

Class 7

Topic: The Muscles

Grammar: Past Simple Active

Task 1. Open the brackets and make the following sentences negative and interrogative:

- 1 The doctor (to tell) us an interesting case from his practice.
- 2 The doctors (to use) these drugs to treat such cases a decade ago.
- 3 He (score) the top mark in the English test.
- 4 He (to come) to see me off last week.
- 5 I (to get) nearly all the answers right.
- 6 The students (discuss) this problem with their tutor yesterday.
- 7 She (to ask) too many questions.
- 8 The students (to be) tired when the exams were over.
- 9 The patient (to sleep) well.
- 10 We (to be) afraid of taking the exam in Chemistry.

Task 2. Ask questions to underlined words:

- 1 In the last term we attended anatomy lectures regularly.
- 2 Yesterday he went to the library.
- 3 My sister read a lot when she was a student.
- 4 Every day he got up at 7 am, had breakfast and drove to the university.
- 5 They did a medical course 5 years ago.
- 6 She spoke English well as a child.
- 7 I saw your brother yesterday.
- 8 He entered the university a year ago.
- 9 Our lectures began at 9 am.
- 10 He came home late yesterday.
- 11 As a junior student she did a lot of humanity courses.
- 12 We had five lectures last week.
- 13 In my class all the students passed the exam.
- 14 They also lived in this city.
- 15 He did sports in his childhood.

Vocabulary & reading

Task 3. a) Study the following nouns:

| | |
|-------------|----------------------------------|
| weight | — вес; масса |
| tissue | — ткань |
| bundle | — пучок |
| tendon | — сухожилие |
| will | — воля; сила воли; желание |
| feature | — особенность, характерная черта |
| contraction | — мышечное сокращение |
| nerve fibre | — нервное волокно |

motor fiber – двигательное волокно
stapedius muscle – стремечковая (стременная) мышца

b) Study the following adjectives:

smooth – гладкий
striated – поперечно-полосатый
involuntary – непроизвольный
bound – связанный
voluntary – произвольный
complete – полный

c) Study the following verbs:

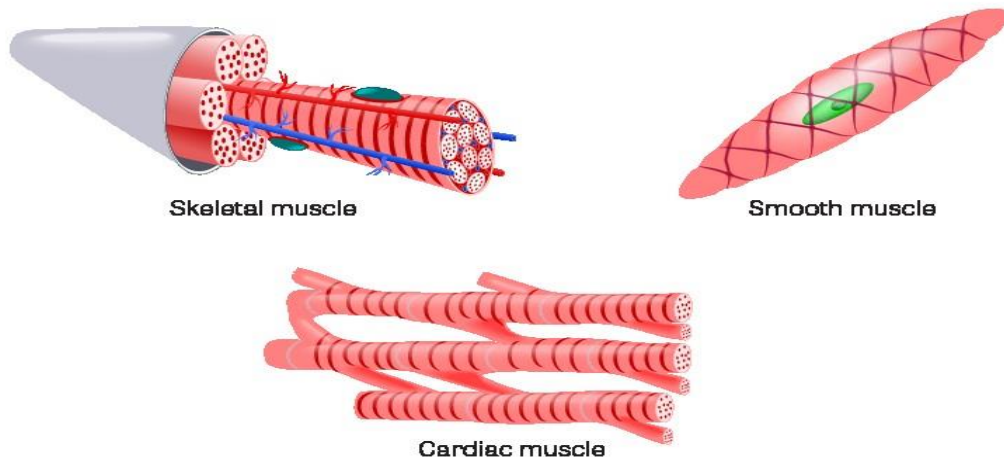
to identify – распознавать; устанавливать, определять
to contract – сокращаться
to expand – растягивать(ся), расширять(ся); увеличивать(ся) в объеме, в размерах
to respond – отвечать
to bind – связывать

Task 4. Read and translate the following text:

Types of Muscles

The muscles constitute about 50% of the total body weight. There are three main types of muscular tissue that we identify and classify on the basis of structure and functions:

- 1) smooth or visceral muscle,
- 2) striated or skeletal muscle,
- 3) cardiac muscle.



Smooth muscles can contract slowly. They make up the walls of the internal organs. The visceral muscles react slowly to changes within the body. They contract and react when they respond to certain chemicals in the blood or in response to the effect of temperature but we cannot make them move. For this reason, we call them involuntary muscles. Smooth muscle tissue consists of long cells. Smooth muscle fibres are bound into bundles by connective tissue.

Striated muscle tissue consists of large fibres in the form of bundles. There are tendons at their ends by means of which they are connected to bones. Striated muscles are most necessary for manipulation of the bones of the skeleton. They react quickly to changes in the environment and become active through an effort of will. For this reason, we call striated muscles voluntary muscles. Striated muscle is richer in blood vessels than smooth muscle.

A characteristic feature of cardiac muscle is that fibres have neither a beginning nor an end. Cardiac muscle is under complete involuntary control.

Muscles are the active part of the motor apparatus: their contractions produce various movements. Muscles have both motor and sensory nerve fibres. Impulses (signals) about the state of the muscle reach the brain along the sensory fibres. The nerve impulses which cause the muscle to contract come from the brain along the motor fibres.

Muscles are called according to their uses, for example extensors, or according to their direction, for example oblique. Some short muscles, of which stapedius is the smallest muscle in the human body, form facial musculature.

The structure of muscular fibers is different in different groups of muscles. Muscles consist of a mass of muscle cells. Muscular fibers are connected together by connective tissue. There are many blood vessels and nerves in muscles. Muscles are the active agents of motion and contraction.

Task 5. Find English equivalents of the following words and phrases:

Общий вес тела, основные типы мышечной ткани, сердечная мышца, гладкая мышца, поперечно-полосатая мышца, выстилать стенки внутренних органов, непроизвольно сокращающиеся мышцы, произвольно сокращающиеся мышцы, скелетные мышцы, мышцы внутренних органов, соединительная ткань, изменения внутри организма, в ответ на, быстро реагировать на изменения, характерная особенность, производить различные движения, образовывать лицевую мускулатуру, структура мышечных волокон.

Task 6. Fill in the gaps with the most appropriate words given below: extensors; smooth muscle; motor impulses; react; consists; contract; motion and contraction; are bound; voluntary muscles; sensory; oblique; main types; control.

- 1** There are three ... of muscular tissue.
- 2** Smooth muscle tissue ... of long cells.
- 3** We call striated muscles
- 4** Muscles have both motor and ... nerve fibres.
- 5** Visceral muscles ... slowly to changes within the body.
- 6** Smooth muscle fibres ... into bundles by connective tissue.
- 7** Muscles are the active agents of
- 8** Cardiac muscle is under involuntary....
- 9** Smooth muscles can ...slowly.
- 10** Striated muscle is richer in blood vessels than
- 11** The motor fiber is any of the fibers in a mixed nerve that transmit

- 12** Some muscles are called according to their uses, for example
- 13** Some muscles are called according to the direction of their fibres, for example

Home Assignment:

Task 7. Answer the following questions about muscles:

- 1** How many types of muscular tissue are there? What are they?
- 2** What are smooth muscles sometimes called?
- 3** What is another name of striated muscles?
- 4** What substances do visceral muscles react to?
- 5** What is the difference between cardiac and skeletal muscles?
- 6** Which muscles are richer in blood vessels, smooth muscles or striated ones?
- 7** Which muscles react quickly to the changes in the environment?
- 8** Which muscle is under complete involuntary control?
- 9** Why do we call striated muscles voluntary?
- 10** Why do we call visceral muscles involuntary muscles?
- 11** How does the information about the state of muscles reach the brain?
- 12** What nerve fibres do muscles have?
- 13** Which muscle is the smallest one in the human body? What is it used for?
- 14** What is the structure of muscles?
- 15** Why are muscles important?

***** Task 8. Build sentences using words from these two columns:***

| | | |
|-------------------------------|---------------|--|
| 1 The fibre | is/are | A the smallest muscle in the human body, forming facial musculature. |
| 2 The tendon | | B involuntary muscle tissue in the walls of viscera and blood vessels, consisting of nonstriated, spindle-shaped cells. |
| 3 A muscle | | C muscles that serve to extend or straighten a part of the body. |
| 4 Cardiac muscle | | D any of the smooth muscles, except for the cardiac muscle, not under control of the will. |
| 5 Smooth muscle | | E muscle tissue that consists of large fibres in the form of bundles. |
| 6 The stapedius muscle | | F muscle whose action is normally controlled by an individual's will. |
| 7 Visceral muscles | | G involuntary striated muscle that is found in the walls and histological foundation of the heart, specifically the myocardium. |
| 8. Extensors | | H muscles that react slowly to changes within the body. |
| 9 Striated muscle | | I a cord or band of dense, tough, inelastic, white, fibrous tissue, serving to connect a muscle with a bone or part. |
| 10 Voluntary muscles | | J a tissue composed of cells or fibers, the contraction of which produces movement in the body. |
| 11 Involuntary muscles | | K a fine, threadlike piece, as of cotton |