



YMCA Awards

Level 3 Applied anatomy and
physiology

2018

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Blood pressure

Blood pressure classifications

- Hypotension - $<90/60$
- Normal/optimal - $120/80$
- Pre-high blood pressure - $120-140/80-90$
- Stage 1 hypertension - $>140/90$
- Stage 2 hypertension - $>160/100$
- Severe hypertension - $>180/100$

Risks and recommendations

- Hypotension and Stage 1 and Stage 2 hypertension
- Seek medical advice prior to exercising for extremely low blood pressure
- Severe hypertension is completely contraindicated and exercise should be performed under medical conditions

Risks and recommendations

- Heavy weight training and isometric exercise can significantly increase systolic and diastolic blood pressure
- Postural hypotension (a reduction in blood pressure) can occur in some clients following quick changes in body position (from lying to standing) or long periods of standing. This is common in older adults and pregnant women

Terms associated with circulation

- Cardiac cycle - The sequence of events that occurs when the heart beats
- The two phases of heart beat are diastole and systole
- Stroke volume - The amount of blood pumped from the heart in a single beat
- Cardiac output - The amount of blood pumped from the heart over a minute

Short-term effects of exercise on the cardio-respiratory system

- Increased breathing rate
- Increased tidal volume
- Increased efficiency of gaseous exchange
- Increased heart rate, stroke volume and cardiac output
- Vasodilation of blood vessels to the muscles
- Vasoconstriction of blood vessels to the internal organs

Long-term effects of exercise on the cardio-respiratory system

- Resting heart rate decreases
- Stroke volume increases
- Post-exercise recovery increases
- Increased blood volume
- Increased red blood cell count
- Increased capillarisation in lungs and muscle

Long-term effects of exercise on the cardio-respiratory system

- Decreased breathing rate
- Increased tidal volume
- Increased vital capacity
- Increased endurance of respiratory muscles
- Capillarisation within lungs and muscles
- Increased endurance of respiratory muscles

