)

6. I could prepare for the consultation better if I had a chance to talk to the professor again. (___)

7. If it were stomach cancer, I would expect him to be very unwell. (___)

8. You shouldn't hesitate to contact your GP immediately or come and see us if there are any changes in Jack's condition. (___)

9. Would you have entered the medical university if you had known how difficult it was to study there? (___)

5. Закончите предложения, употребив глаголы в скобках в соответствующей форме активного или пассивного залога.

1. _____ (take) this drug if you _____ (feel) any discomfort again.

2. If the patient _____ (have) gastric ulcer, the pain _____ (develop) 15-60 minutes after meals, but he is complaining of the pain on an empty stomach.

3. If he _____ (not pass) the exam on his third attempt, he _____ (expel) from the university in a week.

4. If she _____ (have) chickenpox in her childhood, she _____ (catch) it now when she's 37!

5. If I _____ (be) you, I _____ (take) extra classes in English.

6. Please, do not worry. If the diagnosis _____ (not make) by your ward doctor, Professor White _____ (invite) tomorrow.

7. If the interns _____ (examine) the patient more carefully, they _____ (could/guess) the diagnosis, but they just didn't care!

8. I just don't know what to do! If I _____ (be) in my country, I _____ (seek) help at a local clinic.

9. I _____ (not go) on holiday next weekend if I still _____ (feel) sick.

10. You are so careful and sympathetic. If you _____ (become) a doctor, you _____ (can/help) a lot of people.

11. Unfortunately, I can't help you. But if you _____ (explain) the problem to Sister, she _____ (tell) you what to do.

12. If the parents _____ (not call) an ambulance immediately, their child _____ (may/die).

13. If being a medical student _____ (not be) so difficult, I _____ (spend) more time with my friends.

14. When you examine the abdomen guarding _____ (may/reduce) if the patient _____ (persuade) to relax.

15. I don't think there's any fluid here. If fluid _____ (be) present, the dull note _____ (hear) on percussion moves.

16. If my father _____ (not/go) to work in Simferopol, he _____ (never/meet) my mother and I _____ (never/be born).

6. Прочитайте текст. Используйте условные предложения разных типов.

THE SECRET OF A LONG LIFE

Valery Amisulashvili recently celebrated his 120th birthday and reporters visited him in his mountain village in Georgia to find out a secret of a long life.

'The secret of a long life,' Valery said, 'is happiness. If you _____ 1 (be) happy, you will live a long time.' 'Are you married?' 'Yes. I married my third wife when I was 102. If you are happily married, you _____ 2 (live) forever. If I _____ 3 (not/get) married to my third wife, I _____ 4 (die) years ago.' 'What about smoking and drinking?' the reporter asked. 'Yes, they are important,' Valery said. 'Don't smoke if you _____ 5 (want) to feel well. Besides, if you _____ 6 (drink) two glasses of wine a day, you _____ 7 (be) healthy and happy.'

'If you _____ 8 (can/live) your life again, what _____ you _____ 9 (do)?' 'I would do what I have done. If I _____ 10 (have) more sense, I _____ 11 (eat) more yoghurt!' he chuckled. 'If you _____ 12 (can/change) one thing in your life, what _____ you _____ 13 (change)?' 'If I _____ 14 (know) I was going to live so long, I _____ 15 (look after) myself better!'

Checklist

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

- I can speak about X-rays and MRI
- I can describe CT, nuclear scans, ultrasound
- I can speak about a radiographer's job
- I can use *Conditional Sentences: Type II* and *Type III*

Key Words

- blood clot (blʌd klɒt)
- breast cancer (brɛst 'kænsə)
- calcium (kælsɪəm)
- cross-sectional ('krɒs sekʃnəl)
- fracture (fræktʃər)
- injection (ɪndʒekʃn)
- injury (ɪndʒəri)
- internal bleeding (ɪntɜːnl bliːdɪŋ)
- ligament (lɪgəmənt)
- magnetic resonance imaging (mæɡnetɪk rezənəns ɪmɪdʒɪŋ)
- nuclear scan (njuːkliər skæn)
- spinal cord (spɑːnl kɔːrd)
- sonogram ('səʊnə græm)
- structure (strʌktʃər)
- technician (tekniʃn)
- tumor (tʊmə)
- ultrasound (ʌltrəsʌʊnd)

Look back through this unit. Find other words and expressions that you think are useful and worth learning.

UNIT 4.12. ENDOSCOPIC METHODS AND BIOPSY

In this unit

- talking about endoscopic investigations and biopsy
- describing different types of endoscopy
- speaking about wireless capsule endoscopy

Warm up

Do you agree with the saying? Why/Why not?

*“Hearing that something might not be normal, and that you need a **biopsy** can be downright terrifying. If you need a **biopsy**, first of all, do not panic. The **biopsy** itself should be a quick, easy, pain-free procedure.”*

Video Activity: Skin Biopsy

(<https://www.youtube.com/watch?v=IB5qd4Rtsl0>)

I. Before you watch

Match the terms (1-6) with the images (A-F).

- | | | |
|--------------|----------------|-------------------|
| 1. Epidermis | 3. Hypodermis | 5. Stitches |
| 2. Dermis | 4. Skin lesion | 6. Gauze dressing |



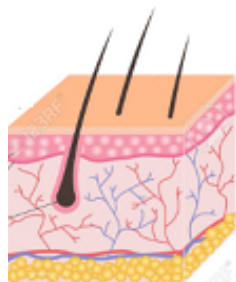
A



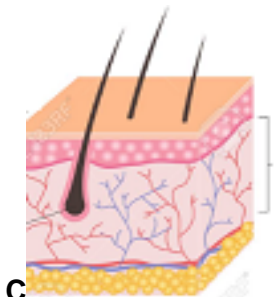
D



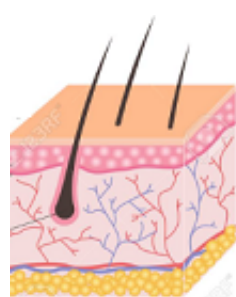
B



E



C



F

II. While you watch

II.1. Choose from (A-D) the one which best fits each space (1- 4). Write your answers.

- | | |
|------------------|-------------------|
| 1. The epidermis | 3. The hypodermis |
| 2. The dermis | 4. Skin |

(A) provides support for the epidermis and gives the skin its flexibility and strength.

(B) helps prevent most bacteria and other foreign substances from entering the body.

(C) is the largest organ of the body.

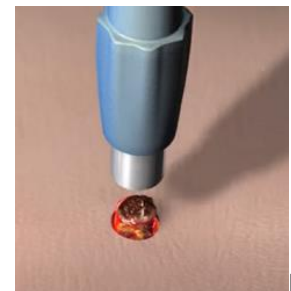
(D) is a layer of fat cells providing insulation and protective padding.

II.2. Match the procedures (1-5) with the images (A-E).

- To inject the skin with a local anesthesia to numb the area
- To use a sharp scalpel or razor blade to thinly slice or shave the top layer of the skin lesion
- To rotate a circular hollow blade around the lesion until it cuts completely through the epidermis and dermis
- To be closed with stitches
- To remove all of the area visibly affected as well as some unaffected tissue around the outside of the lesion



A



D



B

C



E

III. After you watch

Make up the dialogues before biopsy. Student A is a doctor. Student B is a patient. Get the information about the best biopsy procedure, risks, the type and location of the biopsy.

Reading

An **endoscopy** is a procedure where organs inside your body are looked at using an instrument called an **endoscope**. An endoscope is a long, thin, flexible tube that has a light and camera at one end. Images of the inside of your body are shown on a television screen.

Endoscopes can be put into the body through the mouth and down the throat, or through the bottom. An endoscope can also be put inside the body through a small cut (**incision**) made in the skin when keyhole surgery is being done.

An endoscopy can be used to investigate unusual symptoms and to help perform certain types of surgery. An endoscope can also be used to remove a small sample of tissue to be looked at more closely. This is called a **biopsy**.

An endoscopy might be recommended to investigate many symptoms, including: difficulty swallowing (**dysphagia**), tummy pain that does not go away or keeps coming back, having **diarrhoea**, or feeling or being sick often, unintentional **weight loss**, **heartburn** or **indigestion**.

If the **oesophagus**, stomach, or top part of the small intestine need to be looked at, it's known as a **gastroscopy**. If the bowel needs to be looked at, it's known as a **colonoscopy**. Other types of endoscopies used to investigate symptoms include:

- **bronchoscopy** – used to look at the airways if you have a cough that is not getting better or you're coughing up blood
- **hysteroscopy** – used to look inside the womb (uterus) if there are problems such as irregular periods or if you have more than 1 miscarriage
- **cystoscopy** – used to look inside of the bladder if there are problems like **urinary incontinence** or blood in your urine
- flexible **sigmoidoscopy** – used to look inside the lower part of the bowel
- **endoscopic ultrasound** – used to take images of internal organs, such as the pancreas, and take tissue samples
- **wireless capsule endoscopy** – involves swallowing a small capsule that has a camera and light in it, which sends pictures to a computer

An endoscopy is not usually painful, but it can be uncomfortable. Most people only have mild discomfort, similar to indigestion or a sore throat. The procedure is usually done while you're awake. You may be given a local **anaesthetic** to numb a specific area of your body. The endoscope will be carefully put into your body. Depending on the part of your body being looked at, it may be put into your mouth and down your throat, anus, urethra.

Wireless capsule endoscopy

You swallow a small capsule with a camera and light in it. The capsule sends images of the inside of your body to a computer for a doctor to look at. The capsule is the size of a large tablet and leaves your body naturally when you go to the toilet. It's often used if you have any internal bleeding and there's no obvious cause. There are some **complications** associated with wireless capsule endoscopy. It can be difficult to swallow the capsule and to pass it naturally. The capsule can also get caught in the narrow areas of your bowel, causing a blockage.

Vocabulary Practice

1. Give the definition of the words in bold.

2. Practise the pronunciation of the following words. Transcribe them:

biopsy	
hysteroscopy	
diarrhoea	
procedure	
dysphagia	
cystoscopy	
through	
discomfort	

3. Fill in the gaps with the following words:

dysphagia, biopsy, endoscopic ultrasound, cystoscopy, sigmoidoscopy, bronchoscopy, hysteroscopy, heartburn

- _____s usually performed by a doctor who specializes in lung disorders (a pulmonologist).
- You might also hear _____ called a cystourethroscopy or, more simply, a bladder scope.
- _____ means it takes more time and effort to move food or liquid from your mouth to your stomach.
- Your healthcare provider may use _____ to take a tissue sample, remove polyps or fibroid tumors, prevent bleeding by destroying tissue using electric current, freezing, heat, or chemicals.
- A _____ is a way to view the lower 20 inches of a person's sigmoid colon and rectum.
- _____ is often worse after eating, in the evening, or when lying down or bending over.
- Because _____ can get close to the organ(s) being examined, the images obtained are often more accurate and detailed than images provided by traditional ultrasound which must travel from the outside of the body.
- What type of endoscopic _____ you undergo depends on where the suspicious area is located.

4. Find the English equivalent of the following words and word combinations:

глотать	
нерегулярные менструации	
выкидыш	
мочевой пузырь	
поджелудочная железа	
небольшой дискомфорт	
гибкий	
пищевод	
недержание мочи	
тошнота	
матка	

5. Give synonyms to:

uterus	
difficulty swallowing	
incision	
cystoscopy	
food pipe	
bottom	
tummy	

6. Fill in the table:

organ	type of endoscopy
the oesophagus	
the womb	
the stomach	
the bowel	
the bladder	
the lower part of the bowel	
the pancreas	
top part of the small intestine	
airways	

Language Development

1. Answer the following questions to the text:

1. What is an endoscopy?

2. How does an endoscope look like?

3. What is an endoscopy used for?

4. What is a biopsy?

5. Enumerate symptoms an endoscopy might be recommended to investigate

6. What types of endoscopy do you know? Characterize all of them.

7. Describe the endoscopic procedure.

8. What is wireless capsule endoscopy?

9. What are complications associated with wireless capsule endoscopy?

2. Replace the underlined words and phrases with alternative words and phrases from the report:

Introduced into, transferred, premedication, pulse oximeter.

After connecting the patient to an instrument which measures levels of oxygen in the blood and pulse rate and placing him on his left side, oxygen was provided through a tube in his nose and the drug treatment prior to the procedure administered as stated. Shortly afterward, the endoscope was inserted into the oesophagus. After the examination, the patient was moved to the recovery area.

Checklist

Evaluate what you have learnt in this unit. Tick

(✓) what is right:

- I can speak about endoscopic investigations
- I can describe endoscopic procedure
- I can talk about wireless capsule endoscopy

Key Words

anaesthetic (ænisθetik)

biopsy (baɪpsi)

bronchoscopy ('brɒŋkə,skəʊpi)

colonoscopy (kə'lɒnə,skəʊpi)

complication (kɒmplɪkeɪʃn)

cystoscopy (sɪs'tɒskəpi)

diarrhoea (daɪəriə)

dysphagia (dis'feɪdʒɪə)

endoscope ('endəʊ,skəʊp)

endoscopic ultrasound
('endəʊ,skəʊpɪk ʌltrəsəʊnd)

endoscopy ('endəʊ,skəʊpi)

gastroscopy ('gæstrə,skəʊpi)

heartburn (hɑ:tbɜ:n)

hysteroscopy (hɪstərə,skəʊpi)

incision (ɪnsɪʒn)

oesophagus (i:spəfəgəs)

sigmoidoscopy (sɪg'mɔɪdə,skəʊpi)

VOCABULARY

accident and emergency (A&E) department /ˈæksɪdɪənt ənd ɪˈmɜːdʒənsɪ diːpɑːtmənt/ отделение неотложной помощи (Unit 5)
accompany /əˈkʌmpəni/ v сопровождать
ache /eɪk/ n боль (Unit 5)
achieve /əˈtʃiːv/ v достигать (Unit 2)
achievement /əˈtʃiːvmənt/ n достижение
acute /əˈkjuːt/ adj острый (о боли) (Unit 4)
admit /ədˈmɪt/ v принимать, допускать (Unit 7)
adolescent /ædəˈlesənt/ n подросток; adj юношеский, подростковый (Unit 4)
adult /ˈædʌlt, əˈdʌlt/ n взрослый человек; adj взрослый (Unit 4)
advice /ədˈvaɪs/ n совет (Unit 5)
ambulance /ˈæmbjuləns/ n машина скорой помощи (Unit 7)
apply /əˈplai/ v применять (Unit 9)
appointment /əˈpɔɪntmənt/ n договоренность о встрече; условленная встреча (Unit 5)
assess /əˈses/ v оценивать (Unit 5)
associate professor /əˈsəʊsiət prəˈfesə/ адъюнкт-профессор, доцент (Unit 2)
attend /əˈtend/ v посещать (Unit 2)
auscultation /ɔːskəlˈteɪʃən/ n аускультация (Unit 8)
available /əˈveɪləbl/ adj доступный, имеющийся в наличии (Unit 5)
background /ˈbækgraʊnd/ n происхождение, окружение (Unit 3)
bandage /ˈbændɪdʒ/ n бинт, повязка; v перевязывать, бинтовать (Unit 9)
be going /ˈgəʊɪŋ/ **to** собираться, намереваться (сделать что-л.) (Unit 1)
become /bɪˈkʌm/ v irreg становиться (Unit 1)
bioassay /baɪəˈæseɪ/ n биотест, биологический анализ (Unit 7)
bioassay laboratory /baɪəˈæseɪ ləˈbɒrətɹi/ химическая лаборатория (Unit 7)
bioethics /baɪəuˈeθɪks/ n биоэтика (Unit 5)
bleeding /ˈbliːdɪŋ/ n кровотечение (Unit 9)
blood testing /blʌdˈtestɪŋ/ исследование (анализ) крови (Unit 8)
brain /breɪn/ n мозг (Unit 9)
breathe /briːð/ v дышать (Unit 9)
bring /brɪŋ/ v irreg приносить; **bring about** вызывать, осуществлять (Unit 5)
burn /bɜːn/ n ожог (Unit 9)
campus /ˈkæmpəs/ n кампус, территория университета (Unit 1)
cancer /ˈkænsə/ n рак (заболевание) (Unit 4)
cardiac arrest /ˈkɑːdiæk əˈrest/ остановка сердечной деятельности (Unit 9)
care /keə/ n забота; v заботиться (Unit 4)
career /kəˈrɪə/ n карьера; профессия (Unit 2)
caring profession /ˈkeərɪŋ prəˈfeɪʃn/ профессия, связанная с уходом за другими людьми (например, медсестры) (Unit 1)

carry out /ˈkæri aʊt/ v проводить (Unit 10)
case history /keɪsˈhɪstəri/ история болезни (Unit 3)
cause /kɔːz/ n причина; v вызывать, быть причиной (Unit 8)
CBC (complete blood count) /kəmˈpli:t blʌd kaʊnt/ ОАК (общий анализ крови) (Unit 7)
challenging /ˈtʃælɪndʒɪŋ/ adj побуждающий к действиям, требующий напряжения сил (Unit 3)
change dressing /tʃeɪndʒɪŋˈdresɪŋ/ делать перевязку (Unit 7)
charge /tʃɑːdʒ/ n забота, попечение; **to be in charge of** отвечать за кого-л. (Unit 7)
childbirth /ˈtʃaɪldbɜːθ/ n роды (Unit 9)
choking /ˈtʃəʊkɪŋ/ n удушье (Unit 9)
choose /tʃuːz/ v irreg выбирать (Unit 2)
chronic /ˈkrɒnɪk/ adj хронический (Unit 8)
circulation /ˌsɜːkjʊˈleɪʃən/ n кровообращение (Unit 9)
citizen /ˈsɪtɪzən/ n гражданин (Unit 2)
cold /kəʊld/ n простуда (Unit 5)
commit /kəˈmɪt/ v предназначать, вверять (Unit 3)
commitment /kəˈmɪtmənt/ n приверженность, заинтересованность (Unit 3)
committed /kəˈmɪtɪd/ adj преданный (Unit 3)
common /ˈkɒmən/ adj распространенный (Unit 5)
communicate /kəˈmjʊːnɪkeɪt/ v общаться (Unit 1)
complain /kəmˈpleɪn/ v жаловаться (of – на) (Unit 8)
complaint /kəmˈpleɪnt/ n жалоба (Unit 8)
complete /kəmˈpli:t/ v завершать (Unit 2)
computed tomography (CT) /kəmˈpjʊːtɪd təˈmɒgrəfi/ компьютерная томография (КТ) (Unit 8)
confidence /ˈkɒnfɪdəns/ n уверенность в себе (Unit 5)
confirm /kənˈfɜːm/ v подтверждать (Unit 8)
consent /kɒnsənt/ n согласие (Unit 5)
control /kənˈtrəʊl/ v контролировать, купировать (Unit 4)
cough /kɒf/ n кашель (Unit 5)
cramp /kræmp/ n спазм, судорога (Unit 9)
curriculum /kəˈrɪkjʊləm/ n учебный план (Unit 2)
death /deθ/ n смерть (Unit 4)
defect /dɪˈfekt/ n порок (Unit 4)
department /diːpɑːtmənt/ n отделение (больницы); кафедра (университета) (Unit 2)
determine /dɪˈtɜːmɪn/ v определять (Unit 5)
diagnosis /daɪəgˈnəʊsɪs/ n диагноз (Unit 4)
dignity /ˈdɪgnɪti/ n достоинство (Unit 5)
discharge /dɪsˈtʃɑːdʒ/ v выписывать (из больницы) (Unit 7)

dislocation /dɪsləʊˈkeɪʃən/ *n* вывих (Unit 9)
doctor on duty /ˈdʒuːtɪ/ дежурный врач (Unit 7)
drowning /ˈdraʊnɪŋ/ *n* утопление (Unit 9)
drug chart /drʌg tʃɑːt/ список назначенных препаратов (Unit 7)
effort /ˈefət/ *n* усилие (Unit 10)
elderly /ˈeldəli/ *adj* пожилой (Unit 4)
elective course /ɪˈlektɪv kɔːs/ курс (предмет) по выбору (Unit 3)
electroencephalography (EEG)
 /ɪˌlektroʊmˌsefəˈlɒɡrəfi/
 электроэнцефалография (ЭЭГ) (Unit 8)
electrocardiography (ECG or EKG)
 /ɪˌlektroˌkɑːdiˈɒɡrəfi/ электрокардиография (ЭКГ) (Unit 7)
elevate /ˈelveɪt/ *v* поднимать (Unit 9)
emergency /ɪˈmɜːdʒənsɪ/ *n* непредвиденный случай (Unit 4)
enjoy /ɪnˈdʒɔɪ/ *v* наслаждаться (Unit 1)
enrol /ɪnˈrəʊl/ *v* записываться, регистрироваться (Unit 3)
ensure /ɪnˈʃʊə/ *v* обеспечивать (Unit 5)
enter /ˈentə/ *v* поступать (Unit 1)
entrant /ˈentrənt/ *n* абитуриент (Unit 2)
equipment /ɪˈkwɪpmənt/ *n* оборудование (Unit 9)
ethics /ˈeθɪks/ *n* этика (Unit 5)
euthanasia /juːθəˈneɪzə/ *n* эфтаназия (Unit 5)
examination /ɪɡˌzæmɪˈneɪʃən/ *n* обследование (Unit 5)
examine /ɪɡˌzæmɪn/ *v* обследовать (Unit 5)
experience /ɪkˈspɪəriəns/ *n* (жизненный) опыт; *v* испытывать (Unit 3)
expertise /ˌekspɜːˈtiːz/ *n* квалификация, компетентность (Unit 5)
Faculty of Postgraduate Training факультет последипломного образования (Unit 2)
family doctor /ˈfæmɪliˈdɒktə/ семейный врач (Unit 1)
far /fɑː/ *adj* далекий; *adv* далекий (Unit 1)
favourite /ˈfeɪvərɪt/ *adj* любимый (Unit 1)
fertilisation /ˌfɜːtɪlaɪˈzeɪʃən/ *n* оплодотворение (Unit 5)
fertility /fəˈtɪlɪti/ *n* фертильность, способность к воспроизведению потомства (Unit 5)
festive event /ˈfestɪvɪˈvent/ праздничное событие (Unit 2)
first aid /fɜːst eɪd/ первая помощь (Unit 9)
follow /ˈfɒləʊ/ *v* следовать (Unit 8)
fracture /ˈfræktʃə/ *n* перелом (Unit 9)
free (of charge) бесплатно (Unit 2)
freeze /friːz/ *v irreg* замораживать (Unit 5)
gain /geɪn/ *v* получать, приобретать (Unit 10)
general practitioner (GP) /ˈdʒenərəl prækˈtɪʃənəl/ врач общей практики (Unit 5)
genetic makeup /dʒəˈnetɪkˈmeɪkʌp/ организация генома (Unit 5)
geriatric /ˌdʒerɪˈætrɪk/ *adj* гериатрический, старческий (Unit 7)

give injection /ɪnˈdʒɛkʃən/ делать укол (Unit 7)
goal /ɡəʊl/ *n* цель (Unit 10)
graduate /ˈɡrædʒueɪt/ *v* оканчивать (вуз); /ˈɡrædʒuət/ *n* выпускник (Unit 1)
guide /ɡaɪd/ *v* вести, направлять (Unit 5)
guidelines /ˈɡaɪdlaɪnz/ *n pl.* нормативы (Unit 5)
hard /hɑːd/ *adj* твердый (Unit 10)
health /helθ/ *n* здоровье (Unit 4)
history taking /ˈhɪstəriˈteɪkɪŋ/ сбор анамнеза (Unit 8)
hospital /ˈhɒspɪtəl/ *n* больница (Unit 7)
hostel /ˈhɒstəl/ *n* общежитие (Unit 1)
imaging studies /ˈɪmɪdʒɪŋˈstʌdɪz/ инструментальные исследования с получением изображения (Unit 8)
immediate /ɪˈmiːdiət/ *adj* немедленный (Unit 4)
improve /ɪmˈpruːv/ *v* улучшать (Unit 1)
include /ɪnˈkluːd/ *v* включать в себя (Unit 2)
infant /ˈɪnfənt/ *n* младенец (Unit 4)
initial /ɪˈnɪʃəl/ *adj* первоначальный (Unit 8)
injured /ˈɪndʒəd/ *adj* травмированный
injury /ˈɪndʒəri/ *n* травма, ранение (Unit 4)
inpatient /ˈɪnpeɪʃənt/ *n* стационарный больной (Unit 7)
inspection /ɪnˈspekʃən/ *n* осмотр (Unit 8)
institution /ɪnˈstɪːtjuːʃən/ *n* организация, учреждение (Unit 7)
insurance /ɪnˈʃʊərəns/ *n* страхование (Unit 5)
intensive care unit (ICU) /ɪnˈtensɪv kɜːˈjuːnɪt/ отделение интенсивной терапии (Unit 7)
internal /ɪnˈtɜːnəl/ *adj* внутренний (Unit 4)
internship /ˈɪntɜːnʃɪp/ *n* интернатура (Unit 2)
investigate /ɪnˈvestɪgeɪt/ *v* исследовать (Unit 8)
investigation /ɪnˌvestɪˈɡeɪʃən/ *n* исследование (Unit 7)
involve /ɪnˈvɒlv/ *v* вовлекать, включать (Unit 8)
issue /ˈɪʃuː/ *n* предмет разговора, спорный вопрос (Unit 5)
it takes ... to do sth необходимо столько-то времени, чтобы сделать что-л. (Unit 1)
laboratory findings /ləˈbɒrətɪˈfaɪndɪŋz/ данные лабораторных исследований (Unit 8)
life-saving technique /ˈlaɪf seɪvɪŋ tekˈniːk/ прием по спасению жизни (Unit 9)
life-threatening /ˈlaɪf.θretənɪŋ/ *adj* опасный для жизни (Unit 5)
look after /lʊkˈɑːftə/ *v* ухаживать (Unit 1)
lung /lʌŋ/ *n* легкое (Unit 9)
magnetic resonance imaging (MRI)
 /mæɡˈnetɪkˈrezənənsˈɪmɪdʒɪŋ/ магнитно-резонансная томография (МРТ) (Unit 8)
maintain /meɪnˈteɪn/ *v* поддерживать (Unit 5)
manage /ˈmænɪdʒ/ *v* управлять; удаваться
management /ˈmænɪdʒmənt/ *n* управление; ведение (*больного*) (Unit 4)
master /ˈmɑːstə/ *v* осваивать, овладевать
medical history /ˈmedɪkəlˈhɪstəri/ история болезни (Unit 3)

meet the requirements /rɪˈkwaɪəmənts/ отвечать требованиям (Unit 5)
memorise /ˈmeməraɪz/ v запоминать (Unit 2)
National Health Service (NHS) /ˈnæʃənəl ˈhelθ ˈsɜːvɪs/ Государственная служба здравоохранения (Unit 5)
near /nɪə/ prep около (Unit 1)
numerous /ˈnjuːməərəs/ adj многочисленный
nurse /nɜːs/ n медсестра (Unit 5)
observation /ˌɒbzəˈveɪʃən/ n наблюдение (Unit 3)
observe /əbˈzɜːv/ v наблюдать (Unit 3)
obstetrics /ɒbˈstetɪks/ n акушерство (Unit 2)
outdated /aʊtˈdeɪtɪd/ adj несовременный (Unit 5)
out-of-date /ˌaʊtəvˈdeɪt/ adj несовременный (Unit 5)
outpatient /ˈaʊtpeɪʃənt/ n амбулаторный больной (Unit 7)
overcome /əʊvəˈkʌm/ v irreg преодолевать (Unit 1)
paediatrician /ˌpeɪdiəˈtriʃən/ n педиатр (Unit 1)
pain /peɪn/ n боль (Unit 5)
palpation /pəlˈpeɪʃən/ n пальпация (Unit 8)
particular /pəˈtɪkjʊlə/ adj особенный (Unit 4)
patient /ˈpeɪʃənt/ n больной (Unit 1)
patient record /ˈpeɪʃənt ˈrekɔːd/ карточка (записи) больного (Unit 7)
percussion /pəˈkʌʃən/ n перкуссия (Unit 8)
physical examination /ˈfɪzɪkəl ɪgˌzæmɪˈneɪʃən/ физикальное обследование (Unit 8)
physician /fɪˈzɪʃən/ n врач, терапевт (Unit 1)
poisoning /ˈpɔɪzənɪŋ/ n отравление (Unit 9)
postgraduate /pəʊstˈgrædʒuət/ n выпускник вуза (Unit 2)
practice /ˈpræktɪs/ n практика (Unit 5)
prepare /prɪˈpeə/ v готовить (Unit 1)
prescribe /prɪˈskraɪb/ v прописывать (Unit 5)
prescription /prɪˈskɪpʃən/ n рецепт (Unit 5)
present /prɪˈzent/ v представлять (Unit 7)
preserve /prɪˈzɜːv/ v сохранять (Unit 5)
pressure /ˈpreʃə/ n давление (Unit 9)
prevent /prɪˈvent/ v предотвращать (Unit 4)
prevention /prɪˈvenʃən/ n профилактика (Unit 4)
primary /ˈpraɪməri/ adj первичный (Unit 4)
procedure /prəˈsiːdʒə/ n процедура (Unit 7)
probing /ˈprəʊbɪŋ/ n зондирование (Unit 10)
protect /prəˈtekt/ v защищать (Unit 5)
provide /prəˈvaɪd/ v обеспечивать (Unit 4)
pulse rate /pʌls reɪt/ частота пульса (Unit 7)
radiography (X-ray) /ˌreɪdɪˈɒgrəfi/ рентгенологическое исследование (Unit 8)
reduce /rɪˈdjuːs/ v снижать (Unit 4)
refer /rɪˈfɜː/ v обращаться, направлять (Unit 5)
referral /rɪˈfɜːrəl/ n обращение (Unit 5)
refresher courses /rɪˈfrefə ˈkɔːsɪz/ курсы повышения квалификации (Unit 2)
register /ˈredʒɪstə/ v регистрироваться (Unit 5)
remove sutures /rɪˈmuːv ˈsuːtʃəz/ снимать швы

render /ˈrendə/ v оказывать (Unit 9)
rent a room снимать комнату (Unit 1)
reproductive /ˌriːprəˈdʌktɪv/ adj репродуктивный (Unit 4)
require /rɪˈkwaɪə/ v требовать (Unit 5)
requirement /rɪˈkwaɪəmənt/ n требование (Unit 5)
residency /ˈrezɪdənsɪ/ n ординатура (Unit 3)
responsibility /rɪˈspɒnsəbɪləti/ n ответственность (Unit 3)
responsible /rɪˈspɒnsəbəl/ adj ответственный (Unit 3)
revise /rɪˈvaɪz/ v повторять (*material*) (Unit 2)
scratch /skrætʃ/ n царапина (Unit 9)
shock /ʃɒk/ n шок (Unit 9)
sign /saɪn/ n знак; симптом (Unit 8)
skill /skɪl/ n умение, навык (Unit 2)
socialise /ˈsəʊʃəlaɪz/ v общаться (Unit 1)
soft /sɔft/ adj мягкий (Unit 10)
specimen /ˈspesɪmɪn/ n образец (Unit 7)
sprain /spreɪn/ n растяжение (Unit 9)
staff /stɑːf/ n персонал (Unit 7)
stroke /strəʊk/ n инсульт (Unit 9)
subject /ˈsʌbdʒekt/ n учебный предмет (Unit 1)
substance abuse /ˈsʌbstəns əˈbjuːs/ злоупотребление (Unit 4)
succeed /səkˈsiːd/ v добиваться успеха (Unit 3)
supervise /ˈsjuːpəvaɪz/ v наблюдать (Unit 7)
supply /səˈplaɪ/ v снабжать (Unit 5)
surgeon /ˈsɜːdʒən/ n хирург (Unit 1)
surgery /ˈsɜːdʒəri/ n хирургия (Unit 5)
suspect /səˈspekt/ v подозревать (Unit 8)
swelling /ˈswelɪŋ/ n отек (Unit 9)
symptom /ˈsɪmptəm/ n симптом (Unit 5)
temporary /ˈtempərəri/ adj временный (Unit 5)
terminally ill /ˈtɜːmɪnəlɪ ɪl/ смертельно больной (Unit 5)
tissue /ˈtɪʃjuː, ˈtɪʃuː/ n биол. ткань (Unit 10)
transplant surgery /trænˈsplɑːnt ˈsɜːdʒəri/ трансплантология (Unit 5)
treat /tri:t/ v лечить (Unit 4)
treatment /ˈtriːtmənt/ n лечение (Unit 4)
tuition fee /ˈtjuː ˈfiː/ плата за обучение (Unit 2)
tumour /ˈtjuːmə/ n опухоль (Unit 4)
ultrasound /ˌʌltrəsaʊnd/ n ультразвук (Unit 7)
ultrasound investigation /ˌʌltrəsaʊnd ɪnˌvestɪˈgeɪʃən/ ультразвуковое исследование (Unit 8)
up-to-date /ˌʌptəˈdeɪt/ adj современный (Unit 5)
urgent /ˈɜːdʒənt/ adj срочный (Unit 5)
urine testing /ˈjʊərɪn ˈtestɪŋ/ анализ мочи (Unit 8)
victim /ˈvɪktɪm/ n жертва (Unit 9)
violate /ˈvaɪəleɪt/ v нарушать (Unit 6)
vomit /ˈvɒmɪt/ v рвать (Unit 9)
ward /wɔːd/ n палата (Unit 7)
ward round /wɔːd raʊnd/ обход палат (Unit 7)