

cardiovascular system

The cardiovascular or circulatory system supplies the body with blood. It consists of the heart, arteries, veins, and capillaries.

✚ **Heart** = 4 chambers - R & L atria, R & L ventricles

Blood from circulation to R atrium to R ventricle to pulmonary artery to lungs for gas exchange (CO₂ & O₂) to L atrium to L ventricle to aorta to systemic circulation

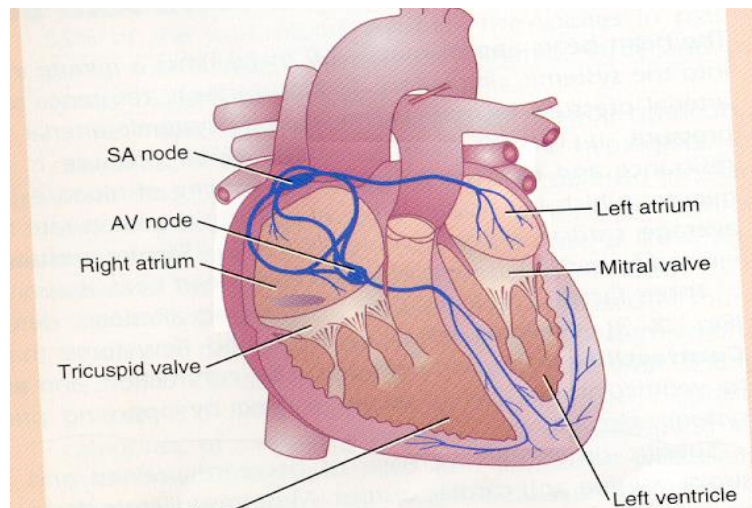
✚ **Heart muscle**

myocardium & surrounds the atria & ventricles

Pericardium = fibrous covering around the heart that protects it from injury & infection

Endocardium = 3-layered membrane that lines the inner part of the heart chambers

✚ Valves = 4 - two atrioventricular (tricuspid & mitral) & 2 semilunar (pulmonic & aortic) - control blood flow between atria & ventricles & pulmonary artery & the aorta.



Blood flow & Heart Rate (HR)

* Ave. HR = 60 - 80 beats/min. (adult).

* Ave. BP = 120/80 mm/Hg - resistance to blood.

Diseases and conditions that affect the heart include:

- ✚ **angina:** a type of chest pain that occurs due to decreased blood flow into the heart
- ✚ **arrhythmia:** or an irregular heartbeat or heart rhythm
- ✚ **congenital heart disease:** in which a problem with heart function or structure is present from birth
- ✚ **coronary artery disease:** which affects the arteries that feed the heart muscle
- ✚ **heart attack:** sudden blockage to the heart's blood flow and oxygen supply
- ✚ **heart failure:** wherein the heart cannot contract or relax normally.

Medication Groups

- ✚ **Beta Blockers:** Propranolol, labetalol, metoprolol, (betaloc), sotalol, celiprolol, atenolol, carvedilol
- ✚ **Ca Channel Blockers:** Used in coronary artery spasm
 - Nifedipine/Felodipine acts on blood vessels
 - Verapamil/Diltiazem acts on the heart muscle
- ✚ **Nitrates:** Isosorbide mono-nitrate, (duride) isosorbide di-nitrate, (coronex) glyceryl tri-nitrate (nitrolingual)
- ✚ **ACE Inhibitors:** (ACE = Angiotensin Converting Enzyme) Captopril, cilazopril, enalapril, quinapril, accupril.
- ✚ **Diuretics:** Bendrofluazide ,Frusemide, Bumetanide ,Aldactone, Amiloride
- ✚ **Digoxin**