

Title of Course: Dysphagia – Guide to Establishing a Restorative Mealtime Program

CE Credit: 2 Hours

Learning Level: Introductory

Author: Jill E. Day, MS, CCC/SLP

Abstract:

This course will enable therapists in long-term care or post-acute rehabilitation facilities to present staff training that offers strategies and techniques for implementing a Restorative Mealtime Program (RMP). The purposes of such a program are to make dining safe and enjoyable, to increase resident independence at mealtimes, and to create a mechanism for monitoring declining abilities as disease processes progress. Also included are descriptions of dysphagic indicators, lists of aspiration precautions, methods for ascertaining needed levels of assistance, case studies, and a method for monitoring adherence to swallow safety standards. The author includes useful forms, checklists, and diagrams with limited permission for course participants to reproduce handouts for their own use in daily practice.

Learning Outcomes: As a result of taking this course, participant will be able to:

1. List five restorative services identified by the Centers for Medicare and Medicaid Services
2. Identify three suggestions for increasing the effectiveness of staff training in long-term care facilities
3. List ten dysphagic indicators for which caregivers should be vigilant
4. Match staff functions with various levels of feeding assistance required by residents
5. Name five aspiration precautions to be employed during mealtimes
6. List six strategies for reducing symptoms in persons with Gastroesophageal Reflux Disease (GERD)
7. Identify three essential principles for safe feeding of long-term care residents

About the Author:

Jill E. Day, MS, CCC/SLP, earned her Bachelor's and Master's degrees in Communication Disorders from Fontbonne University in Clayton, Missouri. For the last twenty-two years she has treated speech, language, and swallowing disorders in pediatric through geriatric populations. She obtained intense dysphagic experience in long term care, and acute and post-acute rehabilitation settings during sixteen years of work in the field of speech-language pathology. Six years have been spent treating pediatric clients within their homes or schools, and in a clinic-based setting. Currently, she works full-time as Director of Rehabilitation in a long-term acute and rehab-to-home setting. Jill resides in Dardenne Prairie, Missouri and has been blessed with a supportive husband and two wonderful children. In her spare time, she enjoys interacting with her family, writing to share her experiences with others, and party planning. Jill went into the field of speech-language pathology "to make a difference in the lives of others" and feels privileged to serve the needs of her clients. *Dysphagia: A Guide to Establishing a Restorative Mealtime Program* is dedicated to her family, who endured months of manuscript writing and to her mother who always inspired her to "do the best" in all she did.

Dysphagia: Guide to Establishing a Restorative Mealtime Program

Restorative Mealtime Program (RMP) Definition

The population of residents in sub-acute, skilled nursing, and residential long-term care facilities is varied. Two groups that have been defined are:

- Residents who have Medicare Part A, making them eligible for rehabilitative services for a short term stay
- Medicare Part B residents who are in the facility for an indefinite time due to a decline in function

RMPs are needed for comprehensive care after a stroke in combination with speech therapy treatment for Medicare Part A residents. Dysphagia is present in at least 50% of patients within the first three days of stroke onset. Approximately one-third of the 50% will require intervention by a speech-language pathologist (SLP) while in long term care post stroke (Palmer, 2008).



Restorative Mealtime Programs in long-term care will aid in fully restoring independent function at mealtimes for the resident afflicted with a stroke. RMPs are also needed for aging residents with progressive illnesses and Medicare Part B coverage in long-term care facilities. AN RMP lends focus to the concept of achieving maximum functional independence at mealtimes for the benefit of the resident. Fulfilling this independence in a way that caters to the social, personal, and inherent needs of dining is the goal of an RMP.

Restorative services, as defined by federal and state governments are “specialized services provided by trained and supervised individuals to help applicants or recipients obtain and/or maintain their optimal highest practicable functioning potential. Each applicant or recipient must have an individual overall plan of care developed by the provider with written goals and response/progress documented. Restorative services may include, but are not limited to: applicant or recipient teaching program (self-transfer, self-administration of medications, self-care [inclusive of self-feeding]), range of motion, bowel and bladder program, remotivational therapy, validation therapy, patient/family program and individualized activity program” (Centers for Medicare and Medicaid Services [CMS], 2011).

AN RMP provides a well-structured environment for residents to achieve their maximum functional independence in feeding, as well as relearn activities of daily living. RMPs can educate caregivers and improve a resident’s self-feeding capacity within the safe confines of observation by trained staff.

Definition of Skilled Dysphagia Treatment

In the world of long-term care, skilled treatments must be carefully documented in order to assure payment from insurance or third party payers. A physician must order a speech therapy consultation for dysphagia, as well as document in clinical notes any history of aspiration or aspiration pneumonia, choking or frequent coughing while eating, drooling, excessive chewing or pocketing of food consistencies, spillage of food or liquids from the oral cavity, and presence of a feeding tube or tracheotomy, prior to the speech-language pathologist evaluation.

Evaluation documentation by the speech-language pathologist must describe the resident’s swallowing deficits, as well as to his or her motivational and cognitive level. Anticipation of functional improvement based on interventions after review of the resident’s medical history, mealtime assessment, and clinical observation must be documented. A Plan of Care complete with long-term and short-term goals must be established. All short-term goals should be functional in nature directed at the long-term goal or result of interventions. The long-term goal must be a functional improvement from the current status for reimbursement.

The following list includes some of the speech-language pathologist **skilled treatments** that are accepted by insurance for a resident with dysphagia and that should improve swallow function if the patient exhibits disorders in each of these areas:

- Resident training on swallow or feeding techniques to ensure safe per oral intake
- Caregiver training on swallow or feeding techniques to ensure safe per oral intake with a given resident
- Development of specific modifications or diet recommendations to suit a particular resident's needs
- Exercises to increase laryngeal adduction and elevation during swallow
- Exercises to increase lingual, labial, mandibular, or buccal strength and range of motion
- Training on compensatory techniques during feeding for the resident or caregiver

Skilled speech therapy services do **not** include continuous feeding of a resident unless (1) per oral trials of varied consistencies have been conducted and/or (2) observation has been carried out for longer than the specified plan of care (Groher & Crary, 2010). Paid feeding assistants, as proposed by the Center for Health and Human Services, are valuable resources when trained properly to prevent Medicare denials in residents with dysphagia and to ensure swallow safety at mealtimes.

People over age 65 are the fastest growing segment of the population and account for 42% to 52% of the intensive care unit admissions in the United States (Pisani, 2009). Over 78 million Americans born between 1946 and 1964, charmingly known as the "Baby Boom" generation, will soon be requiring long-term care or exhibit presbyphagia, the decline in swallowing abilities based on age (Ney, Weiss, Kind, & Robbins, 2009). Therefore, we are suggesting here that caregivers will increase the use of RMPs over the next ten years. It would be advantageous to have these types of programs established and functioning before such a demand is placed on long-term care rehabilitative programs. Residents receiving skilled speech therapy interventions will most likely be placed on aspiration precautions or compensatory feeding techniques. The paid feeding assistants in an RMP can monitor use of the precautions and techniques, as the speech-language pathologist is unavailable for attendance at every meal. Residents not requiring skilled speech therapy interventions as described above are applicable for placement in an RMP as well.

Definition of Paid Feeding Assistants

AN RMP benefits the resident by maintaining a program established by the speech-language pathologist, making dining enjoyable and safe, and allowing for rehabilitation of an acute illness or monitoring of a decrease in ability as a disease process progresses. According to the Center for Health and Human Services (CMS, 2011), the requirements for paid feeding assistants are:



- eight hours of training on feeding techniques
- assistance with feeding and hydration
- preparing residents for and serving meals
- feeding the helpless
- communication and interpersonal skills
- appropriate responses to resident behavior
- safety and emergency procedures (including the Heimlich maneuver)
- infection control
- resident rights
- recognition of changes in residents that are inconsistent with their normal behavior
- the importance of reporting those changes to the supervisory nurse
- maintenance of records

A facility must maintain a record of all individuals, used by the facility as feeding assistants, who have successfully completed the training course for paid feeding assistants. A feeding assistant must work under the supervision of a registered nurse (RN) or licensed practical nurse (LPN). A resident having a complicated risk of aspiration that has not been treated by a speech-language pathologist should not be fed by a paid feeding assistant (CMS, 2011).

Setting up a Restorative Mealtime Program

Rosenvinge and Starke (2005) determined that patients in long-term care are not always fed in a manner that is in the best interest of the residents served. Best practice in the area of dysphagia dictates that efforts are made to educate and verify follow-through with relatively simple and low-cost measures to improve the quality of resident care. The presence of post-stroke dysphagia that does not respond to treatment methods or is not properly addressed is directly associated with increased long-term care residency. A resident with untreated dysphagia will not progress in rehabilitative therapy as quickly or as fully as one without dysphagia. In fact, quality of life, life functioning – even mortality – can be impacted greatly by swallowing difficulties (Palmer, 2008).

Dysphagia leading to aspiration can decrease a person's overall health and wellness, which – in turn – can hamper progress in therapy. The lack of progress can decrease the individual's motivation, thereby limiting progress in therapy. Lack of progress can also mean a delayed potential for discharge from a rehab bed. These types of complications can hinder a person's full recovery from a stroke and create reliance on the long-term care facility for an extended period. Therefore, it is critical to identify swallowing problems early in the rehabilitation process (Palmer, 2008).

The best way to ensure success of the rehab program as a whole is by enlisting the assistance of the long-term care staff by providing them with the education they need to identify residents with dysphagia. As a speech-language pathologist, the best referrals have come from caregivers. Caregivers have such a close familiarity with the resident that many can easily identify those who will benefit from speech therapy services. Residents will often divulge their deficits or concerns to a caregiver once a cordial interpersonal relationship has been developed.

Speech-language pathologists generally may not have the opportunity to engage in such personal conversations as frequently as do caregivers. Therefore, quality information presented in a nonthreatening interactive presentation can:

- increase appropriate referrals
- decrease premature discharges from Medicare Part A due to lack of progress resulting from undiagnosed dysphagia
- decrease devastating effects – including aspiration pneumonia or mortality – from undiagnosed dysphagia
- increase resident longevity
- create the existence of a team approach to resident care

Establishing a restorative mealtime program involves a number of steps. First, the facility must set up the RMP team, which should include at least: a physician, speech-language pathologist, nurse, occupational therapist, physical therapist, dietitian, social worker and family member(s), and the resident. Second, the team should develop team goals that address the identification of residents with dysphagia, clinical evaluation by all team members, individualized treatment plans, objective measurement of resident progress, effective communication among team members, and carryover of treatment goals following discharge from skilled treatment. Third, since facility staff are instrumental in carrying out the individualized care plans, it is essential that staff members be thoroughly educated regarding the philosophy, goals, and procedures of the program.



Setting the Scene – Presentation Tips

In preparation for establishing an RMP, speak initially to the Therapy Supervisor and Director of Nursing. Schedule a time that is convenient for all of you, stating that you have a cost-effective way to educate and verify follow-through of dysphagic recommendations, thereby improving the quality of resident care. During the designated meeting time, emphasize the need for an RMP based on a comprehensive presentation to all staff for the benefit of all residents. Cite references and prevalence data to indicate that you have “done your homework.”

Explain that undiagnosed dysphagia can affect patients’ progress in therapy, thereby limiting their eligibility for Medicare Part A days. Decreasing Medicare Part A days can – in turn – reduce the likelihood that the patient will resume premorbid functioning and return home. In addition, sample documents such as those included as appendices in this course can be duplicated to bring along for further discussion.

The Director of Nursing can assist you with advertising the presentation to staff. If possible, the presentation could be during staff meetings, preferably done in increments. However, in order to emphasize that this is important information, it should be paid time for staff attending, even if it needs to be mandated attendance. However, be careful of using “mandatory in-service” because often this may strike a negative connotation, with staff being resentful if they are required to come in to work on their day off. You may need to present several times to accommodate all staff requiring the in-service, but remember practice makes perfect! Possibly arranging with the Therapy Supervisor to provide refreshments would be an added perk for attendance, if the in-service is not made mandatory.

There are a number of training components that can help increase the effectiveness of presentations like the ones described here. First, giving the caregivers a packet of printed information to which they can refer during and after the presentation is useful in at least two ways. First, it can offer a visual expression of what the speaker is presenting verbally. Many people learn better when they can both see and hear new information at the same time. Second, if participants do not fully understand any of the information presented, they can read it over again at a later time. Some individuals may not feel comfortable asking questions about something they do not understand during the presentation. Also, pairing presented material with hands-on experience is a very effective way to help individuals assimilate and become comfortable with new information. Many of the activities described in this course are intended to give training participants the opportunity to practice what is being presented by the trainer.

In addition to the verbal and practical portions of the presentation, the attitude of the caregivers being trained can assist in carryover of new skills that are learned. Some caregivers attend in-services with an open mind to learning new skills. Others may not come so willingly or feel as though they are knowledgeable already. I usually begin any presentation with “The Sculptor’s Attitude” to set the tone (also found in Appendix A). This particular poem indicates that life is what you make of it based on your attitude or the way you approach it.

The Sculptor’s Attitude

I woke up early today, excited over all I get to do before the clock strikes midnight.

I have responsibilities to fulfill today. I am important.

My job is to choose what kind of day I am going to have.

Today I can complain because the weather is rainy or I can be thankful that the grass is getting watered for free.

Today I can feel sad that I don’t have more money or I can be glad that my finances encourage me to plan my purchases wisely and guide me away from waste.

Today I can grumble about my health or I can rejoice that I am alive.

Today I can lament over all that my parents didn’t give me when I was growing up or I can feel grateful that they allowed me to be born.

Today I can cry because roses have thorns or I can celebrate that thorns have roses.

Today I can mourn my lack of friends or I can excitedly embark upon a quest to discover new relationships.

Today I can whine because I have to go to work or I can shout for joy because I have a job to do.

Attributing value to the staff members in an RMP is a wonderful way to enlist their help with the program. I often use the following introduction:

“As a health care provider, you are the ‘eyes and ears’ of the speech-language pathologist’s world. You often provide direct one-to-one care for the long-term care resident, including feeding, offering of fluids or medication administration. You have the unique opportunity in each of these situations to see how each patient reacts to the food and liquid given. Throughout this presentation we will be discussing dysphagia and the newly developed RMP as it relates to you and the residents you serve. Dysphagia is a disorder of swallowing. Aspiration, meaning food or liquid entering the trachea, is a result of dysphagia. Aspiration can lead to aspiration pneumonia. Aspiration pneumonia can result in premature death of some long-term care residents.” Upon empowering your listeners, they will potentially realize the value of their efforts. You will become a team as you offer respect to each member.

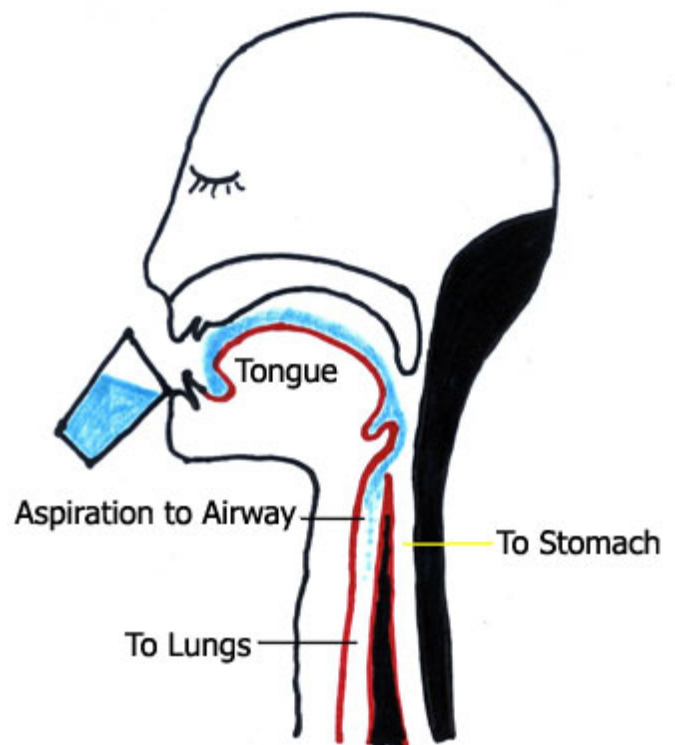
As you explain each person's role on the team you may introduce the Dysphagia Referral Form, which can be widely distributed within the long-term care facility for use by nursing to indicate which residents seem to have difficulty with eating or swallowing during mealtimes (see Appendix B). Such a form will give a frame of reference to staff members. It can generate substantial information for a nurse to relay to a doctor to obtain the evaluation order, and provide a starting point for the evaluating speech-language pathologist.

Placing chairs in a circular form as in a “round robin” type of discussion will allow the presentation to appear less formal and “stuffy.” As the presenter, I position myself at the front of the circle, but remain seated during most of the discussion. By using this physical arrangement, it levels the playing field and encourages questions during your presentation seminar. It is important to appear approachable so that listeners will be more receptive to the information and more apt to ask questions for the benefit of the residents.

Explanation of Dysphagia for Caregivers

Dysphagia is a swallowing disorder that can result from various neurological and/or structural impairments. It may be the result of head and neck trauma, cerebrovascular accident, neuromuscular degenerative diseases, head and neck cancer, dementias, or encephalopathies. Dysphagia most often reflects problems involving the oral cavity, pharynx, esophagus, or gastroesophageal junction. Difficulty with swallowing can cause food to enter the airway, resulting in coughing, choking, pulmonary problems, aspiration or inadequate nutrition and hydration. These conditions can cause weight loss, failure to thrive, pneumonia, and even death.

Speech-language pathology services are covered under Medicare for the treatment of dysphagia, regardless of the presence or absence of a communication disability. “Patients who are motivated, moderately alert and have some degree of deglutition (the act or process of swallowing food) and swallowing function are appropriate candidates for dysphagia therapy. Elements of the therapy program can include thermal stimulation to heighten the sensitivity of the swallowing reflex, exercises to improve oral-motor control, training in laryngeal adduction and compensatory swallowing techniques, and positioning and dietary modifications. Design all programs to ensure swallowing safety of the patient during oral feedings and maintain adequate nutrition” (CMS, 2011).



Diagnoses have been assigned to the distinct phases of dysphagia, as noted by CMS in its 2011 revision. Dysphagia is diagnosed as oral, oropharyngeal, pharyngeal, pharyngoesophageal, or other unspecified dysphagia. In **oral dysphagia** the following problems may be observed:

- Protracted or reduced mastication effort
- Reduced bolus formation due to decreased lingual lateralization
- Impaired oral sensation
- Pocketing of food in the cheeks
- Spillage of food or liquid from the lips due to weakness of labia, or drooling (ASHA, 2007)

In the case of a diagnosis of **oropharyngeal dysphagia**, there are problems with management of food or liquid in the oral cavity through the pharynx to the esophagus, encompassing deficits such as:

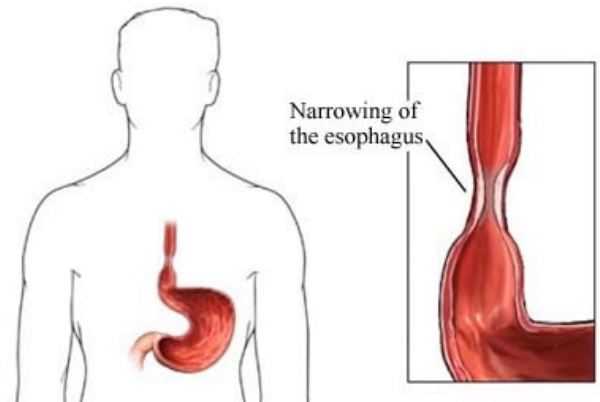
- Nasal regurgitation
- Uncontrolled bolus flow into pharynx
- Decreased range of motion to propel food or liquid into the pharynx
- Decreased intraoral pressure
- Abnormal swallow onset

Given a **pharyngeal** phase dysphagic diagnosis, signs include:

- Abnormal pharyngeal phase onset
- Laryngeal penetration and secretions, leading to coughing, choking, or a tickling sensation
- Aspiration
- Pharyngeal residue and stasis before, during or after the swallow (ASHA, 2007)

With **esophageal dysphagia**, there are difficulties managing the food or liquid at the level of the esophagus. Common esophageal dysphagic problems include:

- Reflux disease causing cricopharyngeal dysfunction (difficulty swallowing, difficulty passing solids, feeling that food is stuck in the throat)
- Benign or malignant lesions
- Esophageal dysfunction due to Achalasia (inability of smooth muscle to move food down the esophagus)



Siersema (2008) stated that esophageal strictures are frequently the cause of esophageal dysphagia. Benign lesions are often treated with esophageal dilation or use of stents. Dilation usually results in dysphagic symptom relief but is not permanent; therefore the procedures require repetition. Malignancies are removed and may or may not require stents or additional cancer treatments. Speech-language pathologists are able to treat symptoms of esophageal dysphagia through management of reflux. Reflux precautions are taught to patients in order to reduce cricopharyngeal dysfunction, but esophageal dysphagia requires examination by a gastroenterologist.

Reflux precautions:

- Elevate the head of the bed 30 degrees
- Remain upright for one hour after eating or drinking
- Avoid alcohol and smoking
- Use antacids as directed
- Avoid trigger foods and liquids

The Medicare NCDS manual (CMS, 2011) gives the following definition and interpretation: “Dysphagia is a swallowing disorder that may be due to various neurological, structural, and cognitive deficits.” Dysphagia may be the result of head trauma, cerebrovascular accident, cerebral palsy, neuromuscular degenerative diseases, head and neck cancer, or encephalopathy. Common neuromuscular degenerative diseases include:

- Muscular Dystrophy (MD)
- Multiple Sclerosis (MS)
- Amyotrophic Lateral Sclerosis (ALS)
- Parkinson’s disease
- Huntington’s chorea

Any of these disorders may produce oropharyngeal dysphagia (Palmer, 2008). Estimates are that between 300,000 and 600,000 individuals in the United States are affected by neurogenic dysphagia each year (Sura, Madhavan, Carnaby, & Crary, 2012). While dysphagia can afflict any age group, it most often appears among the elderly. In the elderly, the estimated prevalence of dysphagia is astounding. You may want to put the following statistics on a white board for more visual interest during your presentation:

- Aspiration pneumonia is the most common form of hospital-acquired pneumonia among adults. It occurs in 4-8 of every 1,000 patients who are admitted to hospitals in the United States (Smith-Hammond, 2006).
- In a study of 33 ischemic stroke patients, 34% were at high risk for aspiration and 66% did not have evidence of aspiration (Hammond et al., 2009). This is representative of current trends in the geriatric stroke population.
- The exact prevalence of dysphagia is unknown. Epidemiologic studies, however, indicate that the prevalence may be as high as 22% in those over 50 years of age (Howden, 2004).
- It is estimated that aspiration pneumonia affects some 300,000 to 600,000 Americans each year. It is also the most common cause of death in patients with dysphagia due to neurological disorders (Australian and New Zealand Position Paper, 2010).
- Stroke, Parkinson's disease, amyotrophic lateral sclerosis, and several other motility and structural disorders may cause oropharyngeal dysphagia in the older patient (Sura et al., 2012).
- As the elderly advance in age, oropharyngeal dysphagia becomes much more common. Most of the aforementioned causative disorders impacting swallow are age-related as well. Oropharyngeal dysphagia is the most common reason recognized by physicians for aspiration in the elderly. In a prospective study of 134 consecutive elderly patients admitted with pneumonia, 55% were found to have signs of oropharyngeal dysphagia (Cabre et al., 2010).
- One fifth of the population experiences frequent difficulty swallowing, requiring primary care physicians to remain alert to the presence of dysphagia in their patients (Wilkins et al., 2007).
- 5 to 15% of community-acquired pneumonia cases are really aspiration pneumonia. The incidence of aspiration pneumonitis, occurs in about 10% of hospitalized patients due to drug overdose and in about 1 in 3,000 patients post anesthesia (Australian and New Zealand Position Paper, 2010).
- Another 30-75% of residents in long-term care facilities exhibit dysphagia as well (Sura et al., 2012).

Of the 700,000 Americans who have a stroke annually, greater than 20% die within the first year (Hinchey et al., 2005). Approximately 13% of those having strokes develop aspiration pneumonia during hospitalization. Post-stroke pneumonia increases a person’s likelihood of mortality: 35% of those developing aspiration pneumonia die each year (Hinchey et al., 2005). Those residents with dysphagia will become participants in a restorative feeding program of some kind within a long-term care facility.

Case Study 1: Mrs. Stoddard, a 54 year old female with left brain stroke and right facial paralysis has persistent coughing when sitting in the recreational room after meals. When asked if she is ok, she reports a sticking of food in her throat.

- Do you as a staff member refer for a swallow evaluation?
- After evaluation, Mrs. Stoddard is on reflux precautions. She is given a soft diet and told to take small bites and small sips with alternation of liquid with solid. Name three reflux precautions. What does alternation of liquid with solid mean?

Explanation of Normal Swallow Function for Caregivers

How does one go about instructing the caregivers in a way that will achieve long-lasting results? Here are some suggestions. If caregivers are to understand dysphagia, we must first present a perspective of normal swallow function. Swallowing occurs in four distinct phases: 1. Oral prep phase; 2. Oral phase; 3. Pharyngeal phase; 4. Esophageal phase (Smith-Hammond, 2006).

The normal eating and swallowing sequence begins in the oral prep phase, when food is placed into the mouth. Chewing is initiated, while the tongue is manipulating the bolus or food particles. The tongue retains the food requiring more chewing in the molars and pushes a cohesive bolus into the pharynx (the oral phase).

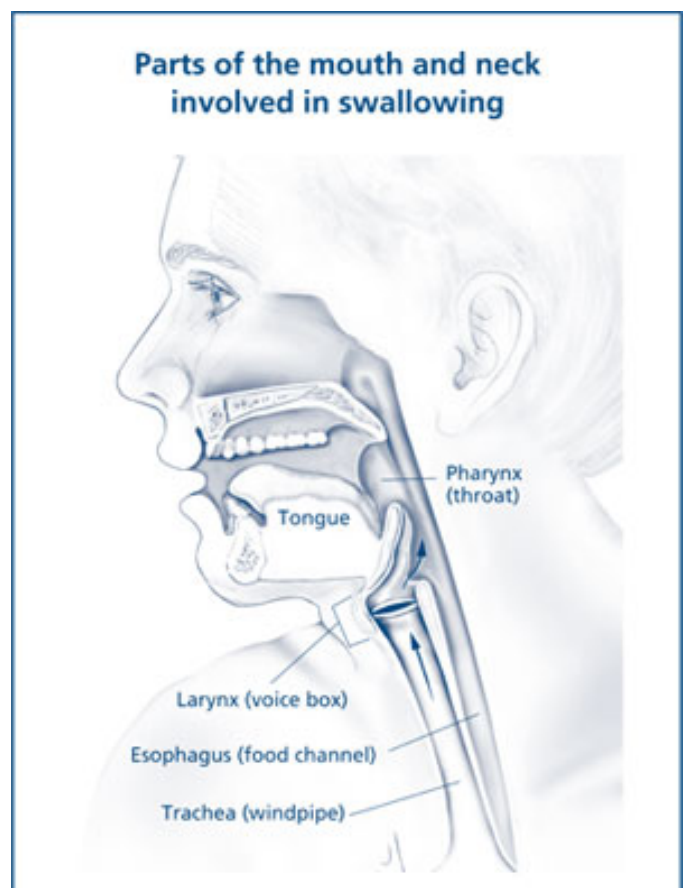
Once at the level of the pharynx, the pharyngeal phase of the swallow is started. The epiglottis flaps down over the larynx or voice box so that food does not enter the trachea or windpipe and can travel easily to the esophagus or food pipe. The hyoid bone and thyroid notch elevate to seal the airway. The vocal folds are pursed together tightly.

The velum extends upward to close the nasal cavity and sustain intraoral pressure. The pharyngeal walls begin peristalsis (normal swallow) moving the bolus down toward the cricopharyngeal sphincter. The thyroid notch returns to resting position upon the completion of the pharyngeal phase of the swallow and the beginning of the esophageal phase.

The esophageal phase begins as peristalsis of the esophagus starts to move the food downward to the stomach. In a normal swallow the bolus transfer of the oral phase, the pharyngeal, and the esophageal phases occur in 0-2 seconds.

A person free from deficits is able to eat a complete meal without choking or spilling food or liquids. If solids or liquids happen to be swallowed wrong or go down “the wrong pipe,” the healthy person is able to activate a strong cough to expel the food or drink. This powerful cough clears the airway or trachea of foreign matter. If coughing does not dislodge it, often times a gag reflex will trigger, causing expulsion of the foreign matter.

As professionals, we are inclined to use lingo vital to communication with other professionals such as doctors, nurses, physical therapists, or occupational therapists. However, remember your audience of caregivers and aides. You must scale down the professional vocabulary and make it clear. Pairing the descriptions of swallowing with the simultaneous experience of eating will help illustrate each point.



For example, the oral phase begins as you tear off a chunk of hamburger with your front teeth. You chew with your back teeth, moving a smaller part to be swallowed onto your tongue. This starts the oral propulsion. In the oral phase, your tongue waves backward to put the smaller piece of food into the pharynx. The soft palate moves up and back to seal off your nose. In the pharynx, the epiglottis flaps down over the trachea or wind pipe so that food can easily travel down the esophagus or food pipe. The vocal folds press together tightly.

The thyroid notch (“Adam’s apple” in males) rises as the small hamburger bite is pushed into the pharynx and it returns to normal resting position when the pharyngeal phase of the swallow is completed. This normally happens within 0-2 seconds.

If solids or liquids happen to “go down the wrong pipe,” the average healthy person coughs it out and re-swallows. Those with dysphagia may or may not even sense that food or liquid has fallen into the trachea or “wind pipe.” Explain how a healthy person coughs, modeling yourself. Take in a deep breath then

cough, telling caregivers that the vocal folds close tightly then burst open to produce a cough. Residents with Congestive Obstructive Pulmonary Disease (COPD) or Congestive Heart Failure (CHF) will prove to have a decreased effective cough based upon the amount of air in their lungs (lung volume is decreased in these residents thus preventing a good reflexive or volitional cough).

To present a clearer picture to the caregivers during your interactive presentation, bring in swallow studies in which the swallow is normal and then disordered. When I have brought in evidence of aspiration on a Modified Barium Swallow (MBS), caregivers can then relate to exactly what happens when aspiration occurs. The purpose of the MBS is to evaluate the swallowing process for people who are having problems speaking or swallowing food without aspirating it into the windpipe. By using a swallowed contrast material which can be seen using X-rays, we are able to see all structures involved in swallowing (from the oral cavity to the esophagus) on a video screen while the test is taking place. Several MBS films indicating trace, mild, moderate, and gross aspiration are included on the following pages to assist in presentation.



MBS SLIDES: (Images by Jill E. Day, 2007)

Figure 1: This Modified Barium Swallow has a pronounced epiglottis. The darkened outline is the Barium coating the epiglottis. The Barium is sliding down the backside of the epiglottis into the trachea or penetrating the trachea. The Barium reached the level of the vocal folds. No cough was triggered by this person and aspiration of a trace amount of Barium was observed.



Figure 2: This Modified Barium Swallow film depicts a mild amount of aspirated Barium as it penetrated the trachea and vocal folds. The epiglottis and vocal cords are outlined with a small amount of Barium.

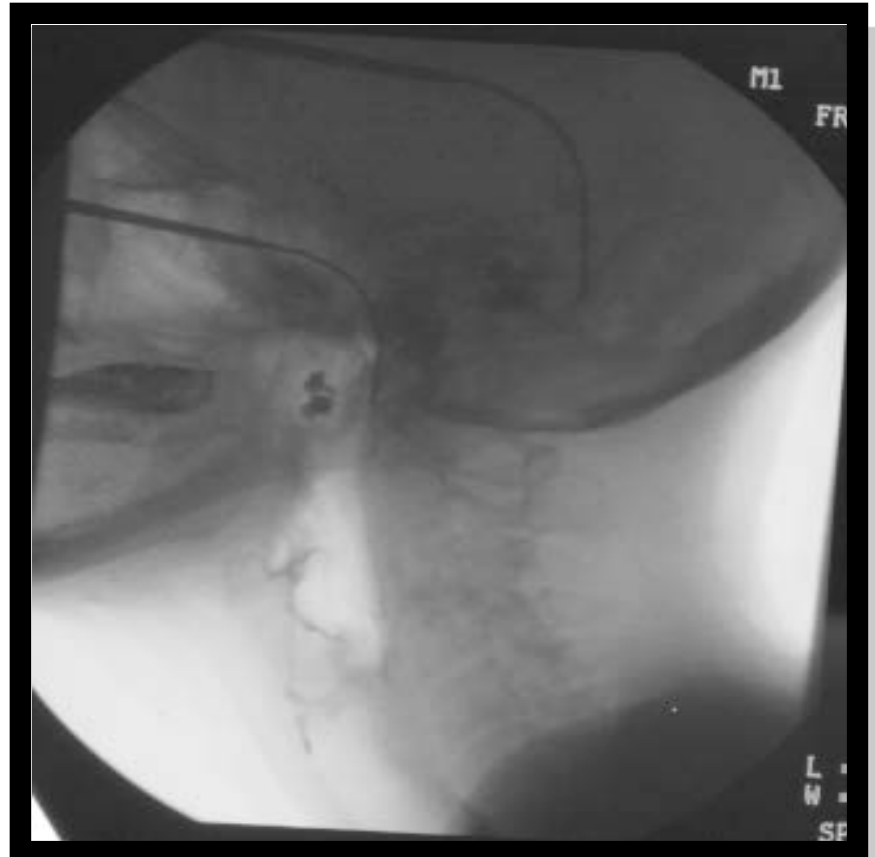


Figure 3: This Modified Barium Swallow exhibits penetration into the trachea and moderate degree of aspiration through the vocal folds. The vocal folds are coated with Barium defining them. This person also had a tube feeding secured outlining the esophagus.

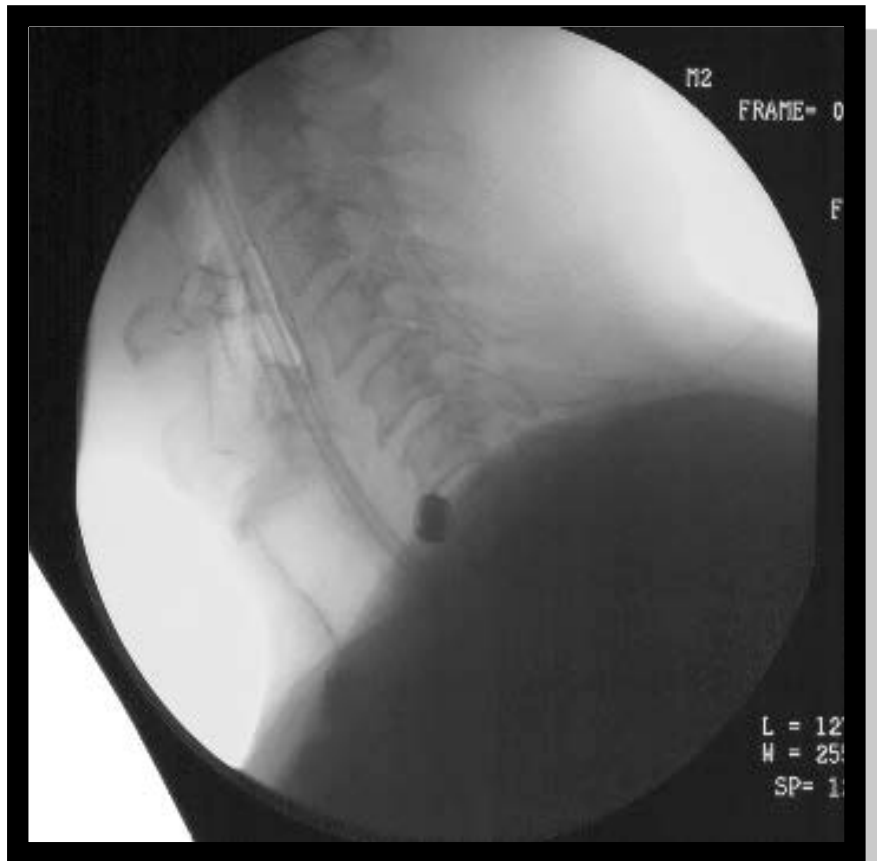


Figure 4: This Modified Barium Swallow defines the vocal folds by a generous pooling of Barium on them. This person had significant deficits in the oral phase and in the pharyngeal phase. The large amount of Barium penetrated the trachea and was aspirated silently or without a cough. This indicates gross aspiration as all the Barium pooled on the folds was aspirated.



Figure 5: In this Modified Barium Swallow film, Barium has penetrated the trachea, settled on the vocal folds (lateral darkened lines at the level of the thyroid notch), and a moderate amount is aspirating below the folds. The larger blackened bolus is traveling down the esophagus.



Figure 6: In this Modified Barium Swallow, the person is in process of swallowing. The Barium has penetrated the trachea, but is pooled above the vocal folds. Upon swallowing completion, the Barium cleared from the valleculae. The larger blackened bolus Barium is traveling down the esophagus.



Figure 7: This Modified Barium Swallow film depicts a person with a weakened oral phase. There is Barium residue in the oral cavity upon swallow. A large amount of Barium is pooled in the valleculae just above the level of the vocal folds. Upon the swallow, the Barium residue did not clear and the person trace penetrated and aspirated.

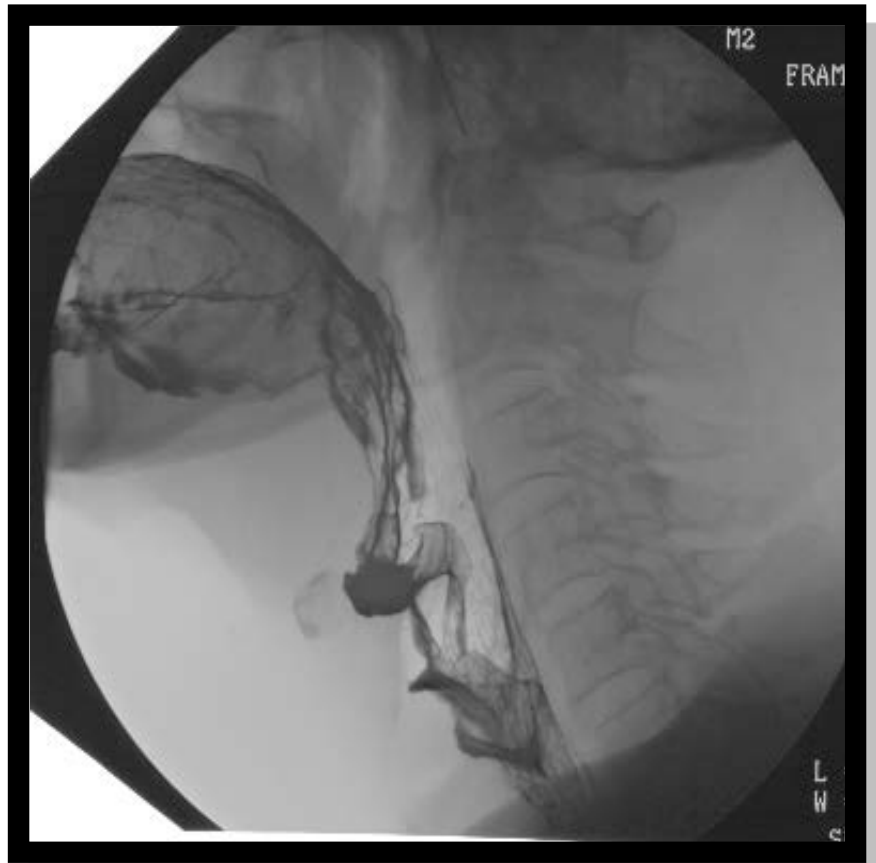
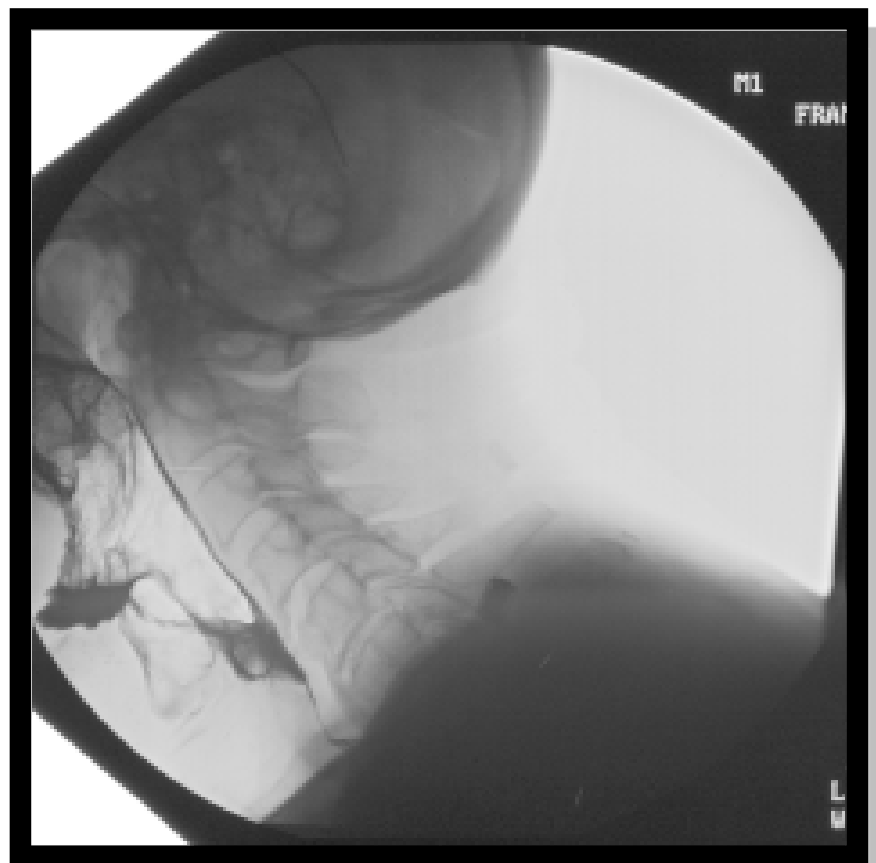


Figure 8: In this Modified Barium Swallow film, Barium residue is seen on the floor of the mouth and back of the pharynx. Pooling of Barium is noted in the valleculae with moderate penetration and trace aspiration through the vocal folds. This angle was taken with the person head turning to his left to valve off poorer side of swallow.



Explanation of Dysphagia for Caregivers

Considering that the mortality rate of residents without proper treatment is significantly higher than those who are diagnosed and treated, it is vital that dysphagia be identified quickly and that a feeding program is initiated. During the interactive presentation remind caregivers that it is important to speak with the nurse in charge or physician if any indications of aspiration are recognized during resident mealtimes. Indications of dysphagia or swallowing deficits during mealtimes that should be discussed are as follows:



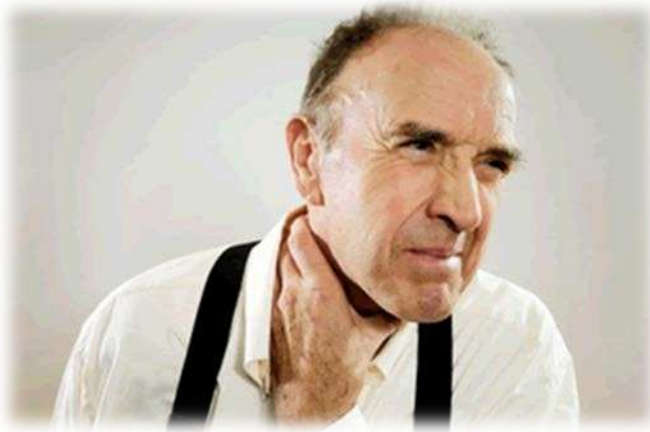
- Coughing or choking, immediate or delayed, during swallowing
- Watery eyes during oral intake
- Low grade persistent fever (indicative of aspiration pneumonia)
- Recurrent pneumonia
- A sensation of a lump in the throat
- Decreased ability to masticate or prolonged chewing
- Drooling
- Ineffective coughing to dislodge food particle
- Pocketing of food in cheeks
- Residual food on tongue post swallow
- Poor ability to move the food given to the back of the throat
- Food falling out of mouth
- Repetitive swallows or progressive need to clear throat
- Excessive chewing of food
- Weight loss due to decreased intake, and/or dehydration due to insufficient fluid intake (Pelletier, 2004; Wilkins et al., 2007)
- Change in voice or speech (i.e. gurgly voice)
- Regurgitation, immediate or delayed (pharyngeal and nasal or esophageal and gastric)
- Weakness; lack of control of head and neck musculature
- Fullness/tightness in throat
- Pain on passage of bolus (odynophagia)

During explanations of dysphagia, I have brought in audio and video tapes of anonymous individuals with gurgly vocal quality, along with MBS films to view extent of aspiration and how such aspiration sounds. While video of patients eating would be of great help, gaining appropriate permission to use residents on tape for instructional purposes takes advance planning.

Each of these symptoms of dysphagia, if noted, needs to be addressed by the speech-language pathologist. If caregivers notice any of these, speak with the nurse in charge or physician to obtain an order for a speech-language pathology consult for dysphagia.

This list of indicators will most likely spur a discussion of current residents. If not, using examples from your own past cases may be of benefit. Included below are case studies that I have used in my own interactive presentations. A round table discussion will help target main ideas for the staff as well complete with case studies to discuss.

Why Dysphagia Occurs



Wilkins et al. (2007) determined that 46% of patients with dysphagia do not talk to their physician about their swallowing problems. Patients in high-risk groups (patients with a history of stroke, multiple sclerosis, or chronic GERD associated with weight loss or bleeding) may be at significant clinical risk for cancer or aspiration pneumonia. In addition, patients who do tell a physician that they have a swallowing deficit are experiencing such problems at an increased rate and should receive treatment. Stroke patients often do not identify the fact that they have a problem with swallowing (Rosenvinge & Starke, 2005). Stroke patients may not perceive they have dysphagic problems because of one or more of the following:

- Decreased sensitivity and awareness
- Facial paresis
- Disorders of communication (including receptive or expressive forms)
- Decreased responsiveness
- Cognitive impairment

Cerebral lesions can interfere with chewing functions and propulsion of a bolus into the pharynx.

Cortical lesions can impair facial, lip, tongue, or pharyngeal strength.

Right brain strokes will compromise the patient's cognitive functioning, inclusive of memory, concentration, attention, and problem solving abilities.

Brain stem lesions affect the sensation of food in the mouth and potentially the failure of triggering the swallow response in the pharynx. More importantly, the gag reflex is often not intact given a brain stem lesion, therefore reflexive coughing is nonexistent.

Given a **left brain stroke**, the patient may be unable to comprehend instructions or be able to express himself regarding food choice or preference. Therefore, it becomes the caregivers' responsibilities to pinpoint deficits experienced by patients in long-term care.

You can provide a concrete example of loss of oral sensation by giving the caregivers the parallel experience of being at the dentist to get a cavity filled. Point out how easy it is to drool from the numb side and explain that this is how a resident afflicted by stroke feels on a daily basis. Have them think for a moment about all the things they eat on a daily basis that they would avoid if they have had a local anesthetic.

In addition to those with dysphagia, residents who may benefit from an RMP include:

- Residents having a decrease in appetite – as observed by pushing food away or weight loss
- Residents who become dehydrated easily
- Residents exhibiting poor per oral intake due to distractibility
- Residents with visual impairments or coordination problems
- Residents with inability to manage utensils or cups due to cognitive or physical impairments
- Residents with dementia who simply forget to eat

Residents with Dementia

Residents who have dementia can pose a complex problem for the speech-language pathologist. It is important to evaluate the resident's ability to benefit from evaluation and treatment. Once evaluated, the resident's cognitive status will determine the next step.

Before delivering skilled speech therapy services for dysphagia, the speech-language pathologist has an ethical responsibility to assess the patient's cognition. If cognition is poor or fair with poor prognostic indications, skilled speech therapy services are not indicated. Therefore, recommendations for feeding or mealtimes can be delegated to trained paid feeding assistants. If cognitive ability – based on disease progression – is such that the resident can effectively manage dysphagic symptoms with visual cues or exercise, he or she could benefit from skilled treatment. However, the paid feeding assistants would need to monitor each meal to verify that compensatory techniques are being followed.

Visually Impaired Residents

Visually impaired residents present another challenge, in that each food tray needs to be positioned in the same manner. This is important if the resident is to achieve his or her most functional independent level. One practice is to associate positions on the plate with the numbers on a clock, since most people are familiar with the concept. Set up a diagram for all caregivers to follow. For instance, meats are always at the twelve o'clock position, vegetables are always at the three o'clock position, drinks are always at the nine o'clock position, and so on. In addition, if the visually impaired person cannot differentiate the items on his or her tray, it may be helpful to name each item and its position on the plate as the food is delivered. Proper lighting can also lessen the mystery of foods for the visually impaired person. Seating the resident facing the source of light from a window will light up the plate, enabling the resident with residual sight to distinguish items. For further assistance in aiding the visually impaired with mealtime set up, please visit the website for the National Federation of the Blind at <http://www.nfb.org/>.

The Team

Each resident in an RMP should have a team of professionals who will collaborate in his or her treatment planning and delivery. If possible, the team should include the physician, an occupational therapist, a physical therapist, a registered dietitian, a nurse, a speech-language pathologist, restorative assistants/caregivers, as well as the resident and family members.



All recommendations for mealtimes should be discussed at care planning meetings (Bonn, 2010). Appendix D has a form that can be completed at the team care planning meeting for each resident who is on a Residential Mealtime Program. Checkmarks will indicate items required for each resident at meals. This checklist should be kept in the resident's chart at the nursing station and in a binder in the residential dining room for easy reference.

It is the speech-language pathologist's responsibility to notify the RMP team of any changes in functions or variations in requirements for each resident. Furthermore, it is the responsibility of any other staff member to advise the speech-language pathologist of any changes – positive or negative – observed in the resident, so that the proper changes to mealtimes can be made to ensure safe and enjoyable dining.

Explain all the team members' responsibilities during the interactive presentation. The goal for all members of the team is to achieve the highest functional potential of the resident within the dining room, considering his/her cognitive ability. The physician is the driving force to initiate all services. The occupational therapist assures the person has the appropriate adaptive equipment needed for the resident to attain the highest functional level for independence in eating and drinking.

The physical therapist – along with the occupational therapist – should instruct staff on the means to attain the most functional upright position for the person to feed. A registered dietitian – along with the physician – will determine the type of diet that is needed, such as diabetic diet, two gram sodium, etc. The registered dietitian will also assure that the correct diet textures and liquid thickness are being given to the residents according to physician’s orders.

The nurse collaborates and coordinates all the services and communicates directly with the physician. The speech-language pathologist evaluates and makes recommendations for dining or feeding. He or she will determine the necessity of thickening agents for liquid consumption, patient’s tolerance for textures of foods, patient’s ability to consume dual textured foods (i.e. chicken noodle soup, cold cereal – solid with liquid at the same time), best positioning techniques (including chin tuck, head turn), and aspiration precautions.

The paid feeding assistants, caregivers, and aides have the responsibility to report resident dysphagic complaints, declines in function, and adherence to recommendations during feeding. The resident and family have the right to a full comprehension of the problem and solution by the treatment team. The resident and family members have the responsibility to ask questions when information given is vague or not delivered in a manner they can understand.

Levels of Assistance

In consideration of the fact that most long-term care patients are in the facility due to some degree of cognitive decline (i.e. Dementia), or neurological deficits (i.e. Stroke, MD, MS, Parkinsonism), there are varying levels of care that must be offered in the dining room. These are differentiated according to the following functional levels:

- Independent self-feeder
- Independent self-feeder with meal set up
- Intermittent/constant supervision self-feeder
- Dependent feeder dining within residential dining room
- Dependent feeder outside of residential dining room

In order to identify the residents’ required level of cues, colored signal cards can be placed at the tables of residents. No card for the independent self-feeder, a green card for the independent self-feeder with meal set up, a yellow card for self-feeders needing intermittent supervision, a red card for self-feeders requiring constant supervision or dependent feeders in the residential dining room. Red cards can also be placed next to residents’ name plates outside their room doors to indicate dependent feeders outside of the residential dining room.

The independent self-feeder will be able to fully complete liquid thickening requirements, if needed, and adhere to guidelines set by the speech-language pathologist in an autonomous manner. The independent self-feeder with meal set up requires assistance with thickening agents in liquids, if needed, and cutting up food items. Self-feeders with intermittent or constant supervision require assistance in meal and liquid prep, as well as verbal cues as needed to adhere to the recommendations made by the speech-language pathologist.

Staff members should be assigned to monitor the dining area checking for use of aspiration precautions and compensatory maneuvers for independent self-feeding residents or residents requiring only minimal cues. Independent self-feeders do not need a colored signal card. Independent self-feeders with meal set up should have a green colored signal card at their table indicating that staff members upon delivery of tray should attend to cutting up meats, thickening liquids, or checking the consistency of the tray as directed by physician order. Reminder cards to cue residents can be discretely placed at the table.



Levels of Assistance with Coordinating Staff Functions

Independent self-feeder	None	No assistance required; aspiration precautions
Independent self-feeder with meal set up	Green	Assistance with thickening agents in liquids if needed and cutting up food items; aspiration precautions
intermittent/constant supervision self-feeder	Yellow	Assistance in meal and liquid prep, as well as, varying amounts of verbal cueing; aspiration precautions
Dependent feeder dining in residential dining room	Red	Full feeding assistance; compensatory maneuvers as indicated; high alert for aspiration precautions
Dependent feeder outside of residential dining room	N/A	Full feeding assistance; compensatory maneuvers as indicated; high alert for aspiration precautions

Residents who are able to feed themselves in some capacity should be allowed to do so with varying levels of supervision. Those residents needing intermittent cues can be placed together at a table designated with a yellow card. The yellow card will signify to caregivers to slow down around the table when passing to cue the residents. The table with the residents requiring intermittent cues would be best placed near a table with constant supervision. Those residents needing constant supervision when self-feeding may be best grouped together with a paid feeding assistant.

Dependent feeders are people who are unable to feed themselves in any capacity due to physical or cognitive limitations. In this group there is a 50% incidence of malnutrition and dehydration in long-term care facilities (Pelletier, 2004). Patients who are sleepy or experience reduced consciousness are at a high risk for aspiration and should not be fed orally until the level of consciousness has improved (Smith-Hammond, 2006). A paid feeding assistant should be assigned to one – or at the very most two – dependent feeding patients at mealtimes. The healthcare worker should be fully aware of all the techniques and aspiration precautions each feeder requires, in order to effectively prevent aspiration. According to current research, dependent feeders are the group most likely to aspirate.

Aspiration Precautions and Compensatory Maneuvers

Among the **aspiration precautions** speech-language pathologists and feeding aides may employ during mealtimes are the following:

- Sitting upright
- Small bite
- Small sip
- Slow rate
- Alternation of bite and sip
- Use of special cups/plates/utensils
- Remaining upright for 30 minutes post feeding
- Limiting distractions by one-to-one feeding
- Use of straws
- No use of straws

Compensatory maneuvers can include:

- Chin tuck
- Head turn to the right or left (depending upon which side is the weaker)
- Chin upward
- Head tilted
- Throat clear or cough after each bite
- Double swallow given a bite or sip
- A strong swallow
- Effortful swallow
- Mendelsohn maneuver

Cerebral, cerebellar, or brain stem strokes can affect swallowing strength and/or function. Exercise programs to strengthen the swallowing musculature are often prescribed by the speech-language pathologist in order to rebuild strength and tension of lips, tongue, palate, laryngeal elevation, and pharyngeal peristalsis.

During this portion of the presentation to caregivers I have generated a faux feeding situation to increase caregiver understanding of the important role they play in the dining room and to increase disability awareness. For instance I have taken four “fun-spirited” members of the group, depending on its size. I have blindfolded one person; secured hands to an arm chair with another, told another he cannot speak and secured his right hand to an arm chair, and placed another in a reclined Geri chair with instructions to not speak.

Mimicking disabilities takes some creativity, but it is worth the effort. Have trays of varied textures and liquid viscosities ready. Call upon another four participants to feed as they normally would their residents. Note aloud the positioning of each “patient,” amount on spoons and the rate at which each “patient” is being fed. This activity – when done properly – can be invaluable in earmarking pitfalls when feeding and creating compassion for residents stricken with disease.

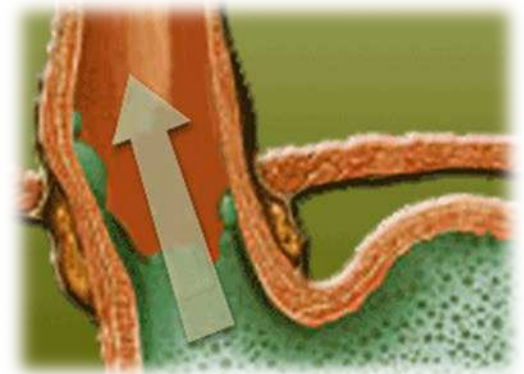
Gastroesophageal Reflux Disease and Feeding Complications

Gastroesophageal Reflux Disease (GERD) presents a significant problem for residents with dysphagia. When GERD is listed as a diagnosis for a resident, it is important to place the resident on Reflux precautions. These can include the following: (See Appendix E for signage to place in the chart and on the wall of a resident’s room)

- Elevate the head of the bed 30 degrees
- Remain upright for one hour after eating or drinking
- Avoid alcohol and smoking
- Use antacids as directed
- Avoid trigger foods and liquids

Reflux occurs when gastric acids flow upward from the stomach washing over the esophagus and potentially entering the laryngeal-pharyngeal segment. A prolonged period of reflux can cause esophageal dysmotility, inflammation or dysfunction of the cricopharyngeal muscle, or epiglottic dysfunction.

There are several medications that can cause GERD as well. Make note that nitrates (heart medications), bronchodilators (inhalers), and risedronates (osteoporosis medications) list side effects of reflux disease as well as many others. It is recommended that the person with reflux consider the following practices:



- Cease smoking.** Smoking has been associated with increased reflux. Many long-term care facilities have adopted “smoke free” status on premises in order to promote healthier lifestyles.
- Limit alcohol consumption.** Excessive alcohol consumption has been associated with increased reflux. However, when kept to a minimum of 1-2 drinks per week, alcohol consumption lessens as a risk for reflux.
- Remain upright for one hour after a meal.** Remaining upright for one hour after eating allows for the food to further digest, reducing the chance for reflux of food particles. For those residents typically lying supine in bed, a recliner could be used, since a slightly reclined position can result in reduced reflux.
- Elevate the head of the bed 30 degrees for sleep.** The head of the bed needs to be elevated 30 degrees to prevent aspiration of refluxed substances. It may help to use foam wedges under or on top of mattresses, or to place plastic bed elevator cups or wooden blocks under only the head of the bed. To assist the resident in remaining on the wedge or at the head of the bed, it can help to use rubber drawer liner around the middle of the bed on top of the sheet, or a small piece between the wedge and the pillow.
- Use prescription antacid medication as directed.** Antacid medication can only work if it is used as directed.

□ **Avoid trigger foods.** I have found it beneficial to share the list of potential trigger foods with the dietary staff that assist the residents with meal selection. If residents are listed as requiring reflux precautions, it is especially helpful if the dietary staff is knowledgeable as to what trigger foods may need to be avoided. Potential reflux trigger foods include the following (Christie, 2007):

- **Meats:** High fat or fried meats including, but not limited to: ground beef, marbled sirloin, chicken nugget-style, and chicken/buffalo wings
- **Fats, Oils & Sweets:** Chocolate, regular corn and potato chips, high-fat butter cookies, brownies, doughnuts, creamy and oily salad dressings, fried or fatty food in general
- **Fruits, Vegetables & Juice:** Orange juice, lemon, lemonade, grapefruit juice, cranberry juice, tomato, mashed potatoes, French fries, raw onion, garlic, tomato-based foods or sauces, potato salad
- **Other Beverages:** Caffeinated drinks, liquor, wine, coffee, and tea
- **Grains:** Macaroni and cheese, spaghetti with marinara sauce
- **Dairy:** Sour cream, milk shake, ice cream, regular cottage cheese
- **Spices:** Garlic and onions, mint, or mint flavored foods

Continuum of Consistencies and Viscosities

Diet texture modification and liquid viscosity alteration for dysphagia management is a common practice. There is a continuum of consistencies for per oral feeding. In my experience registered dietitians have been extremely helpful in determining the scope of diet textures for long-term care patients.

The National Dysphagia Diet (NDD), published in 2002 by the Academy of Nutrition and Dietetics aims to establish standard terminology and practice applications of dietary texture modification for dysphagia management. The NDD was developed through consensus by a panel of registered dietitians, speech-language pathologists, and a food scientist. It proposed the classification of foods according to eight textural properties. A hierarchy of diet levels was then proposed, with inclusion and exclusion of items at each level. It is recommended by the American Speech Language Hearing Association (ASHA) that each resident's needs be customized despite the four levels listed by the NDD. Not everyone recovers in the same pattern and therefore one cannot define the type of foods that all patients should eat as they progress to safe oral intake.



Four levels of semisolid/solid foods were proposed in the NDD:

- **Regular** (all foods allowed): no modifications needed
- **NDD Level 3:** Dysphagia-Advanced (soft foods that require more chewing ability than at NDD Level 2) – soft solids diet texture for people having decreased mastication ability
- **NDD Level 2:** Dysphagia-Mechanical Altered (cohesive texture, moist, semisolid foods, requiring minimal chewing) - there are three major components to the mechanically altered diet: soft, moist, and single-textured consistencies. In other words, the food can be chewed easily. “Moist” – meaning gravy – is added to ground meats. “Single textures” means that no cold cereal or thin broth soups (i.e. chicken noodle soup) should be given. Foods within this diet texture are finely chopped or mashed
- **NDD Level 1:** Dysphagia-Pureed (homogenous texture, very cohesive, pudding-like, requiring virtually no chewing ability, baby food consistency) – pureed food textures resemble baby food or applesauce consistency requiring no mastication effort

During the presentation, it is useful to have trays of each desired consistency on display for observation by caregivers.

In the NDD, the Academy of Nutrition and Dietetics lists four terms used to label liquid viscosity:

- Thin: thin liquids run like water from the tap
- Nectar-Thick: nectar-thickened liquids run like cheap pancake syrup or peach nectar, slightly thicker than water
- Honey-Thick: honey appears as the name implies
- Spoon-Thick: spoon thick is the thickest of the viscosities, which is spoon fed as pudding would be

The speech-language pathologist may recommend liquid thickening agents for a variety of reasons. The variations in consistency are directly related to how quickly a patient is able to initiate a swallow. It is vital that the prescribed thickness be obtained. Current research indicates that the thicker the liquids, the greater the risk of aspiration and pneumonia since the chest cannot clear this thickened material.

The preferred thickening agent is one of a gum base (i.e. Simply Thick or Hydra-aide); instead of a thickener with a corn starch base (i.e. Thicken Up or Thick It). The gum based thickeners do not continue to gel past the point of amount added to obtain the desired consistency per four fluid ounces. For instance, corn starch brand thickening agents will continue to gel if let sit, resulting in a pudding-like consistency.



During the interactive presentation, it is best to have thickening agents on hand with liquids for the caregivers to mix according to package directions per viscosity. Hands-on experience is the optimal way to generate consistency with how liquids are mixed and to gain an understanding of how liquids are to flow according to each viscosity level. Some thickening agents must be shaken or vigorously beaten with a fork, while others should be stirred with a spoon. This will be primarily based on which type of thickener is used at your particular long-term care facility.

It is essential to explain why speech-language pathologists do not just thicken all liquids for residents with dysphagia. It may be helpful to give examples, like cases in which the swallow is weak and cannot clear the consistency from the airway. This condition can present a significant threat of aspiration when the liquid does not fully swallow. As swallows occur that are not timely enough to accommodate thin liquid, the liquid flow has to be reduced to compensate. Provide examples, such as the resident with a delayed swallow initiation who is able to tolerate a milkshake or meal replacement shakes better than water. Residents who complain that they choke on water should be evaluated for liquid viscosity changes.

Appendix I is a quick reference tool for the dietary staff. The grid adapted from Susan Ostrowski (2011) is a useful layout at a glance regarding which diet types include which types of food and food preparation.

Case Study 2: Mr. Thompson, a 72-year-old male with Parkinson's disease has recurrent pneumonia, nasal discharge at meals, and a thick, wet, froggy voice after meals. Note: Current research indicates that the thicker the liquids, the greater the risk of aspiration and pneumonia since the chest cannot clear this thickened material.

- Do you as a staff member refer to the SLP for a swallow evaluation?
- After evaluation, Mr. Thompson is on a thickened to nectar liquid viscosity and mechanical soft diet texture. Name three liquids that do not have to be thickened and three food items he cannot have.
- Mr. Thompson has an independent level of eating with intermittent cues. He requires small bites and small sips with straws and his chin tucked. How can you approach him to cue him to use these techniques without offending him?

Frazier's Free Water Protocol

Often I have been asked why I allow free water for those residents with thickened liquids. I refer to the Frazier Free Water Protocol, stating that water does not pose a significant threat of raising the aspiration pneumonia risk for those with dysphagia. The body is 60% water. It has been proven that the lung tissue quickly reabsorbs aspirated water into the bloodstream. The pH of water is neutral and virtually bacteria-free. Therefore, I allow free water or ice chips for residents not exhibiting aspiration on nectar thickened liquids. In my scope of practice, I have found better compliance with thickened liquid recommendations by those individuals for whom I allow free water and ice chips. In addition, those residents maintain better hydration. It is important to note that residents on honey or spoon thickened liquids are not eligible for free water or ice chips.



Caution: Water passing through the mouth will pick up all of the bacteria in the mouth, which is thought to be responsible for most of the pneumonia that occurs. Before offering free water the clinician should ensure that the patient is not aspirating. It is also important to provide oral care prior to giving free water to a resident.

Mnemonic Devices to Assist in Recall during Feeding

Developing an acronym for recall of points discussed has been of great help within long-term care when educating staff. I used the following in my presentations: "Are you up to **PAR** when you feed residents? **PAR** is an acronym developed for easy recall of vital concepts needed during feeding a patient. **P** stands for **positioning**, **A** stands for **amount**, and **R** stands for **rate**."

- **Positioning.** The most important factor in feeding a person, is feeding in an upright position at a 90 degree angle. You may need to prop the patient up with pillows to attain a good posturing. Recheck often for shifts in this positioning. Ideally, everyone would be sitting upright in a chair for mealtime, but unfortunately this may not be possible for each individual. If the patient is sitting in a Geri chair or bed, you can put the chair/bed completely upright, propping the person from behind or on the leaning side to attain the best position. It should look like the person is sitting in a hard-backed chair if at all possible. Feeding a person in a lying down position, or reclined in a Geri chair, is likely to cause aspiration. For individuals who are able to be fed only while in a lying down position, this must be verified on x-ray. Position yourself as the feeder on a person's weaker side, so that the patient will naturally valve off the poorer side of their trachea when looking to their weaker side. Place the spoon in the stronger side of the mouth. In addition, the resident should remain upright for an additional 20 minutes after eating or drinking to prevent reflux from occurring.
- **Amount.** Feed the resident using small bites, which means no larger than ½ teaspoon. For some independent self-feeders small bites can be encouraged by providing a long-handled iced tea spoon, or toddler spoon, which will naturally decrease the bulk bolus on the spoon. Some adults prefer to fill up the entire base of the spoon. Using a smaller-sized spoon can create a sense of control over the spoonful without providing too much food at one time. Also, put the spoon into the stronger side of the patient's mouth. For instance, a patient who has hemiparesis on the left side would be given a spoonful of food into the right side of his mouth. Intermittently check for pocketing of food in the cheeks.
- **Rate.** Feed at a slow rate, watching for the rise and fall of the thyroid notch with each swallow. Do not offer another bite until the first is swallowed. Alternate giving bites with sips of liquid to assist the patient in swallowing consistencies. Only offer one type of food or sip of liquid at a time. In addition, laying the spoon down in between bites will automatically slow the rate of the independent feeder or of the paid feeding assistant.

There are a number of other things to keep in mind when feeding a resident:

- Discourage talking when eating/drinking prior to swallowing
- Do not ask patient questions during feeding (unless swallow has triggered and the mouth is clear)
- Secure a patient's dentures prior to each meal

Case Study 3: Mrs. Hammond, a 64 year old female, is admitted to a nursing facility directly from an acute care hospital. Prior to her stroke she was an affluent individual who had traveled abroad teaching college courses. She is now unable to feed herself due to her stroke. She has difficulty speaking but understands most of what is said to her. She frequently drools and is on thickened to honey liquids, with a pureed diet. A MBS was completed in the acute care hospital.

- Should the SLP be consulted?
- Mrs. Hammond requires feeding. Name three ways to be assured she will be respectfully fed.
- Mrs. Hammond leans to her right. Why is it important to center her in her chair? Which side will be her weaker side?

Choking

Hitting a choking resident on the back is not a recommended technique. It can surprise the person and cause the food to lodge further. Rather, educate staff to encourage the person to continue coughing. If there is no exchange of air, he ceases coughing, or cannot talk, perform the **Heimlich maneuver**.



A Missouri firefighter once gave this guideline for those in an emergency to reference when administering the Heimlich maneuver:

Stand behind the resident tucking your thumbs into his waistband. Slide your right hand to the middle of his stomach and place your left one flat palm side down over the right. Push in and up in thrusts to assist the resident in expelling the foreign food particle.

Practicing this version of the Heimlich maneuver is very practical for lay people, rather than finding exact placement (i.e. two fingers past the Xiphoid process).

In addition, be sure families of residents who go home for visits are aware of the resident's feeding requirements and know the Heimlich maneuver. While on a home visit, a woman eating a biscuit at breakfast began choking and could not dislodge it. Her husband, in a panic, called the ambulance, and by the time the

ambulance arrived the woman had become anoxic. A situation such as this might have been avoided had the man known the Heimlich maneuver.

It is also advisable to train residents for independent expulsion of aspirated bolus. If a resident is alone, being equipped with a means to dislodge food choking him will be invaluable instruction. Teaching those residents of higher cognitive function to throw themselves over a hard-backed chair in time of necessity can be beneficial. Standing behind a hard-backed stationary chair then throwing oneself forward will force air from the lungs upward, thus dislodging the food particle. Have residents and staff members practice this type of technique as well in the event of an emergency when alone.

The Structured Feeding Assessment

Cathy Pelletier (2004) has developed a structured feeding assessment that can be performed with trained paid feeding assistants. A modification of this assessment is in Appendix F and its working definitions are in Appendix G. The speech-language pathologist who makes the most dietary modifications or techniques would be an appropriate person to complete this survey. When used as part of a performance appraisal, this survey can contribute valuable information to the facility's Director of Nursing in assessing feeding assistants' ability to perform the techniques they have learned.

Social Aspects of Mealtime and Patient Rights

Meals are often social times in American culture, during which participants speak about the day's activities, or other mutually shared interests. According to CMS or the Medicare/Medicaid System, the resident has a right to a dignified existence, self-determination, and communication with and access to persons and services inside and outside the facility. A facility must protect and promote the rights of each resident (CMS, 2011). Pelletier (2004) incorporates such social aspects of mealtime routines shown by the feeder and resident in addition to **PAR**. For example, the caregiver is assessed on responding to a resident's request for help, greeting the resident, limiting extraneous conversation, offering sequences of food items, and verbal identification of modified food or beverage items.



If a resident who is alert and oriented – or a person with power of attorney (POA) for that resident – opts to refuse any meal modification or liquid viscosity, the SLP has responsibility for providing patient education and thorough documentation of the education process. Nursing staff also need to provide well-documented education. While the patient has the right to refuse such modifications of diet (Ombudsman Act Rights and Responsibilities of Long Term Care Residents - <http://www.aging.senate.gov/crs/aging12.pdf>), it is advisable from a risk management standpoint for the facility to have the patient or POA sign a waiver document (see Appendix J for a sample document).

Case Study 4: Mr. Thurston, a 68 year old male resident of the long-term care facility due to dementia for 2 years, begins pocketing food in his left cheek. He is choking on thin liquids and seems to be stuffing his mouth. He has a minimal need for assistance, but was placed in long-term care due to his personal hygiene and memory for living independently.

- Should the SLP be consulted?
- After evaluation by the physician, Mr. Thurston was diagnosed with a transient ischemic attack, also known as a TIA or ministroke. The speech-language pathologist was contacted and upon evaluation, Mr. Thurston was put on a mechanical soft diet with intermittent supervision and cues. He requires his head to be turned to the left to swallow his nectar thickened liquids. How will you cue him to turn his head without being negative? Name two respectful ways to slow down his rate of feeding.

Importance of Oral Care

Maintaining good oral care for residents with dysphagia, whether or not they are fed, is recommended practice. Those individuals aspirating tainted secretions are more likely to develop aspiration pneumonia. Periodontal disease and poor oral hygiene create a lively place for bacteria to infiltrate and reproduce rapidly in saliva. When aspirated, these bacteria-ridden secretions can cause aspiration pneumonia even in the resident with NPO or nothing per oral status. Therefore, swabbing with a toothette post feeding for residents eating by mouth is essential. Also, and more importantly, swabbing the mouths of residents with tube feedings as part of routine hourly care is vital. The following procedures should be followed (See Appendix H for signage to hang up in the rooms of residents to remind caregivers to perform routine oral hygiene care):



1. Soak oral swab in ice water
2. Shake swab and/or squeeze excess water
3. Gently stroke the tongue, gums, cheeks, teeth, and hard palate to remove debris and to hydrate mucosa
4. Re-wet swab as needed
5. Repeat hourly

Summary

A restorative dining program consists of many factors. It ultimately depends on those doing the feeding as to the success of the program. Residents often cannot express themselves fully to determine that they have dysphagia or difficulty with meals. Therefore, as caregivers it is our responsibility to identify those in need, and contribute to happier, healthier, longer lives of the residents we serve. In order to achieve greater success of an RMP, this course has attempted to describe a carefully executed interactive presentation to empower and assist paid feeding assistants. As “The Sculptor’s Attitude” suggests: “any task is what we make of it based on the way we approach it.”

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APPENDIX A

The Sculptor's Attitude

Author Unknown

I woke up early today, excited over all I get to do before the clock strikes midnight.

I have responsibilities to fulfill today. I am important.

My job is to choose what kind of day I am going to have.

Today I can complain because the weather is rainy or I can be thankful that the grass is getting watered for free.

Today I can feel sad that I don't have more money or I can be glad that my finances encourage me to plan my purchases wisely and guide me away from waste.

Today I can grumble about my health or I can rejoice that I am alive.

Today I can lament over all that my parents didn't give me when I was growing up or I can feel grateful that they allowed me to be born.

Today I can cry because roses have thorns or I can celebrate that thorns have roses.

Today I can mourn my lack of friends or I can excitedly embark upon a quest to discover new relationships.

Today I can whine because I have to go to work or I can shout for joy because I have a job to do.

APPENDIX B

DYSPHAGIA REFERRAL FORM

Patient/Resident Name: _____
Medical Diagnosis: _____
HIC#: _____
Referring Physician/Nurse Name: _____

I have examined the above patient and found him/her to have a swallowing disorder involving the:
 oral preparatory or oral phase pharyngeal phase esophageal phase

Based on my examination and collaboration with the SLP, dysphagia rehabilitation potential is expected to be:
 excellent good fair poor
Patient's level of alertness is: good fair poor
Patient's level of motivation is: good fair poor
Patient's level of cognition is: good fair poor

The following conditions are present:

History of: Aspiration problems Aspiration pneumonia

Definite risk for:

- Aspiration Reverse aspiration Chronic aspiration Nocturnal aspiration
- Aspiration pneumonia Nasal regurgitation Choking
- Frequently coughing during swallowing Delayed or slow swallow reflex
- Wet or gurgling voice quality after swallowing liquids

Presence of oral motor disorders such as:

- Drooling Oral food retention
- Leakage of food or liquids placed in mouth Impaired salivary gland performance
- Presence of local structural lesions in the pharynx resulting in marked oropharyngeal swallowing difficulties

Postural difficulties:

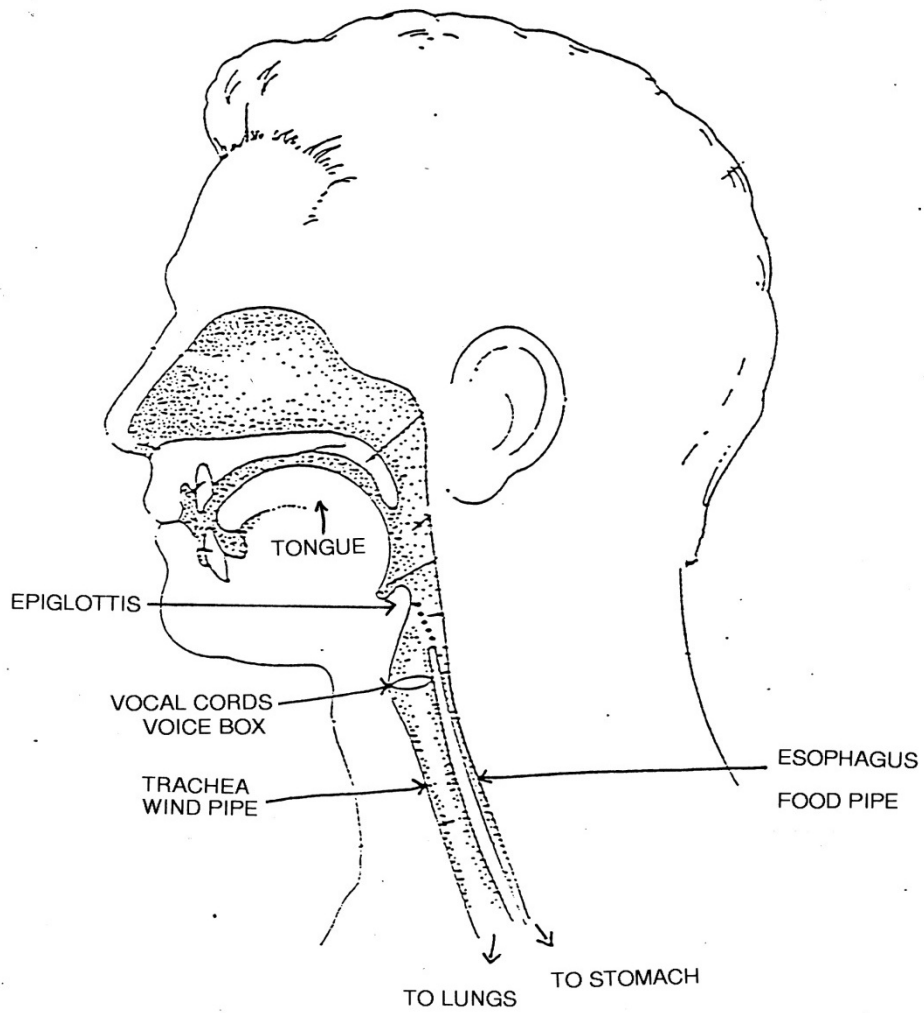
- Discoordination
- Sensation loss
- Other neuromotor disturbances affecting oropharyngeal abilities necessary to close the buccal cavity and/or bite, chew, suck, shape, and squeeze the food bolus into the upper esophagus while protecting the airway
- Post-surgical reaction affecting ability to adequately use oropharyngeal structures in swallowing
- Significant weight loss directly related to non-oral nutritional intake (g-tube feeding) and reaction to textures/ consistencies

Existence of other conditions such as:

- Presence of tracheotomy tube Reduced or inadequate laryngeal elevation
- Cricopharyngeal dysfunction Reduced or inadequate labial closure
- Reduced or inadequate laryngeal closure Reduced or inadequate velopharyngeal closure
- Clear nasal discharge during or after per oral intake

Referring Physician/Nurse Signature: _____
Effective date: _____

Swallow Diagram



APPENDIX D

Restorative Mealtime Program Check Sheet

Level of Resident Assistance at Mealtime:

- independent self-feeder (no card)
- independent self-feeder with meal set up (green card)
- intermittent supervision self-feeder (yellow card)
- constant supervision self-feeder (red card)
- dependent feeder dining in dining room (red card)
- dependent feeder outside of dining room (red card)

Social Needs:

- Greet resident by name
- Be friendly
- Identify food choices
- Give choice of food sequence
- Attend only to resident
- Clean up of resident after meal

Meal Needs:

- Preparation of thickened liquids to
 - Nectar Like
 - Honey Like
 - Spoon Thick
- Meal set up including taking lids off food items, cutting up meats, checking food consistency
 - Regular
 - Soft Solids
 - Mechanically Altered Solids
 - Pureed
- Attention to every bite or sip to be assured swallow has occurred
- Put estimate of food or liquid intake on appropriate I & O documentation

Positioning:

- Facing a window (visually impaired)
- Facing way from distractions
- Sit upright at 90 degrees
- Prop upright to 90 degrees
- Feeder to be positioned on resident's weak side
- Head turn Right or Left
- Chin tuck
- Remain upright for 1/2 hour after meals
- Check for pocketing of food in checks

Amount:

- Place bite into stronger side of resident's mouth
- 1/2 teaspoon bite size
- Small sip from a cup
- Small sip from a straw
- Use special utensils

Rate:

- Feed at a slow rate
- Watch for rise and fall of thyroid notch or swallow completion
- Lay down utensil between bites
- Alternate liquid with solid
- Swallow Techniques:
 - Double swallow after each bite or sip
 - Strong swallow with each bite or sip
 - Throat clear or cough after each swallow

Resident Name: _____

Date: _____

Designated by Restorative Mealtime Team

Contact Speech-language pathologist with any concerns or questions at _____.

APPENDIX E

REFLUX PRECAUTIONS

- ELEVATE THE HEAD OF THE BED 30 DEGREES
- REMAIN UPRIGHT FOR ONE HOUR AFTER EATING OR DRINKING
- AVOID ALCOHOL AND SMOKING
- USE ANTACIDS AS DIRECTED
- AVOID TRIGGER FOODS AND LIQUIDS

RESIDENT: _____

SPEECH-LANGUAGE PATHOLOGIST: _____

APPENDIX F

Structured Feeding Observation

Date of observation: _____

Time feeding duties began: _____

Meal observed: _____

Time feeding duties ended: _____

Resident Name: _____

Care giver: _____

Level of Resident Assistance at Mealtime:

- | | |
|--|---|
| <input type="checkbox"/> independent self-feeder | <input type="checkbox"/> dependent feeder dining within residential dining room |
| <input type="checkbox"/> independent self-feeder with meal set up | <input type="checkbox"/> dependent feeder outside of residential dining room |
| <input type="checkbox"/> intermittent/constant supervision self-feeder | |

Set up and after Meal Care

Body positioning:	Yes	No
Tray positioning:	Yes	No
Preparation of thickened liquid consistency:	Yes	No
After meal care:	Yes	No

Feeding Techniques

Responds to need for assistance:	Yes	No
Responds to signs/symptoms of dysphagia:	Yes	No
Slow rate presentation:	Yes	No
Small amount presented:	Yes	No

Communication

Greets resident by name:	Yes	No
No conversation extraneous to the resident:	Yes	No
Verbally identifies each food, if texturally modified:	Yes	No
Verbally identifies beverage, if texturally modified:	Yes	No
Offers sequence of food and beverage:	Yes	No
Gives attention every bite and sip:	Yes	No
Exhibits positive affect and verbal interactions:	Yes	No

Oral Intake

Estimated fluid intake (cc) _____

Estimated food intake (0, 25, 50, 75, 100%) _____

Note: All behaviors rated as observed and desired (yes) or observed and not desired (no) as indicated, except oral intake.

Observed by: _____

_____ "Yes" responses out of a possible 15

Key:

15/15 Exceptional; 14/15 Good; 13/15 Fair; 12/15 Poor; 11/15 Unacceptable

Restructured from Pelletier, C.A. (2004). What Do Certified Nurse Assistants Actually Know About Dysphagia and Feeding Nursing Home Residents? *American Journal of Speech-Language Pathology*, 13: 99-113.

APENDIX G

Operational Definitions of Structured Feeding Observations

(Modified from Pelletier, C.A., 2004)

Set Up and After Meal Care:

- **Body Positioning:** Body must be positioned as close to 90 degrees as possible; trunk straight; head in neutral position, which may require the use of bolsters or pillows. Score as “yes” if resident is able to sit independently and maintain appropriate posture in chair. If in wheelchair or recliner chair, score for positioning with reflection above criteria.
- **Tray Positioning:** Tray must be positioned and prepared in front of resident; lids off, food cut up, cartons opened clothing protector on straws inserted, food and drinks within reach if appropriate (resident must be positioned close enough to table to reach food tray if partial self-feeder). All liquids are thickened as resident requires for safe consumption of liquids.
- **After Meal Care:** Checks mouth for residue at the end of the meal and cleans; washes face and hands; repositions after meal if resident has slid down or needs more comfortable position, but maintains as close to 90 degree angle as possible for safety if signs or symptoms of dysphagia are observed.

Feeding Techniques:

- **Need for Assistance:** Must respond within 60 seconds to resident’s need for assistance. Uses verbal cue, such as “Eat slower, take smaller bites”; physical prompt (pointing to item, helping with food on spoon, or getting food or cup to mouth); wipes mouth using napkin or cloth (not spoon); removes food spilled from clothes. Score “yes” if resident is a self-feeder or needs no assistance with rate and/or volume prompts.
- **Signs/Symptoms of Dysphasia:** Must show awareness of difficulty and try to decrease Dysphagia difficulty chewing food in some manner either by verbally noting and or physically altering feeding of meal because of observation of difficulty chewing food (excessive chew or lack of rotary chew); oral problem (difficulty opening of mouth, poor dentition, poor oral hygiene); pocketing of food in mouth; cough; throat clearing; nasal discharge either during or after feeding; gagging with or without emesis; wet vocal quality; slow or absent swallow resulting in holding of food in mouth or shoveling of food into mouth without swallow per presentation.
- **Presentation Rate and Volume:** Presents food at appropriate rate (i.e. initial bite and Volume swallowed prior to offering consecutive bite) and volume (i.e. no more than ½ teaspoon). Does not present drink or bite up to mouth while resident is still chewing. Score “yes” if patient is independent feeder and adheres to guidelines.

Communication:

- **Identifies Food:** If food is texturally modified in some manner, verbally states name of each food and beverage on tray at least once prior to presenting food to resident. If regular texture is used score as “yes.”
- **No Conversation Extraneous to Resident:** Maintains attention verbally to residents during feeding. No outside conversation to others unless resident is specifically included in the conversation or topic is related to feeding a resident. Score “yes” if resident is fed outside of the dining room and/or no one else is in the immediate room.
- **Sequence Choice:** Offers choice with regard to the order of food and liquid that are given. Asks resident what food/beverage item he/she would like next. Score “yes” if resident is unable to communicate choices in any manner or if resident is a self-feeder.
- **Attention to every bite/sip:** Looks directly at the resident during delivery of bite or sip. Score “yes” if resident self feeds.
- **Greet by name:** Greets each resident to be fed or assisted by name.
- **Exhibits positive affect:** Makes small talk with resident and treats resident and verbal interactions with respect. Maintains positive or neutral facial expressions and body language, pleasant voice tone and verbalizations. No frowns or negativity. No physical restraint.
- **Fluid/Food Intake:** Estimate amount of liquid/food taken in by resident.

Instructions for Oral Care:

Have resident's head elevated at a *minimum* of 30-45 degrees (ideally, 90 degrees)

1. Soak oral swab in ice water
2. Shake swab and/or squeeze excess water
3. Gently stroke the tongue, gums, cheeks, teeth, and hard palate to remove debris and to hydrate mucosa
4. Re-wet swab as needed
5. Repeat hourly

Thank you,
Speech-Language Pathologist

APPENDIX I. Chart of Food Preparation for Dietary Staff. (Adapted and used with permission Susan Ostrowski, 2011)

	NDD Level 3: Dysphagia- Advanced	NDD Level 2: Dysphagia- Mechanically Altered	NDD Level 1: Dysphagia- Pureed
MEAT, FISH, CHICKEN	<i>chopped</i>	<i>ground</i>	<i>pureed</i>
SALAD	<i>chopped</i>	<i>ground</i>	<i>pureed</i>
FRESH FRUIT	<i>ground</i>	<i>ground</i>	<i>pureed</i>
CAN FRUIT	<i>chopped</i>	<i>regular</i>	<i>pureed</i>
RICE, BEANS, PEAS, CORN	<i>ground</i>	<i>regular</i>	<i>pureed</i>
POTATOES, COOKED VEGETABLES	<i>chopped</i>	<i>regular</i>	<i>pureed</i>
SOUP	<i>Pureed/crackers crushed in to dry up broth</i>	<i>Pureed/crackers crushed in to dry up broth</i>	<i>Pureed/crackers crushed in to dry up broth</i>
CAKE, QUICK BREAD	<i>yes</i>	<i>yes</i>	<i>pureed</i>
PANCAKES, FRENCH TOAST, WAFFLES	<i>Chopped with syrup</i>	<i>Chopped with syrup</i>	<i>Pureed with syrup</i>
DRY, HARD FOOD (eg, VEG STICKS, CHIPS)	<i>no</i>	<i>no</i>	<i>no</i>
MIXED CONSISTENCIES (e.g. COLD CEREAL, CAN FRUIT)	<i>yes (milk is thickened or vanilla yogurt is used when combined with cereal; canned fruit is strained.)</i>	<i>yes (If Resident is on thickened liquid, then cereal milk is thickened or vanilla yogurt is used; canned fruit is strained.)</i>	<i>N/A</i>
MOISTURE	<i>1 extra</i>	<i>1 extra</i>	<i>N/A</i>
WHEAT BREAD	<i>yes</i>	<i>yes</i>	<i>pureed</i>
WHEAT TOAST	<i>yes</i>	<i>yes</i>	<i>pureed</i>
SANDWICHES	<i>Halved with chopped meat</i>	<i>Halved with ground meat</i>	<i>pureed</i>

Swallowing Waiver

I, _____ of sound mind
OR _____ (individual with power of attorney)
on this date _____ am making a conscious decision to refuse all diet
modifications and liquid thickness recommendations as advised by the medical professionals involved in
_____’s current care.

I have been educated on dysphagia/swallowing deficits, aspiration, aspiration pneumonia, and potentially premature death associated with the neglect of these recommendations. I realize I may be risking ingestion of food and/or liquid into _____’s lungs and it is against medical advice to refuse these diet and/or liquid modifications. I fully understand the consequences of my actions.

Patient

(or Designated Power of Attorney)

Speech-Language Pathologist

Physician