

<https://blogs.bmj.com/bjbm/2020/12/18/return-to-exercise-helping-patients-to-overcome-the-long-tail-of-covid-19/>

“Return To Exercise Model” British Journal of Sport Medicine (December 2020)

1. Patients hospitalised, or bedridden during the course of illness (moderate and severe illness).
2. Patients on long term oxygen, or who require cardiac / respiratory evaluation prior to starting exercise.
 - Some patients may have prolonged rehabilitation needs in the community for up to 3-6 months after recovery from covid-19 (1,2,6).
 - The rehabilitation and “Return to Exercise” guidance should focus on activities of daily living (ADL), return to function, and then exercise.
 - Exercise clinicians may be able to offer unique skills and help act as a “quarter back” to co-ordinate individualised rehabilitation plans for patients (10). This could involve undertaking biomechanical assessments, prescribing exercise and reviewing patients holistically in a multisystem approach.

Stage 1

- All exercises focused on aerobic or strength training should stop whilst patients are symptomatic in the acute phase of infection.
- Where available, pulse oximetry can help to guide ambulation, though oxygen saturation monitors on phones are not yet validated for clinical use. (2,11).
- Controlled and paced breathing techniques can be used to aid ambulation and ease breathlessness (12).
- Hygiene measures are advised to prevent indoor transmission of the virus to close contacts (<6 feet) (13). There have been several outbreaks in care homes, collegiate and university campus facilities where communal areas are utilised (14).

Stage 2

- Initially, limit aerobic exercise to walking and carrying out ADL's. Begin low level stretching and strength exercise; flexibility and strength exercises can minimise further physical deconditioning (8,9).
- Gradual increase in aerobic exercise, limited to 6/10 on a scale of rate of perceived exertion, and strength exercises up to 40% one repetition maximum (1RM) beginning with bodyweight exercises (7,17). Even modest improvement in fitness can reduce symptoms of breathlessness and can aid recovery post covid-19 (12).
- For patients who are unable to tolerate aerobic exercise due to respiratory muscle weakness, or chronic lung disease consider referral for specialist pulmonary rehabilitation or supervised respiratory muscle training.
- Consider targeted nutritional interventions (caloric supplementation or protein intake >1.5 k/kg) in high-risk groups. These include patients at risk of a catabolic state, who are elderly, frail or exhibit sarcopenia (15).

Stage 3

- Increase volume of aerobic exercise with shorter intervals (30-60s) or continuous bouts of exercise working toward the WHO recommended levels of physical activity (16).
- Aim to increase muscle strength as well as function; resistance training load can be increased gradually up to 70% of 1RM (8-12 reps, 2-3 sets) to increase muscle strength (17).
- Progression may take longer for patients who have a low baseline fitness (premorbid condition) or whom demonstrate significant post infection deconditioning. Consider referral to a regional MDT rehabilitation clinic where available in secondary care (6).
- Where available, pulse oximeters and heart rate responses to exercise can be used alongside ratings of perceived exertion to monitor exercise intensity.

Stage 4

- Patients at risk of significant deconditioning, such as those who were bedbound, may benefit from an individualised exercise prescription or secondary care input to prevent further deconditioning (18).
- Exercise programs online or via apps may be used to promote continued physical activity and improve motivation through progress tracking. Group based exercise may also be delivered online and increase motivation when exercising at home (12).
- Consider screening high risk patients to identify risk factors such as obesity, sarcopenia or frailty. Targeted interventions such as exercise prescription, nutritional supplementation, or specialist physiotherapy may improve long-term outcomes.
- Covid-19 may adversely affect the mental health of patients both directly and indirectly (19, 20). If appropriate, offer psychological support, sleep hygiene interventions and consider referral to psychological services through local pathways.

Key Points

1. There is limited guidance available on how to return non-athlete patients to exercise post covid-19.
2. “Return to Exercise” guidelines for non-athletes may help to prevent physical deconditioning and reduce disability post covid-19.
3. Patients with prolonged symptoms (“long covid”), or who fail to progress during a “return to exercise” protocol may benefit from an MDT approach to rehabilitation.
4. Exercise physicians could play a key role, in initiating and supervising structured exercise programs for patients with complex rehabilitation needs.

All information has been taken from the journal article: “Return to exercise” – helping patients to overcome the long tail of covid-19.