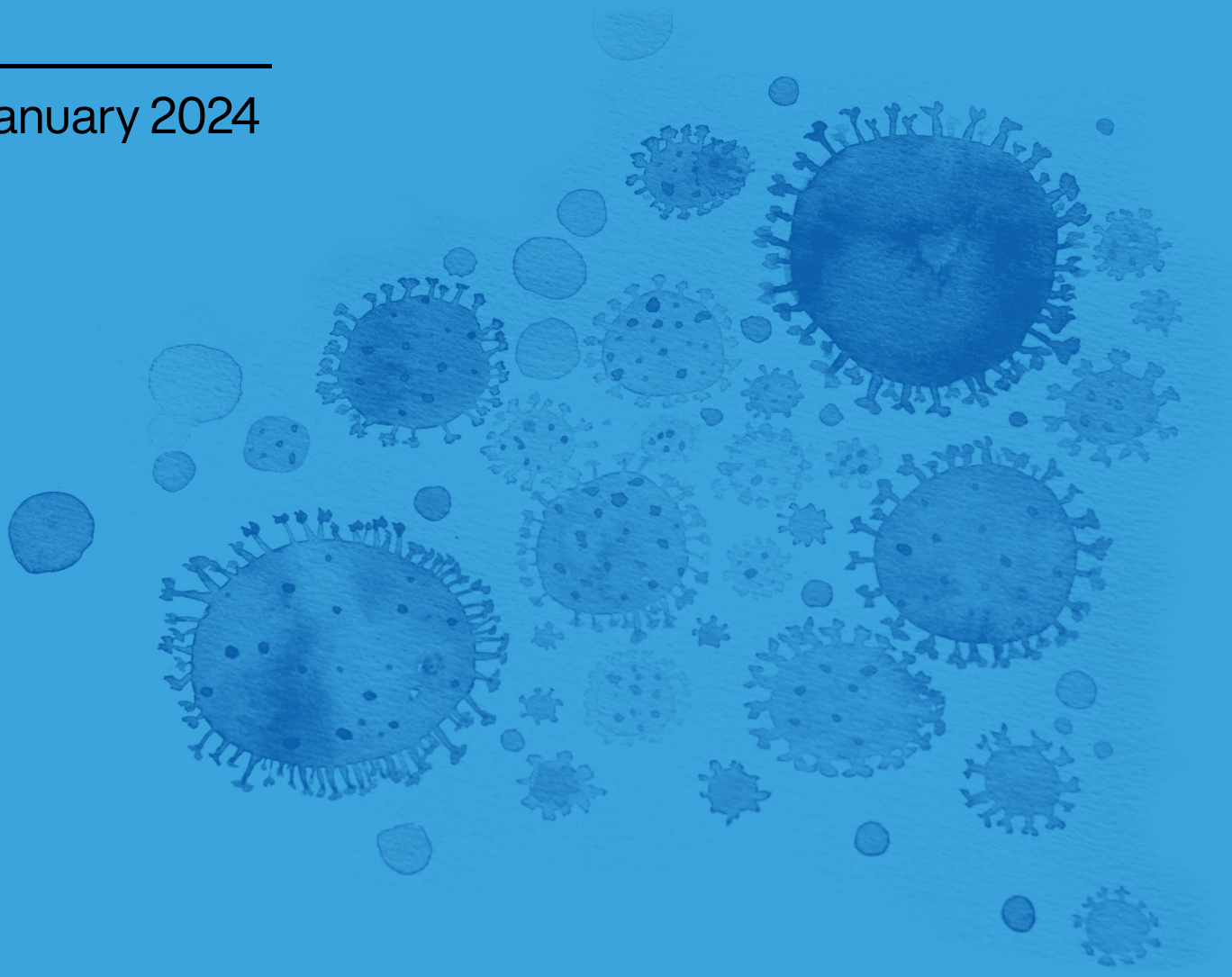
NIHR Policy Research Programme Reviews Facility
Supporting national policy development and implementation

Reviews on Long COVID

A scope of the literature: update

January 2024



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Reviews on Long COVID: A scope of the literature. Update January 2024

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Summary

- For this update, we identified 42 published reviews and 42 review protocols for Long COVID. The number of published reviews Is less than in October (n=46) but more than in July (n=31) and April (n=37), 2023.
- Most published reviews were focused on the prevalence of symptoms or effects (18/42), which remains consistent with the earlier reports.
- This update includes more published reviews with a primary focus on Long COVID risk factors (n=9) than in each of the previous reports. We identified fewer on treatment or rehabilitation (n=7) than in the October 2023 report (n=11), but more than in the four previous reports (n=5).
- We identified fewer reviews on pathobiology or mechanisms (n=2), than for the October 2023 report (n=6), but a similar number to previous reports (e.g., July 2023, n=1).
- Similar numbers of protocols were focused on the prevalence of symptoms or effects (15/42), and treatment or rehabilitation (13/42). These have consistently been the largest two categories across all the previous reports.
- Seven protocols were focused on risk factors with or without prevalence; the same number as in the October 2023 report.

Introduction

This is the eighth update (ninth report) in an ongoing series of quarterly evidence scans, for published systematic and ongoing reviews related to Long COVID, requested by the Department of Health and Social Care. The last update covered the period from July to October 2023.[1]

For the current update, we identified systematic reviews and review protocols focused on Long COVID that were published between early October 2023 and the start of January 2024. Long COVID was conceptualised broadly as any symptoms or effects that persist or develop after acute COVID-19 infection.

Methods

Identification of reviews

The Cochrane Database of Systematic Reviews (CDSR; via Wiley) and Epistemonikos were searched to identify reviews about Long COVID. In addition, MEDLINE (via Ovid) and CINAHL (via EBSCO) were searched with retrieval limited to systematic reviews.[2,3] The searches took place on 4th January, 2024 and were limited by date to capture those records added to the databases since the last update searches in October 2023. No language restrictions were applied. A further search of PROSPERO was undertaken, by the review team, up to the 4th January, 2024 to identify any new ongoing reviews. Due to the rapid nature of the project, the database searches were designed to balance the need to

[1] Khouja C, Raine G, Khatwa M, Harden M, Sutcliffe K, Sowden A (2023) Reviews on Long COVID: A scope of the literature. Update October 2023. London: EPPI Centre, UCL Social Research Institute, UCL Institute of Education, University College London.

[2] Navarro-Ruan T, Haynes RB. Preliminary comparison of the performance of the National Library of Medicine's systematic review publication type and the sensitive clinical queries filter for systematic reviews in PubMed. J Med Libr Assoc. 2022;110:43-46.

[3] Booth A. Chapter 3: Searching for Studies. In: Noyes J, Booth A, Hannes K, Harden A, Harris J, Lewin S, Lockwood C (editors), Supplementary Guidance for Inclusion of Qualitative Research in Cochrane Systematic Reviews of Interventions. Version 1 (updated August 2011). Cochrane Collaboration Qualitative Methods Group, 2011.

retrieve as many relevant systematic reviews as possible against the limited time available for screening. The search strategies can be found in Appendix 1 (page 22).

Study selection

To be included, reviews needed to have a primary focus on Long COVID (however conceptualised and defined) and be systematic in nature. A review was considered systematic if it reported some search terms and inclusion criteria, as well as the number of references found and studies included, and identified or referenced the included studies. Reviews could focus on adults and/or children and include primary studies of any design or other reviews (i.e., reviews of reviews). We did not apply criteria relating to the length of time after infection owing to variation in how Long COVID has been defined in the literature. Reviews were only included if the full text was readily available, and we excluded pre-prints. Titles and abstracts were screened by one reviewer; two reviewers screened the full text of each paper that was not excluded on title and abstract.

Key findings

From the database searches, 889 records were retrieved in total, and after duplicates were removed in EndNote (version 21),[4] 470 records remained for screening. From PROSPERO, we screened 187 records. We identified **42 published reviews, one protocol for a completed but not published review, and 41 protocols for ongoing reviews**. The flow of studies through the review is shown in Appendix 2 (page 29). Table 1 provides a summary of all reviews identified for this update by focus. The full reference and aim/research questions for each included review are provided on pages 7 to 20. Table 2 (Appendix 3, page 30) provides a summary of the reviews identified across all nine reports we have produced to date.

Table 1: Summary of reviews (October 2023 to January 2024)

Review status Primary focus	Systematic review	Review of reviews	Review update
Published reviews (n=42)			
Treatment or rehabilitation	7		
Prevention	3		
Prevalence of symptoms or effects	17		1
Prevalence of symptoms or effects, and treatment	2		
Risk factors +/- prevalence of symptoms or effects	9		
Risk factors +/- prevalence, and treatment	1		
Pathobiology or mechanisms	2		
Protocols - completed not published reviews (n=1)			
Prevalence of symptoms or effects	1		
Protocols - ongoing reviews (n=41)			
Treatment or rehabilitation	13		
Prevention	1		1
Prevalence of symptoms or effects	14		
Prevalence of symptoms or effects, and treatment	3		
Risk factors +/- prevalence of symptoms or effects	6	1	
Risk factors +/- prevalence, and treatment	1		
Pathobiology or mechanisms	1		

[4] [program]. EndNote 21 version. Philadelphia, PA: Clarivate, 2023.

Published reviews

The number of systematic reviews identified for this update (n=42) was less than the previous update in October (n=46), and less than last year, January 2023 (n=50), although it was more than in April (n=37) and July (n=31), 2023; all used the same databases and search strategy.

Treatment or rehabilitation (n=7)

The number of reviews in the current update that focused solely on treatment or rehabilitation (n=7) was less than the last report (n=11), but more than in the previous four reports (all n=5). Four of these reviews focused on rehabilitation for Long COVID – three on respiratory rehabilitation (#2 Ghram, et al., 2023, #5 Morgan, et al., 2024, and #7 Sanchez-Garcia, et al., 2023); and one on rehabilitation interventions for COVID-19 and Long COVID (#6 Pollini, et al., 2023). One review focused on treatment using corticosteroids for olfactory loss (#3 Kabiri, et al., 2023). The remaining two reviews investigated any intervention in long-term care (#1 Fyffe, et al., 2023); or in Australian support services (#4 Luo, et al., 2023).

Prevention (n=3)

Three reviews focused solely on prevention. Two were on antiviral treatment during infection to prevent Long COVID (#8 Choi et al., 2023 and #9 Fernandez-de-las-Penas et al., 2023), and one was on vaccination to prevent Long COVID (#10 Marra et al., 2023). Across all reviews to date, there are now nine published reviews that focus on vaccination to prevent Long COVID.

Prevalence of symptoms or effects (n=18)

Eighteen of the 42 reviews focused on the prevalence of symptoms or effects of Long COVID. One was an update of a previous review, included in our April 2022 report (#11 Behnood, et al., 2023). This review update focused on long-term symptoms in children and young people.

One review investigated the prevalence of Long COVID symptoms in the general population two years after infection (#16 Fernandez-de-Las-Penas, et al., 2023). One review investigated COVID's impact on functional status, fatigue and quality of life one year after hospital discharge (#18 Gesser, et al., 2023). The remaining 15 reviews all concentrated on specific symptoms or syndromes.

Four symptoms or effects were each investigated in two reviews. Two reviews investigated cardiac symptoms (#17 Ferreira, et al., 2023; and #19 Guo, et al., 2023). Two reviews investigated pain with or without other symptoms (#20 Hoshijima, et al., 2023; and #25 Santos, et al., 2023); one of these (#20 Hoshijima, et al., 2023) was included as a preprint in our April 2022 report. Two reviews investigated neurological symptoms (#23 Moreira, et al., 2023) or neuropsychiatric symptoms in patients in South America (#24 Perea-Florez, et al., 2023). Two reviews investigated cognitive impairments in general (#14 Cipoli, et al. 2023) or specifically working memory (#15 Cui, et al., 2023).

The remaining seven reviews investigated glomerulonephritis (#12 Banjongjit, et al., 2023); sleep disturbance (#13 Chinvararak, et al., 2023); in-vitro fertilisation (IVF) outcome (#21 Kaur, et al., 2023); respiratory symptoms in children (#22 Martino, et al., 2023); pulmonary embolism (#26 Shah, et al., 2023); irritable bowel syndrome (#27 Silva, et al., 2023); and renal outcomes (#28 Zhang, et al., 2023).

Prevalence of symptoms or effects, and treatment or rehabilitation (n=2)

Two reviews investigated the prevalence of symptoms and their treatment. One was on the symptoms and management of multisystem inflammatory syndrome in children after COVID-19 (#29 Albanji, et al., 2023); and the other was on chest pain and its treatment (#30 Kubrova, et al., 2023).

Risk factors with or without prevalence of symptoms or effects (n=9)

Nine reviews, in this update, focused on risk factors for Long COVID, with or without symptom prevalence. One review was on risk factors and general symptoms, with no specific focus (#33 Luo, et al., 2023). Three reviews were on risk factors and prevalence of general symptoms in Africa (#31 Frallonardo, et al., 2023, #34 Moyo, et al., 2023, and #35 Muller, et al., 2023). One was on risk factors in children or adolescents (#36 Rayner, et al., 2023); and another with the same lead author focused on multisystem inflammatory syndrome in children (#37 Rayner, et al., 2024). One review was on the social determinants of Long COVID (#38 Voss, et al., 2023), and one was on allergic diseases as risk factors (#39 Wolff, et al., 2023). The last of the nine reviews was on the prevalence and risk factors for depression in elderly patients after COVID-19 (#32 Lu, et al., 2023).

Risk factors with or without prevalence of symptoms or effects, and treatment or rehabilitation (n=1)

One review reported on the factors that predict recovery and treatments for Long COVID olfactory dysfunction (#40 Orji, et al., 2023). In this report, there were 10 reviews that included risk factors, which is the same number as was in last year's January 2023 report; there were three in the April, six in the July, and one in the October, 2023 reports.

Pathobiology or mechanisms (n=2)

Two reviews focused on the pathobiology or mechanisms of Long COVID; one was on blood markers (#41 Collins, et al., 2023), and the other on brain alterations (#42 Morales-Verdugo, et al., 2023). The number of reviews on pathobiology or mechanisms was fewer than in the October 2023 report (n=6), but similar to the numbers included in the January (n=2), April (n=3) and July (n=1), 2023 reports.

Protocols – completed not published reviews (n=1)

In this update, we identified one protocol for a completed review awaiting publication. This review was on the prevalence of cardiovascular symptoms or effects in athletes after COVID-19 (#43 Tsampasian and Vassiliou, 2023).

Protocols - ongoing reviews (n=41)

We identified 41 protocols for ongoing reviews, which is the same as in the October 2023 report, but less than in each of the previous four reports (July 2023, n=52; April 2023, n=68; January 2023, n=56; and October 2022, n=63). Two of the 41 protocols were published in journals and identified from the database searches, while the other 39 were registered in PROSPERO. Most of the protocols for this update focused on prevalence of symptoms or effects (n=14), or treatment or rehabilitation (n=13).

Treatment or rehabilitation (n=13)

Thirteen protocols for ongoing reviews were on treatment or rehabilitation. Six of the 13 focused on physiotherapy, exercise or rehabilitation. Two of the six were on exercise alone (#54 Singh, et al., 2023) or with cognitive therapy (#45 Cunha, et al., 2023). The other four were on rehabilitation and drop-out rates (#51 Monte, et al., 2023); telerehabilitation for adults (#47 Huang, et al., 2023); virtual reality rehabilitation (#52 Perez-Gisbert, et al., 2023), and rehabilitation for fatigue (#46 Gschwenter, et al., 2023). One of the 13 protocols was for a review on treatment and rehabilitation (#55 Stahlberg, et al., 2023); one was on whole-person health care (#48 Jantraporn, et al., 2024); and one was on any intervention for breathlessness (#44 Almulhim, et al., 2023). The remaining four protocols were for specific interventions including incentive spirometry for adults (#49 Kloni, et al., 2023), hyperbaric oxygen therapy (#50 Li and Lin, 2023), stellate ganglion block for anosmia (#53 Rehman, et al., 2023), and Chinese herbal medicine for adults (#56 Tsang, et al., 2023).

Prevention (n=2)

Two protocols focused on prevention. One was for a review update on vaccination to prevent Long COVID (#57 Liu, et al., 2023); and the other was a journal-published protocol on the effects of Qingfei Paidu decoction during infection to prevent Long COVID (#58 Rong, et al., 2023).

Prevalence of symptoms or effects (n=14)

Fourteen protocols were for reviews of the prevalence of symptoms or effects. Two were on any Long COVID symptoms (#65 Mota and Dos Santos, 2023), or symptoms in India (#62 Jain, et al., 2023). One was on patient-completed questionnaires to measure Long COVID symptoms (#64 Mertens, et al., 2023). The remaining 11 protocols focused on specific symptoms or symptom types. Three had a neurological focus: one on Alzheimer's disease or dementia in adults over 65 years old after COVID-19 (#68 Shan, et al., 2023); one on executive function (#67 Nasir, et al., 2023); and one on brain function (#59 Bastos Siqueira, et al., 2023). Two were on cardiovascular outcomes (#70 Tsampasian and Vassiliou, 2023, and #71 Weber, et al., 2023), and two were on frailty (#63 Mehta, et al., 2023, and #72 Yang and Zhang, 2023). One protocol was on physical function and return to work (#61 Ip, et al., 2023); one was on hypertension (#66 Musa, et al., 2023); one on mucormycosis a rare fungal infection (#60 Guerrero-Ker, et al., 2023); and one on fatigue definitions and measures (#69 Thomas, et al., 2023, a journal-published protocol).

Prevalence of symptoms or effects, and treatment or rehabilitation (n=3)

Three protocols focused on interventions and the prevalence of symptoms or effects. One was on support given to return to work with or after Long COVID (#73 Daniels, et al., 2023). The second was on neurological effects in children and their management (#74 Mehta, et al., 2023). The third was on cognitive and psychological symptoms and their rehabilitation or treatment (#75 Pettemeridou, et al., 2023).

Risk factors with or without prevalence of symptoms or effects (n=7)

Seven protocols were for reviews on risk factors with or without prevalence of symptoms for Long COVID. One was for a review of reviews, focusing on predictors of outcomes in multiple domains in a socio-ecological framework (#76 Semchishen, et al., 2023). The other six protocols were for systematic reviews of primary research, of which three were on specific risk factors for Long COVID, and three were on any risk factor for specific symptoms. The specific risk factors were obesity (#78 Jang and Moon, 2023); symptoms during infection (#81 Rayner and Gou, 2023); and genetic polymorphisms (#82 Santana de Silva, et al., 2023). The protocols on specific symptoms were on predictors of psychiatric outcomes (#77 Cowansage, et al., 2023); recovery from olfactory dysfunction (#79 Mao and Yang, 2023); and dyspnoea and fatigue (#80 Melo Oliveira, et al., 2023).

Risk factors with or without prevalence of symptoms or effects, and treatment or rehabilitation (n=1)

One protocol was for a review examining nutrition as a risk factor or to manage Long COVID (#83 Piper, et al., 2023).

Pathobiology or mechanisms (n=1)

One protocol was for a review on biomarkers for pulmonary fibrosis after COVID-19 infection (#84 Maestre and De Oro, 2023).

1) Published Reviews (n=42)

Treatment/rehabilitation (n=7)

Standard systematic reviews

1. Fyffe I, Sorensen J, Carroll S, et al. Long COVID in long-term care: a rapid realist review. BMJ Open 2023;13:e076186. doi: https://dx.doi.org/10.1136/bmjopen-2023-076186

Review aim: *To determine the key mechanisms that drive successful interventions for Long COVID in long-term care (LTC), and the critical contexts that determine whether the mechanisms produce the intended outcomes?*

2. Ghram A, Latiri I, Methnani J, et al. Effects of cardiorespiratory rehabilitation program on submaximal exercise in patients with Long-COVID-19 conditions: a systematic review of randomized controlled trials and recommendations for future studies. Expert Review of Respiratory Medicine 2023:1-30. doi: https://dx.doi.org/10.1080/17476348.2023.2293226

Review aim: *To assess the impact of cardiorespiratory rehabilitation programmes on submaximal exercise performance, specifically the six-minute walk test outcomes, in Long COVID patients through an analysis of available randomised controlled trials.*

3. Kabiri M, Emadzadeh M. The effect of corticosteroids on post-COVID-19 smell loss: a meta-analysis. Iranian Journal of Otorhinolaryngology 2023;35:235-46. doi: https://dx.doi.org/10.22038/IJORL.2023.72451.3456

Review aim: *To assess the efficacy of corticosteroid interventions in the treatment of post-COVID-19 olfactory loss.*

4. Luo S, Zheng Z, Bird SR, et al. An overview of Long COVID support services in Australia and International clinical guidelines, with a proposed care model in a global context. Public Health Reviews 2023;44:1606084. doi: https://dx.doi.org/10.3389/phrs.2023.1606084

Review aim: *To identify gaps among Australian Long COVID support services and guidelines alongside recommendations for future health programmes.*

5. Morgan SP, Visovsky C, Thomas B, Klein AB. Respiratory muscle strength training in patients post-COVID-19: a systematic review. Clinical Nursing Research 2024;33:60-69. doi: https://dx.doi.org/10.1177/10547738231201994

Review aim: *To evaluate the evidence for the effectiveness of respiratory muscle strength training for individuals with post-COVID-19 dyspnoea.*

6. Pollini E, Lazzarini SG, Cordani C, et al. Effectiveness of rehabilitation interventions on adults with COVID-19 and post COVID-19 condition. a systematic review with meta-analysis. Archives of Physical Medicine & Rehabilitation 2023;05:05. doi: https://dx.doi.org/10.1016/j.apmr.2023.08.023

Review aim: *To evaluate the effectiveness of rehabilitation interventions for adults with COVID-19 and post COVID-19 condition (PCC) in all settings.*
NB Only sections of the review are on Long COVID

7. Sanchez-Garcia JC, Reinoso-Cobo A, Piqueras-Sola B, et al. Long COVID and physical therapy: a systematic review. Diseases 2023;11:09. doi: https://dx.doi.org/10.3390/diseases11040163

Review aim: *To conduct a systematic review of studies conducted in patients with Long COVID in conjunction with interventions targeting respiratory function, particularly involving physical activity.*

Prevention (n=3)

Standard systematic reviews

8. Choi YJ, Seo YB, Seo JW, et al. Effectiveness of antiviral therapy on Long COVID: a systematic review and meta-analysis. Journal of Clinical Medicine 2023;12:28. doi: https://dx.doi.org/10.3390/jcm12237375

Review aim: *To evaluate the effectiveness of antiviral drugs in preventing Long COVID*

9. Fernandez-de-Las-Penas C, Torres-Macho J, Catahay JA, et al. Is antiviral treatment at the acute phase of COVID-19 effective for decreasing the risk of Long-COVID? A systematic review. Infection 2023;19:19. doi: https://dx.doi.org/10.1007/s15010-023-02154-0

Review aim: *To investigate if having received pharmacological treatment during acute SARS-CoV-2 infection may reduce the risk of Long COVID.*

10. Marra AR, Kobayashi T, Callado GY, et al. The effectiveness of COVID-19 vaccine in the prevention of post-COVID conditions: a systematic literature review and meta-analysis of the latest research. Antimicrobial Stewardship & Healthcare Epidemiology : ASHE 2023;3:e168. doi: https://dx.doi.org/10.1017/ash.2023.447

Review aim: *To conduct a literature review on the effectiveness of COVID-19 vaccines, specifically examining the impact of receiving two or more doses of these vaccines in preventing post-COVID conditions.*

Prevalence of symptoms and effects (n=18)

Systematic review update

11. Behnood S, Newlands F, O'Mahoney L, et al. Persistent symptoms are associated with long term effects of COVID-19 among children and young people: results from a systematic review and meta-analysis of controlled studies. PLoS ONE [Electronic Resource] 2023;18:e0293600. doi: https://dx.doi.org/10.1371/journal.pone.0293600

Review aim: *To update and refine an earlier systematic review and meta-analysis to assess the current evidence for post-COVID-19 condition in children and young people.*

Standard systematic reviews

12. Banjongjit A, Thammathiwat T, Townamchai N, Kanjanabuch T. SARS-CoV-2 infection associated with antineutrophil cytoplasmic antibody (ANCA)-associated glomerulonephritis (ANCA-GN): a systematic review and two case reports. Journal of Nephrology 2023;06:06. doi: https://dx.doi.org/10.1007/s40620-023-01777-8

Review aim: *To conduct a systematic review of previously reported cases with a presumed association of new-onset antineutrophil cytoplasmic antibody-associated glomerulonephritis (ANCA-GN).*

13. Chinvararak C, Chalder T. Prevalence of sleep disturbances in patients with Long COVID assessed by standardised questionnaires and diagnostic criteria: a systematic review and meta-analysis. Journal of Psychosomatic Research 2023;175:111535. doi: https://dx.doi.org/10.1016/j.jpsychores.2023.111535

Review aim: *To study the prevalence of sleep disturbances in patients with Long COVID.*

14. Cipolli GC, Alonso V, Yasuda CL, et al. Cognitive impairment in post-acute COVID-19 syndrome: a scoping review. Arquivos de Neuro-Psiquiatria 2023;81:1053-69. doi: https://dx.doi.org/10.1055/s-0043-1777115

Review aim: *To examine studies that have reported cognitive impairment in post-acute COVID-19, categorising them into subacute and chronic phases.*

15. Cui R, Gao B, Ge R, et al. The effects of COVID-19 infection on working memory: a systematic review. Current Medical Research & Opinion 2023:1-11. doi: https://dx.doi.org/10.1080/03007995.2023.2286312

Review aim: *To explore the incidence of working memory impairment and possible concomitant symptoms in the acute phase (< three months) and chronic phase (> six months) of COVID-19.*

16. Fernandez-de-Las-Penas C, Notarte KI, Macasaet R, et al. Persistence of post-COVID symptoms in the general population two years after SARS-CoV-2 infection: a systematic review and meta-analysis. Journal of Infection 2023;13:13. doi: https://dx.doi.org/10.1016/j.jinf.2023.12.004

Review aim: *To investigate the prevalence of post-COVID symptoms two years after SARS-CoV-2 infection.*

17. Ferreira AA, Abreu RM, Teixeira RS, et al. Applicability of heart rate variability for cardiac autonomic assessment in long-term COVID patients: a systematic review. Journal of Electrocardiology 2023;82:89-99. doi: https://dx.doi.org/10.1016/j.jelectrocard.2023.12.002

Review aim: *To determine the main methods used to study the heart rate variability in individuals after the acute phase of COVID-19.*

18. Gesser AF, Campos ML, Artismo RS, et al. Impact of COVID-19 critical illness on functional status, fatigue symptoms, and health-related quality of life one-year after hospital discharge: a systematic review and meta-analysis. Disability & Rehabilitation 2023:1-12. doi: https://dx.doi.org/10.1080/09638288.2023.2266365

Review aim: *To estimate the prevalence and the severity of impairments in functional status, fatigue, and health-related quality of life in survivors of critical COVID-19 one-year after hospital discharge.*

19. Guo B, Zhao C, He MZ, et al. Identifying patterns of reported findings on long-term cardiac complications of COVID-19: a systematic review and meta-analysis. BMC Medicine 2023;21:468. doi: https://dx.doi.org/10.1186/s12916-023-03162-5

Review aim: *To conduct a systematic review and meta-analysis on long-term cardiac complications of COVID-19 and examine patterns of reported findings by study quality and characteristics.*

20. Hoshijima H, Mihara T, Seki H, et al. Incidence of long-term post-acute sequelae of SARS-CoV-2 infection related to pain and other symptoms: a systematic review and meta-analysis. PLoS ONE 2023;18:e0250909. doi: https://dx.doi.org/10.1371/journal.pone.0250909

Review aim: *To conduct a rapid systematic review and meta-analysis of observational studies to determine the incidence of pain-related and other symptoms in SARS-CoV-2 convalescents.*
NB A preprint for this was included in the April 2022 report.

21. Kaur H, Chauhan A, Mascarenhas M. Does SARS CoV-2 infection affect the IVF outcome - a systematic review and meta-analysis. European Journal of Obstetrics, Gynecology, & Reproductive Biology 2024;292:147-57. doi: https://dx.doi.org/10.1016/j.ejogrb.2023.11.027

Review aim: *To summarise the evidence so far reporting the effects of COVID-19 infection on in-vitro fertilisation (IVF) outcome.*

22. Martino L, Morello R, De Rose C, Buonsenso D. Persistent respiratory symptoms associated with post-COVID condition (Long COVID) in children: a systematic review and analysis of current gaps and future perspectives. Expert Review of Respiratory Medicine 2023;17:837-52. doi: https://dx.doi.org/10.1080/17476348.2023.2271836

Review aim: *To characterise the incidence, pattern and duration of respiratory symptoms after acute SARS-CoV-2 infection in the paediatric population.*

23. Moreira R, Leonardo, Américo S, et al. Revisão integrativa sobre complicações neurológicas pós-infecção por COVID-19 em adultos. Enfermagem Brasil 2023;22:522-31. doi: https://dx.doi.org/10.33233/eb.v22i4.5442

Review aim: *To present the neurological complications associated with post-infection with SARS-CoV-2 in adults.*

24. Perea-Florez F, Javier-Murillo N, Lapeyre-Rivera A, et al. Prevalence and incidence of neuropsychiatric disorders in post hospitalized COVID-19 patients in South America: a systematic review and meta-analysis. Frontiers in psychiatry Frontiers Research Foundation 2023;14:1163989. doi: https://dx.doi.org/10.3389/fpsyt.2023.1163989

Review aim: *To determine the prevalence and incidence of neuropsychiatric disorders in patients following hospitalisation for COVID-19 in South America.*

25. Santos PWS, Baptista Abrahão F, Santos Thalyta Cibele Passos d, Hazime Fuad A. Clinical profile of pain in post-COVID-19 patients: systematic review. Brazilian Journal of Pain 2023;6:179-84. doi: https://dx.doi.org/10.5935/2595-0118.20230031-en

Review aim: *To describe the clinical profile of pain in post-COVID-19 patients.*

26. Shah B, Ahmad MN, Khalid M, et al. Long COVID and wavering incidence of pulmonary embolism: a systematic review. Journal of Community Hospital Internal Medicine Perspectives 2023;13:23-31. doi: https://dx.doi.org/10.55729/2000-9666.1233

Review aim: *To collate and report trends of pulmonary embolism in patients with Long COVID (four to 12 weeks since infection) and post-COVID-19 syndrome (over 12 weeks since infection).*

27. Silva JTC, Fonseca N, Ocld. Post-COVID-19 irritable bowel syndrome: an integrative review. Revista do Colegio Brasileiro de Cirurgioes 2023;50:e20233618. doi: https://dx.doi.org/10.1590/0100-6991e-20233618-en

Review aim: *To review the data on post-COVID-19 irritable bowel syndrome.*

28. Zhang Y, Zhao Y, Wang J, et al. Long-term renal outcomes of patients with COVID-19: a meta-analysis of observational studies. Journal of Nephrology 2023;36:2441-56. doi: https://dx.doi.org/10.1007/s40620-023-01731-8

Review aim: *To perform a meta-analysis of observational studies reporting the long-term renal outcome of COVID-19 patients with and without acute kidney injury to explore the long-term effects of COVID-19 on kidney function.*

Prevalence of symptoms or effects, and treatment or rehabilitation (n=2)

Standard systematic review

29. Albanji MH, Baghafar AA, Alghanmi YA, et al. Clinical presentation and management of multisystem inflammatory syndrome in children with COVID-19: a systematic review. Cureus 2023;15:e46918. doi: https://dx.doi.org/10.7759/cureus.46918

Review aim: *To compile the available evidence on the clinical presentation and management of MIS-C in children after COVID-19.*

30. Kubrova E, Hallo-Carrasco AJ, Klasova J, et al. Persistent chest pain following COVID-19 infection - a scoping review. Physical Medicine and Rehabilitation 2023;31:31. doi: https://dx.doi.org/10.1002/pmrj.13098

Review aim: *To assess the range and extent of current evidence on incidence and prevalence, aetiology, and treatment of persistent chest pain following COVID-19 infection.*

Risk factors with or without prevalence of symptoms or effects (n=9)

Standard systematic reviews

31. Frallonardo L, Segala FV, Chhaganlal KD, et al. Incidence and burden of Long COVID in Africa: a systematic review and meta-analysis. Scientific Reports 2023;13:21482. doi: https://dx.doi.org/10.1038/s41598-023-48258-3

Review aim: *To investigate the occurrence of post-acute sequelae of COVID-19 in the African continent, and to evaluate the burden of this condition in terms of prevalent symptoms and risk factors.*

32. Lu Y, Lou J, Yu B, et al. The prevalence and risk of depression in aged COVID-19 survivors: a bibliometric and meta-analysis. Psychogeriatrics 2023;19:19. doi: https://dx.doi.org/10.1111/psyg.13057

Review aim: *To explore depression prevalence and related risk factors among elderly coronavirus disease 2019 (COVID-19) survivors, while also evaluating research characteristics.*

33. Luo, Mei B, Wang P, et al. Prevalence and risk factors for persistent symptoms after COVID-19: a systematic review and meta-analysis. Clinical Microbiology and Infection 2023;20:20. doi: https://dx.doi.org/10.1016/j.cmi.2023.10.016

Review aim: *To estimate the prevalence and risk factors for persistent symptoms after COVID-19.*

34. Moyo E, Chimene M, Moyo P, et al. Risk factors and clinical presentations of Long COVID in Africa: a scoping review. Journal of Infection and Public Health 2023;16:1982-88. doi: https://dx.doi.org/10.1016/j.jiph.2023.09.021

Review aim: *To summarise the risk factors and clinical symptoms of Long COVID in Africa between 2020 and 2022.*

35. Muller SA, Isaaka L, Mumm R, et al. Prevalence and risk factors for Long COVID and post-COVID-19 condition in Africa: a systematic review. The Lancet Global Health 2023;11:e1713-e24. doi: https://dx.doi.org/10.1016/S2214-109X(23)00384-4

Review aim: *To review the evidence on prevalence, associated risk factors for Long COVID, and systemic or sociocultural determinants of reporting Long COVID.*

36. Rayner DG, Wang E, Su C, et al. Risk factors for Long COVID in children and adolescents: a systematic review and meta-analysis. World Journal of Pediatrics 2023;27:27. doi: https://dx.doi.org/10.1007/s12519-023-00765-z

Review aim: *To summarise the risk factors for Long COVID in the paediatric population.*

37. Rayner DG, Gou D, Chen JZX, et al. Prognostic factors for multisystem inflammatory syndrome in children: a systematic review and meta-analysis. Acta Paediatrica 2024;113:39-47. doi: https://dx.doi.org/10.1111/apa.16999

Review aim: *To summarise the prognostic factors for multisystem inflammatory syndrome in children (MIS-C) development.*

38. Voss JG, Pinto MD, Burton CW. How do the social determinants of health impact the post-acute sequelae of COVID-19: a critical review. Nursing Clinics of North America 2023;58:541-68. doi: https://dx.doi.org/10.1016/j.cnur.2023.07.004

Review aim: *To critically analyse the social determinants of health variables in the current literature of patients with post-acute sequelae of COVID-19 in the United States.*

39. Wolff D, Drewitz KP, Ulrich A, et al. Allergic diseases as risk factors for Long-COVID symptoms: systematic review of prospective cohort studies. Clinical and Experimental Allergy 2023;53:1162-76. doi: https://dx.doi.org/10.1111/cea.14391

Review aim: *To systematically review and appraise the epidemiological evidence on allergic diseases as risk factors for Long COVID.*

Risk factors with or without prevalence, and treatment or rehabilitation (n=1)

Standard systematic reviews

40. Orji FT, Akpeh JO, Okolugbo NE. Recovery patterns of COVID-19 related smell disorders: an analysis of the available evidence. Indian Journal of Otolaryngology and Head and Neck Surgery 2023;75:4179-89. doi: https://dx.doi.org/10.1007/s12070-023-04005-8

Review aim: *To generate a pooled recovery rate of COVID-19-associated olfactory dysfunctions and attempt to examine the predictors of olfactory recovery.*

Pathobiology or mechanisms (n=2)

Standard systematic reviews

41. Collins E, Philippe E, Gravel CA, et al. Serological markers and Long COVID - a rapid systematic review. European Journal of Clinical Investigation 2023:e14149. doi: https://dx.doi.org/10.1111/eci.14149

Review aim: *To assess relationships between post-infection serological response and Long COVID and investigate and report on the sources of inter-study heterogeneity.*

42. Morales-Verdugo J, Lozano-Lozano José A, Pérez-Rojas F, et al. Structural brain alterations in individuals post-COVID-19: a systematic review. International Journal of Morphology 2023;41

Review aim: *To systematically analyse the literature on brain changes observed through neuroimaging after COVID-19.*

2) Protocols for completed but not published reviews related to Long COVID (n=1)

Prevalence of symptoms or effects (n=1)

43. Tsampasian and Vassiliou. Prevalence of abnormal cardiovascular magnetic resonance findings in athletes recovered from COVID-19. PROSPERO 2023 CRD42023487503 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023487503

Review question: This systematic review and meta-analysis aims to assess the prevalence of cardiovascular magnetic resonance derived myocardial tissue characterisation abnormalities in athletes recovered from COVID-19 infection.

3) Protocols for ongoing reviews related to Long COVID (n=41)

Treatment (n=13)

44. Almulhim, et al. Interventions for breathlessness post COVID-19. PROSPERO 2023 CRD42023393940 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023393940

Review question: What are the available intervention approaches to treat breathlessness in post-COVID-19 patients?

45. Cunha, et al. Effects of rehabilitation with physical exercise and cognitive therapy in Long COVID-19 or COVID-19 on cognitive functions and depressive and anxiety symptoms: a systematic review. PROSPERO 2023 CRD42023495221 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023495221

Review question: What are the effects of rehabilitation with physical exercise and cognitive therapies in patients with Long COVID or COVID-19 on cognitive functions and depressive and anxiety symptoms?

46. Gschwenter, et al. The effectiveness of rehabilitation on fatigue in patients with Long COVID: a systematic review. PROSPERO 2023 CRD42023475326 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023475326

Review question: Is there conclusive evidence for the effectiveness of rehabilitation on fatigue in patients suffering from post-COVID-19 syndrome?

47. Huang, et al. Telerehabilitation interventions for physical capacity and quality of life in adults with post-COVID-19/Long-COVID-19 condition: a systematic review and meta-analysis. PROSPERO 2023 CRD42023490863 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023490863

Review question: To investigate the clinical efficacy of telerehabilitation intervention in the recovery of post-COVID-19/Long-COVID-19 patients.

48. Jantraporn, et al. Whole-person assessment for Long COVID: a rapid review. PROSPERO 2024 CRD42024494957 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42024494957

Review questions: What is the current state of whole-person health care for adults with Long COVID? What assessments or tools currently exist in the literature for screening/evaluating whole-person health of adults with Long COVID? What is the theoretical framework currently existing in the literature for whole-person care for Long COVID?

49. Kloni, et al. Incentive spirometer in adults with post-COVID syndrome: a systematic review of clinical trials. PROSPERO 2023 CRD42023468835 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023468835

Review question: Can the use of incentive spirometer improve pulmonary function in adults with post-COVID syndrome in comparison with other interventions or no intervention?

50. Li and Lin. Efficacy and safety of hyperbaric oxygen therapy for post-acute COVID-19 syndrome: a systematic and meta-analysis review. PROSPERO 2023 CRD42023482523 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023482523

Review question: Efficacy and safety of hyperbaric oxygen therapy for post-acute COVID-19 syndrome.

51. Monte, et al. Dropouts in rehabilitation studies in patients with Long COVID-19 or COVID-19: a systematic review. PROSPERO 2023 CRD42023485820 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023485820

Review questions: How many dropouts occur in rehabilitation studies with patients with Long COVID and what are the reasons for these dropouts?

52. Pérez-Gisbert, et al. Virtual reality in the rehabilitation of surviving COVID-19 patients: a systematic review and meta-analysis. PROSPERO 2023 CRD42023493597 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023493597

Review question: How has virtual reality helped in the rehabilitation of COVID-19 survivors?

53. Rehman, et al. Stellate ganglion block for anosmia in Long COVID: a systematic review and analysis of existing literature. PROSPERO 2023 CRD42023488361 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023488361

Review question: Is stellate ganglion block efficacious for anosmia in patients suffering from Long COVID?

54. Singh, et al. Exercise as a moderator of Long COVID symptoms: a systematic review. PROSPERO 2023 CRD42023430937 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023430937

Review question: What is the impact of exercise on Long COVID symptoms?

55. Ståhlberg, et al. Treatment and rehabilitation of post-COVID and other post-infectious conditions. PROSPERO 2023 CRD42023482562 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023482562

Review question: What treatment and rehabilitation interventions are effective for symptoms of post-COVID and other post-infectious conditions?

56. Tsang, et al. Effects of Chinese herbal medicine in Long COVID symptoms for adults recovering from COVID-19 infection compared to placebo or usual care: a systematic review with meta-analysis of randomized controlled trials #COVID-19. PROSPERO 2023 CRD42023467831 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023467831

Review question: Are Chinese herbal medicine interventions effective in reducing the severity of shortness of breath and other Long COVID symptoms in adults recovered from acute COVID-19 infection compared to placebo or usual care in randomised controlled trials (RCTs)?

Prevention (n=2)

Systematic review update

57. Liu, et al. Effect of COVID-19 vaccines on reducing the risk of Long COVID in the real world: an updated systematic review and meta-analysis. PROSPERO 2023 CRD42023491110 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023491110

Review question: What is the effect of COVID-19 vaccines in reducing the risk and severity of Long COVID?

Standard systematic review

58. Rong F, Haoyu HE, Tao T, Hanjin C. Long-term effects of Qingfei Paidu decoction in patients with coronavirus disease 2019 acute pneumonia after treatment: a protocol for systematic review and meta-analysis. Journal of Traditional Chinese Medicine 2023;43:1068-71. doi: https://dx.doi.org/10.19852/j.cnki.jtcm.20230904.001

Review aim: To provide evidence regarding whether Qingfei Paidu decoction (清肺排毒汤) treatment in the acute phase shows long-term benefits coronavirus disease 2019-associated sequelae.

Prevalence of symptoms or effects (n=14)

Standard systematic reviews

59. Bastos Siqueira, et al. Functional changes in the brain resulting of COVID-19: a systematic review. PROSPERO 2023 CRD42023411464 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023411464

Review question: Are there functional brain changes detected by positron emission tomography (PET) in patients who had COVID-19?

60. Guerrero-Ker, et al. Pathogenesis and related factors in post COVID-19 mucormycosis patients with an odontological perspective: a systematic review of case report. PROSPERO 2023 CRD42023476051 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023476051

Review question: What is the odontological perspective of pathogenesis and related factors in case reports of post COVID-19 mucormycosis?

61. Ip, et al. Physical outcomes and return to employment following COVID-19 critical illness ICU admission: a systematic review. PROSPERO 2023 CRD42023343967 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023343967

Review question: In adult ICU patients diagnosed with COVID-19 compared to non-COVID-19 critical illness, what are the physical impairments, physical function, and return to employment outcomes up to 12 months post ICU admission.

62. Jain, et al. Unveiling the long-term effects of COVID-19: a systematic review and meta-analysis assessing the burden of Long COVID in India. PROSPERO 2023 CRD42023480037 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023480037

Review question: What is the prevalence of the Long COVID condition in the Indian population?

63. Mehta, et al. Does an episode of COVID-19 affect the prevalence and trajectory of frailty in community dwelling or institutionalized individuals? PROSPERO 2023 CRD42023468297 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023468297

Review question: To examine whether individuals who experience an episode of COVID-19 are at risk of developing frailty. This review will also examine other demographic or health-related variables that increase the risk of frailty after an episode of COVID-19.

64. Mertens, et al. Measurement properties of patient-reported outcome measures (PROMs) of symptom burden in patients with post-COVID syndrome (PCS). PROSPERO 2023 CRD42023475115 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023475115

Review questions: Which self-reported questionnaires assessing the symptom burden in patients with post-COVID syndrome (PCS) exist? What are the psychometric properties of existing self-reported questionnaires assessing the symptom burden in patients PCS? Which of the self-reported questionnaires assessing the symptom burden in patients with PCS can be recommended for future clinical research? Which of the self-reported questionnaires assessing the symptom burden in patients with PCS can be recommended for everyday treatment practice?

65. Mota and Dos Santos. Symptoms and diagnosis of Long COVID: a systematic review. PROSPERO 2023 CRD42023454818 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023454818

Review question: What are the symptoms of Long COVID in adults?

66. Musa, et al. Global prevalence, incidence, and risk factors of new-onset hypertension following COVID-19 infection and COVID-19 vaccination: a comparative systematic review and meta-analysis. PROSPERO 2023 CRD42023472056 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023472056

Review questions: What is the prevalence and incidence of new-onset hypertension following COVID-19 infection and COVID-19 vaccination? What are the risk factors associated with the development of hypertension following COVID-19 infection and COVID-19 vaccination?

67. Nasir, et al. Executive function deficit in Long COVID syndrome: a systematic review. PROSPERO 2023 CRD42023485981 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023485981

Review question: What are the executive function deficits in Long COVID syndrome and how do they correlate with the structural and functional alterations in the brain?

68. Shan, et al. Temporal association between COVID-19 diagnosis and subsequent new onset of Alzheimer's disease and other dementias in older adults: a systematic review and meta-analysis. PROSPERO 2023 CRD42023491714 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023491714

Review questions: What is the relative risk of developing new-onset dementia in older adults (age > 65 years) after a COVID-19 diagnosis, as compared to those with other respiratory infections or no infection at all? Are certain types of dementia (like Alzheimer's Disease; AD) more prevalent in older adults following a COVID-19 infection? Are there differences in the risk of subsequently developing AD compared to other types of dementias (e.g., vascular dementia, mixed vascular and Alzheimer's, Lewy body, frontotemporal dementia), following a COVID-19 infection? How does the follow-up period (6 months vs. 12 months) post-COVID-19 infection affect the likelihood of a dementia diagnosis? Does the severity of COVID-19 infection affect the risk of subsequent development of dementia in older adults? Do demographic factors (e.g., age, gender, race/ethnicity, education, loneliness) or clinical characteristics (e.g., co-morbidities, hospitalization, oxygen therapy, pre-existing cognitive decline or frailty, vaccination status) modify the risk of developing dementia after COVID-19? Is there differentiation between those who experience cognitive decline with no dementia (i.e., not clearly a neurodegenerative disease) and those who get dementia (neurodegenerative)?

69. Thomas B, Pattinson R, Edwards D, et al. An exploration of the definitions and measures that have been used when investigating fatigue in adults with Long COVID: a scoping review protocol. JBI Evidence Synthesis 2023;20:20. doi: https://dx.doi.org/10.11124/JBIES-23-00277

Review aim: To investigate how fatigue is defined and measured in adults with Long COVID.

70. Tsampasian and Vassiliou. Cardiovascular disease as part of Long COVID: a systematic review of the literature. PROSPERO 2023 CRD42023478892 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023478892

Review question: How does Long COVID syndrome affect the cardiovascular system?

71. Weber, et al. Connection between SARS-CoV-2 infection and new-onset cardiovascular sequelae and conditions: a systematic review and meta-analysis. PROSPERO 2023 CRD42023480206 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023480206

Review questions: To collect new occurring cardiovascular sequelae in patients with prior SARS-CoV-2 infection and see if there is a connection. If enough data are available: Are there differences in different geographic regions and age groups or can other risk factors be found?

72. Yang and Zhang. The relationship between severe COVID-19 and frailty transition: a systematic review. PROSPERO 2023 CRD42023485555 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023485555

Review question: To pool proportion of adverse frailty changes in patients with severe COVID-19 within three to six months after discharge.

Prevalence of symptoms or effects and Treatment or rehabilitation (n=3)

Standard systematic reviews

73. Daniels, et al. A rapid review of return to work with or following Long COVID. PROSPERO 2023 CRD42023478126 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023478126

Review questions: What, if any, support is being given to return to work in populations with or following Long COVID? What proportion or percentage of people with/or following Long COVID return to work? What are the barriers and/or facilitators to return to work in populations with Long COVID or following Long COVID?

74. Mehta, et al. Long COVID-19 syndrome in the pediatric population: neurological involvement and management - a systematic review and meta-analysis. PROSPERO 2023 CRD42023484260 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023484260

Review questions: What are the long-term neurological effects like headache, dizziness, myalgia/fatigue, meningitis, ischemic/haemorrhagic stroke, and myelitis of COVID-19 in children? What are the management strategies for these effects in children?

75. Pettemeridou, et al. Cognitive and psychological symptoms in Long COVID: a systematic review of structural and functional neuroimaging, neurophysiology, and intervention studies. PROSPERO 2023 CRD42023475302 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023475302

Review question: What research methodologies (i.e., MRI, fMRI and EEG) and treatment modalities (i.e., non-invasive brain stimulation and cognitive rehabilitation) have been used to address and examine their effect on cognitive and psychological difficulties in Long COVID (i.e., PCS)?

Risk factors with or without prevalence of symptoms or effects (n=7)

Systematic review of reviews

76. Semchishen, et al. An umbrella review to determine multi-domain outcomes and predictors of post COVID-19 condition, within a socio-ecological framework. PROSPERO 2023 CRD42023447490 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023447490

Review questions: What are multi-domain outcomes and predictors of post COVID-19 condition (PCC) within a socio-ecological framework? What is the prevalence or risk of identified outcomes and predictors meeting the criteria?

Standard systematic reviews

77. Cowansage, et al. Predictors of adverse psychiatric outcomes following COVID-19: a systematic review. PROSPERO 2023 CRD42023487324 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023487324

Review questions: To investigate how different social, psychological, and general health factors contribute to persistent mental health outcomes following COVID-19 in both military and civilian populations.

78. Jang and Moon. Review analysis of symptoms in post-acute sequelae SARS-CoV-2 infection (PASC) patients with obesity. PROSPERO 2023 CRD42023482257 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023482257

Review question: What are the differences in post-acute sequelae of SARS-CoV-2 infection (PASC) between obese and non-obese COVID-19 patients?

79. Mao and Yang. Prognostic factors affecting the recovery of post COVID-19 olfactory dysfunction: a systematic review and meta-analysis. PROSPERO 2023 CRD42023434368 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023434368

Review question: To find the factors that can affect the recovery of olfactory dysfunction caused by COVID-19, and to guide clinical treatment.

80. Melo Oliveira, et al. Assessment of clinical laboratory characteristics of patients with dyspnea and fatigue in post-COVID-19 syndrome: a systematic review. PROSPERO 2023 CRD42023480989 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023480989

Review questions: What is the incidence of dyspnoea and fatigue in post-COVID-19 syndrome? What are the most common immunological changes in dyspnoea and fatigue in post-COVID-19 syndrome? What are the risk factors associated with this condition of dyspnoea and fatigue in post-COVID-19 syndrome?

81. Rayner and Gou. Symptoms during acute COVID-19 as predictors of Long COVID: a systematic review and meta-analysis. PROSPERO 2023 CRD42023494091 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023494091

Review question: In adults with confirmed or suspected COVID-19 infection, which symptoms during acute COVID-19 predict post-COVID-19 syndrome at 12 weeks or more post-infection?

82. Santana da Silva, et al. The role of genetic polymorphisms in Long COVID: a systematic review. PROSPERO 2023 CRD42023469159 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023469159

Review question: What are the main genetic polymorphisms associated with the development of Long COVID?

Risk factors with or without prevalence of symptoms or effects and Treatment or rehabilitation (n=1)

Standard systematic review

83. Piper, et al. The impact of nutrition on the development and management of Long COVID: a systematic review. PROSPERO 2023 CRD42023472403 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023472403

Review questions: What is the association between nutritional status and being a person with a Long COVID condition? What are the mechanisms for these relationships, e.g., digestion, absorption, and utilisation of nutrients? What are the original research studies that have been done with nutritional therapy to improve (or not) Long COVID symptoms?

Pathobiology or mechanisms (n=1)

Standard systematic review

84. Maestre and De Oro. TGF-B1 as a candidate biomarker of pulmonary fibrosis in people convalescent from COVID-19: systematic review and meta-analysis. PROSPERO 2023

CRD42023447892 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023447892

Review question: What is the role of increased values of Transforming Growth Factor beta1 (TGF-B1) in blood and histology and the development of pulmonary fibrosis?

Appendix 1: Search strategies

MEDLINE ALL
(includes: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE Daily and Ovid MEDLINE)
via Ovid http://ovidsp.ovid.com/
Date range: 1946 to January 03, 2024
Date searched: 4th January 2024
Records retrieved: 320

1 Post-Acute COVID-19 Syndrome/ (2821)
2 COVID-19 post-intensive care syndrome.mp. (6)
3 COVID-19/ or SARS-CoV-2/ (256375)
4 Syndrome/ (123438)
5 Survivors/ (31044)
6 4 or 5 (154359)
7 3 and 6 (1093)
8 1 or 2 or 7 (3829)
9 ((long adj (covid$ or covid-19 or covid19 or coronavirus)) or longcovid$).ti,ab,kf,ot,bt. (4521)
10 ((post adj (covid$ or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) or postcovid$).ti,ab,kf,ot,bt. (9716)
11 ((post acute or postacute) adj2 (covid$ or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)).ti,ab,kf,ot,bt. (970)
12 PASC.ti,ab,kf,ot,bt. (843)
13 (sequela$ adj6 (covid$ or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)).ti,ab,kf,ot,bt. (2765)
14 (chronic adj2 (covid$ or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)).ti,ab,kf,ot,bt. (336)
15 ((long$ term or longterm) adj3 (covid$ or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)).ti,ab,kf,ot,bt. (2282)
16 (persist$ adj6 (covid$ or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)).ti,ab,kf,ot,bt. (4178)
17 ((post discharg$ or postdischarg$) adj5 (covid$ or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)).ti,ab,kf,ot,bt. (135)
18 ((long haul$ or longhaul$) adj6 (covid$ or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)).ti,ab,kf,ot,bt. (263)
19 (surviv$ adj3 (covid$ or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)).ti,ab,kf,ot,bt. (3136)
20 (after adj (covid$ or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)).ti,ab,kf,ot,bt. (9419)
21 ((ongoing or lasting or prolonged or fluctuat$ or residual$ or continu$ or linger$) adj6 (symptom$ or effect$ or complication$ or sequela$ or syndrome or illness$ or disorder$ or dysfunction$ or impair$ or impact$ or consequence$) adj6 (covid$ or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)).ti,ab,kf,ot,bt. (2943)
22 or/9-21 (30316)
23 8 or 22 (30808)
24 systematic review.mp,pt. (328528)
25 search:.tw. (673636)
26 meta analysis.mp,pt. (293960)
27 review.pt. (3259279)
28 24 or 25 or 26 or 27 (3799355)
29 23 and 28 (4957)

30 qualitative review$.ti,ab,kf,ot,bt. (1827)
31 realist synthes$.ti,ab,kf,ot,bt. (407)
32 realist review$.ti,ab,kf,ot,bt. (709)
33 (meta-synthes$ or metasynthes$).ti,ab,kf,ot,bt. (2229)
34 (living adj2 (review$ or map$)).ti,ab,kf,ot,bt. (793)
35 pooled analysis.ti,ab,kf,ot,bt. (13092)
36 or/30-35 (18866)
37 23 and 36 (68)
38 29 or 37 (4964)
39 (202310$ or 202311$ or 202312$ or 202401$).dt. (390156)
40 38 and 39 (320)
41 exp animals/ not humans.sh. (5182830)
42 40 not 41 (320)
43 preprint.pt. (19780)
44 42 not 43 (320)

CINAHL Plus
via Ebsco https://www.ebsco.com/
Date range: Inception to 20240104
Date searched: 4th January 2024
Records retrieved: 243

S1 (MH "Post-Acute COVID-19 Syndrome") 1,107
S2 TI (long N1 (covid* or covid-19 or covid19 or coronavirus) or longcovid*) OR AB (long N1 (covid* or covid-19 or covid19 or coronavirus) or longcovid*) 1,484
S3 TI (post N1 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2) or postcovid*) OR AB (post N1 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2) or postcovid*) 1,725
S4 TI (("post acute" or post-acute or postacute) N3 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) OR AB (("post acute" or post-acute or postacute) N3 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) 361
S5 TI PASC OR AB PASC 109
S6 TI (sequela* N6 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) OR AB (sequela* N6 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) 611
S7 TI (chronic N2 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) OR AB (chronic N2 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) 283
S8 TI ((long* N1 term or long-term or longterm) N3 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) OR AB ((long* N1 term or long-term or longterm) N3 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) 1,077
S9 TI (persist* N6 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) OR AB (persist* N6 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) 960
S10 TI ((post N1 discharg* or post-discharg* or postdischarg*) N4 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) OR AB ((post N1 discharg* or post-discharg* or postdischarg*) N4 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) 54

S11 TI ((long N1 haul* or long-haul* or longhaul*) N6 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) OR AB ((long N1 haul* or long-haul* or longhaul*) N6 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) 96
S12 TI (surviv* N3 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) OR AB (surviv* N3 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) 1,114
S13 TI (after N1 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) OR AB (after N1 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) 4,366
S14 TI ((ongoing or lasting or prolonged or fluctuat* or residual* or continu* or linger*) N6 (symptom* or effect* or complication* or sequela* or syndrome or illness* or dysfunction* or disorder* or impair* or impact* or consequence*) N6 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) OR AB ((ongoing or lasting or prolonged or fluctuat* or residual* or continu* or linger*) N6 (symptom* or effect* or complication* or sequela* or syndrome or illness* or dysfunction* or impair* or impact* or consequence*) N6 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)) 943
S15 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 10,786
S16 (MH "Systematic Review") 130,373
S17 (ZT "systematic review") 154,380
S18 (ZT "meta analysis") 56,284
S19 (MH "Meta Analysis") 72,504
S20 TI (meta-analys* or metaanaly*) OR AB (meta-analys* or metaanaly*) 113,320
S21 TI systematic* N1 review* OR AB systematic* N1 review* 159,766
S22 S16 OR S17 OR S18 OR S19 OR S20 OR S21 265,955
S23 (ZT "review") 379,304
S24 AB systematic* or AB methodologic* or AB quantitative* or AB research* or AB literature* or AB studies or AB trial* or AB effective* 2,989,442
S25 (S23 AND S24) 172,698
S26 S22 OR S25 429,700
S27 S15 AND S26 644
S28 (MH "Meta Synthesis") 2,236
S29 TI qualitative N1 review* OR AB qualitative N1 review* 4,032
S30 TI (realist N1 (review* or synthes*)) OR AB (realist N1 (review* or synthes*)) 580
S31 TI (meta-synthes* or metasynthes*) OR AB (meta-synthes* or metasynthes*) 1,867
S32 TI (living N2 (review* or map*)) AND (living N2 (review* or map*)) 230
S33 TI pooled N1 analys* OR AB pooled N1 analys* 8,414
S34 S28 OR S29 OR S30 OR S31 OR S32 OR S33 15,756
S35 S15 AND S34 29
S36 S27 OR S35 655
S37 EM 202309- 89,821
S38 (ZD "in process") 1,626,225
S39 S37 OR S38 1,716,046
S40 S36 AND S39 243

Cochrane Database of Systematic Reviews (CDSR)
via Wiley http://onlinelibrary.wiley.com/
Issue: Issue 1 of 12, January 2024
Date searched: 4th January 2024

Records retrieved: 2

#1 MeSH descriptor: [Post-Acute COVID-19 Syndrome] this term only 87
#2 MeSH descriptor: [COVID-19] this term only 5003
#3 MeSH descriptor: [SARS-CoV-2] this term only 2469
#4 MeSH descriptor: [Syndrome] this term only 6437
#5 MeSH descriptor: [Survivors] this term only 1560
#6 #2 or #3 5216
#7 #4 or #5 7992
#8 #6 and #7 63
#9 #1 or #8 139
#10 (long next (covid* or covid-19 or covid19 or coronavirus) or longcovid*):ti,ab,kw 368
#11 (post next (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2) or postcovid*):ti,ab,kw 674
#12 ((post acute or postacute) near/2 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)):ti,ab,kw 1197
#13 PASC:ti,ab,kw 59
#14 (sequela* near/6 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)):ti,ab,kw 147
#15 (chronic near/2 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)):ti,ab,kw 34
#16 ((long* term or longterm) near/3 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)):ti,ab,kw 740
#17 (persist* near/6 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)):ti,ab,kw 250
#18 ((post discharg* or postdischarg*) near/5 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)):ti,ab,kw 1193
#19 ((long haul* or longhaul*) near/6 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)):ti,ab,kw 552
#20 (surviv* near/3 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)):ti,ab,kw 187
#21 (after next (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)):ti,ab,kw 297
#22 ((ongoing or lasting or prolonged or fluctuat* or residual* or continu* or linger*) near/6 (symptom* or effect* or complication* or sequela* or syndrome or illness* or dysfunction* or disorder* or impair* or impact* or consequence*) near/6 (covid* or covid-19 or covid19 or coronavirus or SARS-CoV-2 or SARS-CoV2 or SARSCoV2 or SARSCoV-2)):ti,ab,kw 166
#23 {OR #10-#22} 2553
#24 #9 or #23 with Cochrane Library publication date Between Oct 2023 and Jan 2024, in Cochrane Reviews, Cochrane Protocols 2

Epistemonikos
https://www.epistemonikos.org/
Date searched: 4th January 2024
Records retrieved: 324

1. (title:((title:("long covid" OR long-covid OR longcovid OR "long covid 19" OR long-covid-19 OR longcovid19 OR "long covid19" OR long-covid19 OR "longcovid 19" OR longcovid-19 OR "long coronavirus" OR long-coronavirus OR longcoronavirus) OR abstract:("long covid" OR long-covid OR longcovid OR "long covid 19" OR long-covid-19 OR longcovid19 OR "long covid19" OR long-covid19 OR "longcovid 19" OR longcovid-19 OR "long coronavirus" OR long-coronavirus OR longcoronavirus)) OR (title:("post covid" OR post-covid OR postcovid OR "post covid 19" OR post-covid-19 OR

postcovid19 OR "post covid19" OR post-covid19 OR "postcovid 19" OR postcovid-19 OR "post coronavirus" OR post-coronavirus OR postcoronavirus OR "post SARS CoV 2" OR post-SARS-CoV-2 OR postSARSCoV2 OR "post SARS CoV2" OR "post-SARS CoV2" OR "postSARS CoV2" OR "post SARS-CoV2" OR post-SARS-CoV2 OR postSARS-CoV2 OR "post SARSCoV 2" OR "post-SARSCoV 2" OR "postSARSCov 2" OR "post SARSCoV-2" OR "post-SARSCoV-2" OR "postSARSCoV-2" OR PASC) OR abstract:("post covid" OR post-covid OR postcovid OR "post covid 19" OR post-covid-19 OR postcovid19 OR "post covid19" OR post-covid19 OR "postcovid 19" OR postcovid-19 OR "post coronavirus" OR post-coronavirus OR postcoronavirus OR "post SARS CoV 2" OR post-SARS-CoV-2 OR postSARSCoV2 OR "post SARS CoV2" OR "post-SARS CoV2" OR "postSARS CoV2" OR "post SARS-CoV2" OR post-SARS-CoV2 OR postSARS-CoV2 OR "post SARSCoV 2" OR "post-SARSCoV 2" OR "postSARSCov 2" OR "post SARSCoV-2" OR "post-SARSCoV-2" OR "postSARSCoV-2" OR PASC))) OR abstract:((title:("long covid" OR long-covid OR longcovid OR "long covid 19" OR long-covid-19 OR longcovid19 OR "long covid19" OR long-covid19 OR "longcovid 19" OR longcovid-19 OR "long coronavirus" OR long-coronavirus OR longcoronavirus) OR abstract:("long covid" OR long-covid OR longcovid OR "long covid 19" OR long-covid-19 OR longcovid19 OR "long covid19" OR long-covid19 OR "longcovid 19" OR longcovid-19 OR "long coronavirus" OR long-coronavirus OR longcoronavirus)) OR (title:("post covid" OR post-covid OR postcovid OR "post covid 19" OR post-covid-19 OR postcovid19 OR "post covid19" OR post-covid19 OR "postcovid 19" OR postcovid-19 OR "post coronavirus" OR post-coronavirus OR postcoronavirus OR "post SARS CoV 2" OR post-SARS-CoV-2 OR postSARSCoV2 OR "post SARS CoV2" OR "post-SARS CoV2" OR "postSARS CoV2" OR "post SARS-CoV2" OR post-SARS-CoV2 OR postSARS-CoV2 OR "post SARSCoV 2" OR "post-SARSCoV 2" OR "postSARSCov 2" OR "post SARSCoV-2" OR "post-SARSCoV-2" OR "postSARSCoV-2" OR PASC) OR abstract:("post covid" OR post-covid OR postcovid OR "post covid 19" OR post-covid-19 OR postcovid19 OR "post covid19" OR post-covid19 OR "postcovid 19" OR postcovid-19 OR "post coronavirus" OR post-coronavirus OR postcoronavirus OR "post SARS CoV 2" OR post-SARS-CoV-2 OR postSARSCoV2 OR "post SARS CoV2" OR "post-SARS CoV2" OR "postSARS CoV2" OR "post SARS-CoV2" OR post-SARS-CoV2 OR postSARS-CoV2 OR "post SARSCoV 2" OR "post-SARSCoV 2" OR "postSARSCov 2" OR "post SARSCoV-2" OR "post-SARSCoV-2" OR "postSARSCoV-2" OR PASC))))
Limits = added to database from 03/10/2023 onwards, broad synthesis = 8, SR = 60

2. (title:("post acute" OR post-acute OR postacute) OR abstract:("post acute" OR post-acute OR postacute)) AND (title:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2) OR abstract:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2))
Limits = added to database from 03/10/2023 onwards, broad synthesis = 3, SR = 9

3. (title:("long haul" OR "long hauler" OR "long haulers" OR long-haul* OR longhaul*) OR abstract:("long haul" OR "long hauler" OR "long haulers" OR long-haul* OR longhaul*)) AND (title:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2) OR abstract:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2))
Limits = added to database from 03/10/2023 onwards, broad synthesis = 0, SR = 0

4. (title:(sequela*) OR abstract:(sequela*)) AND (title:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2) OR abstract:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2))
Limits = added to database from 03/10/2023 onwards, broad synthesis = 2, SR = 18

5. (title:("chronic covid" OR "chronic covid-19" OR "chronic covid19" OR "chronic coronavirus" OR "chronic SARS CoV 2" OR "chronic SARS-CoV-2" OR "chronic SARSCoV2" OR "chronic SARS CoV2" OR "chronic SARS-CoV2" OR "chronic SARSCoV 2" OR "chronic SARSCoV-2") OR abstract:("chronic covid" OR "chronic covid-19" OR "chronic covid19" OR "chronic coronavirus" OR "chronic SARS CoV 2" OR "chronic SARS-CoV-2" OR "chronic SARSCoV2" OR "chronic SARS CoV2" OR "chronic SARS-CoV2" OR "chronic SARSCoV 2" OR "chronic SARSCoV-2"))
Limits = added to database from 03/10/2023 onwards, broad synthesis = 0, SR = 2

6. (title:("long term" OR "longer term" OR long-term OR longer-term) OR abstract:("long term" OR "longer term" OR long-term OR longer-term)) AND (title:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2) OR abstract:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2))
Limits = added to database from 03/10/2023 onwards, broad synthesis = 7, SR = 68

7. (title:(persist*) OR abstract:(persist*)) AND (title:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2) OR abstract:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2))
Limits = added to database from 03/10/2023 onwards, broad synthesis = 9, SR = 36

8. (title:("post discharge" OR post-discharge OR postdischarge) OR abstract:("post discharge" OR post-discharge OR postdischarge)) AND (title:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2) OR abstract:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2))
Limits = added to database from 03/10/2023 onwards, broad synthesis = 0, SR = 0

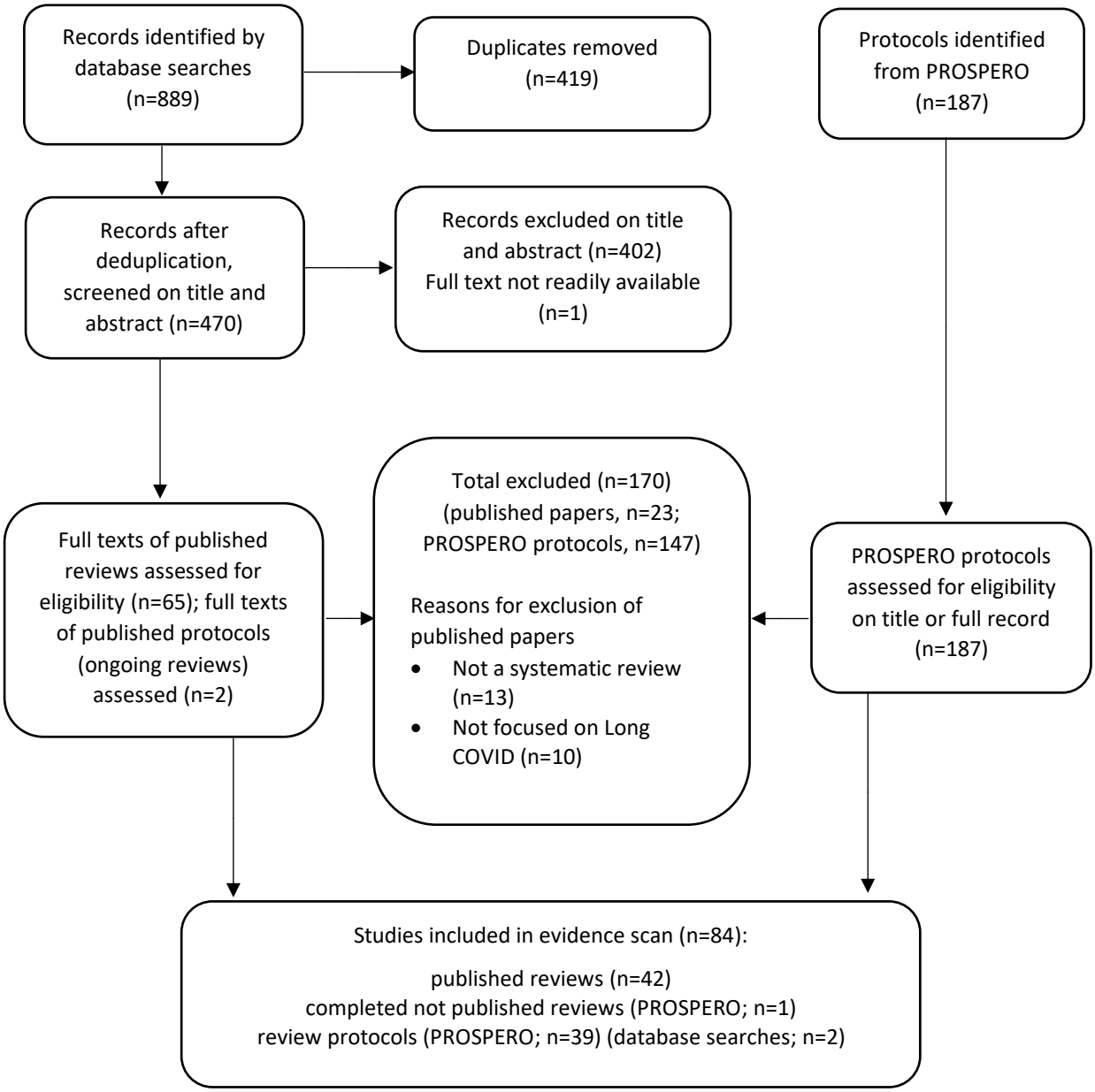
9. (title:(survivor* OR survived) OR abstract:(survivor* OR survived)) AND (title:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2) OR abstract:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2))
Limits = added to database from 03/10/2023 onwards, broad synthesis = 1, SR = 15

10. (title:(ongoing OR lasting OR prolonged OR fluctuat* OR residual* OR continu* OR linger*) OR abstract:(ongoing OR lasting OR prolonged OR fluctuat* OR residual* OR continu* OR linger*)) AND (title:(symptom* OR effect* OR complication* OR sequela* OR syndrome OR illness* OR disorder* OR dysfunction* OR impair* OR impact* OR consequence* OR manifest*) OR abstract:(symptom* OR effect* OR complication* OR sequela* OR syndrome OR illness* OR disorder* OR dysfunction* OR impair* OR impact* OR consequence* OR manifest*)) AND (title:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2) OR abstract:(covid OR covid-19 OR covid19 OR coronavirus OR "SARS CoV 2" OR SARS-CoV-2 OR SARSCoV2 OR "SARS CoV2" OR SARS-CoV2 OR "SARSCoV 2" OR SARSCoV-2))
Limits = added to database from 03/10/2023 onwards, broad synthesis = 12, SR = 74

PROSPERO search strategy
https://www.crd.york.ac.uk/prospero/
Searched from 4th October, 2023 to 4th January, 2024
Records identified: 187

#1 long COVID OR post COVID OR PASC (1087)
#2 persisting OR persistent OR long term OR ongoing OR prolonged OR lingering OR dysfunction OR recovered OR survivors OR long haul OR long hauler OR long haulers OR post discharge OR postdischarge OR sequela OR sequelae OR chronic OR post-acute (76965)
#3 COVID OR COVID-19 OR COVID19 OR coronavirus OR SARS-CoV-2 OR SARS-CoV2 OR SARSCoV2 OR SARSCoV-2 OR 2019-nCoV (11229)
#4 #3 AND #2 (3627)
#5 #1 OR #4 (4009)
#6 * Where CD FROM 04/10/2023 TO 04/01/2024 (14243)
#7 #6 AND #5 (187)

Appendix 2: Flow of studies through the review



Appendix 3: Summary of reports and updates

Table 2: Summary of reviews (November 2021 to January 2024)

Report date	**Jan 2024**	**Oct 2023**	**July 2023**	**April 2023**	**Jan 2023**	**Oct 2022**	**July 2022**	**April 2022**	**Nov 2021**
Period searched **Primary focus by review type**	Oct '23 to Jan '24	Jul to Oct '23	Apr to Jul '23	Jan to Apr '23	Oct '22 to Jan '23	Jul to Oct '22	Apr to Jul '22	Nov '21 to Apr '22	Up to Nov '21
Published reviews	**42**	**46**	**31**	**37**	**50**	**29**	**28**	**54**	**51**
Treatment[1]	7	11	5	5	5	5	3	11	3
Treatment[1] and prevention		1	1	2		2			
Treatment[1] and pathobiology[4]		1							
Treatment,[1] prevention and prevalence[2]		1							
Prevention	3			1	2	1			1
Health and Social						1			
Prevalence[2]	18	20	16	21	31	19	22	38	47
Prevalence[2] and treatment[1]	2		1						
Prevalence[2] and pathobiology[4]			1	1					
Prevalence,[2] treatment[1] and economics		1							
Risk factors[3]	9	1	6	3	8		3		
Risk factors[3] and treatment[1]	1				1	1			
Risk factors[3] and prevention					1				
Pathobiology[4]	2	6	1	3	2				
Risk factors[3] and pathobiology[4]		2						5	
Health and economics		1							
Public, patient involvement		1							
Treatment,[1] prevention, prevalence,[2] pathobiology[4] and diagnosis				1					
Completed not published	**1**	**3**	**1**	**5**		**2**		**5**	**9**
Lived experience									1
Treatment[1]			1	2				1	1
Prevalence[2]	1	2		3		2		4	7
Risk factors[3]		1							
Ongoing reviews (protocols)	**41**	**41**	**52**	**68**	**56**	**63**	**59**	**73**	**77**
Treatment[1]	13	8	26	27	33	24	12	17	15

Treatment[1] and prevention		1		1		4			
Prevention	2	2	2		1		2	4	
Health and Social						1	1		
Prevalence[2]	14	22	12	18	13	30	31	47	59
Prevalence[2] and treatment[1]	3		1		1				
Prevalence[2] and pathobiology[4]		1							
Risk factors[3]	7	6	6	13	4		10		
Risk factors[3] and treatment[1]	1								
Risk factors[3] and prevention					1				
Pathobiology[4]	1		3	4	3		3		
Risk factors[3] and pathobiology[4]			1			4		5	
Diagnosis or monitoring				3					
Health and economics		1	1	1					3
Experiences				1					

1. Treatment = treatment or rehabilitation. 2. Prevalence = prevalence of symptoms or effects. 3. Risk factors = risk factors with or without prevalence of symptoms or effects. 4. Pathobiology = pathobiology or mechanisms.

NB: Caution is required in drawing direct comparisons across time. Records for the October 2022 and subsequent updates were identified using a more comprehensive search strategy and a different combination of databases, compared with the April and July 2022 reports. Pre-prints and early online versions of reviews were also included in the April and July 2022 reports. The November report searched the COVID-19 living map, as the main source, and covered a longer period than other reports.

The NIHR Policy Research Programme Reviews Facility aims to put the evidence into development and implementation of health policy through:

- Undertaking policy-relevant systematic reviews of health and social care research
- Developing capacity for undertaking and using reviews
- Producing new and improved methods for undertaking reviews
- Promoting global awareness and use of systematic reviews in decision-making

The Reviews Facility is a collaboration between the following centres:
EPPI Centre (Evidence for Policy and Practice Information Centre),
UCL Institute of Education, University College London;
CRD (Centre for Reviews and Dissemination), University of York;
and the London School of Hygiene and Tropical Medicine.

The NIHR Policy Research Programme Reviews Facility collaboration has grown out of a previous 'reviews facility' in Health Promotion and Public Health based at the EPPI Centre, and has been funded by the Department of Health and Social Care since 1995.

First produced in 2024 by:

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