COVID-19 weekly update

August 29th 2022

**clinical management**

**Title:** Long-term cognitive and functional status in Danish ICU patients with COVID-19

Acta anaesthesiologica Scandinavica.|01st September 2022

Background  
ICU admission due to covid-19 may result in cognitive and physical impairment. We investigated the long-term cognitive and physical status of Danish ICU patients with covid-19.  
Methods  
we included all patients with covid-19 admitted to Danish ICUs between march 10 and May 19, 2020. Patients were the contacted prospectively at 6 and 12 months for follow-up. Our primary outcomes were cognitive function and frailty at 6 and 12 months after ICU admission, estimated by the mini Montreal cognitive assessment, and the clinical frailty scale. Secondary outcomes were 6- and 12-month mortality, health-related quality of life (HRQOL) assessed by eq-5d-5l, functional status (Barthel activities of daily living and Lawton–Brody instrumental activities of daily living), and fatigue (fatigue assessment scale). The study had no information on pre-ICU admission status for the participants.  
Results  
A total of 326 patients were included. The 6- and 12-month mortality was 37% and 38%, respectively. Among the 204 six-month survivors, 105 (51%) participated in the 6-month follow-up; among the 202 twelve-month survivors, 95 (47%) participated in the 12-month follow-up. At 6 months, cognitive scores indicated impairment for 26% (95% confidence interval [ci], 11.4–12.4) and at 12 months for 17% (95% ci, 12.0–12.8) of participants. Frailty was indicated in 20% (95% ci, 3.4–3.9) at 6 months, and for 18% (95% ci, 3.3–3.8) at 12 months. Fatigue was reported by 52% at 6 months, and by 47% at 12 months. For HRQOL, moderate, severe, or extreme health problems were reported by 28% at 6 months, and by 25% at 12 months.  
Conclusion  
Long-term cognitive, functional impairment was found in up to one in four of patients surviving intensive care for covid-19. Fatigue was present in nearly half the survivors at both 6 and 12 months. However, pre-ICU admission status of the patients was unknown.

Article: [Long‐term cognitive and functional status in Danish ICU patients with COVID‐19 (wiley.com)](https://onlinelibrary.wiley.com/doi/epdf/10.1111/aas.14108)

**Title:** Constructing custom-made radiotranscriptomic signatures of vascular inflammation from routine CT angiograms: a prospective outcomes validation study in COVID-19

the lancet digital health |26th august 2022

Background

Direct evaluation of vascular inflammation in patients with COVID-19 would facilitate more efficient trials of new treatments and identify patients at risk of long-term complications who might respond to treatment. We aimed to develop a novel artificial intelligence (AI)-assisted image analysis platform that quantifies cytokine-driven vascular inflammation from routine CT angiograms, and sought to validate its prognostic value in COVID-19.

Methods

For this prospective outcomes validation study, we developed a radiotranscriptomic platform that uses RNA sequencing data from human internal mammary artery biopsies to develop novel radiomic signatures of vascular inflammation from CT angiography images. We then used this platform to train a radiotranscriptomic signature (C19-RS), derived from the perivascular space around the aorta and the internal mammary artery, to best describe cytokine-driven vascular inflammation. The prognostic value of C19-RS was validated externally in 435 patients (331 from study arm 3 and 104 from study arm 4) admitted to hospital with or without COVID-19, undergoing clinically indicated pulmonary CT angiography, in three UK National Health Service (NHS) trusts (Oxford, Leicester, and Bath). We evaluated the diagnostic and prognostic value of C19-RS for death in hospital due to COVID-19, did sensitivity analyses based on dexamethasone treatment, and investigated the correlation of C19-RS with systemic transcriptomic changes.

Findings

Patients with COVID-19 had higher C19-RS than those without (adjusted odds ratio [OR] 2·97 [95% CI 1·43–6·27], p=0·0038), and those infected with the B.1.1.7 (alpha) SARS-CoV-2 variant had higher C19-RS values than those infected with the wild-type SARS-CoV-2 variant (adjusted OR 1·89 [95% CI 1·17–3·20] per SD, p=0·012). C19-RS had prognostic value for in-hospital mortality in COVID-19 in two testing cohorts (high [≥6·99] vs low [<6·99] C19-RS; hazard ratio [HR] 3·31 [95% CI 1·49–7·33], p=0·0033; and 2·58 [1·10–6·05], p=0·028), adjusted for clinical factors, biochemical biomarkers of inflammation and myocardial injury, and technical parameters. The adjusted HR for in-hospital mortality was 8·24 (95% CI 2·16–31·36, p=0·0019) in patients who received no dexamethasone treatment, but 2·27 (0·69–7·55, p=0·18) in those who received dexamethasone after the scan, suggesting that vascular inflammation might have been a therapeutic target of dexamethasone in COVID-19. Finally, C19-RS was strongly associated (r=0·61, p=0·00031) with a whole blood transcriptional module representing dysregulation of coagulation and platelet aggregation pathways.

Interpretation

Radiotranscriptomic analysis of CT angiography scans introduces a potentially powerful new platform for the development of non-invasive imaging biomarkers. Application of this platform in routine CT pulmonary angiography scans done in patients with COVID-19 produced the radiotranscriptomic signature C19-RS, a marker of cytokine-driven inflammation driving systemic activation of coagulation and responsible for adverse clinical outcomes, which predicts in-hospital mortality and might allow targeted therapy.

Article: [Constructing custom-made radiotranscriptomic signatures of vascular inflammation from routine CT angiograms: a prospective outcomes validation study in COVID-19](https://www.thelancet.com/action/showPdf?pii=S2589-7500%2822%2900132-7)

**Title:** Home as the new frontier for the treatment of COVID-19: the case for anti-inflammatory agents

the lancet infectious diseases|25th august 2022

COVID-19, caused by SARS-CoV-2, is characterised by a broad spectrum of symptom severity that requires varying amounts of care according to the different stages of the disease. Intervening at the onset of mild to moderate COVID-19 symptoms in the outpatient setting would provide the opportunity to prevent progression to a more severe illness and long-term complications. As early disease symptoms variably reflect an underlying excessive inflammatory response to the viral infection, the use of anti-inflammatory drugs, especially non-steroidal anti-inflammatory drugs (NSAIDs), in the initial outpatient stage of COVID-19 seems to be a valuable therapeutic strategy. A few observational studies have tested NSAIDs (especially relatively selective COX-2 inhibitors), often as part of multipharmacological protocols, for early outpatient treatment of COVID-19. The findings from these studies are promising and point to a crucial role of NSAIDs for the at-home management of people with initial COVID-19 symptoms.

Article: [Home as the new frontier for the treatment of COVID-19: the case for anti-inflammatory agents](https://www.thelancet.com/action/showPdf?pii=S1473-3099%2822%2900433-9)

**TITLE**: REAL-WORLD EFFECTIVENESS OF EARLY MOLNUPIRAVIR OR NIRMATRELVIR–RITONAVIR IN HOSPITALISED PATIENTS WITH COVID-19 WITHOUT SUPPLEMENTAL OXYGEN REQUIREMENT ON ADMISSION DURING HONG KONG'S OMICRON BA.2 WAVE: A RETROSPECTIVE COHORT STUDY

THE LANCET INFECTIOUS DISEASES|24TH AUGUST 2022.

Background  
data on the effectiveness of oral antivirals in patients with mild-to-moderate covid-19 are urgently needed. This retrospective cohort study aimed to evaluate the clinical and virological outcomes associated with molnupiravir or nirmatrelvir–ritonavir use in hospitalised patients with mild-to-moderate covid-19 during a pandemic wave dominated by the omicron ba.2 subvariant.

Methods  
We analysed data from a territory-wide retrospective cohort of patients in hong kong who were hospitalised with a confirmed diagnosis of sars-cov-2 infection between feb 26 and april 26, 2022. Data were extracted from the hospital authority, the department of health, and the hong kong death registry. Patients were eligible for inclusion if their admission date was within 3 days before or after confirmation of their covid-19 diagnosis. Those who were admitted to hospital more than 5 days after symptom onset, were younger than 18 years, had a history of oral antiviral use before admission, required supplemental oxygen on admission, had drug-related contraindications to nirmatrelvir–ritonavir use, or had severe renal or severe liver impairment were excluded. Patients who received the oral antivirals molnupiravir or nirmatrelvir–ritonavir were matched with controls using propensity-score matching in a ratio of 1:1. The primary outcome was all-cause mortality and secondary outcomes included a composite outcome of disease progression (all-cause mortality, initiation of invasive mechanical ventilation [imv], intensive care unit [icu] admission, or the need for oxygen therapy) and each of these individual disease progression outcomes, and time to reaching a low viral burden (rt-pcr cycle threshold value ≥30). For each event outcome, crude incidence rates were calculated and hazard ratios (hrs) estimated using cox regression models.

Findings  
We identified 40 776 patients hospitalised with sars-cov-2 infection during the study period, with a mean follow-up of 41·3 days (total 925 713 person-days). After exclusions and propensity-score matching, we included 1856 Molnupiravir recipients and 1856 matched controls, and 890 Nirmatrelvir-Ritonavir recipients and 890 matched controls. A lower risk of all-cause mortality was observed in molnupiravir recipients (crude incidence rate per 10 000 person-days 19·98 events [95% ci 16·91–23·45]) versus matched controls (38·07 events [33·85–42·67]; hr 0·48 [95% ci 0·40–0·59], p<0·0001) and in Nirmatrelvir–ritonavir recipients (10·28 events [7·03–14·51]) versus matched controls (26·47 events [21·34–32·46]; hr 0·34 [0·23–0·50], p<0·0001). Oral antiviral recipients also had lower risks of the composite disease progression outcome (Molnupiravir HR 0·60 [95% ci 0·52–0·69], p<0·0001; Nirmatrelvir–Ritonavir 0·57 [0·45–0·72], p<0·0001) and need for oxygen therapy (molnupiravir 0·69 [0·57–0·83], p=0·0001; Nirmatrelvir–Ritonavir 0·73 [0·54–0·97], p=0·032) compared with controls. Time to achieving a low viral burden was significantly shorter among oral antiviral recipients than matched controls (Molnupiravir hr 1·38 [95% ci 1·15–1·64], p=0·0005; Nirmatrelvir–Ritonavir 1·38 [1·07–1·79], p=0·013). Significant differences in initiation of IMV and ICU admission were not found.

Interpretation  
During a wave of sars-cov-2 omicron ba.2, initiation of novel oral antiviral treatments in hospitalised patients not requiring oxygen therapy on admission showed substantial clinical benefit. Our findings support the early use of oral antivirals in this population of patients.

Article: [Real-world effectiveness of early Molnupiravir or NirmatrelvirA “ritonavir in hospitalised patients with covid-19 without supplemental oxygen requirement on admission during hong kong's omicron ba.2 wave: a retrospective cohort study](https://www.thelancet.com/action/showPdf?pii=S1473-3099%2822%2900507-2)

**TITLE**: Nirmatrelvir Use and Severe Covid-19 Outcomes during the Omicron Surge

nejm|24TH AUGUST 2022.

BACKGROUND

The oral protease inhibitor nirmatrelvir has shown substantial efficacy in high-risk, unvaccinated patients infected with the B.1.617.2 (delta) variant of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Data regarding the effectiveness of nirmatrelvir in preventing severe coronavirus disease 2019 (Covid-19) outcomes from the B.1.1.529 (omicron) variant are limited.

METHODS

We obtained data for all members of Clalit Health Services who were 40 years of age or older at the start of the study period and were assessed as being eligible to receive nirmatrelvir therapy during the omicron surge. A Cox proportional-hazards regression model with time-dependent covariates was used to estimate the association of nirmatrelvir treatment with hospitalization and death due to Covid-19, with adjustment for sociodemographic factors, coexisting conditions, and previous SARS-CoV-2 immunity status.

RESULTS

A total of 109,254 patients met the eligibility criteria, of whom 3902 (4%) received nirmatrelvir during the study period. Among patients 65 years of age or older, the rate of hospitalization due to Covid-19 was 14.7 cases per 100,000 person-days among treated patients as compared with 58.9 cases per 100,000 person-days among untreated patients (adjusted hazard ratio, 0.27; 95% confidence interval [CI], 0.15 to 0.49). The adjusted hazard ratio for death due to Covid-19 was 0.21 (95% CI, 0.05 to 0.82). Among patients 40 to 64 years of age, the rate of hospitalization due to Covid-19 was 15.2 cases per 100,000 person-days among treated patients and 15.8 cases per 100,000 person-days among untreated patients (adjusted hazard ratio, 0.74; 95% CI, 0.35 to 1.58). The adjusted hazard ratio for death due to Covid-19 was 1.32 (95% CI, 0.16 to 10.75).

CONCLUSIONS

Among patients 65 years of age or older, the rates of hospitalization and death due to Covid-19 were significantly lower among those who received nirmatrelvir than among those who did not. No evidence of benefit was found in younger adults.

Article: [Nirmatrelvir Use and Severe Covid-19 Outcomes during the Omicron Surge | NEJM](https://www.nejm.org/doi/full/10.1056/NEJMoa2204919?query=featured_coronavirus)

**TITLE**: Early oral antiviral use in patients hospitalised with COVID-19

THE LANCET INFECTIOUS DISEASES|24TH AUGUST 2022.

Nearly 2 years after the emergence of SARS-CoV-2, two oral antiviral drugs, molnupiravir and nirmatrelvir–ritonavir, which reduce the risk of COVID-19 progression and death in patients at high risk, were approved for emergency use.

In The Lancet Infectious Diseases, Carlos K H Wong and colleagues1 reported the results of a retrospective analysis evaluating the effectiveness of these two antivirals in patients with mild-to-moderate COVID-19 in a real-world setting. The study included patients admitted to hospital during the SARS-CoV-2 omicron BA.2 wave in Hong Kong between Feb 26, 2022, and April 26, 2022, and who did not require supplemental oxygen at the time of admission. From a cohort of 40 776 hospitalised adult patients with SARS-CoV-2 infection confirmed by RT-PCR or rapid antigen test, the analyses included 1856 patients who received molnupiravir and 890 who received nirmatrelvir–ritonavir who were propensity-score matched (1:1) with control patients (those not treated with either oral antiviral) for comparison. For both antivirals, treatment was started within 2 days of admission to the hospital. In patients with a known date of symptom onset (almost half of the patients), the median time from symptom onset to drug administration was 1 day (IQR 1–3) for both drugs. Early administration of oral antivirals in patients with mild-to-moderate COVID-19 was associated with a significantly lower risk of all-cause mortality (hazard ratio 0·48 [95% CI 0·40–0·59], p<0·0001 for molnupiravir vs matched controls; 0·34 [0·23–0·50], p<0·0001 for nirmatrelvir–ritonavir vs matched controls). Reduced risk of the composite outcome of disease progression (which consisted of all-cause mortality, initiation of invasive mechanical ventilation, admission to an intensive care unit, or the need for oxygen therapy) was also found in oral antiviral recipients compared with their respective control groups (0·60 [0·52–0·69], p<0·0001 for molnupiravir; 0·57 [0·45–0·72], p<0·0001 for nirmatrelvir–ritonavir). Additionally, a low viral load (cycle threshold value ≥30 on RT-PCR) was reached more rapidly in oral antiviral recipients than in the corresponding matched control groups.

Article: [Early oral antiviral use in patients hospitalised with COVID-19](https://www.thelancet.com/action/showPdf?pii=S1473-3099%2822%2900522-9)

**TITLE**: Lung epithelial and myeloid innate immunity in influenza-associated or COVID-19-associated pulmonary aspergillosis: an observational study

THE LANCET RESPIRATORY MEDICINE|24TH AUGUST 2022.

Background

Influenza-associated pulmonary aspergillosis (IAPA) and COVID-19-associated pulmonary aspergillosis (CAPA) affect about 15% of critically ill patients with influenza or COVID-19, respectively. These viral–fungal coinfections are difficult to diagnose and are associated with increased mortality, but data on their pathophysiology are scarce. We aimed to explore the role of lung epithelial and myeloid innate immunity in patients with IAPA or CAPA.

Methods

In this observational study, we retrospectively recruited patients who had been admitted to the intensive care unit (ICU) of University Hospitals Leuven, Belgium, requiring non-invasive or invasive ventilation because of severe influenza or COVID-19, with or without aspergillosis, between Jan 1, 2011, and March 31, 2021, whose bronchoalveolar lavage samples were available at the hospital biobank. Additionally, biobanked in vivo tracheobronchial biopsy samples from patients with IAPA or CAPA and invasive Aspergillus tracheobronchitis admitted to ICUs requiring invasive ventilation between the same dates were collected from University Hospitals Leuven, Hospital Network Antwerp (Belgium), and Amiens-Picardie University Hospital (France). We did nCounter gene expression analysis of 755 genes linked to myeloid innate immunity and protein analysis of 47 cytokines, chemokines, and growth factors on the bronchoalveolar lavage samples. Gene expression data were used to infer cell fractions by use of CIBERSORTx, to perform hypergeometric enrichment pathway analysis and gene set enrichment analysis, and to calculate pathway module scores for the IL-1β, TNF-α, type I IFN, and type II IFN (IFNγ) pathways. We did RNAScope targeting influenza virus or SARS-CoV-2 RNA and GeoMx spatial transcriptomics on the tracheobronchial biopsy samples.

Findings

Biobanked bronchoalveolar lavage samples were retrieved from 166 eligible patients, of whom 40 had IAPA, 52 had influenza without aspergillosis, 33 had CAPA, and 41 had COVID-19 without aspergillosis. We did nCounter gene expression analysis on bronchoalveolar lavage samples from 134 patients, protein analysis on samples from 162 patients, and both types of analysis on samples from 130 patients. We performed RNAScope and spatial transcriptomics on the tracheobronchial biopsy samples from two patients with IAPA plus invasive Aspergillus tracheobronchitis and two patients with CAPA plus invasive Aspergillus tracheobronchitis. We observed a downregulation of genes associated with antifungal effector functions in patients with IAPA and, to a lesser extent, in patients with CAPA. We found a downregulated expression of several genes encoding proteins with functions in the opsonisation, recognition, and killing of conidia in patients with IAPA versus influenza only and in patients with CAPA versus COVID-19 only. Several genes related to LC3-associated phagocytosis, autophagy, or both were differentially expressed. Patients with CAPA had significantly lower neutrophil cell fractions than did patients with COVID-19 only. Patients with IAPA or CAPA had downregulated IFNγ signalling compared with patients with influenza only or COVID-19 only, respectively. The concentrations of several fibrosis-related growth factors were significantly elevated in the bronchoalveolar lavage fluid from patients with IAPA versus influenza only and from patients with CAPA versus COVID-19 only. In one patient with CAPA, we visualised an active or very recent SARS-CoV-2 infection disrupting the epithelial barrier, facilitating tissue-invasive aspergillosis.

Interpretation

Our results reveal a three-level breach in antifungal immunity in IAPA and CAPA, affecting the integrity of the epithelial barrier, the capacity to phagocytise and kill Aspergillus spores, and the ability to destroy Aspergillus hyphae, which is mainly mediated by neutrophils. The potential of adjuvant IFNγ in the treatment of IAPA and CAPA should be investigated.

Article: [Lung epithelial and myeloid innate immunity in influenzaassociated or COVID-19-associated pulmonary aspergillosis: an observational study](https://www.thelancet.com/action/showPdf?pii=S2213-2600%2822%2900259-4)

**TITLE**: When disaster strikes fungi take control

THE LANCET RESPIRATORY MEDICINE|24TH AUGUST 2022.

During 1 billion years of evolution, fungi have not only become masters of survival, but have actually leveraged disasters. 65 million years ago, when an asteroid strike wiped out 70% of all life on Earth by sending dusty debris into the atmosphere, fungi strived, taking advantage of the plants decaying due to the lack of sunlight. Back then, fungi infected and killed reptiles in their masses, potentially contributing to the extinction of the dinosaurs.1 By contrast, fungi were not able to survive at the high body temperatures of mammals and thereby contributed to the succession of mammals as the new dominant species on Earth. Ever since then, fungi have maintained their integral role in the development of life.

Although fungi have made us who we are and have paved the way for human civilisation, they sometimes cause harm and can even kill humans.1 Fungi often hit when humans suffer, causing outbreaks after tsunamis, hurricanes, and other natural disasters.2 Where climate change negatively impacts us, fungi strive, quickly adapting to higher temperatures and becoming more virulent and potent; Candida auris, for example, is now emerging as a threat for humankind.3 During the past decade, fungi have also come to our attention as a cause of deadly superinfections in patients with viral infection-associated acute respiratory failure.4 We used to find these fungal superinfections mainly in patients with severe influenza, but the number of cases has been potentiated by the COVID-19 pandemic, with SARS-CoV-2 infecting more than 500 million individuals at a mortality rate of more than 1%.5 Although mucormycosis6 and candidiasis5 have also been increasingly observed, COVID-19-associated pulmonary aspergillosis (CAPA) is the predominant fungal disease associated with high morbidity and mortality in patients with COVID-19 and acute respiratory failure. Several immunological mechanisms have been hypothesised to contribute to the development of viral infection-associated pulmonary aspergillosis (VAPA),but whether VAPA represents its own disease entity with a pathogenesis different to that of other forms of invasive pulmonary aspergillosis in the intensive care unit (ICU) setting is debated.

Article: [When disaster strikes fungi take control (thelancet.com)](https://www.thelancet.com/action/showPdf?pii=S2213-2600%2822%2900268-5)

**TITLE**: Despite Its Fan Base, Newly Authorized “Traditional” Novavax COVID-19 Vaccine Is Having Trouble Gaining a Foothold in the US

jama|24TH AUGUST 2022.

To say that Krystal Lashley went to great lengths to get the Novavax COVID-19 vaccine (NVX-CoV2373) would be a gross understatement.

In April, Lashley traveled roughly 3700 miles from her home in Metuchen, New Jersey, to a pharmacy in Paris, France, for her first dose. She then flew to the UK, where she stayed with relatives before returning to Paris a month later for her second dose of NVX-CoV2373.

Article: [Despite Its Fan Base, Newly Authorized “Traditional” Novavax COVID-19 Vaccine Is Having Trouble Gaining a Foothold in the US | Vaccination | JAMA | JAMA Network](https://jamanetwork.com/journals/jama/fullarticle/2795814)

**TITLE**: Diffuse alveolar damage patterns reflect the immunological and molecular heterogeneity in fatal COVID-19

eBiomedicine|23rd AUGUST 2022.

Background

Severe COVID-19 lung disease exhibits a high degree of spatial and temporal heterogeneity, with different histological features coexisting within a single individual. It is important to capture the disease complexity to support patient management and treatment strategies. We provide spatially decoded analyses on the immunopathology of diffuse alveolar damage (DAD) patterns and factors that modulate immune and structural changes in fatal COVID-19.

Methods

We spatially quantified the immune and structural cells in exudative, intermediate, and advanced DAD through multiplex immunohistochemistry in autopsy lung tissue of 18 COVID-19 patients. Cytokine profiling, viral, bacteria, and fungi detection, and transcriptome analyses were performed.

Findings

Spatial DAD progression was associated with expansion of immune cells, macrophages, CD8+ T cells, fibroblasts, and (lymph)angiogenesis. Viral load correlated positively with exudative DAD and negatively with disease/hospital length. In all cases, enteric bacteria were isolated, and Candida parapsilosis in eight cases. Cytokines correlated mainly with macrophages and CD8+T cells. Pro-coagulation and acute repair were enriched pathways in exudative DAD whereas intermediate/advanced DAD had a molecular profile of elevated humoral and innate immune responses and extracellular matrix production.

Interpretation

Unraveling the spatial and molecular immunopathology of COVID-19 cases exposes the responses to SARS-CoV-2-induced exudative DAD and subsequent immune-modulatory and remodeling changes in proliferative/advanced DAD that occur side-by-side together with secondary infections in the lungs. These complex features have important implications for disease management and the development of novel treatments.

Article: [Diffuse alveolar damage patterns reflect the immunological and molecular heterogeneity in fatal COVID-19](https://www.thelancet.com/action/showPdf?pii=S2352-3964%2822%2900411-X)

**TITLE**: Time to Stop Using Ineffective Covid-19 Drugs

nejm|18th AUGUST 2022.

In practicing evidence-based medicine, physicians use the best evidence currently available on safety and efficacy in making decisions on treatment choices for their patients. During the Covid-19 pandemic, some of the early treatment trials were rushed, leading to studies that were badly conducted1 or had too few patients.2 As a result, initial evidence of the efficacy of some Covid-19 treatments could not be replicated,3,4 but these drugs were already in widespread use by then, and some clinicians have been reluctant to change to proven efficacious alternatives. Ivermectin and fluvoxamine, in particular, are still widely prescribed, even though evidence has been steadily accumulating to indicate that both treatments at acceptable doses are not effective for Covid-19

Editorial: [Time to Stop Using Ineffective Covid-19 Drugs | NEJM](https://www.nejm.org/doi/full/10.1056/NEJMe2209017)

**Title:** Immunity after COVID‐19 vaccination in people with higher risk of compromised immune status: a scoping review

Cochrane Database of Systematic Reviews|09th AUGUST 2022

High efficacy in terms of protection from severe COVID‐19 has been demonstrated for several SARS‐CoV‐2 vaccines. However, patients with compromised immune status develop a weaker and less stable immune response to vaccination. Strong immune response may not always translate into clinical benefit, therefore it is important to synthesise evidence on modified schemes and types of vaccination in these population subgroups for guiding health decisions. As the literature on COVID‐19 vaccines continues to expand, we aimed to scope the literature on multiple subgroups to subsequently decide on the most relevant research questions to be answered by systematic reviews.

Objectives  
To provide an overview of the availability of existing literature on immune response and long‐term clinical outcomes after COVID‐19 vaccination, and to map this evidence according to the examined populations, specific vaccines, immunity parameters, and their way of determining relevant long‐term outcomes and the availability of mapping between immune reactivity and relevant outcomes.

Search methods  
We searched the Cochrane COVID‐19 Study Register, the Web of Science Core Collection, and the World Health Organization COVID‐19 Global literature on coronavirus disease on 6 December 2021.   
  
Selection criteria  
We included studies that published results on immunity outcomes after vaccination with BNT162b2, mRNA‐1273, AZD1222, Ad26.COV2.S, Sputnik V or Sputnik Light, BBIBP‐CorV, or CoronaVac on predefined vulnerable subgroups such as people with malignancies, transplant recipients, people undergoing renal replacement therapy, and people with immune disorders, as well as pregnant and breastfeeding women, and children. We included studies if they had at least 100 participants (not considering healthy control groups); we excluded case studies and case series.

Data collection and analysis  
We extracted data independently and in duplicate onto an online data extraction form. Data were represented as tables and as online maps to show the frequency of studies for each item. We mapped the data according to study design, country of participant origin, patient comorbidity subgroup, intervention, outcome domains (clinical, safety, immunogenicity), and outcomes.

Main results  
Out of 25,452 identified records, 318 studies with a total of more than 5 million participants met our eligibility criteria and were included in the review. Participants were recruited mainly from high‐income countries between January 2020 and 31 October 2021 (282/318); the majority of studies included adult participants (297/318).

Haematological malignancies were the most commonly examined comorbidity group (N = 54), followed by solid tumours (N = 47), dialysis (N = 48), kidney transplant (N = 43), and rheumatic diseases (N = 28, 17, and 15 for mixed diseases, multiple sclerosis, and inflammatory bowel disease, respectively). Thirty‐one studies included pregnant or breastfeeding women.

The most commonly administered vaccine was BNT162b2 (N = 283), followed by mRNA‐1273 (N = 153), AZD1222 (N = 66), Ad26.COV2.S (N = 42), BBIBP‐CorV (N = 15), CoronaVac (N = 14), and Sputnik V (N = 5; no studies were identified for Sputnik Light). Most studies reported outcomes after regular vaccination scheme.

The majority of studies focused on immunogenicity outcomes, especially seroconversion based on binding antibody measurements and immunoglobulin G (IgG) titres (N = 179 and 175, respectively). Adverse events and serious adverse events were reported in 126 and 54 studies, whilst SARS‐CoV‐2 infection irrespective of severity was reported in 80 studies. Mortality due to SARS‐CoV‐2 infection was reported in 36 studies.

Authors' conclusions  
Up to 6 December 2021, the majority of studies examined data on mRNA vaccines administered as standard vaccination schemes (two doses approximately four to eight weeks apart) that report on immunogenicity parameters or adverse events. Clinical outcomes were less commonly reported, and if so, were often reported as a secondary outcome observed in seroconversion or immunoglobulin titre studies. As informed by this scoping review, two effectiveness reviews (on haematological malignancies and kidney transplant recipients) are currently being conducted.

Article: [Immunity after COVID-19 vaccination in people with higher risk ofcompromised immune status: a scoping review (Review)](https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD015021/epdf/full)

**Title:** Outcomes of COVID-19 Vaccination–Related Incidental Axillary Adenopathy in Women Undergoing Breast MRI

JOURNAL OF BREAST IMAGING |JULY / AUGUST 2022

Objective  
To assess the frequency, management, and early outcomes of COVID-19 vaccine–related adenopathy on breast MRI.  
Methods  
This IRB-exempt retrospective study reviewed patients who underwent breast MRI following COVID-19 vaccine approval in the U.S. from December 14, 2020, to April 11, 2021 (N = 1912) and compared patients who underwent breast MRI the year prior to the pandemic, March 13, 2019, to March 12, 2020 (N = 5342). Study indication, patient age, date of study, date and type of vaccination(s), time difference between study and vaccinations, lymph node–specific and overall management recommendations, and outcomes of additional examinations were recorded. Differences in the final assessment categories between the subjects scanned pre-pandemic and post-vaccine were compared using the Fisher exact test.  
Results  
Vaccine-related adenopathy was mentioned in 67 breast MRI reports; only 1 in the pre-pandemic group. There were no clinically relevant differences in patient demographics between groups. There was a statistically significant increase in BI-RADS 0 assessments between the pre-pandemic and post-vaccine approval groups—0.8% (45/5342) versus 1.8% (34/1912) (P = 0.001) and BI-RADS 3 assessments—6.5% (348/5342) versus 9.2% (176/1912) (P < 0.0001). Of the 29 patients who underwent additional imaging (range, 2–94 days following MRI) and the 2 patients who underwent biopsy, 47% (31/66), none were found to have malignant adenopathy.  
Conclusion  
COVID-19 vaccination is associated with transient axillary adenopathy of variable duration. This leads to additional imaging in women undergoing breast MRI, so far with benign outcomes, and this may affect audits of outcomes of MRI.

Article: [Outcomes of COVID-19 Vaccination–Related Incidental Axillary Adenopathy in Women Undergoing Breast MR](https://watermark.silverchair.com/wbac036.pdf?token=AQECAHi208BE49Ooan9kkhW_Ercy7Dm3ZL_9Cf3qfKAc485ysgAAAr0wggK5BgkqhkiG9w0BBwagggKqMIICpgIBADCCAp8GCSqGSIb3DQEHATAeBglghkgBZQMEAS4wEQQM_MOtool7N-ffvpSaAgEQgIICcIgeGu_LxEDyhsh6UugRozOBD0pyYD4RltFJBP6jrbjrwrNQ00nj0gtwe5Rm7PL0MMQ8t_q0o2VYlsCBr-1ENsfWrr2wObqxB2agQ-ycrmIw3gX9k9h4jSdoKrQ9hgi3IeIxuDaMWOz6omlIpbGf-XJaVbIUb_9MkPfWQ-RD4riyvCzo8c4kBwIhj5Idcd0HCDuNmgyPiE7HbHRIR5BV2VLu-FS1lNy7p5Y14SFVd8RM2AJ6p6m1W5UnCmmbmcgxhgIcITBqgCHHnaCQsFUVg7E-Q4Fy2lXyoEqo1lEq_r9BCKOzi1dYA7ToquiT-cFV57pBgMeiFrtEsX3H0jUZO8Y12fbsSQbA8Qao_0K-APFPrjSyHQSvNdPBTr1L0R5LPIIEkyS-jaRKKSAq4MJRoDvepbxeNs-PpUQjsmJCZ_9lfpeaDxFHDgTio3mfgari0pACkLW_GVbJxl73TwT09PcNU-28CuHbAS-bD3EeSa09hCx-UgQl9eO6cFztvO__zi7_96G1r5CaX60VQ1Cx-GpUjfQNKcvS0i_Gthr_1jfk9yyakCky4ILp5tRBTN45_bqmJU4IdeUTMCb__yD6wNmxAp9kePEf2P-rOXhJ_13DO9vn6yOnkdY0SK4ATrp-Pg3XvIHAMPnGiMbLE_nVPmT0kt6bDwFB2-JGxb1UjVx3h8fsF9ivnl4Ye_-MKglF3H6YpUNyNeVVSb8B_EQlIcDBnMbaEFDelJkLh-AQySInrQ30mKcoEXcBDNWb6Uw-ZRrCv7zy1_1jSB4Tjl2V-KyHxJvYgJGODdXU_xbzRQdlTir9PDXoGLbH_a6Sdcspcg)

**Title:** Absence of negativization of nasal swab test and frailty as risk factors for mortality in elderly COVID-19 patients admitted in long-term care facilities

european geriatric medicine.|01st AUGUST 2022

A limited amount of data is now available on prognostic factors and mortality among elderly people resident in Long-Term Care facilities and in post-acute units. These populations (in particular those with underlying chronic medical conditions) seem to have higher risk of morbidity and mortality related to COVID-19 disease, but further evidence is needed. The aim of our study is to investigate the impact of some well-known prognostic factors in elderly patients (≥ 65 years) with COVID-19 admitted in the Long-Term Care setting in AUSL Ferrara, Italy. We performed binary regression logistic analysis for some variables (demographic data, clinical data including nasal swab test (NST) at discharge and frailty assessments) to find potential predictors of mortality. We subsequently tested statistically significant variables using Kaplan–Meier curves and Cox-regression models to find survival outcomes and related hazard ratio.

Article: [Absence of negativization of nasal swab test and frailty as risk factors for mortality in elderly COVID‑19 patients admitted in long‑term care facilities](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9166148/pdf/41999_2022_Article_657.pdf)

**Title:**

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**rates and varients**

**Title:** Analysis of COVID-19 Incidence and Severity Among Adults Vaccinated With 2-Dose mRNA COVID-19 or Inactivated SARS-CoV-2 Vaccines With and Without Boosters in Singapore

jama |26th AUGUST

Question What is the rate and severity of COVID-19 in adult recipients of 2 or 3 doses of mRNA or inactivated SARS-CoV-2 vaccines?

Findings In this cohort study including 2 441 581 individuals aged 30 years or more, the estimated effectiveness of the mRNA booster against Omicron-confirmed infections ranged from 31.7% to 41.3% with rapid waning over time. Estimated mRNA booster effectiveness against severe COVID-19 was 87.4% with no evidence of waning up to 6 months after boosting, while the estimated 3-dose inactivated SARS-CoV-2 booster effectiveness against severe COVID-19 was 69.6%.

Meaning These results suggest that booster mRNA vaccine protection was durable against severe COVID-19 over 6 months regardless of vaccine combination, and 3-dose inactivated SARS-CoV-2 vaccination provided greater protection than 2-dose inactivated SARS-COV-2 vaccine but less protection compared with 3-dose mRNA.

Article: [Analysis of COVID-19 Incidence and Severity Among Adults Vaccinated With 2-Dose mRNA COVID-19 or Inactivated SARS-CoV-2 Vaccines With and Without Boosters in Singapore | Infectious Diseases | JAMA Network Open | JAMA Network](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795654)

**Title:** Association of COVID-19 Infection With Wearing Glasses in a High-Prevalence Area in Denmark and Sweden

jama |25th AUGUST

Question Does wearing eyeglasses protect against COVID-19 transmission?

Findings In this cohort study of 2120 individuals who work at the same rescue corps, a lower COVID-19 prevalence was found among persons wearing glasses in Sweden (8.1% vs 12.6%) but not in Denmark (2.5% vs 2.2%). However, an association was not noted after adjusting for relevant confounding factors.

Meaning These results provide inconclusive findings regarding whether wearing one’s own glasses is associated with a decreased risk of COVID-19 infections when adjusting for confounding factors.

Article: [Association of COVID-19 Infection With Wearing Glasses in a High-Prevalence Area in Denmark and Sweden | Ophthalmology | JAMA Ophthalmology | JAMA Network](https://jamanetwork.com/journals/jamaophthalmology/fullarticle/2795676)

**Title:** Accuracy of 2 Rapid Antigen Tests During 3 Phases of SARS-CoV-2 Variants

jama |24th AUGUST

Question Are rapid antigen tests analytically and clinically accurate for detecting variants of SARS-CoV-2?

Findings In this diagnostic study of 802 adults reporting COVID-19–like symptoms within the prior 5 days, no significant differences were found in the analytical limit of detection or clinical diagnostic accuracy of 2 rapid antigen tests across 3 epidemic phases of SARS-CoV-2 variants. The positive percent agreement ranged from 81% to 91% across the 3 phases of variants.

Meaning This study found that 2 rapid antigen tests had consistent analytical and clinical accuracy across 3 phases of circulating SARS-CoV-2 variants.

Article: [Accuracy of 2 Rapid Antigen Tests During 3 Phases of SARS-CoV-2 Variants | Infectious Diseases | JAMA Network Open | JAMA Network](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795599)

**Title:** Difference in clinical features of SARS-CoV-2 in pediatric patients before and after emergence of P.1

PAEDIATRIC RESEARCH |23rd AUGUST

Background  
The P.1 variant is a Variant of Concern announced by the WHO. The present work aimed to characterize the clinical features of pediatric patients with SARS-CoV-2 before and after the emergence of P.1.  
Methods  
This is a cohort study. Data of symptomatic patients younger than 18 years diagnosed with COVID-19 by PCR tests registered in Painel COVID-19 Amazonas were analyzed.  
Results  
A total of 4080 symptomatic pediatric patients were identified in the database between March 2020 and July 2021, of which 1654 were categorized as pre-P.1 and 978 as P.1-dominant cases, based on the prevalence of P.1 of >90% in the North Region, Brazil. Lower case-fatality rate was observed in non-infants infected during the P.1-dominant period (0.9% vs. 2.2%). In general, patients infected during the P.1-dominant period had less fever (70.8% vs. 74.2%) and less lower respiratory tract symptoms (respiratory distress: 11.8% vs. 18.9%, dyspnea: 27.9% vs. 34.5%) yet higher prevalence of neurological symptoms, headache for example (42.8% vs. 5.9%).  
Conclusions  
The prevalence of symptoms of COVID-19 can differ across different periods of variant dominance. Lower prevalence of fever during the P.1-dominant period may reduce the effectiveness of symptom-based screening in public premises where laboratory diagnostic tests are not available.  
Impact  
The prevalence rate of symptoms of SARS-CoV-2 infection can differ among different variants.  
The present work documents the difference in the clinical features of SARS-CoV-2 in patients aged below 18 years before and after the emergence of P.1, the first study of its kind. Unlike previous studies that focus solely on hospitalized cases, the present work considers both mild and severe cases. While non-infants had a lower fatality rate, lower prevalence of fever associated with the emergence of P.1 may reduce the effectiveness of symptom-based screening in public premises where laboratory diagnostic tests are not available.

Article: [Difference in clinical features of SARS-CoV-2 in pediatric patients before and after emergence of P.1](https://www.nature.com/articles/s41390-022-02046-3.pdf)

**Title:** Antibody Testing’s Limits for Detecting Prior SARS-CoV-2 Infection

jama |24th AUGUST

Serology tests that detect antibodies to the SARS-CoV-2 nucleocapsid protein have played a key role in tracking infections in clinical trials and at population levels because they reveal prior rather than acute infection. But currently used messenger RNA (mRNA) vaccines elicit antibodies to the novel coronavirus’ spike protein rather than the nucleocapsid protein, raising questions about how tests that measure nonspike antibodies will perform in areas with high vaccination coverage.

Article: [Antibody Testing’s Limits for Detecting Prior SARS-CoV-2 Infection | Pathology and Laboratory Medicine | JAMA | JAMA Network](https://jamanetwork.com/journals/jama/fullarticle/2795530)

**Title:** Variation in reported SARS-CoV-2 cases after testing policy changes

the lancet infectious diseases |23rd AUGUST

SARS-CoV-2 testing policies in England continually varied up to April 1, 2022, when, as part of the UK Government's Living with COVID-19 strategy, access to free community testing ended for most of the population.1 These policy changes were reflected in the number of COVID-19 cases reported in England. Cornelia Adlhoch and Helena de Carvalho Gomes2 discussed how surveillance systems for SARS-CoV-2 need to be representative to ensure the provision of high-quality information to understand the ongoing impact of COVID-19.

Following the changes to testing, we investigated trends and demographics of 10 862 278 COVID-19 cases reported to the UK Health Security Agency between Nov 1, 2021, and June 30, 2022, detected by PCR at National Health Service (NHS) laboratories or in the community. Of the 10 862 278 positive cases that were extracted, 10 356 716 (95·3%) were community cases. Within this group, there was a shift from most reported cases being identified by laboratory-reported PCR to mostly by self-reported lateral flow device (LFD), coinciding with the cessation of PCR confirmatory testing of initial LFD-positive results on Jan 11, 2022.

Article: [Variation in reported SARS-CoV-2 cases after testing policy changes (thelancet.com)](https://www.thelancet.com/action/showPdf?pii=S1473-3099%2822%2900572-2)

**Title:** Association of SARS-CoV-2 Load in Wastewater With Reported COVID-19 Cases in the Tokyo 2020 Olympic and Paralympic Village From July to September 2021

the lancet infectious diseases |22ND AUGUST

Because SARS-CoV-2 transmission was a major concern during the Tokyo 2020 Olympic and Paralympic Games, wastewater surveillance,1 mandatory daily screenings with antigen saliva tests,2 and polymerase chain reaction (PCR) tests for close contacts of individuals with confirmed cases3 were conducted in the Olympic and Paralympic Village. In this cross-sectional study, we investigated the association of SARS-CoV-2 load in wastewater with the numbers of confirmed COVID-19 cases and tests for close contacts.

Article: [Association of SARS-CoV-2 Load in Wastewater With Reported COVID-19 Cases in the Tokyo 2020 Olympic and Paralympic Village From July to September 2021 | Infectious Diseases | JAMA Network Open | JAMA Network](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795496)

**Title:** Incubation Period of COVID-19 Caused by Unique SARS-CoV-2 Strains

A Systematic Review and Meta-analysis

JAMA |22ND AUGUST

Question What are the incubation periods of COVID-19 caused by different SARS-CoV-2 strains?

Findings In this systematic review and meta-analysis of 141 articles, the pooled incubation period was 6.57 days. The incubation periods of COVID-19 caused by the Alpha, Beta, Delta, and Omicron variants were 5.00, 4.50, 4.41, and 3.42 days, respectively.

Meaning These results suggest that with the evolution of mutant strains, the incubation period of COVID-19 decreased gradually from Alpha variant to Omicron variant.

Article: [Incubation Period of COVID-19 Caused by Unique SARS-CoV-2 Strains: A Systematic Review and Meta-analysis | Infectious Diseases | JAMA Network Open | JAMA Network](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795489)

**Title:** COVID-19 Disease Severity in Persons Infected With Omicron BA.1 and BA.2 Sublineages and Association With Vaccination Status

jama |22ND AUGUST

Infection with the SARS-CoV-2 Omicron variant is associated with less severe disease compared with the Delta variant.1-3 Two main Omicron sublineages—BA.1 and BA.2—have variable geographic distribution. In Qatar, BA.1 was initially predominant but was quickly replaced by BA.2 as the predominant sublineage. This study sought to determine and compare the severity of SARS-CoV-2 infection among persons infected with these sublineages.

Article: [COVID-19 Disease Severity in Persons Infected With Omicron BA.1 and BA.2 Sublineages and Association With Vaccination Status | Infectious Diseases | JAMA Internal Medicine | JAMA Network](https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2795326)

**Title:** Utility of Newborn Dried Blood Spots to Ascertain Seroprevalence of SARS-CoV-2 Antibodies Among Individuals Giving Birth in New York State, November 2019 to November 2021

JAMA |22ND AUGUST

Question Can analysis of newborn dried blood spot (DBS) samples be used to monitor SARS-CoV-2 seroprevalence in infants and individuals giving birth?

Findings In this repeated cross-sectional study, DBS samples from 415 293 infants born in New York State from November 1, 2019, to November 30, 2021, were analyzed for SARS-CoV-2 antibodies. Statewide and regional seroprevalence data reflect the fluctuations in reported COVID-19 cases and vaccinations among reproductive-aged females during this period in New York State.

Meaning These findings suggest that antibody testing of newborn DBS samples is an effective way to conduct large-scale monitoring of SARS-CoV-2 seroprevalence among individuals recently giving birth.

Article: [Utility of Newborn Dried Blood Spots to Ascertain Seroprevalence of SARS-CoV-2 Antibodies Among Individuals Giving Birth in New York State, November 2019 to November 2021 | Infectious Diseases | JAMA Network Open | JAMA Network](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795491)

**Title:** Clinical Features and Burden of Postacute Sequelae of SARS-CoV-2 Infection in Children and Adolescents

JAMA |22ND AUGUST

Question What are the incidence and clinical features of postacute sequelae of SARS-CoV-2 infection (PASC) in children?

Findings In this cohort study including 659 286 children tested for SARS-CoV-2 by antigen or polymerase chain reaction, the symptom, condition, and medication with the strongest associations with SARS-CoV-2 infection were loss of taste/smell, myocarditis, and cough and cold preparations, respectively. The incidence proportion of non–multisystem inflammatory syndrome in children–related PASC in the viral test–positive group exceeded the incidence proportion in the viral test–negative group by 3.7%, with increased rates associated with acute illness severity, young age, and medical complexity.

Meaning PASC in children appears to be uncommon, with features that differ from adults.

Article: [Clinical Features and Burden of Postacute Sequelae of SARS-CoV-2 Infection in Children and Adolescents | Adolescent Medicine | JAMA Pediatrics | JAMA Network](https://jamanetwork.com/journals/jamapediatrics/fullarticle/2795569)

**Title:** The short term safety of COVID-19 vaccines in Australia: AusVaxSafety active surveillance, February - August 2021

Observational Study|15TH AUGUST

Objective  
To assess the short term safety of the COVID-19 vaccines Comirnaty (Pfizer–BioNTech BNT162b2) and Vaxzevria (AstraZeneca ChAdOx1) in Australia.  
  
Design  
Prospective observational cohort study; online surveys by AusVaxSafety, a national active vaccine safety surveillance system, three and eight days after vaccination.  
  
Setting, participants  
People aged 16 years or more who received COVID-19 vaccines at sentinel vaccination hubs, general practices, or Aboriginal Community Controlled Health Organisation clinics, 22 February – 30 August 2021.  
  
Main outcome measures  
Primary outcome: proportion of respondents who reported any adverse event following immunisation (AEFI) 0–3 days after vaccination. Secondary outcomes: proportions of respondents who reported specific adverse events or medical review for AEFI within seven days of vaccination; impact on usual daily activities; recovery.  
  
Results  
4 851 480 people received COVID-19 vaccines at participating sentinel sites during the study period (25% of all COVID-19 vaccine doses administered in Australia to 30 August 2021). 3 035 983 people responded to both surveys (response rate, 62.6%); 35.9% of respondents reported one or more AEFI 0–3 days after Comirnaty dose 1, 54.7% after Comirnaty dose 2, 52.8% after Vaxzevria dose 1, and 22.0% after Vaxzevria dose 2. Local pain, fatigue, headache, and myalgia were the most frequently reported symptoms. After adjusting for demographic characteristics, vaccination site type, jurisdiction, and self-reported medical conditions, the odds of reporting any AEFI were higher for women than men (range of adjusted odd ratios [aORs], by vaccine and dose, 1.53–1.84), for people with a history of anaphylaxis (aOR range, 1.28–1.45), and for people reporting certain underlying conditions, including obesity (aOR range, 1.15–1.75), immunodeficiency (aOR range, 1.04–2.24), or chronic inflammatory disease (aOR range, 1.05–1.75). 0.9% of respondents sought medical advice in the three days following vaccination, most frequently after Comirnaty dose 2 (1.4%) and Vaxzevria dose 1 (1.2%).  
  
Conclusion  
AusVaxSafety active surveillance affirms the short term safety profile of Comirnaty and Vaxzevria vaccines in a large population sample during the first six months of the Australian COVID-19 vaccination program.

Article: [The short term safety of COVID‐19 vaccines in Australia: AusVaxSafety active surveillance, February – August 2021 (wiley.com)](https://onlinelibrary.wiley.com/doi/epdf/10.5694/mja2.51619)

recovery

**Title:** Action is needed to tackle the clinical, psychological and socioeconomic impact of perinatal COVID-19

Acta paediatrica|12TH AUGUST

Clinical features of patients who visited the outpatient clinic for long COVID in JapanAction is needed to tackle the clinical, psychological and socioeconomic impact of perinatal COVID-19The COVID-19 pandemic has turned perinatal healthcare into a worldwide public health challenge. Although initial data did not demonstrate pregnancy as a more susceptible period to adverse outcomes of severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infection, an increasing number of reports now certify maternal illness as a high-risk condition for the development of maternal-fetal complications. Despite the rarity of SARS-CoV-2 vertical transmission, severe maternal illness might induce adverse perinatal and neonatal outcomes. Additionally, perinatal COVID-19 data may raise concerns about long-term harmful consequences to the offspring in the framework of non-communicable diseases. The World Health Organisation, as well as scientific literature, consider the protection of the maternal-fetal dyad against COVID-19 as a critical issue and, therefore, strongly promote and encourage the vaccination of pregnant and lactating women. Furthermore, the pandemic has triggered an unprecedented recession, leading to historic levels of unemployment and deprivation, while health, societal, economic and gender inequities particularly affecting low-income and middle-income countries, have increased. This mini-review provides an updated brief report on historical, clinical, psychological and socioeconomic aspects of the COVID-19 pandemic based on 10 lectures presented at the 9th Maria-Delivoria-Papadopoulos Perinatal Symposium, held virtually on 19 March 2022.

Article: [Action is needed to tackle the clinical, psychological and socioeconomic impact of perinatal COVID‐19 (wiley.com)](https://onlinelibrary.wiley.com/doi/epdf/10.1111/apa.16513)

public health and health inequalities

**Title:** Short-term and long-term impacts of COVID-19 on economic vulnerability: a population-based longitudinal study (COVIDENCE UK)

BMJ Open |23rd AUGUST

Objective: To determine whether COVID-19 has a significant impact on adequacy of household income to meet basic needs (primary outcome) and work absence due to sickness (secondary outcome), both at the onset of illness (short term) and subsequently (long term).  
Design: Multilevel mixed regression analysis of self-reported data from monthly online questionnaires, completed 1 May 2020 to 28 October 2021, adjusting for baseline characteristics including age, sex, socioeconomic status and self-rated health.  
Setting and participants: Participants (n=16 910) were UK residents aged 16 years or over participating in a national longitudinal study of COVID-19 (COVIDENCE UK).  
Results: Incident COVID-19 was independently associated with increased odds of participants reporting household income as being inadequate to meet their basic needs in the short term (adjusted OR (aOR) 1.39, 95% CI 1.12 to 1.73) though this did not persist in the long term (aOR 1.00, 95% CI 0.86 to 1.16). Exploratory analysis revealed a stronger short-term association among those who reported long COVID, defined as the presence of symptoms lasting more than 4 weeks after disease onset, than those reporting COVID-19 without long COVID (p for trend 0.002). Incident COVID-19 associated with increased odds of reporting sickness absence from work in the long term (aOR 4.73, 95% CI 2.47 to 9.06) but not in the short term (aOR 1.34, 95% CI 0.52 to 3.49).  
Conclusions: We demonstrate an independent association between COVID-19 and increased risk of economic vulnerability among COVIDENCE participants, measured by both household income sufficiency and sickness absence from work. Taking these findings together with pre-existing research showing that socioeconomic disadvantage increases the risk of developing COVID-19, this may suggest a 'vicious cycle' of impaired health and poor economic outcomes.

Article: [Short-term and long-term impacts of COVID-19 on economic vulnerability: a population-based longitudinal study (COVIDENCE UK)](https://bmjopen.bmj.com/content/bmjopen/12/8/e065083.full.pdf)

**Title:** US CDC announces major changes after criticism of its responses to covid-19 and monkeypox

BMJ|23RD August

The US national public health agency, the Centers for Disease Control and Prevention (CDC), will make major changes to its structure and systems in the light of a review of its emergency response to the covid-19 pandemic.

Article: [US CDC announces major changes after criticism of its responses to covid-19 and monkeypox (bmj.com)](https://www.bmj.com/content/bmj/378/bmj.o2074.full.pdf)

**Title:** Factors Associated with COVID-19 Vaccine Hesitancy in Uganda: A Population-Based Cross-Sectional Survey

International Journal of General Medicine|27th August

Vaccination toward coronavirus disease (COVID-19) has been recommended and adopted as one of the measures of reducing the spread of this novel disease worldwide. Despite this, vaccine uptake among the Ugandan population has been low with reasons surrounding this being unknown. This study aimed to investigate the factors associated with COVID-19 vaccine hesitancy in Uganda. Methods: A cross-sectional study was conducted on a total of 1042 adults in the districts of Mukono, Kiboga, Kumi, Soroti, Gulu, Amuru, Mbarara and Sheema from June to November 2021. Data were analyzed using STATA v.15. Barriers to vaccination were analyzed descriptively, while a binary logistic regression model was used to establish the factors associated with COVID-19 vaccine hesitancy. Results: Overall, COVID-19 vaccine hesitancy was 58.6% (611). Respondents from urban areas and those in the eastern or northern region had increased odds of vaccine hesitancy. Further, higher education level and having knowledge on how COVID-19 is transmitted significantly reduced the odds of vaccine hesitancy. The study also noted individual perception such as COVID-19 kills only people with underlying medical conditions, as well as limited awareness on vaccine types or vaccination areas as the main reasons to vaccine hesitancy. Relatedly, other misconceptions like the ability of the vaccine to cause infertility, or spreading the virus Into the body, and acknowledgment of alcohol as a possible cure were other reasons for vaccine hesitancy. Conclusion: The proportion of COVID-19 vaccine hesitancy is still high among the population with this varying across regions. This is driven by low education level and limited awareness on the vaccination as well as perceived myths and misconceptions. The study recommends mass sensitization of the population on the benefits of vaccination using various channels as well as rolling out Community-based outreach vaccination campaigns across the country.

Article: [Factors Associated with COVID-19 Vaccine Hesitancy in Uganda: A Population-Based Cross-Sectional Survey](file:///\\trftfs01\Dept_Home\Library%20Services\Joint%20Services\Current%20Awareness\Bulletins\Covid\Weekly%20update\IJGM_A_372386%206837..6847%20(dovepress.com))

**Title:** Impact of health literacy on anxiety and depressive symptoms in pregnant women in Japan during the COVID-19 pandemic

nature|18th August

To investigate the relationships between communicative and critical health literacy (CCHL) and anxiety and depressive symptoms (ads) in pregnant women during the coronavirus disease 2019 (covid-19) pandemic. A cross-sectional study was conducted and 5466 pregnant women responded in japan in September 2020. A Kessler 6 scale (k6) score ≥ 10, an Edinburgh postnatal depression scale (EPDs) score ≥ 13, and four CCHL groups were analyzed using a logistic regression model and trend test. The proportions of pregnant women with a k6 score ≥ 10 and EPDS score ≥ 13 were 13.5 and 15.4%, respectively. In comparisons with the low CCHl group, the adjusted odds ratio (95% CI) for anxiety symptoms was 0.770 (0.604–0.982) in the high CCHL group, while those for depressive symptoms were 0.777 (0.639–0.946), 0.665 (0.537–0.824), and 0.666 (0.529–0.838) in the lower, higher, and high cchl groups (all p < 0.05), respectively, after adjustments for potential confounding factors, such as age, weeks of gestation, complications, history, number of children, marital status, education, employment, and income. Higher CCHL was associated with significantly lower adjusted odds ratios for anxiety (p for trend = 0.019) and depressive symptoms (p for trend < 0.001). These results suggest a relationship between CCHL and ADS in pregnant women during the covid-19 pandemic.

Article: [Impact of health literacy on anxiety and depressive symptoms in pregnant women in Japan during the COVID-19 pandemic (nature.com)](https://www.nature.com/articles/s41598-022-18405-3.pdf)

**Title:** Risk of preterm birth, small for gestational age at birth, and stillbirth after covid-19 vaccination during pregnancy: population based retrospective cohort study

BMJ| 17th august

Objective To assess the risk of preterm birth, small for gestational age at birth, and stillbirth after covid-19 vaccination during pregnancy.  
Design Population based retrospective cohort study.  
Setting Ontario, Canada, 1 May to 31 December 2021.  
Participants All liveborn and stillborn infants from pregnancies conceived at least 42 weeks before the end of the study period and with gestational age ≥20 weeks or birth weight ≥500 g.  
Main outcome measures Using Cox regression, hazard ratios and 95% confidence intervals were estimated for preterm birth before 37 weeks (overall and spontaneous preterm birth), very preterm birth (<32 weeks), small for gestational age at birth (<10th centile), and stillbirth. Vaccination against covid-19 was treated as a time varying exposure in the outcome specific risk window, and propensity score weighting was used to adjust hazard ratios for potential confounding.  
Results Among 85 162 births, 43 099 (50.6%) occurred in individuals who received one dose or more of a covid-19 vaccine during pregnancy—42 979 (99.7%) received an mRNA vaccine. Vaccination during pregnancy was not associated with any increased risk of overall preterm birth (6.5% among vaccinated v 6.9% among unvaccinated; adjusted hazard ratio 1.02, 95% confidence interval 0.96 to 1.08), spontaneous preterm birth (3.7% v 4.4%; 0.96, 0.90 to 1.03), or very preterm birth (0.59% v 0.89%; 0.80, 0.67 to 0.95). No increase was found in risk of small for gestational age at birth (9.1% v 9.2%; 0.98, 0.93 to 1.03) or stillbirth (0.25% v 0.44%; 0.65, 0.51 to 0.84). Findings were similar by trimester of vaccination, mRNA vaccine product, and number of doses received during pregnancy.  
Conclusion The findings suggest that vaccination against covid-19 during pregnancy is not associated with a higher risk of preterm birth, small for gestational age at birth, or stillbirth.  
Article: [Risk of preterm birth, small for gestational age at birth, and stillbirth after covid-19 vaccination during pregnancy: population based retrospective cohort study](https://www.bmj.com/content/bmj/378/bmj-2022-071416.full.pdf)

**Title:** Geotemporal analysis of perinatal care changes and maternal mental health: an example from the COVID-19 pandemic

Archives of Women's Mental Health| 13th august

Our primary objective was to document COVID-19 induced changes to perinatal care across the USA and examine the implication of these changes for maternal mental health. We performed an observational cross-sectional study with convenience sampling using direct patient reports from 1918 postpartum and 3868 pregnant individuals collected between April 2020 and December 2020 from 10 states across the USA. We leverage a subgroup of these participants who gave birth prior to March 2020 to estimate the pre-pandemic prevalence of specific birthing practices as a comparison. Our primary analyses describe the prevalence and timing of perinatal care changes, compare perinatal care changes depending on when and where individuals gave birth, and assess the linkage between perinatal care alterations and maternal anxiety and depressive symptoms. Seventy-eight percent of pregnant participants and 63% of postpartum participants reported at least one change to their perinatal care between March and August 2020. However, the prevalence and nature of specific perinatal care changes occurred unevenly over time and across geographic locations. The separation of infants and mothers immediately after birth and the cancelation of prenatal visits were associated with worsened depression and anxiety symptoms in mothers after controlling for sociodemographic factors, mental health history, number of pregnancy complications, and general stress about the COVID-19 pandemic. Our analyses reveal widespread changes to perinatal care across the US that fluctuated depending on where and when individuals gave birth. Disruptions to perinatal care may also exacerbate mental health concerns, so focused treatments that can mitigate the negative psychiatric sequelae of interrupted care are warranted.

Article: [Geotemporal analysis of perinatal care changes and maternal mental health: an example from the COVID-19 pandemic (springer.com)](https://link.springer.com/content/pdf/10.1007/s00737-022-01252-6.pdf)

**Title:** Covid-19 vaccination in pregnancy

BMJ| 10th august

Pregnancy is an independent risk factor for severe covid-19. Vaccination is the best way to reduce the risk for SARS-CoV-2 infection and limit its morbidity and mortality. The current recommendations from the World Health Organization, Centers for Disease Control and Prevention, and professional organizations are for pregnant, postpartum, and lactating women to receive covid-19 vaccination. Pregnancy specific considerations involve potential effects of vaccination on fetal development, placental transfer of antibodies, and safety of maternal vaccination. Although pregnancy was an exclusion criterion in initial clinical trials of covid-19 vaccines, observational data have been rapidly accumulating and thus far confirm that the benefits of vaccination outweigh the potential risks. This review examines the evidence supporting the effectiveness, immunogenicity, placental transfer, side effects, and perinatal outcomes of maternal covid-19 vaccination. Additionally, it describes factors associated with vaccine hesitancy in pregnancy. Overall, studies monitoring people who have received covid-19 vaccines during pregnancy have not identified any pregnancy specific safety concerns. Additional information on non-mRNA vaccines, vaccination early in pregnancy, and longer term outcomes in infants are needed. To collect this information, vaccination during pregnancy must be prioritized in vaccine research.

Article: [Covid-19 vaccination in pregnancy (bmj.com)](https://www.bmj.com/content/bmj/378/bmj-2021-069741.full.pdf)

**Title:** Risk factors for anxiety and depression among pregnant women during COVID-19 pandemic-Results of a web-based multinational cross-sectional study

International Journal of gynaecology & obstetrics| 05th august

Objective: To assess risk factors for anxiety and depression among pregnant women during the COVID-19 pandemic using Mind-COVID, a prospective cross-sectional study that compares outcomes in middle-income economies and high-income economies. Methods: A total of 7102 pregnant women from 12 high-income economies and nine middle-income economies were included. The web-based survey used two standardized instruments, General Anxiety Disorder-7 (GAD-7) and Patient Health Questionnaire-9 (PHQ-9). Result: Pregnant women in high-income economies reported higher PHQ-9 (0.18 standard deviation [SD], P < 0.001) and GAD-7 (0.08 SD, P = 0.005) scores than those living in middle-income economies. Multivariate regression analysis showed that increasing PHQ-9 and GAD-7 scales were associated with mental health problems during pregnancy and the need for psychiatric treatment before pregnancy. PHQ-9 was associated with a feeling of burden related to restrictions in social distancing, and access to leisure activities. GAD-7 scores were associated with a pregnancy-related complication, fear of adverse outcomes in children related to COVID-19, and feeling of burden related to finances. Conclusions: According to this study, the imposed public health measures and hospital restrictions have left pregnant women more vulnerable during these difficult times. Adequate partner and family support during pregnancy and childbirth can be one of the most important protective factors against anxiety and depression, regardless of national economic status.

Article: [Risk factors for anxiety and depression among pregnant women during COVID‐19 pandemic—Results of a web‐based multinational cross‐sectional study (wiley.com)](https://obgyn.onlinelibrary.wiley.com/doi/epdf/10.1002/ijgo.14388)

**Infection control**

**Title:** Infection control at mass religious gatherings

bmj| 26th august

Infectious diseases that can cause epidemics are an ongoing risk to global health security.1 mass gatherings such as religious, sporting, and festival events attract millions of people from across the world and create optimal conditions for importation, acquisition, transmission, and onward spread of infectious diseases,23 including Monkeypox.

Editorial: [Infection control at mass religious gatherings | The BMJ](https://www.bmj.com/content/378/bmj-2022-072884)

**Title:** Concordance of SARS-CoV-2 Results in Self-collected Nasal Swabs vs Swabs Collected by Health Care Workers in Children and Adolescents

jama| 26th august

Question Are children and adolescents, aged 4 to 14 years, able to adequately self-collect nasal swabs for SARS-CoV-2 testing after hearing and seeing brief and age-appropriate instructions?

Findings In a cross-sectional study of 197 symptomatic children and adolescents, self-collected nasal swabs that were positive for SARS-CoV-2 agreed with results from health care worker–collected swabs in 97.8% of participants, while self-collected swabs that were negative agreed with health care worker–collected swabs in 98.1% of participants.

Meaning SARS-CoV-2 detection in nasal swabs that were self-collected by school-aged children and adolescents, following simple instructions, demonstrated high agreement with results following collection by health care workers.

Article: [Concordance of SARS-CoV-2 Results in Self-collected Nasal Swabs vs Swabs Collected by Health Care Workers in Children and Adolescents | Adolescent Medicine | JAMA | JAMA Network](https://jamanetwork.com/journals/jama/fullarticle/2795837)

**Title:** Beneficial non-specific effects of live vaccines against COVID-19 and other unrelated infections

THE LANCET INFECTIOUS DISEASES| 26th august

Live attenuated vaccines could have beneficial, non-specific effects of protecting against vaccine-unrelated infections, such as BCG protecting against respiratory infection. During the COVID-19 pandemic, testing of these effects against COVID-19 was of interest to the pandemic control programme. Non-specific effects occur due to the broad effects of specific live attenuated vaccines on the host immune system, relying on heterologous lymphocyte responses and induction of trained immunity. Knowledge of non-specific effects has been developed in randomised controlled trials and observational studies with children, but examining of whether the same principles apply to adults and older adults was of interest to researchers during the pandemic. In this Personal View, we aim to define a framework for the analysis of non-specific effects of live attenuated vaccines against vaccine-unrelated infections with pandemic potential using several important concepts. First, study endpoints should prioritise severity of infection and overall patient health rather than incidence of infection only (eg, although several trials found no protection of the BCG vaccine against COVID-19 infection, it is associated with lower overall mortality than placebo). Second, revaccination of an individual with the same live attenuated vaccine could be the most effective strategy against vaccine-unrelated infections. Third, coadministration of several live attenuated vaccines might enhance beneficial non-specific effects. Fourth, the sequence of vaccine administration matters; the live attenuated vaccine should be the last vaccine administered before exposure to the pandemic infection and non-live vaccines should not be administered afterwards. Fifth, live attenuated vaccines could modify the immune response to specific COVID-19 vaccines. Finally, non-specific effects of live attenuated vaccines should always be analysed with subgroup analysis by sex of individuals receiving the vaccines.

Editorial: [Beneficial non-specific effects of live vaccines against COVID-19 and other unrelated infections - The Lancet Infectious Diseases](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00498-4/fulltext)

**Title:** Self-sampling for SARS-CoV-2 Detection in Children

jama| 26th august

On January 18, 2020, the Centers for Disease Control and Prevention (CDC) reported the first confirmed case of COVID-19 in the US.1 Since then, in only 2.5 years, the global pandemic has resulted in 588 757 628 confirmed cases of COVID-19 and 6 433 794 deaths (as of August 8, 2022).2 While the world is (once again) gradually reopening, the lingering social and economic effects of the pandemic are clearly felt, with national lockdowns and school closures still ongoing in 23 countries. Furthermore, the World Health Organization (WHO) recently forecasted a new wave of COVID-19, predicted to peak in the autumn and winter months, suggesting the potential need to reinstate disruptive measures in the northern hemisphere.

Article: [Self-sampling for SARS-CoV-2 Detection in Children | Infectious Diseases | JAMA | JAMA Network](https://jamanetwork.com/journals/jama/fullarticle/2795838)

**Title:** Use of a Digital Assistant to Report COVID-19 Rapid Antigen Self-test Results to Health Departments in 6 US Communities

jama| 26th august

Question How often do individuals use a digital assistant to log and report COVID-19 rapid antigen test results?

Findings This cohort study of 14 398 household beneficiaries of a COVID-19 test kit program in 6 US communities found that more than 75% of beneficiaries who used the digital assistant reported their rapid antigen test results to their state public health departments. Reporting behavior was significantly higher among communities that were incentivized for reporting test results.

Meaning These results suggest that application-based reporting with incentives may be associated with increased reporting of rapid tests for COVID-19.

Article: [Use of a Digital Assistant to Report COVID-19 Rapid Antigen Self-test Results to Health Departments in 6 US Communities | Public Health | JAMA Network Open | JAMA Network](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795655)

**Title:** Persistence, prevalence, and polymorphism of sequelae after COVID-19 in unvaccinated, young adults of the Swiss Armed Forces: a longitudinal, cohort study (LoCoMo)

the lancet infectious diseases | 25th august

Background

Persistent COVID-19 sequelae could have global, public health ramifications. We therefore aimed to describe sequelae presenting more than 180 days after COVID-19—focussing on several organ systems, general health, and laboratory parameters—in non-hospitalised, unvaccinated, young adults.

Methods

We did a longitudinal cohort study of all army bases in Switzerland. Eligible participants were personnel of the Swiss Armed Forces (SAF) who were aged 18–30 years with a positive or negative RT-PCR test for SARS-CoV-2 during their service between March 1, 2020, and Dec 31, 2020. Exclusion criteria were unwillingness to participate in testing. Females or men with a known reproductive anomaly were excluded from the optional component of male fertility testing. COVID-19 was defined as a positive diagnostic RT-PCR test result for SARS-CoV-2 with concurrent symptoms compatible with COVID-19. Participants were subdivided into four groups: control group (ie, serologically negative), asymptomatic infection group (ie, serologically positive but with no symptoms), non-recent COVID-19 group (>180 days since positive PCR test), and recent COVID-19 group (≤180 days since positive PCR test). Outcomes of interest were part of a comprehensive, intensive test battery that was administered during a single day. The test battery quantified the effect of SARS-CoV-2 infection on cardiovascular, pulmonary, neurological, renal, ophthalmological, male reproductive, psychological, general health, and laboratory parameters. This study was registered with ClinicalTrials.gov, number NCT04942249.

Findings

Between May 20, 2021, and Nov 26, 2021, we enrolled 501 participants. 29 (6%) of 501 were female and 464 (93%) were male, and the median age was 21 years (IQR 21–23). Eight (2%) of 501 had incomplete data and were not included into the study groups. 177 participants had previous COVID-19 that was more than 180 days (mean 340 days) since diagnosis (ie, the non-recent COVID-19 group) compared with 251 serologically negative individuals (ie, the control group). We included 19 participants in the recent COVID-19 group and 46 in the asymptomatic infection group. We found a significant trend towards metabolic disorders in participants of the non-recent COVID-19 group compared with those in the control group: higher BMI (median 24·0 kg/m2 [IQR 22·0–25·8] vs 23·2 kg/m2 [27·1–25·0]; p=0·035), lower aerobic threshold (39% [36–43] vs 41% [37–46]; p=0·012), and higher blood cholesterol (4·2 μM [3·7–4·7] vs 3·9 μM [3·5–4·5]; p<0·0001) and LDL concentrations (2·4 μM [1·9–2·9] vs 2·2 μM [1·7–2·7]; p=0·001). The only significant psychosocial difference was found in the results of the Chalder Fatigue scale with the non-recent COVID-19 group reporting higher fatigue scores than the control group (median 12 points [IQR 11–15] vs 11 [9–14]; p=0·027). No significant differences in other psychosocial questionnaire scores, ophthalmological outcomes, and sperm quality or motility were reported between the control group and non-recent COVID-19 group.

Interpretation

Young, previously healthy, individuals largely recover from SARS-CoV-2 infection. However, the constellation of higher BMI, dyslipidaemia, and lower physical endurance 180 days after COVID-19 is suggestive of a higher risk of developing metabolic disorders and possible cardiovascular complications. These findings will guide future investigations and follow-up management.

Article: [Persistence, prevalence, and polymorphism of sequelae after COVID-19 in unvaccinated, young adults of the Swiss Armed Forces: a longitudinal, cohort study (LoCoMo)](https://www.thelancet.com/action/showPdf?pii=S1473-3099%2822%2900449-2)

**Title:** Covid-19: Asymptomatic testing is “paused” in England’s hospitals and care homes

bmj| 25th august

Regular asymptomatic testing for covid-19 in hospitals, care homes, and hospices in england will be “paused” from 31 august, the department of health and social care has said.

Testing will also be halted in prisons and detention centres, as well as in domestic abuse refuges and homelessness settings. However, symptomatic testing in all of these high risk settings will continue. The government has said that the move is due to “low” prevalence of covid-19.

News article: [Covid-19: Asymptomatic testing is “paused” in England’s hospitals and care homes | The BMJ](https://www.bmj.com/content/378/bmj.o2099)

**Title:** Transmission of SARS-CoV-2 by children to contacts in schools and households: a prospective cohort and environmental sampling study in London

THE LANCET MICROBE| 24TH august

Background

Assessing transmission of SARS-CoV-2 by children in schools is of crucial importance to inform public health action. We assessed frequency of acquisition of SARS-CoV-2 by contacts of pupils with COVID-19 in schools and households, and quantified SARS-CoV-2 shedding into air and onto fomites in both settings.

Methods

We did a prospective cohort and environmental sampling study in London, UK in eight schools. Schools reporting new cases of SARS-CoV-2 infection to local health protection teams were invited to take part if a child index case had been attending school in the 48 h before a positive SARS-CoV-2 PCR test. At the time of the study, PCR testing was available to symptomatic individuals only. Children aged 2–14 years (extended to <18 years in November, 2020) with a new nose or throat swab SARS-CoV-2 positive PCR from an accredited laboratory were included. Incidents involving exposure to at least one index pupil with COVID-19 were identified (the prevailing variants were original, α, and δ). Weekly PCR testing for SARS-CoV-2 was done on immediate classroom contacts (the so-called bubble), non-bubble school contacts, and household contacts of index pupils. Testing was supported by genome sequencing and on-surface and air samples from school and home environments.

Findings

Between October, 2020, and July, 2021 from the eight schools included, secondary transmission of SARS-CoV-2 was not detected in 28 bubble contacts, representing ten bubble classes (participation rate 8·8% [IQR 4·6–15·3]). Across eight non-bubble classes, 3 (2%) of 62 pupils tested positive, but these were unrelated to the original index case (participation rate 22·5% [9·7–32·3]). All three were asymptomatic and tested positive in one setting on the same day. In contrast, secondary transmission to previously negative household contacts from infected index pupils was found in six (17%) of 35 household contacts rising to 13 (28%) of 47 household contacts when considering all potential infections in household contacts. Environmental contamination with SARS-CoV-2 was rare in schools: fomite SARS-CoV-2 was identified in four (2%) of 189 samples in bubble classrooms, two (2%) of 127 samples in non-bubble classrooms, and five (4%) of 130 samples in washrooms. This contrasted with fomites in households, where SARS-CoV-2 was identified in 60 (24%) of 248 bedroom samples, 66 (27%) of 241 communal room samples, and 21 (11%) 188 bathroom samples. Air sampling identified SARS-CoV-2 RNA in just one (2%) of 68 of school air samples, compared with 21 (25%) of 85 air samples taken in homes.

Interpretation

There was no evidence of large-scale SARS-CoV-2 transmission in schools with precautions in place. Low levels of environmental contamination in schools are consistent with low transmission frequency and suggest adequate cleaning and ventilation in schools during the period of study. The high frequency of secondary transmission in households associated with evident viral shedding throughout the home suggests a need to improve advice to households with infection in children to prevent onward community spread. The data suggest that SARS-CoV-2 transmission from children in any setting is very likely to occur when precautions are reduced.

Article: [Transmission of SARS-CoV-2 by children to contacts in schools and households: a prospective cohort and environmental sampling study in London (thelancet.com)](https://www.thelancet.com/action/showPdf?pii=S2666-5247%2822%2900124-0)

**Title:** What do we know about covid-19 vaccines in under 5s?

bmj| 23rd august

It took a year for covid-19 vaccines to be tested and approved for use in children. As countries now reach out to the youngest age group, David Cox reports on the evidence for their effectiveness and deployment.

Article: [What do we know about covid-19 vaccines in under 5s?](https://www.bmj.com/content/bmj/378/bmj.o1892.full.pdf)

**Title:** Epidemiology of SARS-CoV-2 infection among staff and students in a cohort of English primary and secondary schools during 2020–2021

the lancet regional health| 23rd august

Background

There remains uncertainty about the epidemiology of SARS-CoV-2 among school students and staff and the extent to which non-pharmaceutical-interventions reduce the risk of school settings.

Methods

We conducted an open cohort study in a sample of 59 primary and 97 secondary schools in 15 English local authority areas that were implementing government guidance to schools open during the pandemic. We estimated SARS-CoV-2 infection prevalence among those attending school, antibody prevalence, and antibody negative to positive conversion rates in staff and students over the school year (November 2020–July 2021).

Findings

22,585 staff and students participated. SARS-CoV-2 infection prevalence among those attending school was highest during the first two rounds of testing in the autumn term, ranging from 0.7% (95% CI 0.2, 1.2) among primary staff in November 2020 to 1.6% (95% CI 0.9, 2.3) among secondary staff in December 2020. Antibody conversion rates were highest in the autumn term. Infection patterns were similar between staff and students, and between primary and secondary schools. The prevalence of nucleoprotein antibodies increased over the year and was lower among students than staff. SARS-CoV-2 infection prevalence in the North-West region was lower among secondary students attending school on normal school days than the regional estimate for secondary school-age children.

Interpretation

SARS-CoV-2 infection prevalence in staff and students attending school varied with local community infection rates. Non-pharmaceutical interventions intended to prevent infected individuals attending school may have partially reduced the prevalence of infection among those on the school site.

Article: [Epidemiology of SARS-CoV-2 infection among staff and students in a cohort of English primary and secondary schools during 2020−2021](https://www.thelancet.com/action/showPdf?pii=S2666-7762%2822%2900167-3)

**Title:** Trends in pediatric ambulatory community acquired infections before and during COVID-19 pandemic: A prospective multicentric surveillance study in France

the lancet regional health| 23rd august

Background

Covid-19 pandemic control has imposed several non-pharmaceutical interventions (NPIs). Strict application of these measures has had a dramatic reduction on the epidemiology of several infectious diseases. As the pandemic is ongoing for more than 2 years, some of these measures have been removed, mitigated, or less well applied. The aim of this study is to investigate the trends of pediatric ambulatory infectious diseases before and up to two years after the onset of the pandemic.

Methods

We conducted a prospective surveillance study in France with 107 pediatricians specifically trained in pediatric infectious diseases. From January 2018 to April 2022, the electronic medical records of children with an infectious disease were automatically extracted. The annual number of infectious diseases in 2020 and 2021 was compared to 2018-2019 and their frequency was compared by logistic regression.

Findings

From 2018 to 2021, 185,368 infectious diseases were recorded. Compared to 2018 (n=47,116) and 2019 (n=51,667), the annual number of cases decreased in 2020 (n=35,432) by about a third. Frequency of scarlet fever, tonsillopharyngitis, enteroviral infections, bronchiolitis, and gastroenteritis decreased with OR varying from 0·6 (CI95% [0·5;0·7]) to 0·9 (CI95% [0·8;0·9]), p<0·001. In 2021, among the 52,153 infectious diagnoses, an off-season rebound was observed with increased frequency of enteroviral infections, bronchiolitis, gastroenteritis and otitis with OR varying from 1·1 (CI95% [1·0;1·1]) to 1·5 (CI95% [1·4;1·5]), p<0·001.

Interpretation

While during NPIs strict application, the overall frequency of community-acquired infections was reduced, after relaxation of these measures, a rebound of some of them (enteroviral infections, bronchiolitis, gastroenteritis, otitis) occurred beyond the pre-pandemic level. These findings highlight the need for continuous surveillance of infectious diseases, especially insofar as future epidemics are largely unpredictable.

Article: [Trends in pediatric ambulatory community acquired infections before and during COVID-19 pandemic: A prospective multicentric surveillance study in France (thelancet.com)](https://www.thelancet.com/action/showPdf?pii=S2666-7762%2822%2900193-4)

**Title:** How should aerosol generating procedures be defined?

bmj| 18th august

What you need to know:  
Opportunistic airborne transmission of aerosols can occur during activities and procedures related to patient care. The mechanisms and quantities of aerosols generated are unknown, but the amount of aerosolisation is likely related to flow rate and volume of air exerted on a patient’s mucus-air interface

The risk of infection from coughing is underappreciated, and the risk from other documented aerosol generating procedures may be overemphasised

Simulation studies suggest that aerosols exhaled during respiratory treatments are mostly concentrated within 1 metre around the patient, but can be more widely dispersed during coughing or other concomitant respiratory activities

Article: [How should aerosol generating procedures be defined?](https://www.bmj.com/content/bmj/378/bmj-2021-065903.full.pdf)

**Title:** Covid-19: UK will roll out Moderna’s omicron BA.1 vaccine as part of autumn booster programme

bmj| 17th august

Moderna’s bivalent covid-19 vaccine—which targets both the original version of sars-cov-2 and the omicron ba.1 variant—will be rolled out alongside the original moderna, Pfizer, and Novavax covid-19 vaccines, the joint committee on vaccination and immunisation (JCVI) has said.

Nhs England has yet to confirm how and when eligible people will be able to access the booster vaccine, but the UK Health Security Agency has said that it will be offered to those at higher risk of severe illness.

Article: [Covid-19: UK will roll out Moderna’s omicron BA.1 vaccine as part of autumn booster programme](https://www.bmj.com/content/bmj/378/bmj.o2038.full.pdf)

**Title:** Covid-19: UK will not buy Evusheld owing to “insufficient data” on protection, government says

bmj| 15th august

The UK government has said that it will not procure the covid-19 drug Evusheld—a combination of two long acting antibodies, tixagevimab and cilgavimab—because of “insufficient data” on the duration of protection it provides against omicron and its subvariants.

News article: [Covid-19: UK will not buy Evusheld owing to “insufficient data” on protection, government says](https://www.bmj.com/content/378/bmj.o2021)

**Title:**

**Title:**

**Title:** Robust humoral and cellular immune responses in long-term convalescent COVID-19 individuals following one-dose SARS-CoV-2 inactivated vaccination

Frontiers in immunology. | 01ST AUGUST

COVID-19, caused by SARS-CoV-2, has resulted in hundreds of millions of infections and millions of deaths worldwide. Preliminary results exhibited excellent efficacy of SARS-CoV-2 vaccine in preventing hospitalization and severe disease. However, data on inactivated vaccine-induced immune responses of naturally infected patients are limited. Here, we characterized SARS-CoV-2 RBD-specific IgG (anti-S-RBD IgG) and neutralizing antibodies (NAbs) against SARS-CoV-2 wild type and variants of concerns (VOCs), as well as RBD-specific IgG-secreting B cells and antigen-specific T cells respectively in 51 SARS-CoV-2 recovered subjects and 63 healthy individuals. In SARS-CoV-2 recovered patients, a single dose vaccine is sufficient to reactivate robust anti-S-RBD IgG and NAbs. The neutralizing capacity against VOCs increased significantly post-vaccination no matter healthy individuals or SARS-CoV-2 recovered patients. In addition, RBD-specific IgG-secreting B cells in SARS-CoV-2 recovered patients were significantly higher than that in healthy vaccine recipients. After the vaccine booster, the frequencies of specific IFN-γ+ CD4+ T cell, IL-2+ CD4+ T cell, and TNF-α+ CD4+ T cell responses were significantly increased in SARS-CoV-2 recovered patients. Our data highlighted the safety and utility of SARS-CoV-2 inactivated vaccine and demonstrated that robust humoral and cellular immune response can be reactivated by one-dose inactivated vaccine in SARS-CoV-2 recovered patients.

**workforce wellbeing**

**Title:** What workers can tell us about post-COVID workability

Occupational medicines| 01st august

Background: the apparent functional impact of post-covid-19 syndrome has workability implications for large segments of the working-age population.  
Aims: to understand obstacles and enablers around self-reported workability of workers following covid-19, to better guide sustainable workplace accommodations.  
Methods: an exploratory online survey comprising quantitative and qualitative questions was disseminated via social media and industry networks between December 2020 and February 2021, yielding usable responses from 145 workers. Qualitative data were subjected to content analysis.  
Results: over half of the sample (64%) were from the health, social care, and education sectors. Just under 15% had returned to work, and 53% and 50% reported their physical and psychological workability respectively as moderate at best. Leading workability obstacles were multi-level, comprising fatigue, the interaction between symptoms and job, lack of control over job pressures, inappropriate sickness absence management policies, and lack of covid-aware organizational cultures. Self-management support, modified work, flexible co-developed graded return-to-work planning, and improved line management competency were advocated as key enablers.  
Conclusions: assuming appropriate medical management of any pathophysiological complications of covid-19, maintaining or regaining post-covid workability might reasonably follow a typical biopsychosocial framework enhanced to cater to the fluctuating nature of the symptoms. This should entail flexible, regularly reviewed and longer-term return-to-work planning addressing multi-level workability obstacles, co-developed between workers and line managers, with support from human resources, occupational health professionals (OHP's), and a COVID-aware organizational culture.

Article: [What workers can tell us about post-COVID workability (nih.gov)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9384751/pdf/kqac086.pdf)

**Health management**

**Title:** Fatality assessment and variant risk monitoring for COVID-19 using three new hospital occupancy related metrics

eBioMedicine| 01ST September

Background  
Though case fatality rate (CFR) is widely used to reflect covid-19 fatality risk, its use is limited by large temporal and spatial variation. Hospital mortality rate (HMR) is also used to assess the severity of covid-19, but HMR data is not directly available globally. Alternative metrics are needed for covid-19 severity and fatality assessment.

Methods  
We introduce new metrics for covid-19 fatality risk measurements/monitoring and a new mathematical model to estimate average hospital length of stay for deaths (LDEAD) and discharges (LDIS). Multiple data sources were used for our analyses.

Findings  
We propose three, new metrics: hospital occupancy mortality rate (HOMR), ratio of total deaths to hospital occupancy (TDHOR), and ratio of hospital occupancy to cases (HOCR), for dynamic assessment of covid-19 fatality risk. Estimated LDEAD and LDIS for 501,079 covid-19 hospitalizations in 34 us states between 7 august 2020 and 1 march 2021 were 18·2(95%ci:17·9-18·5) and 14·0(95%ci:13·9-14·0) days, respectively. We found the dramatic changes in covid-19 CFR observed in 27 countries during early stages of the pandemic were mostly caused by undiagnosed cases. Compared to the first week of November 2021, the week mean HOCRs (mimics hospitalization-to-case ratio) for omicron variant (58·6% of us new cases as of 25 december 2021) decreased 65·16% in the us as of 16 January 2022.

Interpretation  
The new and reliable measurements described here could be useful for covid-19 fatality risk and variant-associated risk monitoring.

Article: [Fatality assessment and variant risk monitoring for COVID-19 using three new hospital occupancy related metrics](https://www.thelancet.com/action/showPdf?pii=S2352-3964%2822%2900407-8)

**Title:** Wearable technology and COVID-19

the LANCET RESPIRATORY MEDICINE| 26TH august

A basic smartwatch or fitness tracker can be bought for less than £40. It will tell you how many steps you have walked, the calories you have expended, and the quality of your sleep. It will track your heart rate and nag you if you spend too much time sitting down. Depending on the model, there might even be monitors for blood oxygen and blood pressure. The more advanced devices are able to detect breathing disturbances. Other functions might include electrocardiograms, fall detectors, and skin temperature gauges. It is a thriving market. One in four Americans is thought to own some kind of wearable technology.

Article: [Wearable technology and COVID-19 - The Lancet Respiratory Medicine](https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(22)00351-4/fulltext)

**Title:** Covid-19: What have been the direct and indirect health impacts in England?

BMJ| 17TH august

In addition to the health harms that arose as a direct consequence of the pandemic, significant indirect impacts include reduced diagnosis of some long term conditions. Jacqui Wise reports.

Article: [Covid-19: What have been the direct and indirect health impacts in England? | The BMJ](https://www.bmj.com/content/378/bmj.o2045)

**Long term effects**

**Title:** Clinical features of patients who visited the outpatient clinic for long COVID in Japan

eNeurologicalSci.|01ST September

Background: The clinical course, comorbidity, and management of symptoms after the acute phase of coronavirus disease 2019 (COVID-19) remain controversial.  
Methods: This was a descriptive case series study, examining the characteristics of patients with longstanding symptoms related to COVID-19 who visited our outpatient clinic between 1 June and 31 December 2021. We analyzed patients' background, chief complaints, clinical course after COVID-19 onset, and clinical examination results.  
Results: A total of 90 patients with a mean age of 39.8 years were confirmed as having long COVID. The median time between diagnosis of COVID-19 and visiting our clinic was 66.8 days, and 89 patients (98.9%) were unvaccinated. Depression was the most common comorbidity (nine patients, 10.0%). The most common chief complaint was disturbance of smell and/or taste (35, 38.9%), followed by memory disturbance (22, 24.4%) and fatigue (29, 31.1%). Head MRI was performed for 42 (46.7%) patients, and the most common finding was sinusitis (four patients). Olfactory testing was conducted in 25 patients (27.8%) using a T&T olfactometer, and 14 patients (56%) had mild olfactory impairment. Of the five odors in the T&T, recognition of β-phenylethyl alcohol was most impaired.  
Conclusions: This study describes the basic characteristics of long COVID in Japan. It suggests that long COVID is complex because it results in a wide range of symptoms.

Article: [Clinical features of patients who visited the outpatient clinic for long COVID in Japan](https://www.sciencedirect.com/science/article/pii/S2405650222000272?via%3Dihub)

**Title:** COVID-19 sequelae: can long-term effects be predicted?

the lancet infectious diseases|25th august

The COVID-19 pandemic has had an unprecedented impact on all aspects of human activity worldwide. Despite the positive effect that vaccination, anti-viral treatment, and monoclonal antibodies have had, unmet clinical needs still exist such as early prediction of patients who will develop severe COVID-19 or sequelae.

Given the worldwide impact of COVID-19 and the uncertain long-term sequelae, better understanding of the pathophysiology of the condition is of utmost importance. Similar to severe COVID-19, endothelial dysfunction might be commonly associated with COVID-19 sequelae. Persistent dyspnoea has been associated with lung damage and impaired lung function, and SARS-CoV-2 has been persistently detected in post-mortem lung tissue. Fatigue, as a part of COVID-19 sequelae, does not seem to be associated with autonomic dysfunction, although SARS-CoV-2 has also been detected in endothelial cells. SARS-CoV-2 particles have also been documented via electron microscope in penile tissue samples, suggesting a link between COVID-19 sequelae and erectile dysfunction. In accordance with the observed vascular damage, endothelial dysfunction, detected by the gold-standard method (ie, flow-mediated dilatation), has been reported after COVID-19 recovery. Previous SARS-CoV-2 infection was an independent predictor of flow-mediated dilatation impairment. Increased inflammatory response, oxidative stress, proinflammatory cytokines, and impaired mitochondrial function have been also described in the pathophysiology of COVID-19 sequelae.

Article: [COVID-19 sequelae: can long-term effects be predicted?](https://www.thelancet.com/action/showPdf?pii=S1473-3099%2822%2900529-1)

**Title:** Possible long COVID healthcare pathways: a scoping review

BMC Health Services Research volume |23rd august

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.

**Title:** Covid-19: Increased risk of some neurological and psychiatric disorders remains two years after infection, study finds

bmj |17th august

Disorders such as psychosis, dementia, seizures, and “brain fog” remain more common for as much as two years after covid-19 infection than after other respiratory infections, a large follow-up study has found.1

However, it found that the increased risks of depression and anxiety seen in an earlier study disappeared within 2-3 months, with no overall excess of cases over those two years.

Researchers from the University of Oxford used data from the US based TriNetX electronic health record network to investigate 14 neurological and psychiatric diagnoses over a two year period. The records from 1.25 million patients who had received a covid-19 diagnosis were matched for 82 confounding variables with a cohort of 1.25 million patients who had other respiratory infections.

Article: [Covid-19: increased risk of some neurological and psychiatric disorders remains two years after infection, study finds](https://www.bmj.com/content/bmj/378/bmj.o2048.full.pdf)

**Title:** Screening and assessment for post-acute COVID-19 syndrome (PACS), guidance by personal pilots and support with individual digital trainings within intersectoral care: a study protocol of a randomized controlled trial

BMC infectious diseases |15th august

Background: because the clinical patterns and symptoms that persist after a covid-19 infection are diverse, a diagnosis of post-acute covid-19 syndrome (pacs) is difficult to implement. The current research project therefore aims to evaluate the feasibility and the practicability of a comprehensive, interdisciplinary, and cross-sectoral treatment program consisting of a low-threshold online screening and holistic assessment for pacs. Furthermore, it aims to evaluate digital interventions and the use of so-called personal guides that may help to facilitate the recovery of PACS.

Methods: this German study consists of a low-threshold online screening for PACS where positively screened participants will be supported throughout by personal pilots. The personal pilots are aimed at empowering patients and helping them to navigate through the study and different treatment options. Patients will then be randomly assigned either to an intervention group (IG) or an active control group (ACG). The IG will receive a comprehensive assessment of physiological and psychological functioning to inform future treatment. The ACG does not receive the assessment but both groups will receive a treatment consisting of an individual digital treatment program (digital intervention platform and an intervention via a chatbot). This digital intervention is based on the needs identified during the assessment for participants in the IG. Compared to that, the ACG will receive a more common digital treatment program aiming to reduce pacs symptoms. Importantly, a third comparison group (COMPG) will be recruited that does not receive any treatment. A propensity score matching will take place, ensuring comparability between the participants. Primary endpoints of the study are symptom reduction and return to work. Secondary outcomes comprise, for example, social participation and activities in daily life. Furthermore, the feasibility and applicability of the online screening tool, the holistic assessment, digital trainings, and personal pilots will be evaluated.

Discussion: this is one of the first large-scale studies to improve the diagnosis and the care of patients with PACS by means of empowerment. It is to be evaluated whether the methods utilized can be used for the German and international population.

Article: [Screening and assessment for post-acute COVID-19 syndrome (PACS), guidance by personal pilots and support with individual digital trainings within intersectoral care: a study protocol of a randomized controlled trial (biomedcentral.com)](https://bmcinfectdis.biomedcentral.com/track/pdf/10.1186/s12879-022-07584-z.pdf)

**Title:** Symptomatology and imaging findings in early post-Covid period: A comparative study in older vs younger patients

Experimental gerontology|06th august

Background: While there are substantial reports on the acute phase of Covid-19, the data on post-Covid phase are limited.  
Aim: To report the data on older post-Covid patients comparatively with the young adults.  
Study design: Retrospective, single-center study in post-Covid outpatient clinic. Clinical characteristics, laboratory examination, chest imagings were examined.  
Results: 665 patients were included (median age, 46; 53 %, male; 10.5 %, aged ≥65). We assessed patients at 47th day (median) after recovery. 43.6 % were suffering from one or more ongoing symptomatology. The prevalence of symptoms or physical examination findings were not different between older and younger groups. Most prevalent ongoing symptom was dyspnea (14.3 % and 11.8 % older and younger group, respectively). Most common laboratory abnormality was high pro-BNP (12.2 %, in both age groups). Despite there was no differences regarding imaging findings at acute-phase, there were higher rates of control imaging abnormalities in older subgroup (35.7 % vs 19.4 %; p = 0.006). On admission 28.4 % younger patients had normal imaging, of whom 12.4 % developed some form of sequela; however, in older group, 40.0 % had normal imaging, of whom 25.0 % developed sequela.  
Conclusion: Complaints related to Covid-19 persisted in about half of the patients at about 1.5 months after Covid. More than 1/3 older post-Covid patients displayed pulmonary sequela in the post-acute period which was more prevalent than those in younger adults. Hence, compared to the younger counterparts, the clinicians should be alert in follow-up of older adults for subsequent pulmonary sequela, even among those that had normal imaging finding on initial presentation.

Article: [Symptomatology and imaging findings in early post-Covid period: A comparative study in older vs younger patients | Elsevier Enhanced Reader](https://reader.elsevier.com/reader/sd/pii/S0531556522002157?token=F11AA7004D164FC26DD6A991FEA692D5EAF9296D44FB8F460E303422B1A611C717E8EEC8C06095C92E1261D3B89E37C9&originRegion=eu-west-1&originCreation=20220831110612)

**Title:** Prevalence of symptoms, comorbidities, fibrin amyloid microclots and platelet pathology in individuals with Long COVID/Post-Acute Sequelae of COVID-19 (PASC)

Cardiovascular diabetology.|06th august

Background: Fibrin(ogen) amyloid microclots and platelet hyperactivation previously reported as a novel finding in South African patients with the coronavirus 2019 disease (COVID-19) and Long COVID/Post-Acute Sequelae of COVID-19 (PASC), might form a suitable set of foci for the clinical treatment of the symptoms of Long COVID/PASC. A Long COVID/PASC Registry was subsequently established as an online platform where patients can report Long COVID/PASC symptoms and previous comorbidities.

Methods: In this study, we report on the comorbidities and persistent symptoms, using data obtained from 845 South African Long COVID/PASC patients. By using a previously published scoring system for fibrin amyloid microclots and platelet pathology, we also analysed blood samples from 80 patients, and report the presence of significant fibrin amyloid microclots and platelet pathology in all cases.

Results: Hypertension, high cholesterol levels (dyslipidaemia), cardiovascular disease and type 2 diabetes mellitus (T2DM) were found to be the most important comorbidities. The gender balance (70% female) and the most commonly reported Long COVID/PASC symptoms (fatigue, brain fog, loss of concentration and forgetfulness, shortness of breath, as well as joint and muscle pains) were comparable to those reported elsewhere. These findings confirmed that our sample was not atypical. Microclot and platelet pathologies were associated with Long COVID/PASC symptoms that persisted after the recovery from acute COVID-19.

Conclusions: Fibrin amyloid microclots that block capillaries and inhibit the transport of O2 to tissues, accompanied by platelet hyperactivation, provide a ready explanation for the symptoms of Long COVID/PASC. Removal and reversal of these underlying endotheliopathies provide an important treatment option that urgently warrants controlled clinical studies to determine efficacy in patients with a diversity of comorbidities impacting on SARS-CoV-2 infection and COVID-19 severity. We suggest that our platelet and clotting grading system provides a simple and cost-effective diagnostic method for early detection of Long COVID/PASC as a major determinant of effective treatment, including those focusing on reducing clot burden and platelet hyperactivation.

Article: [Prevalence of symptoms, comorbidities, fbrin amyloid microclots and platelet pathology in individuals with Long COVID/Post-Acute Sequelae of COVID-19 (PASC)](https://cardiab.biomedcentral.com/track/pdf/10.1186/s12933-022-01579-5.pdf)

**Title:** The Effectiveness of a Four-Week Digital Physiotherapy Intervention to Improve Functional Capacity and Adherence to Intervention in Patients with Long COVID-19

clinical trial |03rd august  
  
Long COVID-19 has been defined as the condition occurring in individuals with a history of probable or confirmed SARS-CoV-2 infection, with related symptoms lasting at least 2 months and not explainable by an alternative diagnosis. The practice of digital physiotherapy presents itself as a promising complementary treatment method to standard physiotherapy, playing a key role in the recovery of function in subjects who have passed the disease and who maintain some symptomatology over time. The aims of this research are to explore the effect of a digital physiotherapy intervention on functional recovery in patients diagnosed with Long COVID-19 and to identify the level of adherence to the treatment carried out. A quasi-experimental pre-post study assessed initially and at the end of the 4-week intervention the functional capacity (1-min STS and SPPB) and the adherence (software) of a total of 32 participants. After the 4-week digital physiotherapy practice intervention with an individualised and customise exercise programme, a statistically significant improvement was observed (p &lt; 0.05) with a small to medium effect size, high adherence rates and values above the minimal clinically important difference (MCID). We consider our intervention feasible, safe and consistent with our objectives. However, further randomised clinical trials and studies with larger samples are needed to draw extrapolable conclusions. Trial registration NCT04742946.

Article: [IJERPH | Free Full-Text | The Effectiveness of a Four-Week Digital Physiotherapy Intervention to Improve Functional Capacity and Adherence to Intervention in Patients with Long COVID-19 | HTML (mdpi.com)](https://www.mdpi.com/1660-4601/19/15/9566/htm)

**Title:** Long-term changes in pulmonary function among patients surviving to COVID-19 pneumonia

infection |01st august

Purpose: The aim of this study was to assess respiratory function at the time of clinical recovery, 6 weeks, 6 months, and 12 months after discharge in patients surviving to COVID-19 pneumonia.

Methods: Our case series consisted of 13 hospitalized patients with COVID-19 pneumonia.

Results: Baseline pulmonary function tests were 55.7 ± 15.6 for FEV1%, 68.6 ± 16.0 for FVC%, and 1.2 ± 0.1 for FEV1/FVC%. Although pulmonary function showed a small improvement after 6 weeks, patients experienced a more significant improvement after 6 and 12 months in FEV1% (95.4 ± 13.7 and 107.2 ± 16.5, respectively; p < 0.001), FVC% (91.3 ± 14.5, and 105.9 ± 15.6, respectively; p < 0.001), and FEV1/FVC% values (1.04 ± 0.04, and 1.01 ± 0.05, respectively; p < 0.001).

Conclusion: COVID-19 pneumonia may result in significant alterations in lung function, with a mainly restrictive pattern, partly persisting at 6 weeks after recovery from acute phase, but significantly improving during a 12-month follow-up period.

Article: [Long-term changes in pulmonary function among patients surviving to COVID-19 pneumonia (springer.com)](https://link.springer.com/content/pdf/10.1007/s15010-021-01718-2.pdf)

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

The Lancet. Respiratory medicine. |01st august

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.   
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.  
Article: [Clinical characteristics with inflammation profiling of long COVID and association with 1-year recovery following hospitalisation in the UK: a prospective observational study (nih.gov)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9034855/pdf/main.pdf)

**Title:** Long-COVID, Metabolic and Endocrine Disease

Hormone and metabolic research. |01st august

In the aftermath of the corona pandemic, long-COVID or post-acute COVID-19 syndrome still represents a great challenge, and this topic will continue to represent a significant health problem in the coming years. At present, the impact of long-COVID on our health system cannot be fully assessed but according to current studies, up to 40% of people who have been infected with SARS-CoV-2 suffer from clinically relevant symptoms of long-COVID syndrome several weeks to months after the acute phase. The main symptoms are chronic fatigue, dyspnea, and various cognitive symptoms. Initial studies have shown that people with overweight and diabetes mellitus have a higher risk of developing long-COVID associated symptoms. Furthermore, repeated treatment of acute COVID-19 and long-COVID with steroids can contribute to long-term metabolic and endocrine disorders. Therefore, a structured program with rehabilitation and physical activity as well as optimal dietary management is of utmost importance, especially for patients with metabolic diseases and/or long-COVID. Furthermore, the removal of autoantibodies and specific therapeutic apheresis procedures could lead to a significant improvement in the symptoms of long-COVID in individual patients.  
Article: [Long-COVID, Metabolic and Endocrine Disease](file:///\\trftfs01\Dept_Home\Library%20Services\Joint%20Services\Current%20Awareness\Bulletins\Covid\Weekly%20update\10-1055-a-1878-9307.pdf%20(nih.gov))

**TITLE**: HIGH-DENSITY EEG SLEEP CORRELATES OF COGNITIVE AND AFFECTIVE IMPAIRMENT AT 12-MONTH FOLLOW-UP AFTER COVID-19

CLINICAL NEUROPHYSIOLOGY |01ST AUGUST

Objective  
to disentangle the pathophysiology of cognitive/affective impairment in coronavirus disease-2019 (covid-19), we studied long-term cognitive and affective sequelae and sleep high-density electroencephalography (eeg) at 12-month follow-up in people with a previous hospital admission for acute covid-19.  
Methods  
people discharged from an intensive care unit (icu) and a sub-intensive ward (nonicu) between march and may 2020 were contacted between march and june 2021. Participants underwent cognitive, psychological, and sleep assessment. High-density eeg recording was acquired during a nap. Slow and fast spindles density/amplitude/frequency and source reconstruction in brain gray matter were extracted. The relationship between psychological and cognitive findings was explored with pearson correlation.  
Results  
we enrolled 33 participants ( 17 nonicu) and 12 controls. We observed a lower physical quality of life index, higher post-traumatic stress disorder (ptsd) score, and a worse executive function performance in nonicu participants. Higher ptsd and beck depression inventory scores correlated with lower executive performance. The same group showed a reorganization of spindle cortical generators.  
Conclusions  
our results show executive and psycho-affective deficits and spindle alterations in covid-19 survivors – especially in nonicu participants – after 12 months from discharge.  
Significance  
these findings may be suggestive of a crucial contribution of stress experienced during hospital admission on long-term cognitive functioning.

Article: [High-density EEG sleep correlates of cognitive and affective impairment at 12-month follow-up after COVID-19 | Elsevier Enhanced Reader](https://reader.elsevier.com/reader/sd/pii/S1388245722002942?token=1C2CEC3D9AE516403E54F1C3C73BFF5D7FDF97B7CCFB8E1BAC16297D5003D2C5119F60DB38C602B7769F9CF38D2B07BF&originRegion=eu-west-1&originCreation=20220831102913)

**Title:** Assessment of Long-Term Effects on Pulmonary Functions Between Severe and Non-Severe Convalescent COVID-19 Patients: A Single-Center Study in China

Journal of Inflammation Research |01st august

Objective: To explore the long-term effects of SARS-Cov-2 infection on the pulmonary function in the severe convalescent COVID-19 patients for 6 to 9 months follow-up in Beijing, China.

Methods: A total of 64 cases of COVID-19 patients were recruited for the study and discharged from the Beijing Ditan Hospital, Capital Medical University, for 6 to 9 months. COVID-19 patients were divided into non-severe (mild and moderate) and severe groups. The follow-up investigated the lung function tests, the novel coronavirus antibody (IgM and IgG), chest CT and blood tests.

Results: About 25.00% (16/64) patients had pulmonary ventilation dysfunction and 35.9% (23/64) had diffusion dysfunction. In the severe group, 56.50% (13/23) individuals showed decreased diffusion function. The diffusion dysfunction of the severe group was significantly decreased than the non-severe group (P = 0.01). Among 56 cases, the positive rate of IgG titers was 73.2% (41/56). The result of chest CT showed 55.36% (31/56) cases in nodules, 44.64% (25/56) in strip-like changes, 37.5% (21/56) in-ground glass shadow, and 5.36% (3/56) in grid shadow, which was significantly different between the severe group and the non-severe group. Patients tended to have ground glass changes in the severe group while nodules in the non-severe group.

Conclusion: For the 6 to 9 months in convalescent COVID-19 patients, 56.50% (13/23) of severe patients had pulmonary diffusion dysfunction. Convalescent COVID-19 patients should have their pulmonary function regularly tested, especially those with severe illness.

Article: [Assessment of Long-Term Effects on Pulmonary Functions Between Severe | JIR (dovepress.com)](https://www.dovepress.com/assessment-of-long-term-effects-on-pulmonary-functions-between-severe--peer-reviewed-fulltext-article-JIR)

**INTERNATIONAL PERSPECTIVES**

**Title:** Ximena Aguilera—guiding pandemic preparedness in Chile

The Lancet Infectious Diseases.|01st September

Thanks to her early aptitude at reading, Ximena Aguilera skipped a year of primary school and started medical school at the university of Chile (Santiago, Chile), aged just 16 years. It was clear her talents lay in science and she decided on medicine (even though she was also a top 100 m sprinter in her youth). Today, she is director of the Center Of Epidemiology and Public Health Policies, and full professor at the faculty of medicine Clínica Alemana Universidad Del Desarrollo in Chile, and president of the independent advisory board for the covid-19 response, which has been working with the Chilean ministry of health since the beginning of the pandemic. She is also a member of WHO's technical advisory group on sars-cov-2 evolution.

Article: [Ximena Aguilera—guiding pandemic preparedness in Chile - The Lancet Infectious Diseases](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00533-3/fulltext)

**Title:** COVID-19 Vaccine Willingness and Related Factors Among Health Care Workers in 3 Southeast Asian Jurisdictions

JAMA.|22ND aUGUST

Question What are the covid-19 vaccine willingness rates among the health care workers (hcws) in 3 southeast asian jurisdictions in the context of pandemic severity and vaccination policies?

Findings In this survey study including responses from 3396 doctors and nurses , willingness to take the covid-19 vaccine was highest in Nepal, followed by Vietnam, and lowest in Hong Kong, which may be associated with the pandemic severity and vaccination policy in the 3 jurisdictions. Type of HCW (doctor), older age, male gender, higher educational level, and having seasonal influenza vaccination history were found to be factors associated with vaccination willingness.

Meaning The findings of this study may have utility in informing future public health policies and strategies to promote vaccine acceptance during pandemics.

Article: [COVID-19 Vaccine Willingness and Related Factors Among Health Care Workers in 3 Southeast Asian Jurisdictions | Health Care Workforce | JAMA Network Open | JAMA Network](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795488)

**Title:** Covid-19: Results from India’s 12 molnupiravir clinical trials remain unpublished

BMJ.|19TH AUGUST

The results of 12 clinical trials conducted in India looking at the efficacy of molnupiravir —an antiviral drug for covid-19—have not been published a year after completion, researchers have said.

Researchers from St George’s, Imperial College London, and the University of Liverpool looked at the availability of data from these trials as of July 2022 for a study released as a preprint.1 They found that, while some details of the findings had been revealed through press releases or conference abstracts, none of the results had been published in a journal or preprint service. This equates to missing data for 13 694 trial participants.

News article: [Covid-19: Results from India’s 12 molnupiravir clinical trials remain unpublished | The BMJ](https://www.bmj.com/content/378/bmj.o2063)

**Title:** The COVID-19 pandemic and disruptions to essential health services in Kenya: a retrospective time-series analysis

the lancet global health.|01st September

Background

Public health emergencies can disrupt the provision of and access to essential health-care services, exacerbating health crises. We aimed to assess the effect of the COVID-19 pandemic on essential health-care services in Kenya.

Methods

Using county-level data routinely collected from the health information system from health facilities across the country, we used a robust mixed-effect model to examine changes in 17 indicators of essential health services across four periods: the pre-pandemic period (from January, 2018 to February, 2020), two pandemic periods (from March to November 2020, and February to October, 2021), and the period during the COVID-19-associated health-care workers’ strike (from December, 2020 to January, 2021).

Findings

In the pre-pandemic period, we observed a positive trend for multiple indicators. The onset of the pandemic was associated with statistically significant decreases in multiple indicators, including outpatient visits (28·7%; 95% CI 16·0–43·5%), cervical cancer screening (49·8%; 20·6–57·9%), number of HIV tests conducted (45·3%; 23·9–63·0%), patients tested for malaria (31·9%; 16·7–46·7%), number of notified tuberculosis cases (26·6%; 14·7–45·1%), hypertension cases (10·4%; 6·0–39·4%), vitamin A supplements (8·7%; 7·9–10·5%), and three doses of the diphtheria, tetanus toxoid, and pertussis vaccine administered (0·9%; 0·5–1·3%). Pneumonia cases reduced by 50·6% (31·3–67·3%), diarrhoea by 39·7% (24·8–62·7%), and children attending welfare clinics by 39·6% (23·5–47·1%). Cases of sexual violence increased by 8·0% (4·3–25·0%). Skilled deliveries, antenatal care, people with HIV infection newly started on antiretroviral therapy, confirmed cases of malaria, and diabetes cases detected were not significantly affected negatively. Although most of the health indicators began to recover during the pandemic, the health-care workers’ strike resulted in nearly all indicators falling to numbers lower than those observed at the onset or during the pre-strike pandemic period.

Interpretation

The COVID-19 pandemic and the associated health-care workers’ strike in Kenya have been associated with a substantial disruption of essential health services, with the use of outpatient visits, screening and diagnostic services, and child immunisation adversely affected. Efforts to maintain the provision of these essential health services during a health-care crisis should target the susceptible services to prevent the exacerbation of associated disease burdens during such health crises.

Article: [The COVID-19 pandemic and disruptions to essential health services in Kenya: a retrospective time-series analysis](https://www.thelancet.com/action/showPdf?pii=S2214-109X%2822%2900285-6)

**Title:** Post-COVID-19 condition 3 months after hospitalisation with SARS-CoV-2 in South Africa: a prospective cohort study

the lancet global health.|01st September

Background

Post COVID-19 condition (PCC), as defined by WHO, refers to a wide range of new, returning, or ongoing health problems in people who have had COVID-19, and it represents a rapidly emerging public health priority. We aimed to establish how this developing condition has affected patients in South Africa and which population groups are at risk.

Methods

In this prospective cohort study, we used the DATCOV national hospital surveillance system to identify participants aged 18 years or older who had been hospitalised with laboratory-confirmed SARS-CoV-2 infection in South Africa. Participants underwent telephone follow-up assessment at 1 month and 3 months after hospital discharge. Participants were assessed using a standardised questionnaire for the evaluation of symptoms, functional status, health-related quality of life, and occupational status. We used negative binomial regression models to determine factors associated with PCC.

Findings

Of 241 159 COVID-19 admissions reported to DATCOV between Dec 1, 2020, and Aug 23, 2021, 8309 were randomly selected for enrolment. Of the 3094 patients that we were able to contact, 2410 (77·9%) consented to participate in the study at 1 month after discharge. Of these, 1873 (77·7%) were followed up at 3 months after hospital discharge. Participants had a median age of 52 years (IQR 41–62) and 960 (51·3%) were women. At 3 months of follow-up, 1249 (66·7%) of 1873 participants reported new or persistent COVID-19-related symptoms, compared with 1978 (82·1%) of 2410 at 1 month after hospital discharge. The most common symptoms reported at 3 months were fatigue (50·3%), shortness of breath (23·4%), confusion or lack of concentration (17·5%), headaches (13·8%), and problems seeing or blurred vision (10·1%). On multivariable analysis, the factors associated with persistent symptoms after acute COVID-19 were being female (adjusted incident rate ratio 1·20, 95% CI 1·04–1·38) and admission to an intensive care unit (1·17, 1·01–1·37).

Interpretation

Most participants in this cohort of individuals previously hospitalised with COVID-19 reported persistent symptoms 3 months after hospital discharge and a significant impact of PCC on their functional and occupational status. The large burden of PCC symptoms identified in this study emphasises the need for a national health strategy. This should include the development of clinical guidelines and training of health-care workers for identifying, assessing, and caring for patients affected by PCC; establishment of multidisciplinary health services; and provision of information and support to people who have PCC.

Article: [Post-COVID-19 condition 3 months after hospitalisation with SARS-CoV-2 in South Africa: a prospective cohort study](https://www.thelancet.com/action/showPdf?pii=S2214-109X%2822%2900286-8)

**Title:** Post-COVID-19 condition: current evidence and unanswered questions

the lancet global health.|01st September

As of July 2022, over 555 million cases of COVID-19 have been recorded globally, with more than 8·5 million confirmed cases reported in the African region.1, 2 Various studies have been published in the past 2 years identifying persisting symptoms in individuals who had COVID-19 in different countries across the globe.3 On the basis of this emerging condition—persisting symptoms linked to COVID-19 extending past the acute phase of infection—the UK's National Institute for Health and Care Excellence (NICE) published a guideline for clinicians on the long-term effects of COVID-19.4 The NICE guideline goes beyond clinical guidelines and defines the terms associated with these persistent signs and symptoms. The guideline distinguishes between the terminologies long COVID and post-COVID-19 condition, formerly used interchangeably. The term long COVID now refers to signs and symptoms that continue after acute COVID-19 disease (4–12 weeks),4 while the term post-COVID-19 condition (PCC) refers to signs and symptoms that develop during or after COVID-19 disease that continue for more than 12 weeks and cannot be explained by an alternative diagnosis.4 As the number of COVID-19 cases and survivors grows, the burden of PCC will also increase. Understanding the epidemiology and associated factors for PCC across diverse populations is crucial as the world transitions from the acute phase of the pandemic to a longer-term chronic phase.

Article: [Post-COVID-19 condition: current evidence and unanswered questions](https://www.thelancet.com/action/showPdf?pii=S2214-109X%2822%2900323-0)

**Title:** Calling on Latin America and the Caribbean countries to recognise the disability from long COVID

the lancet regional health.|26th august

Long covid sufferers voiced the term on social media after being stigmatised, denied access to medical/specialist services or diagnosis, and feeling “fobbed off,” hoping their burden of devastating debilitation would stop being dismissed. This multi-dimensional disability is characterised by diverse health-related challenges embracing physical, mental, and cognitive issues, affecting daily activities, social, family, and employment relationships. Considering its life-changing impact on disabling resumption of normalcy, mentation, and work capacity, the 2006 United Nations convention on the rights of persons with disabilities qualifies it as a disability. An impending enormous influx of new entrants to the disability community is signalled by adverse health issues for six months or more in half of covid-19 survivors from a large systemic review of 57 reports. the longest longitudinal cohort of covid-19 patients, studied two years post-hospitalisation in Wuhan, found that 11% who did not return to work had decreased physical function or were unwilling to do so.4 as of early 2022 long covid has distressed 23 million Americans, driving an approximate million people jobless, causing yet unknown significant public health, social, and economic outcomes.

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Article: [Calling on Latin America and the Caribbean countries to recognise the disability from long COVID (thelancet.com)](https://www.thelancet.com/action/showPdf?pii=S2667-193X%2822%2900179-X)

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