# Evidence Search Service Results of your search request

## COVID 19; Respiratory rehabilitation; Nursing care; CPAP; IPAP

**ID of request:** 22542  
**Date of request:** 1st April, 2020  
**Date of completion:** 5th April, 2020

If you would like to request any articles or any further help, please contact:  Adam Tocock at [adam.tocock@nhs.net](mailto:adam.tocock@nhs.net)

Please acknowledge this work in any resulting paper or presentation as: Evidence search: COVID 19; Respiratory rehabilitation; Nursing care; CPAP; IPAP. Adam Tocock. ( 5th April, 2020). LONDON, UK: Barts Health Knowledge and Library Services.

**Sources searched**  
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ClinicalSkills.net (1)  
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**Date range used** (5 years, 10 years): 2019-   
**Limits used** (gender, article/study type, etc.): -   
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"invasive ventiilation" chapter: https://www.clinicalkey.com/#!/content/book/3-s2.0-B9781455707928000325?scrollTo=%23top

Critical Care Secrets (2019) (click read me):

http://bartshealth.nhslibraries.com/HeritageScripts/Hapi.dll/retrieve2?SetID=73F58E3C-9B33-4DE4-9B5E-2FFEF3B26896&SearchTerm0=critical%20care%20secrets&SearchPrecision=30&SortOrder=0&Offset=1&Direction=%2E&Dispfmt=F&Dispfmt\_b=B27&Dispfmt\_f=F10&DataSetName=LIVEDATA

See  "noninvasive respiratopry support" chapter: https://www.clinicalkey.com/#!/content/book/3-s2.0-B9780323510646000185?scrollTo=%23hl0000144

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## A. National and International Guidance

#### National Institute for Health and Care Excellence (NICE)

**NICE guideline [NG161]: "COVID-19 rapid guideline: delivery of systemic anticancer treatments"** (2020)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=7b077cc0735d516a2d22b67544cfeb29)

**NICE guideline [NG166]: "COVID-19 rapid guideline: severe asthma "** (2020)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=3fa4e24e5028916a09ebcd801ace3b5c)

**NICE guideline [NG159]: "COVID-19 rapid guideline: critical care in adults"** (2020)

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## B. Synopses or Summaries

#### BMJ Best Practice

**Coronavirus disease 2019 (COVID-19)** (2020)

Nicholas J. Beeching, Tom E. Fletcher, Robert Fowler

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=b39d111b1be91dfb27bf42f2e4e07bc1)

See "Advanced oxygen/ventilatory support" section on p35: "Follow local infection prevention and control procedures to prevent transmission to healthcareworkers, especially when performing aerosol-generating procedures. • Provide advanced oxygen/ventilatory support in patients who are deteriorating and failing torespond to standard oxygen therapy.[3] Some patients may develop severe hypoxic respiratoryfailure, requiring a high fraction of inspired oxygen, and high air flow rates to match inspiratoryflow demand. Patients may also have increased work of breathing, demanding positive pressurebreathing assistance. • Consider a trial of high-flow nasal oxygen, or non-invasive ventilation (including continuous positiveairway pressure [CPAP]) if high-flow nasal oxygen is not available, in patients with hypoxaemicrespiratory failure.[3] [181] Monitor patients closely for clinical deterioration that could result in theneed for urgent intubation.[3] These procedures may avoid the need for intubation and mechanicalventilation; however, they have a higher risk of aerosol generation.[188] Patients with lower PaO₂/fraction of inspired oxygen (FiO₂) were more likely to experience failure with high-flow nasal oxygenand require ventilation in one study.[189] • Consider intubation and mechanical ventilation in patients who are acutely deteriorating. Two-thirds of patients who required critical care in the UK had mechanical ventilation within 24 hours ofadmission.[190] Endotracheal intubation should be performed by an experienced provider usingairborne precautions. Young children, or adults who are obese or pregnant, may desaturate quicklyduring intubation and therefore require pre-oxygenation with 100% FiO₂ for 5 minutes. Mechanicallyventilated patients with acute respiratory distress syndrome should receive a lung-protective,low tidal volume/low inspiratory pressure ventilation strategy (lower targets are recommended inchildren). A higher positive end-expiratory pressure (PEEP) strategy is preferred over a lower PEEPstrategy.[3] [181] • Consider prone ventilation in patients with persistent severe hypoxic failure.[3] [181] Pregnantwomen may benefit from being placed in the lateral decubitus position.[3] A small cohort studyof 12 patients in Wuhan City, China, with COVID-19-related acute respiratory distress syndromesuggests that spending periods of time in the prone position may improve lung recruitability.[191] • A trial of an inhaled pulmonary vasodilator may be considered in adults who have severe acuterespiratory distress syndrome and hypoxaemia despite optimising ventilation. Lung recruitmentmanoeuvres are suggested, but staircase recruitment manoeuvres are not recommended.[181] • Some patients may require extracorporeal membrane oxygenation (ECMO) according to availabilityand expertise.[3] [181] [192] • The risk of treatment failure is high in patients with non-acutely reversible conditions, and there isalso concern about nosocomial transmission with open ventilation systems and suboptimal non-invasive face mask or nasal pillow seals. More research to define the balance of benefits and risksto patients and health workers is needed." See also "Management of comorbidities" section on p38: "Asthma • There is currently no evidence of a relationship between the use of inhaled corticosteroids andCOVID-19, and these agents are still considered safe to use. However, there is some evidence thatinhaled corticosteroids may increase the risk of some respiratory infections in patients with asthma,and there is uncertainty over whether higher doses increase the risk of pneumonia.[208] Cancer • In patients who require systemic anticancer treatment, take into account: the level ofimmunosuppression associated with cancer types and individual treatments, as well as anyother patient-specific factors; resource issues; and balancing the risk of not treating canceroptimally versus the risk of the patient being immunosuppressed and becoming severely ill fromCOVID-19.[167] Radiotherapy should be avoided if the evidence suggests there is little to nobenefit or if alternative treatment is available, or should be deferred if clinically appropriate.[209]Clinicians should consider the severity of disease and post-transplant risks of COVID-19 whendeciding on treatment plans for haematopoietic stem cell transplantation.[210]" See also treatment algorithm, p48: "adjunct - advanced oxygen/ventilatory support" section.

#### ClinicalSkills.net

**Using continuous positive airway pressure (CPAP)** (2017)

Gerard Nation

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=d54320cb66a76778f3e8a1eb6d43a635)

This illustrated crib sheet provides easily digestive, step-by-step instructions for healthcare workers on using CPAP.

#### Royal Marsden Manual of Clinical Nursing Procedures

**Chapter 12.3 Continuous positive airway pressure (CPAP)** (2019)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=139966450a675f1591a1b05d64b9e075)

See "Chapter 12: Respiratory care, CPR and blood transfusion - Pre‐procedural considerations" for explanations of BiPAP, IPAP, CPAP etc.

#### The Intensive Care Society

**COVID-19: a synthesis of clinical experience in UK intensive care settings 3/4/20** (2020)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=38e6a72e4e4c34b778b95e85a1df7534)

#### UpToDate

**Coronavirus disease 2019 (COVID-19): Critical care issues** (2020)

George L. Anesi, MD, MSCE, MBE

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=cd3b9c8cbb8713f15e01f1aba9835cbb)

See "RESPIRATORY CARE OF THE NONINTUBATED PATIENT" section.

**An overview of asthma management** (2020)

Christopher H. Fanta, MD

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=6963c71e74e13eea541c870238a91eeb)

See "ADVICE RELATED TO COVID-19 PANDEMIC" section: "ADVICE RELATED TO COVID-19 PANDEMICAsthma does not appear to be a strong risk factor for acquiring coronavirus disease 2019 (COVID-19; SARS-CoV-2), although poorly controlled asthma may lead to a more complicated disease course for those with COVID-19 infection [4]. We concur with expert groups that every effort should be made to avoid COVID-19 exposure and all regular medications necessary to maintain asthma control, including inhaled glucocorticoids, oral glucocorticoids, and biologic agents (eg, omalizumab, mepolizumab), should be continued during the COVID-19 pandemic [2,5,6]. Maintaining good asthma control helps minimize risk of an asthma exacerbation and the associated need for interaction with the healthcare system, which could lead to exposure to COVID-19. There is no good evidence that inhaled glucocorticoids or the biologic agents used for asthma have an adverse effect on the course of COVID-19 infection. For those taking long-term oral glucocorticoids, abruptly stopping this medication can have a number of serious consequences. Furthermore, the usual guidelines for prompt initiation of systemic glucocorticoids for asthma exacerbations should be followed, as delaying therapy can increase the risk of a life-threatening exacerbation. For patients with COVID-19 infection, use of nebulized medications should be avoided, if possible, because of the risk of aerosolizing SARS-CoV-2 and enhancing disease spread. Additional information about COVID-19 is provided separately. (See "Coronavirus disease 2019 (COVID-19)" and "Patient education: Coronavirus disease 2019 (COVID-19) overview (The Basics)".)"

**Cancer care during the coronavirus disease 2019 (COVID-19) pandemic** (2020)

Robert G. Uzzo, MD, MBA, FACS and Alexander Kutikov, MD, FACS

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=57364f36654f7ad74dd213679df1db39)

See "Patients with lung cancer or lung metastases" section: "The risks for patients with primary lung cancer or lung metastases are not fully understood. However, in the above study from China, patients with lung cancer did not have a higher probability of severe events compared with patients with other cancer types (one of five patients with lung cancer [20 percent] versus 8 of 13 patients with other types of cancer [62 percent] [13]). Nevertheless, such patients should be particularly cautious and report any new or changing symptoms to their clinicians."

## C. Institutional Publications

#### Health Education England (HEE)

**e-Learning for Healthcare: Coronavirus (COVID-19) Programme** (2020)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=bf6f72611afa5c061f250a47e00cff15)

Free online learning programme for NHS staff that includes modules on aspects of respiration.

## D. Original Research

1. **A rapid advice guideline for the diagnosis and treatment of 2019 novel coronavirus (2019-nCoV) infected pneumonia (standard version)**  
   Jin Y. H. Mil Med Res 2020;7:4.

In December 2019, a new type viral pneumonia cases occurred in Wuhan, Hubei Province; and then named "2019 novel coronavirus (2019-nCoV)" by the World Health Organization (WHO) on 12 January 2020. For it is a never been experienced respiratory disease before and with infection ability widely and quickly, it attracted the world's attention but without treatment and control manual. For the request from frontline clinicians and public health professionals of 2019-nCoV infected pneumonia management, an evidence-based guideline urgently needs to be developed. Therefore, we drafted this guideline according to the rapid advice guidelines methodology and general rules of WHO guideline development; we also added the first-hand management data of Zhongnan Hospital of Wuhan University. This guideline includes the guideline methodology, epidemiological characteristics, disease screening and population prevention, diagnosis, treatment and control (including traditional Chinese Medicine), nosocomial infection prevention and control, and disease nursing of the 2019-nCoV. Moreover, we also provide a whole process of a successful treatment case of the severe 2019-nCoV infected pneumonia and experience and lessons of hospital rescue for 2019-nCoV infections. This rapid advice guideline is suitable for the first frontline doctors and nurses, managers of hospitals and healthcare sections, community residents, public health persons, relevant researchers, and all person who are interested in the 2019-nCoV.

1. **Facing in real time the challenges of the Covid-19 epidemic for rehabilitation.**  
   Negrini Stefano European journal of physical and rehabilitation medicine 2020;:No page numbers.

1. **How should rehabilitative departments of hospitals prepare for coronavirus disease 2019?**  
   Chang Min Cheol American journal of physical medicine & rehabilitation 2020;:No page numbers.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=57eee28ebffb9b7b5db28572b547d019)

1. **How Should the Rehabilitation Community Prepare for 2019-nCoV?**  
   Koh G. C. Arch Phys Med Rehabil 2020;:No page numbers.

With the 2019-nCoV pandemic spreading quickly in USA and the world, it is urgent that the rehabilitation community quickly understands the epidemiology of the virus and what we can and must do to face this microbial adversary at the early stages of this likely long global pandemic. The 2019-nCoV is a novel virus so the majority of world's population does not have prior immunity to it. It is more infectious and fatal than seasonal influenza, and definitive treatment and a vaccine are months away. Our arsenal against it are currently mainly social distancing and infection control measures.

1. **Impact of COVID-19 outbreak on rehabilitation services and Physical and Rehabilitation Medicine (PRM) physicians' activities in Italy. An official document of the Italian PRM Society (SIMFER)**  
   Boldrini P. Eur J Phys Rehabil Med 2020;:No page numbers.

1. **Intubation and Ventilation amid the COVID-19 Outbreak: Wuhan's Experience**  
   Meng L. Anesthesiology 2020;:No page numbers.

The COVID-19 outbreak has led to 80,409 diagnosed cases and 3,012 deaths in mainland China based on the data released on March 4, 2020. Approximately 3.2% of patients with COVID-19 required intubation and invasive ventilation at some point in the disease course. Providing best practices regarding intubation and ventilation for an overwhelming number of patients with COVID-19 amid an enhanced risk of cross-infection is a daunting undertaking. The authors presented the experience of caring for the critically ill patients with COVID-19 in Wuhan. It is extremely important to follow strict self-protection precautions. Timely, but not premature, intubation is crucial to counter a progressively enlarging oxygen debt despite high-flow oxygen therapy and bilevel positive airway pressure ventilation. Thorough preparation, satisfactory preoxygenation, modified rapid sequence induction, and rapid intubation using a video laryngoscope are widely used intubation strategies in Wuhan. Lung-protective ventilation, prone position ventilation, and adequate sedation and analgesia are essential components of ventilation management.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=37bd6f6e9a006d9002994631c1a452c4)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=954710ee2ca7ec6bcd498c152a41021f)

1. **Lower mortality of COVID-19 by early recognition and intervention: experience from Jiangsu Province**  
   Sun Q. Annals of Intensive Care 2020;10(1):No page numbers.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=2086600c1f1f3c6bb0fe7f9ac779cdb1)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=cf0c190d1496d7dcd10ebc5921c346cc)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=3435a96a781bad152bf22aab8405c42f)

1. **Nursing and the Novel Coronavirus: Risks and Responsibilities in a Global Outbreak**  
   Choi K.R. Journal of advanced nursing 2020;:No page numbers.

In December of 2019, reports emerged of pneumonia clusters of unknown cause at health facilities in Wuhan, China. These cases were linked to a wet animal wholesale market in the region and, after extensive epidemiologic investigation, led to identification of a novel coronavirus (COVID-19). COVID-19 is among a family of viruses-called coronaviruses-that can affect both humans and animals (Zhu et al., 2020).<br/>Copyright This article is protected by copyright. All rights reserved.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=f2f560d7746be001ca813a0b85341b6a)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=c01ec078abe0ad58ddf971ae8791031e)

1. **Reflections on Nursing Ingenuity During the COVID-19 Pandemic**  
   Newby J.C. The Journal of neuroscience nursing : journal of the American Association of Neuroscience Nurses 2020;:No page numbers.

INTRODUCTION: This reflections article provides insight toward nursing innovations to reduce the overuse of personal protective equipment while maintaining a safe environment for staff taking care of COVID-19 patients. The secondary aim of this paper to capitalize on recent advances in mass electronic communication through social media to encourage nurses across the globe to share their knowledge and expertise during this pandemic.The many innovations that have been implemented fall into 3 categories of: reducing unnecessary use of personal protective equipment (PPE), promoting staff safety and readiness, and reducing foot traffic. SUMMARY: These strategies are being shared to promote dissemination of innovative nursing interventions that will save lives during the COVID-19 pandemic.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=1eb06fc55f44514c30d1f50936c63239)

1. **Respiratory physiotherapy in patients with COVID-19 infection in acute setting: a Position Paper of the Italian Association of Respiratory Physiotherapists (ARIR)**  
   Lazzeri M. Monaldi Arch Chest Dis 2020;90:No page numbers.

Respiratory physiotherapy in patients with COVID-19 infection in acute setting: a Position Paper of the Italian Association of Respiratory Physiotherapists (ARIR) On February 2020, Italy, especially the northern regions, was hit by an epidemic of the new SARS-Cov-2 coronavirus that spread from China between December 2019 and January 2020. The entire healthcare system had to respond promptly in a very short time to an exponential growth of the number of subjects affected by COVID-19 (Coronavirus disease 2019) with the need of semi-intensive and intensive care units.

1. **[Airway management of COVID-19 patients with severe pneumonia]**  
   Anon. Zhonghua Er Bi Yan Hou Tou Jing Wai Ke Za Zhi 2020;55:E001.

Patients with severe and critical COVID-19 will develop into acute respiratory distress syndrome in a short time. Noninvasive or invasive positive pressure ventilation will be important means for those patients, which will help to improve the clinical cure rate and reduce the mortality. Effective airway management has a great significance to improve respiratory support, reduce complications, and promote rehabilitation.

1. **[Management of corona virus disease-19 (COVID-19): the Zhejiang experience]**  
   Xu K. Zhejiang Da Xue Xue Bao Yi Xue Ban 2020;49:0.

The current epidemic situation of corona virus disease-19 (COVID-19) still remained severe. As the National Clinical Research Center for Infectious Diseases, the First Affiliated Hospital of Zhejiang University School of Medicine is the primary medical care center for COVID-19 inZhejiang Province. Based on the present expert consensus carried out by National Health Commission and National Administration of Traditional Chinese Medicine, our team summarized and established an effective treatment strategy centered on "Four-Anti and Two-Balance" for clinical practice. The "Four-Anti and Two-Balance"strategy included antivirus, anti-shock, anti-hyoxemia, anti-secondary infection, and maintaining of water, electrolyte and acid base balance and microecological balance. Meanwhile, integrated multidisciplinarypersonalized treatment was recommended to improve therapeutic effect. The importance of early viralogical detection, dynamic monitoring of inflammatory indexes and chest radiograph was emphasized in clinical decision-making. Sputum was observed with the highest positive rate of RT-PCR results. Viral nucleic acids could be detected in10% patients'blood samples at acute periodand 50% of patients had positive RT-PCR results in their feces. We also isolated alive viral strains from feces, indicating potential infectiousness of feces.Dynamic cytokine detection was necessary to timely identifyingcytokine storms and application of artificial liver blood purification system. The "Four-Anti and Two-Balance"strategyeffectively increased cure rate and reduced mortality. Early antiviral treatment could alleviate disease severity and prevent illness progression, and we found lopinavir/ritonavir combined with abidol showed antiviraleffects in COVID-19. Shock and hypoxemia were usually caused by cytokine storms. The artificial liver blood purification system could rapidly remove inflammatory mediators and block cytokine storm.Moreover, it also favoredthe balance of fluid, electrolyte and acid-base and thus improved treatment efficacy in critical illness. For cases of severe illness, early and also short periods of moderate glucocorticoid was supported. Patients with oxygenation index below 200 mmHg should be transferred to intensive medical center. Conservative oxygen therapy was preferred and noninvasive ventilation was not recommended. Patients with mechanical ventilation should be strictly supervised with cluster ventilator-associated pneumonia prevention strategies. Antimicrobial prophylaxis should be prescribed rationally and was not recommended except for patients with long course of disease, repeated fever and elevated procalcitonin (PCT), meanwhile secondary fungal infection should be concerned.Some patients with COVID-19 showed intestinal microbialdysbiosis with decreasedprobiotics such as Lactobacillus and Bifidobacterium. Nutritional and gastrointestinal function should be assessed for all patients.Nutritional support and application of prebiotics or probiotics were suggested to regulate the balance of intestinal microbiota and reduce the risk of secondary infection due to bacterial translocation. Anxiety and fear were common in patients with COVID-19. Therefore, we established dynamic assessment and warning for psychological crisis. We also integrated Chinese medicine in treatment to promote disease rehabilitation through classification methods of traditional Chinese medicine. We optimized nursing process for severe patients to promote their rehabilitation. It remained unclear about viral clearance pattern after the SARS-CoV-2 infection. Therefore, two weeks' quarantine for discharged patients was required and a regular following up was also needed.The Zhejiang experience above and suggestions have been implemented in our center and achieved good results. However, since COVID-19 was a newly emerging disease, more work was warranted to improve strategies of prevention, diagnosis and treatment for COVID-19.

1. **[Pulmonary rehabilitation guidelines in the principle of 4S for patients infected with 2019 novel coronavirus (2019-nCoV)]**  
   Yang F. Zhonghua Jie He He Hu Xi Za Zhi 2020;43:180-182.

A recent epidemic of pneumonia cases in Wuhan China was caused by a novel coronavirus with strong infectivity, the 2019 novel coronavirus (2019-nCoV). The article provides the pulmonary rehabilitation (PR) methods in the principle of 4S (simple, safe, satisfy, save) for patients with pneumonia caused by the novel coronavirus, shows how to establish a ventilative and convectional PR environment to prevent the spread of virus through droplets, how to guide the patients to carry out PR, how to carry out respiratory muscle training, effective cough, expectoration, sneeze, general exercise, digestive function rehabilitation and psychological rehabilitation, and how to clean and disinfect the PR environment.

1. **[Recommendations for respiratory rehabilitation of COVID-19 in adult]**  
   Anon. Zhonghua Jie He He Hu Xi Za Zhi 2020;43:E029.

COVID-19 is a highly infectious respiratory infection disease, which leads to dysfunction of respiratory, physical, and psychological of the patients. pulmonary rehabilitation is an important intervention for clinical patients as well as cure patients. With the deeper cognition of COVID-19 and accumulation of clinical experience, we proposed the recommendations for pulmonary rehabilitation of COVID-19 in adults based on the opinions of front-line clinical experts involved in the management of this epidemic and a review of the relevant literature and evidences: 1. for the inpatients with COVID-19, pulmonary rehabilitation would relieve the symptoms of dyspnea, anxiety, and depression; eventually improve physical function and the quality of life; 2. For severe/critical inpatients, the early performance of pulmonary rehabilitation is not suggested. 3. For isolating patients, the pulmonary rehabilitation guidence should be conducted through education video, instruction manual or remote consultation. 4. Assessment and monitor should be performed throughout the entire pulmonary rehabilitation process.5. Taking proper grading protection following the guideline. These recommendations can serve as a clinical practice guidence and basis for pulmonary rehabilitation of COVID-19.

### Opening Internet Links

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### Full text papers

Links are given to full text resources where available. For some of the papers, you will need an **NHS OpenAthens Account**. If you do not have an account you can [register online](https://openathens.nice.org.uk/).

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### Guidance on searching within online documents

Links are provided to the full text of each document. Relevant extracts have been copied and pasted into these results. Rather than browse through lengthy documents, you can search for specific words as follows:

**Portable Document Format / pdf / Adobe**  
Click on the Search button (illustrated with binoculars). This will open up a search window. Type in the term you need to find and links to all of the references to that term within the document will be displayed in the window. You can jump to each reference by clicking it.

**Word documents**  
Select Edit from the menu, the Find and type in your term in the search box which is presented. The search function will locate the first use of the term in the document. By pressing 'next' you will jump to further references.

## E. Search History

|  | **Source** | **Criteria** | **Results** |
| --- | --- | --- | --- |
| 1. | AMED, BNI, CINAHL, EMBASE, EMCARE, HMIC, Medline, PsycINFO, PubMed | ((COVID OR coronavirus OR "corona virus" OR "COVID-19" OR COVID19 OR "2019-nCoV" OR "SARS-CoV-2" OR cv19 OR "cv-19") AND ((rehab\*9 ADJ respirat\*) OR CPAP OR IPAP OR (nurs\* ADJ car\*))).ti,ab | 27 |
| 2. | Medline | exp CORONAVIRUS/ | 11558 |
| 3. | Medline | (COVID\* OR coronavir\* OR "corona vir\*" OR "2019-nCoV" OR "SARS-CoV-2" OR cv19 OR "cv-19").ti,ab | 13995 |
| 4. | Medline | (2 OR 3) | 18445 |
| 5. | Medline | (CPAP).ti,ab | 7972 |
| 6. | Medline | exp "CONTINUOUS POSITIVE AIRWAY PRESSURE"/ | 6863 |
| 7. | Medline | ("Continuous Positive Airway Pressure").ti,ab | 9051 |
| 8. | Medline | (5 OR 6 OR 7) | 13635 |
| 9. | Medline | (4 AND 8) | 5 |
| 10. | Medline | (ipap).ti,ab | 171 |
| 11. | Medline | ("inspiratory positive airway pressure").ti,ab | 100 |
| 12. | Medline | (10 OR 11) | 228 |
| 13. | Medline | (4 AND 12) | 1 |
| 15. | Medline | exp "NURSING CARE"/ OR exp NURSING/ | 286034 |
| 16. | Medline | exp "RESPIRATION DISORDERS -- REHABILITATION"/ OR exp "RESPIRATORY INSUFFICIENCY -- REHABILITATION"/ | 978 |
| 18. | Medline | exp REHABILITATION/ OR exp "REHABILITATION NURSING"/ | 414310 |
| 20. | Medline | (rehab\*9 OR (nurs\* ADJ3 car\*)).ti,ab | 234891 |
| 21. | Medline | (15 OR 16 OR 18 OR 20) | 841693 |
| 22. | Medline | (4 AND 21) | 124 |
| 23. | Medline | (4 AND 21) [DT FROM 2019] | 32 |
| 24. | EMBASE | (COVID\* OR coronavir\* OR "corona vir\*" OR "2019-nCoV" OR "SARS-CoV-2" OR cv19 OR "cv-19").ti,ab | 15931 |
| 26. | EMBASE | exp CORONAVIRINAE/ OR exp "CORONAVIRUS INFECTION"/ | 18637 |
| 27. | EMBASE | (24 OR 26) | 26243 |
| 28. | EMBASE | (rehab\*9 OR (nurs\* ADJ3 car\*)).ti,ab | 301996 |
| 29. | EMBASE | exp REHABILITATION/ OR exp NURSING/ | 731673 |
| 30. | EMBASE | (28 OR 29) | 886250 |
| 31. | EMBASE | (CPAP).ti,ab | 15646 |
| 32. | EMBASE | ("Continuous Positive Airway Pressure").ti,ab | 13257 |
| 33. | EMBASE | (ipap).ti,ab | 463 |
| 34. | EMBASE | ("inspiratory positive airway pressure").ti,ab | 165 |
| 35. | EMBASE | exp "POSITIVE END EXPIRATORY PRESSURE"/ | 53458 |
| 36. | EMBASE | (31 OR 32 OR 33 OR 34 OR 35) | 56768 |
| 37. | EMBASE | (30 OR 36) | 941276 |
| 38. | EMBASE | (27 AND 37) | 421 |
| 39. | EMBASE | (27 AND 37) [DT FROM 2019] | 49 |
| 40. | CINAHL | exp CORONAVIRUS/ | 743 |
| 41. | CINAHL | (COVID\* OR coronavir\* OR "corona vir\*" OR "2019-nCoV" OR "SARS-CoV-2" OR cv19 OR "cv-19").ti,ab | 1783 |
| 42. | CINAHL | (40 OR 41) | 2018 |
| 45. | CINAHL | exp REHABILITATION/ | 302443 |
| 46. | CINAHL | (rehab\*9 OR (nurs\* ADJ3 car\*)).ti,ab | 196914 |
| 47. | CINAHL | exp "REHABILITATION NURSING"/ OR exp "NURSING CARE"/ | 300653 |
| 48. | CINAHL | (45 OR 46 OR 47) | 701722 |
| 50. | CINAHL | (CPAP).ti,ab | 3020 |
| 51. | CINAHL | exp "CONTINUOUS POSITIVE AIRWAY PRESSURE"/ | 5411 |
| 52. | CINAHL | ("Continuous Positive Airway Pressure").ti,ab | 3466 |
| 53. | CINAHL | (ipap).ti,ab | 37 |
| 54. | CINAHL | ("inspiratory positive airway pressure").ti,ab | 39 |
| 55. | CINAHL | (50 OR 51 OR 52 OR 53 OR 54) | 7143 |
| 56. | CINAHL | (48 OR 55) | 708409 |
| 57. | CINAHL | (42 AND 56) | 53 |
| 58. | CINAHL | (42 AND 56) [DT FROM 2019] | 15 |
| 59. | EMCARE | (COVID\* OR coronavir\* OR "corona vir\*" OR "2019-nCoV" OR "SARS-CoV-2" OR cv19 OR "cv-19").ti,ab | 1648 |
| 60. | EMCARE | exp CORONAVIRINAE/ OR exp "CORONAVIRUS INFECTION"/ | 4049 |
| 61. | EMCARE | (59 OR 60) | 4661 |
| 62. | EMCARE | (rehab\*9 OR (nurs\* ADJ3 car\*)).ti,ab | 129414 |
| 63. | EMCARE | exp REHABILITATION/ OR exp NURSING/ | 342792 |
| 64. | EMCARE | (CPAP).ti,ab | 2855 |
| 65. | EMCARE | ("Continuous Positive Airway Pressure").ti,ab | 3682 |
| 66. | EMCARE | (ipap).ti,ab | 37 |
| 67. | EMCARE | ("inspiratory positive airway pressure").ti,ab | 41 |
| 68. | EMCARE | exp "POSITIVE END EXPIRATORY PRESSURE"/ | 19946 |
| 69. | EMCARE | (62 OR 63 OR 64 OR 65 OR 66 OR 67 OR 68) | 404253 |
| 70. | EMCARE | (61 AND 69) | 243 |
| 71. | EMCARE | (61 AND 69) [DT FROM 2019] | 10 |
| 72. | BNI | (COVID\* OR coronavir\* OR "corona vir\*" OR "2019-nCoV" OR "SARS-CoV-2" OR cv19 OR "cv-19").ti,ab | 412 |
| 73. | BNI | (rehab\*9 OR (nurs\* ADJ3 car\*)).ti,ab | 54301 |
| 74. | BNI | REHABILITATION/ | 8302 |
| 75. | BNI | (CPAP).ti,ab | 270 |
| 76. | BNI | ("Continuous Positive Airway Pressure").ti,ab | 377 |
| 77. | BNI | (ipap).ti,ab | 5 |
| 78. | BNI | ("inspiratory positive airway pressure").ti,ab | 3 |
| 79. | BNI | (73 OR 74 OR 75 OR 76 OR 77 OR 78) | 57982 |
| 80. | BNI | (72 AND 79) | 9 |

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