

Chapter 2

Physical and Mental Demands of Performance

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2.2 Injury

The chances of getting an injury through taking part in physical activity are quite high and most performers experience one at some time. Injury prevention is therefore very important.

Objectives

- Consider the ways in which injuries might be caused and the type of injury that results
- Consider the precautions that can be taken to prevent injuries occurring

Activity 1- Sorting Task

Sort these injuries into two columns 'Internal' and 'external'

Internal	External

- Overuse injuries (stress fractures and tennis elbow)
- Foul Play or incorrect actions
- Impact Injuries
- Accidents
- Sudden injuries

Activity 2- Application

Explain how completing a risk assessment can reduce the risk of injury.

Activity 3- Exam Question



Describe the difference between internally and externally caused injuries.

(2 marks)

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2.3 First Aid and Emergency Arrangements

Accidents and emergencies do occur so it is very important to know what to do if they do happen.



Objectives:

- Be aware of the action to be taken if an accident or emergency occurs.
- Have a knowledge of the common injuries associated with different activities
- Be able to identify particular injuries and be aware of the actions that might be taken.

Activity 1- Matching

Match the injury with the correct action

Injury:

Head injuries

Fractures

Hypothermia

Joint and muscle injuries

Cuts

Action:

-Put the patient in the coma position ensuring nose and mouth are clear.

-Remove wet clothing/ cover with a warm, dry blanket

-Clean and dress the wound

-Carry out the RICE method

-Try not to move the patient and call 999

Activity 2 Application

Describe the symptoms of each of the following injuries:

Concussion: _____

Fractures: _____

Strains: _____

Sprains: _____

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2.4 The Respiratory System: Aerobic

The respiratory system involves the air being taken in through the mouth and nose, into the bronchioles to the lungs where gaseous exchange occurs in the alveoli.

Objectives:

- Be aware of the components that make up the respiratory system
- Consider what is meant by aerobic respiration
- Consider the process of gaseous exchange
- Understand the action of breathing.

Activity 1- Fill in the blanks

_____ + Oxygen \longrightarrow Energy + _____ + _____

Activity 2 Definition

Using the formula above, create a definition of Aerobic Respiration

Activity 3 Application

a. Explain why breathing rate increases during exercise

b. Why doesn't the breathing rate return to a normal rate immediately after exercise?

Activity 4- Exam Question

Describe aerobic respiration and give an example of when the body would use this.



(4 marks)

(Dec, 2012)

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2.5 The Respiratory System: Anaerobic

Anaerobic Respiration occurs in the absence of oxygen.



Objectives:

- Consider what is meant by anaerobic respiration and the types of exercise that requires it
- Consider what takes place during the recovery period
- Consider the function and role of the blood in this process

Activity 1- Fill in the blanks

Glucose → _____ → Lactic acid

Activity 2. List

Name 3 sporting activities that use anaerobic respiration

1. _____
2. _____
3. _____

Activity 3- Expansion

By including the following words, create a definition of 'Oxygen Debt'

Muscles, respiring anaerobically, vigorous exercise, glycogen, 60seconds, borrowing, owed

Activity 3- Exam Question (this must be on the recovery period and or Role of the blood

Describe anaerobic respiration and give an example of when the body would use this.

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(4 marks)

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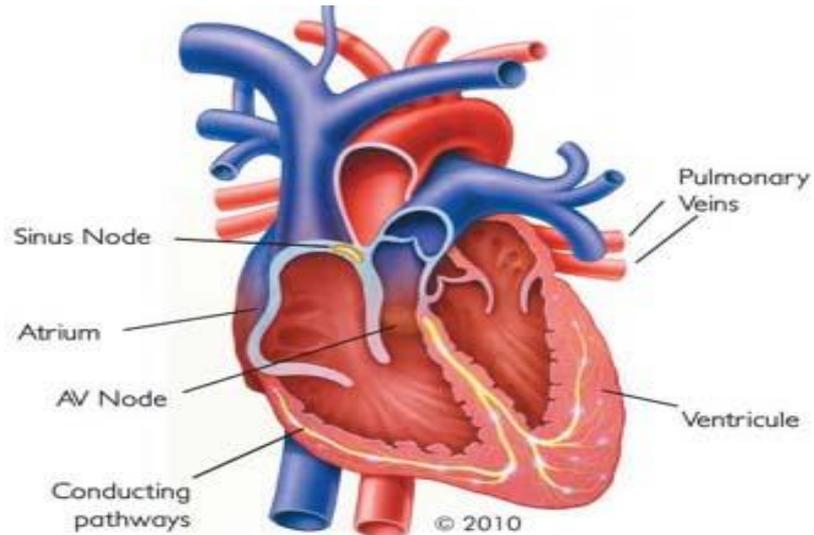
2.6 The circulatory System

The circulatory system carries and transports the blood as the body's fuel supply around the body. The basic function is to transport oxygen, water, nutrients and waste products in the blood. It also provides protection when antibodies that fight infection are carried in the blood. Finally, this system helps to regulate the temperature of the body.

Objectives:

- Be aware what the circulatory system consists of
- Consider the main components of the system and the functions they perform
- Consider that the heart with its role in pumping blood is an effective transport system.

Activity 1- Draw arrows showing the blood flow through the heart



Activity 2- Application

State 2 differences between the following:

Arteries & veins: 1. _____

2. _____

Veins & capillaries 1. _____

2. _____

Capillaries & arteries 1. _____

2. _____

Activity 3- Exam Question

Which of the following is the main function of the circulatory system?

- (a) Transporting blood around the body. (c) Transporting waste from the digestive system.
(b) Pumping blood from the heart. (d) Transporting hormones throughout the body.

(1 mark)

(May, 2007)

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2.7 Cardiovascular System

This is the system which consists of the heart and blood vessels that circulate the blood and transports oxygen around the body. This is the system that is referred to when the respiratory system and circulatory system work together.

Objectives:

- Be aware what the cardiovascular system consists of
- Understand what is meant by cardiovascular endurance
- Consider the ways in which levels of cardiovascular endurance can be measured and improved.

Activity 1

Give a definition of Cardiovascular Endurance

Activity 2- Application

Describe 2 ways that cardiovascular endurance can be measured

1. _____
2. _____

Activity 3 Application

- a. What training zone should you aim to work within in order to improve your cardiovascular endurance? _____
- b. Explain what would happen if you worked above this training zone _____

- c. Explain what would happen if you worked below this training zone _____

Activity 3- Exam Question

When you take part in sustained activity what 3 effects will you notice regarding the cardiorespiratory system?

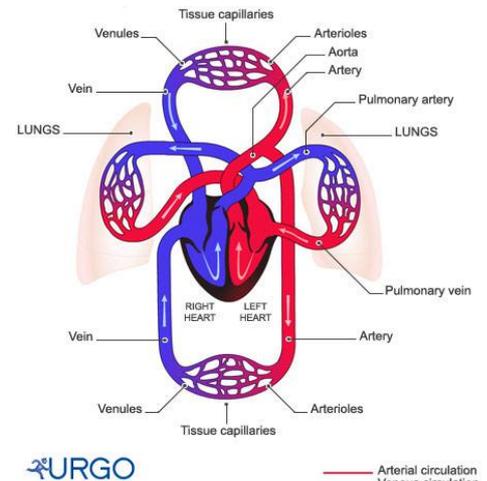
(i).....

(ii).....

(iii).....

3 Marks

(May, 2007)



URGO

Arterial circulation
Venous circulation