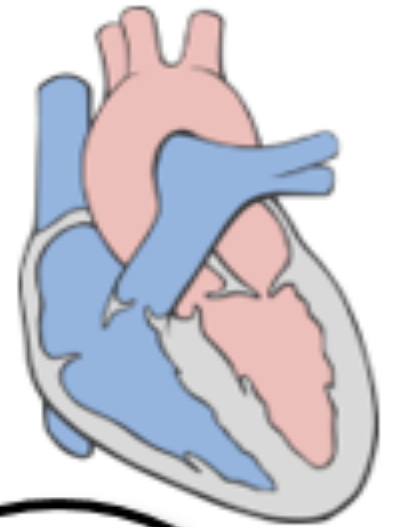


Function of the Heart

The heart needs to supply the muscles with enough oxygen to work. In order to increase the amount of oxygen supplied, they can increase the stroke volume or the heart rate.



Cardiac Output

The volume of
blood pumped
out of the heart
per minute
L per min

=

Stroke Volume

The amount of
blood pumped
out of the
heart per beat
L

×

Heart Rate

The number of
heart beats per
minute
BPM

Paper 1: Cardiac system

The relationship facts:

- ⚙ A long-term effect of exercise is cardiac hypertrophy, which involves an increase in heart size and strength. A stronger heart can pump out more blood per contraction, resulting in a higher stroke volume.
- ⚙ With more blood being pumped per contraction, the heart does not have to work as hard and is more efficient, meaning long-term exercise results in a lower resting heart rate.
- ⚙ Exercise increases heart rate, due to the demand for more oxygen by working muscles. This will result in an increased cardiac output during exercise.

Heart Rate during Exercise

