

# Covid -19 Evidence Update

## Summarized and appraised resources

### 05/02/2021

*The following resources are available via electronically or in print. Please follow links to access full text online, or contact the library if you have any difficulties with the links.*

The resources included in this update are summaries or critically appraised articles. If you would like a more specific search conducted please email [kgh-tr.library.service@nhs.net](mailto:kgh-tr.library.service@nhs.net)

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#### [Improving the management of adult COVID-19 patients in secondary care: webinar](#)

[The Getting It Right First Time (GIRFT) team is hosting a lunchtime webinar to share best practice and insight from its recently-published guidance for improving the care of COVID-19 patients. Published in December, Clinical practice guide for improving the management of COVID-19 patients in secondary care is based on the experiences of hospital trusts that performed well during the early phase of the pandemic, and shares successful innovations and practices which others can utilise and adopt.]

Online webinar

Date: 9th February, 2021, 12:30pm- 1:30pm

<https://www.gettingitrightfirsttime.co.uk/webinar-to-share-best-practice-in-the-management-of-covid-19-patient/>

## Royal College/Society Guidance and Point of Care Tools

### Latest information and guidance

<p>NICE  <a href="#">Rapid guidelines and evidence summaries</a>  <a href="#">Speciality guides</a> (NHS England and NHS Improvement advice has moved here)</p>	<p>NHS England and NHS Improvement <a href="#">Secondary care</a>  <i>(Includes Prevention, Infection control, Assessment, Management, Discharge, Isolation, Estates and facilities, Finance, Workforce, Cancer ...)</i></p>
<p>Royal College of Emergency Medicine  <a href="#">Covid-19 resources</a></p>	<p>Association for Palliative Medicine  <a href="#">Covid 19 and Palliative, End of Life and Bereavement Care</a></p>
<p>Royal College of General Practitioners  <a href="#">COVID-19</a></p>	<p>Royal College of Obstetrics &amp; Gynaecologists  <a href="#">Coronavirus (COVID-19), pregnancy and women's health</a></p>
<p>Royal College of Paediatrics and Child Health  <a href="#">Key topics COVID 19</a></p>	<p>Royal College of Pathologists  <a href="#">COVID-19 Resources Hub</a></p>
<p>Royal College of Psychiatrists  <a href="#">COVID-19: Community mental health settings</a></p>	<p>Royal College of Surgeons  <a href="#">COVID 19 Information Hub</a></p>
<p>Royal Pharmaceutical Society  <a href="#">COVID-19</a></p>	<p>British Society of Echocardiography  <a href="#">COVID-19 clinical guidance</a></p>
<p>British Society of Gastroenterology  <a href="#">COVID 19 updates</a></p>	<p>British Society for Haematology  <a href="#">COVID-19 Updates</a></p>

<p>British Society for Rheumatology  <a href="#">COVID-19 updates for members</a></p>	<p>Combined Intensive Care Society, Association of Anaesthetists, Royal College of Anaesthetists, Faculty of Intensive Care Medicine guidance  <a href="#">Clinical Guidance</a></p>
<p>BMJ Best Practice  <a href="#">Coronavirus disease 2019 (COVID-19)</a>  <a href="#">Management of coexisting conditions in the context of COVID-19</a></p>	<p>DynaMed  <a href="#">Covid 19 (Novel Coronavirus)</a>  <a href="#">Covid-19 and Pediatric Patients</a>  <a href="#">Covid 19 and Special Populations</a>  <a href="#">Covid-19 and Patients with Cancer</a>  <a href="#">Covid-19 and Cardiovascular Disease Patients</a>  <a href="#">Covid-19 and Patients with Chronic Kidney Disease and End-stage renal Disease</a>  <a href="#">Covid-19 and Pregnant Patients</a>  <a href="#">Covid-19-associated Coagulopathy</a></p>
<p>Don't forget the bubbles  <a href="#">An evidence summary of paediatric Covid-19 literature</a>  <a href="#">Covid-19</a> – a selection of evidence based summaries and articles.</p>	

### New NICE Guidance

No new guidance published since last bulletin.

## New Guidance and Reports from other sources

### [Assessment, Diagnosis, and Treatment of Dysphagia in Patients Infected With SARS-CoV-2: A Review of the Literature and International Guidelines.](#)

Vergara J. *American Journal of Speech Language Pathology* 2020;29(4):2242-2253.

[International associations have provided extensive guidance regarding the level of risk related to the management of dysphagia in this population. To date, there are no scientific papers offering disease and/or recovery profiling for patients with dysphagia and coronavirus disease 2019. As a result, research in this area is urgently needed.]

*Freely available online*

### [Coronavirus COVID-19 serology and viral detection tests: technical validation reports.](#)

Department of Health and Social Care (DHSC); 2021.

<https://www.gov.uk/government/publications/coronavirus-covid-19-serology-and-viral-detection-tests-technical-validation-reports/>

[Findings from technical validations and in-service valuations reviewed by the Technical Validation Group. Updated 03 February 2021: Replaced 'Nonacus: VirPath Sars-CoV-2 Multiplex qRT-PCR: qRT-PCR' report (with updated results) and added 2 new reports, 'LumiraDx: POC rapid COVID-19 Ag test' and 'Primer Design Ltd: PROMate direct: qRT-PCR'.]

*Freely available online*

### [Coronavirus: Long Covid.](#)

House of Commons Library; 2021.

<https://commonslibrary.parliament.uk/research-briefings/cbp-9112/>

[This briefing provide an overview of long Covid, the impacts of this condition and the development of clinical guidance and services for those affected. It also provides links to further reading and Parliamentary material.]

*Freely available online*

### [COVID-19: Occupational health and safety for health workers.](#)

World Health Organization (WHO); 2021.

[https://www.who.int/publications/i/item/WHO-2019-nCoV-HCW\\_advice-2021.1](https://www.who.int/publications/i/item/WHO-2019-nCoV-HCW_advice-2021.1)

[Occupational hazards for health workers on the front line include exposure to SARS-CoV-2 and other pathogens, violence, harassment, stigma, discrimination, heavy workload and prolonged use of personal protective equipment (PPE). This document provides specific measures to protect occupational health and safety of health workers and highlights the duties, rights and responsibilities for health and safety at work in the context of COVID-19.]

### [Covid-19 recovery and resilience: what can health and care learn from other disasters?](#)

Kings Fund February 2021

<https://features.kingsfund.org.uk/2021/02/covid-19-recovery-resilience-health-care/>

[We set out to understand what the health and care system can learn from the experience of recovery from other disasters. While Covid-19 can feel like an entirely unique event, there are parallels with and lessons to be learned from other disasters from the past 20 years. Here we identify key insights from people involved in recovery work around the world.]

### [Face coverings in the community and COVID-19: a rapid review \(update 1\)](#)

Public Health England: 2021

<https://phe.koha-ptfs.co.uk/cgi-bin/koha/opac-retrieve-file.pl?id=d86880bf65bd6b18eae21aa3bdaf2a4b>

[The purpose of this rapid review is to identify and examine new evidence on the role of face coverings in relation to COVID-19 transmission. 17 observational studies examined the effectiveness of face coverings. These studies consistently reported that the use of face coverings in the community reduced the spread of COVID-19.]

### [Perspectives from the front line: The disproportionate impact of COVID-19 on BME communities.](#)

NHS Confederation BME Leadership Network; 2020.

[https://www.nhsconfed.org/-/media/Confederation/Files/Publications/Documents/Perspectives-from-the-front-line\\_FNL\\_Dec2020.pdf](https://www.nhsconfed.org/-/media/Confederation/Files/Publications/Documents/Perspectives-from-the-front-line_FNL_Dec2020.pdf)

[A report into the disproportionate impact of coronavirus on BAME communities based on interviews with BME NHS leaders, clinicians, community organisations and service users, as well as a survey of more than 100 members of the

BME Leadership Network. Overwhelmingly, participants point to long-standing inequalities and institutional racism as root causes.]

#### **SARS-CoV-2 vaccine advice for adults living with HIV.**

British HIV Association (BHIVA) & Terrence Higgins Trust (THT); 2021.

<https://www.bhiva.org/SARS-CoV-2-vaccine-advice-for-adults-living-with-HIV-update>

[The British HIV Association (BHIVA) & Terrence Higgins Trust (THT) have issued guidance on COVID vaccines for people living with HIV. The COVID-19 vaccines are expected to be protective in people with HIV and are recommended. The Department of Health and Social Care recommends that all adults living with HIV should have the vaccines currently on offer, regardless of their CD4 count.]

#### **Triage guidance for upper gastrointestinal physiology investigations during restoration of services during the COVID-19 pandemic**

British Society of Gastroenterology (BSG); 2021.

<https://www.bsg.org.uk/covid-19-advice/triage-guidance-for-upper-gastrointestinal-physiology-investigations-during-restoration-of-services-during-the-covid-19-pandemic/>

[The following article provides a framework for triaging patients referred into upper GI physiology services using standardised decision making based on clinical need. These triaging guidelines were initially compiled by the authors and subsequently subject to review and approval by the AGIP council, an elective group comprising representatives from the Gastroenterology, Surgery, Physiology and the Healthcare Science workforces.]

*Freely available online*

#### **Vaccinated patients guidance**

Royal College of Surgeons (RCS); 2021.

<https://www.rcseng.ac.uk/coronavirus/vaccinated-patients-guidance/>

[This statement expresses the hope that everyone for whom the vaccine is suitable is vaccinated, for their own benefit and to protect the health of those who are vulnerable. It describes the need for doctors to act as exemplars and do all they can to ensure that they are able to protect themselves and avoid spreading COVID-19 to patients or colleagues, and that unless there are good reasons why it is not personally appropriate, doctors should be vaccinated.]

*Freely available online*

## [Covid-19 Evidence Alerts from McMaster Plus](#)

COVID-19 Evidence Alerts to current best evidence for clinical care of people with threatened, suspected or confirmed COVID-19 infection. Reports are critically appraised for scientific merit, and those with acceptable scientific merit are appraised for relevance and importance by frontline clinicians. The studies listed below meet their criteria for quality. The site also lists other studies published which do not meet their criteria, or do not belong to a study category they appraise. ([More information available](#)).

<b>Diagnosis</b>
<a href="#">Lung Ultrasonography for the Diagnosis of SARS-CoV-2 Pneumonia in the Emergency Department.</a> <i>Pivetta E, Goffi A, Tizzani M, et al. Ann Emerg Med</i>
<a href="#">Universal screening for SARS-CoV-2 infection: a rapid review.</a> <i>Viswanathan M, Kahwati L, Jahn B, et al. Cochrane Database Syst Rev</i>
<a href="#">Point-of-care testing for the detection of SARS-CoV-2: a systematic review and meta-analysis.</a> <i>Yoon SH, Yang S, Cho H, et al. Eur Rev Med Pharmacol Sci</i>
<a href="#">Artificial Intelligence-assisted chest X-ray assessment scheme for COVID-19.</a> <i>Rangarajan K, Muku S, Garg AK, et al. Eur Radiol</i>
<a href="#">Diagnostic accuracy of serological tests and kinetics of severe acute respiratory syndrome coronavirus 2 antibody: A systematic review and meta-analysis.</a> <i>Mekonnen D, Mengist HM, Derby A, et al. Rev Med Virol</i>
<a href="#">Diagnosing COVID-19 pneumonia in a pandemic setting: Lung Ultrasound versus CT (LUVCT) - a multicentre, prospective, observational study.</a> <i>Lieveld AWE, Kok B, Schuit FH, et al. ERJ Open Res</i>
<a href="#">Head-to-Head Comparison of Rapid and Automated Antigen Detection Tests for the Diagnosis of SARS-CoV-2 Infection.</a> <i>Favresse J, Gillot C, Oliveira M, et al. J Clin Med</i>
<a href="#">Higher Sensitivity Provided by the Combination of Two Lateral Flow Immunoassay Tests for the Detection of COVID-19 Immunoglobulins.</a> <i>Daoud Z, McLeod J, Stockman DL Front Cell Infect Microbiol</i>
<b>Etiology</b>
<a href="#">Use of non-steroidal anti-inflammatory drugs and risk of death from COVID-19: an OpenSAFELY cohort analysis based on two cohorts.</a> <i>Wong AY, MacKenna B, Morton CE, et al. Ann Rheum Dis</i>
<b>Primary Prevention</b>
<a href="#">The efficacy and safety of hydroxychloroquine for COVID-19 prophylaxis: A systematic review and meta-analysis of randomized trials.</a> <i>Lewis K, Chaudhuri D, Alshamsi F, et al. PLoS One</i>
<a href="#">Mass screening vs lockdown vs combination of both to control COVID-19: A systematic review.</a> <i>Johanna N, Citrawijaya H, Wangge G J Public Health Res</i>
<a href="#">Face masks to prevent transmission of COVID-19: a systematic review and meta-analysis.</a> <i>Li Y, Liang M, Gao L, et al. Am J Infect Control</i>
<b>Prognosis</b>
<a href="#">The impact of the COVID-19 pandemic on maternal and perinatal health: a scoping review.</a> <i>Kotlar B, Gerson E, Petrillo S, et al. Reprod Health</i>
<a href="#">Maternal and Neonatal Characteristics and Outcomes of COVID-19 in Pregnancy: An Overview of Systematic Reviews.</a> <i>Papapanou M, Papaioannou M, Petta A, et al. Int J Environ Res Public Health</i>
<a href="#">Clinical characteristics and outcomes of pregnant women with COVID-19 and comparison with control patients: A systematic review and meta-analysis.</a> <i>Jafari M, Pormohammad A, Sheikh Neshin SA, et al. Rev Med Virol</i>
<b>Clinical Prediction Guide</b>
<a href="#">Accuracy of the pre-hospital triage tools (qSOFA, NEWS, and PRESEP) in predicting probable COVID-</a>

<p><a href="#">19 patients' outcomes transferred by Emergency Medical Services.</a> Saberian P, Tavakoli N, Hasani-Sharamin P, et al. <i>Caspian J Intern Med</i></p>
<p><a href="#">Predicting severe COVID-19 in the Emergency Department.</a> Holten AR, Nore KG, Tveiten CEVWK, et al. <i>Resusc Plus</i></p>
<p><a href="#">Development and external validation of a COVID-19 mortality risk prediction algorithm: a multicentre retrospective cohort study.</a> Mei J, Hu W, Chen Q, et al. <i>BMJ Open</i></p>
<p><a href="#">A Symptom-Based Rule for Diagnosis of COVID-19.</a> Smith DS, Richey EA, Brunetto WL <i>SN Compr Clin Med</i></p>
<p><b>Treatment</b></p>
<p><a href="#">Prophylactic anticoagulants for people hospitalised with COVID-19.</a> Flumignan RL, Tinoco JDS, Pascoal PI, et al. <i>Cochrane Database Syst Rev</i></p>
<p><a href="#">Critical analysis on the use of cholecalciferol as a COVID-19 intervention: a narrative review.</a> Chagas SCC, Moreira FSM, Barbosa ICF, et al. <i>Sao Paulo Med J</i></p>
<p><a href="#">Therapeutic potential of ivermectin as add on treatment in COVID 19: A systematic review and meta-analysis.</a> Padhy BM, Mohanty RR, Das S, et al. <i>J Pharm Pharm Sci</i></p>
<p><a href="#">Effect of anakinra versus usual care in adults in hospital with COVID-19 and mild-to-moderate pneumonia (CORIMUNO-ANA-1): a randomised controlled trial.</a> <i>Lancet Respir Med</i></p>
<p><a href="#">Remdesivir for the treatment of COVID-19: A systematic review and meta-analysis of randomized controlled trials.</a> Al-Abdoun A, Bizanti A, Barbarawi M, et al. <i>Contemp Clin Trials</i></p>
<p><a href="#">Effect of tocilizumab on clinical outcomes at 15 days in patients with severe or critical coronavirus disease 2019: randomised controlled trial.</a> Veiga VC, Prats JAGG, Farias DLC, et al. <i>BMJ</i></p>
<p><a href="#">Effect of Bamlanivimab as Monotherapy or in Combination With Etesevimab on Viral Load in Patients With Mild to Moderate COVID-19: A Randomized Clinical Trial.</a> Gottlieb RL, Nirula A, Chen P, et al. <i>JAMA</i></p>
<p><a href="#">The Role of Vitamin C as Adjuvant Therapy in COVID-19.</a> Kumari P, Dembra S, Dembra P, et al. <i>Cureus</i></p>
<p><a href="#">Corticosteroid nasal spray for recovery of smell sensation in COVID-19 patients: A randomized controlled trial.</a> Abdelalim AA, Mohamady AA, Elsayed RA, et al. <i>Am J Otolaryngol</i></p>
<p><a href="#">Effect of Discontinuing vs Continuing Angiotensin-Converting Enzyme Inhibitors and Angiotensin II Receptor Blockers on Days Alive and Out of the Hospital in Patients Admitted With COVID-19: A Randomized Clinical Trial.</a> Lopes RD, Macedo AVS, de Barros E Silva PGM, et al. <i>JAMA</i></p>
<p><a href="#">Early High-Titer Plasma Therapy to Prevent Severe Covid-19 in Older Adults.</a> Libster R, Perez Marc G, Wappner D, et al. <i>N Engl J Med</i></p>
<p><a href="#">Rehabilitation and Covid-19: the Cochrane Rehabilitation 2020 rapid living systematic review.</a> Ceravolo MG, Arienti C, De Sire A, et al. <i>Eur J Phys Rehabil Med</i></p>
<p><a href="#">Treatment of COVID-19 Patients with Prolonged Post-Symptomatic Viral Shedding with Leflunomide -- a Single-Center, Randomized, Controlled Clinical Trial.</a> Wang M, Zhao Y, Hu W, et al. <i>Clin Infect Dis</i></p>
<p><a href="#">Mental health services for infectious disease outbreaks including COVID-19: a rapid systematic review.</a> Yue JL, Yan W, Sun YK, et al. <i>Psychol Med</i></p>
<p><a href="#">Pragmatic Recommendations for Therapeutics of Hospitalized COVID-19 Patients in Low- and Middle-Income Countries.</a> Shetty VU, Brotherton BJ, Achilleos A, et al. <i>Am J Trop Med Hyg</i></p>

### [Cochrane Evidence on COVID-19: a roundup](#)

#### [Topical antibiotic prophylaxis to reduce respiratory tract infections and mortality in adults receiving mechanical ventilation.](#)

Minozzi S. *Cochrane Database of Systematic Reviews* 2021;1:CD000022.

**OBJECTIVES:** To assess the effect of topical antibiotic regimens (SDD and SOD), given alone or in combination with systemic antibiotics, to prevent mortality and respiratory infections in patients receiving mechanical ventilation for at least 48 hours in ICUs.

#### Key results

In patients receiving the combination of topical plus systemic antibiotics, there were fewer deaths (data from 18 studies with 5290 patients) and probably fewer patients with respiratory tract infections (data from 17 studies with 2951 patients) compared to those who received no treatment or placebo, although we cannot exclude the possibility that the systemic component of the treatments contributed to the reduction in deaths. Assuming an illustrative risk of 303 deaths and of 417 cases of respiratory tract infections in 1000 people under mechanical ventilation, we expect 48 fewer death in patients who receive a combination of topical plus systemic antibiotics and 238 fewer cases of respiratory tract infections. When patients who received topical antibiotics only were compared with patients who received no treatment, or when patients who received topical plus systemic antibiotics were compared with patients who received systemic antibiotics alone, the number of deaths was probably similar (data from 22 studies with 4213 patients), although there may be fewer patients with respiratory tract infections in patients who received topical prophylaxis (data from 19 studies; 2698 patients). Adverse events were poorly reported, with limited data.

#### Certainty of the evidence

We judged the certainty of the evidence as high to moderate for deaths and respiratory tract infections and low to very low for adverse events.



## Evidence Aid

<https://evidenceaid.org/evidence/coronavirus-covid-19/>

This evidence collection contains plain-language summaries of high-quality research which are available in English, and translated into French, Spanish, Portuguese, Arabic and Chinese (simplified and traditional).

The collection includes summaries of systematic reviews that might be relevant to the direct impact of COVID-19 (including reviews of emerging research, as well as existing reviews of relevant interventions) on health and other outcomes, the impact of the COVID-19 response on other conditions, and issues to consider for the recovery period after COVID-19.

### [Nurses' experiences in acute care hospitals during a pandemic: qualitative evidence synthesis](#)

**Citation:** Fernandez R, Lord H, Halcomb E, et al. *Implications for COVID-19: a systematic review of nurses' experiences of working in acute care hospital settings during a respiratory pandemic*. International Journal of Nursing Studies. 2020;111:103637.

**What is this?** The COVID-19 pandemic is placing a strain on healthcare workers, Existing research on the experiences of, for example, hospital nurses during pandemics and epidemics might provide useful information for policy makers.

In this systematic review, the authors searched for qualitative research on the experiences of nurses working in acute hospital settings during a pandemic or epidemic. They restricted their search to studies published in English but did not restrict their search by date or type of publication. They do not report the date of the search but the manuscript was submitted to the journal on 15 April 2020. They included 13 qualitative studies (348 nurses).

**What was found:** Despite the risk of potential infection, nurses reported having felt a great sense of professional obligation to work during a pandemic.

Nurses often expressed that they had been put through an ethical and moral dilemma in which they would have to choose between their patient and family responsibilities. Such a personal sacrifice resulted in the social isolation of nurses through separation from their family and friends.

Nurses who had worked in an acute hospital setting during a pandemic or epidemic expressed a greater appreciation for their nursing colleagues and were more willing to share their experiences, work together, and encourage team spirit.

Nurses were also more likely to experience fear, vulnerability and psychological distress in the face of a pandemic or epidemic. Due to the demanding nature of their work and the unfamiliarity of a pandemic, nurses often expressed feeling overwhelmed and a sense of powerlessness.

### [Rehabilitation and COVID-19 \(search up to 31 August 2020\)](#)

**Citation:** De Sire A, Andrenelli E, Negrini F, et al. *Rehabilitation and COVID-19: the Cochrane Rehabilitation 2020 rapid living systematic review. Update as of August 31st, 2020*. European Journal of Physical and Rehabilitation Medicine. 2020;56(6):839-45.

**What is this?** Some COVID-19 patients will require rehabilitation as they recover from their illness.

In this rapid living systematic review, the authors searched for research on rehabilitation for COVID-19 patients. The authors restricted their searches to articles published from January 2020 to 31 August 2020 in this version of the version. They included 20 case reports, 10 case series, 9 historical cohort studies, 6 cohort studies and 6 cross-sectional studies. These are from Europe (23 studies), Asia (15), the Americas (11), and intercontinental collaborations (2).

**What was found:** At the time of this version of the review, the included studies showed that hospitalized COVID-19 patients may take longer to recover and return to their baseline health compared to COVID-19 outpatients.

At the time of this version of the review, the included studies showed that nervous system structure and functions and respiratory function are the most common functional limitations studied.

At the time of this version of the review, the included studies showed that lockdown restrictions may lead to aggravation of pre-existing diseases due to limited physical activity.

### **Cardiovascular conditions and COVID-19 (multiple reviews)**

**What is this?** Some patients with COVID-19 may experience cardiovascular complications or have pre-existing cardiovascular conditions. There are many rapid reviews have been done and findings are summarised here. More details about the reviews, including citations and links to their full text, are available further down this page.

**What was found:** Severe COVID-19 infection is associated with cardiovascular complications, and cardiovascular complications were independently associated with higher mortality rates.

Elevated cardiac-specific biomarkers and acute cardiac injury may be negative prognostic indicators for COVID-19 patients and might be used to identify cardiac complications early.

Pre-existing cardiovascular disease is a negative prognostic indicator for COVID-19 patients.

At the time of the Kunutsor review (search up to 27 May 2020), the included studies showed that the most common cardiovascular complications for COVID-19 patients were heart failure, myocardial injury and cardiac arrhythmias. Other complications included acute coronary syndrome, cardiac arrest, venous thromboembolism and disseminated intravascular coagulation. The Momtazmanesh review (search done on 21 April 2021) notes a wide spectrum of cardiac involvement in COVID-19 patients.

At the time of the Momtazmanesh review (search done on 21 April 2021), children were reported to rarely be affected in relation to cardiovascular

symptoms or complications but multisystem inflammatory syndrome in children has been reported.

#### **What are the reviews:**

**Citation:** Fontana P, Casini A, Robert-Ebadi H, et al. *Venous thromboembolism in COVID-19: systematic review of reported risks and current guidelines*. Swiss Medical Weekly. 2020;150:w20301.

In this rapid review, the authors searched for studies reporting the risk of VTE in patients with COVID-19. They did not restrict their searches by language of publication and searched for articles published between 1 January 2019 and 30 April 2020. They included 1 single-arm clinical trial, 7 retrospective studies and 3 prospective studies.

**Citation:** Kunutsor SK, Laukkanen JA. *Cardiovascular complications in COVID-19: A systematic review and meta-analysis*. Journal of Infection 2020 Jun 3;81(2):E139-41.

In this rapid review, the authors searched for studies of cardiovascular complications associated with COVID-19. They searched for studies published between 2019 and 27 May 2020. They included 17 retrospective cohort studies (total: 5815 patients). There was marked variation among the included studies, including small sample sizes in some.

**Citation:** Li JW, Han TW, Woodward M, et al. *The impact of 2019 novel coronavirus on heart injury: a systemic review and meta-analysis*. Progress in Cardiovascular Diseases. 2020;63(4):518-24.

In this rapid review, the authors searched for observational studies of cardiac injury or cardiac-specific biomarkers (including troponin, creatine kinase-MB fraction, myoglobin, or NT-proBNP) in COVID-19 patients. They did not restrict their searches by language of publication and searched for articles published between 1 December 2019 and 27 March 2020. They included 28 studies (4189 patients).

**Citation:** Li X, Guan B, Su T, et al. *Impact of cardiovascular disease and cardiac injury on in-hospital mortality in patients with COVID-19: a systematic review and meta-analysis*. Heart. 2020;106:1142-7.

In this rapid review, the authors searched for studies of mortality associated with cardiovascular disease, hypertension and cardiac injury in adult COVID-19 patients. They did not restrict their searches by type of publication and searched for articles published between 1 January 2020 and 14 April 2020. They included 2 case-series and 8 cohort studies (total: 3118 patients) from China, of which 9 were conducted in Wuhan. All the included cohort studies were assessed as high-quality observational evidence.

**Citation:** Momtazmanesh S, Shobeiri P, Hanaei S, et al. *Cardiovascular disease in COVID-19: a systematic review and meta-analysis of 10,898 patients and proposal of a triage risk stratification tool*. Egyptian Heart Journal. 2020;72:41.

In this rapid review, the authors looked for studies on newly developed cardiovascular disease in COVID-19 patients, as well as how pre-existing conditions such as hypertension affect COVID-19 outcomes. They did not restrict their searches by date or language of publication and did the search on 21 April 2020. They included 35 studies in their meta-analyses.

**Citation:** Pranata R, Huang I, Lukito AA, et al. *Elevated N-terminal pro-brain natriuretic peptide is associated with increased mortality in patients with COVID-19: systematic review and meta-analysis*. Postgraduate Medical Journal. 2020;96:387-91.

In this rapid review, the authors searched for studies of the association between NT-proBNP (a cardiac-specific biomarker) and mortality in COVID-19 patients. They restricted their searches to articles published in English in 2020 and did the final search on 8 April 2020. They included 6 retrospective observational studies (967 patients).

**Citation:** Pranata R, Huang I, Lim MA, et al. *Impact of cerebrovascular and cardiovascular diseases on mortality and severity of COVID-19—systematic review, meta-analysis, and meta-regression*. Journal of Stroke and Cerebrovascular Diseases. 2020;29(8):104949.

In this rapid review, the authors searched for studies assessing COVID-19 and its relationship to cardiovascular or cerebrovascular disease. They restricted their searches to articles published in English and did the search on 10 April 2020. They included 16 studies (4448 patients).

**Citation:** Santoso A, Pranata R, Wibowo A, et al. *Cardiac injury is associated with mortality and critically ill pneumonia in COVID-19: A meta-analysis*. The American Journal of Emergency Medicine. 2020 Apr 19.

In this rapid review, the authors searched for studies of the association between cardiac injury and mortality, intensive care unit care, and severity of disease in COVID-19 patients. They restricted their searches to articles published in English in 2020 and did the search on 29 March 2020. They included 13 retrospective observational studies (2389 patients).

**Citation:** Shafi AM, Shaikh SA, Shirke MM, et al. *Cardiac manifestations in COVID-19 patients—A systematic review*. Journal of Cardiac Surgery. 2020;35(8):1988-2008.

In this rapid review, the authors searched for studies that evaluated risk factors for cardiovascular manifestation in COVID-19 patients. They did not restrict their searches by language of publication. The search dates is not reported but the manuscript was submitted to the journal on 30 May 2020. They included 61 articles.

**Citation:** Zheng Z, Peng F, Xu B, et al. *Risk factors of critical & mortal COVID-19 cases: A systematic literature review and meta-analysis*. Journal of Infection. 2020 81(2):e16-25.

In this rapid review, the authors searched for studies of risk factors for the progression of COVID-19 disease, including hypertension and cardiovascular disease. They did not restrict their searches by language of publication and did the search on 20 March 2020. They included 13 studies (3027 patients).

#### **Other reviews of this topic:**

**Citation:** Kollias A, Kyriakoulis KG, Destounis A, et al. *Cardiac injury and prognosis in COVID-19: methodological considerations and updated meta-analysis*. Journal of Infection. 2020; 81(2):e181-2.

**Citation:** Lin J, Yan H, Chen H, et al. *COVID-19 and coagulation dysfunction in adults: A systematic review and meta-analysis*. Journal of Medical Virology. 2021;93(2):934-44.

**Citation:** Pirzada A, Mokhtar AT, Moeller AD. *COVID-19 and myocarditis: What do we know so far?* CJC Open. 2020;2(4):278-85.

**Citation:** Shao MJ, Shang LX, Luo JY, et al. *Myocardial injury is associated with higher mortality in patients with coronavirus disease 2019: a meta-analysis*. Journal of Geriatric Cardiology: JGC. 2020;17(4):224-8.

**Citation:** Tian W, Jiang W, Yao J, et al. *Predictors of mortality in hospitalized COVID-19 patients: A systematic review and meta-analysis*. Journal of Medical Virology. 2020;92:1875-83.

**Citation:** Vrsalovic M, Vrsalovic Presecki A. *Cardiac troponins predict mortality in patients with COVID-19: a meta-analysis of adjusted risk estimates*. Journal of Infection 2020; 81:E99-100.

**Citation:** Zhu J, Pang J, Ji P, et al. *Coagulation dysfunction is associated with severity of COVID-19: a meta-analysis*. Journal of Medical Virology. 2021;93(2):962-72.

### **[Biomarkers and COVID-19 \(multiple reviews\)](#)**

**What is this?** Some patients with COVID-19 will become critically ill and information on biomarkers that might identify those likely to develop severe disease or become critically ill may provide useful information for clinicians and policy makers. A large number of reviews have been done and these are summarised here. For more details, including citations and links to the full reviews, please scroll down this page.

**What was found:** A variety of biomarkers have been reported in relation to COVID-19, including haematological, inflammatory, cardiac, hepatic and renal biomarkers. Such biomarkers may have a role in monitoring COVID-19 patients.

Haematological abnormalities associated with severe COVID-19 include high white blood cell count, high neutrophils, low platelet count, high neutrophil-lymphocyte ratio, high platelet-lymphocyte ratio, coagulation abnormalities (prothrombin time, activated partial thromboplastin time, fibrinogen levels), low lymphocytes, eosinophils and monocytes and low haemoglobin.

Inflammatory biomarkers associated with severe COVID-19 include C-reactive protein, lactate dehydrogenase, procalcitonin, D-dimer, erythrocyte sedimentation rate, serum ferritin, serum amyloid A and interleukin-6 and other cytokines.

Other biomarkers reported in relation to severe COVID-19 include cardiac-specific biomarkers (creatinine kinase, troponin and brain natriuretic peptide), hepatic-specific biomarkers (liver function tests) and renal-specific biomarkers (renal function tests).

#### **What are the reviews:**

**Citation:** Aziz M, Fatima R, Assaly R. *Elevated Interleukin-6 and Severe COVID-19: A Meta-Analysis*. Journal of Medical Virology. 2020; 92(11):2283-5.

In this rapid review, the authors searched for studies of Interleukin-6 (IL-6) levels in patients with severe and non-severe COVID-19 infection. They searched up to 20 April 2020 and included 9 observational studies (1426 patients), all from China.

**Citation:** Bao J, Li C, Zhang K, et al. *Comparative analysis of laboratory indexes of severe and non-severe patients infected with COVID-19*. Clinica Chimica Acta. 2020;509:180-94.

In this rapid review, the authors searched for research on clinical characteristics and laboratory data from COVID-19 patients. They restricted their searches to articles published in English up to 27 April 2020. They included 35 articles, which were all from China.

**Citation:** Chen XY, Huang MY, Xiao ZW, et al. *Lactate dehydrogenase elevations is associated with severity of COVID-19: a meta-analysis*. Critical Care. 2020;24:459.

In this rapid review, the authors searched for studies of the association between lactate dehydrogenase (LDH) elevations and COVID-19 severity. They did not restrict their searches by type or language of publication and did the search up to 3 July 2020. They included 6 studies, all from China.

**Citation:** Dalia T, Lahan S, Ranka S, et al. *Impact of Congestive Heart Failure and Role of Cardiac Biomarkers in COVID-19 patients: A Systematic Review and Meta-Analysis*. Indian Heart Journal. 2020 Dec 6.

In this rapid review, the authors searched for studies reporting cardiovascular comorbidities, cardiac biomarkers, disease severity and survival in COVID-19 patients. They searched for articles published between December 2019 and May 2020. They included 20 studies, from China (17 studies), Italy (1) and USA (2).

**Citation:** Di Minno MN, Calcaterra I, Lupoli R, et al. *Hemostatic changes in patients with COVID-19: a meta-analysis with meta-regressions*. Journal of Clinical Medicine. 2020;9(7):2244.

In this rapid review, the authors searched for studies of the associations between hemostatic parameters and COVID-19 disease severity. They did not restrict their searches by language of publication and did the search up to 16 June 2020. They included 84 studies.

**Citation:** Huang I, Pranata R, Lim MA, et al. *C-reactive protein, procalcitonin, D-dimer, and ferritin in severe coronavirus disease-2019: a meta-analysis*. Therapeutic advances in respiratory disease. 2020;14:1753466620937175.

In this rapid review, the authors searched for studies of serum CRP, procalcitonin levels, D-dimer and serum ferritin in adult COVID-19 patients. They restricted their searches to articles published in English and did the search up to 8 April 2020. They included 25 studies (5350 patients).

**Citation:** Huang I, Pranata R. *Lymphopenia in severe coronavirus disease-2019 (COVID-19): systematic review and meta-analysis*. Journal of Intensive Care. 2020;8:36.

In this rapid review, the authors searched for studies of 20 or more adults that assessed lymphocyte count on admission and COVID-19 outcomes. They restricted their searches to articles published in English and did the search up to 25 March 2020. They included 23 studies.

**Citation:** Kermali M, Khalsa RK, Pillai K, et al. *The role of biomarkers in diagnosis of COVID-19—A systematic review*. Life Sciences. 2020;254:117788.

In this rapid review, the authors searched for studies on the correlation between a biomarker and COVID-19 severity. They did their search before May 2020. They included 34 studies, from China (32 studies), Italy (1) and Singapore (1).

**Citation:** Quirch M, Lee J, Rehman S. *Hazards of the cytokine storm and cytokine-targeted therapy in patients with COVID-19*. Journal of Medical Internet Research. 2020;22(8):e20193.

In this rapid review, the authors searched for evidence in relation to the cytokine storm response in SARS-CoV-2 and other coronaviruses, and assessment of possible early treatment options for critically ill COVID-19 patients. They restricted their searches to studies published in English since December 2000 and did the search on 4 April 2020. They included 38 studies.

**Citation:** Shah S, Shah K, Patel SB, et al. *Elevated D-Dimer Levels are Associated with Increased Risk of Mortality in COVID-19: A Systematic Review and Meta-Analysis*. Cardiology in Review. 2020; 10.1097/CRD.0000000000000330.

In this rapid review, the authors searched for studies reporting admission D-dimer levels in COVID-19 patients and the effect on mortality. They restricted their searches to articles published in English up to 16 April 2020. They included 16 retrospective and 2 prospective studies (total: 3682 patients).

**Citation:** Zeng F, Li L, Zeng J, et al. *Can we predict the severity of coronavirus disease 2019 with a routine blood test?* Polish Archives of Internal Medicine. 2020;130:400-6.

In this rapid review, the authors searched for studies of the association of markers in routine blood tests with COVID-19 severity. They restricted their searches to articles published in English or Chinese and did the search up to 20 March 2020. They included 15 studies (3090 participants).

**Citation:** Zhang ZL, Hou YL, Li DT, et al. *Laboratory findings of COVID-19: a systematic review and meta-analysis*. Scandinavian Journal of Clinical and Laboratory Investigation. 2020;80(6):441-7.

In this rapid review, the authors searched for studies describing laboratory findings for COVID-19 patients. They restricted their searches to articles published in English or Chinese, and searched up to 25 March 2020. They included 28 studies (4663 participants), all from China.

**Citation:** Zong X, Gu Y, Yu H, et al. *Thrombocytopenia Is Associated with COVID-19 Severity and Outcome: An Updated Meta-Analysis of 5637 Patients with Multiple Outcomes*. Laboratory Medicine. 2021;52(1):10-5.

In this rapid review, the authors searched for studies of the association between thrombocytopenia and COVID-19 severity. They did not restrict their searches by language of publication and did their last search on 18 April 2020. They included 24 studies (5637 participants).

**Other reviews of this topic:**

**Citation:** Balla M, Merugu GP, Patel M, et al. COVID-19, Modern Pandemic: A Systematic Review From Front-Line Health Care Providers' Perspective. Journal of Clinical Medicine Research. 2020;12(4):215-29.

**Citation:** Chan AS, Rout A. *Use of Neutrophil-to-Lymphocyte and Platelet-to-Lymphocyte Ratios in COVID-19*. Journal of clinical medicine research. 2020 Jul;12(7):448-53.

**Citation:** Henry BM, Cheruiyot I, Vikse J, et al. *Lymphopenia and neutrophilia at admission predicts severity and mortality in patients with COVID-19: a meta-analysis*. Acta Bio Medica: Atenei Parmensis. 2020;91(3):e2020008.

**Citation:** Lu L, Zhong W, Bian Z, et al. *A comparison of mortality-related risk factors of COVID-19, SARS, and MERS: A systematic review and meta-analysis*. Journal of Infection. 2020;81(4):e18-25.

**Citation:** Nugroho J, Wardhana A, Maghfirah I, et al. *Relationship of D-dimer with severity and mortality in SARS-CoV-2 patients: A meta-analysis*. International Journal of Laboratory Hematology. 2021;43(1):110-5.

**Citation:** Pormohammad A, Ghorbani S, Baradaran B, et al. *Clinical characteristics, laboratory findings, radiographic signs and outcomes of 61,742 patients with confirmed COVID-19 infection: A systematic review and meta-analysis*. Microbial Pathogenesis. 2020;147:104390.

**Citation:** Sahu BR, Kampa RK, Padhi A, et al. *C-reactive protein: a promising biomarker for poor prognosis in COVID-19 infection*. Clinica Chimica Acta. 2020;509:91-4.

**Citation:** Shi L, Wang Y, Wang Y, et al. *An updated meta-analysis on the relationship between D-dimer levels and severity of coronavirus disease 2019*. International Journal of Laboratory Hematology. 2020;42(5):e207-10.

**Citation:** Shi L, Wang Y, Liang X, et al. *Is neutrophilia associated with mortality in COVID-19 patients? A meta-analysis and meta-regression*. International journal of Laboratory Hematology. 2020;42(6):e244-7.

**Citation:** Shi L, Wang Y, Wang Y, et al. *Meta-analysis of Relation of Creatine kinase-MB to Risk of Mortality in Coronavirus Disease 2019 Patients*. American Journal of Cardiology. 2020;130:163-5.

**Citation:** Shoar S, Hosseini F, Naderan M, et al. *Meta-analysis of cardiovascular events and related biomarkers comparing survivors versus non-survivors in patients with COVID-19*. American Journal of Cardiology. 2020;135:50-61.

**Citation:** Vrsalovic M, Presecki AV. *Cardiac troponins predict mortality in patients with COVID-19: A meta-analysis of adjusted risk estimates*. Journal of Infection. 2020;81(3):e99-100.

**Citation:** Wu Y, Li H, Guo X, et al. *Incidence, risk factors, and prognosis of abnormal liver biochemical tests in COVID-19 patients: a systematic review and meta-analysis*. Hepatology international. 2020;14(5):621-37.

**Citation:** Yamada T, Wakabayashi M, Yamaji T, et al. *Value of leukocytosis and elevated C-reactive protein in predicting severe coronavirus 2019 (COVID-19): A systematic review and meta-analysis*. Clinica Chimica Acta. 2020;509:235-43.

**Citation:** Zeng F, Huang Y, Guo Y, et al. *Association of inflammatory markers with the severity of COVID-19: a meta-analysis*. International Journal of Infectious Diseases. 2020;96:467-74.

### [Skin problems and COVID-19 \(multiple reviews\)](#)

**What is this?** Patients with COVID-19 can develop a variety of skin problems. Rapid reviews have been done and some are summarised here. More details, including citations and links to the full reviews, are available lower down this page.

**What was found:** At the time of these reviews, the included studies reported patterns of inflammatory and exanthematous skin problems in COVID-19 patients including urticarial rashes, confluent erythematous–maculopapular–morbilliform lesions and papulovesicular exanthema. They also reported patterns of vasculopathic and vasculitic skin problems, which include chilblain-like lesions (commonly referred to as “COVID toe”), livedo reticularis– or livedo racemosa-like lesions and purpuric vasculitic lesions.

The Marzano (search done on 30 April 2020) and Zhao (search up to 30 May 2020) reviews found that skin lesions most often developed after the onset of typical COVID-19 symptoms, with a variable latency period.

The Seirafianpour review (search up to 3 May 2020) reported a variety of skin problems in COVID-19 patients ranging from virus-induced to virus-associated drug-induced dermatoses, and secondary cutaneous involvements due to wider pandemic circumstances.

The Zhao review (search up to 30 May 2020) found that the most common skin symptoms included erythematous, urticarial and chilblain-like lesions.

The Seirafianpour review (search up to 3 May 2020) included some management recommendations, including that non-infected, non-at risk patients under treatment with immunosuppressive or immunomodulatory treatments for dermatologic conditions do not need to alter their treatment; that suspected COVID-19 patients undergoing immunosuppressive or immunomodulatory dermatological treatments might need changes to their treatment; and that patients with active COVID-19 infection should pause immunosuppressant treatment until they have recovered from COVID-19.

The Zhao review (search up to 30 May 2020) reported that the ACE2 receptor was expressed on the skin, which suggests that the skin might be a target of infection by SARS CoV-2.

#### **What are the reviews:**

**Citation:** Marzano AV, Cassano N, Genovese G, et al. *Cutaneous manifestations in patients with COVID-19: A preliminary review of an emerging issue*. British Journal of Dermatology. 2020;183(3):431-42.

In this rapid review, the authors searched for studies on cutaneous manifestations in COVID-19 patients. They did the search on 30 April 2020. They included 46 observational studies, which were mostly case reports and small case series.

**Citation:** Seirafianpour F, Sodagar S, Pour Mohammad A, et al. *Cutaneous manifestations and considerations in COVID-19 pandemic: A systematic review*. Dermatologic Therapy. 2020;33(6):e13986.



In this rapid review, the authors searched for studies of primary and secondary COVID-related cutaneous presentations and expert recommendations about dermatological management, in particular, immunomodulator usage issues during the COVID-19 pandemic. They restricted their searches to articles published in English from December 2019 to 3 May 2020. They included 89 observational descriptive studies, including case reports and case series.

**Citation:** Zhao Q, Fang X, Pang Z, et al. *COVID-19 and cutaneous manifestations: A systematic review*. Journal of the European Academy of Dermatology and Venereology. 2020;34(11):2505-10.

In this rapid review, the authors searched for studies of cutaneous manifestations in COVID-19 patients and expression of the SARS-CoV-2 receptor (ACE2) in skin tissues. They searched up to 30 May 2020. They included 44 articles (total: 507 patients, with 488 of these from Europe), including 38 case reports and 6 publications of ACE2 expression in skin tissues.

**Other reviews of this topic:**

**Citation:** Lester JC, Jia JL, Zhang L, et al. *Absence of skin of colour images in publications of COVID-19 skin manifestations*. British Journal of Dermatology. 2020;183(3):593-5.

### [Sinonasal pathophysiology and COVID-19 \(multiple reviews\)](#)

**What is this?** Some patients with COVID-19 will develop upper respiratory tract symptoms, including disruption to their sense of smell or taste. Relevant reviews are summarized here. More details of these, including citations and links to their full text, are available further down this page.

**What was found:** The Gengler review (search done on 30 March 2020) found that the sinonasal tract may be an important site for infection, and sinonasal viral shedding may be an important transmission mechanism. They also noted that loss of smell without nasal obstruction may be a highly specific indicator of COVID-19.

The Chung review (search done on 23 April 2020) also found that sinonasal symptoms are characteristic of COVID-19; with these sometimes being the only symptoms an individual experiences, and sometimes persisting beyond virologic clearance.

The Lehrich review (search up to 24 April 2020) found that approximately half of COVID-19 patients will have some disruption to their sense of smell or taste, but that sinonasal symptoms are less likely in COVID-19 patients than in those infected with other coronaviruses.

The Krajewska review (search up to March 2020) found that the most common ear, nose and throat (ENT) symptoms in COVID-19 patients were cough, sore throat, dyspnoea, rhinorrhoea, nasal congestion and dizziness. They also reported that ENT specialists were at increased risk of contracting COVID-19.

**What are the reviews:**

**Citation:** Chung TW, Sridhar S, Zhang AJ, et al. *Olfactory Dysfunction in Coronavirus Disease 2019 Patients: Observational Cohort Study and Systematic Review*. In Open Forum Infectious Diseases 2020;7(6):ofaa199.

In this systematic review, the authors searched for studies on the presentation of olfactory dysfunction in COVID-19 patients. They restricted their searches to articles published in English between January 2020 and 23 April 2020. They included 17 cohort studies and 6 case reports.

**Citation:** Gengler I, Wang JC, Speth MM, et al. *Sinonasal pathophysiology of SARS-CoV-2 and COVID-19: A systematic review of the current evidence*. Laryngoscope Investigative Otolaryngology. 2020;5(3):354-9.

In this rapid review, the authors searched for studies of nasal and sinonasal pathophysiology in COVID-19 patients. They restricted their searches to articles published in English or Chinese and did the search on 30 March 2020. They included 19 studies, and identified an additional two studies, which were awaiting assessment when the review was published.

**Citation:** Krajewska J, Krajewski W, Zub K, et al. *COVID-19 in otolaryngologist practice: a review of current knowledge*. European Archives of Oto-Rhino-Laryngology. 2020 Jul;277(7):1885-97.

In this rapid review, the authors searched for articles reporting clinical characteristics of COVID-19 in relation to ENT symptoms. They did not restrict their searches by date, language or type of publication. The date of the search is not reported but the article was submitted to the journal on 30 March 2020. They included 50 studies, mostly from China.

**Citation:** Lehrich BM, Goshtasbi K, Raad RA, et al. *Aggregate Prevalence of Chemosensory and Sinonasal Dysfunction in SARS-CoV-2 and Related Coronaviruses*. Otolaryngology–Head and Neck Surgery. 2020 May 19;163(1):156-61.

In this rapid review, the authors searched for studies of sinonasal symptoms and effects on taste and smell of COVID-19 and other coronaviruses. They did not restrict their searches by date of publication and did the search on 24 April 2020. They included 49 studies (10,415 patients), including 28 studies (9263 patients) that were specific to COVID-19.

#### **Other reviews:**

**Citation:** Kattar N, Do TM, Unis GD, et al. *Olfactory Training for Postviral Olfactory Dysfunction: Systematic Review and Meta-analysis*. Otolaryngology–Head and Neck Surgery. 2020 July 14:0194599820943550.

**Citation:** Syamal M. *Literature-guided recommendations for otolaryngologists during the COVID-19 pandemic: A contemporary review*. Laryngoscope Investigative Otolaryngology. 2020;5(3):432-7.

### **[Face mask decontamination \(multiple reviews\)](#)**

**What is this?** Face masks are widely used to prevent transmission of COVID-19. Three reviews of the decontamination and reuse of N95 filtering face-piece respirators (FFR) and surgical masks are summarized here. More details of these reviews, including citations and links to their full text, are available further down this page.

**What works:** Microwave irradiation or heat between 60 and 90°C can deactivate viral pathogens on certain N95 FFR models while maintaining acceptable fit and function (Gertsman review, search done on 29 March 2020).

Ultraviolet germicidal irradiation and vaporized hydrogen peroxide might be useful for N95 FFR decontamination, based on their biocidal efficacy (including against SARS-CoV-2) and lack of residual toxicity, as well as their lack of significant effect on fit and function (Rodriguez-Martinez review, search up to July 2020).

Although the surgical mask decontamination study included in the Zorko review (search up to 8 April 2020) did not assess germicidal effects, mask performance was best preserved with dry heat. Studies evaluating interventions applied before mask use found good germicidal effects for salt-, N-halamine- and nanoparticle-coated surgical masks.

**What doesn't work:** All three reviews found that autoclaving is unsuitable for decontaminating N95 FFR and surgical masks.

Heat above 90oC is damaging to N95 FFR (Gertsman review, search done on 29 March 2020).

Moist heat and chemical decontamination methods resulted in greater reductions in the filtration efficiency of surgical masks, with bleach being the most damaging (Zorko review, search up to 8 April 2020).

**What's uncertain:** The Gertsman (search done on 29 March 2020) and Rodriguez-Martinez (search up to July 2020) reviews noted that the effects of different decontamination methods depend on the specific N95 FFR model and the pathogen involved, and that there is a need for further research to clarify this. The maximum number of safe decontamination cycles is also unclear.

The Zorko review (search up to 8 April 2020) concluded that the safest and most effective ways to decontaminate surgical masks are uncertain.

#### **What are the reviews:**

**Citation:** Gertsman S, Agarwal A, O'Hearn K, et al. *Microwave-and heat-based decontamination of N95 filtering facepiece respirators: a systematic review.* Journal of Hospital Infection. 2020;106(3):536-53.

In this systematic review, the authors searched for studies of the effects of microwave- or heat-based decontamination interventions on N95 FFR function, fit, physical traits and viral or bacterial load. They restricted their searches to articles published in English or French between 1 January 1972 and 29 March 2020. They included 13 studies.

**Citation:** Rodriguez-Martinez CE, Sossa-Briceño MP, Cortés JA. *Decontamination and reuse of N95 filtering facemask respirators: a systematic review of the literature.* American Journal of Infection Control. 2020;48(12):1520-32.

In this systematic review, the authors searched for studies of the effects of N95 FFR decontamination methods. They did not restrict their searches by date or language of publication and did the search up to July 2020. They included 15 studies.

**Citation:** Zorko DJ, Gertsman S, O'Hearn K, et al. *Decontamination Interventions for the Reuse of Surgical Mask Personal Protective Equipment: A Systematic Review.* Journal of Hospital Infection. 2020;106(2):283-94.

In this systematic review, the authors searched for studies of decontamination interventions for surgical masks. They restricted their searches to articles published in English or French up to 8 April 2020. They included 7 studies, one that evaluated decontamination interventions after mask use and six that evaluated interventions applied prior to mask use.

**What is this?** The use of antimicrobial mouthwashes or nasal sprays by patients or healthcare workers have been suggested as ways to reduce the risk of transmission of COVID-19 infection. Some relevant reviews are summarised here. More details, including citations and links to their full text, are available further down this page.

**What was found:** At the time of the series of three Cochrane Reviews (searches done on 1 June 2020), the effects of antimicrobial mouthwashes and nasal sprays on patient outcomes and transmission of COVID-19 to healthcare workers were uncertain. However, some ongoing studies were identified.

At the time of the Moosavi review (search done in June 2020), the included *in vitro* studies showed that some mouthwashes reduced the salivary viral load of a range of viruses but no clinical studies were available and none of the studies investigated SARS-CoV-2.

**What are the reviews:**

**Citation:** Burton MJ, Clarkson JE, Goulao B, et al. *Antimicrobial mouthwashes (gargling) and nasal sprays to protect healthcare workers when undertaking aerosol-generating procedures (AGPs) on patients without suspected or confirmed COVID-19 infection.* Cochrane Database of Systematic Reviews. 2020;(9):CD013628.

In this Cochrane rapid review, the authors searched for studies of the effects of antimicrobial mouthwashes and nasal sprays by patients or healthcare workers before or after aerosol-generating procedures. They did not restrict their searches by date, language or status of publication and did the search on 1 June 2020. They identified no completed or ongoing studies.

**Citation:** Burton MJ, Clarkson JE, Goulao B, et al. *Use of antimicrobial mouthwashes (gargling) and nasal sprays by healthcare workers to protect them when treating patients with suspected or confirmed COVID-19 infection.* Cochrane Database of Systematic Reviews. 2020;(9):CD013626.

In this Cochrane rapid review, the authors searched for studies of the effects of antimicrobial mouthwashes and nasal sprays used by healthcare workers to protect them when treating COVID-19 patients. They did not restrict their searches by date, language or status of publication and did the search on 1 June 2020. They did not identify any completed studies but found two ongoing randomized trials and one ongoing non-randomized study.

**Citation:** Burton MJ, Clarkson JE, Goulao B, et al. *Antimicrobial mouthwashes (gargling) and nasal sprays administered to patients with suspected or confirmed COVID-19 infection to improve patient outcomes and to protect healthcare workers treating them.* Cochrane Database of Systematic Reviews. 2020;(9):CD013627.

In this Cochrane rapid review, the authors searched for studies of the effects of antimicrobial mouthwashes and nasal sprays administered to COVID-19 patients on outcomes for both patients and healthcare workers. They did not restrict their searches by date, language or status of publication and did the search on 1 June 2020. They did not identify any completed studies but found 14 ongoing randomized trials and 2 ongoing non-randomized studies.

**Citation:** Moosavi MS, Aminishakib P, Ansari M. *Antiviral mouthwashes: possible benefit for COVID-19 with evidence-based approach.* Journal of Oral Microbiology. 2020;12(1):1794363.

In this rapid review, the authors searched for studies of the effects of mouthwashes on the viral load of viral infections. They did not restrict their searches by date or language of publication and did the search in June

2020. They included five *in vitro* studies, all of which were from before 2020 and investigated viruses other than SARS-CoV-2.

### [Tocilizumab and COVID-19 \(search up to 23 July 2020\)](#)

**Citation:** Aziz, M, Haghbin, H, Abu Sitta, E, et al. *Efficacy of tocilizumab in COVID-19: A systematic review and meta-analysis*. Journal of Medical Virology. 2020 Sep 12.

**What is this?** Tocilizumab has been suggested as a possible treatment for COVID-19.

In this rapid review, the authors searched for studies that assessed the efficacy of adding tocilizumab to standard care for COVID-19 patients. They did not restrict their searches by language of publication and searched for articles published from 1 January to 23 July 2020. They included 23 observational studies (6279 patients), from North America (8 studies) and Europe (15).

**What was found:** At the time of the review, the included studies suggest that tocilizumab has the potential to reduce mortality rates and the need for mechanical ventilation in COVID-19 patients with severe disease.

### [Drugs that upregulate or downregulate ACE2 in COVID-19 patients \(search up to 1 April 2020\)](#)

**Citation:** Dambha-Miller H, Albasri A, Hodgson S, et al. *Currently prescribed drugs in the UK that could upregulate or downregulate ACE2 in COVID-19 disease: a systematic review*. BMJ Open. 2020;10(9):e040644.

**What is this?** Drugs affecting the renin-angiotensin system may upregulate or downregulate ACE2 and might affect COVID-19 disease.

In this rapid review, the authors searched for animal or human studies that reported on effect of drugs prescribed in the UK on ACE2 level, activity or gene expression. They did not restrict their searches by type or language of publication and searched for articles published up to 1 April 2020. They included 10 human studies and 102 animal studies, that examined 21 different drug classes.

**What was found:** At the time of this review, the included studies showed that the impact of the prescribed drugs on ACE2 had been poorly studied *in vivo* and there was a lack of convincing evidence for starting or stopping these drugs to influence the outcomes of COVID-19 disease.

At the time of this review, the authors noted that the most frequent drugs to upregulate ACE2 were those prescribed in people with diabetes or cardiovascular disease.

### [Care bundles for COVID-19 patients in intensive care \(search done on 26 October 2020\)](#)

**Citation:** Smith V, Devane D, Nichol A, et al. *Care bundles for improving outcomes in patients with COVID-19 or related conditions in intensive care – a rapid scoping review*. Cochrane Database of Systematic Reviews. 2020;(12):CD013819.

**What is this?** Some patients with COVID-19 will become critically ill and need treating in an intensive care unit (ICU). Care bundles (evidence-based interventions delivered together and consistently) may improve clinical outcomes for such patients.

In this Cochrane rapid scoping review, the authors searched for studies where at least three evidence-informed practices were delivered collectively and consistently for COVID-19 patients or those with acute respiratory distress syndrome (ARDS), viral pneumonia or pneumonitis who were in ICU. They did not restrict their searches by type or language of publication and did the search on 26 October 2020. They included 21 studies (>2100 participants), which were published between 1999 and 2020. Where reported, the studies were from Chile (2 studies), China (5), France (1), Germany (1), India (1), Korea (1), UK (3) and USA (4). The authors also identified 3 ongoing studies.

**What was found:** At the time of this review, the included studies had tested a variety of care bundles and found that these typically involved care practices related to breathing support, ventilator use or position of a patient (e.g. face down) for patients with ARDS and COVID-19.

At the time of this review, COVID-19 specific studies had focused on infection control and use of personal protective equipment (PPE).

At the time of this review, evidence gaps included a lack of care bundles focused on preparing patients to leave the ICU, preventing infections caused by giving medicines intravenously and the long-term effects of COVID-19.

# Dynamed - [COVID-19 \(Novel Coronavirus\)](#)

## Latest updates

**Evidence** Updated 4 Feb 2021

SARS-CoV-2 viral load on nasopharyngeal swabs not associated with in-hospital mortality or severe COVID-19 in adults (Acad Emerg Med 2021 Jan 22 early online)

[View in topic](#)

**Evidence** Updated 29 Jan 2021

28-day in-hospital mortality 29.9% in critically ill adults with COVID-19 admitted to ICU with acute respiratory failure or shock between March and May 2020 in Pennsylvania, United States (Ann Intern Med 2021 Jan 19 early online)

[View in topic](#)

**Evidence** Updated 28 Jan 2021

addition of tocilizumab to standard care may not reduce composite of death and mechanical ventilation at 15 days, but may increase 15-day mortality in hospitalized adults with severe or critical COVID-19 (BMJ 2021 Jan 20)

[View in topic](#)

28 Jan 2021

combination treatment with bamlanivimab plus etesevimab may reduce viral load at 11 days in nonhospitalized adults with mild-to-moderate COVID-19 (JAMA 2021 Jan 21 early online)

[View in topic](#)

22 Jan 2021

hydroxychloroquine may not prevent COVID-19, hospitalization, or death when used as post- or pre-exposure prophylaxis, but may increase adverse events in systematic review of 4 randomized trials including 4,921 persons (PLoS One 2021)

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22 Jan 2021

adenovirus-vectored vaccine expressing SARS-CoV-2 spike protein (Ad26.COV2.S) reported to induce humoral response by day 29 and be associated with grade 3 adverse event in 1%-7% of healthy adults (N Engl J Med 2021 Jan 13 early online)

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21 Jan 2021

in-hospital mortality reported in 51% of patients with late AKI and 14.3% of patients with early AKI in patients with COVID-19 in China during early 2020 (Nephrol Dial Transplant 2020 Dec 4)

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19 Jan 2021

insufficient data to recommend for or against ivermectin (NIH 2021 Jan 14)

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**19 JAN 2021**

in patients with COVID-19 discharged from hospital, symptoms persisting at 6 months included fatigue or muscle weakness, problems sleeping, and anxiety or depression, and more severe disease associated with shorter distance on 6-minute walking test and impaired pulmonary diffusion (Lancet 2021 Jan 16)

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## Useful Links

[BMJ – latest news and resources for COVID-19](#)

[Cochrane Library Coronavirus \(COVID-19\): evidence relevant to critical care](#)

[Elsevier - Novel Coronavirus Information Center – Elsevier](#)

[European Centre for Disease Prevention and Control](#)

[GOV.UK](#)

[Health protection Scotland](#)

[New England Journal of Medicine](#)

[NHS UK](#)

[Oxford University Press](#)

[Patient.Info](#)

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