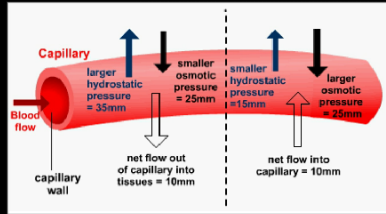
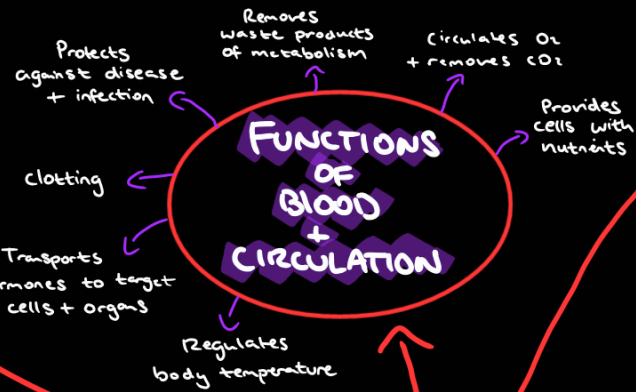


HYDROSTATIC VS ONCOTIC PRESSURE



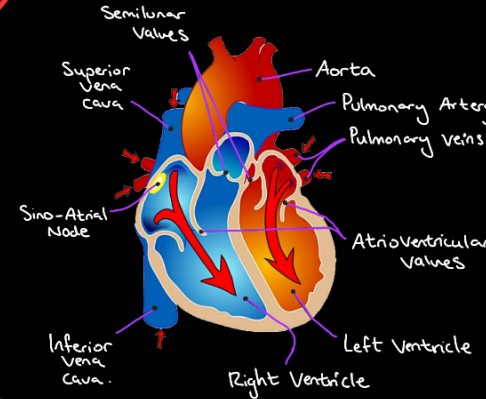
ARTERIES VS VEINS

	Artery	Vein
Diameter	↓	↑
Wall Thickness	↑	↓
Elastic Tissue	↑	↓
Smooth Muscle	↑	↓
Valves	×	✓

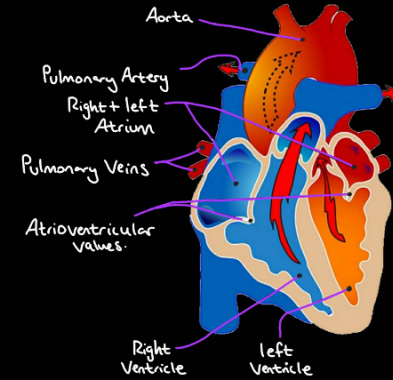


THE HEART

Diastole



Systole

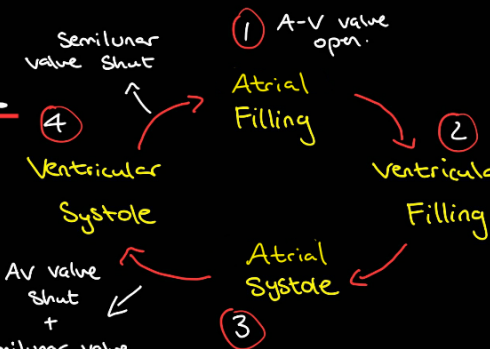


Cardiovascular - Circulation

SINO-ATRIAL NODE

- Produces electrical signals which are detected by ECGs.

CARDIAC CYCLE



INFLUENCES ON CARDIAC OUTPUT

$$\text{Cardiac Output} = \text{Heart rate} \times \text{Stroke volume}$$

will match venous return

Amount of blood entering ventricle in a diastole determines Pre-load

- ↑ Pre-load
- = ↑ stroke vol
- = ↑ Cardiac output

- Filling pressure of heart at the end of diastole.
- Ensures heart can deal with wide variations in venous return
- Balances outputs of the 2 sides of the heart.

OTHER INFLUENCES

$$\text{Cardiac Output} = \frac{\text{Arterial Blood Pressure}}{\text{Total Peripheral Resistance}}$$

Due to tone/damage in resistance arterioles determines afterload.

- Affected by factors affecting
- resistance vessel tone
 - autonomic control
 - circulating hormones
 - vascular damage

EXTRINSIC INFLUENCES ON HEART

Autonomic Nervous System

PNS (slows) SNS (speeds)

Circulating Factors

co-ordinated Responses

Reflexes

CARDIOVASCULAR DISEASE

Artherosclerosis → Blockage of Arteries

TYPES OF HEART DISEASE

- Coronary Heart Disease
- Aneurysm
- Valve Disease
- Cardiac Arrhythmia
- Heart Failure
- Cardiomyopathy

RISK FACTORS

- Hypertension
- Smoking
- Family history
- Hyperglycaemia
- Poor fitness
- Obesity
- Kidney disease
- Insulin resistance
- Dyslipidaemia

