



Society of Physician Assistants in Otorhinolaryngology-Head & Neck Surgery

THE VANGUARD



President's Message

By Reagan Davis, MPAS, PA-C

Dear Colleagues,

As we move into summer, I want to take a moment to reflect on the continued growth and momentum of our organization. None of this would be possible without the dedication of our volunteer leaders,

whose commitment strengthens our profession and supports our members.

On behalf of the Society of PAs in Otolaryngology-Head and Neck Surgery (SPA-O-HNS), I would like to extend our sincere gratitude to our outgoing Board of Directors members. Their time, leadership, and contributions have helped advance our mission and position the organization for continued success.

We are deeply appreciative of their service and the lasting impact they have made. At the same time, we are excited to welcome our newly elected board members in the coming weeks and look forward to the fresh perspectives and enthusiasm they will bring as we continue building on this strong foundation.

As many of you know, the Board has been actively working to implement the initiatives outlined in our strategic plan. We are currently reviewing membership engagement opportunities and educational delivery platforms for our members to learn, develop, and connect throughout the year. We appreciate your continued support as we invest in the future of SPAO-HNS and our profession.

Finally, for those attending the annual meeting of the American Academy of Otolaryngology-Head and Neck Surgery in Los Angeles this fall, we look forward to connecting with you in person. Some of SPAO's leaders will be there and look forward to the opportunity to learn, collaborate, strengthen professional relationships with our physician colleagues, and celebrate the important role of physician assistants within otolaryngology. We hope you'll take the opportunity to say hello and engage with your SPAO-HNS colleagues during the meeting.

Thank you for your continued membership, engagement, and commitment to our organization. Wishing you a safe, enjoyable, and productive summer.

Warm Regards,
Reagan Davis, DMSc, PA-C
President, SPAO-HNS

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THE VANGUARD

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Allergic Rhinitis Overview: Evaluation and Management

By Christina Larkin, PA-C
SPAO-HNS Secretary

Allergic rhinitis is a common inflammatory disorder of the nasal mucosa triggered by immunoglobulin E (IgE)-mediated responses. Common symptoms patients present with are sneezing, nasal congestion, clear rhinorrhea, and nasal pruritus. It is one of the most common chronic conditions encountered in allergy and otolaryngology settings. Allergic rhinitis often co-occurs with asthma. Allergic rhinitis impairs quality of life, affects social life, school, and work.

Epidemiology

Allergic rhinitis affects 10 to 30 percent of children and adults in the United States.² Allergic rhinitis is associated with the presence of asthma, eczema, and chronic or recurrent sinusitis

Pathogenesis

When exposed to an allergen, proteases are activated and damage nasal epithelial cells.^{1,2} These release alarmins such as interleukin 25, interleukin 33, and other damaged associated molecular patterns.^{1,2} In some patients, these signals initiate T-helper type 2 inflammatory response to the allergen and produce immunoglobulins E. These immunoglobulins bind to mast cell surfaces when exposed to allergens and result in rapid degranulation and mediator release.^{1,2}

Risk Factors

The following are identified or proposed risk factors for allergic rhinitis: personal or family history of atopy, maternal smoking exposure during first year of life, exposure to indoor allergens such as dust or mold, serum IgE > 100 international units/ml before six years, and birth during pollen season.²

Physical Examination

On physical examination, the clinician may notice mouth breathing, rhinorrhea, nasal crease, throat clearing, postnasal drip, and allergic shiners.¹ Anterior rhinoscopy reveals swelling of the nasal mucosa, inferior turbinates with bluish hue, and clear secretions.^{1,5} Nasal polyps are also associated with long-standing allergic rhinitis. Other non-nasal symptoms include fatigue, cough, rash, and itching of ears or palate.⁵

Outline of symptoms	Historical definitions	Physical ruling
Nasal symptoms	- Seasonal vs perennial nature of symptoms - Manifestation on subjection to particular agent (animals, particular plants) - Prevalent therapy - Genealogy of atopic or allergic disease - Manifestation on irritant exposure	- Clear rhinorrhoea - Pale or bruised nasal mucosal swelling - Ocular findings (watery discharge, swollen conjunctiv scleral infection) - Frequent throat clearing - Nasal polyps - Allergic shiners - Absence of foreign body, tumour, purulence suggestin infection. - Fiberoptic visualization of nose - Lymphadenopathy suggest infectious cause of rhinitis
Non- nasal symptoms	Manifestation of upper respiratory infection	
- Frequent throat clearing - Cough - Malaise - Fatigue - Eczema - Headache - Itching of ear and palate		

Table 1: Outline of allergic rhinitis symptoms. 5

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Evaluation

Allergic rhinitis is often a clinical diagnosis. A positive response to empiric treatment with nasal glucocorticoid or antihistamine can support the diagnosis. Formal allergy testing with serum testing for allergen-specific IgE or allergy skin testing can be done.⁴ Skin testing is slightly more sensitive to serum testing and more cost effective. Antihistamines should be stopped prior to allergy testing.⁴

Treatment/Management

Management includes avoidance of symptomatic triggers (i.e. house dust mites, pollen, pets) when practical. Patients allergic to household dust mites should consider allergen-impermeable covers for bedding and furniture.⁴ Air purifiers and dust filters may aid in allergen free environment. Nasal saline irrigations are useful adjuncts in management of allergic rhinitis.^{2,4}

Pharmacological options include antihistamine, intranasal steroids, leukotriene receptor antagonists (LTRAs), and immunotherapy.^{1,2} Pharmacological treatments can be used as monotherapy or in combination, particularly intranasal corticosteroid therapy. Common intranasal sprays include fluticasone propionate, budesonide, mometasone furoate, and triamcinolone acetonide.¹

First-generation antihistamines include diphenhydramine, chlorpheniramine, and hydroxyzine.^{1,2,3} Second-generation antihistamines include fexofenadine, loratadine, desloratadine, and cetirizine. First-generation antihistamines are more sedating and can cause dry mouth, urinary retention, constipation, and/or tachycardia.¹ Second-generation antihistamines have fewer sedating effects than first-generation with cetirizine being most sedating of all second-generation antihistamines.¹

In some cases, allergic rhinitis symptoms are inadequately relieved by avoidance measures to allergens or by medication and clinicians can consider referral to an allergist for immunotherapy. Treatment for immunotherapy includes identifying allergens and increasing progressive exposure to allergen(s) to eventual maintenance dose over several years.² In patients who have undergone immunotherapy there are reductions in levels of IgE and therefore a diminished need for allergy medication. Immunotherapy may be administered subcutaneously or sublingually.²

Overall allergic rhinitis is a common disorder that can significantly affect quality of life for patients and by treating allergic rhinitis clinicians can play a key role in reducing disease burden and improving everyday function for patients.

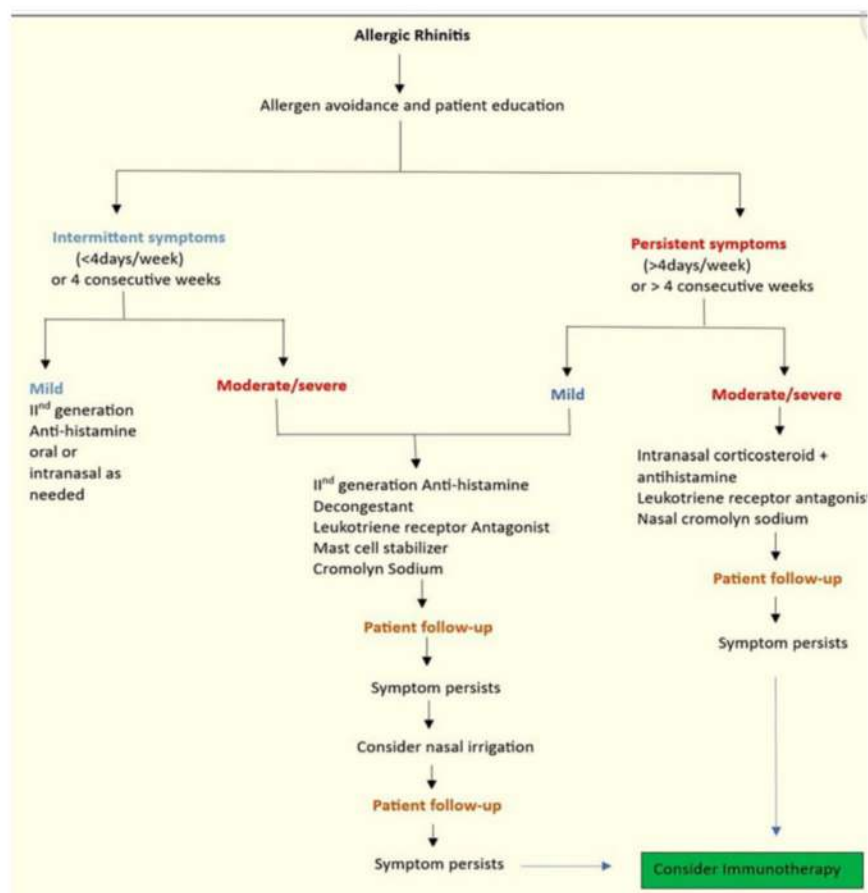


Figure 1: Treatment for allergic rhinitis. 5

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If you're interested

in contributing an article, whether CME-eligible or non-CME-eligible, please contact Monika Kamdar at monikakamdar12@gmail.com.

"Alone we can do so little; together we can do so much."
- Helen Keller



You're Established in ENT. Is Your Financial Plan?

By Frank Randall, MPA, MedPro Financials

Guest Contributor

Guest Contributor Disclaimer: This article is provided for general informational purposes and reflects the author's views only. It is not SPAO-HNS editorial content. Publication does not constitute SPAO-HNS endorsement, recommendation, or verification of any firm, product, service, claim, website, or social media account.

First, a quick introduction since this is my first time writing for this group. I run a financial planning practice built around physician assistants and nurse practitioners. My wife Katie is an NP, so much of what we do started at our own kitchen table. Over the years, most of our clients have come to us saying some version of the same thing: "We make good money, and we don't really know where to put it."

That sentence sounds a little different in mid-career. Early on, the challenge is not having enough. Later, the challenge is that your income has grown, life has gotten more complicated, and the plan never quite caught up. In ENT specifically, pay often comes with moving parts (production or RVU bonuses, procedural volume, sometimes moonlighting or 1099 work), which makes a clear plan more useful, not less.

Here are five areas we see mid-career ENT APPs benefit from revisiting. None of this is advice for your specific situation. Think of it as a checklist worth running on a quiet afternoon.

1. Protect the income before you optimize it

Your ability to practice is the engine behind everything else. For APPs in a procedural specialty, that engine is worth protecting carefully.

- Read the definition of disability in your group long-term disability plan, and check whether it covers your own occupation or any occupation.
- Note the monthly benefit cap, and whether that benefit would be taxable (employer-paid coverage usually is, which lowers what you actually receive).
- Consider whether a supplemental individual policy with own-occupation language could help close the gap, and whether it would stay with you if you changed employers.

2. Get cash flow clear, and keep money you can actually reach

Retirement accounts matter. They are also hard to touch when real life shows up.

- Look at how much you could access quickly without dipping into retirement accounts or taking on debt.
- Map your fixed costs against your flexible spending, so you know your real monthly number.
- Notice whether your saving happens automatically or depends on you remembering each month.

3. Don't let the 403(b) or 401(k) be the entire plan

Maxing a single account feels productive. It can also leave you with one kind of money and limited flexibility later.

- Review the mix of account types you hold (pre-tax, Roth strategies, and taxable accounts).
- Consider whether more tax diversification may give you greater control over your income in retirement.

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- If most of your savings sits in one place, ask what you would actually draw on for a goal that arrives before age 59 and a half.

4. Plan around variable pay and taxes

Bonuses and extra shifts are a real advantage. Surprises in April are not.

- Look at how much of any bonus or moonlighting income is already spoken for by taxes before you spend it.
- If any of your income is 1099, look into whether quarterly estimated payments apply to you.
- Revisit your withholding after a raise, a title change, or a change in a partner's income.

5. Update the basics that quietly go stale

These are simple, and easy to postpone for years without noticing.

- Check the beneficiaries on your retirement accounts and insurance today, not someday.
- Confirm your life insurance still matches your current obligations (a mortgage, children, a partner who relies on your income).
- Revisit the whole picture after any major change at work or at home.

Where to start

If you read this and felt a little behind, you are probably closer than you think. Established earners usually are. Pick the one item above that nagged at you most and give it an hour this month. One area handled well beats five half-started.

If it would help to talk it through with someone who works with APPs every day, we offer a complimentary, no-pressure review of where things stand. You can find a time at www.medprofinancials.com or reach out and mention you saw this in the SPAO-HNS newsletter.

Thanks for having me. I'm glad to be writing for this group.

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Chronic Sinusitis Showdown: A Critical Review of Surgical Versus Medical Management

By Reagan Davis, DMSc, PA-C
President, SPAO-HNS

Abstract

Chronic rhinosinusitis is a common inflammatory disorder that causes symptoms of nasal congestion, nasal obstruction, rhinorrhea, postnasal drip, hyposmia, anosmia, and facial pressure. This condition results in millions of outpatient visits each year and can cause impairment in a patient's quality of life.

Current otolaryngology practice guidelines for chronic sinusitis include both medical management and surgical management. Antibiotics and standard intranasal corticosteroid sprays are frequently prescribed in the treatment of chronic sinusitis; however, the efficacy of these medications is negligible.

Traditional practice favors endoscopic sinus surgery as the definitive treatment modality, but recent findings may indicate effective medical management in many cases. This review will analyze evidence comparing outcomes in surgical intervention and medication-based therapy in the form of an exhalation delivery system with Fluticasone in patients suffering with chronic sinusitis.

Keywords: Chronic sinusitis, chronic rhinosinusitis (CRS), functional endoscopic sinus surgery (FESS), intranasal corticosteroids, exhalation delivery system with fluticasone (EDS-FLU), otolaryngology

Introduction and Rationale

Chronic rhinosinusitis (CRS), or chronic sinusitis, is a disorder characterized by inflammation in the nasal cavity and paranasal sinuses that lasts for 12 or more weeks.¹ It is estimated that 31 million adults in the United States experience chronic sinusitis.² Classic hallmark symptoms of CRS include two of the following: nasal congestion and obstruction, purulent nasal discharge, reduced sense of smell, and facial pain or pressure.¹

Persistent physical symptoms and frequent medical visits both contribute to the disease burden and disruption in one's quality of life. Chronic sinusitis accounts for approximately 10 million outpatient visits each year, many of which result in antibiotic prescriptions.² Primary management of this disorder also includes saline irrigations, intranasal steroid sprays, and surgery.^{1,2}

Traditional medical treatments of sinonasal congestion ordinarily include nasal saline irrigations to help clear thick mucus, followed by an application of a conventional intranasal corticosteroid spray. While nasal steroids can aid in reducing inflammation in the anterior nasal cavity and are the mainstay of therapy for allergic rhinitis, these sprays alone are often ineffective at treating chronic rhinosinusitis.² This is in large part due to their inability to extend and treat inflammation in the superior and posterior nasal cavities, past the inferior turbinates, where the sinus drainage tracts are located.² When a patient fails to respond to medical therapy, surgical intervention is recommended.

Functional endoscopic sinus surgery (FESS), a procedure typically conducted as outpatient surgery, is commonly performed to treat CRS.³ In fact, approximately 600,000 patients in the United States undergo sinus surgery each year.^{2,4} The primary goals of minimally invasive sinus surgery include reducing inflammation, restoring normal nasal breathing and drainage from the

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sinuses, and enhancing one's quality of life.²⁻⁴

A secondary goal of FESS is to facilitate proper delivery of topical therapies such as nasal irrigations and sprays.^{2,4} While surgery remains an effective evidence-based treatment option with positive outcomes, it is not without risks. A newer medical therapy in the form of a corticosteroid drug-device has emerged as a safe, considerable option for clinicians to integrate in their treatment plans, both before and after sinus surgery to manage CRS.²

Evaluation of Functional Endoscopic Sinus Surgery

FESS offers patients suffering with CRS a powerful solution to manage their persistent nasal symptoms. Miglia et al⁵ conducted a cross-sectional study at a hospital-based Otolaryngology practice in a tertiary care center in South India to explore the effects of FESS on functional and symptomatic outcomes.

The study enrolled 40 participants between the ages of 20 and 60 years with CRS with or without nasal polyps and who had undergone FESS. This study uniquely aimed to obtain both subjective and objective outcomes of sinus surgery. Data was collected and analyzed from preoperative screening to the final postoperative visit at six months.

A computed tomography (CT) scan was obtained to confirm the diagnosis of CRS before saccharine transit testing, peak nasal inspiratory flow rate, and Sinonasal outcome test (SNOT-22) scores were collected; following these evaluations, FESS was performed. The patients were then re-evaluated on these same factors at 1 month, 3 months, and 6 months post-surgery.

Of the 40 patients sampled, 55% of subjects had CRS with nasal polyps, whereas 45% had CRS without polyps. A P value of less than 0.05 was considered statistically significant. When comparing pre-operative versus post-operative scores for the saccharine transit testing, peak nasal inspiratory flow rates, and SNOT-22, the P values of each variable were 0.0001. This study proved that FESS significantly improved nasal mucociliary clearance, nasal breathing, and quality of life for patients suffering with CRS, with or without polyps.⁵

Evaluation of Exhalation Delivery System with Fluticasone

Novel and unique, the exhalation delivery system with fluticasone (EDS-FLU) is a treatment that features a device with both a nosepiece and mouthpiece to effectively deposit a corticosteroid medication, Fluticasone, to the hard-to-reach areas of the sinonasal tract.^{2,4,6} Palmer et al² conducted two fully blinded randomized controlled trials, named ReOpen1 and ReOpen 2, which analyzed the efficacy of EDS-FLU in the treatment of chronic rhinosinusitis.² Enrolled participants were 18 years or older with chronic sinusitis confirmed on CT imaging.

The ReOpen 1 trial enrolled patients suffering with CRS with or without nasal polyps; ReOpen 2 trial was reserved exclusively for patients diagnosed with CRS without nasal polyps.

Patients participating in the trials were randomly administered either EDS-placebo, EDS-FLU low dose, or EDS-FLU high dose. Each of these treatments were taken twice daily. Nasal examinations and CT imaging were conducted at screening and week 24 of the trial. The outcomes include a change in the baseline composite symptom score, change in sinus opacification, change in the frequency of acute exacerbations and change in disease-specific quality of life via SNOT-22 score.

The ReOpen 1 trial had 332 participants and the ReOpen 2 trial had 223 participants. Overall completion rate was 90% for each trial. The results showed that in both trials EDS-FLU improved composite symptom score (ReOpen 1 P <0.001; ReOpen 2 P <0.001). Sinus opacification was reduced in both trials (ReOpen 1 P = 0.012; ReOpen 2 P <0.001). The number of acute

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exacerbations were reduced by 56% to 66% ($P = 0.001$) compared to placebo. Lastly, the subjective symptom scores also dramatically reduced with use of EDS-FLU (ReOpen 1 $P < 0.001$; ReOpen 2 $P < 0.001$).

Overall, the study proved that EDS-FLU is a highly effective nonsurgical intervention in the treatment of chronic sinusitis.² This system of exhaled corticosteroid delivery significantly reduces sinus opacification, reduces symptoms, decreases the frequency of acute exacerbations, and improves quality of life associated with CRS.²

Discussion

This review examines the efficacy of FESS and EDS-FLU in the treatment of CRS. While the typical treatment trajectory for patients with CRS is to undergo FESS after failure to respond to standard-delivery intranasal corticosteroids, EDS-FLU may be a considerable option prior to surgery.

EDS-FLU has been proven to subjectively improve patients' physical symptoms as well as objectively reduce inflammation in the nasal cavity and paranasal sinuses. Therefore, this effective treatment option may be preferable as an alternative to surgery in patients with significant comorbid conditions who are at an increased risk of undergoing anesthesia. Thus, EDS-FLU may lead to reduced postoperative complications, recurrence of disease, need for revision surgery, and reduced need for anesthesia.

Following functional endoscopic sinus surgery, the use of EDS-FLU proves beneficial in managing inflammation and decreasing the frequency of acute exacerbations. By effectively controlling postoperative inflammation, EDS-FLU not only enhances recovery but also plays a crucial role in minimizing the need for systemic treatments, particularly antibiotics.² In light of growing concerns around antibiotic stewardship initiatives, the use of EDS-FLU can help reduce the overprescribing of antibiotics, thus mitigating the risk of developing antibiotic resistance.² In addition to potentially decreasing the need for antibiotic therapy, EDS-FLU can contribute to a decrease in the number of office visits required for acute symptom management. This reduction helps to lower health care costs associated with chronic sinusitis.

EDS-FLU is the first and only Food and Drug Administration (FDA) approved medication used in the first-line treatment of chronic sinusitis.^{6,7} While it was initially approved for the treatment of CRS with nasal polyps, in 2024, the FDA approved EDS-FLU in the treatment of CRS without nasal polyps.^{6,7} This expanded indication captures a wider group of patients who suffer with chronic nasal congestion and obstruction caused by inflammation in the sinuses without the diagnosis of nasal polyposis. While EDS-FLU is an effective treatment option that can be used in the primary management of CRS, special consideration should be given to insurance coverage and affordability.

Although traditional nasal sprays may not be as effective as EDS-FLU in the treatment of CRS, the standard intranasal corticosteroid sprays are affordable and available over the counter, which is convenient for many patients. EDS-FLU is currently approved for use in adults 18 years and older.^{6,7} However, many children also suffer with frequent upper respiratory infections and CRS.⁸ Therefore, future consideration should be made to analyze effective treatment options in the pediatric population.

Conclusion

Chronic rhinosinusitis is a common disorder for which many patients seek medical care. CRS causes persistent nasal congestion and obstruction, rhinorrhea, reduced sense of smell, and facial pain and pressure. These symptoms can lead to increased health care costs, overuse of antibiotics, and decreased quality of life. Traditionally, practice guidelines recommend standard intranasal corticosteroids as a primary treatment option.

However, based on nasal anatomy and the medication's mode of delivery, these sprays often fail to improve sinonasal

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congestion in patients with CRS. Therefore, functional endoscopic sinus surgery, a minimally invasive procedure that reduces inflammation, improves nasal breathing and restores drainage of the paranasal sinuses, is typically recommended. However, a newer drug-device combination, EDS-FLU, effectively deposits corticosteroids into the posterior and superior nasal cavity where the sinuses drain, and also significantly improves symptoms of CRS.

EDS-FLU is an FDA-approved, effective treatment option for patients with CRS with or without nasal polyps. Its efficacy reduces the disease burden and acute exacerbations, increases patients' quality of life, and may reduce the need for sinus surgery in some patients. In conclusion, both FESS and EDS-FLU are effective treatment options for chronic sinusitis, yet EDS-FLU may be more favorable in patients with significant comorbidities who may not be able to safely undergo anesthesia.

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The Road to Successful Tracheostomy Decannulation in the Pediatric Patient

*By Christine Willis, MMS, PA-C
SPAO-HNS Director at Large*

There are multiple indications for tracheostomy placement in pediatric patients, and, in many cases, eventual decannulation is anticipated at the time of tracheostomy insertion. Although tracheostomy can provide a lifesaving and effective means of airway management, its presence is associated with a range of medical comorbidities.

In addition, psychosocial factors, including the perceived stigma associated with a tracheostomy, often contribute to decannulation being a shared goal among patients, families, and the multidisciplinary care team.

Decannulation may be considered once the underlying condition necessitating the artificial airway has resolved or significantly improved. Successful decannulation has been associated with reduced healthcare utilization and costs, decreased tracheostomy-related morbidity, and improved quality of life for both patients and caregivers.

Decannulation protocols can help ensure safety and success. Many facilities have created their own protocol system, but many factors universally align. It is important to note, however, that there are no standard protocols in place for pediatric decannulation. In 2013, the American Academy of Otolaryngology-Head and Neck Surgery Foundation (AAO-HNSF) published a clinical consensus statement on pediatric decannulation. The findings of this consensus group were stated as opinions or suggestions, not as recommendations.

Pediatric Consensus Statements included:

- In children, prior to decannulation, a bronchoscopy should be performed within a few months to ensure a patent airway with no occluding suprastomal granuloma
- In children, prior to decannulation, a flexible laryngoscopy should reveal at least one mobile vocal fold or a patent glottis.
- In children, there should be no documented aspiration events that would preclude decannulation.
- In children, prior to decannulation, no ventilator assistance should be needed where a tracheostomy would be required.
- For children, prior to decannulation, the tracheostomy tube should be capped all day and the cap removed at night for several weeks to determine whether the cap can remain on even when the child has an URI.
- Prior to decannulation, children with a tracheostomy should undergo a daytime capping trial (if they are older than 2 years and if the tracheostomy does not occupy so much of the trachea so as to preclude capping). If they pass such a capping trial, options prior to decannulation include a capped sleep study, a capped exercise test, or a nighttime capping trial while hospitalized and being observed.
- In a child who is either too young or too small to undergo a successful capping trial, decannulation protocols need to be individualized for the patient.

Although the general principles of pediatric tracheostomy decannulation are consistent across institutions, variations in protocols often reflect differences in available resources and institutional practices. A fundamental prerequisite for

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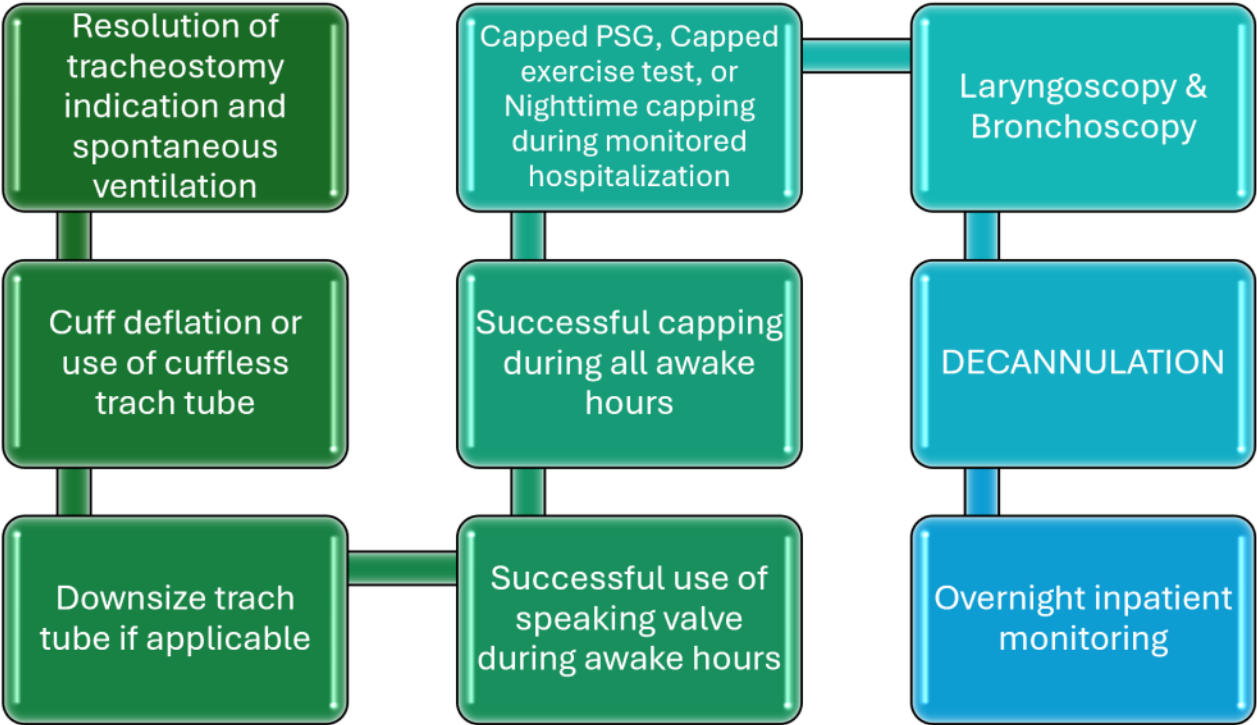
decannulation is the ability to maintain adequate spontaneous ventilation without the need for mechanical ventilatory support. Patients should ideally have a cuffless tracheostomy tube, or, if a cuffed tube is present, the cuff should be fully deflated.

Tracheostomy tube downsizing is commonly performed as part of the decannulation process, as it increases the available airway lumen around the tube and may improve tolerance of speaking valve and capping use. Downsizing in patients less than 2 years old should be used with caution as many of these patients are already utilizing small tracheostomy tubes, and further downsizing may lead to increased risk of mucus plugging. For safety, speaking valves and tracheostomy caps are typically used only during waking hours. In patients with unrecognized upper airway obstruction, capping trials may result in inadequate ventilation and respiratory compromise.

Following successful daytime capping, further assessment is generally recommended to evaluate readiness for decannulation. This may include a capped polysomnogram, capped exercise testing, or capped overnight inpatient monitoring. When obstructive sleep apnea is identified, surgical interventions such as tonsillectomy and/or adenoidectomy may be indicated prior to decannulation. Direct airway evaluation with laryngoscopy and bronchoscopy is also commonly performed to assess for anatomic obstruction and to guide any necessary interventions.

Decannulation should occur in a monitored inpatient setting to facilitate prompt recognition and management of respiratory compromise. Many institutions favor admission to an intensive care unit, where patients may benefit from closer observation and immediate access to advanced airway management resources. Although no universally accepted post-decannulation observation period exists, a monitoring duration of 24- 48 hours is commonly employed across institutions.

ROAD TO DECANNULATION



Decannulation is an achievable and desirable outcome for many pediatric patients with tracheostomy dependence. While standardized pediatric decannulation guidelines are currently lacking, institutions generally employ similar principles and

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stepwise approaches to optimize patient safety and maximize the likelihood of successful decannulation.

Careful assessment of decannulation readiness is essential and requires confirmation that the underlying indication for tracheostomy has resolved and that the native airway can adequately support ventilation without the artificial airway. Decannulation protocols facilitate the identification and management of potential anatomic and physiologic barriers to success.

Future efforts should focus on the development and validation of evidence-based, standardized guidelines to promote consistency in practice, improve patient outcomes, and further advance the care of children undergoing tracheostomy decannulation.

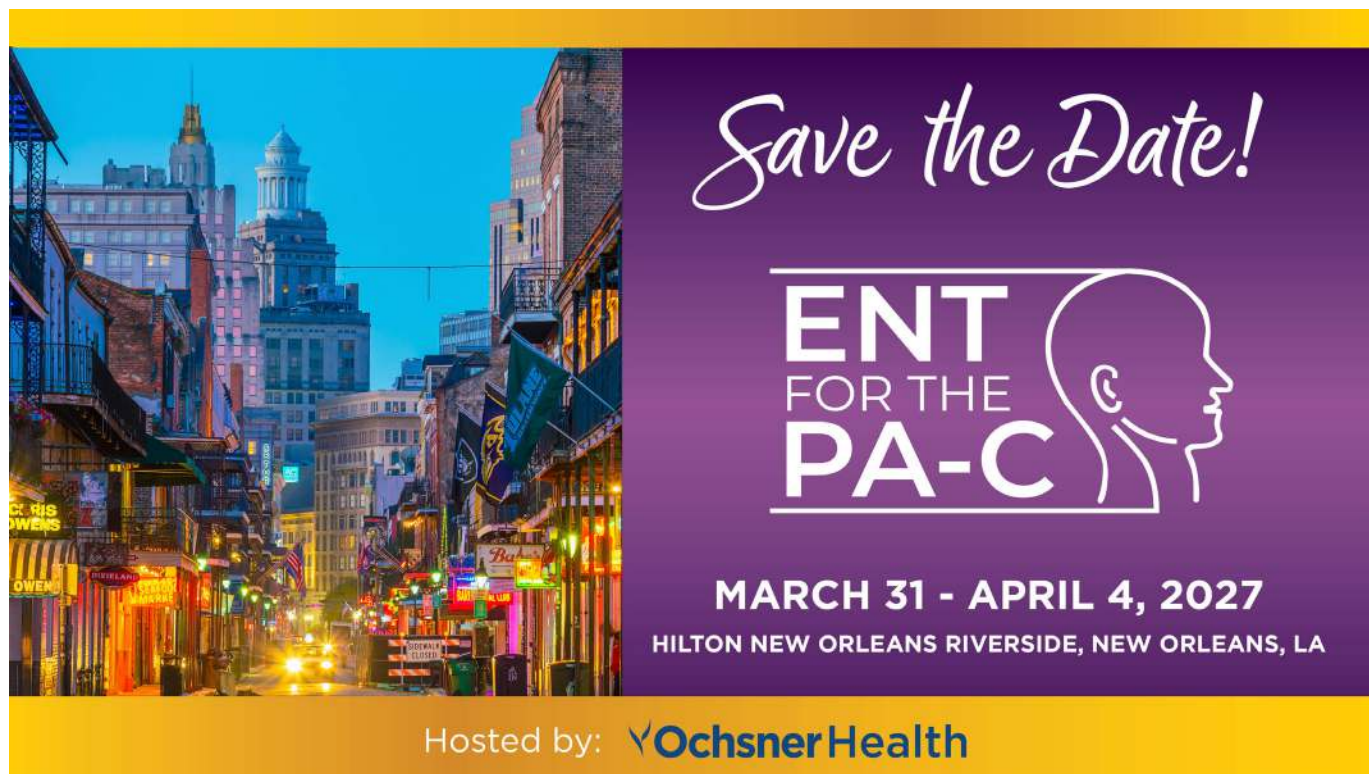
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A promotional graphic for an ENT conference. The left side features a vibrant, nighttime photograph of a city street, likely New Orleans, with illuminated buildings and streetlights. The right side has a dark purple background with white text and a white line-art profile of a human head facing right. The text reads: "Save the Date!" in a large, elegant script font; "ENT FOR THE PA-C" in a bold, sans-serif font; "MARCH 31 - APRIL 4, 2027" in a bold, sans-serif font; and "HILTON NEW ORLEANS RIVERSIDE, NEW ORLEANS, LA" in a smaller, sans-serif font. At the bottom, it says "Hosted by: OchsnerHealth" with the OchsnerHealth logo.



How Nutrition Influences Hormonal and Immune Function: A Functional Medicine Perspective

*By Maria Santee, MSPAS, MPH, PA-C, AFMC
Guest Contributor*

Even patients who eat well may still be missing key nutrients. Modern food production has made calories abundant, but some research suggests that nutrient density in fruits and vegetables has declined over time, creating a hidden gap between “healthy eating” and true nutritional support. For ENT advanced practice providers, this matters because patients with recurrent infections, chronic inflammation, fatigue, metabolic dysfunction, or slow recovery often have overlapping nutritional and hormonal drivers. A functional medicine perspective does not replace standard medical care; rather, it adds a systems-based framework for understanding how diet may influence resilience, symptom burden, and long-term health.¹

The immune system is highly responsive to nutritional status. A major review in *Frontiers in Immunology* notes that inadequate intake of key nutrients can impair immune function, while targeted nutritional support may help optimize defense and tolerance. The review highlights evidence for vitamin D, vitamin E, zinc, n-3 polyunsaturated fatty acids, probiotics, and tea catechins as modulators of immune activity. These nutrients may influence pro-inflammatory mediators, antigen-presenting cells, and communication between innate and adaptive immunity. More recent review literature likewise emphasizes that dietary patterns, micronutrients, and bioactive food compounds can shape systemic inflammation and immune cell function.⁸

From a practical standpoint, the immune benefits of nutrition are most obvious when deficiencies are present. Zinc, for example, is essential for immune cell development and function, while vitamin D is frequently discussed for its role in immune regulation and inflammatory balance. Omega-3 fatty acids are also relevant because they can help modulate inflammatory pathways. In real-world clinical care, this means the goal is not to supplement everything indiscriminately, but to identify likely gaps, dietary patterns that promote inflammation, and patients who may benefit from targeted nutritional counseling.⁷

Nutrition also affects hormones, though often indirectly. The endocrine and immune systems communicate continuously, and immune cells express hormone receptors that allow bidirectional signaling. Diet can influence this relationship through inflammation, insulin sensitivity, body composition, and stress physiology. For example, diets high in ultra-processed foods and refined carbohydrates may worsen inflammatory signaling, which can in turn affect hormonal regulation. In contrast, diets rich in whole foods, fiber, healthy fats, and micronutrient-dense ingredients may support more stable metabolic and endocrine function.³

This interaction is especially important in patients with chronic stress or metabolic dysfunction. Cortisol and other stress-related hormones influence immune activity, and chronic inflammatory states can alter hormonal signaling over time. Nutritional patterns that support stable blood glucose and reduce inflammatory burden may therefore improve both endocrine and immune resilience. In functional medicine terms, the question is not simply “What hormone is abnormal?” but also “What nutritional or inflammatory pattern may be contributing to the imbalance?”⁴

A growing body of literature also suggests that modern agriculture may be contributing to a nutritional gap in the food supply.

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A 2024 review in *Foods* reports an “alarming decline” in the nutritional quality of many foods over the last 60 years and cites soil degradation, high-yield crop selection, chemical farming, and reduced soil biodiversity as likely contributors. An earlier analysis summarized by *Scientific American* similarly reported declines in several nutrients across 43 crops between 1950 and 1999, including protein, calcium, phosphorus, iron, riboflavin, and vitamin C. The practical takeaway is not that fruits and vegetables are unimportant; it is that modern produce may not always deliver the same nutrient density as earlier generations of the same crops.⁵

This matters because patients often assume that “eating healthy” automatically means getting enough micronutrients. In reality, a diet can be calorie-sufficient while still being relatively nutrient-light, especially when food choices are limited, highly processed, or grown in nutrient-depleted systems. A functional medicine lens encourages clinicians to think not only about food quantity but also food quality, soil health, and the broader food system that shapes nutrient content. That perspective can be especially useful when counseling patients with fatigue, recurrent illness, slow healing, or dietary restriction.⁶

The gut microbiome provides one of the clearest bridges between nutrition, immunity, and hormones. The gut microbiota interacts closely with the mucosal immune system, and disruption of this relationship can promote inflammation and pathogenic overgrowth. Diet strongly influences the microbiome, which then affects immune signaling through barrier function, microbial metabolites, and inflammatory pathways. This is one reason why fiber-rich diets, fermented foods, and probiotic-containing foods are often discussed in functional medicine: they may help support a healthier microbial ecosystem, which in turn supports immune homeostasis.²

For ENT APPs, this has everyday relevance. Patients with chronic rhinitis, recurrent upper respiratory infections, post-viral fatigue, reflux symptoms, or poor healing often ask about “immune support.” A reasonable evidence-based message is that adequate protein, micronutrient sufficiency, sleep, stress management, and an anti-inflammatory dietary pattern are foundational. In selected patients, especially those with dietary restrictions, malabsorption, or high inflammatory burden, checking for nutrient gaps may be clinically useful. That approach aligns well with both standard medical practice and a functional medicine framework.¹

It is also important to keep expectations realistic. The immune literature shows promise, but not every supplement study is consistent, and outcomes depend heavily on dose, baseline status, and patient population. Nutritional therapy works best as part of a broader plan that includes diagnosis, guideline-based treatment, and attention to lifestyle factors. For that reason, the most useful clinical stance is balanced: use nutrition as a tool for improving physiologic resilience, not as a substitute for evidence-based medical management.³

In summary, nutrition influences immune function, hormonal signaling, and gut health through interconnected pathways. A functional medicine perspective can help clinicians think more broadly about root contributors to chronic symptoms while staying grounded in science. For ENT APPs, this lens may be especially valuable when counseling patients about inflammation, recovery, infection risk, and overall wellness.²

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SPAO's Summer Crossword Puzzle



CLICK HERE TO PLAY!

<https://crosswordlabs.com/view/2026-05-21-549>

Puzzle Credit: Meredith Ingram, PA-C, Director at Large



Dysphagia: Overview, Evaluation, Differential Diagnosis, Management

By Monika Kamdar, PA-C, MPH

SPAO-HNS Newsletter Committee Chair

Dysphagia is defined as difficulty swallowing solids, liquids, pills, or saliva from the mouth to the stomach, with abnormalities found during the oral, pharyngeal, and/or esophageal phases of swallowing. Complications of dysphagia can include malnutrition, dehydration, unintentional weight loss, aspiration, aspiration pneumonia, which can then contribute to premature mortality, reduced quality of life, including diminished interest in eating, isolation, and embarrassment, as well as increased healthcare costs.

There is evidence that swallowing begins to develop in utero as early as 15 weeks of gestation to regulate amniotic fluid volume. The suck, swallow, and breathe sequence continues to develop in the early stages of life as infants are introduced to new foods and begin to control their swallowing consciously.⁵

The complex behavioral act of swallowing is both involuntary and voluntary and involves six cranial nerves and over 25 pairs of muscles in the mouth, throat, and esophagus.⁴

The oral phase begins as food is manipulated and masticated in the mouth, relying mainly on tongue movement and contraction of the lips, cheeks, orbicularis oris, and buccinator muscles. The pharyngeal phase of swallowing involves the pharyngeal and laryngeal muscles as well as oral cavity muscles, including the tongue and suprahyoid muscles. Periorbital muscles also contribute to involuntary swallows. The full oropharyngeal swallowing sequence lasts about 0.6–1.0 seconds. The esophageal phase is slower, may last more than 10 seconds, and consists of a peristaltic contraction wave through the striated and smooth muscles that moves the bolus toward the stomach.⁶

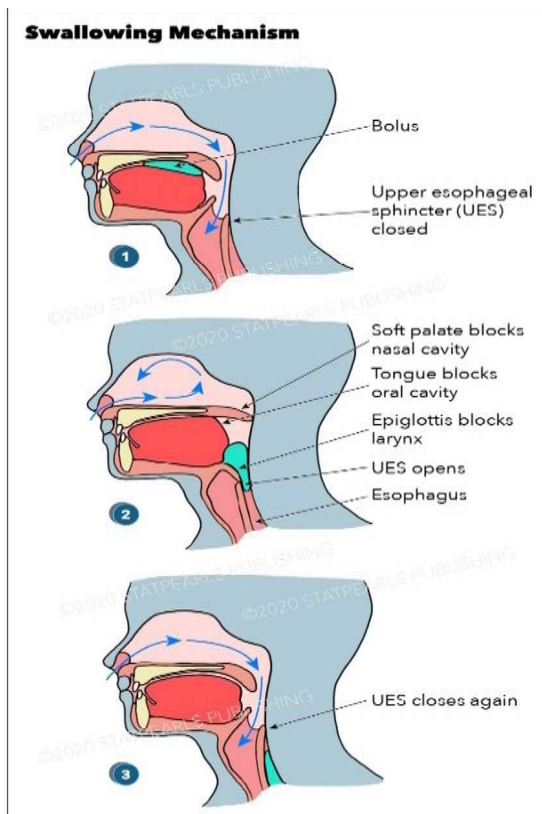


Figure 1

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“Interdisciplinary care for dysphagia management is considered the best practice to reduce complications, resulting in better health outcomes and decreased cost.”¹

Initial evaluation includes assessment of duration of swallowing concerns; consistencies patient has difficulty with (all consistency solids, thicker solids, i.e. meats, breads, liquids, or both solids and liquids); are symptoms stable or progressing; frequency of dysphagia; do they avoid certain foods or consistencies; where does food or liquid bolus feel like they are getting stuck; do they require swallowing multiple times, drink additional liquids, cough, or regurgitate food or liquid bolus back up.

Patients with dysphagia may experience pooling of secretions, drooling, ineffective mastication, oral residue, delay in swallowing, nasal regurgitation, change of voice quality after eating (wet or gurgling voice), odynophagia, and globus sensation.

EAT-10 is a Patient-Reported Outcome (PROM) made up of 10 questions assessing dysphagia and measuring symptom severity. Evaluation of dysphagia can include barium swallow, modified barium swallow (MBS/VFSS), upper endoscopy, pH impedance, and manometry study.

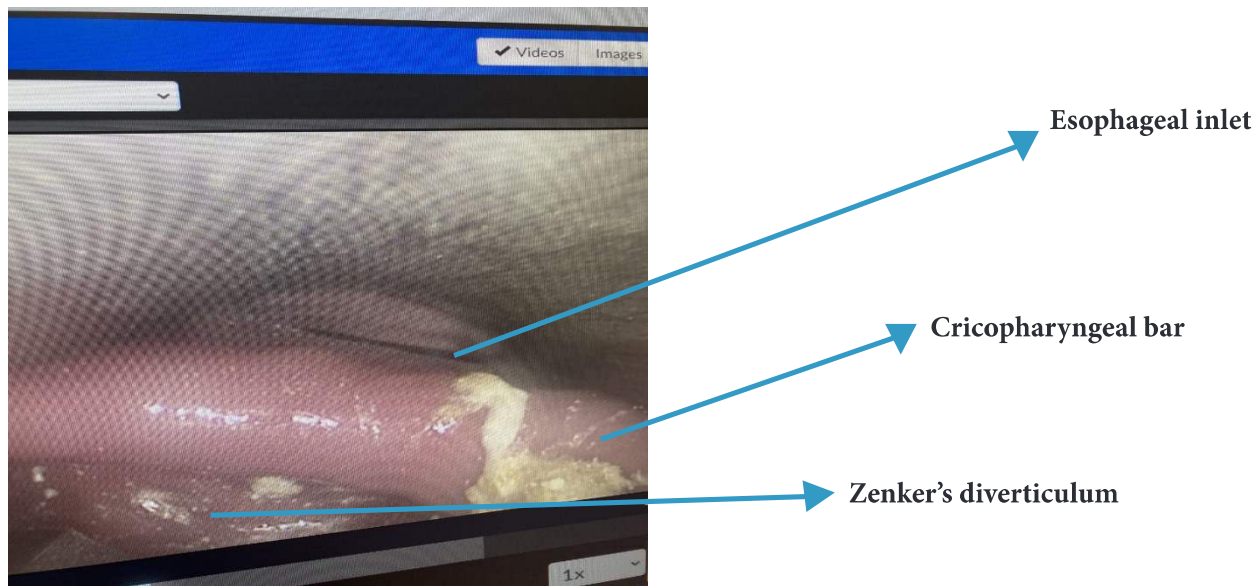
There is a broad differential diagnosis for dysphagia, including gastrointestinal, neurological, neuromuscular, medication adverse effect, chemotherapy/radiation therapy, ENT, iatrogenic from surgery, rheumatological/autoimmune, infectious, and muscle tension dysphagia.

Category	Examples
Iatrogenic	Radiation therapy can cause stricture and stenosis. Head and neck cancer patients treated with platinum-based chemotherapy can develop severe mucositis. Doxycycline, NSAIDS, and Alendronate can cause pill esophagitis; Anticholinergics and antipsychotics can often cause xerostomia
Infectious	Mucositis from herpes, cytomegalovirus, Candida (can cause dysphagia and oropharyngeal dysfunction), diphtheria, Lyme disease
Metabolic	Amyloidosis; Cushing syndrome; thyrotoxicosis; Wilson disease
Myopathic	Scleroderma, CREST, myasthenia gravis (ptosis and diplopia early symptoms, can have dysphagia liquids>solids, dysarthria, difficulty with mastication); oculopharyngeal muscular dystrophy (OPMD presents with ptosis, dysphagia with dry, solids at first, then liquids), sarcoidosis

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Neurological	Brainstem tumors; head trauma; CVA{ (MCA disrupt cortical control of swallowing causing delay in initiation of swallow, Brain stem strokes (Wallenberg syndrome) results in injury to central pattern generator with global dysphagia and has high risk for aspiration, Basal ganglia and Internal capsule injury to corticobulbar pathway impairs timing and coordination of oral and pharyngeal phase, cerebellar can have ataxia involving swallowing muscles), Guillain-Barré syndrome (autoimmune disorder with sudden ascending muscle weakness can affect extremities, cranial nerves, respiratory muscles, paresthesia, areflexia can result in paralysis treatments IVIG, plasmapheresis; Huntington disease, mild twitching to chorea to rigidity, dysregulation of voluntary and involuntary muscle contraction leads to high risk for choking and aspiration pneumonia; multiple sclerosis neurodegenerative disorder a chronic demyelinating and inflammatory disease of CNS with lesions in corticobulbar tracts, paresis of cranial nerves, disorders of cerebellum and brainstem, and cognitive dysfunctions can result in dysphagia; amyotrophic lateral sclerosis neurodegenerative disorder with progressive muscle paralysis can be spinal or bulbar onset in presentation (overall worse prognosis), bulbar symptoms slurred or hyper nasal speech, dysphagia, hoarseness, can have tongue fasciculations, atrophy, weakness of tongue; Parkinson disease can have repetitive tongue pumping, piecemeal swallow, oral residue, difficulty with bolus formation, difficulty in initiating and completing airway closure resulting in laryngeal penetration and aspiration, reduced pharyngeal and laryngeal sensitivity, residue in piriform sinuses, reduced esophageal peristalsis and often have glottal gap and would benefit from vocal fold augmentation with gel; Alzheimer's disease initially can have oral residue after swallowing, mastication inefficacy, coughing or choking followed by difficulties in bolus preparation, airway clearance, upper esophageal sphincter opening, may ultimately develop swallowing apraxia; Multiple System Atrophy, a rapid neurodegenerative disorder with deterioration of autonomic failure plus cerebellar syndrome and/or parkinsonism often have throat clearing after eating, coughing, gurgle voice after drinking, silent aspiration; Progressive Supranuclear Palsy, most common Parkinson Plus syndrome with postural instability, falls, rigidly, dysarthria, dysphagia often with tongue pumping and delayed initiation of swallow response, have a high risk for aspiration pneumonia.
Structural	Cricopharyngeal bar thickening of cricopharyngeus muscle from replacement of muscle with fibrous connective tissue with symptoms of cervical dysphagia, globus sensation, chronic throat clearing, regurgitation and can be asymptomatic treatment can include Botox injection, balloon dilation, CP myotomy; Zenker's diverticulum outpouching in the posterior hypopharynx (Killian's triangle), an area of weakness through the transverse fibers of the cricopharyngeus muscle and oblique fibers of the thyropharyngeus muscle, surgical management can be endoscopic with staple or laser, Z-POEM (Zenker's Per Oral Endoscopic Myotomy or Open surgery with transcervical approach; Killian-Jamieson diverticulum, cervical webs, oropharyngeal tumors, esophageal cancer, esophageal web, stricture(reflux is the common cause), EOE, mediastinal mass, Cricopharyngeal dysfunction, esophageal dysmotility, achalasia motility disorder involving inability of relaxation of lower esophageal sphincter and initial treatment can include Calcium channel blockers, nitrates, dysphagia lusoria-aberrant right subclavian artery compresses esophagus

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Barium swallow (BS) uses barium sulfate as the contrast, which absorbs X-rays and is used to evaluate for reflux, esophageal stricture, esophageal tumor, esophageal spasms, esophageal dysmotility, hiatal hernia, achalasia, and diffuse esophageal spasms. Barium is eliminated from the digestive tract within 24 to 72 hours. Patients can have constipation, bloating, and a rare risk of aspiration of barium. The patient is exposed to more radiation with a BS compared to an MBS.

Modified barium swallow (MBS) or Video Fluoroscopy Swallowing Study (VFSS) is performed with a speech language pathologist and radiologist, during which the oral and pharyngeal phase of swallow is assessed. The patient swallows a standard panel of solid and liquid consistencies mixed with barium to view oral, pharyngeal, and upper esophageal function in real time. Clinical indications include concern for neurological disorder, aspiration, also observing compensatory strategies.

Oral phase	Pharyngeal phase	Airway / esophageal
1. Lip closure 2. Lingual elevation 3. Tongue-to-palatal seal 4. Bolus preparation/mastication 5. Bolus transport/lingual motion	6. Initiation of pharyngeal swallow 7. Soft palate elevation/retraction 8. Laryngeal elevation 9. Anterior hyoid excursion 11. Pharyngeal contraction 13. Tongue base retraction 14. Epiglottic inversion	10. Laryngeal closure 12. Pharyngoesophageal segment opening 15. Esophageal clearance

Figure 3

High-resolution esophageal manometry measures pressures within the upper esophageal sphincter, the main body of esophagus, and the lower esophageal sphincter. It is helpful in the diagnosis of achalasia, diffuse esophageal spasm, jackhammer esophagus, and esophagogastric junction outflow obstruction.²

Speech-language pathologists can educate patients with various swallowing maneuvers and swallowing exercises that can assist efforts to reduce the risk of aspiration and strengthen the tongue and pharyngeal muscles.

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- **Mendelsohn maneuver** —The Mendelsohn maneuver is designed to elevate the larynx and open the esophagus during the swallow to prevent food/liquid from falling into the airway. The patient holds the larynx in an elevated position at the peak of hyolaryngeal elevation.
- **Supraglottic swallow** —The supraglottic swallow is designed to close the vocal folds by voluntarily holding one's breath before and during a swallow to protect the airway. The patient is instructed to hold their breath just before swallowing to close the vocal folds. The swallow is followed immediately by a volitional cough
- **Super-supraglottic swallow** —The super-supraglottic swallow is designed to voluntarily move the arytenoids anteriorly, closing the entrance to the laryngeal vestibule before and during the swallow. The super-supraglottic swallow is like the supraglottic swallow; however, it involves increased effort during the breath-hold before the swallow, which facilitates glottal closure
- **Masako or tongue-hold** —The patient holds the tongue forward between the teeth while swallowing; this is performed without food or liquid in the mouth, and it improves movement and strength of the posterior pharyngeal wall during swallowing.
- **Chin tuck** — Chin is tucked to the chest during a swallow, which may bring the tongue base closer to the posterior pharyngeal wall, narrow the opening to the airway, widen the vallecula, possibly resulting in reduced laryngeal penetration/aspiration.
- **Head rotation** — Rotation of the head to the side with a paresis/paralysis to direct bolus to the stronger side of the pharynx/larynx⁸

Some patients may benefit from the use of an Acapella device, which provides positive expiratory pressure that allows for improved clearance and mobilization of secretions, as well as an expiratory muscle strengthening device (EMST) in patients with neurodegenerative or neuromuscular disorders, which can help strengthen respiratory and suprahyoid muscles, improve laryngeal elevation, and reduce the risk of aspiration.

Lastly, some patients with more severe dysphagia, aspiration, recurrent aspiration pneumonia, and failure to thrive may benefit from enteral nutrition with placement of a nasogastric tube, gastrostomy tube, or gastrojejun tube.

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