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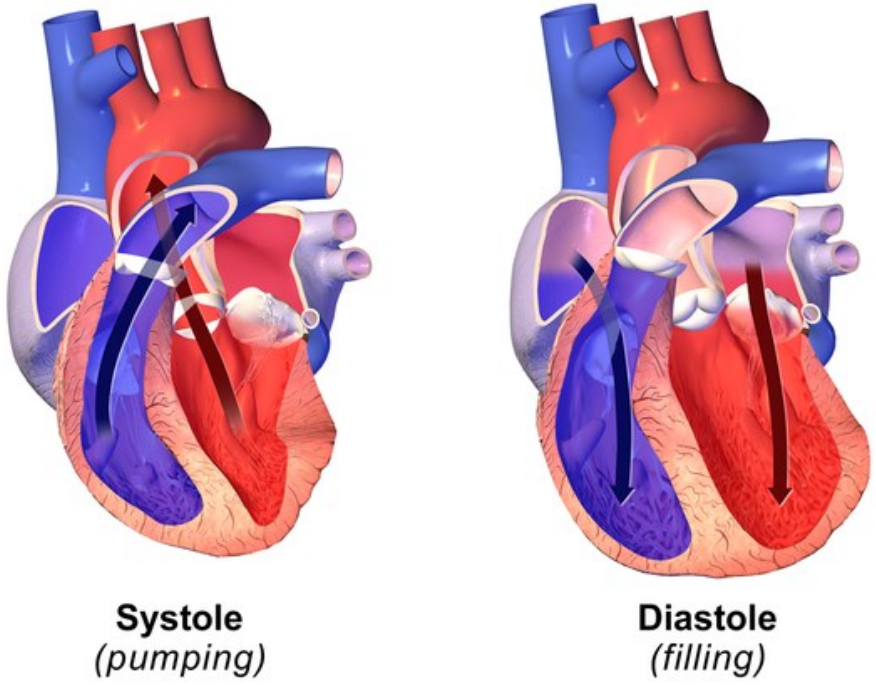
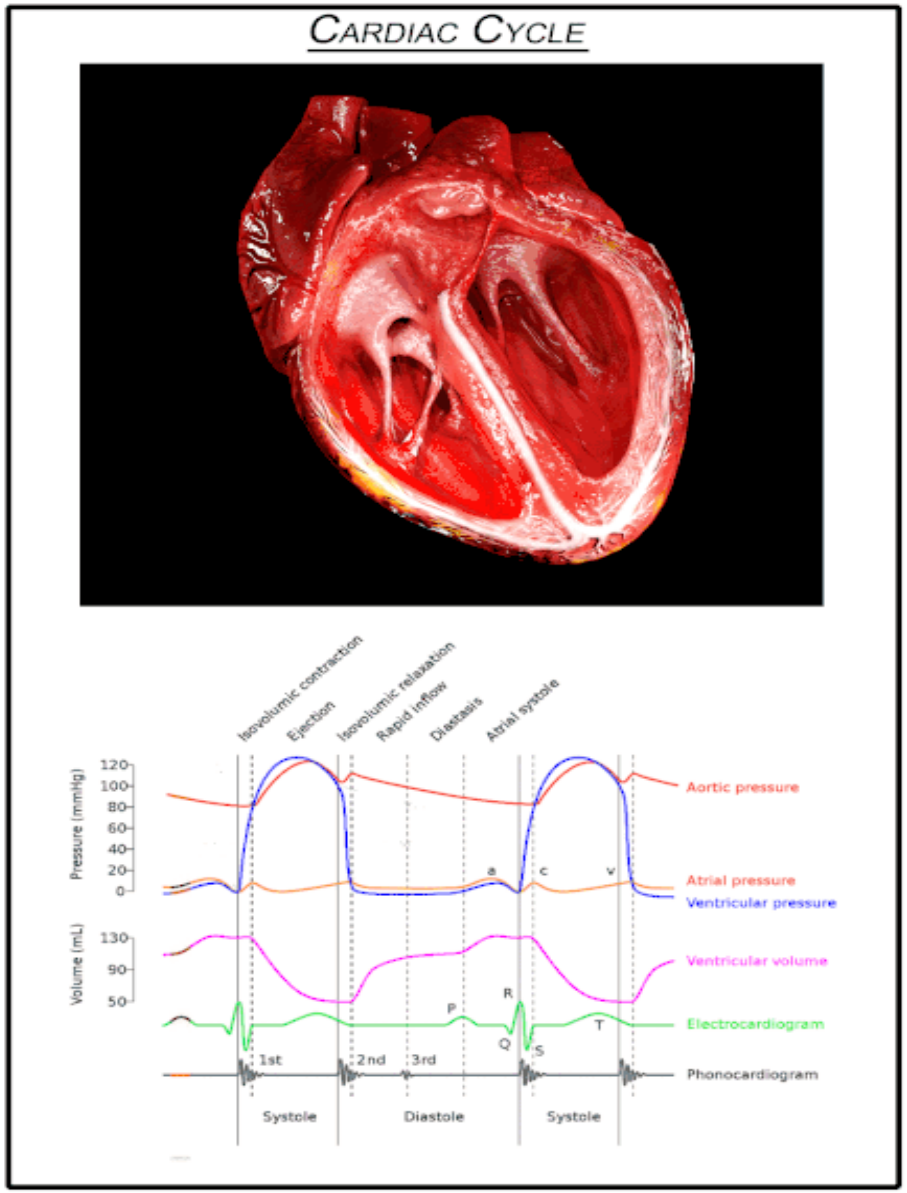
Circulatory System

Cardiac Cycle

Cardiac Cycle (0.8 Sec)

- The cardiac cycle is the performance of the human heart from the beginning of one heartbeat to the beginning of the next. It is a **sequence of alternating contraction and relaxation of the atria and ventricles** in order to pump blood throughout the body.

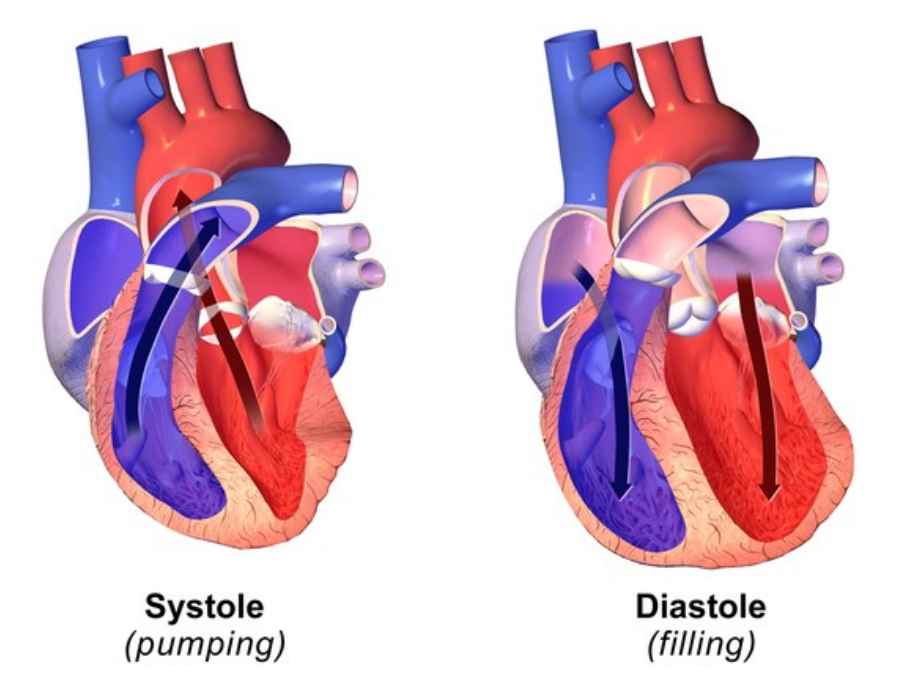


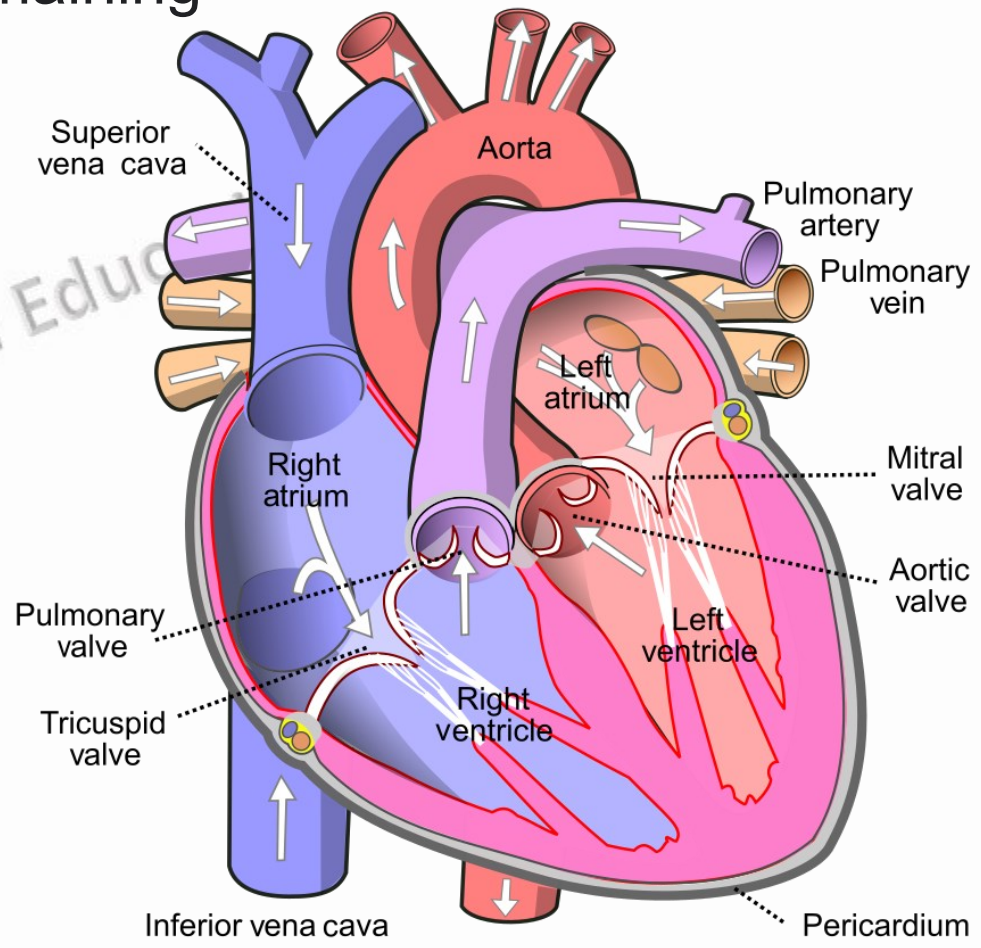


Stage of Cardiac Cycle

Atrial systole- (Atria contract and remaining blood is pushed into ventricles)

Duration- 0.1 sec.





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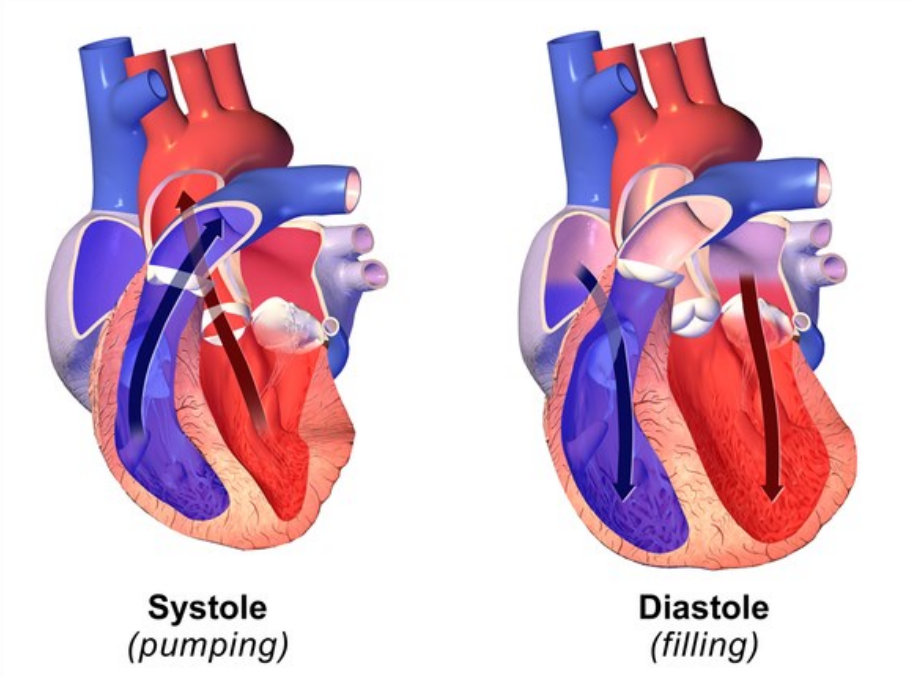
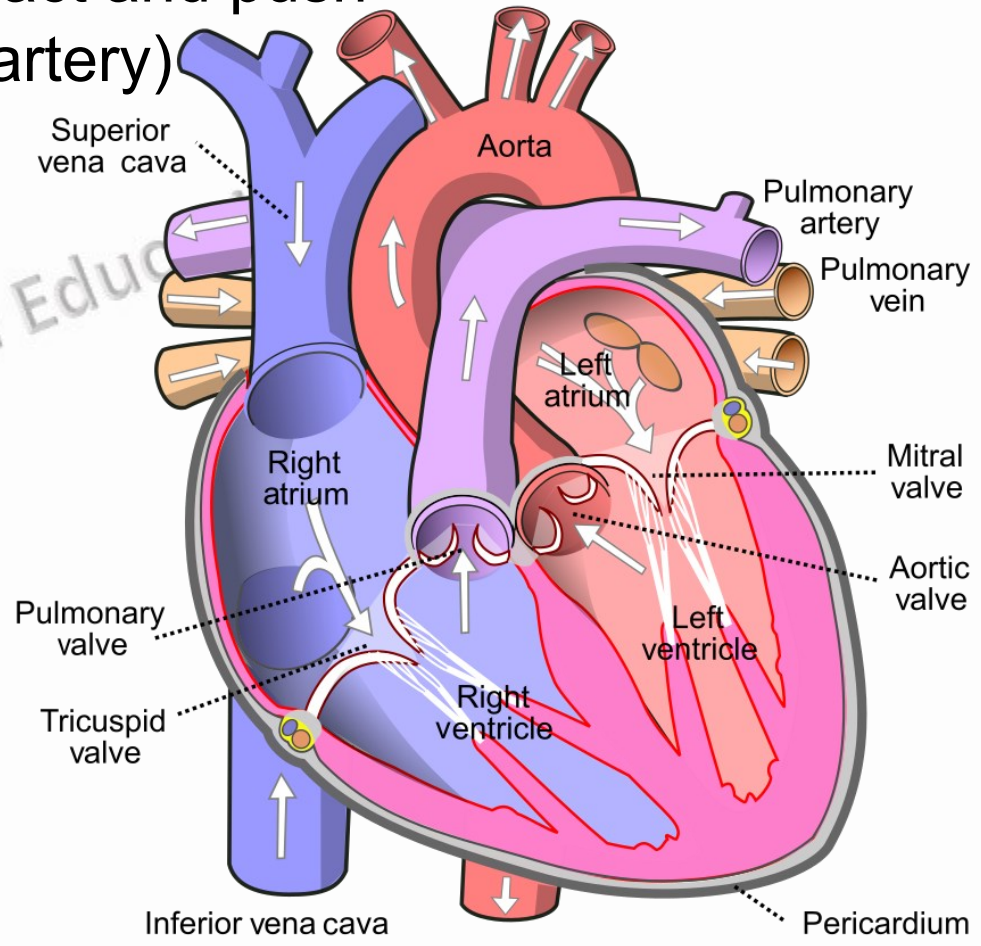
Stage of Cardiac Cycle

Ventricular systole (ventricles contract and push blood out through aorta and pulmonary artery)

Duration- 0.3 sec.

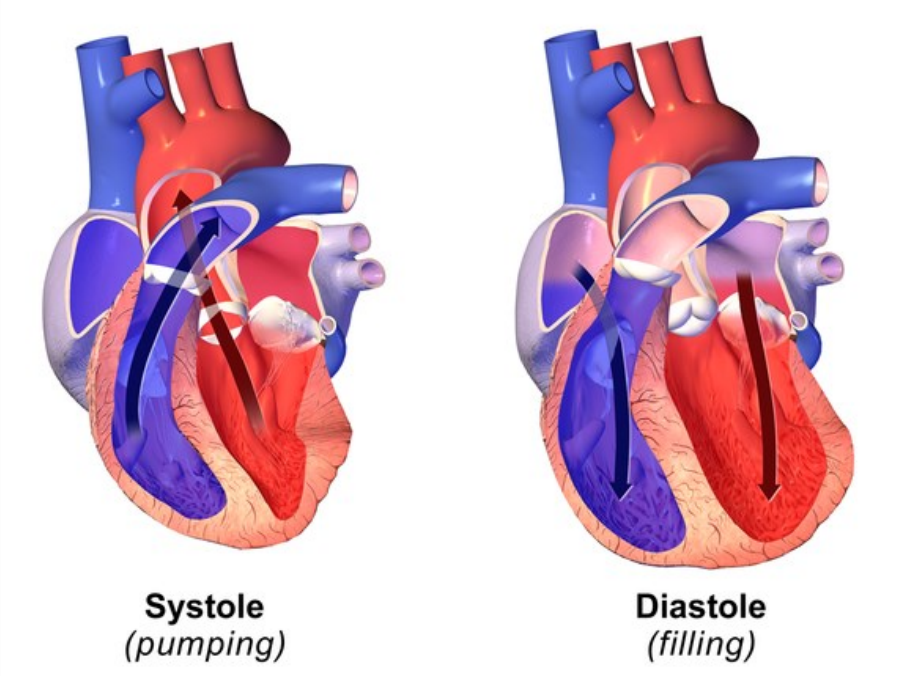


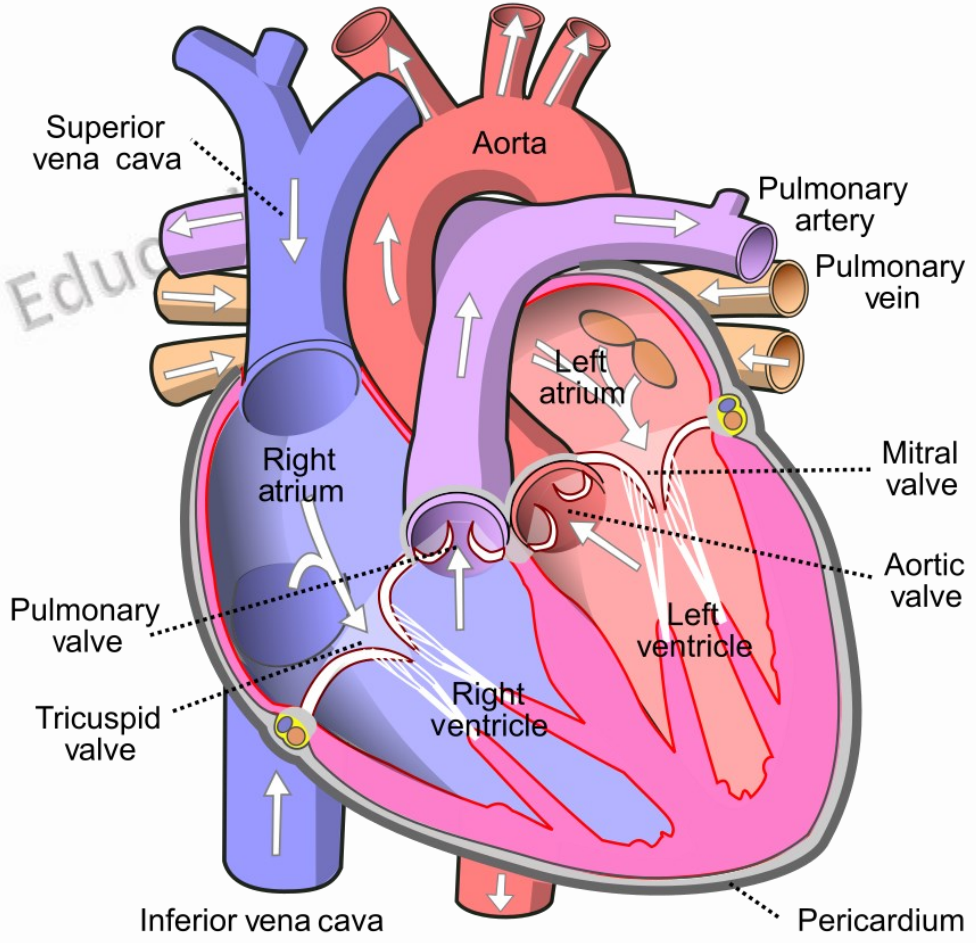


Stage of Cardiac Cycle

Atrial and Ventricular diastole (chambers are relaxed and filling with blood)

Duration- 0.4 sec.





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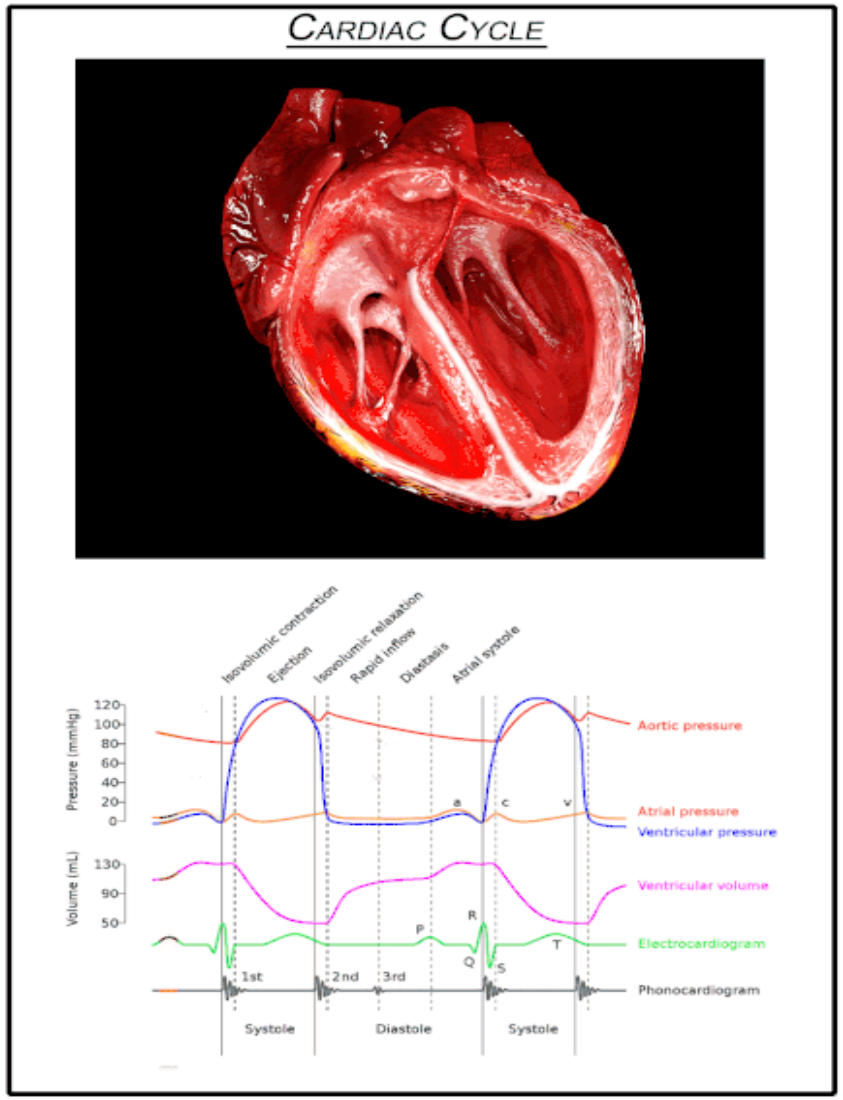
Lubb and Dubb Sound

- During each cardiac cycle, two prominent sounds are produced, which can be easily heard through a stethoscope.
- The first heart sound (lubb) is associated with the closure of the tricuspid and bicuspid valves.
- Second heart sound (dubb) is associated with the closure of the semilunar valves.



Cardiac murmur-

A heart murmur is an extra noise heard during a heartbeat. The noise is caused when blood does not flow smoothly through the heart.

Cardiac Cycle

1 Cardiac cycle= 0.8 Second

1 Minutes=72 Cardiac Cycle

Heart Rate-

1 Minutes=72 Beats

- Heart rate is the frequency of the heartbeat measured by the number of contractions of the heart per minute. Heart rate is a term used to describe the frequency of the cardiac cycle.

Newborn baby-140/min
1year-120/min
2 year-110/min
5 year-90-100/min
10year-80-10/min
Adult-60-80 beats/min

Maximum Heart Rate- '220-Age'

Athletics Heart-

- Athlete's heart (AHS) is **an increase in cardiac mass due to systematic training**.

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Stroke Volume-

- Stroke volume (SV) is the volume of **blood pumped from the left ventricle per beat.**

Cardiac Output-

- **Cardiac output** refers amount of blood your heart(left ventricle) pumps in one minute. **Cardiac output** is the function of heart rate and stroke volume.

Cardiac output = Stroke Volume X Heart Rate

For example: If the heart rate is 70 bpm and stroke volume is 70 ml.

Cardiac output = 70 X 70 = 4900 ml/min or 4.9 liters per minute.

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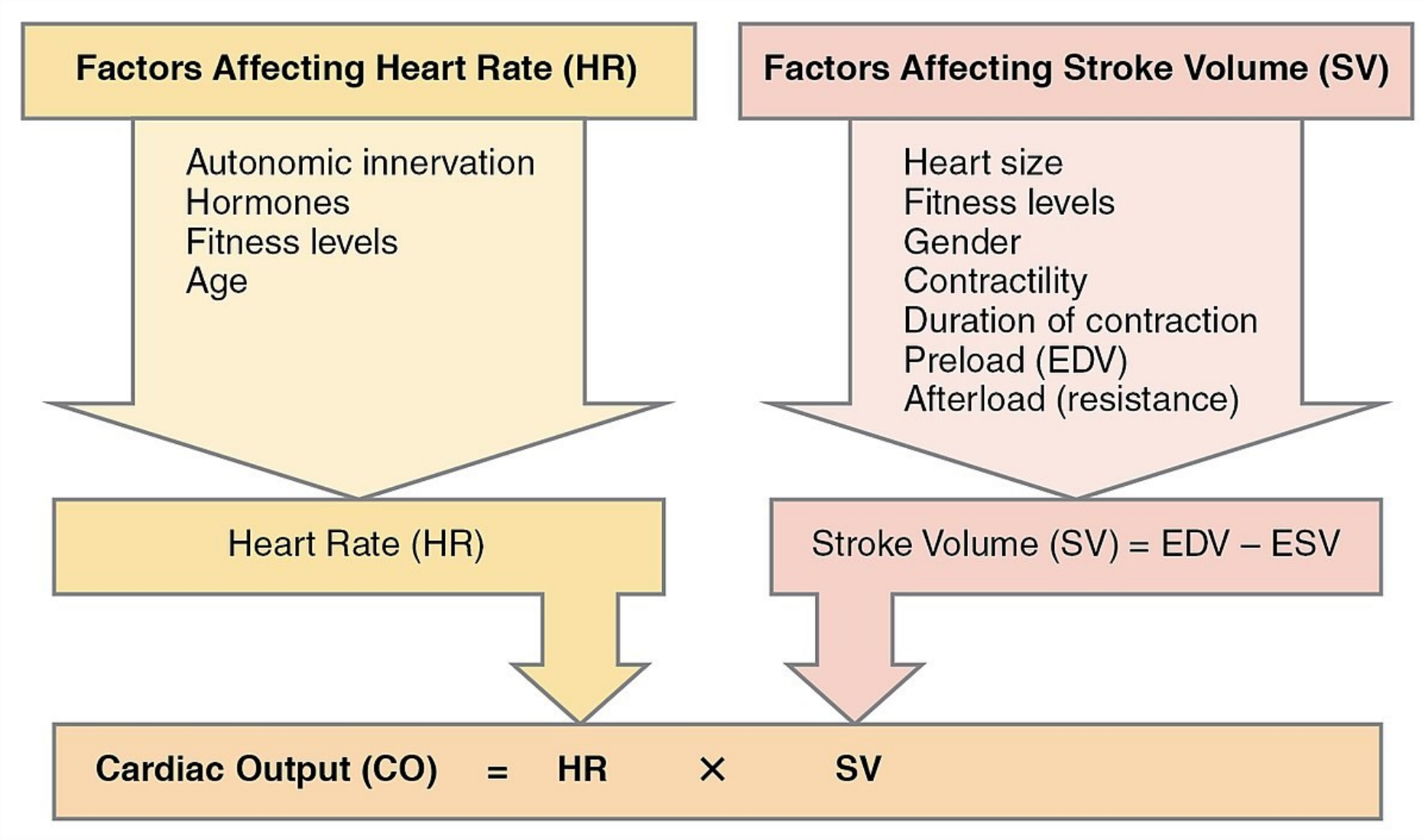
Cardiac Output



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Thank You for Watching

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thakuranjna99

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