# Evidence Search Service Results of your search request

## Dysphagia (swallowing difficulties) associated with Covid-19

**ID of request:** 22891  
**Date of request:** 24th April, 2020  
**Date of completion:** 29th April, 2020

If you would like to request any articles or any further help, please contact:  Liz Wright at [Elizabeth.wright@poole.nhs.uk](mailto:Elizabeth.wright@poole.nhs.uk)

Please acknowledge this work in any resulting paper or presentation as: Evidence search: Dysphagia (swallowing difficulties) associated with Covid-19. Liz Wright. (29th April, 2020). BOURNEMOUTH, UK: East Dorset Library and Knowledge Service.

**Sources searched**  
CINAHL (4)  
ClinicalKey (1)  
EMBASE (2)  
MEDLINE (1)

**Date range used** (5 years, 10 years): 2018-2020   
**Limits used** (gender, article/study type, etc.): No Limits   
**Search terms and notes** (full search strategy for database searches below):

I have searched Medline, CINAHL, EMBASE, PubMed, ClinicalKey and Google Scholar using the terms found in the search history. To date there has not been much published about Dysphagia and Covid-19. Articles 2 and 4, “Guidelines of clinical practice for the management of swallowing disorders and recent dysphonia in the context of the COVID-19 pandemic” and “Rehabilitation and respiratory management in the acute and early post-acute phase. "Instant paper from the field" on rehabilitation answers to the Covid-19 emergency.” relate directly to this. Also below is a link to the Royal College of Speech and Language Therapist guidelines on aerosol generating procedures, dysphagia assessment and COVID-19 and a blog piece from Swallow Study regarding Post-Extubation Dysphagia during Covid -19. The rest of the articles I have included are some up to date articles regarding Dysphagia and Intubation.

<https://www.rcslt.org/-/media/docs/Covid/RCSLT-Dysphagia-and-AGP220420FINAL-1-(1).PDF?la=en&hash=816B77BE5A88976CD97F32B84754F223FA761C54> - Royal College of Speech and Language Therapists - Aerosol generating procedures, dysphagia assessment and COVID-19

<https://swallowstudy.com/are-we-ready-for-post-extubation-dysphagia/> - swallow study. Com, blog - Are We Ready for Post-Extubation Dysphagia?

For more information about the resources please go to: <https://dorsetnhs.libguides.com>.

## Contents

[A. Original Research](#Content5)

1. [Flexible endoscopic evaluation of swallowing (FEES) to determine neurological intensive care patients' oral diet](#Research631784)
2. [Guidelines of clinical practice for the management of swallowing disorders and recent dysphonia in the context of the COVID-19 pandemic](#Research630714)
3. [Predictors of Extubation Failure Related to Aspiration and/or Excessive Upper Airway Secretions](#Research631785)
4. [Rehabilitation and respiratory management in the acute and early post-acute phase. "Instant paper from the field" on rehabilitation answers to the Covid-19 emergency.](#Research631783)
5. [Clinical Decision Making in the ICU: Dysphagia Screening, Assessment, and Treatment.](#Research631789)
6. [Effectiveness of Therapy on Post-Extubation Dysphagia: Clinical and Electromyographic Findings.](#Research631786)
7. [Relationship Between Laryngeal Sensation, Length of Intubation, and Aspiration in Patients with Acute Respiratory Failure.](#Research631788)
8. [Upper airway tract complications of endotracheal intubation.](#Research631787)

### [B. Search History](#SearchHistory)

## A. Original Research

1. **Flexible endoscopic evaluation of swallowing (FEES) to determine neurological intensive care patients' oral diet**  
   Braun T. International journal of speech-language pathology 2020;:1-9.

Purpose: Dysphagia is common in critically ill neurological patients and is associated with a high mortality and morbidity. Data on the usefulness of flexible endoscopic examination of swallowing (FEES) in neurological intensive care unit (ICU) patients are lacking, raising the need for evaluation. <br/>Method(s): FEES was performed in neurological intensive care patients suspected of dysphagia. We correlated findings with baseline data, disability status, pneumonia and duration of hospitalisation, as well as a need for mechanical ventilation or tracheotomy. <br/>Result(s): This analysis consisted of 125 patients with suspected dysphagia. Most of the patients (81; 64,8%) suffered from acute stroke. Dysphagia was diagnosed using FEES in 90 patients (72%). FEES results led to dietary modifications in 80 patients (64%). The outcome at discharge was worse in dysphagic stroke patients diagnosed by FEES as compared to non-dysphagic stroke patients (p=0.009). Patients without oral diet had higher need for intubation (p=0.007), tracheotomy (p=0.032) and higher mortality (p&lt;0.001) in comparison to patients with at least small amounts of oral intake. <br/>Conclusion(s): As the clinical assessment of the patients often classified the dysphagia incorrectly, the broad use of FEES in ICU patients might help to adequately adjust patients' oral diet. This knowledge might contribute to lower mortality and morbidity.

1. **Guidelines of clinical practice for the management of swallowing disorders and recent dysphonia in the context of the COVID-19 pandemic**  
   A. Mattei European Journal of Otorhinolaryngology Head and Neck Disease 2020;:Epub.

Procedures putting healthcare workers in close contact with the airway are particularly at risk of contamination by the SARS-Cov-2 virus, especially when exposed to sputum, coughing, or a tracheostomy. In the current pandemic phase, all patients should be considered as potentially infected. Thus, the level of precaution recommended for the caregivers depends more on the type of procedure than on the patient's proved or suspected COVID-19 status. Procedures that are particularly at high risk of contamination are clinical and flexible endoscopic pharyngo-laryngological evaluation, and probably also video fluoroscopic swallowing exams. Voice rehabilitation should not be considered urgent at this time. Therefore, recommendations presented here mainly concern the management of swallowing disorders, which can sometimes be dangerous for the patient, and recent dysphonia. In cases where they are considered possible and useful, teleconsultations should be preferred to face-to-face assessments or rehabilitation sessions. The latter must be maintained only in few selected situations, after team discussions or in accordance with the guidelines provided by health authorities.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=aa8e84d229110e65ff3d39abb956ce24)

1. **Predictors of Extubation Failure Related to Aspiration and/or Excessive Upper Airway Secretions**  
   Houze M.-H. Respiratory care 2020;65(4):475-481.

BACKGROUND: Extubation failure may have several causes, including swallowing dysfunction, aspiration, and excessive upper airway secretions. We hypothesized that a bedside global swallowing pattern assessment including 9 criteria (volume of pharyngeal secretions, 5 swallowing motor items, swallowing reflex, and 2 gag reflexes) performed prior to extubation could identify patients at risk of extubation failure. <br/>METHOD(S): In a multicenter prospective observational study, all consecutive patients intubated and mechanically ventilated for &gt;=6 d were included. Before a planned extubation, a physiotherapist evaluated the 9 criteria of the swallowing assessment. The final extubation decision was left to the physician's discretion, blinded to the swallowing assessment. Extubation failure was defined as the need for re-intubation related to aspiration or excessive upper airway secretions within the first 72 h after extubation. Results are expressed as median (interquartile range [IQR]). <br/>RESULT(S): The study included 159 subjects (age 61 y [IQR 48-75]; male/female ratio 1.5; Simplified Acute Physiologic score II 54 [IQR 42-66]; duration of mechanical ventilation 11 d [IQR 8-17]). A total of 23 subjects (14.5%) required re-intubation, with 16 occurring within the first 72 h after extubation and 7 related to aspiration or excessive secretions. Swallowing assessment was significantly lower in subjects with re-intubation related to aspiration or excessive secretions within the first 72 h after extubation versus those not re-intubated for aspiration or excessive secretions (6 [IQR 5-7] vs 8 [IQR 7-8], P = .008, respectively). Among the 9 swallowing assessment criteria, normal right pharyngeal gag reflex was associated with a lower incidence of re-intubation related to aspiration or excessive secretions (odds ratio 0.12, 95% CI 0.03-0.59, P = .01), as well as normal left pharyngeal gag reflex (odds ratio 0.13, 95% CI 0.03-0.63, P = .01), with a negative predictive value of 0.98 for each reflex. <br/>CONCLUSION(S): In subjects with prolonged ventilation, the presence of one or both gag reflexes could predict a reduction in extubation failure related to aspiration or excessive upper airway secretions. (Clinical trials.gov registration NCT00780078.).<br/>Copyright &#xa9; 2020 by Daedalus Enterprises.

1. **Rehabilitation and respiratory management in the acute and early post-acute phase. "Instant paper from the field" on rehabilitation answers to the Covid-19 emergency.**  
   Kiekens Carlotte European journal of physical and rehabilitation medicine 2020;:No page numbers.

Covid-19 is a respiratory infectious disease that can cause respiratory, physical and psychological long-term dysfunctions in patients. First recommendations on respiratory management were published, but they were not based on the specific needs due to Covid-19. In this paper we share the early experiences from the clinical field in Northern Italy, where the epidemic started in February. This paper summarizes the second webinar on Covid-19 (230 live attendees, 11,600 viewers of the recorded version) organized by the Italian Society of Physical and Rehabilitation Medicine about rehabilitation and in particular respiratory management in the acute (Intensive Care Unit - ICU) and immediate post-acute phases. There is the need to prepare for the post-acute phase. ICU length of stay is relatively long, with immobilisation in prone position. Some specific problems are described, including severe muscle weakness and fatigue, joint stiffness, dysphagia, (neuro)psychological problems, impaired functioning concerning mobility, activities of daily life and work. A lot is yet unknown and patients can experience long-term consequences as we know from the literature on the post-intensive care syndrome, but Covid-19 has unique features to be investigated and understood. As one colleague stated during the Covinar: this is a marathon, not a sprint….

1. **Clinical Decision Making in the ICU: Dysphagia Screening, Assessment, and Treatment.**  
   Anon. Seminars in Speech & Language 2019;40(3):170-187.

Clinicians often perceive the intensive care unit as among the most intimidating environments in patient care. With the proper training, acquisition of skill, and approach to clinical care, feelings of intimidation may be overcome with the great rewards this level of care has to offer. This review—spanning the ages of birth to senescence and covering oral/nasal endotracheal intubation and tracheostomy—presents a clinically relevant, directly applicable review of screening, assessment, and treatment of dysphagia in the patients who are critically ill for clinical speech–language pathologists and identifies gaps in the clinical peer-reviewed literature for researchers.

1. **Effectiveness of Therapy on Post-Extubation Dysphagia: Clinical and Electromyographic Findings.**  
   El Gharib Aretuza Zaupa Gasparim Clinical Medicine Insights: Ear, Nose & Throat 2019;12:No page numbers.

Introduction: Patients who require prolonged endotracheal intubation (>48 hours) are at risk of dysphagia. Speech-language pathologists should perform swallowing exercises after extubation due to the high probability of developing aspiration pneumonia. There are no studies describing the use of swallowing techniques employed in post-extubation therapy aided by surface electromyography. Objectives: To evaluate the effects of swallowing function therapy in extubated patients after prolonged orotracheal intubation by means of clinical and electromyographic evaluation. Methods: A total of 15 patients were enrolled in this study (average age 48.6 ± 16.5 years). The study was carried out in three phases: (1) Clinical and electromyographic evaluation using the Dysphagia Risk Assessment Protocol following dysphagia scores criteria, and the measurement of the suprahyoid muscles amplitude (μV) expressed by root mean square (RMS), respectively; (2) swallowing rehabilitation program; and (3) reevaluation of patients after therapy. The Wilcoxon paired test assuming a significance level of 5% was used for statistical analysis. Results: By means of the swallowing scale, it was verified that patients suffered from severe oropharyngeal dysphagia at the first evaluation (80%), but the rehabilitation therapy reduced clinical signs, persistent only in one patient (6.7%) post-therapy, thus, improving swallowing. Significant differences, pre- and post-therapy, for suprahyoid muscles during maximal voluntary isometric contractions of right (P =.0067) and left (P =.0215), saliva swallowing by right (P =.0413) and left (P =.0151), and liquid swallowing by right (P =.0479) and left (P =.0215) sides, were found, as shown by electromyography. Conclusions: Swallowing exercises carried out by extubated patients after prolonged orotracheal intubation increased neuromuscular recruitment of suprahyoid muscles involved with swallowing and reduced dysphagia levels.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=403e72b19bbd42380a86f856f87f6557)

1. **Relationship Between Laryngeal Sensation, Length of Intubation, and Aspiration in Patients with Acute Respiratory Failure.**  
   Borders James C. Dysphagia (0179051X) 2019;34(4):521-528.

Dysphagia is common in hospitalized patients post-extubation and associated with poor outcomes. Laryngeal sensation is critical for airway protection and safe swallowing. However, current understanding of the relationship between laryngeal sensation and aspiration in post-extubation populations is limited. Acute respiratory failure patients requiring intensive care unit admission and mechanical ventilation received a Flexible Endoscopic Evaluation of Swallowing (FEES) within 72 h of extubation. Univariate and multivariable analyses were performed to examine the relationship between laryngeal sensation, length of intubation, and aspiration. Secondary outcomes included pharyngolaryngeal secretions, pneumonia, and diet recommendations. One-hundred and three patients met inclusion criteria. Fifty-one patients demonstrated an absent laryngeal adductor reflex (LAR). Altered laryngeal sensation correlated with the presence of secretions (p = 0.004). There was a significant interaction between the LAR, aspiration, and duration of mechanical ventilation. Altered laryngeal sensation was significantly associated with aspiration on FEES only in patients with a shorter length of intubation (p = 0.008). Patients with altered laryngeal sensation were prescribed significantly more restricted liquid (p = 0.03) and solid (p = 0.001) diets. No relationship was found between laryngeal sensation and pneumonia. There is a high prevalence of laryngeal sensory deficits in mechanically ventilated patients post-extubation. Altered laryngeal sensation was associated with secretions, aspiration, and modified diet recommendations especially in those patients with a shorter length of mechanical ventilation. These results demonstrate that laryngeal sensory abnormalities impact the development of post-extubation dysphagia.

1. **Upper airway tract complications of endotracheal intubation.**  
   Tikka Theofano British Journal of Hospital Medicine (17508460) 2019;80(8):441-447.

The gold standard in airway maintenance is translaryngeal endotracheal intubation, but this is not without its complications. Trauma to the upper airway as a result of the act of endotracheal intubation is a common event in adults undergoing procedures under general anaesthesia. Sites requiring attention during intubation include the laryngeal apparatus, the pharynx and oral cavity as well as the nasal cavity when nasopharyngeal intubation is performed. Patients can present with a range of symptoms which can make assessment and management challenging. Dysphonia, throat pain and dysphagia are the commonest presenting complaints. Patient-related factors, intubation technique and other anaesthetic-related conditions can be a cause of trauma, if not adequately considered before intubation. All patients should be carefully examined preoperatively and their past medical history obtained. Patient demographics, comorbidities, existing airway pathology and presence of reflux should be noted. Trauma prevention strategies should be in place to eliminate avoidable complications. Potential difficult airway cases should be flagged up and adequately prepared for, in anticipation of intubation difficulties that can lead to trauma. The majority of injuries will resolve spontaneously with conservative management. Persistent symptomatology, usually secondary to laryngeal injuries, requires prompt referral to an ear nose and throat specialist with an interest in laryngology for further assessment and treatment.

### Opening Internet Links

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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.

## B. Search History

|  | **Source** | **Criteria** | **Results** |
| --- | --- | --- | --- |
| 1. | CINAHL | (Covid-19).ti,ab | 848 |
| 2. | CINAHL | (Covid 19).ti,ab | 11 |
| 3. | CINAHL | "DEGLUTITION DISORDERS"/ | 8820 |
| 4. | CINAHL | (Dysphagia).ti,ab | 8923 |
| 5. | CINAHL | CORONAVIRUS/ | 308 |
| 6. | CINAHL | (1 OR 2 OR 5) | 1135 |
| 7. | CINAHL | (3 OR 4) | 12847 |
| 8. | CINAHL | (6 AND 7) | 0 |
| 9. | Medline | CORONAVIRUS/ | 2016 |
| 10. | Medline | (Covid-19).ti,ab | 5006 |
| 11. | Medline | exp "DEGLUTITION DISORDERS"/ | 51916 |
| 12. | Medline | (dysphagia).ti,ab | 26675 |
| 13. | Medline | (9 OR 10) | 6904 |
| 14. | Medline | (11 OR 12) | 65597 |
| 15. | Medline | (13 AND 14) | 2 |
| 16. | EMBASE | (Covid-19).ti,ab | 4955 |
| 17. | EMBASE | CORONAVIRUS/ | 6991 |
| 18. | EMBASE | (16 OR 17) | 11657 |
| 19. | EMBASE | exp DYSPHAGIA/ OR "DYSPHAGIA AID"/ OR DYSPHAGIAS/ | 71016 |
| 20. | EMBASE | (18 AND 19) | 4 |
| 21. | PubMed | (covid-19).ti,ab | 7106 |
| 22. | PubMed | (Coronavirus).ti,ab | 19283 |
| 23. | PubMed | (21 OR 22) | 22506 |
| 24. | PubMed | (Dysphagia).ti,ab | 67421 |
| 25. | PubMed | (DEGLUTITION DISORDERS).ti,ab | 53139 |
| 26. | PubMed | (24 OR 25) | 67421 |
| 27. | PubMed | (23 AND 26) | 4 |
| 28. | EMBASE | "RESPIRATORY TRACT INTUBATION"/ OR INTUBATION/ | 38379 |
| 29. | EMBASE | (19 AND 28) | 900 |
| 30. | EMBASE | 29 [DT FROM 2020] | 21 |
| 31. | CINAHL | "INTUBATION, INTRATRACHEAL"/ OR INTUBATION/ | 14813 |
| 32. | CINAHL | (7 AND 31) | 128 |
| 33. | CINAHL | 32 [DT FROM 2018] | 13 |
| 34. | Medline | "INTUBATION, INTRATRACHEAL"/ OR INTUBATION/ | 40739 |
| 35. | Medline | (14 AND 34) | 637 |
| 36. | Medline | 35 [DT FROM 2019] | 11 |

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