IB Biology Topic 6 – Human Physiology Revision Sheet

Digestion:

- Contraction of circular and longitudinal muscles causes peristalsis - the of the intestine contents along the
- The pancreas secretes digestive enzymes in the intestines, and insulin glucagon into
- Villi increase surface area of the and their function is to absorb nutrient molecules from the intestines into the blood, or the lymphatic
- Membrane transport is required to transfer nutrients into epithelial

Hydrolytic enzymes amylase, lipase and an endopeptidase digest these macromolecules

Amylase starch (amylose) into Lipase into fatty acids and

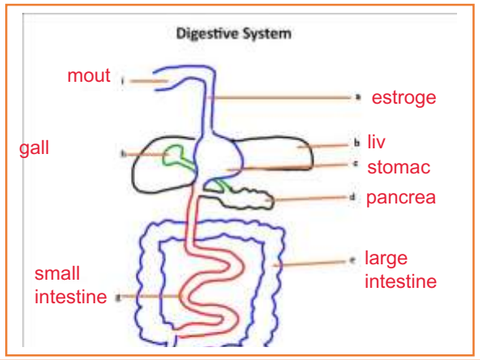
Endopeptidase breaks the inner peptide bonds of a

The four layers of tissue in the digestive system are:

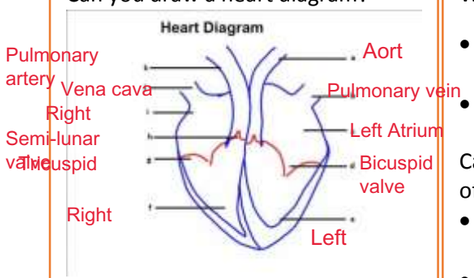
Epithelium Mucosa

Sub-mucosa Circular muscle

Longitudinal muscle



Can you draw a heart diagram?



William Harvey

- Challenged Galen's ideas about heart
- Proved through experiments that the

Causes & consequences of occlusion of coronary arteries

- Too much saturated fats, smoking
- Arteries become blocked, leading heart disease / heart

Compare the structure and function of arteries and veins

Arteries	Veins
thick elastic walls, thinner walls	
smaller lumen larger lumen	
no valves valves	
high pressure blood in pulses blood at lower pressure, no pulses	

Increasing and decreasing heart rate

- Epinephrine hormone released by adrenal gland
- Nerves from the medulla The heart rate can be increased or decreased through impulses in two nerves from the Medulla

Explain the role of the SA node

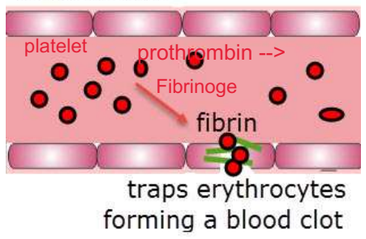
SA node produces a regular depolarization in the atria of the heart, which is transmitted in cardiac muscle.

Epinephrine can increase the rate of these depolarizations

Nerves from the medulla also affect the rage of the heart pacemaker (SA node)

Heart is myogenic because of the function of the

Blood vessel annotate



Steps in the formation of a blood clot: platelets detect damage, prothrombin --> thrombin, promotes fibrinogen --> fibrin which traps RBC in a net, forms

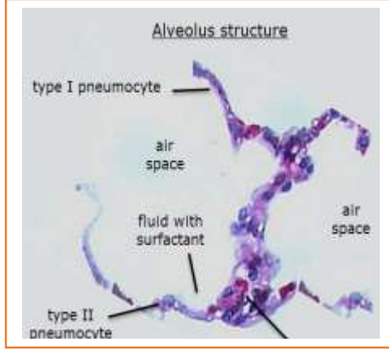
The role of the skin is As a physical barrier to bacteria / pathogens. It also contains glands which produce the mucus for mucous:

Production of antibodies is by lymphocyte, Their function is to disable, bind to antigens on,

Florey and Chain's experiments found in their tests on penicillin on bacterial infections in that penicillin was not toxic to mice, and that it had antibacterial properties in mice infected with steptococci

Hormones and their function

Hormone	Functrion
Insulin	target organ liver, absorbs glucose from the blood, lowering glucose
Glucagon	target liver to release glucose
Thyroxin	regulates metabolic rate & partly controls body
Leptin	secreted by adipose cells, it acts on the hypothalamus of the brain to inhibit appetite



Parts of the lungs which help ventilation and gas

Type I pneumocytes thin cells form the wall of

Type II pneumocytes capable of cell division, more rounded shape, replace damaged

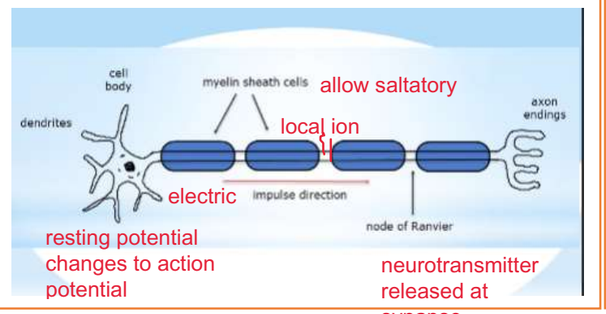
Trachea & Bronchi tubes with cilia and cartilage rings - carry air to

Capillaries thin blood vessels - carry oxygen away from alveoli and CO2 to

Intercostal muscles move the rib cage up (internal) and down (external) to help

Diaphragm & abdominal muscles diaphragm contracts, moves down and increases thorax abdominal muscles contract and push diaphragm upwards reducing thorax volume for

Neurones & nerve impulses annotate



The roles of FSH, LH, estrogen and progesterone in the menstrual cycle are.

FSH follicle stimlating hormone - promotes the maturation of a follicle in the ovary.

LH promotes ovulation and the formation of the corpus luteum in the ovary