

**Updates on Dysphagia Management**  
**Maine Speech Language Hearing Association**  
**October, 2023**

**Angela Mansolillo, MA/CCC-SLP, BCS-S**

**Reference List**

**Practice Patterns and Implementation Science**

Carnaby, G. D., & Harenberg, L. (2013). What is "usual care" in dysphagia rehabilitation: a survey of USA dysphagia practice patterns. *Dysphagia*, 28(4), 567–574.

Easterling, D., (2016) Getting real with strategy: Insights from implementation science, *The Foundation Review*, 8(2), Article 11.

Felicetti, C., et al, (2020) Dysphagia Management in Schools: A Survey of Speech-Language Pathologists. *Perspectives of the ASHA Special Interest Groups*, 5(2), 527-46.

Vose, A. K., Kesneck, S., Sunday, K., Plowman, E., & Humbert, I. (2018). A Survey of Clinician Decision Making When Identifying Swallowing Impairments and Determining Treatment. *Journal of speech, language, and hearing research : JSLHR*, 61(11), 2735–2756.

**Dysphagia in Respiratory Diseases**

Addington, et al, (2005) Effect of Stroke Location on the Laryngeal Cough Reflex and Pneumonia Risk”, *Cough*, 1:4.

Almario, C., et al, (2020) Increased risk of COVID-19 among users of proton pump inhibitors, *Am J Gastroenterology*, 115(10), 1707-15.

Andriolo, B. N., Andriolo, R. B., Saconato, H., Atallah, Á. N., & Valente, O. (2015). Early versus late tracheostomy for critically ill patients. *The Cochrane database of systematic reviews*, 1(1), CD007271.

Bhutada, A. M., Broughton, W. A., & Focht Garand, K. L. (2020). Obstructive sleep apnea syndrome (OSAS) and swallowing function-a systematic review. *Sleep & breathing = Schlaf & Atmung*, 24(3), 791–799.

Bianchi, C, et al, (2012) Cough peak flow as a predictor of pulmonary morbidity in patients with dysphagia, *Am J Phys Med and Rehabil*, 91(9), 783-8.

Campanholo, M., et al (2021). Dysphagia in patients with moderate and severe obstructive sleep apnea. *Brazilian journal of otorhinolaryngology*, 87(4), 422–427.

Caparroz, FA., et al, (2019) A pilot study on the efficacy of continuous positive airway pressure on the manifestations of dysphagia in patients with obstructive sleep apnea, *Dysphagia*, 34, 333-340.

Cassiani, R. A., et al (2015). Oral and pharyngeal bolus transit in patients with chronic obstructive pulmonary disease. *International journal of chronic obstructive pulmonary disease*, 10, 489–496.

Clayton, N. A. et al (2014). Impaired laryngopharyngeal sensitivity in patients with COPD: the association with swallow function. *International journal of speech-language pathology*, 16(6), 615–623.

Corradi, A., et al, (2019) Swallowing evaluation after surgery for obstructive sleep apnea syndrome: Uvulopalatopharyngoplasty vs expansion pharyngoplasty, *Eur Arch Otorhinolaryngol*, 275(4), 1023-30.

- Curtis, J. A., & Troche, M. S. (2020). Effects of Verbal Cueing on Respiratory-Swallow Patterning, Lung Volume Initiation, and Swallow Apnea Duration in Parkinson's Disease. *Dysphagia*, 35(3), 460–470.
- Curtis, J.A., Troche, M.S. (2020) Handheld Cough Testing: A Novel Tool for Cough Assessment and Dysphagia Screening. *Dysphagia* 35, 993–1000
- Cvejic, L., & Bardin, P. G. (2021). Breathing-swallow dysfunction in COPD: How silent aspiration may be contributing to exacerbations. *Respirology (Carlton, Vic.)*, 26(12), 1110–1111.
- Cvejic, L., et al (2021). Aspiration and severe exacerbations in COPD: a prospective study. *ERJ open research*, 7(1), 00735-2020.
- da Rosa, F. B., et al (2020). Oral and Oropharyngeal Sensory Function in Adults With Chronic Obstructive Pulmonary Disease. *American journal of speech-language pathology*, 29(2), 864–872
- Damarla, M., et al, (2020) Prone Positioning of Nonintubated Patients with COVID-19. *American journal of respiratory and critical care medicine*, 202(4), 604–606.
- Davenport P. W. (2008). Urge-to-cough: what can it teach us about cough?. *Lung*, 186 Suppl 1, S107–S111.
- Davenport, P. (2009) Clinical cough I: The urge to cough: A respiratory sensation, *Handb Exp Pharmacol*, 187, 263-76.
- Domer, A., et al, (2013) Neurophysiology and clinical implications of the laryngeal adductor reflex *Curr Otorhinolaryngol Rep*, 1(3), 178-82.
- Drulia, T. C., et al (2021). An Exploration of Lung Volume Effects on Swallowing in Chronic Obstructive Pulmonary Disease. *American journal of speech-language pathology*, 30(5), 2155–2168.
- Epiu, I., et al (2021). Tongue strength and swallowing dynamics in chronic obstructive pulmonary disease. *ERJ open research*, 7(3), 00192-2021.
- Filice, G., Patel, P., Kata, P., Kanukuntla, A., Patel, V., Gallagher, N., & Cheriya, P. (2021). An Overview of Outcomes Associated With Early Versus Late Tracheostomy From a National Standpoint. *Cureus*, 13(7), e16325.
- Galli, J., et al (2021). Impact of Tracheal Tube on Swallowing in Post-Operative Head and Neck Cancer Patients: Scintigraphic Analysis. *Dysphagia*, 36(6), 953–958.
- Ghannouchi, I., Speyer, R., Doma, K., Cordier, R., & Verin, E. (2016). Swallowing function and chronic respiratory diseases: Systematic review. *Respiratory medicine*, 117, 54–64.
- Ghannouchi, I., Speyer, R., Doma, K., Cordier, R., & Verin, E. (2016). Swallowing function and chronic respiratory diseases: Systematic review. *Respiratory medicine*, 117, 54–64.
- Gonzalez Lindh, M., et al (2019). Subjective swallowing symptoms and related risk factors in COPD. *ERJ open research*, 5(3), 00081-2019.
- Gross, RD., et al, (2009) The Coordination of Breathing and Swallowing in Chronic Obstructive Pulmonary Disease, *Am J Resp Care*, 179, 559-65.
- Guillén-Solà, A., et al (2015). Usefulness of citric cough test for screening of silent aspiration in subacute stroke patients: a prospective study. *Archives of physical medicine and rehabilitation*, 96(7), 1277–1283.
- Hegland, K, et al, (2014) Sequential voluntary cough and aspiration or aspiration risk in Parkinson's Disease, *Lung*, 192(4), 601-8.

Kato, M. G., et al (2018). The Incidence and Characterization of Globus Sensation, Dysphagia, and Odynophagia Following Surgery for Obstructive Sleep Apnea. *Journal of clinical sleep medicine : JCSM : official publication of the American Academy of Sleep Medicine*, 14(1), 127–132.

Kim, Y. K., Choi, J. H., Yoon, J. G., Lee, J. W., & Cho, S. S. (2015). Improved Dysphagia After Decannulation of Tracheostomy in Patients With Brain Injuries. *Annals of rehabilitation medicine*, 39(5), 778–785.

Kishida, Y., et al, (2013) Relationship between dysphagia and serum Substance P level in chronic central nervous disease, *Int Jnl Clin Med*, 4, 86-90.

Kobayashi, S., et al (2007). Impairment of the swallowing reflex in exacerbations of COPD. *Thorax*, 62(11), 1017.

Korompoki, E., et al (2021). Epidemiology and organ specific sequelae of post-acute COVID19: A narrative review. *The Journal of infection*, 83(1), 1–16.

Kwok, A., et al, (2013) Post-extubation dysphagia in trauma patients: It's hard to swallow *Am J Surg*, 206(6), 924-27

Ladopoulos, T., et al, (2018) Gastrointestinal dysmotility in critically ill patients, *Annals of Gastroenterology*, 31, 273-81.

Le, M. Q., et al, (2020) The Down Side of Prone Positioning: The Case of a Coronavirus 2019 Survivor. *American journal of physical medicine & rehabilitation*, 99(10), 870–872.

Lee, J., et al, (2014) Usefulness of the simplified cough test in evaluating cough reflex sensitivity as a screening test for silent aspiration, *Ann Rehab, Med*, 38(4), 476-84.

Lee, S. J., et al (2015). Voluntary Cough and Swallowing Function Characteristics of Acute Stroke Patients Based on Lesion Type. *Archives of physical medicine and rehabilitation*, 96(10), 1866–1872.

Lin, T. F., & Shune, S. (2020). Chronic Obstructive Pulmonary Disease and Dysphagia: A Synergistic Review. *Geriatrics (Basel, Switzerland)*, 5(3), 45.

Lin, T. F., & Shune, S. (2020). Chronic Obstructive Pulmonary Disease and Dysphagia: A Synergistic Review. *Geriatrics (Basel, Switzerland)*, 5(3), 45.

Magliulo, G., et al (2018). Laryngopharyngeal reflux in obstructive sleep apnoea patients: Literature review and meta-analysis. *American journal of otolaryngology*, 39(6), 776–780

Marik, P. and Kaplan, D., (2003) Aspiration Pneumonia and Dysphagia in the Elderly, *Chest*, 124, 328-36.

Mathews, K. S., Soh, H., Shaefi, S., Wang, W., Bose, S., Coca, S., Gupta, S., Hayek, S. S., Srivastava, A., Brenner, S. K., Radbel, J., Green, A., Sutherland, A., Leonberg-Yoo, A., Shehata, A., Schenck, E. J., Short, S. A. P., Hernán, M. A., Chan, L., Leaf, D. E., ... STOP-COVID Investigators (2021). Prone Positioning and Survival in Mechanically Ventilated Patients With Coronavirus Disease 2019-Related Respiratory Failure. *Critical care medicine*, 49(7), 1026–1037.

Miarons, M., et al (2018). Increased levels of substance P in patients taking beta-blockers are linked with a protective effect on oropharyngeal dysphagia. *Neurogastroenterology and motility : the official journal of the European Gastrointestinal Motility Society*, 30(9), e13397.

Miles, A., et al (2018). Cough response to aspiration in thin and thick fluids during FEES in hospitalized inpatients. *International journal of language & communication disorders*, 53(5), 909–918.

Mokhlesi, B., et al, (2002) Oropharyngeal deglutition in stable COPD, *Chest*, 121(2), 361-69.

Muhle, P., et al, (2017) Increase of Substance P concentration in saliva after pharyngeal electrical stimulation in severely dysphagic stroke patients – An indicator of decannulation success?, *Neuro Signals*, 25, 74-87.

- Munshi, L., et al, (2017) Prone Position for Acute Respiratory Distress Syndrome. A Systematic Review and Meta-Analysis. *Annals of the American Thoracic Society*, 14(Supplement\_4), S280–S288.
- Niimi, M. et al, (2018) Relationship between frequency of spontaneous swallowing and salivary substance P level in patients with acute stroke, *Dysphagia*, 33, 414-18.
- Pitts, T., et al (2009). Impact of expiratory muscle strength training on voluntary cough and swallow function in Parkinson disease. *Chest*, 135(5), 1301–1308.
- Pitts, T., et al, (2008) Voluntary cough production and swallow dysfunction in Parkinson’s Disease, *Dysphagia*, 23(3), 297-301.
- Pitts, T., et al, (2010) Using voluntary cough to detect penetration and aspiration during oropharyngeal swallowing in patients with Parkinson Disease, *Chest*, 138(6), 1426-31.
- Pizzorni, N., et al (2021). Dysphagia symptoms in obstructive sleep apnea: prevalence and clinical correlates. *Respiratory research*, 22(1), 117.
- Plowman, E., et al (2016) Voluntary cough airflow differentiates safe vs unsafe swallowing in Amyotrophic Lateral Sclerosis, *Dysphagia*, 31, 383-90.
- Rumbak, M. J., et al (2004). A prospective, randomized, study comparing early percutaneous dilational tracheotomy to prolonged translaryngeal intubation (delayed tracheotomy) in critically ill medical patients. *Critical care medicine*, 32(8), 1689–1694.
- Sakai, Y., et al (2020). Cough Strength Is an Indicator of Aspiration Risk When Restarting Food Intake in Elderly Subjects With Community-Acquired Pneumonia. *Respiratory care*, 65(2), 169–176.
- Sato, K., Chitose, S. I., Sato, K., Sato, F., Ono, T., & Umeno, H. (2021). Recurrent aspiration pneumonia precipitated by obstructive sleep apnea. *Auris, nasus, larynx*, 48(4), 659–665.
- Scarpel, R. et al (2021). Oropharyngeal Swallowing Dynamic Findings in People with Asthma. *Dysphagia*, 36(4), 541–550.
- Schar, M., et al (2018). Pathophysiology of swallowing following oropharyngeal surgery for obstructive sleep apnea syndrome. *Neurogastroenterology and motility : the official journal of the European Gastrointestinal Motility Society*, 30(5), e13277.
- Schar, M., et al (2018). Pathophysiology of swallowing following oropharyngeal surgery for obstructive sleep apnea syndrome. *Neurogastroenterology and motility : the official journal of the European Gastrointestinal Motility Society*, 30(5), e13277.
- Shah, F., et al, (2018) Axon and Schwann Cell Degeneration in Nerves of Upper Airway Relates to Pharyngeal Dysfunction in Snorers and Patients With Sleep Apnea. *Chest*, 154(5)
- Shah, H. et al (2023). Long-term laryngological sequelae and patient-reported outcomes after COVID-19 infection. *American journal of otolaryngology*, 44(2), 103780
- Siempos, I. I., Ntaidou, T. K., Filippidis, F. T., & Choi, A. (2015). Effect of early versus late or no tracheostomy on mortality and pneumonia of critically ill patients receiving mechanical ventilation: a systematic review and meta-analysis. *The Lancet. Respiratory medicine*, 3(2), 150–158.
- Silverman, E. P., et al (2016). Measurement of Voluntary Cough Production and Airway Protection in Parkinson Disease. *Archives of physical medicine and rehabilitation*, 97(3), 413–420.

- Skoretz, S. A., Anger, N., Wellman, L., Takai, O., & Empey, A. (2020). A Systematic Review of Tracheostomy Modifications and Swallowing in Adults. *Dysphagia*, 35(6), 935–947.
- Skoretz, S. et al, (2014) Dysphagia and associated risk factors following extubation in cardiovascular surgical patients, *Dysphagia*, 29(6), 647–654.
- Sugiya, R., et al (2022). Decreased Tongue Strength is Related to Skeletal Muscle Mass in COPD Patients. *Dysphagia*, 37(3), 636–643.
- Taboada, M., et al, (2020) Effectiveness of prone positioning in non-intubated ICU patients with moderate to severe ARDS by COVID-19. *Anesthesia and analgesia*, 2020 10.1213/ANE.0000000000005239.
- Terada, K., et al (2010). Abnormal swallowing reflex and COPD exacerbations. *Chest*, 137(2), 326–332.
- Terk, A. R., Leder, S. B., & Burrell, M. I. (2007). Hyoid bone and laryngeal movement dependent upon presence of a tracheotomy tube. *Dysphagia*, 22(2), 89–93.
- Troche, M., (2014) A framework for understanding the shared substrates of airway protection, *J Appl Oral Sci*, 22(4), 251-60.
- Troche, M., et al, (2016) Reflex cough and disease duration as predictors of swallowing dysfunction in Parkinson Disease”, *Dysphagia*, 31(6), 757-64.
- Wakasugi, Y.,et al. (2008) Screening Test for Silent Aspiration at the Bedside *Dysphagia* 23, 364–370.
- Wakasugi, Y.,et al. (2014) Usefulness of a handheld nebulizer in cough test to screen for silent aspiration, *Odontology* 102, 76–80.
- Wang, C., et al, (2016) Non-invasive assessment of swallowing and respiration coordination for the OSA patient, *Dysphagia*, 31, 771-80.
- Wang, X., et al (2023). Elucidating the Link: Chronic Obstructive Pulmonary Disease and the Complex Interplay of Gastroesophageal Reflux Disease and Reflux-Related Complications. *Medicina (Kaunas, Lithuania)*, 59(7), 1270.
- Watando, A., et al, (2004) Daily oral care and cough reflex sensitivity in elderly nursing home patients”, *Chest*, 126(4), 1066-70
- Widdicombe, J and Fontana, G (2006) Cough, What’s in a Name?, *Eur Respir J*, 28, 10-15.
- Wu, Z. H., et al (2019). The relationship between obstructive sleep apnea hypopnea syndrome and gastroesophageal reflux disease: a meta-analysis. *Sleep & breathing = Schlaf & Atmung*, 23(2), 389–397.
- Xiao, Y. L., et al (2012). Gastroesophageal and laryngopharyngeal reflux profiles in patients with obstructive sleep apnea/hypopnea syndrome as determined by combined multichannel intraluminal impedance-pH monitoring. *Neurogastroenterology and motility : the official journal of the European Gastrointestinal Motility Society*, 24(6), e258–e265.
- Young, D., Harrison, D. A., Cuthbertson, B. H., Rowan, K., & TracMan Collaborators (2013). Effect of early vs late tracheostomy placement on survival in patients receiving mechanical ventilation: the TracMan randomized trial. *JAMA*, 309(20), 2121–2129.

### **Presbyphagia, Frailty and Sarcopenia**

- Bahat, G., et al (2019). Association between Dysphagia and Frailty in Community Dwelling Older Adults. *The journal of nutrition, health & aging*, 23(6), 571–577.

- Banda, K. J., et al (2021). Prevalence of Oropharyngeal Dysphagia and Risk of Pneumonia, Malnutrition, and Mortality in Adults Aged 60 Years and Older: A Meta-Analysis. *Gerontology*, 1–13. Advance online publication.
- Chang, M. C., & Kwak, S. (2021). Videofluoroscopic Swallowing Study Findings Associated With Subsequent Pneumonia in Patients With Dysphagia Due to Frailty. *Frontiers in medicine*, 8, 690968.
- Cohen, S. M., et al. (2020). Association Between Dysphagia and Inpatient Outcomes Across Frailty Level Among Patients  $\geq$  50 Years of Age. *Dysphagia*, 35(5), 787–797.
- Hathaway, B., et al (2014). Frailty measurements and dysphagia in the outpatient setting. *The Annals of otology, rhinology, and laryngology*, 123(9), 629–635.
- Mateos-Nozal, J., et al (2021). Oropharyngeal dysphagia in older patients with hip fracture. *Age and ageing*, 50(4), 1416–1421.
- Love, A. L., Cornwell, P. L., & Whitehouse, S. L. (2013). Oropharyngeal dysphagia in an elderly post-operative hip fracture population: a prospective cohort study. *Age and ageing*, 42(6), 782–785.
- Madsen, G., et al (2020). Prevalence of Swallowing and Eating Difficulties in an Elderly Postoperative Hip Fracture Population-A Multi-Center-Based Pilot Study. *Geriatrics (Basel, Switzerland)*, 5(3), 52.
- Rofes, L., et al (2010). Pathophysiology of oropharyngeal dysphagia in the frail elderly. *Neurogastroenterology and motility : the official journal of the European Gastrointestinal Motility Society*, 22(8), 851–e230.
- Sella-Weiss O. (2021). Association between swallowing function, malnutrition and frailty in community dwelling older people. *Clinical nutrition ESPEN*, 45, 476–485.
- Takeuchi, K., et al (2014). Nutritional status and dysphagia risk among community-dwelling frail older adults. *The journal of nutrition, health & aging*, 18(4), 352–357.
- Wakabayashi H. (2014). Presbyphagia and Sarcopenic Dysphagia: Association between Aging, Sarcopenia, and Deglutition Disorders. *The Journal of frailty & aging*, 3(2), 97–103.

## Exercise

- Borders, J. C., Curtis, J. A., Sevitz, J. S., Vanegas-Arroyave, N., & Troche, M. S. (2022). Immediate Effects of Sensorimotor Training in Airway Protection (smTAP) on Cough Outcomes in Progressive Supranuclear Palsy: A Feasibility Study. *Dysphagia*, 37(1), 74–83.
- Brandimore, A. E., Hegland, K. W., Okun, M. S., Davenport, P. W., & Troche, M. S. (2017). Voluntary upregulation of reflex cough is possible in healthy older adults and Parkinson's disease. *Journal of Applied Physiology*, 123(1), 19–26
- Braun, S., et al (2008). Using mental practice in stroke rehabilitation: a framework. *Clinical rehabilitation*, 22(7), 579–591.
- Caldas, A. S. C., et al (2018). Motor imagery and swallowing: a systematic literature review. *Revista CEFAC*, 20, 247-257.
- Cho, Y. S., et al (2017). Effects of bedside self-exercise on oropharyngeal swallowing function in stroke patients with dysphagia: a pilot study. *Journal of physical therapy science*, 29(10), 1815–1816.
- Choi, J. B., et al (2017). Effects of Shaker exercise in stroke survivors with oropharyngeal dysphagia. *NeuroRehabilitation*, 41(4), 753–757.

- Choy, J., et al (2023). Dosages of swallowing exercises in stroke rehabilitation: a systematic review. *European archives of oto-rhino-laryngology : official journal of the European Federation of Oto-Rhino-Laryngological Societies (EUFOS) : affiliated with the German Society for Oto-Rhino-Laryngology - Head and Neck Surgery*, 280(3), 1017–1045.
- Curtis, J.A., Troche, M.S. (2020) Handheld Cough Testing: A Novel Tool for Cough Assessment and Dysphagia Screening. *Dysphagia* 35, 993–1000
- Curtis, J. A., Mocchetti, V., & Rameau, A. (2023). Concurrent Validity of the IOPI and Tongueometer Orofacial Strength Measurement Devices. *The Laryngoscope*, 10.1002/lary.30782. Advance online publication
- Doeltgen, S. H., et al (2011). Pharyngeal pressure generation during tongue-hold swallows across age groups. *American journal of speech-language pathology*, 20(2), 124–130.
- Doeltgen, S. H., et al (2017). Biomechanical Quantification of Mendelsohn Maneuver and Effortful Swallowing on Pharyngoesophageal Function. *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*, 157(5), 816–823.
- Easterling, C., et al, (2005) Attaining and maintaining isometric and isokinetic goals of the Shaker exercise, *Dysphagia*, 20(2), 133-38.
- El Sharkawi, et al, (2002) Swallowing and Voice Effects of Lee Silverman Voice Treatment (LSVT): A pilot study, *Jnl Neur Neurosurg Psychiatry*, 72(1), 31-6.
- Fujiki, RB, et al, (2019) The recline and head lift exercises: A randomized clinical trial comparing biomechanical swallowing outcomes and perceived effort in healthy older adults, *J Speech Lang Hearing Res*, 62, 631-43.
- Fujiu, M., and Logemann, J., (1996) Effect of tongue holding maneuver on posterior pharyngeal wall movement during deglutition, *AJSLP*, 5, 23 – 30.
- Fujiwara, S., et a, (2018) Tongue pressure production and submental surface electromyogram activities during tongue-hold swallow with different holding positions, *Dysphagia*, 33, 403-13.
- Gomes, L. M., et al (2016). Effects of Effortful Swallow on Cardiac Autonomic Regulation. *Dysphagia*, 31(2), 188–194.
- Hegland, K., et al, (2016) Rehabilitation of swallowing and cough functions following stroke: An expiratory muscle strength training trial, *Arch Phys Med Rehabil*, 97(8), 1345-51.
- Huckabee, M and Burnip, E., (2018) Still Rethinking Rehab: Motor Learning Tomreatment Approaches for Dysphagia, *Perspectives of the ASHA Special Interest Groups SIG 13*, Vol 3(pt4).
- Huckabee, M., and Steele, C., (2007) An analysis of lingual contribution to submental surface electromyographic measures and pharyngeal pressure during effortful swallow, *Arch Phys Med Rehab*, 87(8), 1067-72.
- Hughes, T., & Watts, C. R. (2016). Effects of 2 Resistive Exercises on Electrophysiological Measures of Submandibular Muscle Activity. *Archives of physical medicine and rehabilitation*, 97(9), 1552–1557.
- Kidgell, D., et al, (2011) Strength training of one limb increases corticomotor excitability projecting to the contralateral homologous limb, *Motor Control*, 15(2), 247-66
- Kılınc, H. E., et al (2020). The Effects of Different Exercise Trainings on Suprahyoid Muscle Activation, Tongue Pressure Force and Dysphagia Limit in Healthy Subjects. *Dysphagia*, 35(4), 717–724.

- Kraaijenga, S., et al, (2015) Effects of strengthening exercises on swallowing musculature and function in senior healthy subjects: A prospective effectiveness and feasibility study, *Dysphagia*, 30, 392-402.
- Krekeler, B. N., Rowe, L. M., & Connor, N. P. (2021). Dose in Exercise-Based Dysphagia Therapies: A Scoping Review. *Dysphagia*, 36(1), 1–32.
- Kober, S. E., & Wood, G. (2014). Changes in hemodynamic signals accompanying motor imagery and motor execution of swallowing: a near-infrared spectroscopy study. *NeuroImage*, 93 Pt 1, 1–10.
- Kober, S. E., Grössinger, D., & Wood, G. (2019). Effects of Motor Imagery and Visual Neurofeedback on Activation in the Swallowing Network: A Real-Time fMRI Study. *Dysphagia*, 34(6), 879–895
- Lazarus, C., et al, (2002) Effects of voluntary maneuvers on tongue base function for swallowing, *Folia Phoniatrica et Logopaedica*, 54(4), 171-6.
- Lee, M., et al, (2009) Unilateral strength training increases voluntary activation of the opposite untrained limb, *Clin Neurophysiology*, 120(4), 802-8.
- Lin, C. H., Chung, S. Y., Lin, C. T., & Hwu, Y. J. (2021). Effect of tongue-to-palate resistance training on tongue strength in healthy adults. *Auris, nasus, larynx*, 48(1), 116–123.
- Liu, J., et al (2023). Effects of chin tuck against resistance exercise on post-stroke dysphagia rehabilitation: A systematic review and meta-analysis. *Frontiers in neurology*, 13, 1109140p
- Martin-Harris, B., et al, (2015) Respiratory-Swallow training in patients with head and neck cancer, *Arch Phys Med Rehabil*, 96(5), 885-93.
- Matsubara, M., et al (2018). High-speed jaw-opening exercise in training suprahyoid fast-twitch muscle fibers. *Clinical interventions in aging*, 13, 125–131.
- Mepani, R., et al, (2009) Augmentation of Deglutitive Thyrohyoid Muscle Shortening by the Shaker Exercise, *Dysphagia*, 24, 26-31.
- Miles, A., et al (2017). Effect of Lee Silverman Voice Treatment (LSVT LOUD®) on swallowing and cough in Parkinson's disease: A pilot study. *Journal of the neurological sciences*, 383, 180–187.
- Munn, J., et al, (2005) Training with unilateral resistance exercise increases contralateral strength, *Jnl of Applied Physiology*, 99, 1880-84.
- Nagano, A., et al (2020). Effects of Physical Rehabilitation and Nutritional Intake Management on Improvement in Tongue Strength in Sarcopenic Patients. *Nutrients*, 12(10), 3104.
- Nozaki, S et al (2021) Effects of Lee Silverman Voice treatment (LSVT LOUD) on swallowing in patients with progressive supranuclear palsy: a pilot study. *Prog Rehabil Med*. 6: 20210012
- Oh J. C. (2019). Effects of Tongue-Hold Swallows on Suprahyoid Muscle Activation According to the Relative Tongue Protrusion Length in the Elderly Individuals. *Dysphagia*, 34(3), 382–390.
- Oh, J., (2016) A pilot study of the head extension swallowing exercise: New method for strengthening swallowing-related muscle activity, *Dysphagia*, 31, 680-86.
- Oh, J., (2018) Effect of the head extension swallowing exercise on suprahyoid muscle activity in elderly individuals, 110, 133-38.

- Oh, J., and Kwon, J., (2018) Effects of resistive jaw-opening exercise with elastic bands on suprahyoid muscle activation in normal subjects, *Folia Phoniatr Logop*, 70, 101-08.
- Park, J. et al, (2018) Effect of chin tuck against resistance exercise on patients with dysphagia following stroke: A randomized pilot study, *NeuroRehabilitation*, 42(2), 191-97.
- Park, J. S., & Hwang, N. K. (2021). Chin tuck against resistance exercise for dysphagia rehabilitation: A systematic review. *Journal of oral rehabilitation*, 48(8), 968–977.
- Park, J. S., et al(2017). Effect of head lift exercise on kinematic motion of the hyolaryngeal complex and aspiration in patients with dysphagic stroke. *Journal of oral rehabilitation*, 44(5), 385–391.
- Park A., et al (2022) Swallowing outcomes following voice therapy in multiple system atrophy with dysphagia: comparison of treatment efficacy with Parkinson’s Disease. *Dysphagia*, 37(1), 198-06.
- Park, T., and Kim, Y., (2016) Effects of tongue pressing effortful swallow in older healthy individuals, *Arch Gerontol Geriatr*, 66, 127-33.
- Petersson, K., et al (2023). A randomized controlled study evaluating the head-lift exercise in head and neck cancer patients with radiation-induced dysphagia: effect on swallowing function and health-related quality of life over 12 months. *European archives of oto-rhino-laryngology : official journal of the European Federation of Oto-Rhino-Laryngological Societies (EUFOS) : affiliated with the German Society for Oto-Rhino-Laryngology - Head and Neck Surgery*, 10.1007/s00405-023-08183-7. Advance online publication
- Plowman, E. K., et al (2019). Impact of expiratory strength training in amyotrophic lateral sclerosis: Results of a randomized, sham-controlled trial. *Muscle & nerve*, 59(1), 40–46.
- Pu, D., & Yao, T. J. (2023). The use and effects of whole-body exercises on swallowing function: A scoping review. *International journal of language & communication disorders*, 58(4), 1357–1374.
- Sevitz, J. S., et al (2022). Rehabilitation of Airway Protection in Individuals With Movement Disorders: A Telehealth Feasibility Study. *American journal of speech-language pathology*, 31(6), 2741–2758
- Shaker, et al, (2002) Rehabilitation of swallowing by exercise in tube fed patients with pharyngeal dysphagia secondary to abnormal UES opening, *Gastroenterology*, 122, 1314-1321.
- Smaoui, S., Langridge, A., & Steele, C. M. (2020). The Effect of Lingual Resistance Training Interventions on Adult Swallow Function: A Systematic Review. *Dysphagia*, 35(5), 745–761.
- Szynkiewicz, S. H., et al (2021). A Randomized Controlled Trial Comparing Physical and Mental Lingual Exercise for Healthy Older Adults. *Dysphagia*, 36(3), 474–482.
- Tran, T., Harris, B. M., & Pearson, W. G., Jr (2018). Improvements resulting from respiratory-swallow phase training visualized in patient-specific computational analysis of swallowing mechanics. *Computer methods in biomechanics and biomedical engineering. Imaging & visualization*, 6(5), 532–538.
- Troche, M., (2015) Respiratory muscle strength training for the management of airway protective deficits, *Perspectives in Swallowing and Swallowing disorders*, 24, 58-64.
- Wada, S., et al (2012). Jaw-opening exercise for insufficient opening of upper esophageal sphincter. *Archives of physical medicine and rehabilitation*, 93(11), 1995–1999.
- Xie, Q., et al (2021) Respiratory muscle training reduces respiratory complications and improves swallowing function after stroke: A systematic review and meta-analysis. *Arch Phys Med Rehabil*, Nov 12

## Diet Modification

Baert, F., et al, (2021) Dysphagia management in Parkinsons Disease: Comparison of the effect of thickening agents on taste, aroma, and texture, *J Food Science*, 86(3), 1039–1047.

Bannerman, E and McDermott, K., (2011) Dietary and fluid intakes of older adults in care homes requiring a texture modified diet – The role of snacks, *J AM Med Dir Assoc*, 12(3), 234-9  
Beck, A., et al, (2018) Systematic review and evidence based recommendations on texture modified foods and thickened liquids for adults (above 17 years) with oropharyngeal dysphagia - an updated clinical guideline, *Clin Nutr*, 37(6 pt A), 1980-91.

Cichero J. A. (2013). Thickening agents used for dysphagia management: effect on bioavailability of water, medication and feelings of satiety. *Nutrition journal*, 12, 54.

Clavé, P., et al (2008). Accuracy of the volume-viscosity swallow test for clinical screening of oropharyngeal dysphagia and aspiration. *Clinical nutrition (Edinburgh, Scotland)*, 27(6), 806–815.

Dahl, W., et al, (2007) Protein content of pureed diets: Implications for planning, *Can J Diet Pract Res*, 68(2), 99-12.

Eglseer, D., et al (2018) Dysphagia in Hospitalized Older Patients: Associated Factors and Nutritional Interventions. *The journal of nutrition, health & aging*, 22(1), 103–110.

Germain, I., et al, (2006) A novel dysphagia diet improves the nutrient intake of institutionalized elders, *J Am Diet Assoc*, 106, 1614-23.

Horner, J., et al, (2016) Consent, refusal, and waivers in patient-centered dysphagia care: Using law, ethics, and evidence to guide clinical practice, *Am J Speech Language Pathology*, 25(4):453-469.

Jovanovic, N., et al, (2022) Supporting patient autonomy in shared decision making for individuals with head and neck cancer. *American Journal of Speech Language Pathology*, 31, 1588-1600

Keller, H., and Duizer, L., (2014) What do consumers think of pureed food? Making the most of the indistinguishable food, *J Nutr Gerontol Geriatr*, 33(3), 139-59.

Leslie, P., et al (2021) It's not such a small world after all: The intersection of food, identity, and the Speech-Language Pathologist. *Perspectives of the ASHA Special Interest Groups*, 6(4), 876-84

Levy, D. S., et al (2019). The Effect of Additives for Reflux or Dysphagia Management on Osmolality in Ready-to-Feed Preterm Formula: Practice Implications. *JPEN. Journal of parenteral and enteral nutrition*, 43(2), 290–297.

Lippert, W. C., et al, (2019). Things We Do for No Reason: The Use of Thickened Liquids in Treating Hospitalized Adult Patients with Dysphagia. *Journal of hospital medicine*, 14(5), 315–317.

Logemann, J. A., et al (2008). A randomized study of three interventions for aspiration of thin liquids in patients with dementia or Parkinson's disease. *Journal of speech, language, and hearing research : JSLHR*, 51(1), 173–183.

Martin, A., et al (2018) Effect of a Minimal-Massive intervention I hospitalized older patients with oropharyngeal dysphagia: A proof of concept study, *J Nutr Health Aging*, 22,739-47.

McCurtin, A., et al, (2018) Plugging the evidence gap: What patients with swallowing disorders post-stroke say about thickened liquids, *Int J Lang Commun Dis*, 53, 30-39.

Miller, W. and Rollnick, S (2013) *Motivational Interviewing: Helping People Change*, (3<sup>rd</sup> edition), Guilford Press

Nativ-Zeltzer, N., et al (2018). The effects of aspirated thickened water on survival and pulmonary injury in a rabbit model. *The Laryngoscope*, 128(2), 327–331.

Newman, R., et al (2016). Effect of Bolus Viscosity on the Safety and Efficacy of Swallowing and the Kinematics of the Swallow Response in Patients with Oropharyngeal Dysphagia: White Paper by the European Society for Swallowing Disorders (ESSD). *Dysphagia*, 31(2), 232–249.

Robbins, J., et al (2008). Comparison of 2 interventions for liquid aspiration on pneumonia incidence: a randomized trial. *Annals of internal medicine*, 148(7), 509–518.

Rogus-Pulia, N and Hind, J. (2015) Patient Centered dysphagia therapy – The critical impact of self-efficacy. *Perspectives on Swallowing and Swallowing Disorders*, 24, 146-54.

Shimizu, A., et al (2021). Texture-Modified Diets are Associated with Poor Appetite in Older Adults who are Admitted to a Post-Acute Rehabilitation Hospital. *Journal of the American Medical Directors Association*, 22(9), 1960–1965.

Soar, N., Birns, J., Sommerville, P., Lang, A., & Archer, S. (2021). Approaches to Eating and Drinking with Acknowledged Risk: A Systematic Review. *Dysphagia*, 36(1), 54–66.

Steele, C. et al (2015). The influence of food texture and liquid consistency modification on swallowing physiology and function: a systematic review. *Dysphagia*, 30(1), 2–26

Swan, K., et al (2015). Living with oropharyngeal dysphagia: effects of bolus modification on health-related quality of life--a systematic review. *Quality of life research : an international journal of quality of life aspects of treatment, care and rehabilitation*, 24(10), 2447–2456.

Vidal-Casariago, A., et al, (2021) Acceptance of different types of thickeners, with and without flavoring, in hospitalized patients with dysphagia – a pilot study, *Nutr Hosp* 38(5), 1082–1088.

Villardell, N., et al (2016). A Comparative Study Between Modified Starch and Xanthan Gum Thickeners in Post-Stroke Oropharyngeal Dysphagia. *Dysphagia*, 31(2), 169–179.

Werden Abrams, S., Gandhi, P., & Namasivayam-MacDonald, A. (2023). The Adverse Effects and Events of Thickened Liquid Use in Adults: A Systematic Review. *American journal of speech-language pathology*, 1–20. Advance online publication.

### **Sensory interventions**

Bisch, E., et al, (1994) Pharyngeal effects of bolus volume viscosity temperature in patients with dysphagia resulting from neurologic impairment in normal subjects, *J Speech Hear Res*, 37, 1041

Clave, P., et al, (2006) the effect of bolus viscosity on swallowing function in neurogenic dysphagia, *Aliment Pharmacol Ther*, 24, 1385-94.

Gatto, A., et al, (2013) Sour taste and cold temperature in the oral phase of swallowing in patients after stroke, *CoDAS*, 25(2), 164-8.

Krival, K., and Bates, C.,(2012) Effects of club soda and ginger brew on linguopalatal pressures in healthy swallowing, *Dysphagia*, 27, 228-39.

Larsson, V., et al, (2017) Effects of carbonated liquid on swallowing dysfunction in dementia with Lewy Bodies and Parkinson's dementia, *Clin Intervent in Aging*, 12, 1215-22.

Logemann, et al, (1995) Effects of a sour bolus on oropharyngeal swallow measures in patients with neurogenic dysphagia, *J Speech Hearing Research*, 38(3), 556-63.

Magara, J., et al (2018). Cold thermal oral stimulation produces immediate excitability in human pharyngeal motor cortex. *Neurogastroenterology and motility : the official journal of the European Gastrointestinal Motility Society*, 30(10), e13384.

Magara, J., et al (2021). Lasting modulation of human cortical swallowing motor pathways following thermal tongue stimulation. *Neurogastroenterology and motility : the official journal of the European Gastrointestinal Motility Society*, 33(1), e13938.

Michou, E., et al, (2012) Examining the role of carbonation and temperature on water-swallowing performance: A swallowing reaction time study, *Chem Senses*, 37, 799-807.

Min, H. S., et al (2022). Effects of Carbonated Water Concentration on Swallowing Function in Healthy Adults. *Dysphagia*, 10.1007/s00455-022-10420-w. Advance online publication

Morishita, M., et al (2014) Effect of carbonated beverages on pharyngeal swallowing in young individuals and elderly inpatients, *Dysphagia*, 29, 213-22.

Nagano, A., et al (2022). Effects of Carbonation on Swallowing: Systematic Review and Meta-Analysis. *The Laryngoscope*, 132(10), 1924–1933.

Newton Yau, N and McDaniel, M., (1991) The effect of temperature on carbonation perception, *Chem Senses*, 16(4), 337-48.

Pelletier, C., and Lawless, H., (2003) Effect of citric acid and citric acid-sucrose measures in patients with neurogenic swallowing, *Dysphagia*, 18, 231-41.

Pelletier, C., and Steele, C., (2004) The influence of the perceived taste intensity of chemesthetic stimuli on swallowing parameters given age and genetic taste differences in healthy adult women, *Jnl Sp Hearing Rsch*, 57, 45-56.

Price, K., et al (2023) Are Bubbles the future of dysphagia rehabilitation: A systematic review analysing evidence on the use of carbonated liquids in dysphagia rehabilitation. *Geriatrics*, 8, 6.

Sdravou, K., et al, (2012) Effects of carbonated liquids on oropharyngeal swallowing measures in people with neurogenic dysphagia, *Dysphagia*, 27, 240-50.

Selçuk, B., Uysal, H., Aydogdu, I., Akyuz, M., & Ertekin, C. (2007). Effect of temperature on electrophysiological parameters of swallowing. *Journal of rehabilitation research and development*, 44(3), 373–380.

Shapira-Galitz, Y., et al (2021). Effects of carbonation of liquids on penetration-aspiration and residue management. *European archives of oto-rhino-laryngology : official journal of the European Federation of Oto-Rhino-Laryngological Societies (EUFOS) : affiliated with the German Society for Oto-Rhino-Laryngology - Head and Neck Surgery*, 278(12), 4871–4881.

Turkington, L., et al (2019). Impact of carbonation on neurogenic dysphagia and an exploration of the clinical predictors of a response to carbonation. *International journal of language & communication disorders*, 54(3), 499–513.