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Exercise safety

The risk-benefit relationship of the exercise component of prehabilitation should be made on a case-by-case basis.

The decision to exercise individuals with relative contraindications should be made after consultation with relevant medical specialists, and with the individual's informed consent. It is preferable that these individuals exercise under direct supervision.

Contraindications to exercise[1-5]

Absolute contraindications

- Patient refusal
- Acute myocardial infarct (3-5 days)
- Unstable angina
- Uncontrolled arrhythmia causing symptoms or haemodynamic compromise
- Syncope
- Active endocarditis
- Active myocarditis or pericarditis
- Symptomatic severe obstructive valve lesions
- Uncontrolled heart failure
- Suspected dissecting or leaking aortic aneurysm
- Uncontrolled asthma
- Resting arterial saturation on room air <88%
- Acute systemic infection with fever >38°C, body pains.

Relative contraindications

- Untreated left main stem coronary stenosis
- Asymptomatic severe valve lesions
- Severe untreated arterial hypertension at rest (>200mmHg systolic, >110mmHg diastolic)
- Heart rate >110 or <50 beats per minute at rest
- Hypertrophic cardiomyopathy or other outflow obstruction
- Significant pulmonary hypertension
- Thrombosis of the lower extremity until treated for a minimum of 2 weeks
- Within 2 weeks of acute symptomatic pulmonary embolus
- Abdominal aortic aneurysm >8.0cm
- Severe electrolyte abnormalities
- Advanced or complicated pregnancy

- Resting arterial saturation on room air 89-94%
- Known or suspected bony metastases
- Ataxia, dizziness
- Significant cognitive impairment
- Acute anaemia with haemoglobin <80 mg/L
- Platelet count < 50 x $10^{9/L}$: monitor bleeding and bruising
- White cell count <2.0 x $10^{9/L}$ and/or neutrophil count <1.5 x $10^{9/L}$: avoid group exercise, individual session only.

Terminating exercise[1-5]

Reasons to terminate exercise

- Patient suffers a fall or collapse, or complains of dizziness or pre-syncope
- New onset chest pain
- Patient becomes diaphoretic, pale, sweaty and/or requests to stop due to feeling unwell
- Oxygenation:
    - SpO_2 <88% during exercise – exercise should be ceased; can be recommenced when SpO_2 returns to resting level at starting FiO_2
- Respiration:
    - If respiratory rate (RR) >35 breaths/minute during exercise; can recommence when RR return to within 5 breaths of resting rate
- Other reason, as per clinician judgement.

References

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