



YOUR QUESTION

What are the guidelines for rehabilitating a COVID-19 patient from a physiotherapy perspective?

What is the best evidence currently?

A team of expert researchers and clinicians within the intensive care and acute cardiorespiratory fields have collaborated to put together: [Physiotherapy Management for COVID-19 in the Acute Hospital Setting: Recommendations to guide clinical practice](#)¹. These recommendations were released on March 23rd 2020 and should be read **in full**. They address both the respiratory treatment and physical rehabilitation of patients with COVID-19. The scope of the recommendations is:

- Workforce planning and preparation including screening to determine indications for physiotherapy (Section 1);
- Delivery of physiotherapy interventions including respiratory and rehabilitation as well as PPE requirements (Section 2).

Specific recommendations for physiotherapy mobilisation, exercise and rehabilitation interventions (pages 22-23) include:

- Relevant PPE precautions need to be undertaken. Droplet precautions should be appropriate in most instances but for any close contact consider using a high filtration mask. Local guidelines should be followed with regard to mobilising patients outside of the isolation room and patient should wear a surgical mask.
- When screening referrals discussion with nursing staff, patient via phone and their family is recommended.
- The number of staff who come into contact with the patient needs to be limited. A trial of the aid may then be performed by the nursing staff already in an isolation room, with guidance provided if needed by the physiotherapist who is outside the room.
- Direct physiotherapy contact should only be considered where there are considerable functional limitations such as frailty.
- Early mobilisation is encouraged and patients in isolation should be encouraged to maintain function in their room.
- Use of equipment needs careful consideration and input from local infection control team to ensure it can be decontaminated after use.

Other themes which emerged from the literature include: education; infection prevention and control (IPC); specific physiotherapy interventions; and the use of telehealth/telerehabilitation.

EDUCATION

Physiotherapy and rehabilitation clinicians must keep up to date with the latest information on the COVID-19 outbreak through WHO updates and their local institution. This will support physiotherapists in disease symptom recognition, treatment and patient education. Free online courses are available from Physiospot² and Physiopedia³ to educate and inform physiotherapists about COVID-19. Cheng et al. shared their institutions experience of providing face-to-face education and staff for frontline healthcare workers, including physiotherapy, occupational therapy and pharmacy. This education addressed IPC including the use of PPE when performing aerosol-generating procedures (AGP), on all patients in both AIIRs and general wards, in case suspected patients had been missed by the surveillance system, and organisational considerations such as supply of PPE, waste and linen management and environmental cleaning.

INFECTION PREVENTION AND CONTROL (IPC)

Infection prevention and control (IPC) is another key consideration for physiotherapists and rehabilitation teams. Tran et al.⁴ have identified chest physiotherapy and related interventions to be AGP, so appropriate PPE, including gloves, long-sleeved gowns, eye protection, and particulate respirators) are recommended as per the WHO⁵, in



addition to standard precautions including hand hygiene, safe waste management, cleaning and disinfection of equipment, and cleaning of the environment. Koh & Hoenig⁶ suggest, from their experience, the increasing of IPC measures, such as patient screening for fever and flu symptoms at the entrance to the facility, and clinician hand washing between patients. They also recommend infection control of rehabilitation equipment such as electrode sponges, water for hot pack units, topical lotions and therapy ball pits to be conducted in consultation with local IPC experts and the designation of isolation rooms should be designated with adequate PPE and training for staff.

SPECIFIC PHYSIOTHERAPY INTERVENTIONS

The recommendations from Thomas et al. referenced above are essential reading in this regard. Guidance has also been provided from clinicians in China. The First Affiliated Hospital, Zhejiang University School of Medicine's Handbook of COVID-19 Prevention and Treatment⁷ suggest that early rehabilitation intervention should involve: rehabilitation assessment – therapy – reassessment. Rehabilitation assessment focuses on evaluation of thoracic activity, diaphragm activity amplitude, respiratory pattern and frequency, etc. Rehabilitation therapy involves: position management (postural drainage/standing position), respiratory training (deep-slow breathing chest expansion breathing combined with shoulder expansion, active cycles of breathing and positive expiratory pressure trainer), and physical therapy (including ultrashort wave, oscillators, external diaphragm pacemaker, electrical muscle stimulation).

Recommendations from the Chinese Association of Rehabilitation Medicine⁸, which provide an abstract only in English, include:

- For inpatients with COVID-19 Pulmonary rehabilitation would relieve the symptoms of dyspnea, anxiety, and depression; and eventually improve physical function and the quality of life.
- For severe/critical inpatients, the early performance of pulmonary rehabilitation is not suggested.
- For patients in isolation the pulmonary rehabilitation guidance should be conducted through education video, instruction manual or remote consultation.
- Assessment and monitoring should be undertaken throughout the entire pulmonary rehabilitation process.

USE OF TELEHEALTH/TELEREHABILITATION

The potential value of technology to enhance and support rehabilitation is increasingly being recognised^{9,10,11} particularly in the case of an infectious disease. Remote consultations are recommended for patients in isolation by the Chinese Association of Rehabilitation Medicine^{vi}. Koh and Hoenig¹² endorse telerehabilitation to provide remote supervision of rehabilitation, particularly for immunocompromised patients.

FUTURE CONSIDERATIONS

Landry et al.¹³ suggest that survival from an infectious disease is the first step, and that infectious disease can lead to long term impairment. They suggest that multidisciplinary rehabilitation teams should be more fully incorporated along the disease trajectory from acute and inpatient care, through to the ambulatory settings and onwards into the community. To be effective, rehabilitative interventions must be considered during the planning and allocation of resources used to fight a disease outbreak.



Produced by the members of the National Health Library and Knowledge Service Evidence Team.† Current as at 27 March 2020. This rapid evidence review collates the best available evidence at the time of writing. Emerging literature or subsequent developments in respect of COVID-19 may require amendment to the information or sources listed in the document. Although all reasonable care has been taken in the compilation of content, the National Health Library and Knowledge Service Evidence Team makes no representations or warranties expressed or implied as to the accuracy or suitability of the information or sources listed in the document. This evidence summary is the property of the National Health Library and Knowledge Service and subsequent re-use or distribution in whole or in part should include acknowledgement of the service.

The following PICO(T) was used as a basis for the evidence summary:

P Population person location condition/patient characteristic	COVID-19 PATIENT
I Intervention length location type	PHYSIOTHERAPY REHABILITATION
C Comparison another intervention no intervention location of the intervention	
O Outcome	

The following search strategy was used:

[ABBREVIATED] ((coronavirus OR COVID-19 OR (Wuhan ADJ3 virus) OR 2019-nCoV OR SARS-COV-2) AND
 Keywords: respiratory exercise OR pulmonary rehabilitation OR rehabilitation OR physical therapy OR physiotherapy OR physical medicine OR
 exercise therapy
 Emtree (EMBASE) : exp physiotherapy practice/ or exp physiotherapy/ or exp rehabilitation/
 Medline (MeSH): (MM rehabilitation+ OR MM physical therapy modalities+ OR MM physical therapy speciality+)

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SOURCES*

- ¹ https://www.wcpt.org/sites/wcpt.org/files/files/wcptnews/images/Physiotherapy_Guideline_COVID-19.pdf [Accessed 26 March 2020].
 - ¹¹ Thomas P, Baldwin C, Bissett B, Boden I, Gosselink R, Granger CL, Hodgson C, Jones AYM, Kho ME, Moses R, Ntoumenopoulos G, Parry SM, Patman S, van der Lee L (2020): Physiotherapy management for COVID-19 in the acute hospital setting. Recommendations to guide clinical practice. Version 1.0, published 23 March 2020. https://www.wcpt.org/sites/wcpt.org/files/files/wcptnews/images/Physiotherapy_Guideline_COVID-19.pdf [Accessed 26 March 2020].
 - ² Physiospot COVID-19 Update: free online course <https://www.physiospot.com/physiopedia/covid-19-update-free-online-course/> [Accessed 26 March 2020].
 - ³ Physiopedia. Role of Physiotherapy in COVID-19 free online course <https://members.physio-pedia.com/learn/role-of-physiotherapy-in-covid-19/> [Accessed 26 March 2020].
 - ⁴ Tran et al. Aerosol Generating Procedures and Risk of Transmission of Acute Respiratory Infections to Healthcare Workers: A Systematic Review. 2012. PLoS One. <https://www.ncbi.nlm.nih.gov/pubmed/?term=22563403> [Accessed 26 March 2020].
 - ⁵ World Health Organisation. Clinical management of severe acute respiratory infection when novel coronavirus (2019-nCoV) infection is suspected. <https://www.who.int/docs/default-source/coronaviruse/clinical-management-of-novel-cov.pdf> [Accessed 26 March 2020].
 - ⁶ Koh & Hoenig. How Should the Rehabilitation Community Prepare for 2019-nCoV? Arch Phys Med Rehab, Mar 21, 2020. <https://www.ncbi.nlm.nih.gov/pubmed/?term=32194034> [Accessed 26 March 2020].
 - ⁷ The First Affiliated Hospital, Zhejiang University School of Medicine. "Handbook of COVID-19 Prevention and Treatment". https://www.alibabacloud.com/universal-service/pdf_reader?spm=a3c0i.14138300.8102420620.dreadnow.6df3647fNEEnE3r&pdf=Handbook_of_COVID_19_Prevention_en_Mobile.pdf. [Accessed 26 March 2020].
 - ⁸ Chinese Association of Rehabilitation Medicine et al. [Recommendations for respiratory rehabilitation of COVID-19 in adult]. Zhonghua Jie He Hu Xi Za Zhi. 3 March 2020 <https://www.ncbi.nlm.nih.gov/pubmed/32125127> [Accessed 26 March 2020].
 - ⁹ The Irish Society of Physiotherapists. Policy and Guidelines on e-health for Physiotherapists in Private Practice (March 2020) <https://www.iscp.ie/covid-19> [Accessed 27 March 2020].
 - ¹⁰ The Chartered Society of Physiotherapists. Clinical Practice Questions (COVID-19) <https://www.csp.org.uk/news/coronavirus/clinical-guidance/clinical-practice-faqs> [Accessed 27 March 2020].
 - ¹¹ Canadian Physiotherapy Association. The CPA's Position on Tele-Rehabilitation. March 2020. <https://physiotherapy.ca/cpas-position-tele-rehabilitation> [Accessed 27 March 2020].
 - ¹² Koh & Hoenig. How Should the Rehabilitation Community Prepare for 2019-nCoV? Arch Phys Med Rehab, Mar 21, 2020. <https://www.ncbi.nlm.nih.gov/pubmed/?term=32194034> [Accessed 26 March 2020].
 - ¹³ Landry et al. Early Reflection on the Global Impact of COVID19, and Implications for Physiotherapy. Physiotherapy. 20 March 2020. <https://doi.org/doi:10.1016/j.physio.2020.03.003> [Accessed 26 March 2020].
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