

Hello, my name is Heather Miller, and I am going to speak with you today about caring for students who are at risk for dysphagia in the school setting. Before we get started, I'd like to provide you with a brief overview about how to navigate this video.

You will notice that in the upper right hand corner of your screen, I have listed my contact information. Please do not hesitate to contact me if you have any questions pertaining to this presentation. This presentation will play automatically, however if you wish to review the content of any of these slides, please refer to the slide outline to the right of your screen. You may click on any slide title to hear the information again. If you do not see the names of the slides listed to the right, please click on the movie projector icon in the lower right hand corner of your screen to change the view. Along the bottom of the screen are controls to play or pause if you wish to take notes or listen again. The arrows below allow you to advance or go back one slide, and the sound button allows you to adjust the volume.

Adequate nutrition and hydration is necessary to ensure that each child benefits from his educational experiences. Not only do mealtimes provide our students with important nutrients necessary for learning, but they also afford them opportunities for social interaction and language development. Increasing numbers of students require intervention in the areas of feeding and swallowing. Some of these children come into the schools with a diagnosis of feeding and swallowing disorders, also known as Dysphagia. These disorders may occur as a result of a diagnosis of cerebral palsy, muscular dystrophy, traumatic brain injury, autism or other neurological or developmental disability. As these students mature, or as their disabilities progress, often the status of their feeding and swallowing will change. It is important to know how to monitor these students so that we can identify when modifications need to be made to their feeding plans.

There are also some students who are at risk for dysphagia, who do not come into the schools with a diagnosis. It is important that we, as educators, learn to identify feeding and swallowing disorders, and refer these students to the appropriate professionals so that they may receive the necessary diagnosis and treatment.

Please note: this training is meant to be used as a tool to help familiarize educators and educational staff with the characteristics of a swallowing disorder, and to provide information about the recommendations that may already be in place for students with dysphagia. This is not meant to be used as a tool for training Speech Language Pathologists to identify or treat swallowing disorders.

Let us begin with a definition of terms...

Feeding includes the act of preparing food and getting it into a person's body. Some individuals receive nutrition through the means of a gastrostomy tube or G-tube, where a tube that is placed directly into the stomach for long term administration of nutrition. However, for the purposes of this training, we will discuss feeding as it pertains to the oral passage of food into a person's body.

Swallowing is the transfer of food from the mouth to the stomach. (google.com). It includes chewing and the movement of food down the throat and esophagus into the stomach.

Aspiration is the entry of food or liquid into the airway.

Dysphagia is defined as having a difficulty with swallowing or demonstrating an inability to swallow. (abta.com). Dysphagia is generally physiologically based, and ranges from mild to severe. It is not the same as having an eating disorder. We will not discuss the eating disorders of anorexia and bulimia in this training, as they are primarily psychological in origin.

Before we begin to discuss the signs and symptoms of Dysphagia, it is important to understand the three phases of swallowing:

- The oral phase, in which food is placed in the mouth and moistened and chewed with the aid of the muscles of mastication (chewing). During this phase food is "prepared" into a pellet (a small ball of food referred to as a bolus) of an appropriate size so that it can be easily passed from the front to the back of mouth, by the tongue. The teeth and the jaw help to break down the food. The lips keep the food in our mouth during the swallow.
- The Pharyngeal Phase, where the food is pushed (squeezed) from the pharynx into the esophagus. The pharynx is the tube that starts at the back of the nose (The pharynx is the area from the back of the nose to the back of the mouth, just past the base of the tongue), and goes to the esophagus
- And the esophageal phase, where the food leaves the pharynx, it enters the esophagus(through a sphincter called the upper esophageal sphincter into a tube (, a tube-like muscular structure which leads food into the stomach due to its rhythmic contractions.

A student can experience trouble in any phase of the swallow, and it is very important for educators to know the signs and symptoms of Dysphagia because...

Children who have dysphagia may suffer from inadequate nutrition and dehydration, leading to drowsiness, decreased energy and poor attention span. (Ault, Guy, Rues, Not, and Guess, 1994)

Children who suffer from dysphagia may end up with pneumonia because of the food that is entering their lungs.

Dysphagia is sometimes a symptom of another neurological condition such as Spinal Muscular Atrophy, muscular dystrophy, or brain tumors. While dysphagia often occurs independent of

these serious conditions, identification of a swallowing disorder may lead to the identification of a neurological condition that otherwise may not have been recognized.

Many individuals who aspirate, do not cough when food enters the airway. These individuals are known as “silent aspirators”. It is of the utmost importance to look for the following Signs and symptoms of swallowing disorders so that individuals with dysphagia can be identified (Logemann and Homer et al., 2000)

- frequent refusal to eat or drink
- irritability or behavioral problems during eating
- inability to tactilely recognize food (tactile agnosia)
- difficulty placing or keeping food in the mouth
- oral hypersensitivity or hyposensitivity
- food texture hypersensitivity or aversion
- difficulty controlling saliva in the mouth or significant drooling, especially after eating
- difficulty controlling food in the mouth or excessive mouth movement during chewing and swallowing
- difficulty starting to swallow
- frequent gagging or spitting or vomiting during or after eating or drinking
- needing to swallow a few times to get food down
- repeated drinking while or immediately after chewing or swallowing
- food left on tongue or pocketed on the side of the mouth after swallowing
- frequent throat clearing or coughing before/during/after eating or drinking
- watery eyes (tearing) during or after eating or drinking
- extended feeding periods (longer than 30–40 minutes)
- gurgly voice quality or breath sounds, especially after eating or drinking.
- Changes in breathing patterns while eating
- frequent bouts of pneumonia or other chronic respiratory problems
- weight loss of unclear origin, failure to gain weight appropriately or evidence of malnutrition

After these signs and symptoms are identified, it is important to notify the parents, and refer this student to the districts Dysphagia team or the school’s Speech Language Pathologist. If the individual is not enrolled in a school, refer him or her to a parent or healthcare provider for further evaluation.

Once difficulties with feeding and swallowing are identified, the speech language pathologist and/or health care provider will generate a dysphagia/ feeding plan. The goal of intervention is to ensure that the child receives appropriate nutrition as safely as possible, and these recommendations should never be made by a person who is not qualified as a provider of dysphagia services.

It is critical to understand that review of this video alone will not qualify personnel to implement the strategies and techniques described. All intervention strategies, when recommended as the result of appropriate assessments or evaluations, should be implemented only by personnel with demonstrated competence, who has been trained by the parent, speech language pathologist or healthcare professional.

http://www.sde.ct.gov/sde/lib/sde/PDF/DEPS/Special/Feeding_and_Swallowing.pdf

Many individuals will require both management and treatment strategies. Such strategies include:

Modification of the **eating environment**:

- some students with special needs may require an environment that is free from distractions when eating. The student should be comfortable, and lighting, sound level and temperature should be assessed.

Modification of the **quantity of food**:

- recommendations may be made to increase or decrease the quantity of food that is presented to the student at one time. While some individuals can handle large spoonfuls of food, others may require bites that are smaller. Some students require small sips of liquid, while others can tolerate liquid being poured into the mouth in large amounts. These recommendations may change in response to changes in a child's medical conditions.
- Some students may be identified as NPO. This means that this student is not to take any nutrition by mouth. This includes everything, including water, ice, lolly-pops...absolutely nothing by mouth unless otherwise specified.

Modification of the **calories**:

- Depending on the student's needs, caloric density may need to be modified. Some students may need foods with high calories to maintain weight, while others may be at risk for obesity, and may need to have fewer calories. Food supplements may also be necessary between meals.

Modification of **texture**:

- Sometimes, solid foods need to be altered in order for an individual to be able to eat them.
- In response to concerns about confusion caused by variations in food texture terminology, the American Dietetic Association convened a task force to develop national standards for dysphagia diets, including these four levels of food consistency:
 1. Level 1 Puree: this means that the food is "pudding like", requiring little chewing ability

2. Level 2 Mechanical Altered: these are semisolid foods that require some chewing such as soft bread, cooked cereal, or mashed potatoes
<http://www.livewellagewell.info/downloads/EasyToChewFoodChoicesJohnsonFischerJan17.pdf>
 3. Level 3 Advanced: soft foods that require more chewing such as cooked vegetables, canned fruits, pasta or ground meat with gravy.
http://nutritioncaremanual.org/vault/editor/Docs/Level%203%20NT%20for%20Dysphagia_Advanced.pdf
 4. Level 4 Regular: all foods are allowed.
- Some individuals with feeding and swallowing disorders require thickened liquids. Many facilities use store-bought thickeners such as “thick-it”. These thickeners are in powder form and can be added to liquids in order to make them thick enough to be safely swallowed. It is important to closely follow the instructions for thickening liquids, too much or too little thickener can be dangerous! Food textures should not be changed arbitrarily, unless a thorough review has been performed. The American Dietetic Association developed the following levels of liquid viscosity:
 1. Thin liquids- the consistency of water or milk
 2. Nectar-like liquids-when thickening to nectar, put a spoon in the nectar mixture, and have the spoon slowly fall to the side of the cup.
 3. Honey-like liquids-when mixing honey –like liquids, the spoon should be able to stand up in the cup
 4. Spoon-thick liquids-this is the consistency of pudding, and should be given with a spoon.
 - It is also important to know that as the thickened liquid sits, it often becomes thicker, so closely monitor liquids that have been thickened to ensure that they are the correct consistency for your student.
 - To avoid potential dangers associated with feeding children with inappropriate textured food, clear communication among all parties regarding diet terminology and manner of preparation is essential. For safety reasons, clear descriptors of texture and multiple examples of allowable food choices must be insisted upon and this information must be clearly communicated to those responsible for food preparation and feeding.
http://www.sde.ct.gov/sde/lib/sde/PDF/DEPS/Special/Feeding_and_Swallowing.pdf

Alternating liquid and solid foods

- Due to weakness, many individuals may experience residue, or food left over in the mouth or throat following the swallow. Upon breathing, this food can be transferred into the lungs, causing aspiration. In order to help to clear this residue, it can be helpful to alternate each solid bite with a drink for liquid to wash away leftover food.

Positioning and posture

- The position of a student can often change the direction of the flow of food. Particular postures are often recommended to assist students with swallowing, such as head turning, head tucking, or full body postures, such as side lying. These positions are

sometimes in place to help protect the airway or to increase the effectiveness of muscle contraction. The SLP conducting a swallow study may try these during the study to assess their effectiveness.

Volitional coughing or throat clearing

- Some students need to be taught to cough voluntarily to help to prevent the build-up of residue on the mouth or throat.

Oral Motor exercises

- These strategies are designed to directly affect the function of the swallow, and if recommended, it is important that they be implemented within the school day.

Swallowing Maneuvers

- These strategies are taught to the student in order to alter the timing or strength of movements during the swallow. If a maneuver is recommended, it is important to follow these recommendations during mealtime.

Remember, that these strategies should only be recommended by a person specialized in working with individuals with swallowing disorders, as each treatment plan is customized to the needs of each student. Never modify a feeding plan unless you are licensed to do so. What works for one student, more than likely will not work for another one.

So we have spent a lot of time discussing how to prepare the student with dysphagia for a meal, and some recommendations that may be in place for during the meal. But how about after the Meal...

Following the meal, educators should check the mouth for residue or pocketing, and leave the student upright for 30 minutes to decrease the risk of delayed aspiration from residue left in the mouth or throat. This is the time when we should observe the student to see if there are any signs of problems.

Some students may also have to sit calmly for up to 30 minutes following a meal because of a condition known as (Gastro-Esophageal Reflux Disease or GERD). This is a condition sometimes seen in children and adults with neurological impairments and can cause aspiration after the swallow. This condition involves material from the stomach moving in reverse up through the esophagus and can sometimes cause a person to choke or cough on the material. Because the airway is always open except during the swallow, material can easily enter the airway because it is not protected.

A key concept that is imperative in keeping the patient safe is oral hygiene; as it is essential in reducing the risk of aspiration pneumonia. In students who have dysphagia, the mouth often contains bacteria that can be aspirated into the lungs causing infection. To reduce the presence of this bacteria, oral care should be provided several times per day.

The issues related to swallowing are complex, and in order to address these issues, the school team needs to have ongoing interaction with families, service providers, and medical professionals. WE as educators need to continually observe our students and monitor any changes that occur before, during and after mealtime. There is a definite need for all parties to work together to provide an effective feeding and swallowing plan. This will allow us to protect the health and safety of our students, while ensuring that they have the nutrition necessary to learn.