

Cardiovascular Pharmacology

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

- Hypertension
- Angina pectoris
- Cardiac Arrhythmias
- Heart Failure

Cardiovascular Pharmacology

- **Cardiovascular (=Circulatory) system** – heart and blood vessels
 - **Arteries** – transport blood to tissues
 - **Capillaries** – sites of exchange, fluid O₂, CO₂, nutrients etc.
 - **Venules** – collect blood from capillaries
 - **Veins** – transport blood back to heart
 - Blood moves within vessels – higher pressure to lower pressure
- Resistance to flow** depends on **vessel diameter, length** and **viscosity** of blood

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Cardiac blood flow

- The mammalian heart is a **double pump** in which the **right side** operates as a **low-pressure system** delivering de-oxygenated blood to the lungs, while the **left side** is a **high pressure system** delivering oxygenated blood to the rest of the body.
- The **walls** of the right ventricle are much thinner than those of the left, because the work load is lower for the right side of the heart.
- The **ventricular muscle** is relatively stiff, and it would take some time to fill with venous blood during diastole. The thin, **flexible atria** serve to **buffer** the incoming venous supply, and their initial contraction at the beginning of each cardiac cycle fills the ventricles efficiently in a short space of time.