



Cizí jazyk – Anglický jazyk 3

VSANJ1111/B2

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The musculoskeletal System

Choose a term and explain it to your partner:

SPINE – JOINTS – SKELETON –
MUSCLE – LIGAMENT – CRANIUM –
CARTILAGE – TENDON – FASCIA –
CONNECTIVE TISSUES – BONES

The musculoskeletal System

Choose a term and explain it to your partner:

SPINE – a series of vertebrae extending from the skull to the small of the back, enclosing the spinal cord and providing support for the thorax and abdomen; the backbone.

JOINTS – a structure in the human or animal body at which two parts of the skeleton are fitted together

SKELETON – an internal or external framework of bone, cartilage, or other rigid material supporting or containing the body of an animal or plant.

MUSCLE – a band or bundle of fibrous tissue in a human or animal body that has the ability to contract, producing movement in or maintaining the position of parts of the body.

LIGAMENT – a short band of tough, flexible fibrous connective tissue which connects two bones or cartilages or holds together a joint.

CRANIUM – the skull, especially the part enclosing the brain.

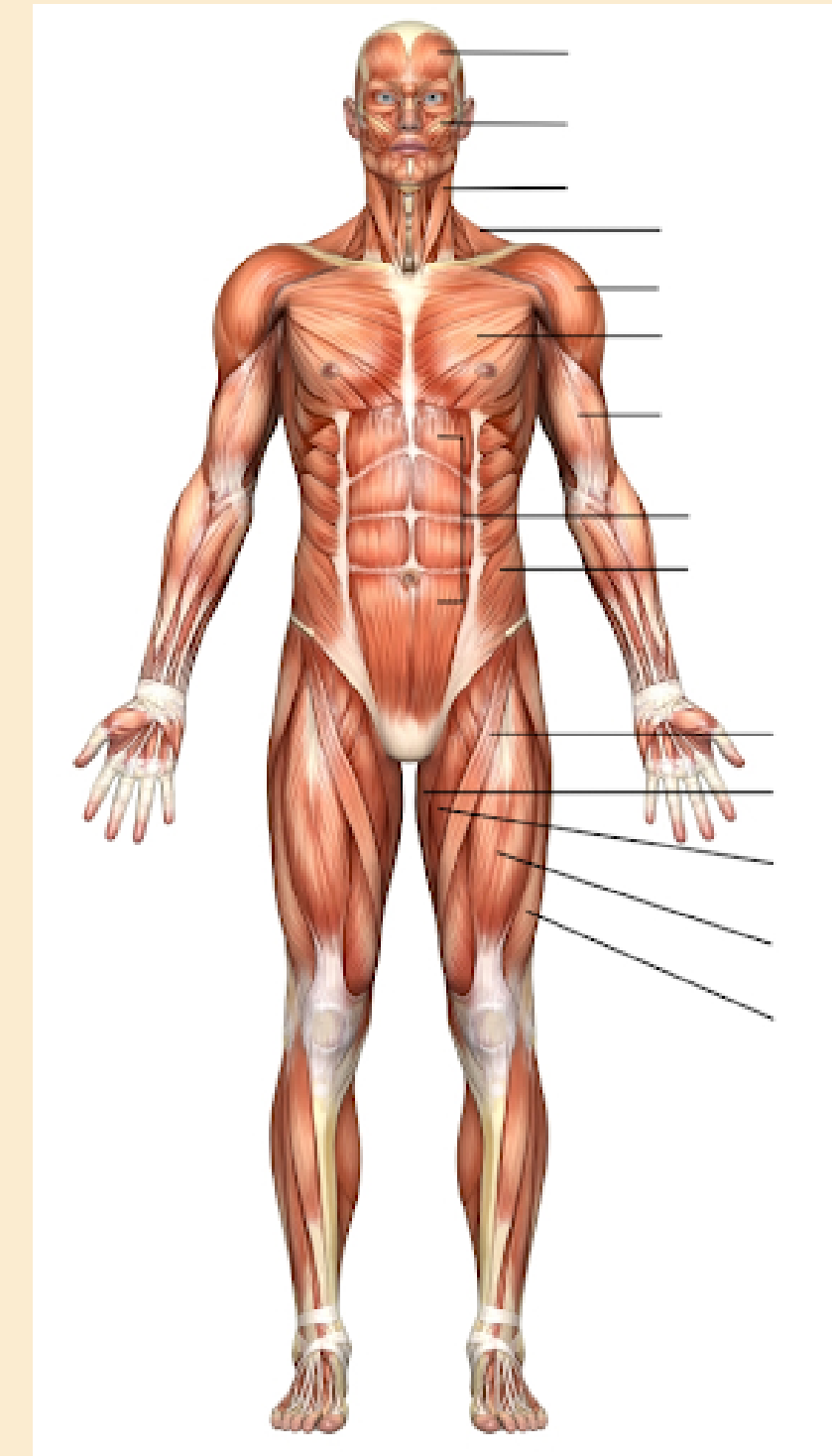
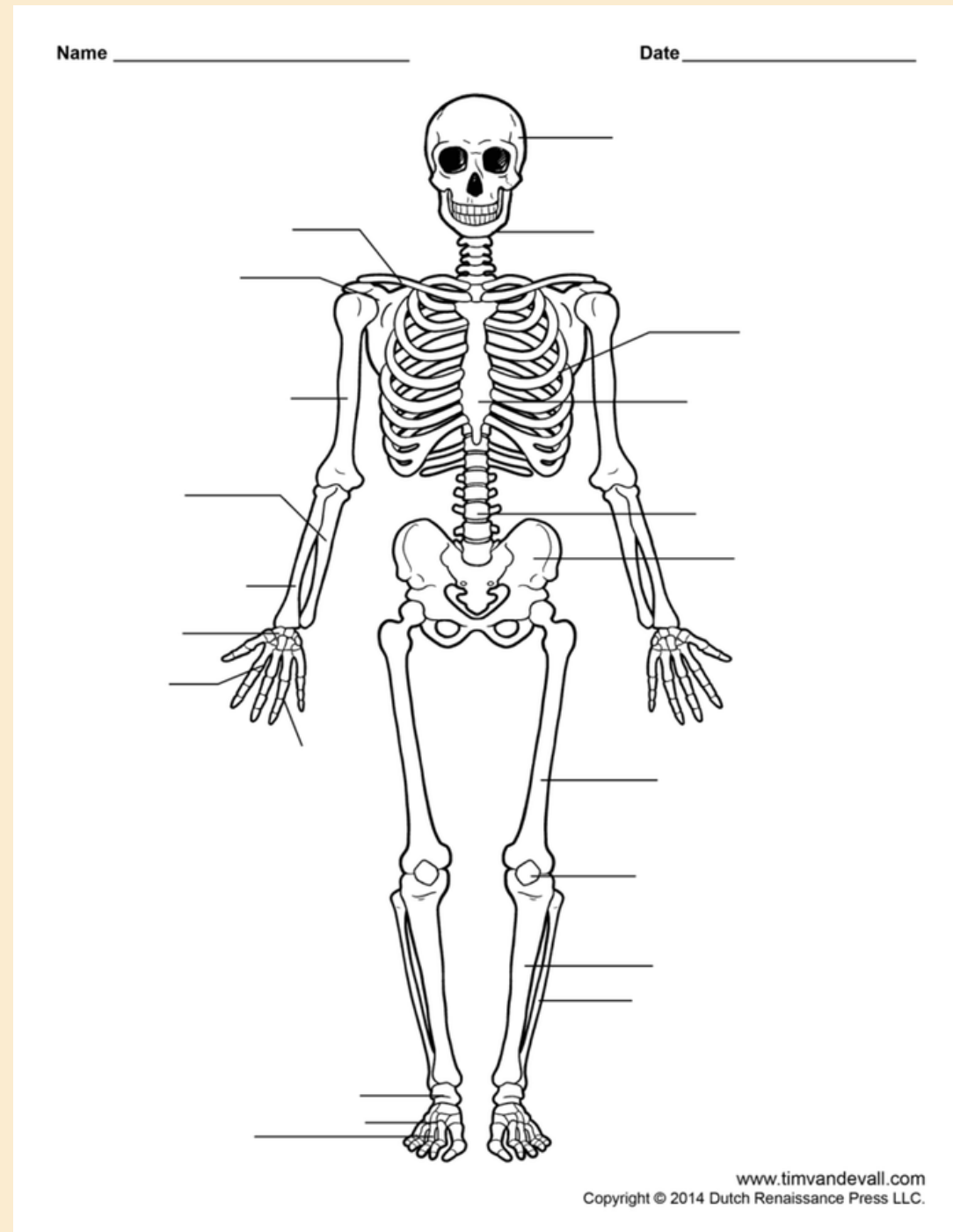
CARTILAGE – firm, flexible connective tissue found in various forms in the larynx and respiratory tract, in structures such as the external ear, and in the articulating surfaces of joints. It is more widespread in the infant skeleton, being replaced by bone during growth.

FASCIA – connective tissue that surrounds and holds every organ, blood vessel, bone, nerve fiber and muscle in place

TENDON – tissue attaching a muscle to a bone.

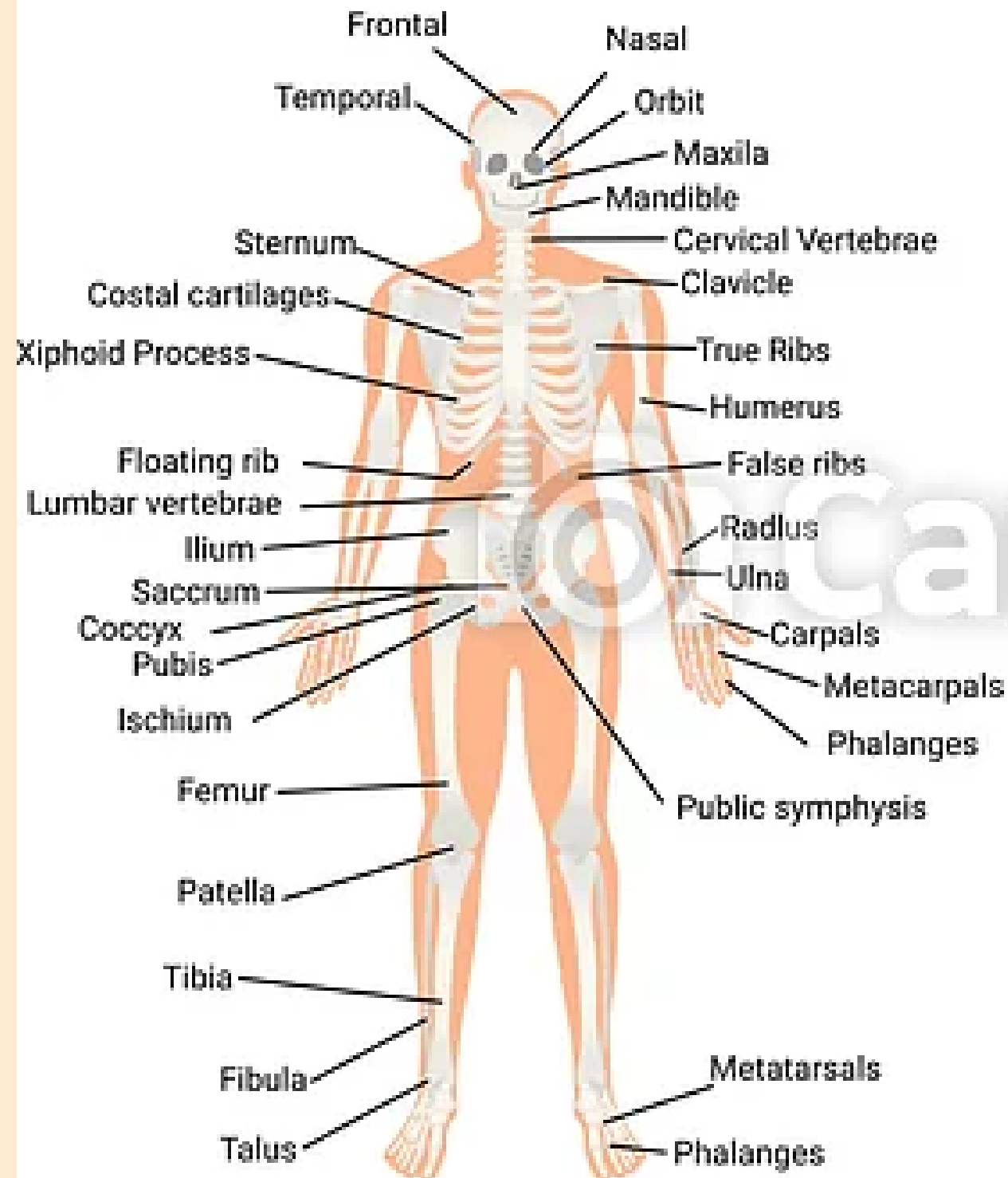
The musculoskeletal System

Try and name as many as you can :-)

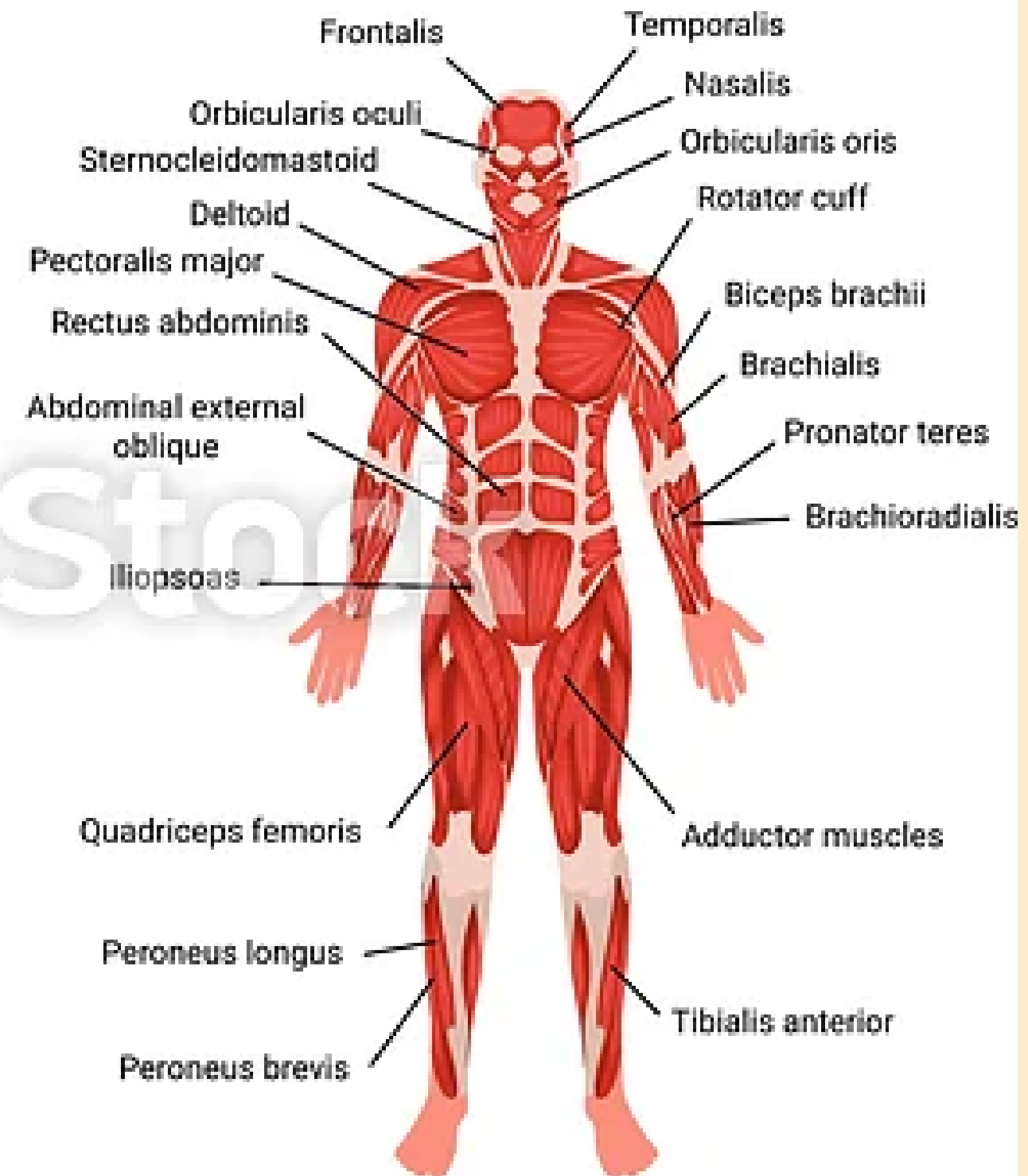


The musculoskeletal System

SKELETAL SYSTEM



MUSCULAR SYSTEM



The musculoskeletal System

Watch the video and decide if given statements are TRUE or FALSE:

1. Skeletal muscles are attached via tendons to our bones. T / F
2. The examples of smooth muscles are intestine and bladder. T / F
3. All the motions in our body are governed by muscular system. T / F
4. Buccinator is a muscle which attaches your cheek to your teeth. T / F
5. Our body contain of two types of muscle fibre - slow-twitch and fast- twitch. T / F
6. Fast-twitch muscles maintain our muscles all day and are found in our back. T / F
7. The heat is spread around the body via nerves. T / F

The musculoskeletal System

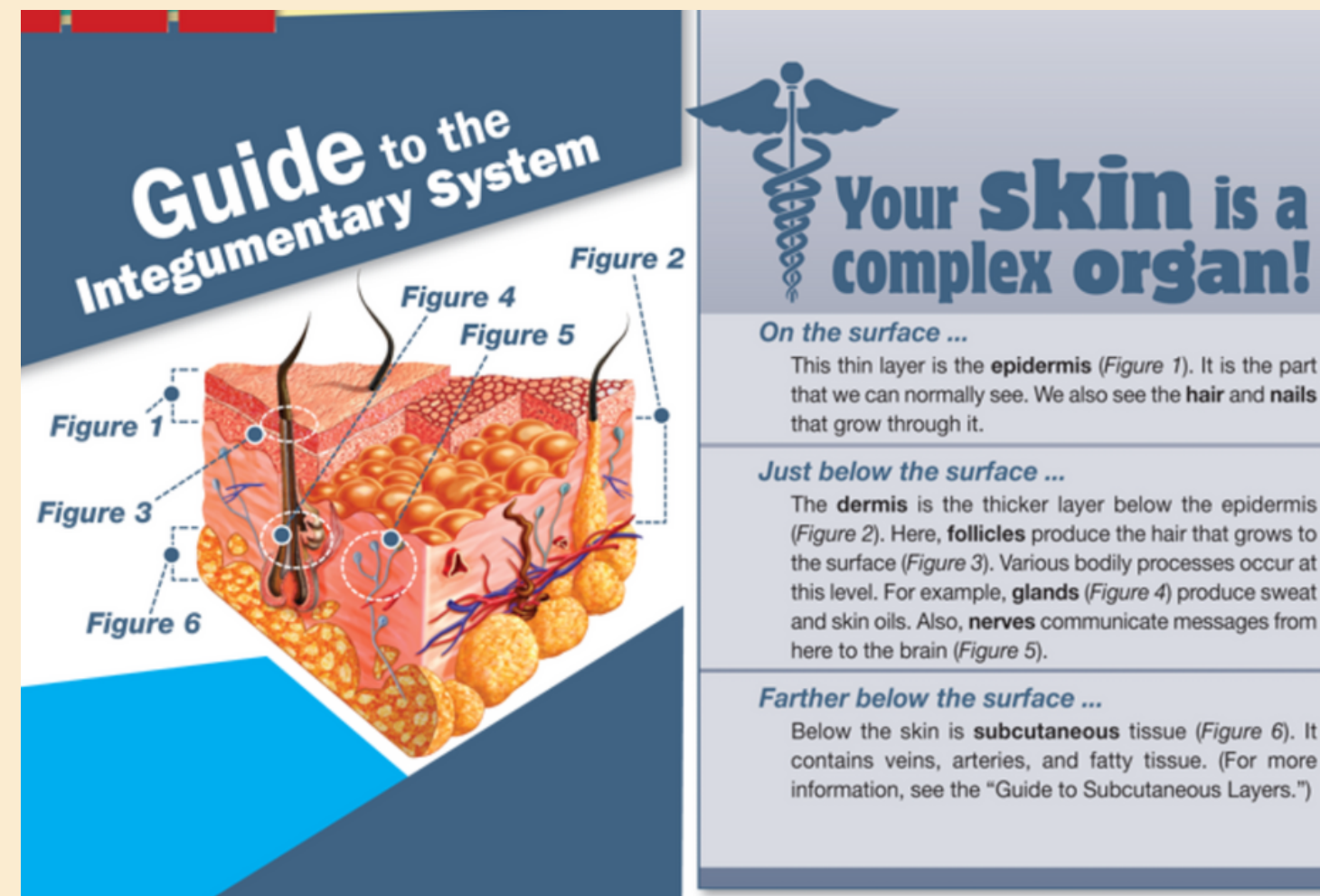
Watch the video and decide if given statements are TRUE or FALSE:

1. Skeletal muscles are attached via tendons to our bones. T / F
2. Smooth muscle can be only found in the heart. T / F (Cardiac muscle, smooth muscle - intestine, uterus)
3. All the motions in our body are governed by muscular system. T / F (sperm cells, hair-like cilia in our airways, certain white blood cells)
4. Buccinator is a muscle which attaches your cheek to your teeth. T / F
5. Our body contain of two types of muscle fibre - slow-twitch and fast- twitch. T / F
6. Fast-twitch muscles maintain our muscles all day and are found in our back. T / F
Slow-twitch muscles
7. The heat is spread around the body via nerves. T / F via heart and blood vessels

Integumentary system

Read the article and answer the questions:

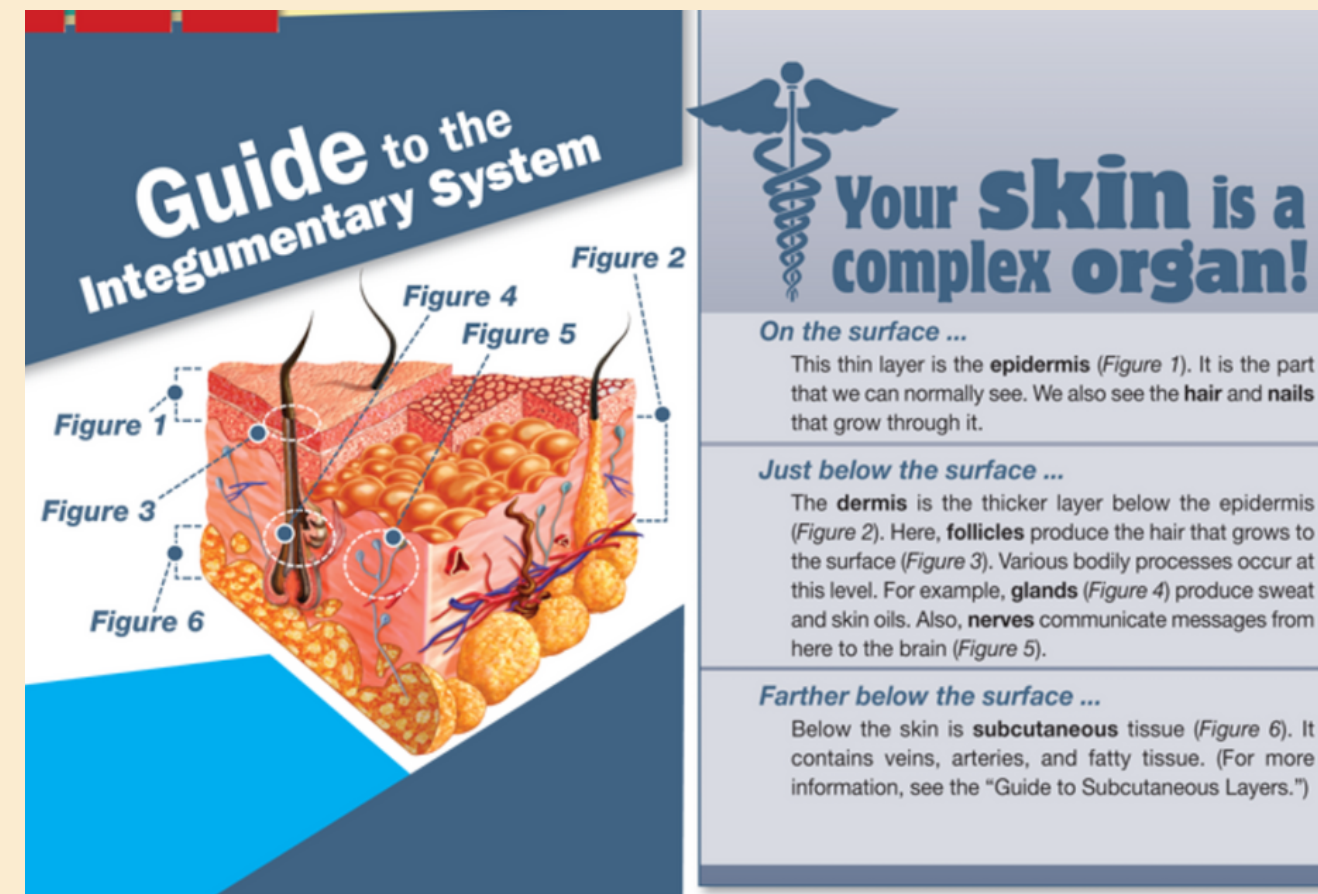
1. What are the major layers of skin?
2. What is the role of the integumentary /In'teg.jə.mən.tər.i/ system?



Integumentary system

Read the text again and decide if the statements are TRUE or FALSE.

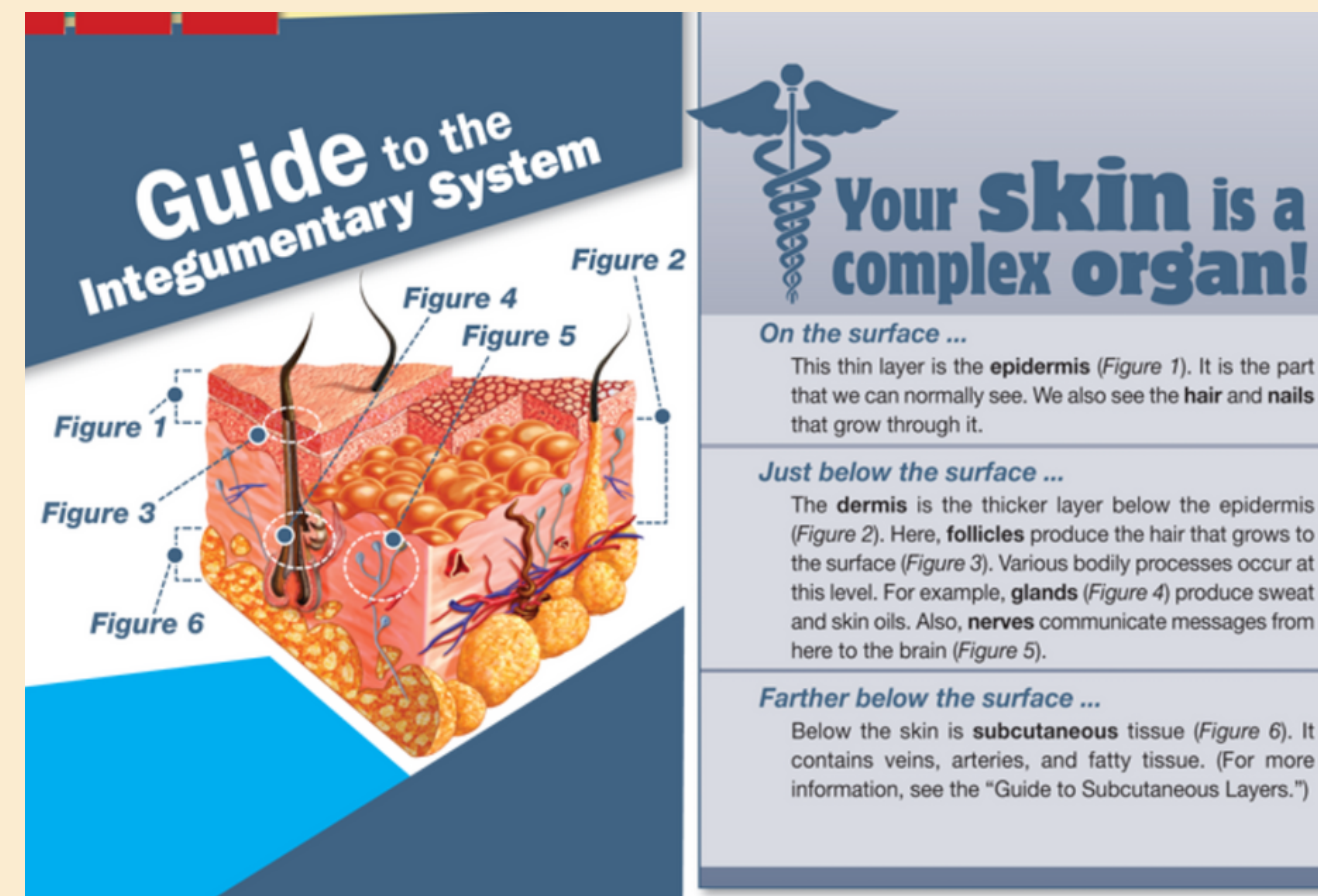
1. The poster reviews multiple layers of skin.
2. Sweat glands are present in the epidermis.
3. Subcutaneous */ˌsʌb.kjuˈteɪ.ni.əs/* tissue contains veins and arteries.



Integumentary system

Read the text again and decide if the statements are TRUE or FALSE.

1. The poster reviews multiple layers of skin. TRUE
2. Sweat glands are present in the epidermis. FALSE
3. Subcutaneous /,sʌb.kju'teɪ.ni.əs/ tissue contains veins and arteries. TRUE



Integumentary system

Match the words with the definitions:

FOLLICLE - INTEGUMENTARY SYSTEM - ORGAN - NERVE - SUBCUTANEOUS - EPIDERMIS

1. existing just beneath the skin
2. part of a system that perceives sensations and sends signals to the brain
3. an internal or external part of the body that performs a particular function
4. the network of body parts that protects the inside of the body, prevents water loss, and regulates temperature
5. a very small hole in the skin from which hair grows
6. the outer layer of skin that makes up the surface of the body
7. A(n) _____ might produce sweat, or it might produce hormones.
8. The _____ is the layer just above the subcutaneous tissue.

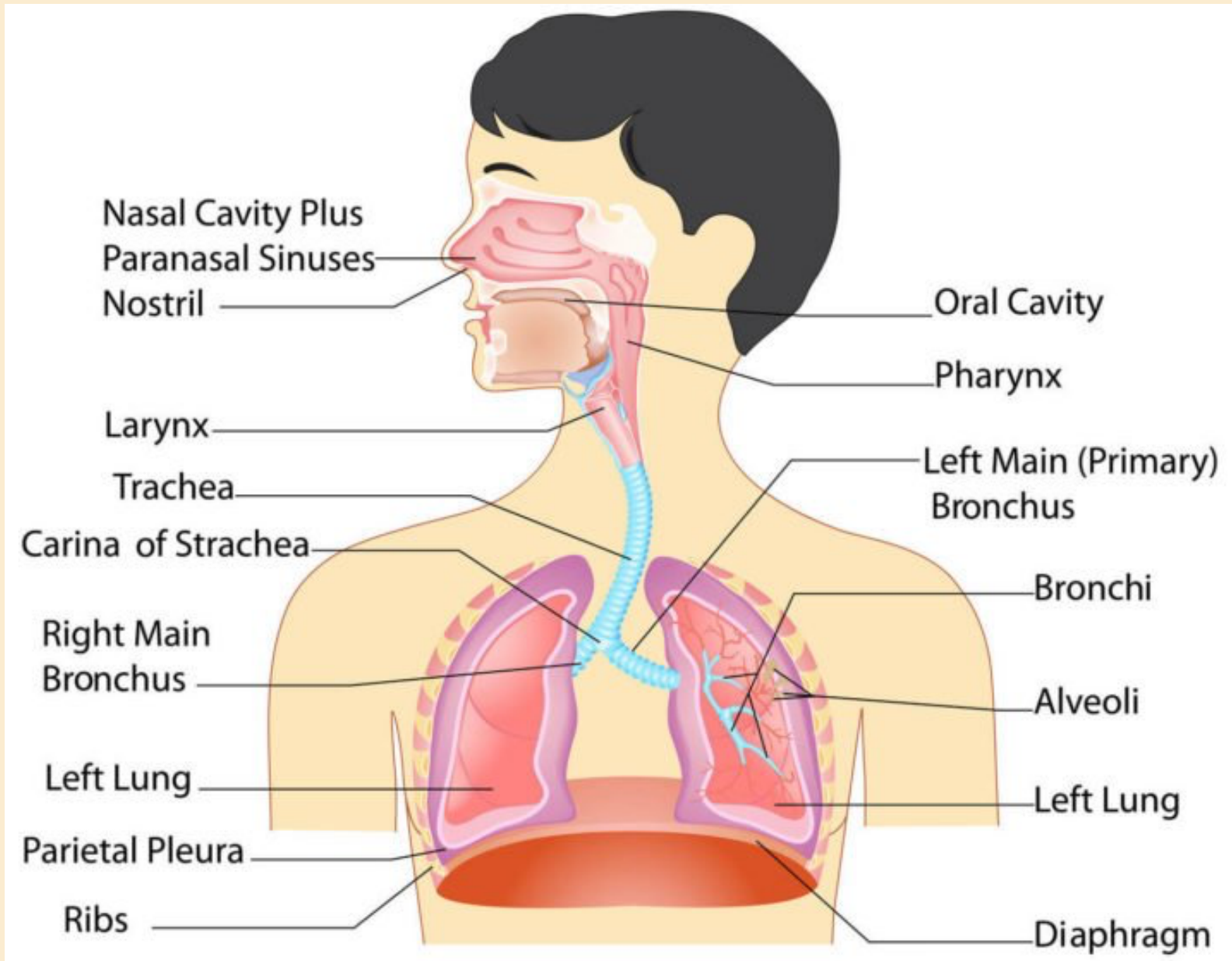
Integumentary system

Match the words with the definitions:

FOLLICLE - INTEGUMENTARY SYSTEM - ORGAN - NERVE - SUBCUTANEOUS - EPIDERMIS

1. existing just beneath the skin **SUBCUTANEOUS**
2. part of a system that perceives sensations and sends signals to the brain **NERVE**
3. an internal or external part of the body that performs a particular function **ORGAN**
4. the network of body parts that protects the inside of the body, prevents water loss, and regulates temperature **INTEGUMENTARY SYSTEM**
5. a very small hole in the skin from which hair grows **FOLLICLE**
6. the outer layer of skin that makes up the surface of the body **EPIDERMIS**
7. A(n) **GLAND** might produce sweat, or it might produce hormones.
8. The **DERMIS** is the layer just above the subcutaneous tissue.

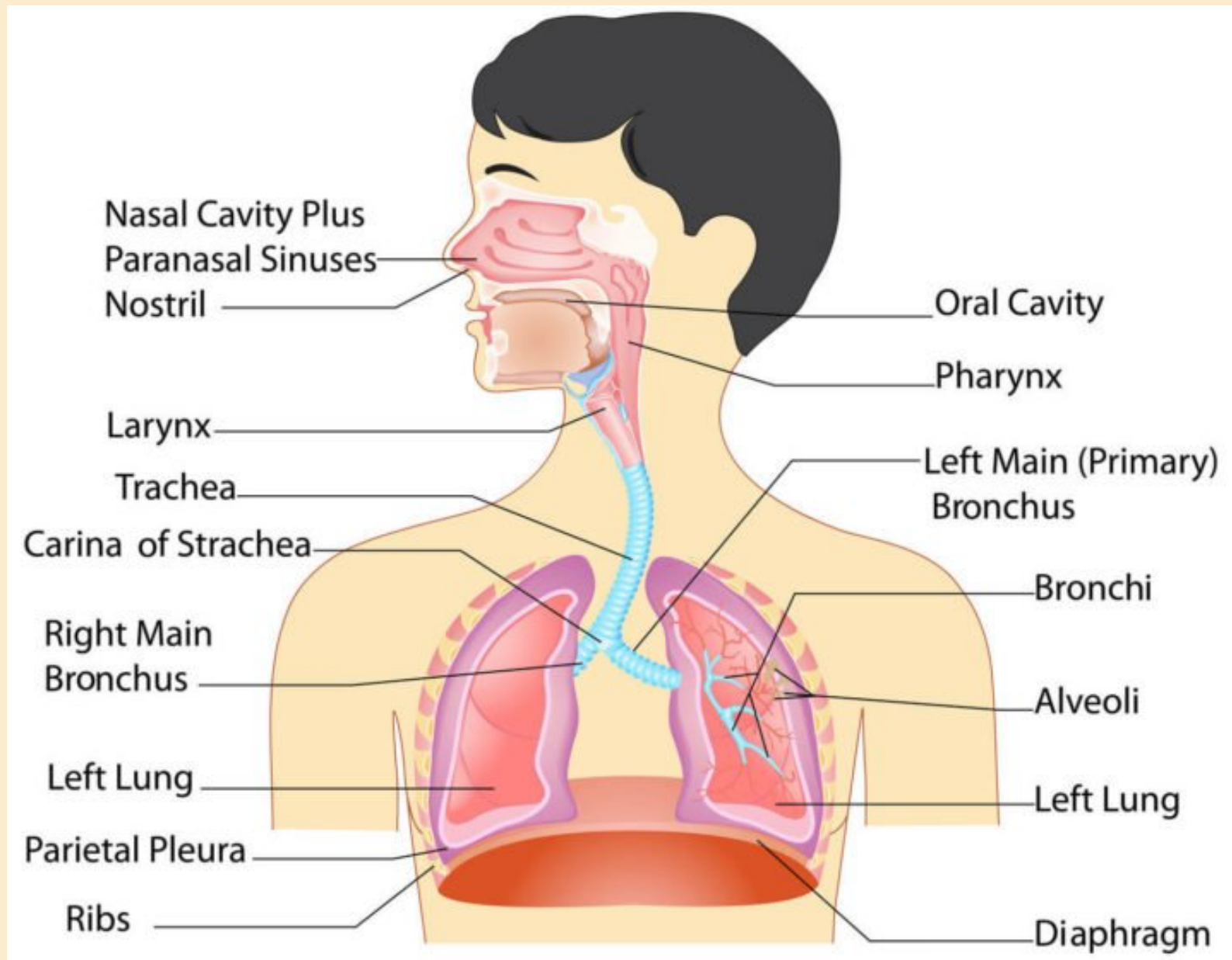
Respiratory system



1. What components make up the respiratory track?
2. How does air reach lungs?

Respiratory system

How does air reach lungs?



Respiration occurs as air enters the respiratory tract. The pharynx */ˈfær.ɪŋks/* is the opening that controls the movement of air. It consists of two main components: the oropharynx, or the opening in the mouth, and the nasopharynx */ˌneɪ.zə/*, or the opening in the nose. Once air enters the pharynx, it travels down to the larynx. This opening closes if it detects any unwanted substances in the airway. After that, the trachea */trəˈkiː.ə/* carries the air to bronchi *ˈbrɒŋ.kai/*. Then, the air enters the lungs.

Medical Emergencies ⇒ ⇒ Respiratory Conditions

Obstructions in the **respiratory tract** can quickly cause cardiac arrest and death. That's why rapid treatment for respiratory failure is so important.

Problem: *The patient cannot breathe.*

Check for obstructions in the **upper airway**. Ensure that the **tongue** is not blocking the **pharynx**. Also, foreign objects sometimes enter through the **oropharynx** or **nasopharynx**. Removal of the object will clear the respiratory passage.

Spasms of the **larynx** are another possible cause of respiratory failure. Treatment depends on the severity of the condition. (See *Treatments ⇒ Laryngospasms* for more information.)

In other cases, the problem is farther down, in the **lower airway**. Obstructions of the **trachea** or **bronchi** may require emergency surgery. (See *Treatments ⇒ Lower Airway* for more information.)



Respiratory system

Read the handbook chapter and decide if the following statements are TRUE or FALSE.

People are likely to die from obstructions in the respiratory tract. TRUE

The passage offers several treatments for laryngospasms. FALSE

Surgery is a possible treatment for lower airway obstructions. TRUE

Respiratory system

Read the poster and answer these questions:

SMOKING: KNOW THE RISKS

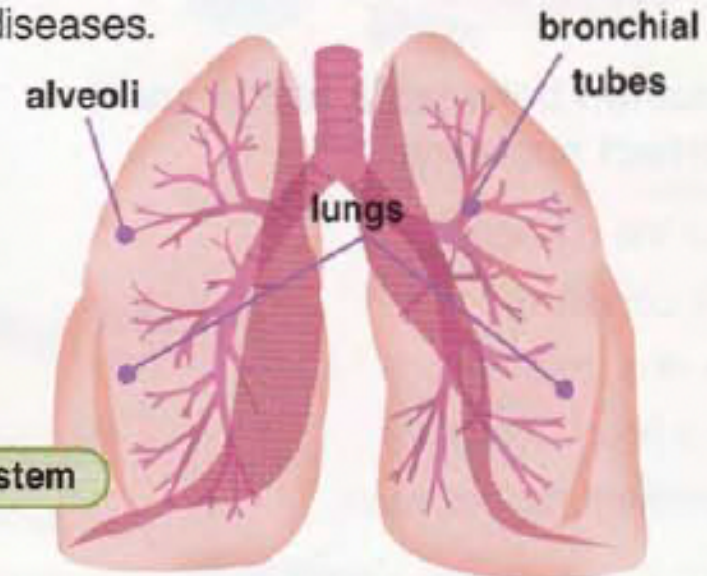
Your respiratory system is important. The **oxygen** you need gets to the lungs through the bronchial tubes. Alveoli in the lungs give oxygen passage into the bloodstream. It also removes toxic **carbon dioxide** from your body.

Smoking damages every part of this process. Smoking can lead to emphysema. This disease destroys alveoli. This impairs their function, makes breathing difficult and raises carbon dioxide levels.

Smoking may also cause lung cancer. The lungs' epithelial cells start growing uncontrollably.

Smoking can hurt the people around you, too. Research suggests inhaling second-hand smoke is a leading cause of asthma. Asthma sufferers' bronchial tubes swell, making breathing difficult.

Not smoking or quitting can decrease your chances of developing these diseases.



What is the main idea of the poster?

What adds gases to the blood?

What can you infer about emphysema?

Respiratory system

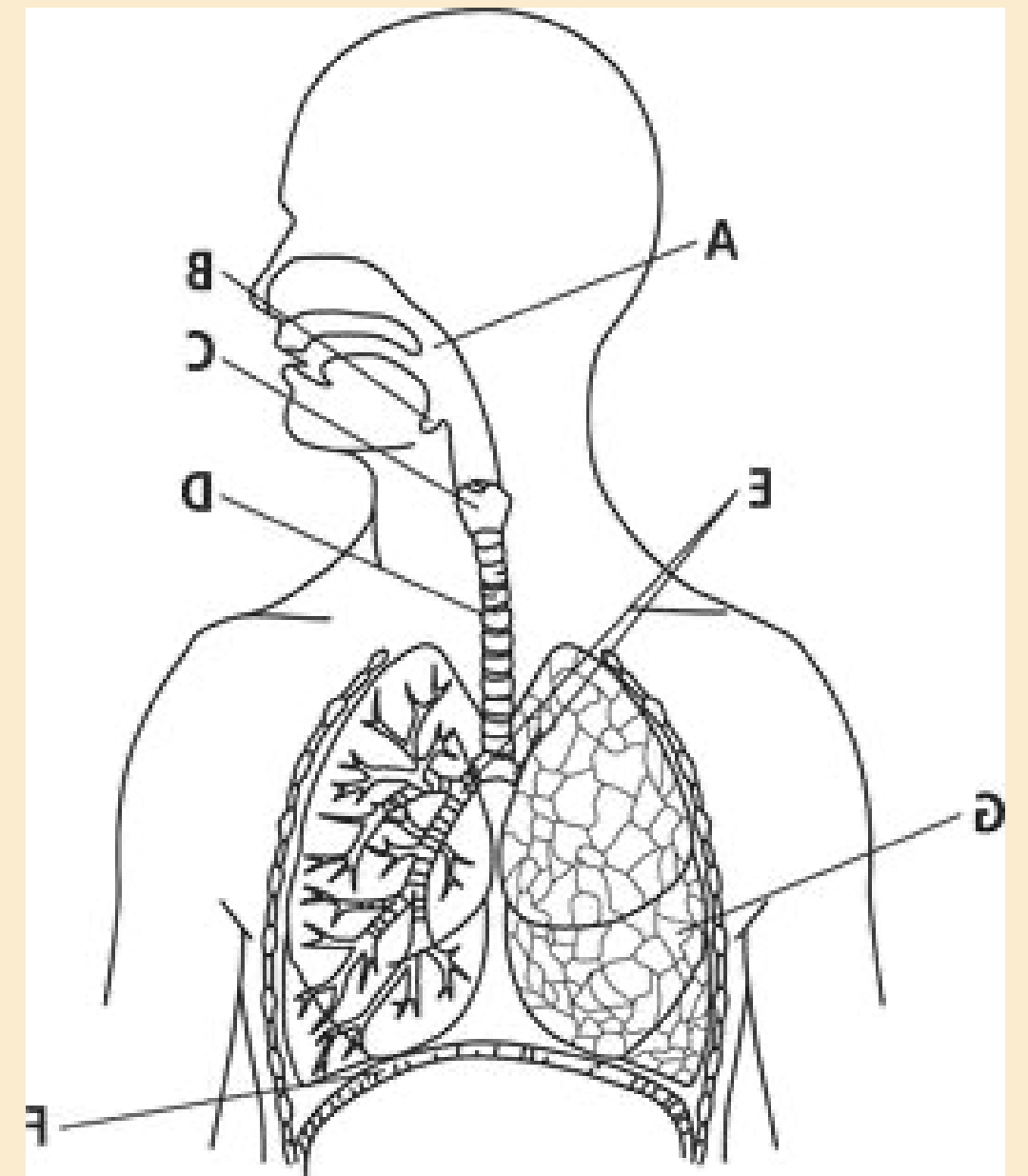
CORRECT

- 1.the part of the respiratory system contained in the lower neck and thorax LOWER AIRWAY
2. a soft, muscular structure in the mouth that is used for eating and speaking TONGUE
- 3.small tubes that carry air between the lower part of the trachea and the lungs BRONCHI
4. the system in the body that performs functions related to breathing RESPIRATORY TRACT
- 5.the part of the respiratory system contained in the head and upper neck UPPER AIRWAY
- 6.an opening in the nose where air enters and leaves the body NASOPHARYNGX
- 7.an opening in the mouth where air enters and leaves the body OROPHARYNX

Respiratory system

Can you guess the word?

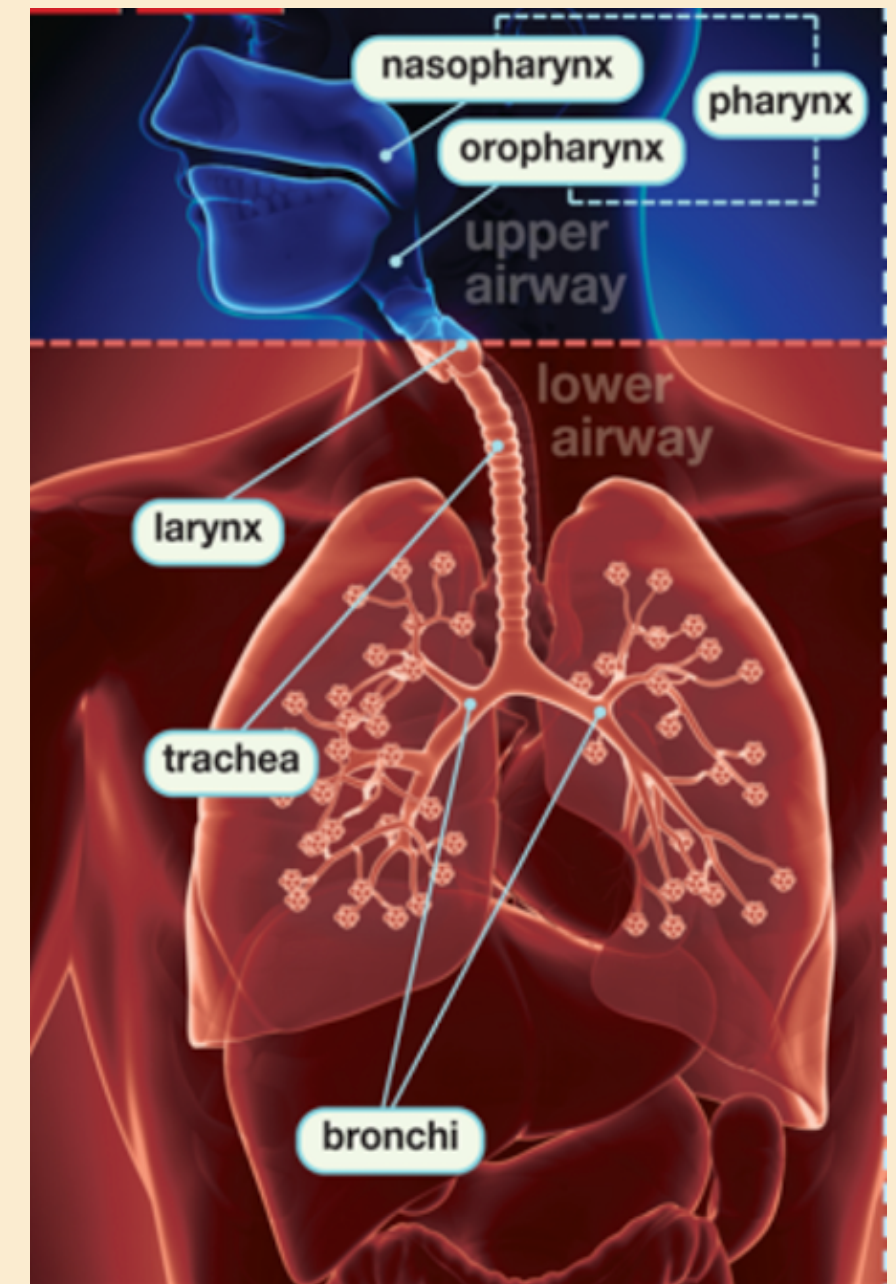
1. The PHARYNX is located in the upper throat.
2. Part of the TRACHEA is located in the thorax.
3. The closing of the LARYNX depends on the materials in the airway.
4. The lungs receive oxygen directly from BRONCHI.



Respiratory system

Can you guess the word?

The treatment for a blocked airway depends on the LOCATION and cause of the OBSTRUCTION. For instance, if there is a FOREIGN object in the PHARYNX, it simply needs to be REMOVED.



Respiratory system

Listen and write the correct word.

NURSE: Hi Mrs. Blake. I have a few QUESTIONS before the doctor sees you. Are you still SMOKING?

PATIENT: Yes, but not very much.

NURSE: Still, you need to quit. You understand the risks, don't you?

PATIENT: Of course, I know it causes LUNG CANCER AND EMPHYSEMA.

NURSE: Yes, plus people around you are at risk of developing ASTHMA.

PATIENT: I know. And I don't want my kids getting it. But quitting is really hard.

NURSE: IT also helps heal the damage to your LUNGS and bronchial tubes.

PATIENT: Well, I'll THINK ABOUT it.

Respiratory system

Create your own conversation and act it out.

USE LANGUAGE SUCH AS:

Are you still smoking?
I know it causes lung cancer.
People around you are at risk.

Student A: You are a nurse. And you're talking to a patient about smoking. Tell Student B about:

- the risks of smoking
- second-hand smoke
- the benefits of quitting

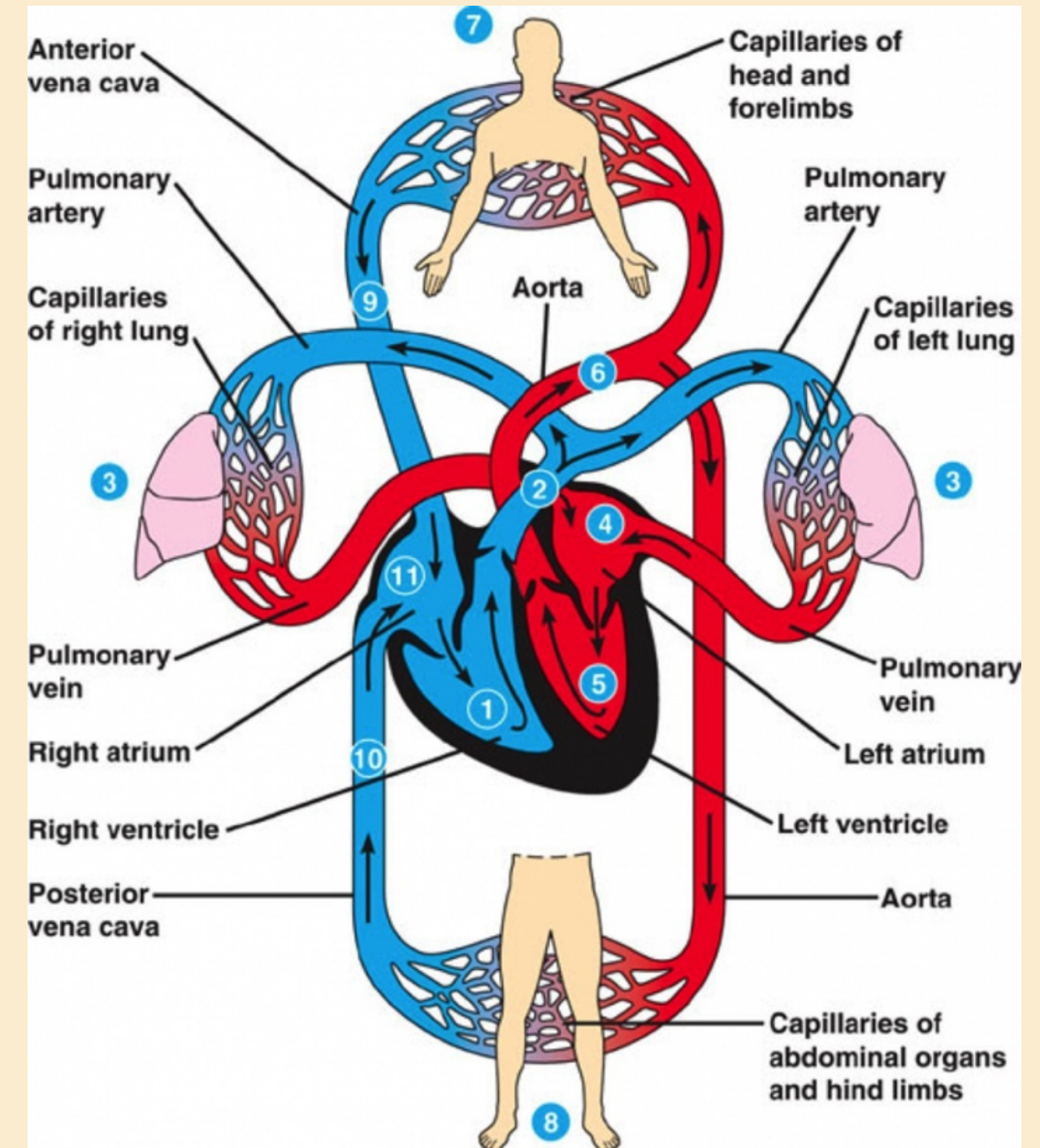
Student B: You are a patient who smokes. Answer Student A's questions.

Circulatory system

What are some parts of the cardiovascular system?

What is the correct _____ at which you should _____ chest compressions on an _____ victim of cardiac arrest?

SPEED
ADULT
PERFORM



Circulatory system

What is the correct word?

- | | |
|--|---------------------------|
| 1.the network of parts that transports vital substances throughout the body | CIRCULATORY SYSTEM |
| 2.any pathway that transports blood within the body, such as a vein | BLOOD VESSEL |
| 3.a fluid that travels throughout the body to distribute nutrients and oxygen | BLOOD |
| 4.an organ in the respiratory system that receives O ₂ and releases CO ₂ | LUNG |
| 5.a type of vessel that carries blood from the heart to the rest of the body | ARTERY |

Hi Mike,

Overall, you did well on your exam. However, you misidentified a few parts of the circulatory system.

For one, you identified veins as the that carry from the heart. Actually, carry blood to the . carry blood from the heart.

In another instance, you identified a lymph node as a organ. Actually, nodes are that distribute for the system.

Perhaps you were thinking of the .

Make sure you study those concepts before the next exam.

Professor Kim

Circulatory system

Using the words complete the email from an instructor to a student.

blood

lungs

veins

heart

arteries

respiratory

blood vessels

organs

lymph

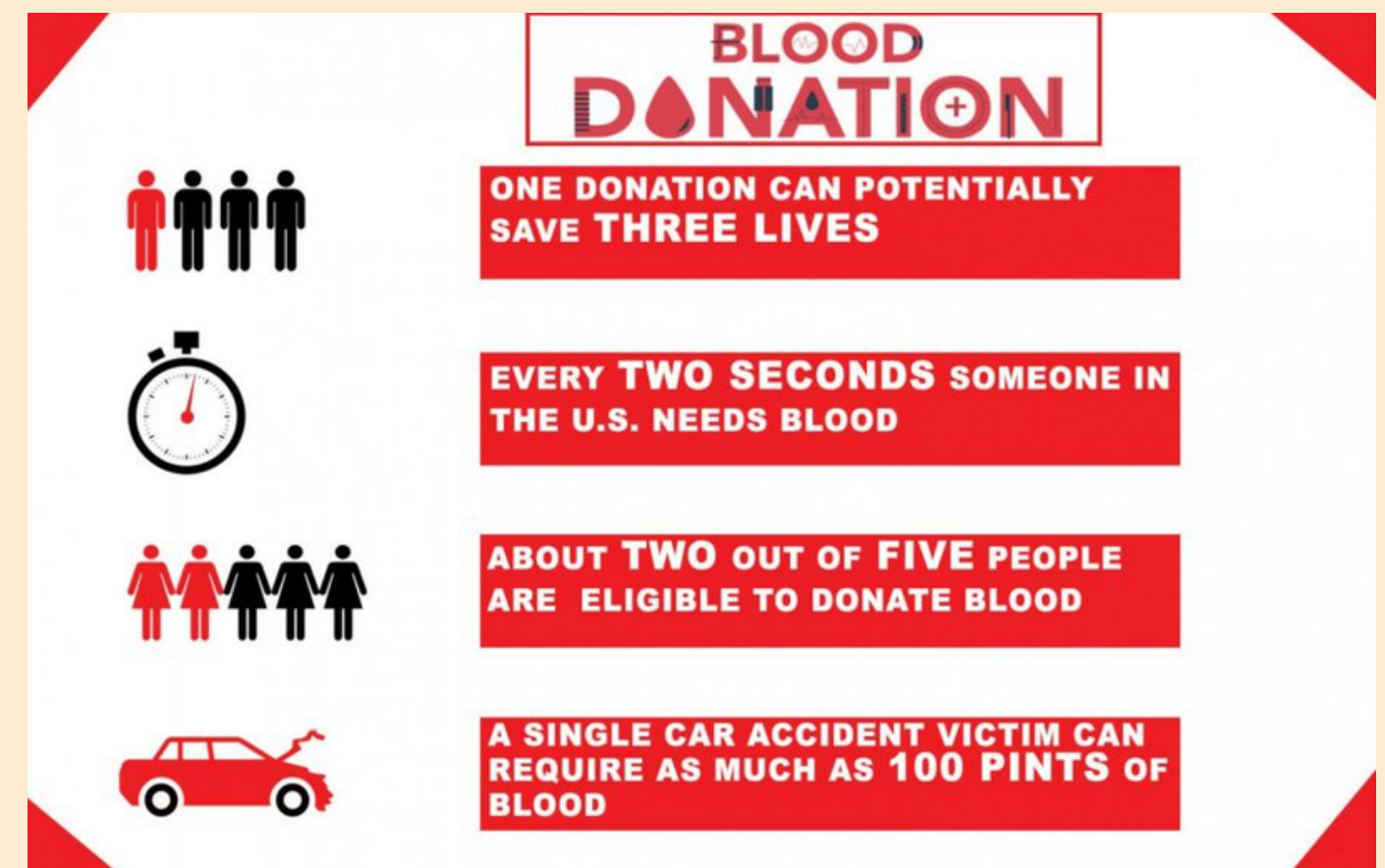
nutrients

lymphatic

Circulatory system – blood

Watch the video and answer these questions:

1. What happens to your blood after it is taken (post donation stage)? (2 steps)
2. What are the blood components and what are their functions?
3. Which of the blood components can be shipped worldwide? Why?
4. Why is donation of this component awarded financially? Why is it controversial?
5. Can the controversy be sorted out? How?



Circulatory system – blood

1. What happens with your blood straight after it is taken?

- a. taken to the lab to identify any infectious diseases + blood type, spin centrifuge = separated into three different components
- b. storing (platelets - 3 days, red blood cells - 42 days, plasma -1 year)

2. What are the blood components and what are their functions? - red blood cells, platelets, plasma

- a. red blood cells - contain hemoglobin, helps to transport oxygen and carbon to/from lungs (patients with low blood cell count - anaemia, after surgery)
- b. platelets - help blood to coagulate properly (cancer patients)
- c. plasma - liquid that shuffles cells throughout body, contains antibodies (rare chronic conditions)

3. Which of the blood components can be shipped worldwide? Why?

- a. plasma - because it can be frozen for 1 year

4. Why is the donation of this blood component awarded financially? Why is it controversial?

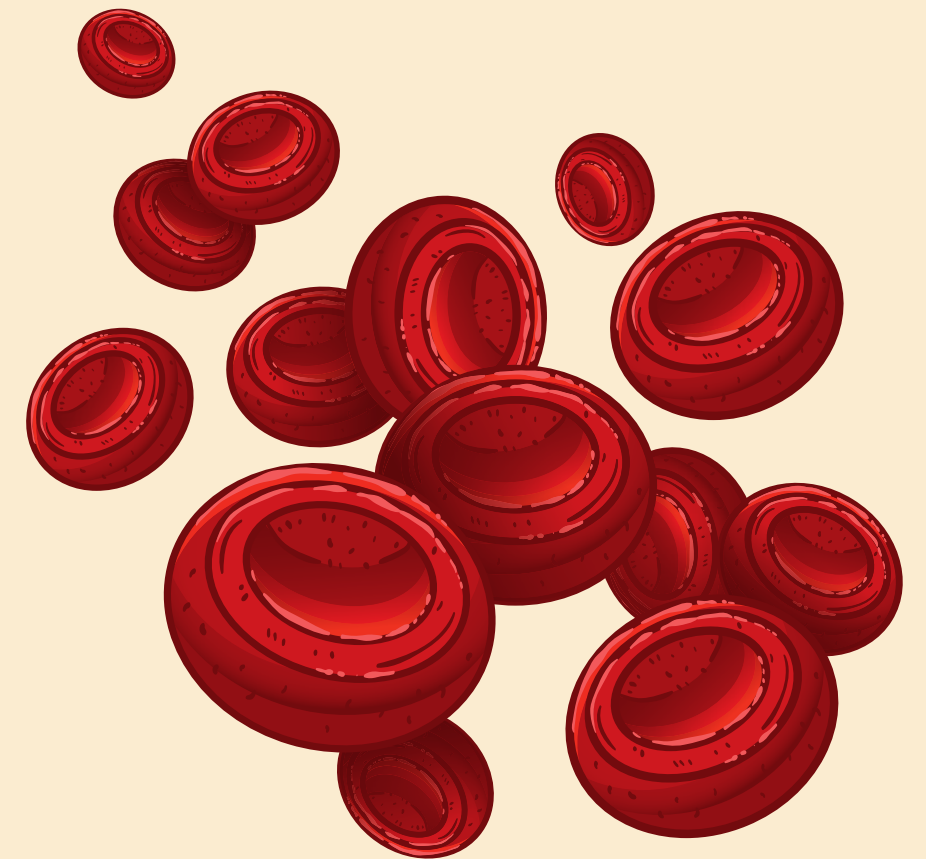
- a. it's time consuming (needle is in for 40 - 45 minutes), because people lie about their health

5. How can the controversy be sorted? - giving compensation for goods or services, Italy - days off

Circulatory system – blood

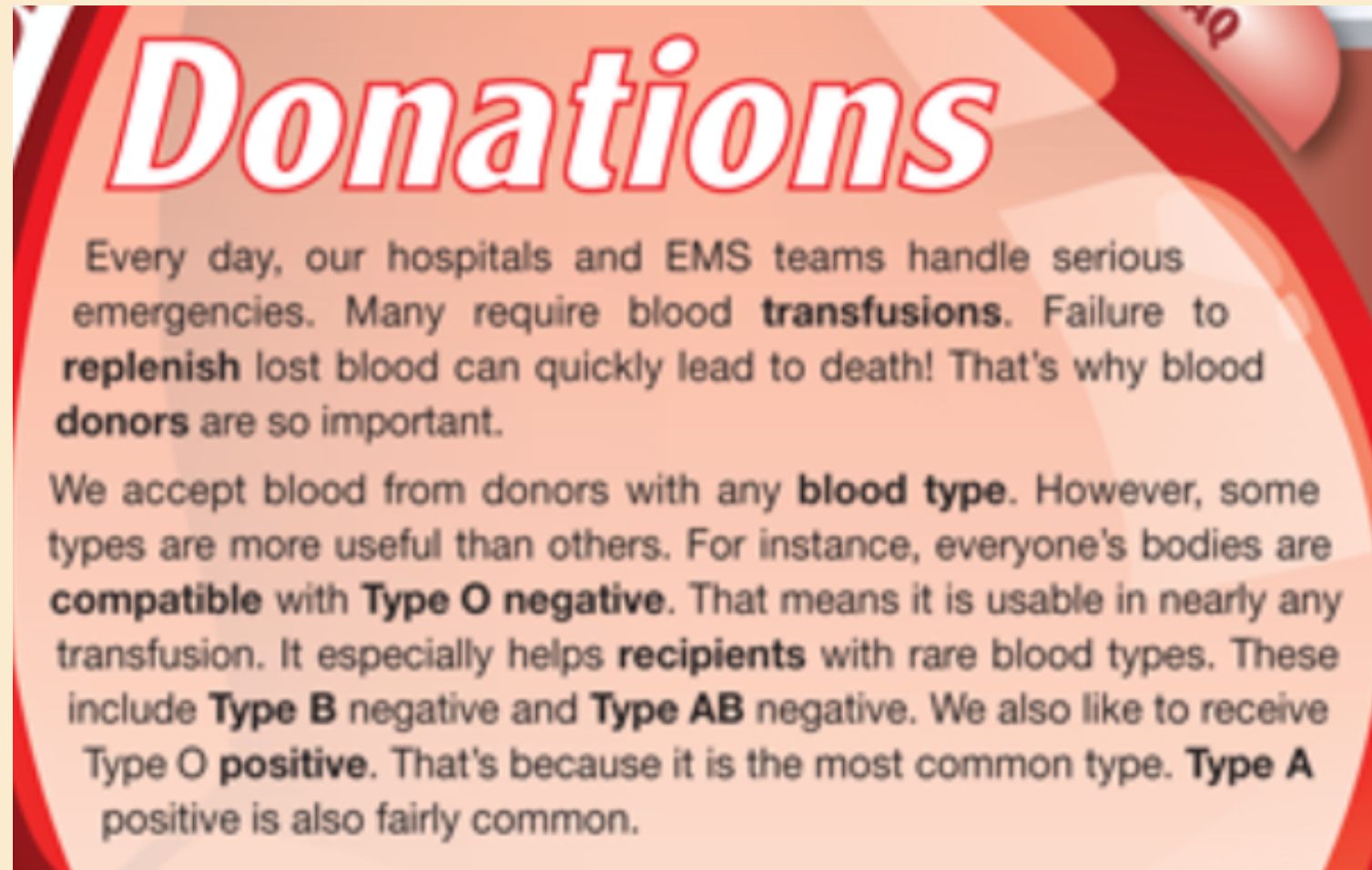
Discuss these questions with your partner

1. Have you ever donated blood? If yes, what was your motivation?
2. Is there enough blood being donated? How could people be motivated to donate blood?
3. What are some reasons not to be able to donate blood?
4. Is there any financial award for donating blood in the Czech republic?



Circulatory system – blood

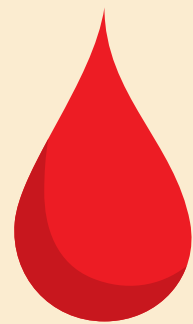
Find the word or phrase which has similar meaning to the bold part.



Donations

Every day, our hospitals and EMS teams handle serious emergencies. Many require blood **transfusions**. Failure to **replenish** lost blood can quickly lead to death! That's why blood **donors** are so important.

We accept blood from donors with any **blood type**. However, some types are more useful than others. For instance, everyone's bodies are **compatible** with **Type O negative**. That means it is usable in nearly any transfusion. It especially helps **recipients** with rare blood types. These include **Type B negative** and **Type AB negative**. We also like to receive **Type O positive**. That's because it is the most common type. **Type A positive** is also fairly common.

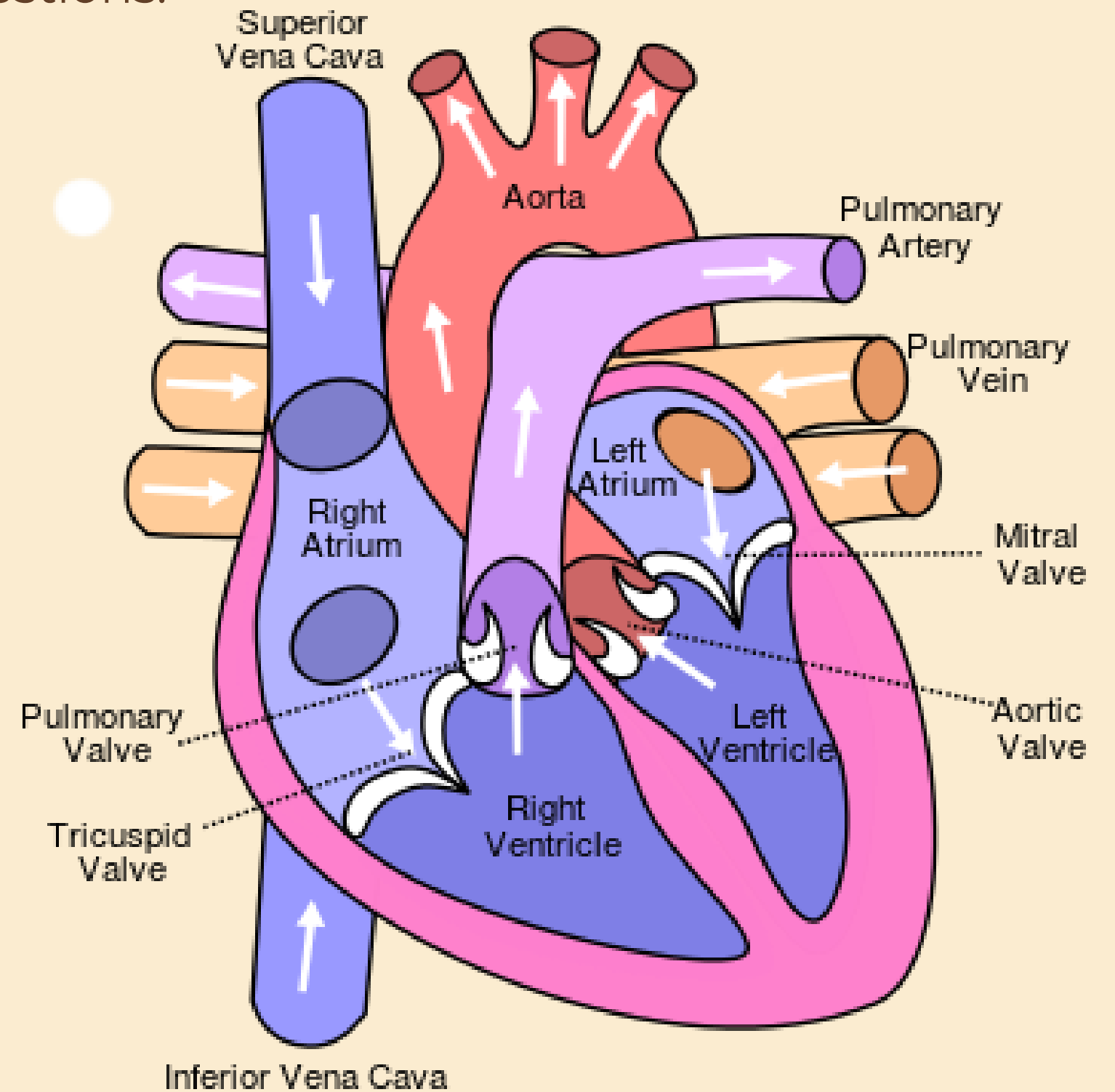


1. Doctors increased the amount of patient's blood after the accident. REPLENISHED
2. If the person's blood is containing the Rhesus factor, he or she cannot donate to those without the Rhesus factor. POSITIVE
3. The patient has blood that fights B-antigens, so she cannot receive Type B. TYPE A
4. Blood that is compatible with both A- and B-antigens tends to be fairly rare. TYPE AB

Circulatory system –heart

Answer these questions:

- What does a person's circulatory system do?
- What problems do people experience related to their circulatory system?



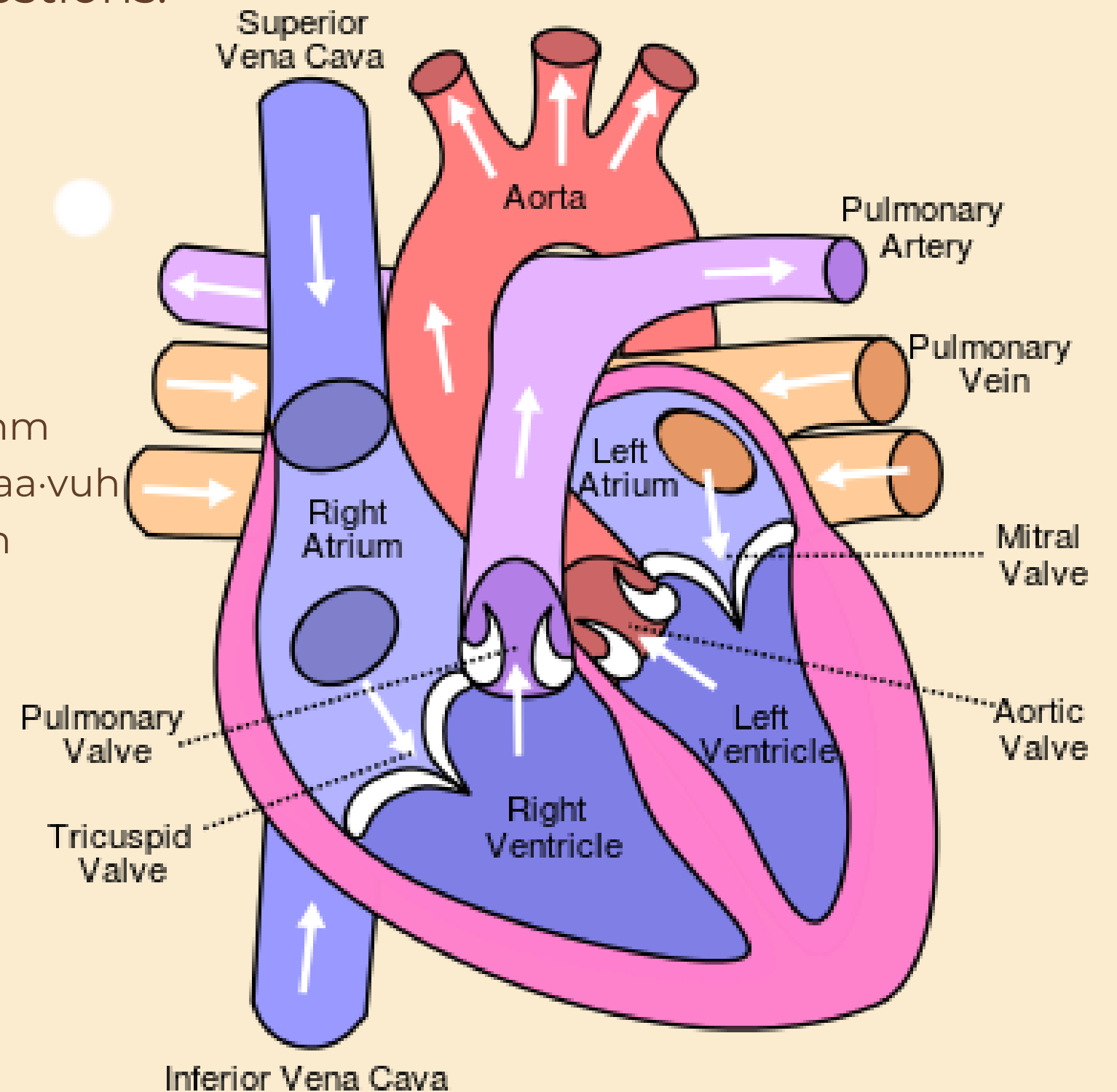
Circulatory system –heart

Answer these questions:

The circulatory system pumps nutrients and oxygen around the body. Blood lacking oxygen enters the right **atrium** of the **heart** through the **vena cava**. The heart pumps this blood through a **valve** and into the right **ventricle**. It travels through **pulmonary arteries** to the lungs and receives oxygen. It travels back to the heart through pulmonary **veins**.

The heart pumps the blood out through the **aorta**. It flows through **capillaries** in the body and delivers oxygen. The blood travels back through veins and the cycle repeats. But sometimes disruptions in the cycle occur. The heart may not pump blood effectively. This is called an **arrhythmia**.

atrium: ay·tree·uhm
vena cava: vay·nuh kaa·vuh
aorta: ay·aw·tuh
valve: valv



Circulatory system – heart

CORRECT

- | | |
|--|-----------|
| 1.A small tube that lets blood and tissue exchange nutrients | CAPILLARY |
| 2.one of the two upper chambers of the heart | ATRIUM |
| 3.one of the two major veins that carries blood to the heart | VENA CAVA |
| 4.relatng to the lungs | PULMONARY |
| 5.a tube that carries blood from the heart to the body | VALVE |
| 6.a structure in the heart that opens and closes | ARTERY |
| 7.a space in the heart that holds blood | VENTRICLE |

Circulatory system

Listen again and fill out the missing words.

NURSE: Good afternoon, Fred. I have your TEST RESULTS back.

PATIENT: What do they say?

NURSE: Well, we're detecting an ARRHYTHMIA.

PATIENT: Oh, What exactly does that mean?

NURSE: It means that your heart VALVES aren't pumping blood through the atria properly.

PATIENT: Is there any TREATMENT for this?

Yes. We're going to start you on medication and see HOW IT GOES Luckily, this form of arrhythmia isn't too serious.

PATIENT: Well, that's COMFORTING to hear.



Circulatory system

Think about your own conversation and act it out.

USE LANGUAGE SUCH AS:

I have your test results back.

What do they say?

Is there any treatment for this?

Student A: You are a patient.
And you are receiving a medical test. Ask Student B questions to find out:

- test results
- explanation of condition
- treatment options

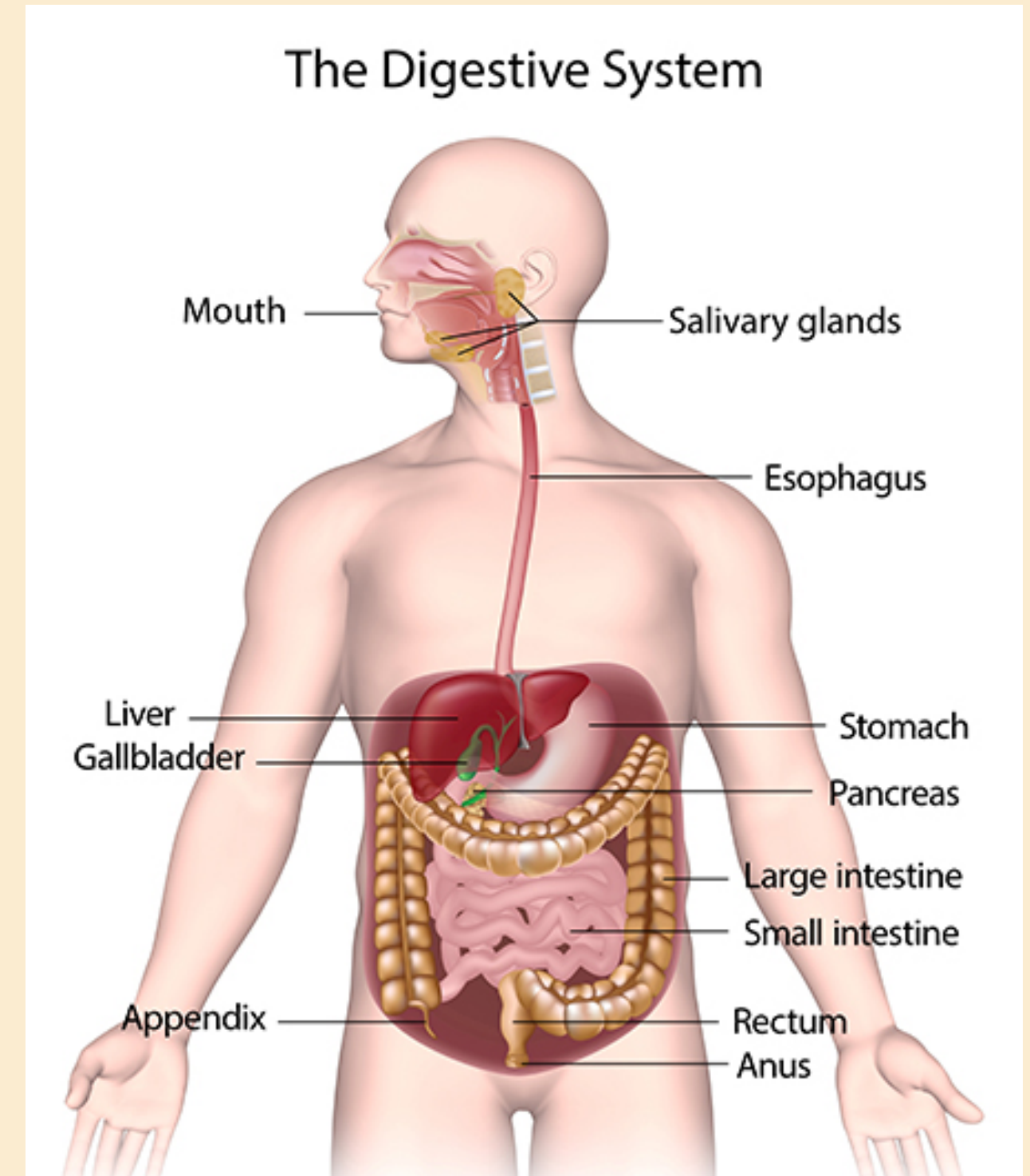
Student B: You are a nurse conducting a medical test. Answer Student A's questions.



The digestive system

Answer these questions:

- What are the functions of the digestive system?
- What types of diseases affect the digestive system? (ulcers, appendicitis, gastric cancer)



The digestive system

Read the patient's summary and decide if the questions are TRUE or FALSE:

- The patient's discomfort is caused by an ulcer. FALSE
- The doctor plans to conduct further tests. TRUE
- The doctor expects to find esophagus damage. FALSE

Reason for visit: Virginia is complaining of sharp stomach pain and cramping. She is also experiencing occasional diarrhea.

Examination notes: I find no evidence of throat or esophagus problems. I also do not think it is likely that the patient's discomfort is from an ulcer. It is possible the patient has appendicitis. The conducting of further tests is needed to narrow the possible causes of the patient's discomfort.

Recommendations for treatment: I am recommending a colonoscopy to rule out any damage to the colon. This procedure is to include an inspection of both the small intestine and her large intestine as well.

The digestive system

Write the word which is similar to the underlined part:

1. The muscular, hollow organ that contains strong acids used to digest food can expand rapidly during meals. STOMACH
2. Swallowing liquids that are too hot burns the mouth and muscular tube that passes food to stomach. ESOPHAGUS
3. The final part of the digestive system plays an important part in the absorption of water. LARGE INTESTINE
4. If left untreated, the condition of having loose or liquid bowel movements can be a fatal disease. DIARRHEA
5. The part of the digestive system where the majority of digestion and absorption of food takes place is just as important as the stomach, but the stomach's function is more widely known. SMALL INTESTINE

The digestive system

Listen to as conversation and fill in the missing words.

NURSE: How are you FEELING, Virginia?

PATIENT: The same. I still have the STOMACH pain as before.

NURSE: I'm sorry to hear that.

PATIENT: Does the doctor know what's wrong yet?

NURSE: Well, he doesn't think it's an ULCER. He believes you might have APPENDICITIS, though.

PATIENT: Really? Isn't that deadly sometimes?

NURSE: Very rarely. He's also recommending a COLONOSCOPY to make sure there's nothing wrong with your colon or INTESTINES. Is that ok with you?

PATIENT: Yes. I'm willing to do whatever it takes.

Physical assessment

Answer these questions:

What do nurses look for during physical assessments?

What physical conditions are hard to find during physical assessment?



Physical assessment

Answer these questions:

What do nurses look for during physical assessments? -
look for abnormalities on the skin or body, check for pain in the abdomen and check the patients' pulse.

What physical conditions are hard to find during physical assessment? *asymptomatic diseases (order blood tests)*



Physical assessment

Read the instruction from Baymont Hospital. Then, choose the correct answers.

Conducting a Physical Assessment

Below are instructions for conducting a physical exam. They detail how to collect **subjective data** and **objective data** from a patient.

1. Introduce yourself and obtain verbal **consent** to perform the exam.
2. Collect **demographic** data. This includes the age and sex of the patient.
3. Collect information about the patient's general appearance. Assess **body build** and **affect**.
4. Perform an **inspection** of skin, hair, and body. Check for any abnormal spots.
5. Perform **palpation** of skin and abdomen. Check for pain or tender areas.
6. Perform **auscultation** of the patient's heart and lungs. Check for any irregular sounds.
7. Perform **percussion** of the patient's abdomen and chest.

Physical assessment

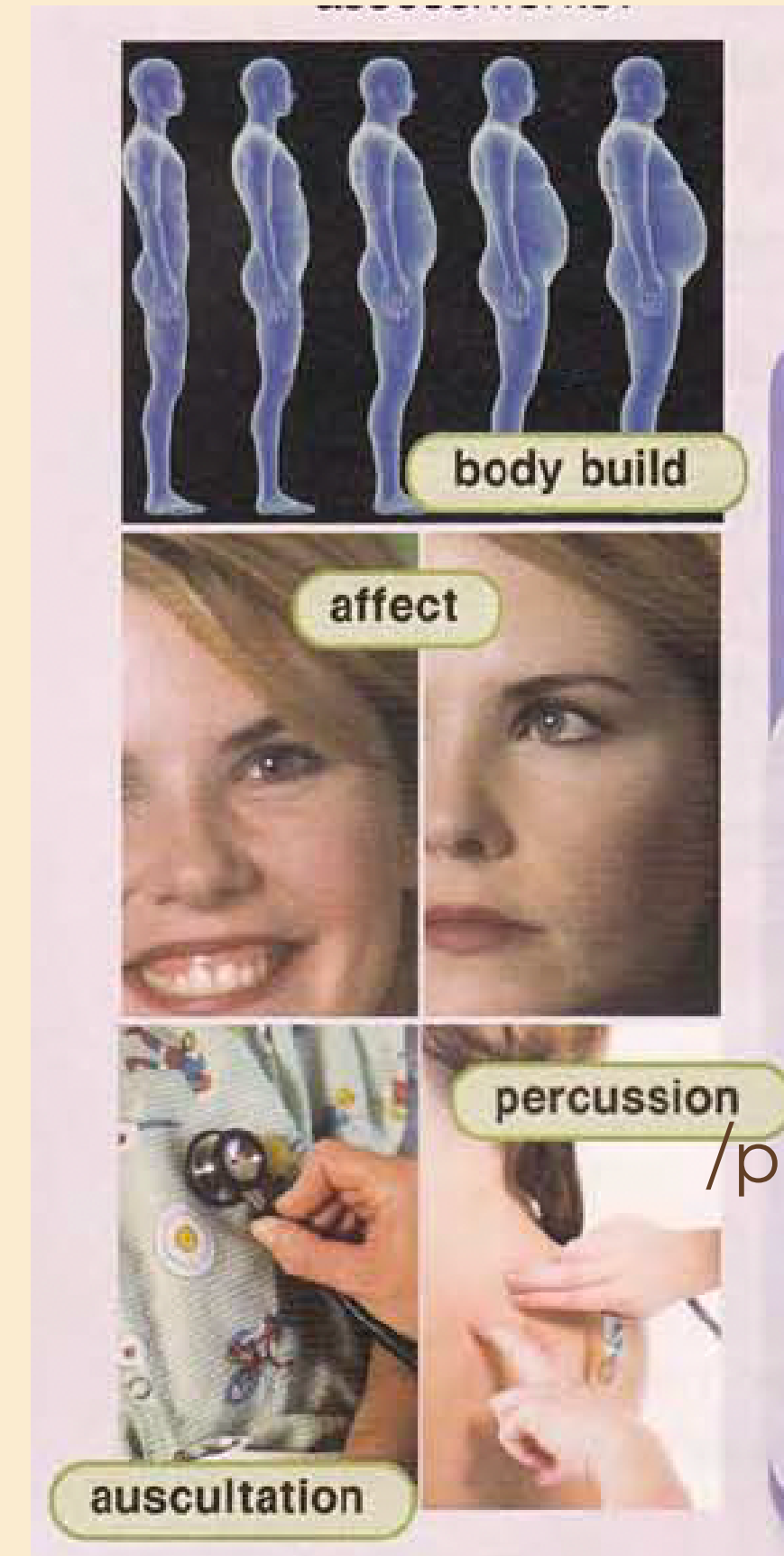
Answer these questions:

What does this passage instruct nurses how to do?

- collect demographic data
- assess body build and affect
- perform auscultation /ˌɔːskəl'teɪʃn/
- perform a physical exam

What should nurses do while performing palpation on the skin?

- check for abnormal spots
- look for patient discomfort
- listen to irregular sounds
- assess body build and affect



Physical assessment

Match the words with the definitions

INSPECTION OBJECTIVE DATA PERCUSSION

DEMOGRAPHIC BODY BUILD AUSCULTATION

the process of examining the body by tapping various parts = PERCUSSION

health information that an observer can see and test = OBJECTIVE DATA

relating to personal information such as sex and age = DEMOGRAPHIC

the overall appearance and shape of a person's body = BODY BUILD

the process of examining the body by listening to internal parts = AUSCULTATION

a visual examination of a part of the body = INSPECTION

Physical assessment – Listening

Listen to a conversation and complete the dialog.

NURSE: Good morning, Mr. Johnson. How are you feeling today?

PATIENT: I'm ALRIGHT. But there's a dull ache in my side.

NURSE: Ok. GOOD THING you're getting a physical exam then. Do I have your
CONSENT?

PATIENT: Sure.

NURSE: First, let me finish the DEMOGRAPHIC data. What's your age?

PATIENT: I'm 62 years old.

NURSE: Great. Next up is palation of the abdomen. I'm going to touch your
STOMACH AND SIDE. Just tell me when it hurts.

PATIENT: Okay. Yeah, it hurts there. Right BELOW my ribs.

Physical assessment

Act out a conversation between a nurse and a patient.

USE LANGUAGE SUCH AS:

How are you feeling today?

I'm ... years old.

Just tell me when it hurts.

Student A: You are a nurse.
And you are conducting a
physical exam. Ask Student B
questions about:

- general feeling
- demographic data
- areas of pain

Student B: You are a patient
receiving a physical exam.
Answer Student A's questions.