

## **Frequently Asked Questions About Alternative Nutrition and Hydration (ANH) in Dysphagia Care**

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**Why this topic? In providing dysphagia care to medically fragile patients across the life span, it is not uncommon for the speech-language pathologist to encounter complex situations requiring advanced knowledge in the area of alternative nutrition and hydration. Decision making should always be a collaborative effort relying on multiple medical and allied health specialties. The patient and family wishes are central and need to be informed. This document addresses some of the frequently asked questions speech-language pathologists have regarding key knowledge needed to provide the highest quality care.**

### **1.1. What should an SLP understand about the different types and schedules of alternative nutrition and hydration (ANH)?**

Given the role speech-language pathologists (SLPs) play in assessing the safety of oral pharyngeal swallowing and assisting in the determination of optimal nutrition consumption, they should be familiar with all of the supplemental and alternative forms of nutrition and hydration. Selection of formula or fluid type is the responsibility of the physician and dietitian and is determined by the individual's specific hydration and nutritional (caloric and protein) needs, as well as by their ability to digest and absorb the supplement. For example, enteral feeds (feeding directly into the stomach) will require use of a standard formula when digestive function is normal, whereas a hydrolyzed formula would be used to aid digestion (Whitney, Cataldo, & Rolfes, 2002). The following chart (see Table 1) identifies the key factors associated with ANH.

**Table 1. Parenteral and enteral alternative nutrition and hydration.**

<b>Type of Nutrition Delivery</b>	<b>Route of Delivery</b>	<b>Method of Delivery</b>	<b>Indications for Use</b>	<b>Types of Formula/Nutrition</b>	<b>Possible Complications</b>
Simple IV/ peripheral parenteral nutrition (PPN); central total parenteral nutrition (CTPN)	Intravenous (small vein; catheter inserted or surgically placed for CTPN in deep central vein)	Continuous or cyclic infusion via pump	Supplemental hydration; restoration of fluid and electrolyte balance, need for complete parenteral nutrition or long-term CTPN.	Simple IV solutions (% dextrose and saline, electrolytes); Complete solutions (amino acids, dextrose, fatty acids, vitamins, minerals, trace elements, IV lipid solutions)	Simple IV: infection, edema, bleeding, burn at insertion site; weakened and collapsed veins; Central line: air embolism, pneumothorax, myocardial perforation, phlebitis, blood clot, infection, sepsis.
NG (nasogastric)	Via catheter/tube placed transnasally to the stomach	Intermittently or continuous drip via pump	Short-term alternative to oral intake (~2 weeks); transnasal insertion, easily removed	Commercial nutritionally complete (standard, hydrolyzed, modular) supplements; regular liquids	Misplacement into the airway, irritation to nasal, pharyngeal, esophageal mucosa; discomfort, negative cosmesis, may impact swallow function, may contribute to reflux and aspiration
G tube/PEG gastrostomy	Via feeding tube inserted directly into the stomach	Bolus or gravity (syringe); drip via infusion pump	Option for long-term alternative to oral intake. Does not necessarily preclude oral intake in certain cases.	Commercial prepared nutritionally complete enteral formulas; fiber supplements, supplemental and regular liquids; select medications, some individuals may liquefy table foods	Nausea, vomiting, diarrhea, constipation; reflux; clogged tube; skin irritation at gastrostomy site, aspiration.
J tube/PEJ	Via feeding tube inserted in jejunum (small intestine)	Bolus or gravity via syringe; drip/infusion via pump	Does not require stomach in digestion, enteral nutrition earlier after stress or trauma, less risk of reflux and aspiration	Commercial prepared nutritionally complete enteral formulas, fiber supplements, supplemental liquids.	Loss of controlled emptying of the stomach; misplacement; diarrhea, dehydration
Hypodermal Clysis	Subcutaneous; common infusion sites are the chest, abdomen, thighs, and upper arms (Sasson & Shyartzman, 2001)	Injection (3 L in 24 hours/2 sites)	Hydration supplement for mild-moderate dehydration	Saline; half saline/glucose; potassium chloride can be added	Mild subcutaneous edema

## **1.2. What are the clinical indications for recommending ANH?**

Enteral feedings, such as those received through nasogastric (NG) tubes or percutaneous gastrostomy (PEG) tubes, are typically indicated for those patients who have a functional gastrointestinal tract but are unable to meet nutritional needs by mouth for a variety of reasons. According to the American Gastroenterological Association (1994) guidelines, tube feeding should be considered when the patient cannot or will not eat, the gut is functional, and the patient can tolerate the placement of the device.

For the speech-language pathologist, the clinical indication for recommending ANH is typically dysphagia. Generally, this recommendation may be presented as a consideration if the patient is unable to demonstrate the necessary physiologic function of the oral, oropharyngeal, pharyngoesophageal, and esophageal phases to safely swallow despite modifications in food texture, liquid consistency, and posture/compensatory strategies. While these judgments are based on clinical and instrumental examinations of swallowing, recommendations for ANH should not be made based solely on the results of the examination. Factors such as medical status (diagnosis, acute vs. chronic, progressive vs. reversible), nutritional status (current nutritional status and intake, projected needs as determined by dietitian), and behavioral/cognitive status (ability to attend and participate in the meal process) are all important clinical considerations when recommending ANH.

## **1.3. What is the evidence regarding outcome associated with PEG tube feeding in various patient populations?**

Published data regarding specific outcomes associated with PEG tube feeding are limited and varied. First, one must consider the different categories of outcomes and how they are focused (e.g., short or long term). Reported measurable outcomes can include survival rates, specific nutrition and hydration goals, prevention of aspiration, general recovery, recovery of swallowing and PO status, complications, and/or quality of life. In the individual who has poststroke dysphagia, earlier placement of a PEG tube may be needed if the prognosis for return to/replace oral feeding extends beyond the initial weeks when short-term NG tube placement suffices to supplement oral feeding. Earlier placement of a PEG may assist in overall recovery, allowing graded assessment and intervention and, ultimately, a shorter duration of tube feeding need. However, the need for early placement is also associated with lower survival rates, given that the individual tends to be more fragile. Regardless of NPO status, the most common complication reported was aspiration pneumonia, followed by PEG site infection and tube blockage (Janes, Price, & Kahn, 2005).

In the patient with head and neck cancer, PEG tubes are commonly placed at the outset of treatment (surgical and/or chemo/radiation) in anticipation of swallowing difficulties severe enough to prevent adequate nutrition and increased risk of aspiration (Selz & Santos, 1995). Specific outcomes regarding length of tube placement depend on numerous factors, including severity of dysphagia, treatment toxicity, disease stage/control, and complications (e.g., abscess and metastasis to abdominal wall/PEG site) from tube placement (Cruz, Memel, Brady, & Cass-Garcia, 2005). In general for patients with mild–moderate dysphagia, weaning from enteral nutrition occurs with progress toward safe oral intake and ability to maintain nutritional goals

under the guidance of the medical doctor and SLP. For patients with severe and intractable dysphagia, long-term tube placement is necessary to maintain nutritional needs.

Few randomized trials have been conducted to examine the benefits of PEG tube placement in the patient with dementia. For those that have been done, survivability and nutrition were the main outcome measures. In two studies, survival rates of persons with advanced dementia following feeding tube placement were reported to be 80% at 1 month, 50% at 6 months, and 38%–40% after 1 year (Finucane & Christmas, 2000). Conflicting information also exists regarding the benefit of tube feeding for preventing pressure sores or related nutritional health issues (i.e., infection prevention). PEG tube placement does not necessarily prevent development of aspiration pneumonia in this population and may contribute to increased occurrences of aspiration pneumonitis. Data currently available are unclear as to PO status of participants with PEG during the studies. Whether patients with advanced dementia suffer more or less with PEG placement is unclear due to the restricted communication abilities of the individual. When working with families to determine feeding methods, consideration must be given to other important health issues, including the stage of dementia, effect of medications on swallowing and digestive function, degree of depression and alertness, level of available care, and options for conservative oral intake (Finucane & Bynum, 1996).

Several studies have identified various risk factors and diagnostic categories associated with poor outcomes following placement of a feeding tube (Janes et al., 2005; Lang, Bardan, & Chowders, 2004; Plonk, 2005). These include, but are not limited to, age > 75 years, advanced cancer, Charlson score > 3, low body mass index, albumin < 3g/dl, hospitalization, and NPO × 7days. Although each one in and of itself may not represent a poor prognostic indicator, any number or combination of these may make the benefit of PEG placement suspect (Plonk, 2005). Diagnoses including advanced dementia, anorexia–cachexia syndrome, and advanced cancer have all been cited in studies as conditions that do not receive the intended benefit of PEG placement (Angus & Burakoff, 2003; DeLegge et al., 2005; Finucane & Bynum, 1996; Gillick, 2000; McMahon, Hurley, Kamath, & Mueller, 2005; Moynihan, Kelly, & Fisch, 2005).

#### **1.4. What supplemental feeding options are used with individuals whose principal nutrition comes from ANH?**

Supplemental feeding is often considered “trial” as part of a carefully planned training/practice program to improve swallowing function and endurance, with a larger goal of increasing oral intake and reducing reliance on enteral nutrition. A patient whose dysphagia is resolving and/or improving should be carefully monitored for the amount and type of oral intake that he or she can safely tolerate. In collaboration with the patient’s physician and dietitian, rate of swallowing improvement relative to maintenance of nutritional status, weight, and pulmonary health typically dictates G-tube weaning.

Supplemental feeding options can also include pleasurable feeding with no particular goal. This option is often limited to tastes or small amounts of food types consumed with clear precautions but administered (or taken) to improve quality of life. Benefits of these small amounts of foods PO may improve salivation and overall oral hygiene. Symptoms such as dry mouth may be present even when the body is adequately hydrated via ANH. In this situation, the discomfort

associated with dry mouth may be relieved with ice chips, sips of water, lip moisteners, mouth moisturizers, and oral care.

### **1.5. Does ANH reduce risk for aspiration pneumonia, malnutrition, and dehydration?**

Aspiration *pneumonia* is a pulmonary infection caused by aspiration of secretions, alone or together with food/liquid from the mouth, oropharynx, or upper gastrointestinal tract, that are colonized by pathogenic bacteria (Marik, 2001). Healthy individuals clear this material by coughing and the execution of normal immune functions (ciliary transport and cellular responses); weak, immune-compromised, or sedated patients are more likely to develop aspiration pneumonia (Langmore et al., 1998; Marik, 2001). Aspiration *pneumonitis* is a chemical irritation to the lungs caused by the retrograde aspiration of gastric contents or anterograde (from the mouth) aspiration of highly acidic foods/liquids that overwhelm the acid buffering capabilities of the lungs (Marik, 2001). The use of ANH may reduce aspiration of mealtime food and liquid into the airway; however, individuals with dysphagia who receive ANH remain at risk for aspiration of saliva if the sensory or motor components of airway protection are impaired (Langmore, Skarupski, Park, & Fries, 2002; Langmore et al., 1998). Similarly, patients with dysphagia may aspirate during episodes of gastric reflux or vomiting. A given individual's risk for aspiration pneumonia or pneumonitis may be reduced by augmenting ANH with oral hygiene care as well as medical and positioning approaches to reduce gastric reflux and vomiting (Langmore et al., 2002; Marik, 2001; Terpenning, 2005).

Malnutrition and dehydration are influenced by the amount of food and liquid intake, as well as by the body's ability to digest and use the food and liquid consumed. If the gastrointestinal tract is functional, or if the individual is able to tolerate parenteral feeding (see TPN), IV hydration, or hypodermal clysis hydration, adequate nutrition and hydration may be maintained via ANH (Finestone, Greene-Finestone, Wilson, & Teasell, 1995). Some disease processes (e.g., cancers and immune disorders) may reduce the patient's ability to benefit from nutrition and hydration. In these cases, even ANH is unlikely to contribute to the patient's overall well-being.

### **1.6. What are the patient factors that might influence recommendations for ANH?**

Nonclinical factors weigh heavily in the decision-making process when patients and/or families are considering ANH. Religion, cultural beliefs/ethnicity, and the patient's wishes (autonomy) are among a few of the nonclinical factors cited in the literature as being influential in the decision-making process (Braun et al., 2005; Cavalieri, 2001; Cervo, Bryan, & Farber, 2006; Duffy, Jackson, Schim, Ronis, & Fowler, 2006; Moynihan et al., 2005; Searight & Gafford, 2005; Smith & Andrews, 2000). Although each factor may carry varying degrees of influence in the decision, they represent important considerations for the practitioner when discussing ANH with patients and/or families.

Patient autonomy, or the right to self-determination, has become a key factor in health care decision making over the past 30 years. Underlying the principle of autonomy is the presumption that individuals participate and make decisions based on an understanding of the *situation*, independent of controlling influences. On the surface, this appears to be basic; however, multiple variables can make this principle complex, particularly where ANH is concerned.

Ethnicity or cultural beliefs can play a large role in decisions regarding ANH. Searight and Gafford (2005) reported that while autonomy is a basic principle embedded in health care in the United States, different cultures use family-based, physician-based, or shared family–physician decision making. Many cultures place beneficence and nonmaleficence (see glossary) above autonomy when dealing with health care issues and think that placing difficult decisions on the individual alone regarding medical management is disrespectful to the patient and the family unit. Other cultures place the bulk of the decision making in the hands of the physician because it is felt that the physician is the most qualified person to make medical decisions.

Religion can also greatly influence decisions regarding ANH. While many view ANH as medical treatment, many religions view it as basic care that should not be denied (Gordon & Alibhai, 2004). The sanctity of life is a powerful principle to which many individuals, groups, and organized religions ascribe (Smith & Andrews, 2000) and equate provision of ANH with receiving food and liquid by mouth (Gordon & Alibhai, 2004). However, for many individuals, it is agreed that withholding or withdrawing ANH is permissible if the burdens and risks clearly outweigh the benefits (Smith & Andrews, 2000).

Typically, those who require ANH are cognitively impaired or at a minimum unable to make the decision to initiate or forego such treatment at the time it is needed. Oftentimes, surrogates are placed in situations where their decision is required to initiate or forego ANH. Although advanced directives have prompted people to express their wishes regarding issues like ANH, the overall use of advanced directives and interpretation of the patient’s wishes can be difficult (Mueller, Hook, & Fleming, 2004; Searight & Gafford, 2005). Furthermore, since provision of food and liquid is symbolic of love and nurturing (Smith & Andrews, 2000), decisions can be made based on the emotional context that if ANH is not provided, they are starving the patient to death. Regardless of whether it is the patient or the surrogate making the decision, the importance lies in the understanding of the benefits and risks associated with ANH specifically related to the diagnosis.

The nonclinical factors discussed are not uniform across ethnic and religious groups. Furthermore, the decision-making capacity of the patient is not always clear-cut, and many times families do not agree on the issue of ANH. Thus, it is important to consider each case separately, in that inclusion into a particular ethnic or religious group does not imply acceptance of the belief system inherent to each group. Therefore, these factors should be considered collectively when approaching patients and families regarding ANH.

### **1.7 How are Medicare payments for tube feedings affected by documentation of partial PO intake?**

Medicare typically pays for tube feedings that are ordered by a physician. The physician order indicates that tube feeding is medically necessary. This is not affected by whether a patient is also taking some food and/or liquid by mouth. In addition, patients on tube feedings may receive swallowing therapy services, and these will be reimbursed by Medicare, as long as all requirements for therapy are met (e.g., skilled service, physician’s order, plan of care established, patient demonstrating progress).

## **1.8 How does having different types of ANH affect eligibility for inpatient rehabilitation?**

Because ANH is not on the list of diagnoses that affect the 75% rule, there should be no effect on eligibility for inpatient rehabilitation. However, there might be some effect on payment relative to the case mix group that the patient is assigned to after admission.

### **Alternative Nutrition and Hydration Glossary**

- 1. Albumin: A major protein found in the blood; low albumin levels can be indicative of poor nutritional status.**
- 2. Autonomy: The right to self-determination; the right of patients to make decisions, or participate in making decisions, about their care.**
- 3. Beneficence: The clinician's duty to act for the benefit of others.**
- 4. BMI (body mass index): A measure of body fat based on height and weight (scores under 18.5 are considered underweight).**
- 5. Bolus feeds: A bolus feed is given through a feeding tube at a set time of day via a syringe connected to a feeding tube. A gravity feed uses a container and tubing that enable the rate to be better controlled and slower.**
- 6. Charlson score (based on Charlson Index): A score based on the number and severity of comorbidities that is predictive of 1-year mortality.**
- 7. Enteral: Within or by way of the intestine or gastrointestinal tract.**
- 8. Hypodermal clysis: The introduction of fluid into the body by subcutaneous injection to replace fluids that have been lost through vomiting, sweating, or diarrhea.**
- 9. Intravenous (IV): Administration of nutrients through a vein.**
- 10. Nasogastric (NG): A feeding tube that is inserted through the nose, down the esophagus, and into the stomach.**
- 11. Nonmaleficence: Clinician's duty to not inflict harm.**
- 12. NPO (nil peros): Nothing by mouth.**
- 13. PEG (percutaneous endoscopic gastrostomy): A tube inserted into the stomach through a small abdominal incision in the abdominal wall to provide food or other nutrients.**
- 14. PEJ (percutaneous endoscopic jejunostomy): A feeding tube inserted directly through the skin into the middle part of the small bowel (the jejunum).**
- 15. Stationary or portable pump: A machine that controls the amount of formula going into the feeding tube.**
- 16. TPN (total parenteral nutrition): A method of providing nutrition through intravenous infusion for those who are unable to absorb nutrients via the intestines. Can contain carbohydrates, protein, fats, and electrolytes. The formula is determined based on individual needs.**

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