



Health & Social Care

Crucial Knowledge

Unit R023



Unit R023: Understanding body systems and disorders

Learning Outcome	Topic
LO1	Know how body systems work
LO2	Understand disorders that affect body systems
LO3	Be able to interpret data obtained from measuring body rates with reference to the functioning of healthy body systems

Why am I learning this?	Careers Links
<p>In this unit you will develop knowledge and understanding of how the body works and keeps us alive. You will learn what happens when body systems do not function correctly and discover methods and techniques to diagnose different types of disorder.</p> <p>In your internal assessment you will be asked to label the body systems and explain their function. You will then be asked to describe and give reasons for the symptoms of a disorder for each body system and the methods used to diagnose. Finally you will show an ability to measure, interpret and compare body rates.</p>	<p>Health care</p> <ul style="list-style-type: none">- GP- Doctor- Nurse- Paramedic- Healthcare science- Pharmacy- Allied health professional



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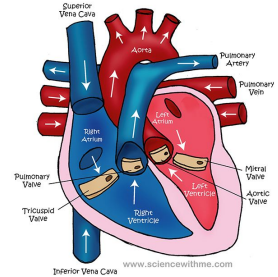
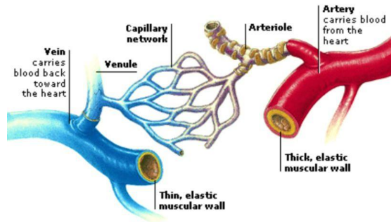
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Learning Outcome 1 & 2



The structure of the cardiovascular system

- Heart (Ventricles, Left & Right Atrium, Aorta)
- Veins - walls are thin, and the internal diameter is large.
- Arteries - walls are thick, elastic and muscular and the internal diameter is small. The blood flows quickly under high pressure.

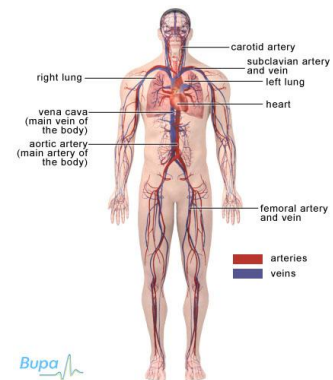


The function of the cardiovascular system

- Circulation (pumping) of blood around the body
- oxygenation and deoxygenation - **arteries** are the blood vessels carrying oxygenated blood **away** from the heart and **veins** carry de-oxygenated blood **in** to the heart.

Arteries – Away

Veins - In



The disorders of the cardiovascular system

- Heart attack, angina, heart failure
- Symptoms (chest pains, discomfort in arms/back etc, shortness of breath, tiredness, dizziness, raised pulse)
- Diagnosis (ECG echocardiogram, x-rays, blood tests, check pulse rates and blood pressure)





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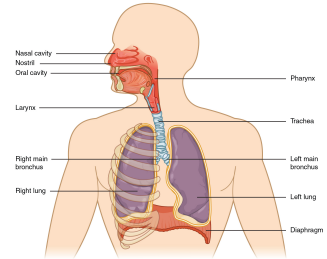
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Learning Outcome 1 & 2



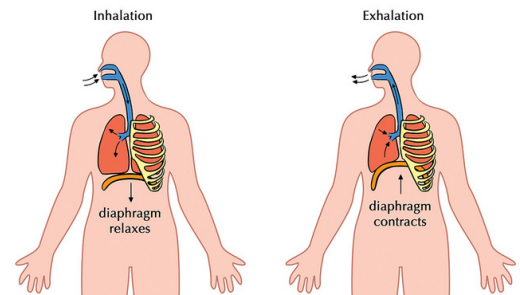
The structure of the respiratory system

- Trachea - cartilage and ligaments, connects nose and mouth to lungs.
- Lungs - cone shaped, right bigger than left.
- Alveoli - within lungs, microscopic sacs bunched together.



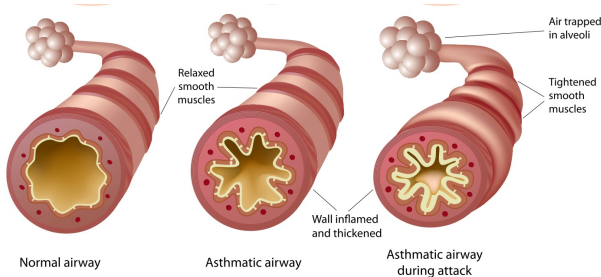
The function of the respiratory system

- Inhale - Sucking air in from atmosphere, diaphragm expanding, air going into lungs, breathing in oxygen.
- Exhale - diaphragm relaxes and ribcage moves inwards and downwards, breathing out carbon dioxide.



The disorders of the respiratory system

- Asthma/allergies, bronchitis, pneumonia, emphysema
- Symptoms - wheezing, shortness of breath, increased breathing rate.
- Diagnosis - CT scan, MRI, x-rays, function tests.





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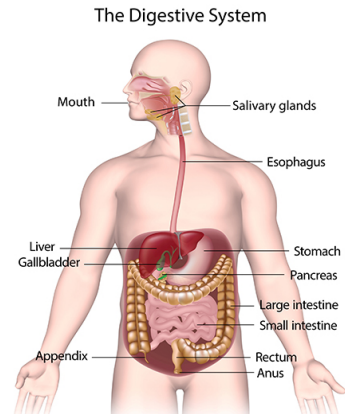
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Learning Outcome 1 & 2



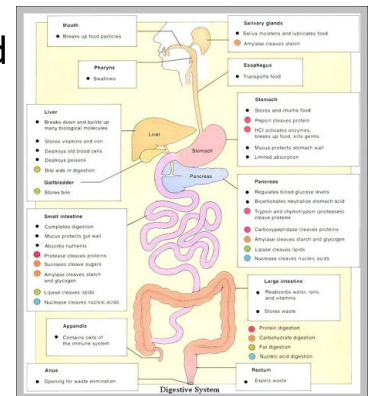
The structure of the digestive system

- Stomach - expanding sac structure, muscular walls
- Oesophagus – length 25-30cm, extends to the stomach, moves food down to the stomach
- Intestines small and large



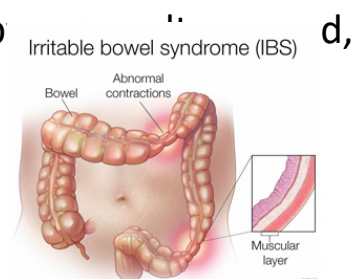
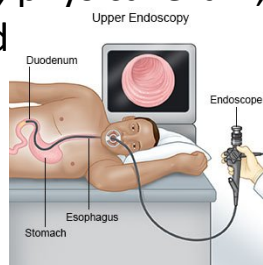
The function of the digestive system

- Chewing and swallowing food in the mouth (ingestion)
- Breaks down food (digestion)
- Absorption of molecules minerals/water into blood
- Waste removal from the body (elimination)



The disorders of the digestive system

- Irritable bowel syndrome (IBS), heartburn, ulcers
- Symptoms pain, discomfort, bloating, diarrhoea, sour/bitter taste in mouth, vomiting, weight loss
- Diagnosis medical history, physical exam, endoscopy, blood test, Body Mass Index





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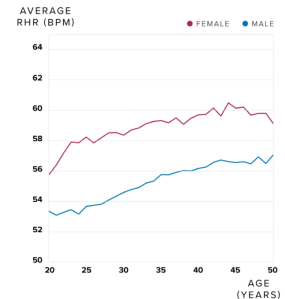
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Learning Outcome 3



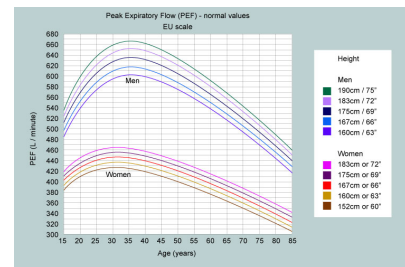
How to measure pulse rate

- Before, during and after exercise
- Compare results against normal/maximum pulse rates for age
- Understand how it measures function of the cardiovascular system. A lower resting pulse rate means efficient heart function and better cardiovascular fitness. The faster the heart rate recovers after exercise, the fitter or healthier a person is



How to measure peak flow

- Before and after activity (using peak flow meter)
- Compare results to normal values for age, height and weight
- Understand how it measures function of the respiratory system. The lower the result, the more breathing is restricted.



How to calculate BMI

- Know average BMI, measure height and weight to input onto BMI chart
- Compare results against healthy weights for height.
- Understand how it measures function of the digestive system. People with a BMI of 19-22 are healthiest. Those with a BMI over 25 have a higher risk of health problems like diabetes, heart disease and some cancers
- **BMI= Weight (kg) / Height(m²)**

