Post COVID-19 – treatment and rehabilitation

A systematic review and assessment of medical and economic aspects

SBU POLICY SUPPORT

AUGUST 2022 | WWW.SBU.SE/328E

Summary

Background

SBU was commissioned by the Swedish Government to evaluate the scientific evidence for care for patients with post COVID-19 (long-term symptoms or sequelae of the disease COVID-19).

Aim

The aim was to summarize published scientific articles addressing the following research question: Which treatments are effective for post COVID-19?

Method

A systematic review conducted in accordance with THE PRISMA statement. The protocol is registered in Prospero. The certainty of evidence was assessed with GRADE.

Inclusion criteria

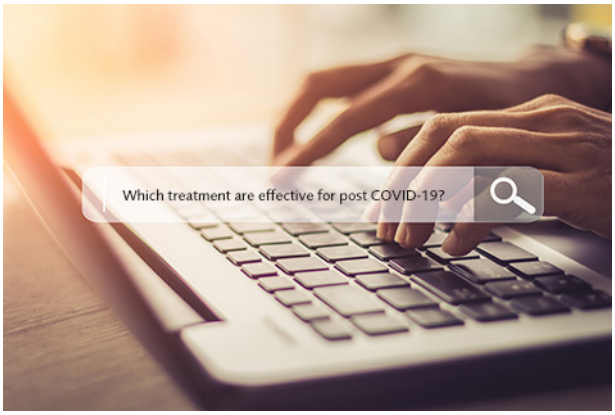
PICO

Population – 1. Patients with post COVID-19 condition according to WHO´s definition (individuals with persistent or new symptoms after 3 months from the initial onset of COVID-19 that last for at least 2 months and cannot be explained by an alternative diagnosis). 2. Patients who did not meet the criteria according to WHO´s definition (but had early symptoms, treatment started after infection clearance and were followed up at least three months).

Interventions – Treatment or rehabilitation for long-term symptoms.

Comparison – No treatment or other treatment.

Outcomes – All outcomes related to post COVID-19 (long-term symptoms or sequelae of the disease COVID-19).



Study design – RCT and non-randomised controlled trials. Observational and qualitative studies, as well as case studies, were excluded.

Search period: From April 26 2021, then weekly. Final search June 1 2022.

Databases searched: Every week, an information specialist searched the database Medline (OvidSP) via Alerts. Every month, five additional databases were searched: Cinahl (Ebsco), PsycINFO (Ebsco), Cochrane Library (Wiley), Embase (embase.com) and WHO: Global literature on coronavirus disease. Reference lists and citations for relevant primary studies and reviews were also screened.

The project group also continuously tracked the following COVID-19 specific resources:

- COVID-NMA
- Cochrane Rehabilitation

Patient involvement: No

Results

Evidence map: Post COVID-19 – effective treatment and rehabilitation

The articles in the evidence map are presented based on included population and intervention. You can filter which articles are displayed by making selections in the menu above the table. Below the table are functions for exporting the selection as an Excel file or image.

SYMPTOM CATEGORIES	TREATMENT/REHABILITATION
Depression/Anxiety	1
Fever	
Palpitations/POTS*	
Mental fatigue/Cognitive impairment	1 / 1
Chronic obstructive pulmonary disease/Asthma	
Smell/Taste	3
Lung function/Breathing	4 / 3
Neurological difficulties	
Kidney problems	
Pneumonia	
Pain	1
Sleeping problems	
Dizziness/Nausea	
Other	1 / 4

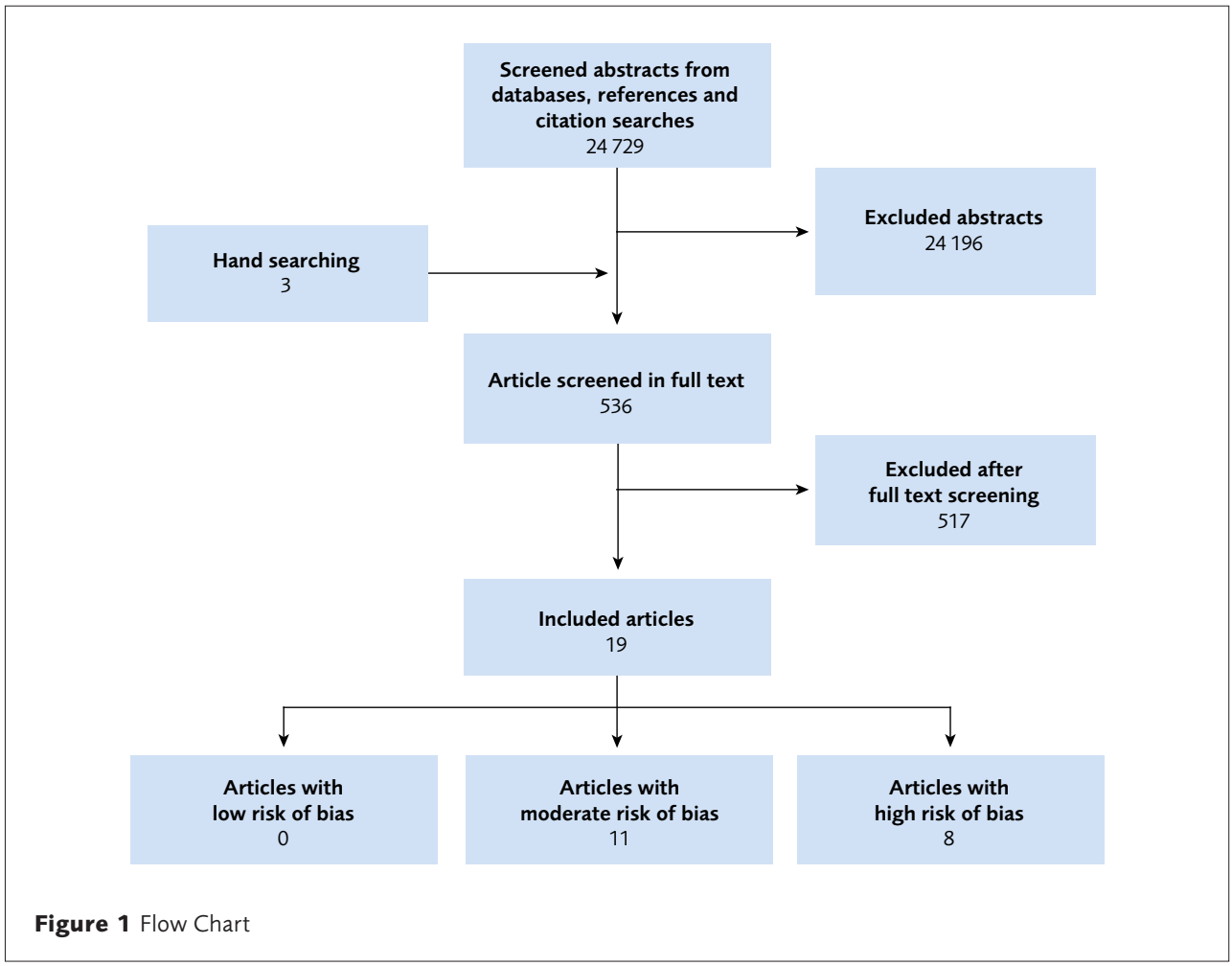


Figure 1 Flow Chart

Table 1 Summary of findings (SOF table).

Intervention vs control	Number of participants (Number of studies and study design) [Reference]	Outcome	Certainty of results Reason for reduced certainty
Telerehabilitation vs short teaching instructions	120 (1 RCT) [12]	Walking distance 6 minutes (6MWD)	Very low Risk of bias –1[1] Precision –1[2] Transferability –1[3]
Inspiratory muscle training vs usual care	281 (1 RCT) [9]	Health-related quality of life (three domains: psychological, shortness of breath and activity, chest symptoms)	Very low Risk of bias –1[1] Precision –1[4] Transferability –1[3]
Instructor-led respiratory exercises via telemedicine vs a brochure describing the same respiratory exercises	52 (1 RCT) [10]	Spirometry, walking distance 6 minutes (6MWT)	Very low Risk of bias –1[1] Precision –2[2] Transferability –1[3]
Guided breathing training using singing techniques (online) vs usual care	150 (1 RCT) [11]	Health-related quality of life	Very low Risk of bias –1[1] Precision –1[2] Transferability –1[3]

[1] Moderate risk of bias; [2] Few participants, few events; [3] The results have not been repeated; 4 Moderate number of participants.

MWD = *Minute walking distance;* **MWT** = *Minute walk test;* **RCT** = *Randomised controlled trial;* **SOF** = *Summary of findings;* **vs** = *Versus*

Table 2 Summary of findings (SOF table).

Intervention vs control	Number of participants (Number of studies and study design) [Reference]	Outcome	Certainty of results Reason for reduced certainty
Narrative exposure therapy (net) & personalized psychological treatment vs personalized psychological treatment	111 (1 RCT) [21]	Post traumatic stress	Very low Risk of bias –1[1] Precision –1[2] Transferability –1[3]

[1] Moderate risk of bias; [2] Few participants, few events; [3] The results have not been repeated.

Net = *Narrative exposure therapy;* **RCT** = *Randomised controlled trial;* **SOF** = *Summary of findings;* **vs** = *Versus*

Table 3 Summary of findings (SOF table).

Intervention vs control	Number of participants (Number of studies and study design) [Reference]	Outcome	Certainty of results Reason for reduced certainty
Palmitoylethanolamide and Luteolin (orally) combined with smell training vs smell training	185 + 12 participants (2 RCT) [16][17]	Smell function	Very low Risk of bias –1[1] Precision –1[2] Transferability –1[4]
Corticosteroids (methylprednisolone) combined with smell training vs smell training	27 participants (1 NRSI prospective) [18]	Smell function	Very low Risk of bias –1[1] Precision –2[2] Transferability –1[3]

[1] Moderate risk of bias; [2] Few participants, few events; [3] The results have not been repeated; [4] The results have only been repeated as pilot study on the same research group.

NRSI = *Non-randomised studies of interventions;* **RCT** = *Randomised controlled trial;* **SOF** = *Summary of findings;* **vs** = *Versus*

Table 4 Summary of findings (SOF table).

Intervention vs control	Number of participants (Number of studies and study design) [Reference]	Outcome	Certainty of results Reasons for reduced certainty
Acetyl-L carnitine combined with rehabilitation training vs rehabilitation training	60 (1 RCT) [22]	Experienced pain and shortness of breath	Very low Risk of bias –1[1] Precision –2[2] Transferability –1[3]

[1] Moderate risk of bias; [2] Few participants, few events; [3] The results have not been repeated.

RCT = *Randomised controlled trial;* **SOF** = *Summary of findings;* **vs** = *Versus*

Table 5 Summary of findings (SOF table).

Intervention vs control	Number of participants (number of studies and study design) [Reference]	Outcome	Certainty of results Reason for reduced certainty
Cognitive training vs no treatment	45 (1 NRSI) [20]	Cognitive function	Very low Risk of bias –1[1] Precision –2[2] Transferability –1[3]

[1] Moderate risk of bias; [2] Few participants, few events; [3] The results have not been repeated.

NRSI = *Non-randomised studies of interventions;* **SOF** = *Summary of findings;* **vs** = *Versus*

Table 6 Summary of findings (SOF table).

Intervention vs control	Number of participants (Number of studies and study design) [Reference]	Outcome	Certainty of results Reason for reduced certainty
Chinese herbal medicine (Bufei Huoxue) vs placebo	131 (1 RCT) [23]	Lung changes (CT scan), walking distance 6 min (6MWD)	Very low Risk of bias -1[1] Precision -1[2] Transferability -2[3]

[1] Moderate risk of bias; [2] Few participants, few events; [3] The results have not been repeated, and the population has been selected on criteria other than from a Swedish context, mainly the diagnosis 'qi deficiency'.

MWD = *Minute walking distance;* **RCT** = *Randomised controlled trial;* **SOF** = *Summary of findings;* **vs** = *Versus*

Discussion

All in all, the scientific basis has very low reliability. It is therefore not possible to assess whether any of the treatments studied are effective or not, on the basis of the evidence identified up to and including 1 June 2022. This does not mean that the treatments have no effect, but that more well-done studies are needed to assess the effect.

Conflicts of interest

In accordance with SBU's requirements, the experts participating in this project have submitted statements about conflicts of interest. These documents are available at SBU's secretariat. SBU has determined that the conditions described in the submissions are compatible with SBU's requirements for objectivity and impartiality.

Appendices, www.sbu.se/328e

Relevant studies
Search strategies
Excluded studies

Project group

Experts

Alison Godbolt, Danderyd Hospital
Judith Bruchfeld, Karolinska University Hospital
Jörgen Månsson, University of Gothenburg
Kristina Hedman, Sundsvall Regional Hospital
Marcus Ståhlberg, Karolinska University Hospital
Michael Runold, Karolinska University Hospital
Olof Hertting, Astrid Lindgren Children's Hospital

SBU

Elizabeth Åhsberg, Project Manager
Nathalie Peira, Assistant Project Manager
Idha Kurtsdotter, Assistant Project Manager (from April 2022)
Jessica Dagerhamn, Assistan Project Manager (from November 2021 to April 2022)
André Sjöberg, Assistant Project Manager (up to December 2022)
Maria Ahlberg, Project Administrator
Carl Gornitzki, Information Specialist (up to November 2021)
Hanna Olofsson, Information Specialist (from December 2021)
Pernilla Östlund, Head of Department
Susanne Eksell, Web Project Manager
Irene Edebert, Acting Head of Department (from November 2021)

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www.sbu.se/en • registrator@sbu.se
Graphic Design: Åsa Isaksson, SBU