COVID-19: updates on follow-up & long-term effects

May 21st 2020

**STRATEGY UNIT RAPID SCAN**

**Title:** REHABILITATION NEEDS AND POST-ICU RECOVERY FOR SEVERE COVID-19 PATIENTS: RAPID SCAN 2

Source: The Strategy Unit | Published online May 13, 2020

View the full document:   
[Rapid scan 2: rehabilitation needs and post-ICU recovery for severe COVID-19 patients](https://www.strategyunitwm.nhs.uk/sites/default/files/2020-05/20200513%20Evidence%20rapid%20scan%202%20-%20Rehab.pdf)  
  
**This evidence scan contains links to 27 papers, guidelines, commentaries and reviews, including:**

* [We need a Nightingale model for rehab after COVID-19](https://www.hsj.co.uk/commissioning/we-need-a-nightingale-model-for-rehab-after-covid-19-/7027335.article) (HSJ)
* [COVID-19 and Post Intensive Care Syndrome: a call for action](https://www.medicaljournals.se/jrm/content/abstract/10.2340/16501977-2677) (J Rehabil Med)
* [Post-acute care preparedness for COVID-19: thinking ahead](https://jamanetwork.com/journals/jama/fullarticle/2763818) (JAMA)
* [Rehabilitation of COVID-19 patients](https://www.medicaljournals.se/jrm/content/html/10.2340/16501977-2678) (J Rehabil Med)
* [Rehabilitation in the wake of Covid-19 - A phoenix from the ashes](https://www.bsrm.org.uk/downloads/covid-19bsrmissue1-published-27-4-2020.pdf) (BSRM)
* [Systematic rapid ‘living’ review on rehabilitation needs due to COVID-19: update to 31/3/20](https://pubmed.ncbi.nlm.nih.gov/32316718/) (Eur J Phys Rehabil Med) and [update to 30/04/2020](https://www.minervamedica.it/en/journals/europa-medicophysica/article.php?cod=R33Y9999N00A20051501)
* [Early pulmonary rehabilitation for SARS-CoV-2 pneumonia: experience from an intensive care unit outside of the Hubei province in China](https://www.heartandlung.org/article/S0147-9563(20)30141-2/pdf) (Heart & Lung)
* [Meeting the psychological needs of people recovering from severe coronavirus (Covid-19)](https://www.bps.org.uk/sites/www.bps.org.uk/files/Policy/Policy%20-%20Files/Meeting%20the%20psychological%20needs%20of%20people%20recovering%20from%20severe%20coronavirus.pdf) (BPS)
* [COVID-19 and rehabilitation](https://www.ersnet.org/covid-19-blog/covid-19-and-rehabilitation) (European Respiratory Society)
* [Rehabilitation and COVID-19: CSP policy statement](https://www.csp.org.uk/professional-clinical/improvement-innovation/community-rehabilitation/rehab-covid-19-policy-statement) (Chartered Society of Physiotherapy)
* [Rehabilitation management of patients with COVID-19. Lessons learned from first experiences in China](https://pubmed.ncbi.nlm.nih.gov/32329589/) (Eur J Phys Rehabil Med)
* [Rehabilitation after critical illness in people with COVID-19 infectio](https://pubmed.ncbi.nlm.nih.gov/32282359/)n (Am J Phys Med Rehabil)
* [A multi-centre, multi country retrospective cohort study to evaluate the clinical outcomes in adults with severe COVID19](https://www.hra.nhs.uk/covid-19-research/approved-covid-19-research/282652/) (ongoing study)

**The rapid scan also summarises emerging, non peer-reviewed evidence**: [scroll to page 10 to read summaries of:](https://www.strategyunitwm.nhs.uk/sites/default/files/2020-05/20200513%20Evidence%20rapid%20scan%202%20-%20Rehab.pdf)

* Features of 16,749 hospitalised UK patients with COVID-19 using the ISARIC WHO Clinical Characterisation Protocol
* Post-Discharge Cardiac Care in the Era of Coronavirus 2019: How Should We Prepare?
* Considerations for Post-acute Rehabilitation for Survivors of COVID-19

**guidance & position statements**

**Title**: british thoracic society guidaNce on respiratory follow up of patients with a clinico-radiological diagnosis of covid-19 pneumonia

Source: British Thoracic Society | Published online May 11th, 2020

View the full document: [British Thoracic Society guidance on respiratory follow up of patients with a clinico-radiological diagnosis of covid-19 pneumonia](https://www.brit-thoracic.org.uk/document-library/quality-improvement/covid-19/resp-follow-up-guidance-post-covid-pneumonia/)

**Title:** Rehabilitation of adults who are hospitalised due to Covid-19: physiotherapy service delivery

Source: Chartered Society of Physiotherapy | Published online May 12th, 2020

The CSP has developed these standards in direct response to the rapidly evolving situation.

View the full document: [Rehabilitation of adults who are hospitalised due to Covid-19: physiotherapy service delivery](https://www.csp.org.uk/publications/rehabilitation-adults-who-are-hospitalised-due-covid-19-physiotherapy-service-delivery)

**Title**: recovery and rehabilitation for patients following the pandemic: ficm position statement and provisional guidance

Source: FICM | Published online May 2020

The Coronavirus (COVID-19) Pandemic has put a strain on NHS critical care services. Whilst recovering from the acute phase of the pandemic, we need to think of the aftermath and seek solutions to provide effective recovery and rehabilitation services for affected patients and their families. This is a unique opportunity to elevate public understanding of the impact of critical illness on outcomes and recovery.

There has been much work related to the evolution of recovery pathways following critical illness. COVID-19 presents a real opportunity to ensure full implementation of existing hospital and community based rehabilitation services for people recovering from critical illness, and to identify areas requiring further development in the post-COVID-19 era.

View the full document: <https://www.ficm.ac.uk/sites/default/files/ficm_rehab_provisional_guidance.pdf>

**research papers**

**Title**: covid-19: the challenge of patient rehabilitation after intensive care

Source: British Medical Journal | Published online May 6th, 2020

As the UK’s coronavirus patients begin to leave ICUs, **Jacqui Thornton** examines how the NHS plans to meet a “tsunami of need”  
  
View the full document: [Covid-19: the challenge of patient rehabilitation after intensive care](https://www.bmj.com/content/369/bmj.m1787)

**Title: considerations for post-acute rehabiliation for survivors of covid-19**

Source: JMIR Public Health Surveill 2020 May 8;6(2):e19462

‘… very little has been written about the rehabilitation needs of patients with COVID-19 after discharge from acute care. The objective of this report is to answer the question "What rehabilitation services do survivors of COVID-19 require?" The question was asked within the context of a subacute hospital delivering geriatric inpatient and outpatient rehabilitation services. Three areas relevant to rehabilitation after COVID-19 were identified. First, details of how patients may present have been summarized, including comorbidities, complications from an intensive care unit stay with or without intubation, and the effects of the virus on multiple body systems, including those pertaining to cardiac, neurological, cognitive, and mental health. Second, I have suggested procedures regarding the design of inpatient rehabilitation units for COVID-19 survivors, staffing issues, and considerations for outpatient rehabilitation. Third, guidelines for rehabilitation (physiotherapy, occupational therapy, speech-language pathology) following COVID-19 have been proposed with respect to recovery of the respiratory system as well as recovery of mobility and function. A thorough assessment and an individualized, progressive treatment plan which focuses on function, disability, and return to participation in society will help each patient to maximize their function and quality of life. Careful consideration of the rehabilitation environment will ensure that all patients recover as completely as possible’.

View the full article: <https://publichealth.jmir.org/2020/2/e19462/>

**Title:** PATIENT FOLLOW-UP AFTER DISCHARGE AFTER COVID-19 PNEUMONIA: CONSIDERATIONS FOR INFECTIOUS CONTROL

Source: J Med Virol 2020 May 8

Coronavirus disease 2019 (COVID-19) represents a significant global medical issue, with a growing number of cumulative confirmed cases. However, a large number of COVID-19 patients have overcome the disease, meeting hospital discharge criteria, and are gradually returning to work and social life. Nonetheless, COVID-19 may cause further downstream issues in these patients, such as due to possible reactivation of the virus, long-term pulmonary defects, and post-traumatic stress disorder. In this study, we therefore queried relevant literature concerning SARS, MERS, and COVID-19 for reference to come to a consensus on follow-up strategies. We found that strategies such as implementation of PCR testing, imaging surveillance, and psychological assessments, starting at the time of discharge, were necessary for long-term follow-up. If close care is given to every aspect of coronavirus management, we expect that the pandemic outbreak will soon be overcome.

View the full article: <https://onlinelibrary.wiley.com/doi/abs/10.1002/jmv.25994>

**Title: rehabilitation and respiratory management in the acute and early post-acute phase. instant ‘paper from the field’ on rehabilitation answers to the covid-19 emergency**

Source: European Journal of Physical and Rehabilitation Medicine| Published online April 15 2020

Covid-19 is a respiratory infectious disease that can cause respiratory, physical and psychological long-term dysfunctions in patients. First recommendations on respiratory management were published, but they were not based on the specific needs due to Covid-19. In this paper we share the early experiences from the clinical field in Northern Italy, where the epidemic started in February. This paper summarizes the second webinar on Covid-19 (230 live attendees, 11,600 viewers of the recorded version) organized by the Italian Society of Physical and Rehabilitation Medicine about rehabilitation and in particular respiratory management in the acute (Intensive Care Unit - ICU) and immediate post-acute phases. There is the need to prepare for the post-acute phase. ICU length of stay is relatively long, with immobilisation in prone position. Some specific problems are described, including severe muscle weakness and fatigue, joint stiffness, dysphagia, (neuro)psychological problems, impaired functioning concerning mobility, activities of daily life and work. A lot is yet unknown and patients can experience long-term consequences as we know from the literature on the post-intensive care syndrome, but Covid-19 has unique features to be investigated and understood. As one colleague stated during the Covinar: this is a marathon, not a sprint….

Download the full article from: <https://www.minervamedica.it/en/freedownload.php?cod=R33Y9999N00A20041508>

**Title: THE BRITISH THORACIC SOCIETY SURVEY OF REHABILITATION TO SUPPORT RECOVERY OF THE POST COVID-19 POPULATION (pre-print)**

Source: Non peer-reviewed preprint from the medRxiv server | Published online May 8 2020

[*This article is a preprint and has not been peer-reviewed. It reports new medical research that has yet to be evaluated and so should*not*be used to guide clinical practice.*](https://www.medrxiv.org/content/what-unrefereed-preprint)

Objectives Those discharged from hospital after treatment for Covid-19 are likely to have significant and ongoing symptoms, functional impairment and psychological disturbances. There is an immediate need to develop a safe and efficient discharge process and recovery programme. Pulmonary rehabilitation is well placed to deliver a rehabilitation programme for this group but will most likely need to be adapted for the post Covid-19 population. The purpose of this survey was to rapidly identify the components of a post-Covid-19 rehabilitation assessment and elements of a successful rehabilitation programme that would be required to deliver a comprehensive service for those post Covid-19 to inform service delivery. Design A survey comprising a series of closed questions and a free text comments box allowing for a qualitative analysis. Setting Online survey. Participants British Thoracic Society members and multi-professional clinicians, across specialities were invited to take part. Results 1031 participants responded from a broad range of specialities over 6 days. There was overwhelming support for early post discharge from hospital phase of the recovery programme to advise patients about the management of fatigue (95% agreed/ strongly agreed), breathlessness (94%), and mood disturbances (including symptoms of anxiety and depression) 92%. At the 6-8-week time point an assessment was considered important, focusing on the assessment of a broad range of possible symptoms and the need to potentially return to work. Recommendations for the intervention described a holistic programme focusing on symptom management, return of function and return to employment. The free text comments added depth to the survey and the need not to reinvent the wheel rather adapt well established (pulmonary rehabilitation) services to accommodate the needs of the post Covid-19 population. Conclusion The responses indicate the huge interest and the urgent need establish a programme to support and mitigate the long term impact of Covid-19.

View the full article: <https://www.medrxiv.org/content/10.1101/2020.05.07.20094151v1>

**Title:** the war on covid-19 pandemic: the role of rehabilitation professionals and hospitals

Source: American Journal of Physical Medicine & Rehabilitation| Published online May 4 2020

The global outbreak of coronavirus disease (COVID-19) has created an unprecedented challenge to the society. Currently, the United States stands as the most affected country, and the entire healthcare system is affected, from emergency department, intensive care unit, post-acute care, outpatient, to home care. Considering the debility, neurological, pulmonary, neuromuscular and cognitive complications, rehabilitation professionals can play an important role in the recovery process for individuals with COVID-19. Clinicians across the nation’s rehabilitation system have already begun working to initiate intensive care unit-based rehabilitation care and develop programs, settings and specialized care to meet the short- and long-term needs of these individuals. We describe the anticipated rehabilitation demands, and the strategies to meet the needs of this population. The complications from COVID-19 can be reduced by (1) delivering interdisciplinary rehabilitation that is initiated early and continued throughout the acute hospital stay, (2) providing patient/family education for self-care after discharge from inpatient rehabilitation at either acute or subacute settings, and (3) continuing rehabilitation care in the outpatient setting, and at home through ongoing therapy either in-person or via telehealth.

View the full article: <https://journals.lww.com/ajpmr/Abstract/9000/The_War_on_COVID_19_Pandemic__Role_of.97999.aspx>

**Title: long-term clinical outcomes in survivors of coronavirus outbreaks after hospitalisation or icu admission: a systematic review and meta-analysis of follow-up studies (pre-print)**

Source: medRxix preprint server | Published online April 22 2020

[*This article is a preprint and has not been peer-reviewed. It reports new medical research that has yet to be evaluated and so should*not*be used to guide clinical practice.*](https://www.medrxiv.org/content/what-unrefereed-preprint)

Objective: To determine the long-term clinical problems in adult survivors of coronavirus (CoV) infection [Coronavirus disease 2019 (COVID-19), Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS)] after hospitalisation or Intensive Care Unit (ICU) admission. Design: Systematic review and meta-analysis of the literature. Data sources: Ovid MEDLINE, EMBASE, CINAHL Plus and PsycINFO were searched using the strategy: (Coronavirus OR Coronavirus Infections OR COVID OR SARS virus OR Severe acute respiratory syndrome OR MERS OR Middle east respiratory syndrome) AND (Follow-up OR Follow-up studies OR Prevalence). Original studies reporting the clinical outcomes of adult survivors of coronavirus outbreaks two months after discharge or three months after admission were included. The quality of the studies was assessed using the Oxford Centre for Evidence-Based Medicine (OCEBM) 2009 Level of Evidence Tool. Meta-analysis was conducted to derive pooled estimates of prevalence and severity for different outcomes at time points up to 6 months follow-up and beyond 6 months follow-up. Results: The search yielded 1169 studies of which 28 were included in this review. There were 15 Level 1b, 8 Level 2b, 2 Level 3b and 3 Level 4 studies by OCEBM grading. Pooled analysis of studies revealed that complications commonly observed were impaired diffusing capacity for carbon monoxide (DLCO) [prevalence of 27.26%, 95% CI 14.87 to 44.57] and reduced exercise capacity [(6-minute walking distance (6MWD) mean 461m, 95% CI 449.66 to 472.71] at 6 months with limited improvement beyond 6 months. Coronavirus survivors had considerable prevalence of psychological disorders such as post-traumatic stress disorder (PTSD) [38.80%, CI 30.93 to 47.31], depression [33.20%, CI 19.80 to 50.02] and anxiety [30.04%, CI 10.44 to 61.26) beyond 6 months. These complications were accompanied by low Short Form 36 (SF-36) scores at 6 months and beyond indicating reduced quality of life which is present long-term. Conclusions: The long term clinical problems in survivors of CoV infections (SARS and MERS) after hospitalisation or Intensive Care Unit (ICU) admission include respiratory dysfunction, reduced exercise capacity, psychological problems such as PTSD, depression and anxiety, and reduced quality of life. Critical care, rehabilitation and mental health services should anticipate a high prevalence of these problems following COVID-19 and ensure their adequate and timely management with the aim of restoring premorbid quality of life.

View full-text online: <https://www.medrxiv.org/content/10.1101/2020.04.16.20067975v1>

**Title**: THE POST-COVID-19 FUNCTIONAL STATUS (PCFS) SCALE: A TOOL TO MEASURE FUNCTIONAL STATUS OVER TIME AFTER COVID-19 (CORRESPONDENCE)

Source: European Respiratory Journal | Published online 6 May 2020

We propose an ordinal tool to measure the full spectrum of functional outcomes following COVID-19. This “Post-COVID-19 Functional Status (PCFS) Scale” can be used for tracking functional status over time as well as for research purposes.

View full-text: <https://erj.ersjournals.com/content/early/2020/05/07/13993003.01494-2020>

**Title:** CONSIDERATION OF PREVENTION AND MANAGEMENT OF LONG-TERM CONSEQUENCES OF POST-ACUTE RESPIRATORY SYNDROME IN PATIENTS WITH COVID-19

Source: Physiotherapy Theory and Practice | Published online May 18th 2020

This manuscript provides support for physical therapists to focus on the long-term, as well as the short-term, consequences of acute respiratory distress syndrome (ARDS) associated with COVID-19. Since late November 2019, COVID-19 has become a global health pandemic and threat. Although most people have no or mild symptoms, COVID-19 spreads aggressively and can lead to ARDS rapidly in a proportion of individuals. The evidence supports that gas exchange and countering the negative effects of bed rest and immobility are priorities in severely affected patients admitted to the intensive care unit (ICU). However, in recent years, research has focused on poor long-term functional outcomes in patients with ARDS, often associated with ICU-acquired weakness, deconditioning, and myopathies and neuropathies. In addition to physical therapists providing respiratory support in the ICU, the literature unequivocally supports the view that early intervention for ICU management of patients with ARDS secondary to COVID-19 needs to focus on reducing contributors to impaired long-term function, with direct attention paid to preventing or managing ICU-acquired weakness, deconditioning, and myopathies and neuropathies, in conjunction with respiratory care.

View abstract (contact library for full-text): <https://www.tandfonline.com/doi/abs/10.1080/09593985.2020.1766181?journalCode=iptp20>

**podcasts**

**TITLE:** DIAGNOSIS AND MANAGEMENT OF POST-INTENSIVE CARE SYNDROME IN THE ERA OF COVID-19: BREATHE EASY PODCAST FROM THE AMERICAN THORACIC SOCIETY

Source: American Thoracic Society | Published online May 2020

In this “**Breathe Easy Critical Perspective**” podcast, Dr. Dominique Pepper interviews **Dr. Dale Needham**. They discuss the diagnosis and management of post-intensive care syndrome in the era of COVID-19. Dr. Needham is a Professor of Medicine and the Medical Director of the Critical Care Physical Medicine and Rehabilitation program at Johns Hopkins Hospital in Baltimore, Maryland.

Listen online at: <https://www.thoracic.org/about/ats-podcasts/critical-perspective-management-of-post-intensive-care-syndrome-in-the-era-of-covid-19.php>

**news items**

**Title:** helping covid-19 patients on their road to recovery

Source: Walsall Healthcare NHS Trust | Published online May 19th 2020

‘Xana Marriott is Senior Sister for Critical Care Rehabilitation who has been working with patients and their families and is now starting to see long term patients who were COVID-19  being able to go home…’

View full story: <https://www.walsallhealthcare.nhs.uk/news/2020/05/19/helping-covid-19-patients-on-their-road-to-recovery/>

**patient information:**

**TITLE:** COVID-19 RECOVERY RESPONSE: WHAT YOU SHOULD KNOW AFTER LEAVING A CRITICAL CARE UNIT: patient information booklet (can be downloaded or viewed online)

Source: The Sepsis Trust | Published online April 2020

‘Your experience of Critical Care may continue to affect you physically and emotionally after you go home. It doesn't matter how old you are, how unwell you were or how healthy or active you were prior to your illness. You have been very poorly and it may take some time for you to recover. THIS IS FOR YOU, YOUR FAMILY AND YOUR FRIENDS People are often shocked and upset by what someone in Critical Care has gone through. This may have been made worse if this was due to CoViD-19 because of the visiting restrictions - people might not have seen quite how ill you were, so it's easy to understand why they might expect you to feel better very soon’.

View the full document: <https://sepsistrust.org/wp-content/uploads/2020/05/Critical-Care-Booklet-220420.pdf>

**TITLE:** COVID-19: SUPPORTING YOUR RECOVERY (online resource)

Source: NHS Lancashire Teaching Hospitals | Published online April 2020

‘This resource has been developed by a group of multi-disciplinary health professionals at Lancashire Teaching Hospitals. The purpose of the website is to support patients with their initial recovery once discharged from hospital following treatment for COVID-19.  Although hospital admission is referred to throughout this resource, it can also be used for patients who remain in their own homes and we hope that the information and advice provided will assist all patients and their families starting their rehabilitation journey following COVID-19’.

View the online resource: <https://covidpatientsupport.lthtr.nhs.uk/#/>

We

[TRFT Library & Knowledge Service](https://www.trftlibraryknowledge.com/) aim to bring together the latest guidelines, research and news on Covid-19 through our [Covid-19 portal](https://www.trftlibraryknowledge.com/coronavirus.html). For daily updates on Covid-19 visit our '[Latest Health](https://trfthealthweeklydigest.wordpress.com/)' newsfeed, or use the hashtag [#covid19rftlks](https://twitter.com/hashtag/covid19rftlks?src=hashtag_click) to see our latest tweets on Covid-19 research, guidelines and news.

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