

LONG TERM EFFECTS OF EXERCISE

EFFECTS

TYPE OF TRAINING



Cardiovascular system

AEROBIC

Cardiac hypertrophy
Increased stroke volume
Decreased resting heart rate
Increase in maximum cardiac output
Capillarisation at the lungs and muscles
Increase in number of red blood cells



Respiratory system

AEROBIC

Increased number of functioning alveoli
Increased strength of respiratory muscles
(intercostals and diaphragm)



Energy system

AEROBIC AND
ANAEROBIC

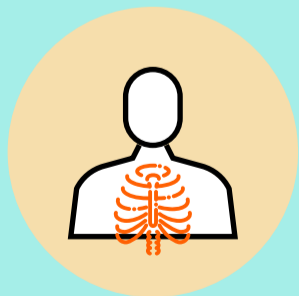
Increased production of energy from the
aerobic energy system
Increased tolerance to lactic acid



Muscular system

RESISTANCE

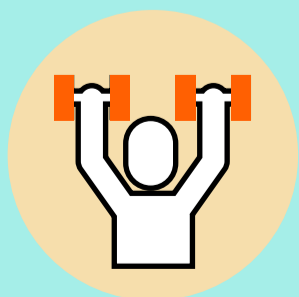
Muscle hypertrophy
Increased strength of tendons
Increased strength of ligaments



Skeletal system

RESISTANCE

Increase in bone density



Fitness

RESISTANCE, STRETCH-
ING AND INTERVAL

Increased strength
Increased flexibility
Increased speed
Increased muscular endurance

MEDIUM TERM

EFFECTS OF EXERCISE

(24-36 hours after)



Tiredness and fatigue

Can be mental or physical Sleeping well after training is important for recovery



Light-headedness

Usually a sign of dehydration and/or low energy stores



Nausea

Can be experienced in hours or days after intense exercise Important for athletes to refuel even if they feel a little nauseous



Delayed Onset of Muscle Soreness (DOMS)

Muscular pain experienced 24-48 hours after intense exercise due to microscopic tears in the muscle fibres Muscles must be rested while in this condition to avoid injury



SHORT TERM EFFECTS OF EXERCISE



Cardiovascular system

Increased stroke volume, increased heart rate, increased cardiac output, increased blood pressure



Respiratory system

Increased breathing rate, increased tidal volume



Cardio-respiratory system

Increased oxygen uptake, increased removal of carbon dioxide



Energy system

Increased lactate production



Muscular system

Increased muscle temperature, increased pliability

