

# COVID-19: Community Rehabilitation

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## Introduction

The rehabilitation of patients recovering from COVID-19 is essential to ensure an improvement in long-term physical and mental health. Community-based physiotherapists will play a key role in the rehabilitation of COVID-19 survivors following hospital discharge.

## The Role of the Community-Based Physiotherapist

Once the surge in acute cases of COVID-19 (/Coronavirus\_Disease\_(COVID-19)) patients has subsided, there will be an increase in rehabilitation needs of these patients following discharge from hospital. The NHS in the United Kingdom has predicted that these patients will have significant physical, neuropsychological, and social needs on discharge from hospital.<sup>[1]</sup> Community-based physiotherapists will be essential in the provision of these rehabilitation services.<sup>[2]</sup>

Community-based physiotherapists will actively contribute to the rehabilitation of patients recovering from COVID-19 and help reduce the risk of readmission to hospital for these patients. Two risk factors for hospital readmission are

1. Impaired physical function

2. Unmet needs for Activities of Daily Living (ADLs) assistance.

These are two areas in which physiotherapists are essential in delivering care.<sup>[2]</sup>

For patients with poor health care outcomes, the provision and participation in rehabilitation may increase their functional reserve and make a difference between surviving or succumbing to an acquired COVID-19 infection.<sup>[3]</sup>

Community-based physiotherapists:

- Will be key in the ongoing rehabilitation of survivors of COVID-19 to optimise recovery of these patients.
- Will perform other tasks such as home safety assessments, acquisition of relevant medical equipment as well as caregiver training once patients have been discharged from hospital.<sup>[2]</sup>
- Can provide interventions to non-COVID-19 patients and possibly reduce the volume of new hospital admissions for this population, which in turn will reduce the burden on already stretched hospitals.

## General Rehabilitation Strategies in COVID-19 Patients Following Hospital Discharge

- Patients recovering from COVID-19 will still need rehabilitation following discharge from a hospital or a rehabilitation centre. Rehabilitation strategies can include<sup>[4]</sup>:
  - Graded exercise (/Therapeutic\_Exercise)
  - Education on energy conservation and behaviour modification
  - Home modification
  - Assistive Devices (/Assistive\_Devices)
- Patients may also benefit from pulmonary rehabilitation (/Pulmonary\_Rehabilitation) interventions – this targets physical and respiratory impairments and include a combination of graded exercise, education, activities of daily living and psychosocial support.
- Pandemic-related constraints (such as social distancing (/Social\_Distancing), limited human resources and limited public transport) and infection risks following discharge might mean physiotherapists need to think out of the box and find innovative ways to provide rehabilitation services.
  - This could include telehealth (/Introduction\_to\_Telehealth) (conference on telehealth, image at R)
  - Remote exercise - such as “virtual group” education and exercise
  - Peer to peer support from COVID-19 patients who have received the appropriate training
- Rehabilitation services in people’s communities are often the best-placed to provide long-term care<sup>[4]</sup>

## Healthcare Needs of COVID-19 Patients Following Discharge

Patients may present with various issues on discharge from hospital or inpatient rehabilitation centres. Rehabilitation specialists such as physiotherapists in the community will be needed to provide the relevant care of these patients. The issues still prevalent in a patient recovering from COVID-19 following discharge will guide and inform the patient’s care and support plan. This can include considerations such as if the patients will be able to care for themselves and manage their needs and what wider support will be necessary.<sup>[5]</sup> These issues may include:

- Physical issues
  - Such as weakness
  - Fatigue
  - Balance (/Balance)
  - Gait (/Gait) issues
  - Loss of function
  - Respiratory problems such as:
    - breathlessness (/Dyspnoea)
    - oxygen desaturation (decrease on O<sub>2</sub> in the blood resulting from any condition that affects the exchange of CO<sub>2</sub> and O<sub>2</sub>)
- Psychological and neuro-psychological issues
  - Patients may present with anxiety, depression (/Depression) or Post Traumatic Stress Disorder (/Post-traumatic\_Stress\_Disorder) and other psychological difficulties as a result of their experience of the illness and the treatment they received
- Social issues
  - A patient’s circumstances may be affected by the pandemic and changes during periods of lockdown

It is critical that the needs of the patient and the symptom management should always be considered and addressed in a holistic way. The patients’ needs will also change as rehabilitation progresses and the treatment goals should be adjusted accordingly.

## Physical Issues

### Respiratory

- Patients may require supplemental oxygen (/Oxygen\_Therapy) following discharge, either temporary or long-term <sup>[5]</sup>
- Pulmonary rehabilitation - the need for this will depend on the severity of the COVID-19 infection, existing comorbidities and the patients’ functional status
- Pulmonary vascular disease – evidence shows that patients with COVID-19 experience a high prevalence of thromboembolic disease and patients that were treated in ICU with severe COVID-19 may develop pulmonary artery hypertension (/Pulmonary\_Hypertension)
- Chronic cough - this is defined in adults as having a cough lasting over eight weeks. Cough is one of the most common clinical features in patients with COVID-19, but research is still lacking on chronic cough post- COVID-19 infection.
- Lung fibrosis – about 30% of SARS and MERS survivors experienced physiological impairment and abnormal radiology that is consistent with fibrotic lung disease. Pulmonary fibrosis (/Pulmonary\_Fibrosis) may be a consequence of COVID-19.
- Pulmonary physiology interventions to determine the effect on lung function
  - Pulmonary function tests (/Pulmonary\_function\_test) such as spirometry (/Spirometry), lung volume (/Lung\_Volumes)s, gas transfer and exercise capacity may need to be done to determine the physiological impact of the effect of COVID-19. These tests are necessary to manage potential pulmonary scarring and resulting fibrosis, but the timing and nature of the tests to be done still needs to be determined.
- Possible risk of bronchiectasis (/Bronchiectasis) after COVID-19 infection needs to be considered <sup>[5]</sup>

### Cardiac

- Acute myocardial injury (/Myocardial\_Infarction) is the most common described cardiovascular complication in patients with COVID-19 ( occurring in 8-12% of discharged patients, heart failure (/Heart\_Failure) is reported in 12% of recovered and discharged patients) <sup>[5]</sup>

## Neuromuscular

- Hospital-acquired weakness
  - The impact of COVID-19 on the incidence of hospital-acquired weakness (/ICU\_Acquired\_Weakness), deconditioning in hospital and the long-term physical weakness is still not known. There seems to be anecdotal evidence from the UK and Europe that there might be a higher than usual incidence of ICU-AW (/ICU\_Acquired\_Weakness) compared to the usual critical care cohort. Early physical rehabilitation following hospital discharge is beneficial and may improve quality of life. An eight-week pulmonary rehabilitation program in survivors of ARDS (/Acute\_Respiratory\_Distress\_Syndrome\_(ARDS)) significantly improved quality of life and exercise capacity. Physiotherapy is critical in addressing these issues of deconditioning and weakness. <sup>[5]</sup>
- Neuropathy
  - Patients may have neuropathies (/Neuropathies) following discharge. One of the treatment methods for patients with respiratory failure is prone-positioning for up to 16 hours per day. This may put patients at risk for compression neuropathies and neural damage. Other issues may be pressure damage (/Pressure\_Ulcers) to heels and other areas due to prolonged bed rest, lack of sensation, lack of proprioception (/Proprioception) and an increased risk for falls (/Falls). Physiotherapists are key role players in the assessment and treatment of neuropathies. <sup>[5]</sup>

## General function and well-being

- Fatigue
  - People who have had COVID-19 report extreme fatigue beyond the usual reported levels. This will influence the recovery rate, the need for support and the need for supportive equipment, as well as a person's return to their normal activities and work. A gradual increase and return to activities and exercise are advised and patients need to be taught pacing strategies. Physiotherapists are in a unique position to early identify fatigue in patients and can implement fatigue management strategies. This can include sleep hygiene (/Sleep\_Regulation\_and\_Assessment), energy conservation techniques, pacing, a gradual increase in activity and graded exercise. The early implementation of these fatigue management strategies could limit the impact of fatigue and the possibility of fatigue developing into a chronic condition (/Chronic\_Disease). <sup>[5]</sup>

## New Challenges to Treatment of Discharged COVID-19 Patients

- Increased number of patients with Post Intensive Care Syndrome (PICS)
- Maintaining infection control
- Increased pressure on equipment provision – such as oxygen canisters, personal protective equipment
- Increased pressure on staffing
- Increased number of patients with persisting psychological difficulties following hospital discharge<sup>[5]</sup>

## Emerging Clinical Perspectives that Affect Rehabilitation of COVID-19 Patients

### Post Intensive Care Syndrome (PICS)

The aftershock of the pandemic will include ongoing rehabilitation needs of patients with PICS. Coordinated rehabilitation approaches should be considered and developed for this specific cohort of patients.<sup>[6]</sup>

More information on PICS is available on this Physiopedia Page: COVID-19: Post-Acute Rehabilitation (/COVID-19:\_Post-Acute\_Rehabilitation)

### Post-Viral Fatigue Syndrome

There is the potential that people recovering from COVID-19 may develop post-viral fatigue syndrome (PVFS). It is critical that physiotherapists are aware of the signs and symptoms of PVFS and be aware and know the management strategies. These management strategies should focus on rest, hydration and nutrition.<sup>[6]</sup>

If the symptoms of post-viral fatigue syndrome do not resolve within 4-5 months of the viral infection, it could then be diagnosed as Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (/Myalgic\_Encephalomyelitis/Chronic\_Fatigue\_Syndrome).

The main symptom of ME is post-exertional malaise and it is important that physiotherapists know this and also know the appropriate treatment. A key factor to keep in mind is that progressive physiotherapy can be harmful to people with ME. People with ME have an abnormal response to exercise. This abnormal response includes<sup>[7]</sup>:

- Lower anaerobic threshold
- Lower oxygen capacity
- Increased acidosis
- Abnormal cardiovascular responses

Suitable management approaches include:

- Symptom contingent pacing
- Heart rate (/Pulse\_rate) monitoring<sup>[6]</sup>

## Post Viral Fatigue (PVF), Post Viral Fatigue Syndr...



[8]

## Steps to Consider Following Discharge

Following discharge, the support of the patient should be kept under review as the person's situation changes and the personalised support and care plan also adapts. Some principles to consider once a person returned home after a COVID-19 infection include<sup>[5]</sup>:

- Existing services
  - Patients should be supported through adapting and strengthening the local existing services in a community, as far as possible. These systems will differ between countries.
- Infection risk
  - Infection prevention control measures should adhere to the local and national guidelines as set out the specific region or country.
- Minimise steps
  - The number of steps in a treatment or management pathway of a patient being discharged from the hospital should be minimised as well as the number of healthcare professionals involved in the management of the patient. This will help to further reduce the risk of infection.
- Volunteers and carers
  - If available in a region or country, make use of volunteers and carers to support patients
- Education and training
  - Rehabilitation professionals involved in the care of COVID-19 patients may have education and training needs
- Support for rehabilitation professionals
  - Psychological and practical support for rehabilitation professionals during the pandemic should be provided.

## COVID-19 Rehabilitation Programme

A programme of online courses by The Physioplus Team

Learn more on this topic ([https://members.physio-pedia.com/learn/covid-19-rehabilitation-programme/?utm\\_source=physiopedia&utm\\_medium=content\\_ad\\_GE16&utm\\_cam](https://members.physio-pedia.com/learn/covid-19-rehabilitation-programme/?utm_source=physiopedia&utm_medium=content_ad_GE16&utm_cam))

## Rehabilitation Strategies for COVID-19 Patients Following Discharge from Hospital

This is just a short summary of some rehabilitation strategies and interventions from different countries. Evidence is still emerging and the clinical guidance may change as more is learnt about the natural history of the disease.

## Pulmonary Rehabilitation in COVID-19 Patients Recovering from ARDS – Suggestions from Italy

These are the results of an Italian consensus through a Delphi process that was published in June 2020<sup>[9]</sup>. The full article can be accessed here (<https://www.monaldi-archives.org/index.php/macd/article/view/1444/1048>). Some of the suggestions that may influence the rehabilitation of patients discharged from hospital will be highlighted here.

## Personal Protection Equipment

Suggestions for personal protection needs<sup>[9]</sup>

- Appropriate PPE (/Personal\_Protective\_Equipment\_(PPE)) should be used by healthcare professionals. They should be trained in the proper donning and doffing procedures of PPE. In this Italian consensus, they recommend that in the first 3 months after infection and if the patient has negative nasal/throat swabs, use eye and respiratory protection, gloves and if possible disposable gowns when using Aerosol Generating Procedures (AGP's)
- All patients should wear a medical mask during treatment
- Measures to minimise droplet and aerosol dispersion should be implemented during AGP's
- Outpatient consultation
  - Aerate the examination room after each consultation
  - Sanitise surfaces
  - Ensure spatial distance between patients in waiting rooms

## Diagnosis of COVID-19 Phenotype Patients

Phenotypes<sup>[9]</sup>

- The following is still unknown:
  - Days of contagious risk
  - Need for pulmonary rehabilitation
  - Timing to commence pulmonary rehabilitation
  - Predictors of recovery
- Pulmonary rehabilitation is proposed for dyspnoeic, older patients with comorbidities, with:
  - Long length of hospital stay
  - History of ICU admission
  - Weaning from mechanical ventilation was required
  - Reduced strength and exercise capacity
  - In need of oxygen at rest and during effort
- Individualised pulmonary rehabilitation programs should be proposed

Frailty measures<sup>[9]</sup>

- Patients with frailty could be affected more seriously and may have a poor prognosis
- Recognition of frailty is important before setting up a PR program, to reduce the risk of poor outcomes
- Multidimensional assessment should be incorporated in frailty measurements such as:
  - Global exercise capacity
  - Strength
  - Balance
  - Coordination
  - Nutritional
  - Psychosocial status

Timing of Pulmonary Rehabilitation Commencement<sup>[9]</sup>

- No clear scientific evidence for the timing as yet
- PR is recommended from an early stage in hospital
- Interestingly, a suggestion that was not approved by the consensus panel was that outpatient rehabilitation programs and telemedicine should be considered for patients discharged from the hospital. Reasons for this included;
  - inconclusive literature evidence on telerehabilitation
  - the belief that telerehabilitation could only be used for stable patients
  - obstacles of telerehabilitation such as useable technology for the largest possible number of patients and the safety of patients at home
  - medico-legal liability
  - issues around economic reimbursement.<sup>[9]</sup>

## Assessments

- Discharge outcomes following COVID-19 are still unknown<sup>[9]</sup>
- Assessments should include:<sup>[9]</sup>
  - symptoms scales
  - cardiorespiratory function
  - pulmonary function tests
  - respiratory muscle strength
  - comorbidities
  - neurological disorders
  - psychological disorders
  - frailty
- Outcome measures should include:<sup>[9]</sup>
  - exercise tolerance
  - functional status and physical performance
  - presence of Critical Illness neuromyopathy and ICU-AW
    - ICU-AW can be measured with manual muscle testing to assess the strength of six muscle groups bilaterally to determine the Medical Research Council (MRC) Sum Score. MRC Sum Score of < 48 is an important criteria to define ICU-AW.<sup>[10]</sup>
  - Activities of Daily Living
  - baseline functional impairment due to dyspnea and how breathlessness affects the patient's mobility
- Gas exchanges and best informative indices<sup>[9]</sup>

- Pulse oximetry and  $\text{SaO}_2/\text{FiO}_2$  values are critical to monitor the clinical situation at rest and during effort
- Pulse oximetry device at home is recommended
- Lung function tests<sup>[9]</sup>
  - When safe to perform by operators and patients
  - Not to be used as outcome measures of pulmonary rehabilitation programs
  - Severe impairment should not be considered a contra-indication for Pulmonary Rehabilitation
- Functional Evaluation<sup>[9]</sup>
  - At discharge and before the start of Pulmonary Rehabilitation
  - Following discharge an assessment of physical performance and ADL autonomy is necessary.
  - The standard maximal cardiopulmonary exercise test is not recommended in the first 6-8 weeks following acute hospital discharge due to unknown cardiorespiratory and muscle involvement and infectious risk
  - Exercise-induced oxygen desaturation assessment is critical during exercise tolerance tests
  - With exercise and exercise testing
    - fatigue and breathlessness should be evaluated through psychometric scales such as BORG scale or VAS
    - Follow-up assessments should routinely include monitoring of physical performance
- Respiratory muscle assessment<sup>[9]</sup>
  - Unknown factors
    - prevalence
    - severity and
    - recovery of respiratory muscle weakness due to COVID-19
  - Standard maximal inspiratory and expiratory pressures (MIP/MEP) are not recommended in the first phase (6-8 week) due to infection risk

#### Quality of life assessment<sup>[9]</sup>

- Test for the presence of disorders such as anxiety, depression, sleep disturbances, PTSD
- Assess patients level of autonomy
- Assess the quality of the patient's support network
- Obtain a global measurement of the patient's perceived Quality of Life level

#### Emotional aspects to identify<sup>[9]</sup>

- Neuropsychological assessment at baseline and post-Pulmonary Rehabilitation
- Measures of psychosocial effects such as depression, anxiety, PTSD
- Do not ignore the long term psychological and psychosocial implications of infectious diseases
- Consider caregiver and family of patient affected by COVID

### Interventions

#### Oxygen therapy<sup>[9]</sup>

- Oxygen needs at rest, during effort and sleep, should be assessed
- Use standardised tests such as 6MWT (if the patient is able to) to assess oxygen need during effort
- Precautions about air dispersion distance should be considered during oxygen administration

#### Exercise programs<sup>[9]</sup>

- Pulmonary Rehabilitation in post-COVID-19 patients could improve symptoms, functional capacity and quality of life. However, the best exercise program intervention is still unknown
- Exercise training principles in patients with chronic lung disease could be considered in post-COVID-19 patients
- In patients with mild or no disability (SPPB\* > 10; Barthel Index (/Barthel\_Index) > 70) – Aerobic exercise <3.0 MET's with a progressive increase of intensity based on symptoms (BORG fatigue and/or dyspnea below the score of 3) is advised to restore normal physical function
- In patients with moderate to severe disability (SPPB < 10; Barthel index (/Barthel\_Index) < 70) – a comprehensive rehabilitation program is recommended to improve autonomy, peripheral and respiratory muscle strength, balance, walking ability, symptoms and Quality of life
- Aerobic exercise (cycling, treadmill, free walking) and resistance strength training should be included in the exercise program
- $\text{SpO}_2$  measurement is mandatory during exercise, subsequent oxygen supplementation may be prescribed if  $\text{SpO}_2 < 93\%$
- \*SPPB = *Short Physical Performance Battery*

#### Lung recruitment exercises<sup>[9]</sup>

- Chest expansion breathing control exercises associated with posture positioning should be considered

#### Respiratory muscle training<sup>[9]</sup>

- Not routinely recommended but could be used if respiratory muscle weakness is present
- The type, efficacy and duration of muscle training in COVID-19, post-acute or long-term still needs to be investigated
- Inspiratory muscle training should start at low intensity guided by dyspnea/fatigue and vital signs

#### Telerehabilitation<sup>[9]</sup>

- May be an appropriate response following discharge
- May increase the accessibility to Pulmonary Rehabilitation

## KNGF position statement: Physiotherapy recommendations in patients with COVID-19

The Royal Dutch Society for Physical Therapy (Koninklijk Nederlands Genootschap voor Fysiotherapie (<https://www.kngf.nl/>)) compiled a position statement on Physiotherapy recommendations in patients with COVID-19. In this statement, recommendations are included for physiotherapy interventions in patients following discharge from hospital. The English version of this position statement is available here ([https://www.kngf.nl/binaries/content/assets/kennisplatform/onbeveiligd/guidelines/kngf-position-statement\\_v1.0-final.pdf](https://www.kngf.nl/binaries/content/assets/kennisplatform/onbeveiligd/guidelines/kngf-position-statement_v1.0-final.pdf)): The recommendations are mainly aimed at physical rehabilitation aspects<sup>[11]</sup>.

In summary, the following recommendations are provided<sup>[11]</sup>:

### General recommendations

- The exact period of contagiousness of COVID-19 is still unknown. Physiotherapists should therefore consider the safety risks involved for both themselves and the patients.
- There is uncertainty about the recovery path, the physical capacity and limitations of patients after active COVID-19 infection. Caution is required with assessments and treatments of this cohort of patients
- Social distancing principles should be respected and therefore physiotherapists should consider measures such as telehealth or e-health
- Always consider and follow national and regional guidelines on safety, infection control and the prevention of transmitting the disease.

### Initial 6 weeks following hospital discharge

- Contact patient by telephone, telehealth, e-consult or e-health within the first two weeks following discharge to assess and determine if the patient is experiencing any difficulties or limitations in daily physical functioning and if there is an indication for further rehabilitation
- Be aware of existing and/or newly acquired comorbidities
- Consider that patients that were in the ICU and who show signs of PICS may have very low and limited exercise tolerance
- Recommend gradual resumption of Activities of Daily Living (ADLs) and physical function. Ensure appropriate monitoring of the patient daily physical function.
- ADLs and exercise therapy are recommended to be performed at low to moderate intensity and with short interval duration.
- The following clinical outcome measures are recommended:
  - Patient Specific Function Scale
  - Oxygen saturation before, during and after rehabilitation/exercise
  - Use SpO<sub>2</sub> of 90% at rest as the lower limit and 85% SpO<sub>2</sub> during exercise as the lower limit.
    - Stop physical activities or exercise when desaturation (SpO<sub>2</sub> < 85% during exercise) occurs
  - Heart rate frequency before, during and after rehabilitation/exercise
  - Borg Scale CR10 for Shortness of breath and fatigue before, during and after rehabilitation/exercise
    - Max score of 4/10 is recommended as a threshold for exercise intensity on the Borg Scale CR10 for shortness of breath and fatigue
    - Reasons for this include:
      - The severe impact on lung function from COVID-19 – such as oxygen desaturation during exercise due to virus-induced lung disease
      - Cardiac function may be compromised due to COVID-19
      - Adequate clinical information is not always available as no maximal exercise testing is done and it is impossible to estimate the risk of physical training/exercise at moderate to high intensity.
- Patients should only perform exercises in the home situation if they are able to understand and apply proper exercise load management (frequency, intensity, time/duration and type)
- Physical functioning of ADLs should be the focus<sup>[11]</sup>

### After 6 weeks following hospital discharge

- Reassess the patients' needs to determine how rehabilitation should be adapted and progressed
- Reassess the patients' actual level of physical functioning (compare with previous tests such as hospital-based exercise tests, lung/heart function tests, etc)
- Design future treatment goals relating to physical activity and/or exercise capacity based on exercise tests and measurements of physical activity
- The aim of these treatment goals should be to further improve the performance of ADLs, increased physical activities and increased capacity to exercise
- Clinical outcome measures that can be used during this phase:
  - Patient Specific Function Scale
  - Short Physical Performance Battery – this includes:
    - Standing balance test
    - Walking speed test over 4 meters
    - 5 times chair stand test
  - Hand-held Dynamometer for grip strength
  - 6-minute walk test (6MWT)
  - Pedometer/accelerometer to assess and evaluate daily physical function
  - Oxygen saturation
  - Heart rate frequency
  - Borg Scale CR10 for shortness of breath and fatigue before, during and after physical exercise
- When physical function tests (lung/heart function) and (sub)maximal exercise tests indicate no severe restrictions or risks, start with a gradual increase in training
- Implement a gradual increase in training frequency, intensity, time/duration as well as type of exercises. This should be based on the needs of the patient, the agreed treatment goals and the patient's physical abilities
  - During exercise, a score of 4-6/10 on the Borg Scale CR 10 for shortness of breath and fatigue and/or intensity of 60-80% of the tested maximum exercise performance (bicycle test, 6MWT and/or 1RM) is recommended.<sup>[11]</sup>

## Rehabilitation Following Critical Care in Adults

The NICE guidelines for rehabilitation following critical care also recommends a 2-3 month follow-up after illness, above and beyond the community rehabilitation that patient received since being discharged from hospital.

Recommendations from these guidelines are:

- Patients with rehabilitation needs should be reviewed 2- 3 months after discharge from critical care.
- Functional reassessment should include the following:
  - physical problems
  - sensory problems
  - communication problems
  - social care or equipment needs
  - anxiety
  - depression
  - PTSD symptoms
  - behavioural and cognitive problems
  - psychosocial problems
- The impact of the outcomes from the functional assessment on Activities of Daily Living and participation should be assessed.
- The rehabilitation goals should be reviewed and updated based on the functional assessment.

- Family or caregivers should be involved if patient agrees to it.

The full NICE guideline is available here: Rehabilitation after critical illness in adults (<https://www.nice.org.uk/guidance/CG83/chapter/1-Guidance#23-months-after-discharge-from-critical-care>)

## Advice and Examples of Exercises for COVID-19 Patients Post-Discharge

### The Road to Recovery

The Chartered Society of Physiotherapy released this short video on the road to recovery. It may be useful to show this to patients.



[12]

### Ways to address breathlessness

- Breathing control techniques<sup>[13]</sup>
- Positions of ease to help in assisting breath control such as:
  - Leaning forward while sitting
  - Leaning forward in standing while supported
  - Standing up, leaning backwards while supported (for example – lean back against a wall)
  - Side-lying with shoulders and head raised
- Secretion management<sup>[13]</sup>
  - Deep breathing techniques (/Diaphragmatic\_Breathing\_Exercises)
  - Breath stacking technique (/Breath\_Stacking)
  - Postural drainage
  - Staying mobile as allowed by energy levels
  - Stay hydrated
- Energy conservation methods<sup>[13]</sup>
  - Things to remind patients:
    - Energy needs may fluctuate
    - Exercise is good – but be wise about it
    - Do activities they are comfortable doing, learn to stop and modify when tasks are difficult and modify
    - Set small goals
    - Aim to do a little more every day, but avoid overdoing it
    - Take breaks between tasks

### Graded exercises

#### Bed exercises<sup>[13]</sup>

- Neck movements
- Neck rotations
- Shoulder rolls
- Arm raises
- Biceps curls – no weight
- Quadriceps setting
- Leg raises
- Ankle rolls

#### Exercises while sitting<sup>[13]</sup>

- Assisted shoulder exercises
- Biceps curls with lightweight
- Above shoulder exercises with weights
- Side shoulder exercises
- Heel-toe raises
- Knee raises
- Leg raises



## Exercises while standing<sup>[13]</sup>

- Hip abduction/adduction (Leg to the side)
- Hip extension (Leg backwards)
- Sitting squads
- Knee raises
- Toe raises

## Core stability exercises<sup>[13]</sup>

- Pelvic tilts
- Bridging
- Hip rolls

# Clinical Bottom Line

People recovering from COVID-19 will need individual and personalised rehabilitation goals and plans. Rehabilitation should be based on appropriate assessment and treatment strategies. Physiotherapists should always use their clinical judgement in the rehabilitation of patients recovering from COVID-19.

## Resources

- Home and Community-Based Physical Therapist Management of Adults With Post-Intensive Care Syndrome. Physical Therapist Management of Adults With PICS ([https://watermark.silverchair.com/pzaa059.pdf?token=AQECAHi208BE49Ooan9khhW\\_Ercy7Dm3ZL\\_9Cf3qfKAc485ysgAAApowggKWBgkqhkiG9w0BBwagggKHMICgwIBADCCAnwGCSqGSib3DQEHTAeBgIghkgBZ\(TBtcBd1HRnGpMWAIEINPg159srmnUNqODtno8D8ujP0yU3DC6qTJUlywPa0qrN23SBeLmAdvKOp8E1h3XpkCe40iToWnODOUuIKRztyn-KwLv2TYpSCW1cyGbFFw2LWtLwpZf1sgB3e4oVSS1wO9HoDlihqmrppzS6zIQdFc8OiDFORuYxUR0XiH7T4VVPJHb9fHf7MGBZUjJV3zCEhBFRzAINspHibf95D3IUYtSuc2;WuITvM2BAWjXoW2OaVt1KmnrPIVMAPuMDu-e2jtvNDF4p7pfgSmOpvYGIrXh93Sr3K7azK2ulDFub5AFPIMxVLWNbp5bAoRoTtXJwEsneMFuIKZuha5TqasAKRvRaOscwuKGUQFrw0gig-DllgIF0a1ecLyU1RDPC2LFN7w6r7FcyKrkJJeryc06jIvR1OItE6a40ypcqAMm5IVlo8x3sx1Lr7gHsEeQyawpGpnt6bN7YulMwgza9B7u6cGWvFDKMK1Q94euF8v13Ly79ocZG](https://watermark.silverchair.com/pzaa059.pdf?token=AQECAHi208BE49Ooan9khhW_Ercy7Dm3ZL_9Cf3qfKAc485ysgAAApowggKWBgkqhkiG9w0BBwagggKHMICgwIBADCCAnwGCSqGSib3DQEHTAeBgIghkgBZ(TBtcBd1HRnGpMWAIEINPg159srmnUNqODtno8D8ujP0yU3DC6qTJUlywPa0qrN23SBeLmAdvKOp8E1h3XpkCe40iToWnODOUuIKRztyn-KwLv2TYpSCW1cyGbFFw2LWtLwpZf1sgB3e4oVSS1wO9HoDlihqmrppzS6zIQdFc8OiDFORuYxUR0XiH7T4VVPJHb9fHf7MGBZUjJV3zCEhBFRzAINspHibf95D3IUYtSuc2;WuITvM2BAWjXoW2OaVt1KmnrPIVMAPuMDu-e2jtvNDF4p7pfgSmOpvYGIrXh93Sr3K7azK2ulDFub5AFPIMxVLWNbp5bAoRoTtXJwEsneMFuIKZuha5TqasAKRvRaOscwuKGUQFrw0gig-DllgIF0a1ecLyU1RDPC2LFN7w6r7FcyKrkJJeryc06jIvR1OItE6a40ypcqAMm5IVlo8x3sx1Lr7gHsEeQyawpGpnt6bN7YulMwgza9B7u6cGWvFDKMK1Q94euF8v13Ly79ocZG))
- Support for Rehabilitation: (Self-Management after COVID-19 Related Illness (2020) (<https://www.euro.who.int/en/health-topics/Life-stages/disability-and-rehabilitation/publications/support-for-rehabilitation-self-management-after-covid-19.-related-illness-2020>)<sup>[14]</sup>

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