

Short term effects of exercise

Muscular system

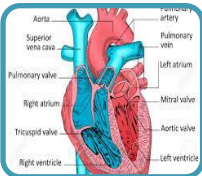


- Muscle temperature **increases**
- Metabolism **increases**
- Lactic Acid production **increases**

Cardiovascular system

ANTICIPATORY RISE begins:

The body is reacting before exercise through ADRENALINE



- Heart rate increases
- Stroke volume increases
- Cardiac output increases

VASCULAR SHUNT TAKES PLACE (redistribution of blood from internal organs meaning **MORE** blood goes to the working muscles)

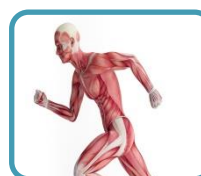
Respiratory system



- Respiratory rate **increases**
- Tidal volume **increases**
- Minute ventilation **increases**

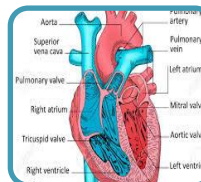
Long term effects of exercise

Muscular system



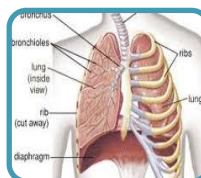
- **Muscular hypertrophy** occurs (Increase in size)
- Muscular strength **increases**
- Muscular endurance **increases**
- Muscular resistance to fatigue **increases**
- Strength of tendons **increases**
- **Increase** in capillarisation at the muscles

Cardiovascular system



- **Cardiovascular hypertrophy** occurs (increase in size)
- Heart strength **increases**
- **Increase** in resting stroke volume
- **Increase** in resting Cardiac output
- **Decrease** in resting heart rate
- **Increase** in rate of recovery from exercise
- Bradycardia occurs (Heart rate below 60 bpm)
- Reduced risk of heart attacks / CHD

Respiratory system



- **Increase** in aerobic capacity
- **Increase** in strength of respiratory muscles (Intercostals)
- **Increase** in tidal volume during exercise
- **Increase** in minute volume during exercise
- **Increase** in capillarisation around the alveoli

Skeletal system



- **Increase** in bone density