

Cardiovascular System

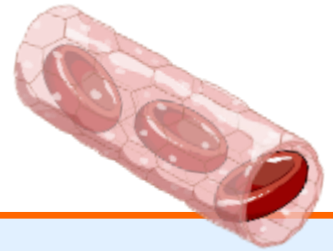


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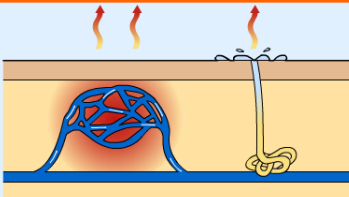
The structure of the Cardiovascular System

Functions of the circulatory system

The circulatory system has three functions:

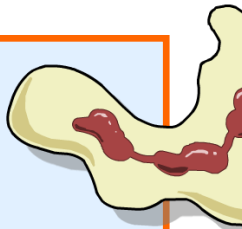


1. **Transporting** substances around the body. These include oxygen, glucose, carbon dioxide, nutrients, water and waste products.



2. **Controlling** body temperature.

3. **Protecting** the body. Blood contains cells and anti-bodies that fight infection and clotting agents to stop bleeding.



The circulatory system is described as a **double system** because it has two loops.

Name the 3 parts of the CV system and describe what they do

- 1.....
.....
- 2.....
.....
- 3.....
.....

Explain why we need to pump blood around the body for exercise

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.....

(3 marks)

What carries the oxygen to the working muscles?

.....
..... (1mark)

What do we mean by a double system?

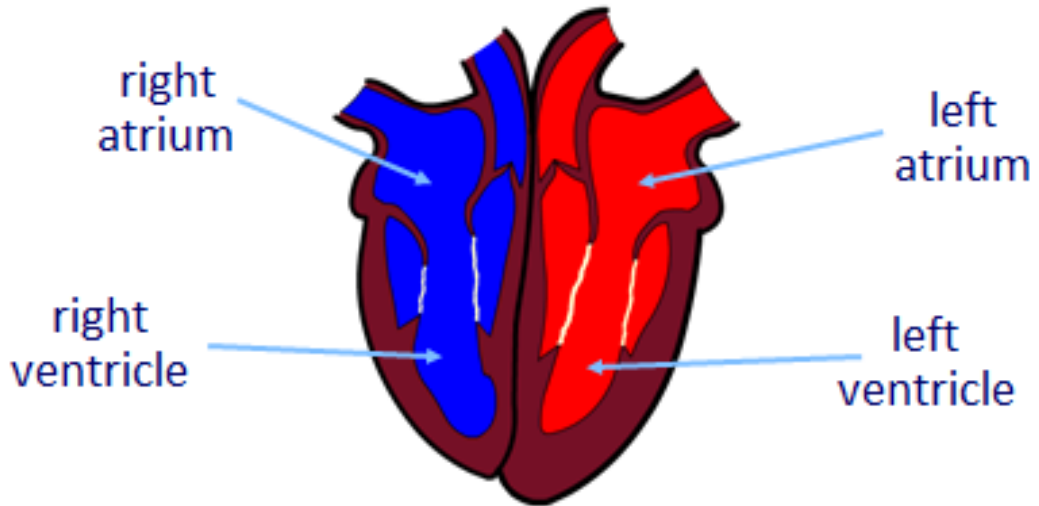
.....
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.....
..... (2 marks)



Cardiac system

The four chambers of the heart have special names:

An **upper** chamber is called an **atrium** (plural: atria).



What causes the heart to beat?

.....

(1 mark)

How does the body ensure the blood flows in the right direction?

.....

(1mark)

Describe the path the blood takes after oxygen enters the blood stream at the lungs

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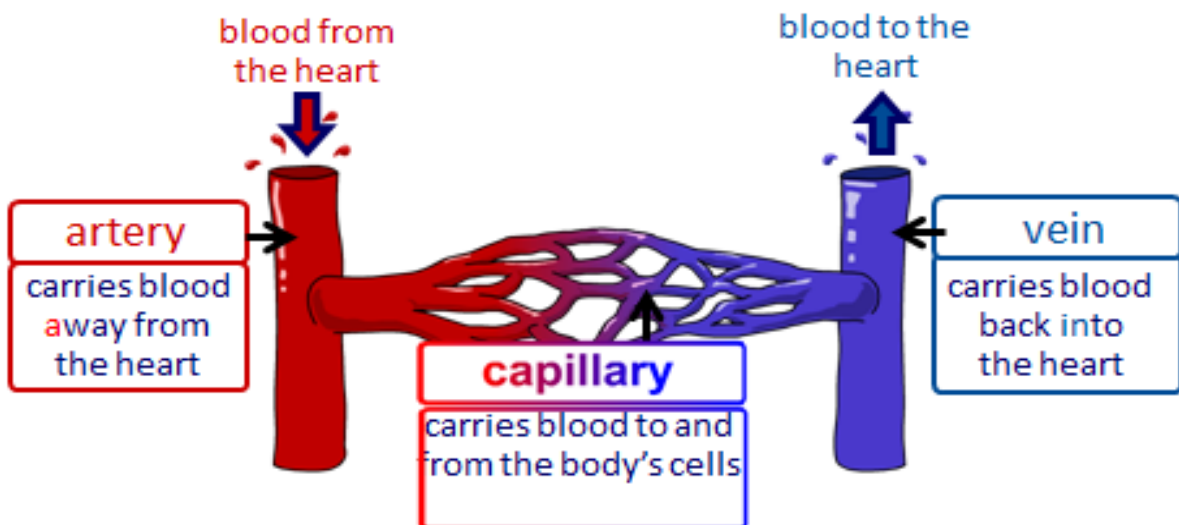
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Blood vessels

There are **three types of blood vessels**, as shown in this magnified part of the circulatory system.



What is Blood pressure?

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Diastolic Pressure is

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Systolic Pressure is

.....
.....

Describe the following –

Cardiac Output -

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.....

Stroke Volume -

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.....

Heart rate -

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.....



..... X =

What is the name of the muscle in the heart?

.....

- (c) Figure 5 shows Jared's heart rate values before, during and after one of his training sessions.

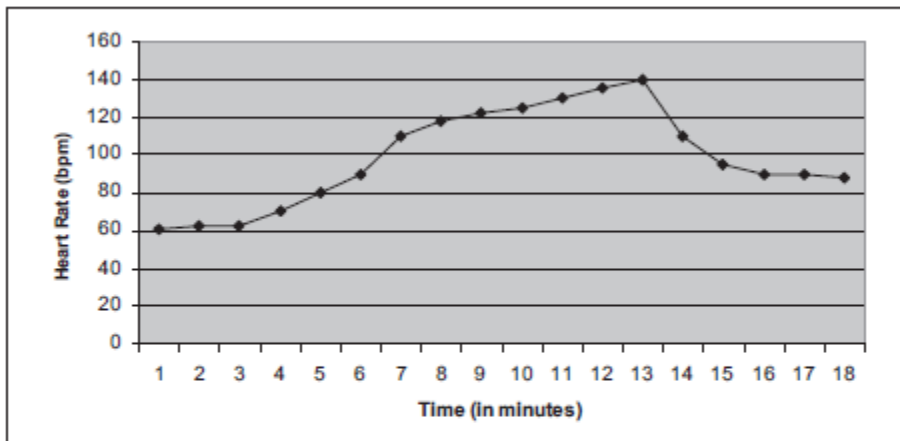


Figure 5

Use Figure 5 to answer the following questions.

- (i) What was Jared's resting heart rate?

..... (1)

- (ii) After how many minutes did Jared start his training session?

..... (1)

- (iii) At what time (in minutes), was Jared working the hardest?

..... (1)

- (iv) When did Jared stop training and start his recovery?

..... (1)

- (v) Did Jared completely recover from the training session?

..... (1)

10. Figure 3 is a diagram of the heart.

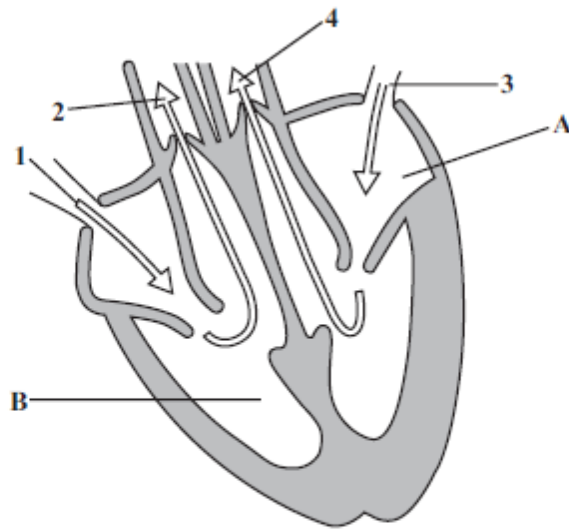


Figure 3

(a) Name the parts labelled A and B.

A (1)

B (1)

(b) Numbered arrows have been added to the diagram to indicate the flow of blood through the heart.

(i) Which arrows indicate the flow of deoxygenated blood?

.....and (2)

(ii) What type of blood vessel carries blood away from the heart?

..... (1)

(iii) State ONE way in which this type of vessel will differ from the type of vessel that returns blood to the heart.

.....
 (1)

(Total 6 marks)

What happens to our cardiovascular system during exercise?

Describe the change and explain why

1.
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2.
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3.
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4.
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5.
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How does our Cardiovascular system adapt in the long term to exercise?

Change in the CV System	Description

5 As part of his Personal Exercise Programme (PEP) Joe measures his heart rate to check on his fitness levels.

(a) The heart rate monitors in **Figure 5** show three different heart rate values. Re-order these heart rate values and plot a graph to show Joe's resting, working and recovery heart rate.

(2)

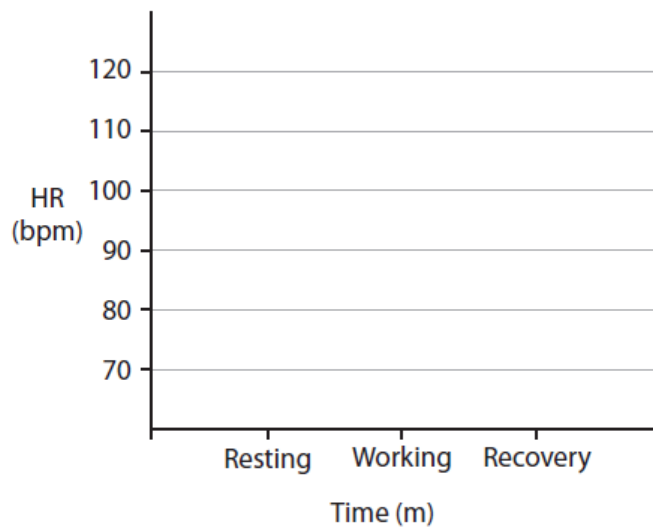


Figure 5

(b) Explain why you have plotted the values in this order.

I placed this value as working heart rate because

(1)

.....

.....

I placed this value as recovery heart rate because

(1)

.....

.....

(Total for Question 5 = 4 marks)

Give 3 different lifestyle choices that affect our cardiovascular system:

1.
.....
.....
2.
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.....
3.
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6 Diet and rest need to be considered when planning a healthy, active lifestyle.

Describe the impact of diet and rest on the cardiovascular system.

(i) Impact of **diet** on the cardiovascular system.

(3)

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(ii) Impact of **rest** on the cardiovascular system.

(2)

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(Total for Question 6 = 5 marks)