Life after COVID-19

The importance of a safe return to physical activity

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The COVID-19 pandemic has exposed the public health crisis created by lack of exercise. The stay-at-home restrictions have drastically limited physical activity and halted organised sport globally. For those who have had COVID-19, the pathway back to physical activity needs a roadmap.

While COVID-19 was initially thought to be primarily a respiratory condition, at least five other systems are commonly affected: cardiovascular, immunological, renal, haematological and neurological. More than one-quarter of patients with severe illness have evidence of cardiac damage, which may lead to myocardial scarring, exercise intolerance and arrhythmia. Presentations with post-viral chronic fatigue-like symptoms are increasing, and there is emerging evidence of long-term respiratory complications.

Physical activity is a key component of long-term recovery from illness, and it has profound physical and mental health benefits. Patients recovering from COVID-19 will require guidance through a gradual reintroduction of activity, with due consideration given to possible complications. The Australasian College of Sport and Exercise Physicians has developed a guideline for all primary care practitioners to assist with safe return of patients to physical activity after a diagnosis of COVID-19.

Assessing return to physical activity

To determine the appropriate return to physical activity, the relative risk of the patient returning to physical activity must be considered, in particular the risk of cardiovascular, respiratory and chronic fatigue complications. A thorough clinical assessment is required to evaluate initial symptom severity and secondary complications that may hinder exercise tolerance. This will stratify patients into three categories:

- **Low risk** – younger patients (aged <50 years) with recreational exercise goals who have had an asymptomatic infection or mild upper respiratory symptoms that have resolved within seven days.

- **Intermediate risk** – patients who experienced prolonged symptoms or fatigue (>7 days) or ongoing shortness of breath or chest pain, which did not require hospitalisation. This group also includes elite and/or endurance athletes or those with pre-existing comorbidities that may affect recovery.

- **High risk** – individuals who required hospitalisation. This includes patients with any evidence of system involvement outside the respiratory tract, prolonged shortness of breath or chest pain at rest or with activities of daily living, along with significant cardiac comorbidities or abnormal electrocardiogram (ECG) or troponin findings during the illness.

Graded return to physical activity following COVID-19

After a COVID-19 diagnosis, it is important that low-risk patients rest for at least 10 days. A graded return to physical activity can begin once the patient is symptom-free for seven days and no analgesia is required. The first priority is returning to baseline cognitive and physical loads at work/school, and to normal routines and sleep patterns. Physical activity should resume with 15 minutes of light activity until energy levels are restored, as lack of fatigue has been described as an important measure for patients in their recovery.

The duration of light exercise should then be extended, followed by the addition of bodyweight exercise (eg yoga or resistance exercise), with adequate rest between sessions. This can be progressed to skills training, heavier resistance exercise and sport-specific training to restore pre-COVID-19 fitness. The presence of red flag symptoms such as chest pain, palpitations and severe shortness of breath...
Returning to physical activity post-SARS-CoV-2 infection

Background

- COVID-19 is usually a mild respiratory disease but can cause severe illness
- It is a multisystem disease where cardiovascular, immunological, renal, haematological and neurological systems are often affected
- Possible chronic complications include ongoing fatigue, myocarditis and airway hypersensitivity
- Exercise is important for recovery for patients with COVID-19 but must be done gradually and safely

Assessing for return to physical activity

**Low risk**
- Mild or no symptoms
- Upper respiratory only
- Younger patient
- Recreational exercise goals

**Intermediate risk**
- Symptoms for >7 days
- Dyspnoea/ chest pain with illness
- Elite and/or endurance athletes
- History of asthma or chronic fatigue

**High risk**
- Hospitalisation and/or ICU
- Abnormal ECG or troponin
- Prolonged dyspnoea or chest pain with rest/minimal exertion
- History of cardiac disease

**Graded return to physical activity**

**Return to work or school**
- Return to normal routines and wake up times.
- Reintroduce physical and cognitive loads.

**Light activity**
- Start with 15 minutes and monitor symptoms.
- Increase heart rate and breathing rate.
- Start to clear any brain fog.
- Try:
  - walking
  - stationary bike
  - light jogging.

**Increase training progressively**
- Increase the duration of a familiar, light activity first.
- Introduce bodyweight resistance exercises but keep number of reps low.
- Remind muscles they can work.
- Pay careful attention to recovery in this post viral period.

**Steady, continual increase in training**
- Introduce sport-specific training, higher intensity drills, eg running drills, ball skills.
- Increase resistance, eg adding weights or return to gym sessions.
- Pay attention to coordination and skills/tactics.
- Restore confidence in pre-COVID skills and exercise tolerance.
- Check in on recovery.

**Return to pre-COVID exercise**
- Enjoy pre-COVID exercise habits and start to set new goals.
- Follow local physical distancing guidelines and COVID-19 protocols.
- If there are any red flag symptoms or concerns about exercise tolerance, a medical review is required as soon as possible.
- A sport and exercise physician may be able to guide specific cases.

**Timeframe for progression**
- Each stage must be completed comfortably before progression.
- Timeframes will vary depending on pre-COVID fitness levels.

**Red flag symptoms**
- Chest pain or palpitations
- Breathlessness, out of proportion with expected recovery
- Features of thrombosis, eg swollen calf or sinus tachycardia, breathlessness

**Figure 1.** Return to physical activity flowchart

*BNP, B-type natriuretic peptide; CT, computed tomography; CXR, chest X-ray; ECG, electrocardiography; ICU, intensive care unit; PCR, polymerase chain reaction
or concerns about exercise intolerance warrants a review by the general practitioner, and the potential for referral to a cardiologist or respiratory physician. Figure 1 is designed to assist primary care physicians with assessing risk, implementing a safe return to physical activity and developing team care arrangements where appropriate. This is a vital component of recovery from COVID-19, and this framework will help clinicians in guiding their patient’s return to physical activity, no matter their athletic ability.

Additional resources

British Journal of Sports Medicine

- COVID-19 cardiac concerns in college sport, https://open.spotify.com/episode/4XrG0bbLs4yqS5msmm?
- Elite athlete return-to-play guidelines
  - Resurgence of sport in the wake of COVID-19: Cardiac considerations in competitive athletes, https://bjsm.bmj.com/content/early/2020/06/18/bjsports-2020-102516
  - Graduated return to play guidance following COVID-19 infection, https://bjsm.bmj.com/content/early/2020/06/22/bjsports-2020-102637

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References


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