

Class 12

Topic: The Respiratory System

Grammar: Passive Voice: Simple Tenses

	<i>Present Simple</i>	<i>Past Simple</i>	<i>Future Simple</i>
Утвердительная форма	I am asked	I (he, she, it) <i>was asked</i>	I (he, she, it, we, you, they) <i>will be asked</i>
	He (she, it) <i>is asked</i>		
	We (you, they) are asked	We (you, they) <i>were asked</i>	
Вопросительная форма	<i>Am I asked?</i>	Was I (he, she, it) <i>asked?</i>	Will I (he, she, it, we, you, they) <i>be asked</i>
	<i>Is he (she, it) asked?</i>		
	Are we (you, they) asked?	<i>Were you (we, they) asked?</i>	
Отрицательная форма	<i>I am not asked</i>	I (he, she, it) <i>was not asked</i>	I (he, she, it, we, you, they) <i>will not be asked</i>
	He (she, it) <i>is not asked</i>		
	We (you, they) <i>are not asked</i>	We (you, they) <i>were not asked</i>	

Note: В английском языке существует группа глаголов, например: *explain something to somebody, translate something to somebody, dictate something to somebody, describe something to somebody, etc.*, с которыми в страдательном залоге возможна только одна конструкция:

The task was explained to him yesterday.

В русском языке данное предложение соответствует двум:

1. Задание было объявлено ему вчера. 2. Ему объявили задание вчера.

Task 1. Put the verbs given in brackets into Past Simple Passive Voice:

- 1 The patient (to ask) about his complaints yesterday.
- 2 The lecture in Chemistry (to deliver) last Monday.
- 3 The visceral muscles (to show) on the screen.
- 4 The patients (to examine) by the physician yesterday.
- 5 The lectures on Anatomy (to deliver) by prominent doctors.
- 6 The research papers (to write) by the medical students.
- 7 The textbooks (to recommend) to the medical students by their professors.
- 8 The exams (to take) by all the medical students at the end of each semester.
- 9 All the rules and words (to revise) before the test.
- 10 A scientific report (to make) by the researchers based on their findings.

Task 2. Use the verbs in brackets in the appropriate form (Past Simple Active or Passive) to complete the sentences.

- 1 Questions (to ask) after the lecture yesterday.
- 2 Students (to ask) questions after the lecture yesterday.
- 3 This drug (to prescribe) to the patient a week ago.
- 4 The doctor (to prescribe) this drug to the patient a week ago.
- 5 Many people (to treat) in this hospital last year.
- 6 Yesterday the surgeons (to use) the device to shatter (раздробить) urinary stones.
- 7 The new device (to enable) doctors to avoid surgery.
- 8 The lecture (to listen) to with great attention.
- 9 Everybody (to listen) to the lecture with great attention.
- 10 Clinical trials (to conduct) at our laboratory.

Task 3. Answer the questions, using a passive construction.

Follow the given example:

Where was your article published? (in the latest collection of papers)

It was published in the latest collection of papers.

- 1 Why was the suggestion thought over? (because it was reasonable)
- 2 When was the drug administered for the last time? (yesterday evening)
- 3 How often was the medication taken by the patient? (twice daily)
- 4 Where were these tests done? (at our university laboratory)
- 5 Who was the idea suggested by? (the monitor of our class)
- 6 What surgery was canceled yesterday? (thoracic surgery)

Task 4. Ask special questions: Begin your questions with question-words suggested: His article was published last month (What? When?)

What was published last month? When was his article published?

- 1 The results of the blood test were handed over to the doctor yesterday. (What results? When?)
- 2 The speaker was asked a lot of questions at the last conference. (Who? When? How many?)
- 3 The patients with this abnormality were treated last month. (Who? When?)
- 4 Notes of the lectures were taken to memorize new information. (What? What information?)
- 5 He was taken to hospital by the ambulance as he was injured. (Who? Where? Why?)
- 6 The article was published. (When? Where? Who ... by?)
- 7 Questions on the given topic were discussed at the last seminar. (What? When?)
- 8 Reports and presentations were made by the first year students. (What? Who ... by?)
- 9 The first book on human anatomy was written by Andreas Vesalius. (What? Who ... by?)
- 10 Grammar mistakes were corrected by the Latin teacher. (What? Who ... by?)
- 11 The problem was solved. (Who ... by? When? How?)
- 12 The idea was suggested. (Who ... by? When?)

Vocabulary & Speaking

Task 5. a) Study the following nouns:

mediastinum – средостение

exchange – обмен

passage – проход
capacity – емкость, объем

border – граница, край
respiration – дыхание

b) Study the following adjectives:

respiratory – дыхательный
pulmonary – легочный

visceral – внутренний
subserous – подсерозный

c) Study the following verbs:

to transfer – передавать, перемещать
to enable – разрешать, давать
возможность что-л. сделать,
облегчать

to transmit – передавать
to compress – сжимать, подвергать
сжатию

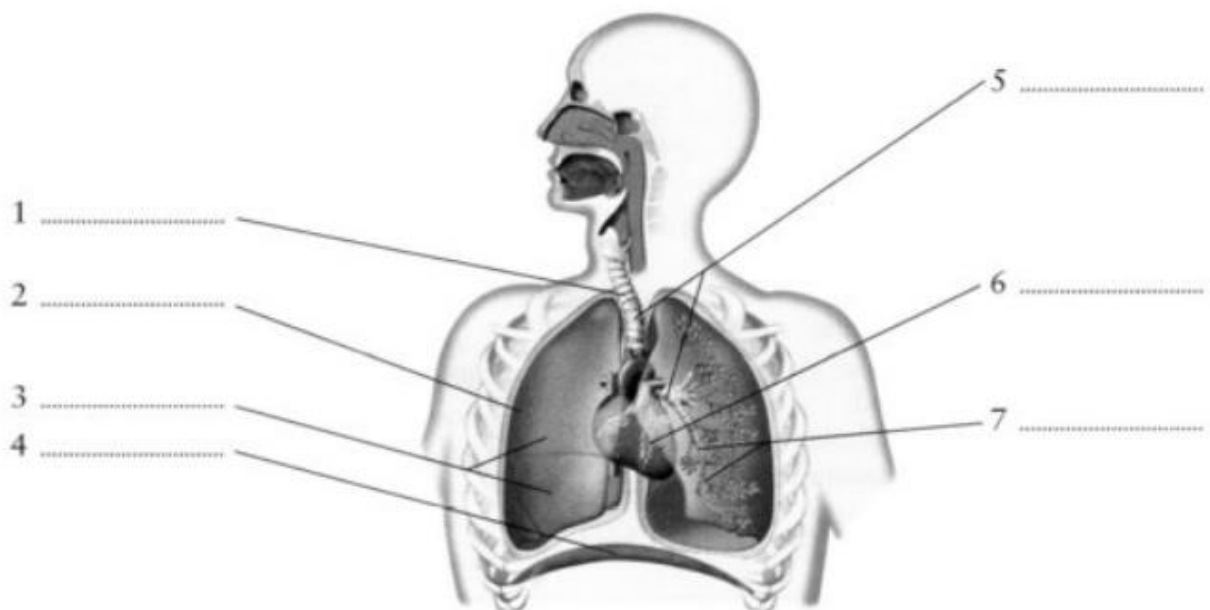
Task 5. Label the diagram using words from the box.

diaphragm
lung

lobes
airways

windpipe
bronchioles

heart



Task 6. Read and translate the following text:

The Respiratory System

The function of the respiratory system is to provide exchange of gases in the human body. It takes oxygen from the atmosphere, transfers it to the bloodstream and eliminates carbon dioxide from the bloodstream into the atmosphere.

The lungs are located on both sides of the heart within the chest. Each lung has the base, apex, two borders and three surfaces. They are conical in shape. The lungs are separated from each other by the mediastinum.

The structure of the lung consists of an external serous coat, the visceral layer of the pleura, the subserous elastic tissue and the parenchyma or proper substance of the lungs.

A great number of alveoli and capillaries in the lungs enable the exchange of gases between the alveolar air and the blood. Elastic fibres of connective tissue composing the walls of the alveoli, alveolar passages and the pleura make it possible for the lungs to dilate.

Respiration is controlled by the cerebral cortex. When the blood accumulates carbon dioxide, the respiratory centre becomes excited. It transmits impulses through the spinal cord to the respiratory muscles. They contract and elevate the ribs. The capacity of the thoracic cavity increases, the pressure in the lungs decreases, and the air enters the lungs.

When the respiratory centre is inhibited, the transmission of impulses to the respiratory muscle weakens. The muscles relax and the diaphragm rises. The ribs go down and the capacity of the thorax decreases. The lungs become compressed, the pressure in them rises, and the air goes out.

An adult at rest makes 16-20 respiratory movements per minute; children make up to 60 movements per minute. Physical exertion and some diseases cause accelerated respiration. Sleep slows down respiration.

Task 7. Complete the sentences. Use one term only:

the mediastinum, weakens, accelerated respiration, oxygen, enters, the chest, carbon dioxide, to dilate, the cerebral cortex, the muscles

- 1 Respiration is controlled by
- 2 The lungs are located within
- 3 Physical exertion causes
- 4 ... relax and the diaphragm rises.
- 5 The pressure in the lungs decreases, and the air ... the lungs.
- 6 The transmission of impulses to the respiratory muscle ... when the respiratory centre is inhibited.
- 7 Lungs are separated by
- 8 The respiratory system transfers ... to the bloodstream.
- 9 The respiratory centre becomes excited when the blood accumulates ...,
- 10 Elastic fibres of connective tissue enable the lungs

Task 8. Find English equivalents of the following words and phrases:

Органы дыхательной системы; быть расположенным по обе стороны от сердца; переносить кислород в кровоток; вершина, две границы и три поверхности; иметь коническую форму; выводить углекислый газ из кровотока; быть разделенным средостением; внешняя серозная оболочка; висцеральный слой плевры; подсерозная эластичная ткань; собственное вещество легких; стенки альвеол; обеспечить обмен газов; волокна соединительной ткани; емкость грудной клетки возрастает; позволяет легким расширяться; диафрагма поднимается; передача импульсов; учащенное дыхание; легкие сжимаются.

Task 9. Choose the most appropriate term and complete the sentences:

- 1 The lungs are surrounded by the pulmonary ... (membranes/pleurae/parenchyma)
- 2 The function of the lungs is to extract ... from the atmosphere and transfer it into the bloodstream. (carbon dioxide/ oxygen/hydrogen)
- 3 The pleurae are two serous ... (membranes/pleurae/parenchyma)

- 4 The respiratory centre is located in the (spinal cord/medulla oblongata/cerebral cortex)
- 5 The ... is the proper substance of the lungs. (membranes/pleurae/parenchyma)
- 6 The lungs are separated from each other by the (septum/mediastinum/pleurae)
- 7 The specific stimulus of the respiratory centre is (carbon dioxide/oxygen/hydrogen)

Task 10. Say if the following is true or false. Provide the correct information.

- 1 The lungs are spherical in shape.
- 2 The cerebral cortex controls respiration.
- 3 The lungs are separated from each other by the septum.
- 4 Each lung has three borders and four surfaces.
- 5 The respiratory centre is excited when the blood accumulates carbon dioxide.
- 6 Carbon dioxide is transferred from the lungs into the bloodstream.
- 7 Nerve impulses are transmitted through the spinal cord to the respiratory muscles.
- 8 The respiratory center is controlled by the medulla oblongata.

Home Assignment:

Task 11. Answer the questions and speak about the respiratory system:

- 1 Where are the lungs located?
- 2 What are the lungs surrounded by?
- 3 What is each lung composed of?
- 4 What are the lungs separated from each other by?
- 5 What is the structure of the lung?
- 6 What is the function of the lungs?
- 7 What enables the lungs to dilate?
- 8 What is the mechanism of respiration controlled by?
- 9 Where is the respiratory centre located?
- 10 How are impulses transmitted to the respiratory muscles?
- 11 What is accompanied by a slowing of respiration?
- 12 What are the average respiratory movements in adults/children?

Task 12. Choose the most appropriate answer to the following questions:

- 1 Who does the heart make 60-72 beats per minute in?
 - a) in a healthy infant;
 - b) in a healthy adult.
- 2 What is called atrial systole?
 - a) the first phase of short contraction of both atria;
 - b) the second phase of a more prolonged contraction of both ventricles.
- 3 Where does the left ventricle discharge the blood?
 - a) to the lungs through the pulmonary arteries;
 - b) to the systemic circulation through the aorta.
- 4 What vessels do the contractions of the heart pump blood to all organs through?

- a) the veins;
- b) the arteries.

5 When does the rate of heartbeat increase?

- a) at rest
- b) in an emotional states.

6 When is the period of rest of the cardiac muscle shorter?

- a) during greater physical exertion;
- b) when the body is at rest.

7 What is called the diastole?

- a) the first phase of short contraction of both atria;
- b) the period of rest of the cardiac muscle.

8 What is the role of the ventricles?

- a) they act as receiving chambers;
- b) they serve as the main pump.