

Cardiovascular Pathology

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Some important principles

- Blood is a tissue – but it flows!
- Interaction between blood, endothelium and surrounding tissues is crucial to much of pathology e.g.
 - Meningococcal infection – acute vasculitis, haemorrhage, DIC
 - Arterial endothelial damage – atherosclerosis, thrombosis, infarction (heart, brain, bowel etc.)

Thrombosis

- Formation (*in the living circulation*) of a solid mass from blood constituents
- **Not** the same as a clot!

Factors causing thrombosis

- Abnormality of vessel wall (endothelium)
- Abnormality of blood flow
- Alterations in blood contents

Virchow's triad



Endothelial injury (heart and arteries)

- Trauma to cardiac valves
- Hypertension (arteries)
- Cigarette smoking
- Hypercholesterolaemia
- Radiation

Abnormal flow (arteries, veins)

- **Turbulence** (heart and arteries)
- **Stasis** (veins)

Normal blood flow is laminar