Long-COVID Update

January 2023

Welcome to the latest edition of the Long-Covid Update. The aim of this publication is to bring together a range of recently published research and guidance that will help you make evidence-based decisions.

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A selection of papers from Medline and CINHAL: Aug – Dec 2022

1. Long COVID: mechanisms, risk factors and recovery

Item Type: Journal Article

Authors: Astin, Rónan;Banerjee, Amitava;Baker, Mark R.;Dani, Melanie;Ford, Elizabeth;Hull, James H.;Lim, Phang Boon;McNarry, Melitta;Morten, Karl;O'Sullivan, Oliver;Pretorius, Etheresia;Raman, Betty;Soteropoulos, Demetris S.;Taquet, Maxime and Hall, Catherine N.

Publication Date: 2023

Journal: Experimental Physiology 108(1), pp. 12-27

Abstract: New Findings: What is the topic of this review? The emerging condition of long COVID, its epidemiology, pathophysiological impacts on patients of different backgrounds, physiological mechanisms emerging as explanations of the condition, and treatment strategies being trialled. The review leads from a Physiological Society online conference on this topic. What advances does it highlight? Progress in understanding the pathophysiology and cellular mechanisms underlying Long COVID and potential therapeutic and management strategies.; Abstract: Long COVID, the prolonged illness and fatigue suffered by a small proportion of those infected with SARS-CoV-2, is placing an increasing burden on individuals and society. A Physiological Society virtual meeting in February 2022 brought clinicians and researchers together to discuss the current understanding of long COVID mechanisms, risk factors and recovery. This review highlights the themes arising from that meeting. It considers the nature of long COVID, exploring its links with other post-viral illnesses such as myalgic encephalomyelitis/chronic fatigue syndrome, and highlights how long COVID research can help us better support those suffering from all post-viral syndromes. Long COVID research started particularly swiftly in populations routinely monitoring their physical performance - namely the military and elite athletes. The review highlights how the high degree of diagnosis, intervention and monitoring of success in these active populations can suggest management strategies for the wider population. We then consider how a key component of performance monitoring in active populations, cardiopulmonary exercise training, has revealed long COVID-related changes in physiology - including alterations in peripheral muscle function, ventilatory inefficiency and autonomic dysfunction. The nature and impact of dysautonomia are further discussed in relation to postural orthostatic tachycardia syndrome, fatigue and treatment strategies that aim to combat sympathetic overactivation by stimulating the vagus nerve. We then interrogate the mechanisms that underlie long COVID symptoms, with a focus on impaired oxygen delivery due to micro-clotting and disruption of cellular energy metabolism, before considering treatment strategies that indirectly or directly tackle these mechanisms. These include remote inspiratory muscle training and integrated care pathways that combine rehabilitation and drug interventions with research into long COVID healthcare access across different populations. Overall, this review showcases how physiological research reveals the changes that occur in long COVID and how different therapeutic strategies are being developed and tested to combat this condition. (© 2022 The Authors. Experimental Physiology published by John Wiley & Sons Ltd on behalf of The Physiological Society.)

Access or request full text: https://libkey.io/10.1113/EP090802

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36412084&custid=ns023446

2. Negotiation of collective and individual candidacy for long Covid healthcare in the early phases of the Covid-19 pandemic: Validated, diverted and rejected candidacy

Item Type: Journal Article

Authors: Maclean, Alice;Hunt, Kate;Brown, Ashley;Evered, Jane A.;Dowrick, Anna;Fokkens, Andrea;Grob, Rachel;Law, Susan;Locock, Louise;Marcinow, Michelle;Smith, Lorraine;Urbanowicz, Anna;Verheij, Nientke and Wild, Cervantee

Publication Date: 2023

Journal: SSM.Qualitative Research in Health 3, pp. 100207

Abstract: This analysis of people's accounts of establishing their need and experiences of healthcare for long Covid (LC) symptoms draws on interview data from five countries (UK, US, Netherlands, Canada, Australia) during the first ~18 months of the Covid-19 pandemic when LC was an emerging, sometimes contested, condition with scant scientific or lay knowledge to guide patients and professionals in their sense-making of often bewildering constellations of symptoms. We extend the construct of candidacy to explore positive and (more often) negative experiences that patients reported in their quest to understand their symptoms and seek appropriate care. Candidacy usually considers how individuals negotiate healthcare access. We argue a crucial step preceding individual claims to candidacy is recognition of their condition through generation of collective candidacy. "Vanguard patients" collectively identified, named and fought for recognition of long Covid in the context of limited scientific knowledge and no established treatment pathways. This process was technologically accelerated via social media use. Patients commonly experienced "rejected" candidacy (feeling disbelieved, discounted/uncounted and abandoned, and that their suffering was invisible to the medical gaze and society). Patients who felt their candidacy was "validated" had more positive experiences; they appreciated being believed and recognition of their changed lives/bodies and uncertain futures. More positive healthcare encounters were described as a process of "co-experting" through which patient and healthcare professional collaborated in a joint quest towards a pathway to recovery. The findings underpin the importance of believing and learning from patient experience, particularly vanguard patients with new and emerging illnesses.; Competing Interests: The authors have no competing interests to declare. (© 2022 The Authors.)

Access or request full text: https://libkey.io/10.1016/j.ssmqr.2022.100207

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36507117&custid=ns023446

3. Association of BMI with general health, working capacity recovered, and post-acute sequelae of COVID-19

Item Type: Journal Article

Authors: Peter, Raphael S.;Nieters, Alexandra;Brockmann, Stefan O.;Göpel, Siri;Kindle, Gerhard;Merle, Uta;Steinacker, Jürgen M.;Kern, Winfried V. and Rothenbacher, Dietrich

Publication Date: 2023

Journal: Obesity (19307381) 31(1), pp. 43-48

Access or request full text: https://libkey.io/10.1002/oby.23611

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=160900065&custid=ns023446

4. Clinical characteristics with inflammation profiling of long COVID and association with 1-year recovery following hospitalisation in the UK: a prospective observational study

Item Type: Journal Article
Clinical characteristics with inflammation profiling of long COVID and association with 1-year recovery following hospitalisation in the UK: a prospective observational study

Publication Date: 2022

Journal: The Lancet.Respiratory Medicine 10(8), pp. 761-775

Abstract: Background: No effective pharmacological or non-pharmacological interventions exist for patients with long COVID. We aimed to describe recovery 1 year after hospital discharge for COVID-19, identify factors associated with patient-perceived recovery, and identify potential therapeutic targets by describing the underlying inflammatory profiles of the previously described recovery clusters at 5 months after hospital discharge.; Methods: The Post-hospitalisation COVID-19 study (PHOSP-COVID) is a prospective, longitudinal cohort study recruiting adults (aged ≥18 years) discharged from hospital with COVID-19 across the UK. Recovery was assessed using patient-reported outcome measures, physical performance, and organ function at 5 months and 1 year after hospital discharge, and stratified by both patient-perceived recovery and recovery cluster. Hierarchical logistic regression modelling was performed for patient-perceived recovery at 1 year. Cluster analysis was done using the clustering large applications k-medoids approach using clinical outcomes at 5 months. Inflammatory protein profiling was analysed from plasma at the 5-month visit. This study is registered on the ISRCTN Registry, ISRCTN10980107, and recruitment is ongoing.; Findings: 2320 participants discharged from hospital between March 7, 2020, and April 18, 2021, were assessed at 5 months after discharge and 807 (32·7%) participants completed both the 5-month and 1-year visits. 279 (35·6%) of these 807 patients were women and 505 (64·4%) were men, with a mean age of 58·7 (SD 12·5) years, and 224 (27·8%) had received invasive mechanical ventilation (WHO class 7-9). The proportion of patients reporting full recovery was unchanged between 5 months (501 25·5%] of 1965) and 1 year (232 28·9%] of 804). Factors associated with being less likely to report full recovery at 1 year were female sex (odds ratio 0·68 95% CI 0·46-0·99]), obesity (0·50 0·34-0·74]) and invasive mechanical ventilation (0·42 0·23-0·76]). Cluster analysis (n=1636) corroborated the previously reported four clusters: very severe, severe, moderate with cognitive impairment, and mild, relating to the severity of physical health, mental health, and cognitive impairment at 5 months. We found increased inflammatory mediators of tissue damage and repair in both the very severe and the moderate with cognitive impairment clusters compared with the mild cluster, including IL-6 concentration, which was increased in both comparisons (n=626 participants). We found a substantial deficit in median EQ-5D-5L utility index from before COVID-19 (retrospective assessment; 0·88 IQR 0·74-1·00]), at 5 months (0·74 0·64-0·88]) to 1 year (0·75 0·62-0·88]), with minimal improvements across all outcome measures at 1 year after discharge in the whole cohort and within each of the four clusters.; Interpretation: The sequelae of a hospital admission with COVID-19 were substantial 1 year after discharge across a range of health domains, with the minority in our cohort feeling fully recovered. Patient-perceived health-related quality of life was reduced at 1 year compared with before hospital admission. Systematic inflammation and obesity are potential treatable traits that warrant further investigation in clinical trials.; Funding: UK Research and Innovation and National Institute for Health Research. (Copyright © 2022 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY 4.0 license. Published by Elsevier Ltd.. All rights reserved.)

Access or request full text: https://libkey.io/10.1016/S2213-2600(22)00127-8

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35472304&custid=ns023446

5. Long COVID: What You Should Know

Item Type: Journal Article
Long COVID: What You Should Know

Publication Date: 2022

Journal: American Family Physician 106(5), pp. 532B

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=160230261&custid=ns023446

6. Resilience resources and coping strategies of COVID-19 female long haulers: A qualitative study

Item Type: Journal Article

Authors: Aghaei, Atefeh;Aggarwal, Abhishek;Zhang, Ran;Li, Xiaoming and Qiao, Shan

Publication Date: 2022

Journal: Frontiers in Public Health 10, pp. 970378

Abstract: Background: Female long haulers deal with persistent post-acute COVID-19 symptoms that have serious health implications. This study aimed to identify resilience resources at multiple socio-ecological levels for female long haulers and describe how resilience resources affect their responses to long COVID.; Methods: Purposive sampling was adopted to recruit participants through social media from April to June 2021 followed by 15 semi-structured interviews. An inductive analytical approach was adopted to categorize themes by open and axial coding that were verified by peer review.; Results: Female long haulers relied on resources at various socio-ecological levels to foster their resilience in response to long COVID. At the individual level, they utilized cognitive and emotional resources to increase knowledge, learn new skills, set goals, and manage emotions; behavioral resources (e.g., internal motivation and executive functioning) to perform physical, creative, and recreational activities, and adopt healthier eating habits; and spiritual resources to perform spiritual rituals and connect with God. At the social level, the support from existing relationships and/or online social support groups enhanced their social identity and provided material and informational resources. At the health systems level, the guidance from counselors and physicians and availability of clinics, medicines, and health equipment assisted them in symptom management and medication adherence.; Conclusion: The resilience of female long haulers can be enhanced through (1) offering financial and health-related resources, (2) developing online social-support groups, (3) counseling and care service training for healthcare professionals, and (4) implementing more psychosocial interventions by labor organizations.; Competing Interests: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. (Copyright © 2022 Aghaei, Aggarwal, Zhang, Li and Qiao.)

Access or request full text: https://libkey.io/10.3389/fpubh.2022.970378

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36407988&custid=ns023446

7. A service evaluation of a community project combining psychoeducation and mind-body complementary approaches to support those with long covid in the UK

Item Type: Journal Article

Authors: Brough, Dr Nicola;Abel, Sally and Priddle, Lucy

Publication Date: 2022

Journal: European Journal of Integrative Medicine 55, pp. 102182

Abstract: Introduction: Post covid-19 syndrome or Long Covid has been estimated to impact 1.3 million individuals in the UK. This study evaluates the outcomes of delivering a complementary Long Covid support service using psycho-educational and mind-body approaches within a community setting.; Methods: This study utilised quantitative

methods to evaluate the outcomes of implementing a complementary approach to providing Long Covid support. The service offered a package of care including group sessions combining psychoeducation and mind-body complementary approaches and optional 1:2:1 sessions (physiotherapy and craniosacral therapy (CST)). Screening for the service and health information was obtained using the Covid-19-Yorkshire Rehabilitation Screening tool (C-19 YRS). The impact of the service was assessed using the patient reported outcome measure: Warwick Holistic Health Questionnaire (WHHQ-18), and a survey was designed for general evaluation and feedback about the service from participants.; Results: 25 participants engaged with the service. The C-19YRS proved to be a useful tool to screen service users. The WHHQ-18 highlighted a positive group change (n = 16) in participants' mental, physical, emotional, and spiritual wellbeing: mean group score at the start = 33.7 (SD=12.5), mean group score at the follow up = 39.5 (SD=10.8). In the feedback from the service evaluation, participants reported that the service was useful in supporting them with their health challenges resulting from Long Covid and was delivered to the standard expected.; Conclusion: In conclusion the psycho-educational and mind-body complementary approaches used within this service were well received and the measures used to evaluate were suitable for a service delivered within a community setting.; Competing Interests: NB & SA are practitioners of CST & Physiotherapy and may gain an increase in clients because of publishing this manuscript. (© 2022 The Authors. Published by Elsevier GmbH.)

Access or request full text: https://libkey.io/10.1016/j.eujim.2022.102182

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36035093&custid=ns023446

8. Pediatric Long-COVID: A Review of the Definition, Epidemiology, Presentation, and Pathophysiology

Item Type: Journal Article

Authors: Brugler Yonts, Alexandra

Publication Date: 2022

Journal: Pediatric Annals 51(11), pp. e416-e420

Abstract: Although children have been largely spared the most severe consequences of acute infection with SARS-CoV-2 virus, it is estimated that up to one-quarter of the more than 14 million children diagnosed as having coronavirus disease 2019 (COVID-19) have developed persistent symptoms of fatigue, postexertional malaise, neurologic and cognitive symptoms, and other symptoms that interfere with activities of daily living for months after their initial illness. Pediatric postacute sequelae of COVID-19 (pPASC), or long-COVID, is a complex, heterogeneous, postviral condition involving multiple body systems and is likely attributable to several concurrent underlying physiologic processes, including damage from direct viral invasion, endovascular dysfunction and microthrombosis, viral persistence, and the development of autoimmunity. In this review, we explore the current state of the literature regarding definition, epidemiology, clinical presentation, and proposed pathophysiologic mechanisms of pPASC. Pediatr Ann . 2022;51(11):e416-e420.] .

Access or request full text: https://libkey.io/10.3928/19382359-20220913-06

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36343180&custid=ns023446

9. Comparison of Long COVID-19 Caused by Different SARS-CoV-2 Strains: A Systematic Review and Meta-Analysis

Item Type: Journal Article

Authors: Du, Min;Ma, Yirui;Deng, Jie;Liu, Min and Liu, Jue

Publication Date: 2022

Journal: International Journal of Environmental Research and Public Health 19(23)
Abstract: Although many studies of long COVID-19 were reported, there was a lack of systematic research which assessed the differences of long COVID-19 in regard to what unique SARS-CoV-2 strains caused it. As such, this systematic review and meta-analysis aims to evaluate the characteristics of long COVID-19 that is caused by different SARS-CoV-2 strains. We systematically searched the PubMed, EMBASE, and ScienceDirect databases in order to find cohort studies of long COVID-19 as defined by the WHO (Geneva, Switzerland). The main outcomes were in determining the percentages of long COVID-19 among patients who were infected with different SARS-CoV-2 strains. Further, this study was registered in PROSPERO (CRD42022339964). A total of 51 studies with 33,573 patients was included, of which three studies possessed the Alpha and Delta variants, and five studies possessed the Omicron variant. The highest pooled estimate of long COVID-19 was found in the CT abnormalities (60.5%; 95% CI: 40.4%, 80.6%) for the wild-type strain; fatigue (66.1%; 95% CI: 42.2%, 89.9%) for the Alpha variant; and ≥1 general symptoms (28.4%; 95% CI: 7.9%, 49.0%) for the Omicron variant. The pooled estimates of ≥1 general symptoms (65.8%; 95% CI: 47.7%, 83.9%) and fatigue were the highest symptoms found among patients infected with the Alpha variant, followed by the wild-type strain, and then the Omicron variant. The pooled estimate of myalgia was highest among patients infected with the Omicron variant (11.7%; 95%: 8.3%, 15.1%), compared with those infected with the wild-type strain (9.4%; 95%: 6.3%, 12.5%). The pooled estimate of sleep difficulty was lowest among the patients infected with the Delta variant (2.5%; 95%: 0.2%, 4.9%) when compared with those infected with the wild-type strain (24.5%; 95%: 17.5%, 31.5%) and the Omicron variant (18.7%; 95%: 1.0%, 36.5%). The findings of this study suggest that there is no significant difference between long COVID-19 that has been caused by different strains, except in certain general symptoms (i.e., in the Alpha or Omicron variant) and in sleep difficulty (i.e., the wild-type strain). In the context of the ongoing COVID-19 pandemic and its emerging variants, directing more attention to long COVID-19 that is caused by unique strains, as well as implementing targeted intervention measures to address it are vital.

Access or request full text: https://libkey.io/10.3390/ijerph192316010

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36498103&custid=ns023446

10. Use of Cardiopulmonary Exercise Testing to Evaluate Long COVID-19 Symptoms in Adults: A Systematic Review and Meta-analysis

Item Type: Journal Article

Authors: Durstenfeld, Matthew S.;Sun, Kaiwen;Tahir, Peggy;Peluso, Michael J.;Deeks, Steven G.;Aras, Mandar A.;Grandis, Donald J.;Long, Carlin S.;Beatty, Alexis and Hsue, Priscilla Y.

Publication Date: 2022

Journal: JAMA Network Open 5(10), pp. e2236057

Abstract: Key Points: Question: Is exercise capacity reduced more than 3 months after SARS-CoV-2 infection among those with long COVID-19 (LC) symptoms compared with recovered individuals without symptoms, and what patterns of limitations on cardiopulmonary exercise testing (CPET) are common? Findings: In this systematic review and meta-analysis of 38 studies comprising 2160 participants, exercise capacity was reduced by 4.9 mL/kg/min among individuals with symptoms consistent with LC compared with individuals without symptoms more than 3 months after SARS-CoV-2 infection. Findings among individuals with exertional intolerance suggest that deconditioning, dysfunctional breathing, chronotropic incompetence, and abnormal peripheral oxygen extraction and/or use may contribute to reduced exercise capacity. Meaning: These findings suggest that CPET may provide insight into the mechanisms for reduced exercise capacity among individuals with LC. This systematic review and meta-analysis addresses whether adults with persistent COVID-19 symptoms more than 3 months after SARS-CoV-2 infection (long COVID-19 LC]) have reduced exercise capacity compared with recovered individuals without symptoms and identifies potential mechanisms of LC. Importance: Reduced exercise capacity is commonly reported

among individuals with COVID-19 symptoms more than 3 months after SARS-CoV-2 infection (long COVID-19 LC]). Cardiopulmonary exercise testing (CPET) is the criterion standard to measure exercise capacity and identify patterns of exertional intolerance. Objectives: To estimate the difference in exercise capacity among individuals with and without LC symptoms and characterize physiological patterns of limitations to elucidate possible mechanisms of LC. Data Sources: A search of PubMed, EMBASE, Web of Science, preprint servers, conference abstracts, and cited references was performed on December 20, 2021, and again on May 24, 2022. A preprint search of medrxiv.org, biorxiv.org, and researchsquare.com was performed on June 9, 2022. Study Selection: Studies of adults with SARS-CoV-2 infection more than 3 months earlier that included CPET-measured peak oxygen consumption (V̇o2) were screened independently by 2 blinded reviewers; 72 (2%) were selected for full-text review, and 35 (1%) met the inclusion criteria. An additional 3 studies were identified from preprint servers. Data Extraction and Synthesis: Data extraction was performed by 2 independent reviewers according to the PRISMA reporting guideline. Data were pooled using random-effects models. Main Outcomes and Measures: Difference in peak V̇o2 (in mL/kg/min) among individuals with and without persistent COVID-19 symptoms more than 3 months after SARS-CoV-2 infection. Results: A total of 38 studies were identified that performed CPET on 2160 individuals 3 to 18 months after SARS-CoV-2 infection, including 1228 with symptoms consistent with LC. Most studies were case series of individuals with LC or cross-sectional assessments within posthospitalization cohorts. Based on a meta-analysis of 9 studies including 464 individuals with LC symptoms and 359 without symptoms, the mean peak V̇o2 was −4.9 (95% CI, −6.4 to −3.4) mL/kg/min among those with symptoms with a low degree of certainty. Deconditioning and peripheral limitations (abnormal oxygen extraction) were common, but dysfunctional breathing and chronotropic incompetence were also described. The existing literature was limited by small sample sizes, selection bias, confounding, and varying symptom definitions and CPET interpretations, resulting in high risk of bias and heterogeneity. Conclusions and Relevance: The findings of this systematic review and meta-analysis study suggest that exercise capacity was reduced more than 3 months after SARS-CoV-2 infection among individuals with symptoms consistent with LC compared with individuals without LC symptoms, with low confidence. Potential mechanisms for exertional intolerance other than deconditioning include altered autonomic function (eg, chronotropic incompetence, dysfunctional breathing), endothelial dysfunction, and muscular or mitochondrial pathology.

Access or request full text: https://libkey.io/10.1001/jamanetworkopen.2022.36057

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=159683791&custid=ns023446

11. Short and Long-Term Wellbeing of Children following SARS-CoV-2 Infection: A Systematic Review

Item Type: Journal Article

Authors: Franco, Juan Victor Ariel;Garegnani, Luis Ignacio;Oltra, Gisela Viviana;Metzendorf, Maria-Inti;Trivisonno, Leonel Fabrizio;Sgarbossa, Nadia;Ducks, Denise;Heldt, Katharina;Mumm, Rebekka;Barnes, Benjamin and Scheidt-Nave, Christa

Publication Date: 2022

Journal: International Journal of Environmental Research and Public Health 19(21)
Abstract: Post-COVID conditions in children and adolescents were mostly investigated as the incidence of individual or clusters of symptoms. We aimed to describe the findings of studies assessing key outcomes related to global wellbeing and recovery in children and adolescents from a public health perspective. We searched the Cochrane COVID-19 Study Register and WHO COVID-19 Global literature on coronavirus disease database on 5 November 2021 and tracked ongoing studies published after this date. We included observational studies on children and adolescents with a follow-up greater than 12 weeks and focused on the outcomes of quality of life, recovery/duration of symptoms, school attendance and resource use/rehabilitation. We assessed their methodological quality, and we prepared a narrative synthesis of the results. We included 21 longitudinal and 4 cross-sectional studies (6 with a control group) with over 68 thousand unvaccinated children and adolescents with mostly asymptomatic or mild disease. Study limitations included convenience sampling, a poor description of their study population and heterogeneous definitions of outcomes. Quality of life was not largely affected in adolescents following COVID-19,

but there might be greater impairment in young children and in those with more severe forms of the disease (4 studies). There might also be an impairment in daily activities and increased school absenteeism following COVID-19, but the findings were heterogeneous (5 studies). A total of 22 studies provided highly variable estimates based on heterogeneous definitions of overall persistence of symptoms (recovery), ranging from 0 to 67% at 8-12 weeks and 8 to 51% at 6-12 months. We found limited data on resource use and the need for rehabilitation. One controlled study indicated that the quality of life of infected children and adolescents might not substantially differ from controls. All controlled studies found a higher burden of persistent symptoms in COVID-19 cases compared with test-negative controls or cases of influenza. There is limited evidence on the short and long-term well-being of children following SARS-CoV-2 infection. High-quality longitudinal studies with control groups are needed to describe the outcomes in this population, especially in vaccinated children and those affected by new variants of the virus.

Access or request full text: https://libkey.io/10.3390/ijerph192114392

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36361269&custid=ns023446

12. Effect of COVID-19 Vaccines on Reducing the Risk of Long COVID in the Real World: A Systematic Review and Meta-Analysis

Item Type: Journal Article

Authors: Gao, Peng;Liu, Jue and Liu, Min

Publication Date: 2022

Journal: International Journal of Environmental Research and Public Health 19(19)
Abstract: The coronavirus disease 2019 (COVID-19) is still in a global pandemic state. Some studies have reported that COVID-19 vaccines had a protective effect against long COVID. However, the conclusions of the studies on the effect of COVID-19 vaccines on long COVID were not consistent. This study aimed to systematically review relevant studies in the real world, and performed a meta-analysis to explore the relationship between vaccination and long COVID. We systematically searched PubMed, Embase, Web of science, and ScienceDirect from inception to 19 September 2022. The PICO (P: patients; I: intervention; C: comparison; O: outcome) was as follows: patients diagnosed with COVID-19 (P); vaccination with COVID-19 vaccines (I); the patients were divided into vaccinated and unvaccinated groups (C); the outcomes were the occurrence of long COVID, as well as the various symptoms of long COVID (O). A fixed-effect model and random-effects model were chosen based on the heterogeneity between studies in order to pool the effect value. The results showed that the vaccinated group had a 29% lower risk of developing long COVID compared with the unvaccinated group (RR = 0.71, 95% CI: 0.58-0.87, $p < 0.01$). Compared with patients who were not vaccinated, vaccination showed its protective effect in patients vaccinated with two doses (RR = 0.83, 95% CI: 0.74-0.94, $p < 0.01$), but not one dose (RR = 0.83, 95% CI: 0.65-1.07, $p = 0.14$). In addition, vaccination was effective against long COVD in patients either vaccinated before SARS-CoV-2 infection/COVID-19 (RR = 0.82, 95% CI: 0.74-0.91, $p < 0.01$) or vaccinated after SARS-CoV-2 infection/COVID-19 (RR = 0.83, 95% CI: 0.74-0.92, $p < 0.01$). For long COVID symptoms, vaccination reduced the risk of cognitive dysfunction/symptoms, kidney diseases/problems, myalgia, and sleeping disorders/problems sleeping. Our study shows that COVID-19 vaccines had an effect on reducing the risk of long COVID in patients vaccinated before or after SARS-CoV-2 infection/COVID-19. We suggest that the vaccination rate should be improved as soon as possible, especially for a complete vaccination course. There should be more studies to explore the basic mechanisms of the protective effect of COVID-19 vaccines on long COVID in the future.; Competing Interests: The authors declare no conflict of interest.

Access or request full text: https://libkey.io/10.3390/ijerph191912422

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36231717&custid=ns023446

13. Therapeutic Approaches to the Neurologic Manifestations of COVID-19

Item Type: Journal Article

Authors: Graham, Edith L.;Koralnik, Igor J. and Liotta, Eric M.

Publication Date: 2022

Journal: Neurotherapeutics : The Journal of the American Society for Experimental NeuroTherapeutics 19(5), pp. 1435-1466

Abstract: As of May 2022, there have been more than 527 million infections with severe acute respiratory disease coronavirus type 2 (SARS-CoV-2) and over 6.2 million deaths from Coronavirus Disease 2019 (COVID-19) worldwide. COVID-19 is a multisystem illness with important neurologic consequences that impact long-term morbidity and mortality. In the acutely ill, the neurologic manifestations of COVID-19 can include distressing but relatively benign symptoms such as headache, myalgias, and anosmia; however, entities such as encephalopathy, stroke, seizures, encephalitis, and Guillain-Barre Syndrome can cause neurologic injury and resulting disability that persists long after the acute pulmonary illness. Furthermore, as many as one-third of patients may experience persistent neurologic symptoms as part of a Post-Acute Sequelae of SARS-CoV-2 infection (Neuro-PASC) syndrome. This Neuro-PASC syndrome can affect patients who required hospitalization for COVID-19 or patients who did not require hospitalization and who may have had minor or no pulmonary symptoms. Given the large number of individuals affected and the ability of neurologic complications to impair quality of life and productivity, the neurologic manifestations of COVID-19 are likely to have major and long-lasting personal, public health, and economic consequences. While knowledge of disease mechanisms and therapies acquired prior to the pandemic can inform us on how to manage patients with the neurologic manifestations of COVID-19, there is a critical need for improved understanding of specific COVID-19 disease mechanisms and development of therapies that target the neurologic morbidities of COVID-19. This current perspective reviews evidence for proposed disease mechanisms as they inform the neurologic management of COVID-19 in adult patients while also identifying areas in need of further research. (© 2022. The American Society for Experimental NeuroTherapeutics, Inc.)

Access or request full text: https://libkey.io/10.1007/s13311-022-01267-y

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35861926&custid=ns023446

14. Long covid-an update for primary care

Item Type: Journal Article

Authors: Greenhalgh, Trisha;Sivan, Manoj;Delaney, Brendan;Evans, Rachael and Milne, Ruairidh

Publication Date: 2022

Journal: BMJ (Clinical Research Ed.) 378, pp. e072117

Abstract: Competing Interests: Competing interests: TG is a member of Independent SAGE. MS is WHO Europe adviser on covid rehabilitation policy and led the development of the C19-YRS (Yorkshire Rehabilitation Scale) outcome measure for long covid. RE and TG are members of the NHS England Task Force for long covid.

Access or request full text: https://libkey.io/10.1136/bmj-2022-072117

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36137612&custid=ns023446

15. Long-COVID and long-term cancer survivorship—Shared lessons and opportunities

Item Type: Journal Article

Authors: Harada, Taku;Schmitz, Kathryn;Helsper, Charles W.;Campbell, Grace and Nekhlyudov, Larissa

Publication Date: 2022

Journal: European Journal of Cancer Care 31(6), pp. 1-7

Abstract: As of 2022, close to 90 million persons in the United States, 243 million persons in Europe and 585 million worldwide have been infected with the novel SARS-CoV-2 (COVID-19) virus and survived. Estimates vary but suggest that up to 50% may experience long-term sequelae, termed 'Long-COVID'. While Long-COVID is a new condition, the phenomenon of disabling long-term effects following an illness requiring ongoing surveillance and management is not. In this commentary, we discuss how Long-COVID parallels the experiences of long-term cancer survivors, highlight shared challenges and offer opportunities to improve research and clinical care for both growing populations of patients as well as other long-term chronic, disabling conditions.

Access or request full text: https://libkey.io/10.1111/ecc.13712

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=160426764&custid=ns023446

16. Interventions for mental health, cognition, and psychological wellbeing in long COVID: a systematic review of registered trials

Item Type: Journal Article

Authors: Hawke, Lisa D.;Nguyen, Anh T. P.;Ski, Chantal F.;Thompson, David R.;Ma, Clement and Castle, David

Publication Date: 2022

Journal: Psychological Medicine 52(13), pp. 2426-2440

Abstract: Background: Among patients diagnosed with COVID-19, a substantial proportion are experiencing ongoing symptoms for months after infection, known as 'long COVID'. Long COVID is associated with a wide range of physical and neuropsychological symptoms, including impacts on mental health, cognition, and psychological wellbeing. However, intervention research is only beginning to emerge. This systematic review synthesizes currently registered trials examining interventions for mental health, cognition, and psychological wellbeing in patients with long COVID.; Methods: Standard systematic review guidelines were followed. Trials registered in two large trial registries in 2020 to May 2022 were reviewed. Included studies were narratively synthesized by type of intervention and a risk-of-bias assessment was conducted.; Results: Forty-two registered trials were included, with a total target sample size of 5814 participants. These include 11 psychological interventions, five pharmacological and other medical interventions, and five evaluating herbal, nutritional, or natural supplement interventions. An additional nine trials are examining cognitive and neurorehabilitation interventions and 12 are examining physiotherapy or physical rehabilitation. Most trials are randomized, but many are feasibility trials; trials are evaluating a wide spectrum of outcomes.; Conclusions: While there is a newly emerging body of research testing interventions for mental health, cognition, and psychological wellbeing in long COVID, the breadth and scope of the research remains limited. It is urgently incumbent on researchers to expand upon the intervention research currently under way, in order to generate high-quality evidence on a wide range of candidate interventions for diverse long COVID patient populations.

Access or request full text: https://libkey.io/10.1017/S0033291722002203

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35768406&custid=ns023446

17. Co-designing personalised self-management support for people living with long Covid: The LISTEN protocol

Item Type: Journal Article

Authors: Heaton-Shrestha, Celayne;Torrens-Burton, Anna;Leggat, Fiona;Islam, Ishrat;Busse, Monica and Jones, Fiona

Publication Date: 2022

Journal: PloS One 17(10), pp. e0274469

Abstract: Background: Long Covid is recognised as a complex condition characterised by multiple, interacting and fluctuating symptoms which impact everyday life in diverse ways. The extent of symptom clusters and variability supports interventions that can accommodate heterogeneity, such as personalised self-management support. This approach is also advocated by people living with long Covid and guidelines published by the UK's National Institute for Health and Care Excellence. Long Covid Personalised Self-managemenT support co-design and EvaluatioN (LISTEN) is one of 15 research projects funded by the UK's National Institute of Health Research long Covid research programme. LISTEN aims to work with people living with or recovered from long Covid to co-design self-management resources, and a training programme for rehabilitation practitioners to deliver personalised support. The intervention will focus on people not hospitalised for Covid. The protocol presented here details the co-design of the LISTEN intervention which, on completion, will be evaluated in a randomised controlled trial.; Methods: The study will utilise an Accelerated Experience-Based Co-Design approach, and involve 30 people from England and Wales with lived experience of long Covid, and 15 rehabilitation practitioners living with, or supporting people with, long Covid. Through online meetings, participants will share their stories of long Covid, their challenges and strategies to live better with or recover from long Covid, their priorities for self-management resources and the practitioner training andcreate, review and refine these resources and the training. Throughout, LISTEN will draw upon the UK standards of public involvement in research.; Discussion: If effective and cost-effective, the intervention will be available across the UK's National Health Service. The first of its kind, this study could make a difference to the lives of people with long Covid. To ensure impact, we have developed strategies to involve people from diverse backgrounds and mitigate potential barriers to involvement.; Competing Interests: The authors have declared that no competing interests exist.

Access or request full text: https://libkey.io/10.1371/journal.pone.0274469

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36219596&custid=ns023446

18. Long COVID: Rapid Evidence Review

Item Type: Journal Article

Authors: Herman, Eric;Shih, Elizabeth and Cheng, Anthony

Publication Date: 2022

Journal: American Family Physician 106(5), pp. 523-532

Abstract: Postacute sequelae of COVID-19, also known as long COVID, affects approximately 10% to 30% of the hundreds of millions of people who have had acute COVID-19. The Centers for Disease Control and Prevention defines long COVID as the presence of new, returning, or ongoing symptoms associated with acute COVID-19 that persist beyond 28 days. The diagnosis of long COVID can be based on a previous clinical diagnosis of COVID-19 and

does not require a prior positive polymerase chain reaction or antigen test result to confirm infection. Patients with long COVID report a broad range of symptoms, including abdominal pain, anosmia, chest pain, cognitive impairment (brain fog), dizziness, dyspnea, fatigue, headache, insomnia, mood changes, palpitations, paresthesias, and postexertional malaise. The presentation is variable, and symptoms can fluctuate or persist and relapse and remit. The diagnostic approach is to differentiate long COVID from acute sequelae of COVID-19, previous comorbidities, unmasking of preexisting health conditions, reinfections, new acute concerns, and complications of prolonged illness, hospitalization, or isolation. Many presenting symptoms of long COVID are commonly seen in a primary care practice, and management can be improved by using established treatment paradigms and supportive care. Although several medications have been suggested for the treatment of fatigue related to long COVID, the evidence for their use is currently lacking. Holistic treatment strategies for long COVID include discussion of pacing and energy conservation; individualized, symptom-guided, phased return to activity programs; maintaining adequate hydration and a healthy diet; and treatment of underlying medical conditions.

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36379497&custid=ns023446

19. Long-term (180-Day) Outcomes in Critically Ill Patients With COVID-19 in the REMAP-CAP Randomized Clinical Trial

Item Type: Journal Article

Authors: Higgins, Alisa M.;Berry, Lindsay R.;Lorenzi, Elizabeth;Murthy, Srinivas;McQuilten, Zoe;Mouncey, Paul R.;Al-Beidh, Farah;Annane, Djillali;Arabi, Yaseen M.;Beane, Abi;van Bentum-Puijk, Wilma;Bhimani, Zahra;Bonten, Marc J. M.;Bradbury, Charlotte A.;Brunkhorst, Frank M.;Burrell, Aiden;Buzgau, Adrian;Buxton, Meredith;Charles, Walton N.;Cove, Matthew, et al

Publication Date: 2022

Journal: Jama
Abstract: Importance: The longer-term effects of therapies for the treatment of critically ill patients with COVID-19 are unknown.; Objective: To determine the effect of multiple interventions for critically ill adults with COVID-19 on longer-term outcomes.; Design, Setting, and Participants: Prespecified secondary analysis of an ongoing adaptive platform trial (REMAP-CAP) testing interventions within multiple therapeutic domains in which 4869 critically ill adult patients with COVID-19 were enrolled between March 9, 2020, and June 22, 2021, from 197 sites in 14 countries. The final 180-day follow-up was completed on March 2, 2022.; Interventions: Patients were randomized to receive 1 or more interventions within 6 treatment domains: immune modulators (n = 2274), convalescent plasma (n = 2011), antiplatelet therapy (n = 1557), anticoagulation (n = 1033), antivirals (n = 726), and corticosteroids (n = 401).; Main Outcomes and Measures: The main outcome was survival through day 180, analyzed using a bayesian piecewise exponential model. A hazard ratio (HR) less than 1 represented improved survival (superiority), while an HR greater than 1 represented worsened survival (harm); futility was represented by a relative improvement less than 20% in outcome, shown by an HR greater than 0.83.; Results: Among 4869 randomized patients (mean age, 59.3 years; 1537 32.1%] women), 4107 (84.3%) had known vital status and 2590 (63.1%) were alive at day 180. IL-6 receptor antagonists had a greater than 99.9% probability of improving 6-month survival (adjusted HR, 0.74 95% credible interval {CrI}, 0.61-0.90]) and antiplatelet agents had a 95% probability of improving 6-month survival (adjusted HR, 0.85 95% CrI, 0.71-1.03]) compared with the control, while the probability of trial-defined statistical futility (HR >0.83) was high for therapeutic anticoagulation (99.9%; HR, 1.13 95% CrI, 0.93-1.42]), convalescent plasma (99.2%; HR, 0.99 95% CrI, 0.86-1.14]), and lopinavir-ritonavir (96.6%; HR, 1.06 95% CrI, 0.82-1.38]) and the probabilities of harm from hydroxychloroquine (96.9%; HR, 1.51 95% CrI, 0.98-2.29]) and the combination of lopinavir-ritonavir and hydroxychloroquine (96.8%; HR, 1.61 95% CrI, 0.97-2.67]) were high. The corticosteroid domain was stopped early prior to reaching a predefined statistical trigger; there was a 57.1% to 61.6% probability of improving 6-month survival across varying hydrocortisone dosing strategies.; Conclusions and Relevance: Among critically ill patients with COVID-19 randomized to receive 1 or more therapeutic interventions, treatment with an IL-6 receptor antagonist had a greater than 99.9% probability of improved 180-day mortality compared with patients randomized to the control, and treatment with an antiplatelet had a 95.0% probability of improved 180-day mortality compared with patients randomized to the control. Overall, when considered with previously reported short-term results, the

findings indicate that initial in-hospital treatment effects were consistent for most therapies through 6 months.

Access or request full text: https://libkey.io/10.1001/jama.2022.23257

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36525245&custid=ns023446

20. Joint patient and clinician priority setting to identify 10 key research questions regarding the long-term sequelae of COVID-19

Item Type: Journal Article

Authors: Houchen-Wolloff, Linzy;Poinasamy, Krisnah;Holmes, Kate;Tarpey, Maryrose;Hastie, Claire;Raihani, Kelly;Rogers, Natalie;Smith, Nikki;Adams, Dawn;Burgess, Paul;Clark, Jean;Cranage, Clare;Desai, Mahadev;Geary, Nicola;Gill, Rhyan;Mangwani, Jitendra;Staunton, Lily;Berry, Colin;Bolton, Charlotte E.;Chalder, Trudie, et al

Publication Date: 2022

Journal: Thorax 77(7), pp. 717-720

Abstract: Given the large numbers of people infected and high rates of ongoing morbidity, research is clearly required to address the needs of adult survivors of COVID-19 living with ongoing symptoms (long COVID). To help direct resource and research efforts, we completed a research prioritisation process incorporating views from adults with ongoing symptoms of COVID-19, carers, clinicians and clinical researchers. The final top 10 research questions were agreed at an independently mediated workshop and included: identifying underlying mechanisms of long COVID, establishing diagnostic tools, understanding trajectory of recovery and evaluating the role of interventions both during the acute and persistent phases of the illness.; Competing Interests: Competing interests: LH-W reports grants from the NIHR and ARC, outside the submitted work. TC reports grants from UK NIHR, UKRI and Guy's and St Thomas' Charity. She has delivered workshops on persistent physical symptoms in the context of long-term conditions, during the conduct of the study for which she has received payment. She is the author of self-help books on fatigue. She is a member of the NICE expert advisory panel for Covid19 Rapid Guidelines.JJ reports fees from Boehringer Ingelheim, Roche, NHSX and GlaxoSmithKline unrelated to the submitted work. JJ is supported by Wellcome Trust Clinical Research Career Development Fellowship 209,553/Z/17/Z and the NIHR UCLH Biomedical Research Centre, UK.SH reports consultancy for Eli Lily, NovoNordisk and Zealand Pharma for which his institution has received payment. He serves on a speaker panel for NovoNordisk for which he and his institution receive payment. MR is currently employed by Roches on a one year senior academic/ industry fellowship. JDC reports grants and personal fees from AstraZeneca, Boehringer-Ingelheim, GlaxoSmithKline, Novartis, and Insmed, personal fees from Chiesi, Zambon, Janssen, and Grifols, and grants from Gilead Sciences, outside the submitted work. AH reports personal fees from Vertex Pharmaceuticals, Mylan Healthcare, and the Cystic Fibrosis Foundation, and grants from JP Moulton Trust and NIHR, outside the submitted work. MT reports personal fees from Merck Sharp & Dohme and GlaxoSmithKline, and grants and personal fees from Bayer and Actelion, during the conduct of the study. LVW reports grants from GlaxoSmithKline and Orion, outside the submitted work. ADS reports grants and personal fees from AstraZeneca, Bayer, Boehringer, Chiesi, Forest Laboratories, GlaxoSmithKline, Grifols, Insmed, MedImmune, Novartis, Pfizer, and 30T, outside the submitted work. RAE reports grants from GlaxoSmithKline during the conduct of the study; and grants from the National Institute for Health Research (NIHR) and personal fees from GlaxoSmithKline, AstraZeneca, and Chiesi, outside the submitted work. All other authors declare no competing interests. (© Author(s) (or their employer(s)) 2022. Re-use permitted under CC BY. Published by BMJ.)

Access or request full text: https://libkey.io/10.1136/thoraxjnl-2021-218582

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35354642&custid=ns023446

21. Neuropsychiatric aspects of long COVID: A comprehensive review

Item Type: Journal Article

Authors: Kubota, Takafumi;Kuroda, Naoto and Sone, Daichi

Publication Date: 2022

Journal: Psychiatry and Clinical Neurosciences
Abstract: Although some patients have persistent symptoms or develop new symptoms following coronavirus disease 2019 (COVID-19) infection, neuropsychiatric aspects of long COVID are not well known. This review summarizes and provides an update on the neuropsychiatric dimensions of long COVID. Its neuropsychiatric manifestations commonly include fatigue, cognitive impairment, sleep disorders, depression, anxiety, and post-traumatic stress disorder. There are no specific tests for long COVID, but some characteristic findings such as hypometabolism on positron emission tomography have been reported. The possible mechanisms of long COVID include inflammation, ischemic effects, direct viral invasion, and social and environmental changes. Some patient characteristics and the severity and complications of acute COVID-19 infection may be associated with an increased risk of neuropsychiatric symptoms. Long COVID may resolve spontaneously or persist, depending on the type of neuropsychiatric symptoms. Although established treatments are lacking, various psychological and pharmacological treatments have been attempted. Vaccination against COVID-19 infection plays a key role in the prevention of long coronavirus disease. With differences among the SARS-CoV-2 variants, including the omicron variant, the aspects of long COVID are likely to change in the future. Further studies clarifying the aspects of long COVID to develop effective treatments are warranted. (© 2022 The Authors. Psychiatry and Clinical Neurosciences published by John Wiley & Sons Australia, Ltd on behalf of Japanese Society of Psychiatry and Neurology.)

Access or request full text: https://libkey.io/10.1111/pcn.13508

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36385449&custid=ns023446

22. Understanding Long COVID From a PT Perspective

Item Type: Journal Article

Authors: Loria, Keith

Publication Date: 2022

Journal: APTA Magazine 14(11), pp. 24-34

Abstract: The article explains why physical therapists (PT) are ideally suited to help people with post COVID-19 conditions. Topics discussed include lingering effects of COVID-19, lack of test to diagnose long COVID, and the ability of PTs to customize interventions. Also mentioned are screening for symptoms, deconditioning model of exercise, and differences among patients recovering from COVID-19.

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=160467487&custid=ns023446

23. Adjuncts to treatments for long COVID

Item Type: Journal Article

Authors: Mendes, Aysha

Publication Date: 2022

Journal: British Journal of Community Nursing 27(7), pp. 318-319

Abstract: The article discusses the alternative treatments for long Covid, including the English National Opera (ENO) Breathe programme. Also cited are a study which examined an effective rehabilitation programme for long Covid by obtaining the opinions of experts from the Taiwan Academy of Cardiovascular and Pulmonary Rehabilitation, and how the ENO programme improved the health-related quality of life (HRQoL) of patients.

Access or request full text: https://libkey.io/10.12968/bjcn.2022.27.7.318

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157753626&custid=ns023446

24. Lactoferrin as Possible Treatment for Chronic Gastrointestinal Symptoms in Children with Long COVID: Case Series and Literature Review

Item Type: Journal Article

Authors: Morello, Rosa;De Rose, Cristina;Cardinali, Sara;Valentini, Piero and Buonsenso, Danilo

Publication Date: 2022

Journal: Children 9(10), pp. 1446-N.PAG

Abstract: Long COVID is an emergent, heterogeneous, and multisystemic condition with an increasingly important impact also on the pediatric population. Among long COVID symptoms, patients can experience chronic gastrointestinal symptoms such as abdominal pain, constipation, diarrhea, vomiting, nausea, and dysphagia. Although there is no standard, agreed, and optimal diagnostic approach or treatment of long COVID in children, recently compounds containing multiple micronutrients and lactoferrin have been proposed as a possible treatment strategy, due to the long-standing experience gained from other gastrointestinal conditions. In particular, lactoferrin is a pleiotropic glycoprotein with antioxidant, anti-inflammatory, antithrombotic, and immunomodulatory activities. Moreover, it seems to have several physiological functions to protect the gastrointestinal tract. In this regard, we described the resolution of symptoms after the start of therapy with high doses of oral lactoferrin in two patients referred to our post-COVID pediatric unit due to chronic gastrointestinal symptoms after SARS-CoV-2 infection.

Access or request full text: https://libkey.io/10.3390/children9101446

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=159903169&custid=ns023446

25. Central hypersomnia and chronic insomnia: expanding the spectrum of sleep disorders in long COVID syndrome - a prospective cohort study

Item Type: Journal Article

Authors: Moura, Alissa Elen Formiga;Oliveira, Danilo Nunes;Torres, Danielle Mesquista;Tavares-Júnior, José,Wagner Leonel;Nóbrega, Paulo Ribeiro;Braga-Neto, Pedro and Sobreira-Neto, Manoel

Publication Date: 2022

Journal: BMC Neurology 22(1), pp. 1-10

Abstract: Introduction: Long-onset COVID syndrome has been described in patients with COVID-19 infection with persistence of symptoms or development of sequelae beyond 4 weeks after the onset of acute symptoms, a medium- and long-term consequence of COVID-19. This syndrome can affect up to 32% of affected individuals, with symptoms of fatigue, dyspnea, chest pain, cognitive disorders, insomnia, and psychiatric disorders. The present study aimed to characterize and evaluate the prevalence of sleep symptoms in patients with long COVID syndrome.Methodology: A total of 207 patients with post-COVID symptoms were evaluated through clinical evaluation with a neurologist and specific exams in the subgroup complaining of excessive sleepiness.Results: Among 189 patients included in the long COVID sample, 48 (25.3%) had sleep-related symptoms. Insomnia was reported by 42 patients (22.2%), and excessive sleepiness (ES) was reported by 6 patients (3.17%). Four patients with ES were evaluated with polysomnography and test, multiple sleep latencies test, and actigraphic data. Two patients had a diagnosis of central hypersomnia, and one had narcolepsy. A history of steroid use was related to sleep complaints (insomnia and excessive sleepiness), whereas depression was related to excessive sleepiness. We observed a high prevalence of cognitive complaints in these patients.Conclusion: Complaints related to sleep, such as insomnia and excessive sleepiness, seem to be part of the clinical post-acute syndrome (long COVID syndrome), composing part of its clinical spectrum, relating to some clinical data.

Access or request full text: https://libkey.io/10.1186/s12883-022-02940-7

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=160112177&custid=ns023446

26. Effect of Ivermectin vs Placebo on Time to Sustained Recovery in Outpatients With Mild to Moderate COVID-19: A Randomized Clinical Trial

Item Type: Journal Article

Authors: Naggie, Susanna;Boulware, David R.;Lindsell, Christopher J.;Stewart, Thomas G.;Gentile, Nina;Collins, Sean;McCarthy, Matthew William;Jayaweera, Dushyantha;Castro, Mario;Sulkowski, Mark;McTigue, Kathleen;Thicklin, Florence;Felker, G. M.;Ginde, Adit A.;Bramante, Carolyn T.;Slandzicki, Alex J.;Gabriel, Ahab;Shah, Nirav S.;Lenert, Leslie A.;Dunsmore, Sarah E., et al

Publication Date: 2022

Journal: Jama 328(16), pp. 1595-1603

Abstract: Importance: The effectiveness of ivermectin to shorten symptom duration or prevent hospitalization among outpatients in the US with mild to moderate symptomatic COVID-19 is unknown.; Objective: To evaluate the efficacy of ivermectin, 400 µg/kg, daily for 3 days compared with placebo for the treatment of early mild to moderate COVID-19.; Design, Setting, and Participants: ACTIV-6, an ongoing, decentralized, double-blind, randomized, placebo-controlled platform trial, was designed to evaluate repurposed therapies in outpatients with mild to moderate COVID-19. A total of 1591 participants aged 30 years and older with confirmed COVID-19, experiencing 2 or more symptoms of acute infection for 7 days or less, were enrolled from June 23, 2021, through February 4, 2022, with follow-up data through May 31, 2022, at 93 sites in the US.; Interventions: Participants were randomized to receive ivermectin, 400 µg/kg (n = 817), daily for 3 days or placebo (n = 774).; Main Outcomes and Measures: Time to sustained recovery, defined as at least 3 consecutive days without symptoms. There were 7 secondary outcomes, including a composite of hospitalization or death by day 28.; Results: Among 1800 participants who were randomized (mean SD] age, 48 12] years; 932 women 58.6%]; 753 47.3%] reported receiving at least 2 doses of a SARS-CoV-2 vaccine), 1591 completed the trial. The hazard ratio (HR) for improvement in time to recovery was 1.07 (95% credible interval CrI], 0.96-1.17; posterior P value HR >1] = .91). The median time to recovery was 12 days (IQR, 11-13) in the ivermectin group and 13 days (IQR, 12-14) in the placebo group. There were 10 hospitalizations or deaths in the ivermectin group and 9 in the placebo group (1.2% vs 1.2%; HR, 1.1 95% CrI, 0.4-2.6]). The most common serious adverse events were COVID-19 pneumonia (ivermectin n = 5]; placebo n = 7]) and venous thromboembolism (ivermectin n = 1]; placebo n = 5]).; Conclusions and Relevance: Among outpatients with

mild to moderate COVID-19, treatment with ivermectin, compared with placebo, did not significantly improve time to recovery. These findings do not support the use of ivermectin in patients with mild to moderate COVID-19.; Trial Registration: ClinicalTrials.gov Identifier: NCT04885530.

Access or request full text: https://libkey.io/10.1001/jama.2022.18590

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36269852&custid=ns023446

27. Predictive model for long COVID in children 3 months after a SARS-CoV-2 PCR test

Item Type: Journal Article

Authors: Nugawela, Manjula D.;Stephenson, Terence;Shafran, Roz;De Stavola, Bianca L.;Ladhani, Shamez N.;Simmons, Ruth;McOwat, Kelsey;Rojas, Natalia;Dalrymple, Emma;Cheung, Emily Y.;Ford, Tamsin;Heyman, Isobel;Crawley, Esther and Pinto Pereira, Snehal M.

Publication Date: 2022

Journal: BMC Medicine 20(1), pp. 1-11

Abstract: Background: To update and internally validate a model to predict children and young people (CYP) most likely to experience long COVID (i.e. at least one impairing symptom) 3 months after SARS-CoV-2 PCR testing and to determine whether the impact of predictors differed by SARS-CoV-2 status.Methods: Data from a nationally matched cohort of SARS-CoV-2 test-positive and test-negative CYP aged 11-17 years was used. The main outcome measure, long COVID, was defined as one or more impairing symptoms 3 months after PCR testing. Potential pre-specified predictors included SARS-CoV-2 status, sex, age, ethnicity, deprivation, quality of life/functioning (five EQ-5D-Y items), physical and mental health and loneliness (prior to testing) and number of symptoms at testing. The model was developed using logistic regression; performance was assessed using calibration and discrimination measures; internal validation was performed via bootstrapping and the final model was adjusted for overfitting.Results: A total of 7139 (3246 test-positives, 3893 test-negatives) completing a questionnaire 3 months post-test were included. 25.2% (817/3246) of SARS-CoV-2 PCR-positives and 18.5% (719/3893) of SARS-CoV-2 PCR-negatives had one or more impairing symptoms 3 months post-test. The final model contained SARS-CoV-2 status, number of symptoms at testing, sex, age, ethnicity, physical and mental health, loneliness and four EQ-5D-Y items before testing. Internal validation showed minimal overfitting with excellent calibration and discrimination measures (optimism-adjusted calibration slope: 0.96575; C-statistic: 0.83130).Conclusions: We updated a risk prediction equation to identify those most at risk of long COVID 3 months after a SARS-CoV-2 PCR test which could serve as a useful triage and management tool for CYP during the ongoing pandemic. External validation is required before large-scale implementation.

Access or request full text: https://libkey.io/10.1186/s12916-022-02664-y

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=160480926&custid=ns023446

28. The prevalence and long-term health effects of Long Covid among hospitalised and non-hospitalised populations: A systematic review and meta-analysis

Item Type: Journal Article

Authors: O'Mahoney, Lauren,L.;Routen, Ash;Gillies, Clare;Ekezie, Winifred;Welford, Anneka;Zhang, Alexa;Karamchandani, Urvi;Simms-Williams, Nikita;Cassambai, Shabana;Ardavani, Ashkon;Wilkinson, Thomas J.;Hawthorne, Grace;Curtis, Ffion;Kingsnorth, Andrew P.;Almaqhawi, Abdullah;Ward, Thomas;Ayoubkhani,

Daniel;Banerjee, Amitava;Calvert, Melanie;Shafran, Roz, et al

Publication Date: 2022

Journal: EClinicalMedicine 55, pp. 101762

Abstract: Background: The aim of this study was to systematically synthesise the global evidence on the prevalence of persistent symptoms in a general post COVID-19 population.; Methods: A systematic literature search was conducted using multiple electronic databases (MEDLINE and The Cochrane Library, Scopus, CINAHL, and medRxiv) until January 2022. Studies with at least 100 people with confirmed or self-reported COVID-19 symptoms at ≥28 days following infection onset were included. Patient-reported outcome measures and clinical investigations were both assessed. Results were analysed descriptively, and meta-analyses were conducted to derive prevalence estimates. This study was pre-registered (PROSPERO-ID: CRD42021238247).; Findings: 194 studies totalling 735,006 participants were included, with five studies conducted in those <18 years of age. Most studies were conducted in Europe (n = 106) or Asia (n = 49), and the time to follow-up ranged from ≥28 days to 387 days. 122 studies reported data on hospitalised patients, 18 on non-hospitalised, and 54 on hospitalised and non-hospitalised combined (mixed). On average, at least 45% of COVID-19 survivors, regardless of hospitalisation status, went on to experience at least one unresolved symptom (mean follow-up 126 days). Fatigue was frequently reported across hospitalised (28.4%; 95% CI 24.7%-32.5%), non-hospitalised (34.8%; 95% CI 17.6%-57.2%), and mixed (25.2%; 95% CI 17.7%-34.6%) cohorts. Amongst the hospitalised cohort, abnormal CT patterns/x-rays were frequently reported (45.3%; 95% CI 35.3%-55.7%), alongside ground glass opacification (41.1%; 95% CI 25.7%-58.5%), and impaired diffusion capacity for carbon monoxide (31.7%; 95% CI 25.8%-3.2%).; Interpretation: Our work shows that 45% of COVID-19 survivors, regardless of hospitalisation status, were experiencing a range of unresolved symptoms at ∼ 4 months. Current understanding is limited by heterogeneous study design, follow-up durations, and measurement methods. Definition of subtypes of Long Covid is unclear, subsequently hampering effective treatment/management strategies.; Funding: No funding.; Competing Interests: This work was supported by National Institute for Health Research (NIHR) ARC East Midlands. AB is PI of the NIHR funded STIMULATE-ICP study (COV-LT2-0043) and has also received other research funding from Astra Zeneca, NIHR, BMA, UK Research and Innovation (UKRI) and EU. MC is Director of the Birmingham Health Partners Centre for Regulatory Science and Innovation, Director of the Centre for the Centre for Patient Reported Outcomes Research and is a NIHR Senior Investigator. MC receives funding from the NIHR, UKRI, NIHR Birmingham Biomedical Research Centre, the NIHR Surgical Reconstruction and Microbiology Research Centre, NIHR ARC West Midlands, UK SPINE, European Regional Development Fund–Demand Hub and Health Data Research UK at the University of Birmingham and University Hospitals Birmingham NHS Foundation Trust, Innovate UK (part of UKRI), Macmillan Cancer Support, UCB Pharma, Janssen, GSK and Gilead. She is senior author of the Symptom Burden Questionnaire™ for Long COVID. MC has received personal fees from Aparito Ltd, CIS Oncology, Takeda, Merck, Daiichi Sankyo, Glaukos, GSK and the Patient-Centered Outcomes Research Institute (PCORI) outside the submitted work. In addition, a family member owns shares in GSK. TS and RS receive funding from the NIHR, and by the UKRI who have awarded funding grant number COVLT0022. All research at Great Ormond Street Hospital NHS Foundation Trust and UCL Great Ormond Street Institute of Child Health is made possible by the NIHR Great Ormond Street Hospital Biomedical Research Centre. The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health. HW is an NIHR Senior Investigator Award, and acknowledges support from the NIHR Imperial Biomedical Research Centre, Health Data Research UK, NIHR Applied Research Collaborative North West London, and the Wellcome Trust. KK is Chair of the Ethnicity Subgroup of the UK Scientific Advisory Group for Emergencies (SAGE) and Member of SAGE and also Chair of the National Long Covid working group which reports to the Chief Medical Officer. TW receives funding from the NIHR, the views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care. JS receives funding from the NIHR and UKRI. (© 2022 The Author(s).)

29. Long Covid stigma: Estimating burden and validating scale in a UK-based sample

Item Type: Journal Article

Authors: Pantelic, Marija;Ziauddeen, Nida;Boyes, Mark;O'Hara, Margaret,E.;Hastie, Claire and Alwan, Nisreen A.

Publication Date: 2022

Journal: PloS One 17(11), pp. e0277317

Abstract: Background: Stigma can be experienced as perceived or actual disqualification from social and institutional acceptance on the basis of one or more physical, behavioural or other attributes deemed to be undesirable. Long Covid is a predominantly multisystem condition that occurs in people with a history of SARSCoV2 infection, often resulting in functional disability. This study aimed to develop and validate a Long Covid Stigma Scale (LCSS); and to quantify the burden of Long Covid stigma.; Methods: Data from the follow-up of a co-produced community-based Long Covid online survey using convenience non-probability sampling was used. Thirteen questions on stigma were designed to develop the LCSS capturing three domains-enacted (overt experiences of discrimination), internalised (internalising negative associations with Long Covid and accepting them as self-applicable) and anticipated (expectation of bias/poor treatment by others) stigma. Confirmatory factor analysis tested whether LCSS consisted of the three hypothesised domains. Model fit was assessed and prevalence was calculated.; Results: 966 UK-based participants responded (888 for stigma questions), with mean age 48 years (SD: 10.7) and 85% female. Factor loadings for enacted stigma were 0.70-0.86, internalised 0.75-0.84, anticipated 0.58-0.87, and model fit was good. The prevalence of experiencing stigma at least 'sometimes' and 'often/always' was 95% and 76% respectively. Anticipated and internalised stigma were more frequently experienced than enacted stigma. Those who reported having a clinical diagnosis of Long Covid had higher stigma prevalence than those without.; Conclusion: This study establishes a scale to measure Long Covid stigma and highlights common experiences of stigma in people living with Long Covid.; Competing Interests: NAA and MP are co-investigators on the NIHR-funded STIMULATE ICP study (https://www.stimulate-icp.org). NAA is a co-investigator on the HI-COVE study (https://blog.westminster.ac.uk/hicovestudy) and has contributed in an advisory capacity to WHO and the EU Commission's Expert Panel on effective ways of investing in health meetings in relation to post-COVID-19 condition. MB is supported by the National Health and Medical Research Council, Australia (Investigator Grant 1173043). NZ is supported by NIHR Applied Research Collaboration Wessex. The views expressed are those of the authors' and not necessarily those of the NIHR or the Department of Health and Social Care. This does not alter our adherence to PLOS ONE policies on sharing data and materials. (Copyright: © 2022 Pantelic et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.)

Access or request full text: https://libkey.io/10.1371/journal.pone.0277317

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36417364&custid=ns023446

30. Revealing the mystery of persistent smell loss in Long COVID patients

Item Type: Journal Article

Authors: Park, Jung Woo;Wang, Xiaoyan and Xu, Ren-He

Publication Date: 2022

Journal: International Journal of Biological Sciences 18(12), pp. 4795-4808

Abstract: COVID-19 is hopefully approaching its end in many countries as herd immunity develops and weaker strains of SARS-CoV-2 dominate. However, a new concern occurs over the long-term effects of COVID-19, collectively called

"Long COVID", as some symptoms of the nervous system last even after patients recover from COVID-19. This review focuses on studies of anosmia, i.e. , impairment of smell, which is the most common sensory defect during the disease course and is caused by olfactory dysfunctions. It remains mysterious how the olfactory functions are affected since the virus can't invade olfactory receptor neurons. We describe several leading hypotheses about the mystery in hope to provide insights into the pathophysiology and treatment strategies for anosmia.; Competing Interests: Competing Interests: R.X. is a founder of ImStem Biotechnology, Inc., a stem cell company. The other authors declare no competing financial interests. (© The author(s).)

Access or request full text: https://libkey.io/10.7150/ijbs.73485

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35874953&custid=ns023446

31. What are the long-term holistic health consequences of COVID-19 among survivors? An umbrella systematic review

Item Type: Journal Article

Authors: Paterson, Catherine;Davis, Deborah;Roche, Michael;Bissett, Bernie;Roberts, Cara;Turner, Murray;Baldock, Emma and Mitchell, Imogen

Publication Date: 2022

Journal: Journal of Medical Virology 94(12), pp. 5653-5668

Abstract: Many people who have survived COVID-19 have experienced negative persistent impacts on health. Impacts on health have included persistent respiratory symptoms, decreased quality of life, fatigue, impaired functional capacity, memory deficits, psychological impacts, and difficulties in returning to paid employment. Evidence is yet to be pooled to inform future directions in research and practice, to determine the physical, psychological, social, and spiritual impacts of the illness which extend beyond the acute phase of COVID-19 survivors. This umbrella review (review of systematic reviews) critically synthesized physical (including abnormal laboratory parameters), psychological, social, and spiritual impacts which extended beyond the acute phase of COVID-19 survivors. The search strategy was based on the sample, phenomena of interest, design, evaluation, research model and all publications were double screened independently by four review authors for the eligibility criteria. Data extraction and quality assessment were conducted in parallel independently. Eighteen systematic reviews were included, which represented a total of 493 publications. Sample sizes ranged from n = 15 to n = 44 799 with a total of n = 295 455 participants. There was incomplete reporting of several significant data points including the description of the severe acute respiratory syndrome coronavirus 2 variant, COVID-19 treatments, and key clinical and demographic data. A number of physical, psychological, and social impacts were identified for individuals grappling with post-COVID condition. The long term sequalae of acute COVID-19 and size of the problem is only beginning to emerge. Further investigation is needed to ensure that those affected by post-COVID condition have their informational, spiritual, psychological, social, and physical needs met in the future. (© 2022 The Authors. Journal of Medical Virology published by Wiley Periodicals LLC.)

Access or request full text: https://libkey.io/10.1002/jmv.28086

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36002399&custid=ns023446

32. Health behaviours the month prior to COVID-19 infection and the development of self-reported long COVID and specific long COVID symptoms: a longitudinal analysis of 1581 UK adults

Item Type: Journal Article

Authors: Paul, Elise and Fancourt, Daisy

Publication Date: 2022

Journal: BMC Public Health 22(1), pp. 1-14

Abstract: Background: Demographic and infection-related characteristics have been identified as risk factors for long COVID, but research on the influence of health behaviours (e.g., exercise, smoking) immediately preceding the index infection is lacking. The aim of this study was to examine whether specific health behaviours in the month preceding infection with COVID-19 act as upstream risk factors for long COVID as well as well as three specific long COVID symptoms.Methods: One thousand five hundred eighty-one UK adults from the UCL COVID-19 Social Study and who had previously been infected with COVID-19 were analysed. Health behaviours in the month before infection were weekly exercise frequency, days of fresh air per week, sleep quality, smoking, consuming more than the number of recommended alcoholic drinks per week (> 14), and the number of mental health care behaviours (e.g., online mental health programme). Logistic regressions controlling for covariates (e.g., COVID-19 infection severity, socio-demographics, and pre-existing health conditions) examined the impact of health behaviours on long COVID and three long COVID symptoms (difficulty with mobility, cognition, and self-care).Results: In the month before infection with COVID-19, poor quality sleep increased the odds of long COVID (odds ratio OR]: 3.53; (95% confidence interval CI]: 2.01 to 6.21), as did average quality sleep (OR: 2.44; 95% CI: 1.44 to 4.12). Having smoked (OR: 8.39; 95% CI: 1.86 to 37.91) increased and meeting recommended weekly physical activity guidelines (3h hours) (OR: 0.05; 95% CI: 0.01 to 0.39) reduced the likelihood of difficulty with self-care (e.g., washing all over or dressing) amongst those with long COVID.Conclusions: Results point to the importance of sleep quality for long COVID, potentially helping to explain previously demonstrated links between stress and long COVID. Results also suggest that exercise and smoking may be modifiable risk factors for preventing the development of difficulty with self-care.

Access or request full text: https://libkey.io/10.1186/s12889-022-14123-7

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=158998320&custid=ns023446

33. Creative Long Covid: A qualitative exploration of the experience of Long Covid through the medium of creative narratives

Item Type: Journal Article

Authors: Pearson, Mark;Singh, Prerna;Bartel, Heike;Crawford, Paul and Allsopp, Gail

Publication Date: 2022

Journal: Health Expectations 25(6), pp. 2950-2959

Abstract: Background: Healthcare is witnessing a new disease with the emergence of Long Covid; a condition which can result in myriad symptoms, varying in frequency and severity. As new data are emerging to help inform treatment guidelines, the perspectives of those living with Long Covid are essential in informing healthcare practice. The research aimed to collect the narratives of people living with Long Covid to better understand the lived experience of this condition. In attempting to narrate complex or traumatic experiences the arts and humanities can offer alternative ways of expressing embodied narratives, representing rich sources of meaning. Therefore, the research specifically sought to elicit creative expressions from participants with lived experience of Long Covid. Methods: Data were collected via an online repository where participants could submit their pieces of creative writing. Data were collected between August 2021 and January 2022 and a total of 28 submissions were received from participants. These were mostly written creative narratives. However, a small number were submitted as audio or video files of spoken word poetry or songs. Data collection was stopped once data saturation was achieved. Results: The submissions were subjected to thematic analysis and five themes were generated. These five themes are Identity, social relationships, symptoms, interaction with healthcare systems and time. The results provide an

insight into the experience of Long Covid as detailed by the participants' creative narratives. Conclusion: The results from this study provide a unique insight into the lived experience of Long Covid. In relation to clinical practice, the results suggest that adjustment reaction and loss of sense of self could be added as common symptoms. Patient and Public Contribution: Before undertaking the research, Long Covid community groups were contacted to discuss the potential value of this study and it was widely supported. One of the leading Long Covid support groups was also involved in disseminating information regarding the project. As part of ongoing work within this project, members of the team are actively disseminating the results within Long Covid communities and seeking to develop arts-based workshops specifically for people with Long Covid.

Access or request full text: https://libkey.io/10.1111/hex.13602

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=160427543&custid=ns023446

34. An online breathing and wellbeing programme (ENO Breathe) for people with persistent symptoms following COVID-19: a parallel-group, single-blind, randomised controlled trial

Item Type: Journal Article

Authors: Philip, Keir E. J.;Owles, Harriet;McVey, Stephanie;Pagnuco, Tanja;Bruce, Katie;Brunjes, Harry;Banya, Winston;Mollica, Jenny;Lound, Adam;Zumpe, Suzi;Abrahams, Amiad M.;Padmanaban, Vijay;Hardy, Thomas H.;Lewis, Adam;Lalvani, Ajit;Elkin, Sarah and Hopkinson, Nicholas S.

Publication Date: 2022

Journal: The Lancet.Respiratory Medicine 10(9), pp. 851-862

Abstract: Background: There are few evidence-based interventions for long COVID; however, holistic approaches supporting recovery are advocated. We assessed whether an online breathing and wellbeing programme improves health related quality-of-life (HRQoL) in people with persisting breathlessness following COVID-19.; Methods: We conducted a parallel-group, single-blind, randomised controlled trial in patients who had been referred from one of 51 UK-based collaborating long COVID clinics. Eligible participants were aged 18 years or older; were recovering from COVID-19 with ongoing breathlessness, with or without anxiety, at least 4 weeks after symptom onset; had internet access with an appropriate device; and were deemed clinically suitable for participation by one of the collaborating COVID-19 clinics. Following clinical assessment, potential participants were given a unique online portal code. Participants were randomly assigned (1:1) to either immediate participation in the English National Opera (ENO) Breathe programme or to usual care. Randomisation was done by the research team using computer-generated block randomisation lists, with block size 10. The researcher responsible for randomisation was masked to responses. Participants in the ENO Breathe group participated in a 6-week online breathing and wellbeing programme, developed for people with long COVID experiencing breathlessness, focusing on breathing retraining using singing techniques. Those in the deferred group received usual care until they exited the trial. The primary outcome, assessed in the intention-to-treat population, was change in HRQoL, assessed using the RAND 36-item short form survey instrument mental health composite (MHC) and physical health composite (PHC) scores. Secondary outcome measures were the chronic obstructive pulmonary disease assessment test score, visual analogue scales (VAS) for breathlessness, and scores on the dyspnoea-12, the generalised anxiety disorder 7-item scale, and the short form-6D. A thematic analysis exploring participant experience was also conducted using qualitative data from focus groups, survey responses, and email correspondence. This trial is registered with ClinicalTrials.gov, NCT04830033.; Findings: Between April 22 and May 25, 2021, 158 participants were recruited and randomly assigned. Of these, eight (5%) individuals were excluded and 150 participants were allocated to a treatment group (74 in the ENO Breathe group and 76 in the usual care group). Compared with usual care, ENO Breathe was associated with an improvement in MHC score (regression coefficient 2·42 95% CI 0·03 to 4·80]; p=0·047), but not PHC score (0·60 -1·33 to 2·52]; p=0·54). VAS for breathlessness (running) favoured ENO Breathe participation (-10·48 -17·23 to -3·73]; p=0·0026). No other statistically significant between-group differences in secondary outcomes were observed. One minor self-limiting adverse event was reported by a participant in the ENO Breathe group who felt dizzy using a computer for

extended periods. Thematic analysis of ENO Breathe participant experience identified three key themes: (1) improvements in symptoms; (2) feeling that the programme was complementary to standard care; and (3) the particular suitability of singing and music to address their needs.; Interpretation: Our findings suggest that an online breathing and wellbeing programme can improve the mental component of HRQoL and elements of breathlessness in people with persisting symptoms after COVID-19. Mind-body and music-based approaches, including practical, enjoyable, symptom-management techniques might have a role supporting recovery.; Funding: Imperial College London.; Competing Interests: Declaration of interests SM, TP, KB, HB, JM, SZ, THH, and ALa work for ENO who developed and deliver ENO Breathe; however, the programme is delivered free of charge to participants. All other authors declare no competing interests. No authors have been paid to write this article by a pharmaceutical company or other agency.

Access or request full text: https://libkey.io/10.1016/S2213-2600(22)00125-4

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35489367&custid=ns023446

35. Mindfulness Meditation Interventions for Long COVID: Biobehavioral Gene Expression and Neuroimmune Functioning

Item Type: Journal Article

Authors: Porter, Nicole and Jason, Leonard A.

Publication Date: 2022

Journal: Neuropsychiatric Disease and Treatment 18, pp. 2599-2626

Abstract: Some individuals infected with SARS CoV-2 have developed Post-Acute Sequelae of SARS CoV-2 infection (PASC) or what has been referred to as Long COVID. Efforts are underway to find effective treatment strategies for those with Long COVID. One possible approach involves alternative medical interventions, which have been widely used to treat and manage symptoms of a variety of medical problems including post-viral infections. Meditation has been found to reduce fatigue and unrefreshing sleep, and for those with post-viral infections, it has enhanced immunity, and reduced inflammatory-driven pathogenesis. Our article summarizes the literature on what is known about mindfulness meditation interventions, and reviews evidence on how it may apply to those with Long COVID and Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS). Evidence is reviewed suggesting effective and sustainable outcomes may be achieved for symptomatology and underlying pathology of post-viral fatigue (PASC and ME/CFS).; Competing Interests: The authors report no conflicts of interest in this work.

Access or request full text: https://libkey.io/10.2147/NDT.S379653

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36387947&custid=ns023446

36. Physiotherapy in the Management of Long COVID: Preparing for the Rising Tide

Item Type: Journal Article

Authors: Rhodes, Sarah

Publication Date: 2022

Journal: New Zealand Journal of Physiotherapy 50(2), pp. 56-57

Access or request full text: https://libkey.io/10.15619/nzjp/50.02.01

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=158333764&custid=ns023446

37. Characterizing the COVID-19 Illness Experience to Inform the Study of Post-acute Sequelae and Recovery

Item Type: Journal Article

Authors: Santiago-Rodriguez, Edda;Maiorana, Andres;Peluso, Michael J.;Hoh, Rebecca;Tai, Viva;Fehrman, Emily A.;Hernandez, Yanel;Torres, Leonel;Spinelli, Matthew A.;Gandhi, Monica;Kelly, J. D.;Martin, Jeffrey N.;Henrich, Timothy J.;Deeks, Steven G. and Sauceda, John A.

Publication Date: 2022

Journal: International Journal of Behavioral Medicine 29(5), pp. 610-623

Abstract: Background: There is an urgent need to fully understand the impact of variable COVID-19 experiences and the optimal management of post-acute sequelae of SARS-CoV-2 infection. We characterized the variability in the acute illness experience and ongoing recovery process from participants in a COVID-19 recovery cohort study in Northern California in 2020. Method: We completed 24 semi-structured in-depth interviews with adults with confirmed positive SARV-CoV-2 nucleic acid amplification test result, had recovered or were recovering from acute infection, and underwent serial evaluations. We purposefully sampled English- and Spanish-speaking adults with asymptomatic, mild, and severe symptomatic infection, including those who were hospitalized and those with HIV co-infection. We used a thematic analysis to analyze interviews and identify salient themes. Results: After integrating the thematic analysis with clinical data, we identified key themes: (1) across symptom profiles and severity, experiencing COVID-19 was associated with psychological distress; (2) symptomatic infection carried uncertainty in symptom presentation and ongoing recovery (e.g., long COVID); and (3) health information-seeking behavior was facilitated by access to medical care and uncertainty with the recovery process. Conclusion: Our data informs the emerging field of "long COVID" research and shows a need to provide information and continuous support to persons with post-acute sequelae to ensure they feel secure along the path to recovery.

Access or request full text: https://libkey.io/10.1007/s12529-021-10045-7

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=159440555&custid=ns023446

38. The Challenge of Long COVID-19 Management: From Disease Molecular Hallmarks to the Proposal of Exercise as Therapy

Item Type: Journal Article

Authors: Scurati, Raffaele;Papini, Nadia;Giussani, Paola;Alberti, Giampietro and Tringali, Cristina

Publication Date: 2022

Journal: International Journal of Molecular Sciences 23(20)
Abstract: Long coronavirus disease 19 (COVID-19) is the designation given to a novel syndrome that develops within a few months after infection by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) and that is presenting with increasing incidence because of the numerous cases of infection. Long COVID-19 is characterized by a sequela of clinical symptoms that concern different organs and tissues, from nervous, respiratory, gastrointestinal, and renal systems to skeletal muscle and cardiovascular apparatus. The main common molecular cause for all long COVID-19

facets appears to be related to immune dysregulations, the persistence of inflammatory status, epigenetic modifications, and alterations of neurotrophin release. The prevention and management of long COVID-19 are still inappropriate because many aspects need further clarification. Exercise is known to exert a deep action on molecular dysfunctions elicited by long COVID-19 depending on training intensity, duration, and continuity. Evidence suggests that it could improve the quality of life of long COVID-19 patients. This review explores the main clinical features and the known molecular mechanisms underlying long COVID-19 in the perspective of considering exercise as a co-medication in long COVID-19 management.; Competing Interests: The authors declare no conflict of interest.

Access or request full text: https://libkey.io/10.3390/ijms232012311

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36293160&custid=ns023446

39. A Review of Respiratory Post-Acute Sequelae of COVID-19 (PASC) and the Potential Benefits of Pulmonary Rehabilitation

Item Type: Journal Article

Authors: Simon, Michael and Simmons, James E.

Publication Date: 2022

Journal: Rhode Island Medical Journal (2013) 105(7), pp. 11-15

Abstract: With the SARS-CoV-2 pandemic continuing into its third year, the number of patients who survive acute COVID-19 infection but go on to develop long-term symptoms is increasing daily. Those individuals who experience one or more of a variety of persistent symptoms post-COVID-19 are now diagnosed with the syndrome called post-acute sequelae of COVID-19 (PASC), often colloquially called "Long COVID." This article discusses relevant research and current hypotheses regarding the pathophysiology and management of respiratory symptoms of PASC, in order to provide primary care physicians with context for management of this heterogeneous population. We focus on the growing body of research that supports the use of pulmonary rehabilitation for patients with PASC to improve symptoms and quality of life.

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=35930484&custid=ns023446

40. Long COVID in Children

Item Type: Journal Article

Authors: Slomski, Anita

Publication Date: 2022

Journal: JAMA: Journal of the American Medical Association 328(13), pp. 1288

Access or request full text: https://libkey.io/10.1001/jama.2022.15439

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=159546355&custid=ns023446

41. Longitudinal Analysis of Quadriceps Muscle Strength in Patients with Previous COVID-19 Hospitalization and in Patients with Post-Acute Sequelae following Mild COVID-19

Item Type: Journal Article

Authors: Stoffels, Anouk A. F.;van Voorthuizen, Esther L.;van Hees, Hieronymus W. H.;Peters, Jeannette B.;van Helvoort, Hanneke A. C.;Voermans, Nicol C.;Doorduin, Jonne and van den Borst, Bram

Publication Date: 2022

Journal: Nutrients 14(20), pp. 4319-N.PAG

Abstract: Muscle weakness is a prominent symptom in post-acute sequelae of COVID-19 (PASC). However, few studies have objectively and longitudinally assessed muscle strength after varying COVID-19 severity grades. This observational study aimed to explore the prevalence, determinants, and 1.5 years change of quadriceps muscle weakness in 98 patients discharged from COVID-19 hospitalization and in 50 patients with PASC following mild COVID-19. Isometric quadriceps maximal voluntary contraction (MVC) was assessed on a computerized dynamometer at three visits. Also, in a subgroup of 14 post-COVID-19 patients with quadriceps muscle weakness, muscle thickness and echo intensity were determined by muscle ultrasound of nine upper and lower extremity muscles. Muscle weakness was found in 59% of post-hospitalized patients and in 65% of those with PASC following mild COVID-19 at ~14 weeks after acute COVID-19. Whereas during ~1.5 years follow-up MVC modestly improved, muscle weakness prevalence remained unchanged. Hospital length of stay and diabetes mellitus were identified as possible predictors of muscle weakness following COVID-19 hospitalization. No predictors could be identified in those with PASC following mild COVID-19. Ultrasound outcomes revealed no large structural abnormalities. In conclusion, clinically relevant muscle weakness is common after COVID-19 and its long-term improvement is poor. Future studies with relevant control groups are warranted to confirm our data.

Access or request full text: https://libkey.io/10.3390/nu14204319

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=159911260&custid=ns023446

42. Tackling Long Covid in the community

Item Type: Journal Article

Authors: Thrupp, Eve

Publication Date: 2022

Journal: Journal of Community Nursing 36(6), pp. 12-13

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=160982737&custid=ns023446

43. Interventions for Improving Long COVID-19 Symptomatology: A Systematic Review

Item Type: Journal Article

Authors: Veronese, Nicola;Bonica, Roberta;Cotugno, Sergio;Tulone, Ottavia;Camporeale, Michele;Smith, Lee;Trott, Mike;Bruyere, Olivier;Mirarchi, Luigi;Rizzo, Giuseppina;Bavaro, Davide Fiore;Barbagallo, Mario;Dominguez, Ligia J.;Marotta, Claudia;Silenzi, Andrea;Nicastri, Emanuele;Saracino, Annalisa and Di Gennaro, Francesco

Publication Date: 2022

Journal: Viruses 14(9)
Abstract: Introduction: Although the understanding of several aspects of long COVID-19 syndrome is increasing, there is limited literature regarding the treatment of these signs and symptoms. The aim of our systematic review was to understand which therapies have proved effective against the symptoms of long COVID-19.; Methods: A systematic search for randomized controlled or clinical trials in several databases was conducted through 15 May 2022. Specific inclusion criteria included: (1) intervention studies, either randomized controlled (RCTs) or clinical trials; (2) diagnosis of long COVID-19, according to the World Health Organization criteria; (3) presence of long COVID-19 for at least 12 weeks after SARS-CoV-2 infection.; Results: We initially found 1638 articles to screen. After removing 1602 works based on their title/abstract, we considered 35 full texts, and among them, two intervention studies were finally included. The first RCT focused on the greater improvement of treatment combining olfactory rehabilitation with oral supplementation with Palmitoylethanolamide and Luteolin in patients with olfactory dysfunction after COVID-19. The second study evaluated the positive impact of aromatherapy vs. standard care in adult females affected by fatigue.; Conclusion: Our systematic review found only two intervention studies focused on patients affected by long COVID-19. More intervention studies are needed to investigate potentially positive interventions for long COVID-19 symptoms.

Access or request full text: https://libkey.io/10.3390/v14091863

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36146672&custid=ns023446

44. Interventions for the prevention of persistent post-COVID-19 olfactory dysfunction

Item Type: Journal Article

Authors: Webster, Katie E.;O'Byrne, Lisa;MacKeith, Samuel;Philpott, Carl;Hopkins, Claire and Burton, Martin J.

Publication Date: 2022

Journal: The Cochrane Database of Systematic Reviews 9, pp. CD013877

Abstract: Background: Loss of olfactory function is well recognised as a symptom of COVID-19 infection, and the pandemic has resulted in a large number of individuals with abnormalities in their sense of smell. For many, the condition is temporary and resolves within two to four weeks. However, in a significant minority the symptoms persist. At present, it is not known whether early intervention with any form of treatment (such as medication or olfactory training) can promote recovery and prevent persisting olfactory disturbance. This is an update of the 2021 review with four studies added.; Objectives: 1) To evaluate the benefits and harms of any intervention versus no treatment for people with acute olfactory dysfunction due to COVID-19 infection. 2) To keep the evidence up-to-date, using a living systematic review approach. SEARCH METHODS: The Cochrane ENT Information Specialist searched the Cochrane ENT Register; Central Register of Controlled Trials (CENTRAL); Ovid MEDLINE; Ovid Embase; Web of Science; ClinicalTrials.gov; ICTRP and additional sources for published and unpublished trials. The date of the latest search was 20 October 2021.; Selection Criteria: We included randomised controlled trials (RCTs) in people with COVID-19 related olfactory disturbance, which had been present for less than four weeks. We included any intervention compared to no treatment or placebo. DATA COLLECTION AND ANALYSIS: We used standard Cochrane methods. Our primary outcomes were the presence of normal olfactory function, serious adverse effects and change in sense of smell. Secondary outcomes were the prevalence of parosmia, change in sense of taste, disease-related quality of life and other adverse effects (including nosebleeds/bloody discharge). We used GRADE to assess the certainty of the evidence for each outcome. MAIN RESULTS: We included five studies with 691 participants. The studies evaluated the following interventions: intranasal corticosteroid sprays, intranasal corticosteroid drops, intranasal hypertonic saline and zinc sulphate. Intranasal corticosteroid spray compared to no intervention/placebo We included three studies with 288 participants who had olfactory dysfunction for less than four weeks following COVID-19. Presence of normal olfactory function The evidence is very uncertain about the effect of intranasal

corticosteroid spray on both self-rated recovery of olfactory function and recovery of olfactory function using psychophysical tests at up to four weeks follow-up (self-rated: risk ratio (RR) 1.19, 95% confidence interval (CI) 0.85 to 1.68; 1 study; 100 participants; psychophysical testing: RR 2.3, 95% CI 1.16 to 4.63; 1 study; 77 participants; very low-certainty evidence). Change in sense of smell The evidence is also very uncertain about the effect of intranasal corticosteroid spray on self-rated change in the sense of smell (at less than 4 weeks: mean difference (MD) 0.5 points lower, 95% CI 1.38 lower to 0.38 higher; 1 study; 77 participants; at > 4 weeks to 3 months: MD 2.4 points higher, 95% CI 1.32 higher to 3.48 higher; 1 study; 100 participants; very low-certainty evidence, rated on a scale of 1 to 10, higher scores mean better olfactory function). Intranasal corticosteroids may make little or no difference to the change in sense of smell when assessed with psychophysical testing (MD 0.2 points, 95% CI 2.06 points lower to 2.06 points higher; 1 study; 77 participants; low-certainty evidence, 0- to 24-point scale, higher scores mean better olfactory function). Serious adverse effects The authors of one study reported no adverse effects, but their intention to collect these data was not pre-specified so we are uncertain if these were systematically sought and identified. The remaining two studies did not report on adverse effects. Intranasal corticosteroid drops compared to no intervention/placebo We included one study with 248 participants who had olfactory dysfunction for ≤ 15 days following COVID-19. Presence of normal olfactory function Intranasal corticosteroid drops may make little or no difference to self-rated recovery at > 4 weeks to 3 months (RR 1.00, 95% CI 0.89 to 1.11; 1 study; 248 participants; low-certainty evidence). No other outcomes were assessed by this study. Data on the use of hypertonic saline nasal irrigation and the use of zinc sulphate to prevent persistent olfactory dysfunction are included in the full text of the review.; Authors' Conclusions: There is very limited evidence available on the efficacy and harms of treatments for preventing persistent olfactory dysfunction following COVID-19 infection. However, we have identified a number of ongoing trials in this area. As this is a living systematic review we will update the data regularly, as new results become available. (Copyright © 2022 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.)

Access or request full text: https://libkey.io/10.1002/14651858.CD013877.pub3

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36063364&custid=ns023446

45. Possible long COVID healthcare pathways: a scoping review

Item Type: Journal Article

Authors: Wolf, Sarah;Zechmeister-Koss, Ingrid and Erdös, Judit

Publication Date: 2022

Journal: BMC Health Services Research 22(1), pp. 1-11

Abstract: Background: Individuals of all ages and with all degrees of severity of the coronavirus disease (COVID) can suffer from persisting or reappearing symptoms called long COVID. Long COVID involves various symptoms, such as shortness of breath, fatigue, or organ damage. The growing number of long COVID cases places a burden on the patients and the broader economy and, hence, has gained more weight in political decisions. This scoping review aimed to give an overview of recommendations about possible long COVID healthcare pathways and requirements regarding decision-making and communication for healthcare professionals.Methods: A systematic search in four databases and biweekly update-hand searches were conducted. In addition to guidelines and reviews, expert opinions in consensus statements or clinical perspectives were also considered. Data were systematically extracted and subsequently narratively and graphically summarised.Results: Fourteen references, five guidelines, four reviews, one consensus paper, and four clinical perspectives were included. The evidence recommended that most long COVID-related healthcare should be in primary care. Patients with complex symptoms should be referred to specialized long COVID outpatient assessment clinics. In contrast, patients with one dominant symptom should be directed to the respective specialist for a second assessment. Depending on the patients' needs, further referral options include, e.g. rehabilitation or non-medical health services. Self-management and good communication between healthcare professionals and patients are crucial aspects of the long COVID management recommendations.Conclusions: The quality of the included guidelines and reviews is limited in the methods applied

due to the novelty of this topic and the associated urgency for research. Hence, an update review with more rigorous data is recommended. Furthermore, the systematic collection of real-world data on long COVID surveillance needs to be set up soon to gather further information on the duration and severity of long COVID and thereby facilitate long COVID care planning.

Access or request full text: https://libkey.io/10.1186/s12913-022-08384-6

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46. Digital Peer-Supported Self-Management Intervention Codesigned by People With Long COVID: Mixed Methods Proof-of-Concept Study

Item Type: Journal Article

Authors: Wright, Hayley;Turner, Andrew;Ennis, Stuart;Percy, Carol;Loftus, Garry;Clyne, Wendy;Matouskova, Gabriela and Martin, Faith

Publication Date: 2022

Journal: JMIR Formative Research 6(10), pp. e41410

Abstract: Background: There are around 1.3 million people in the United Kingdom with the devastating psychological, physical, and cognitive consequences of long COVID (LC). UK guidelines recommend that LC symptoms be managed pragmatically with holistic support for patients' biopsychosocial needs, including psychological, emotional, and physical health. Self-management strategies, such as pacing, prioritization, and goal setting, are vital for the self-management of many LC symptoms.; Objective: This paper describes the codevelopment and initial testing of a digital intervention combining peer support with positive psychology approaches for self-managing the physical, emotional, psychological, and cognitive challenges associated with LC. The objectives of this study were to (1) codesign an intervention with and for people with LC; (2) test the intervention and study methods; (3) measure changes in participant well-being, self-efficacy, fatigue, and loneliness; and (4) understand the types of self-management goals and strategies used by people with LC.; Methods: The study used a pre-post, mixed methods, pragmatic, uncontrolled design. Digital intervention content was codeveloped with a lived-experience group to meet the needs uncovered during the intervention development and logic mapping phase. The resulting 8-week digital intervention, Hope Programme for Long COVID, was attended by 47 participants, who completed pre- and postprogram measures of well-being, self-efficacy, fatigue, and loneliness. Goal-setting data were extracted from the digital platform at the end of the intervention.; Results: The recruitment rate (n=47, 83.9%) and follow-up rate (n=28, 59.6%) were encouraging. Positive mental well-being (mean difference 6.5, P<.001) and self-efficacy (mean difference 1.1, P=.009) improved from baseline to postcourse. All goals set by participants mapped onto the 5 goal-oriented domains in the taxonomy of everyday self-management strategies (TEDSS). The most frequent type of goals was related to activity strategies, followed by health behavior and internal strategies.; Conclusions: The bespoke self-management intervention, Hope Programme for Long COVID, was well attended, and follow-up was encouraging. The sample characteristics largely mirrored those of the wider UK population with LC. Although not powered to detect statistically significant changes, the preliminary data show improvements in self-efficacy and positive mental well-being. Our next trial (ISRCTN: 11868601) will use a nonrandomized waitlist control design to further examine intervention efficacy. (©Hayley Wright, Andrew Turner, Stuart Ennis, Carol Percy, Garry Loftus, Wendy Clyne, Gabriela Matouskova, Faith Martin. Originally published in JMIR Formative Research (https://formative.jmir.org), 14.10.2022.)

Access or request full text: https://libkey.io/10.2196/41410

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36166651&custid=ns023446

47. Impact of Physical Activity on COVID-19

Item Type: Journal Article

Authors: Yang, Jia;Li, Xiang;He, Taiyu;Ju, Fangyuan;Qiu, Ye and Tian, Zuguo

Publication Date: 2022

Journal: International Journal of Environmental Research and Public Health 19(21)
Abstract: Introduction: The coronavirus disease 2019 (COVID-19) pandemic, which is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is seriously endangering human health worldwide. This study finds effective intervention modalities of physical activity on COVID-19 through a narrative review.; Methods: In this study, 41 papers were selected for a narrative literature review after a comprehensive database search from 20 December 2019, to 30 August 2022.; Results: 41 articles meet the established criteria, and in this review, we comprehensively describe recent studies on exercise and COVID-19, including the impact and recommendations of exercise on COVID-19 prevention, patients with COVID-19, and noninfected populations.; Conclusions: The literature suggests that physical activity (PA) contributes to the prevention and treatment of COVID-19, can promote recovery of physical function, alleviate post-acute COVID-19 syndrome, and improve patients' psychological well-being. It is recommended to develop appropriate exercise prescriptions for different populations under the guidance of a physician.

Access or request full text: https://libkey.io/10.3390/ijerph192114108

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36360985&custid=ns023446

48. Proposed subtypes of post-COVID-19 syndrome (or long-COVID) and their respective potential therapies

Item Type: Journal Article

Authors: Yong, Shin Jie and Liu, Shiliang

Publication Date: 2022

Journal: Reviews in Medical Virology 32(4), pp. e2315

Abstract: The effects of coronavirus disease 2019 (COVID-19), a highly transmissible infectious respiratory disease that has initiated an ongoing pandemic since early 2020, do not always end in the acute phase. Depending on the study referred, about 10%-30% (or more) of COVID-19 survivors may develop long-COVID or post-COVID-19 syndrome (PCS), characterised by persistent symptoms (most commonly fatigue, dyspnoea, and cognitive impairments) lasting for 3 months or more after acute COVID-19. While the pathophysiological mechanisms of PCS have been extensively described elsewhere, the subtypes of PCS have not. Owing to its highly multifaceted nature, this review proposes and characterises six subtypes of PCS based on the existing literature. The subtypes are non-severe COVID-19 multi-organ sequelae (NSC-MOS), pulmonary fibrosis sequelae (PFS), myalgic encephalomyelitis or chronic fatigue syndrome (ME/CFS), postural orthostatic tachycardia syndrome (POTS), post-intensive care syndrome (PICS) and medical or clinical sequelae (MCS). Original studies supporting each of these subtypes are documented in this review, as well as their respective symptoms and potential interventions. Ultimately, the subtyping proposed herein aims to provide better clarity on the current understanding of PCS. (© 2021 The Authors. Reviews in Medical Virology published by John Wiley & Sons Ltd.)

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URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=34888989&custid=ns0234

46

49. A Review of Long COVID With a Special Focus on Its Cardiovascular Manifestations

Item Type: Journal Article

Authors: Yousif, Elamein and Premraj, Sarah

Publication Date: 2022

Journal: Cureus 14(11), pp. e31933

Abstract: The novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus has been the cause of the century's worst pandemic so far: coronavirus disease 2019 (COVID-19). It has led to unprecedented mortality and morbidity, resulting in devastating consequences worldwide. The acute manifestations of COVID-19 including respiratory as well as multisystem involvement have been causes of great concern among physicians. However, the long-term effects of the coronavirus have left many patients battling with chronic symptoms, ranging from extreme fatigue to cardiomyopathy. In this article, we review the chronic manifestations of COVID-19 with a focus on cardiovascular manifestations. We discuss the pathophysiology, post-acute sequelae, clinical manifestations, approach to the laboratory diagnosis of cardiovascular manifestations of long COVID, and a proposed multidisciplinary treatment method. We also explore the relationship between vaccination and the long COVID syndrome.; Competing Interests: The authors have declared that no competing interests exist. (Copyright © 2022, Yousif et al.)

Access or request full text: https://libkey.io/10.7759/cureus.31933

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=36582565&custid=ns023446

50. Prevalence, risk factors and treatments for post-COVID-19 breathlessness: a systematic review and meta-analysis

Item Type: Journal Article

Authors: Zheng, Bang;Daines, Luke;Han, Qing;Hurst, John R.;Pfeffer, Paul;Shankar-Hari, Manu;Elneima, Omer;Walker, Samantha;Brown, Jeremy S.;Siddiqui, Salman;Quint, Jennifer K.;Brightling, Christopher E.;Evans, Rachael A.;Wain, Louise V.;Heaney, Liam G. and Sheikh, Aziz

Publication Date: 2022

Journal: European Respiratory Review : An Official Journal of the European Respiratory Society 31(166)
Abstract: Persistent breathlessness >28 days after acute COVID-19 infection has been identified as a highly debilitating post-COVID symptom. However, the prevalence, risk factors, mechanisms and treatments for post-COVID breathlessness remain poorly understood. We systematically searched PubMed and Embase for relevant studies published from 1 January 2020 to 1 November 2021 (PROSPERO registration number: CRD42021285733) and included 119 eligible papers. Random-effects meta-analysis of 42 872 patients with COVID-19 reported in 102 papers found an overall prevalence of post-COVID breathlessness of 26% (95% CI 23-29) when measuring the presence/absence of the symptom, and 41% (95% CI 34-48) when using Medical Research Council (MRC)/modified MRC dyspnoea scale. The pooled prevalence decreased significantly from 1-6 months to 7-12 months post-infection. Post-COVID breathlessness was more common in those with severe/critical acute infection, those who were hospitalised and females, and was less likely to be reported by patients in Asia than those in Europe or North America. Multiple pathophysiological mechanisms have been proposed (including deconditioning, restrictive/obstructive airflow limitation, systemic inflammation, impaired mental health), but the body of evidence remains inconclusive. Seven cohort studies and one randomised controlled trial suggested rehabilitation exercises

may reduce post-COVID breathlessness. There is an urgent need for mechanistic research and development of interventions for the prevention and treatment of post-COVID breathlessness.; Competing Interests: Conflict of interest: A. Sheikh is a member of the Scottish Government Chief Medical Officer's COVID-19 Advisory Group and its Standing Committee on Pandemics, and a member of the UK Government's Risk Stratification Subgroup and AstraZeneca's Thrombotic Thrombocytopenic Taskforce; all roles are unremunerated. P. Pfeffer reports grants from NIHR, outside the submitted work. M. Shankar-Hari reports grants from National Institute for Health Research, outside the submitted work. C.E. Brightling reports grants from UKRI-MRC/DHSC-NIHR. R.A. Evans reports a grant from NIHR Clinician Scientist Fellowship, outside the submitted work. L.V. Wain reports grants from GSK, grants from Orion, outside the submitted work. L.G. Heaney reports personal fees from Novartis, Hoffman la Roche/Genentech Inc, Sanofi, Evelo Biosciences, GlaxoSmithKline, AstraZeneca, Teva, Theravance and Circassia; grants from Medimmune, Novartis UK, Roche/Genentech Inc, GlaxoSmithKline, Amgen, Genentech/Hoffman la Roche, AstraZeneca, Medimmune, Aerocrine and Vitalograph; and other support from Boehringer Ingelheim, Chiesi and Napp Pharmaceuticals, outside the submitted work. All other authors declare no competing interests. (Copyright ©The authors 2022.)