

Quality Is No Accident

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Dysphagia, Aspiration, and Choking

Dysphagia and aspiration are related medical conditions that can affect a person's health and quality of life. Recognizing risk factors, early signs, and symptoms can help prevent more serious conditions from emerging. Occupational Therapists, Speech Pathologists, and other trained professionals can help evaluate these conditions and develop effective intervention and prevention strategies that may alleviate dysphagia and aspiration complications, improve a person's quality of life, and prevent serious illness.

Dysphagia:

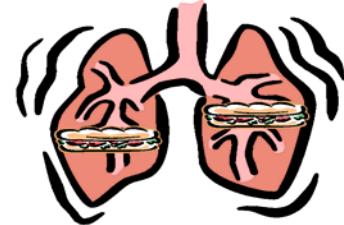
When a person has trouble chewing and/or swallowing. Dysphagia can lead to poor food and fluid intake, **malnutrition** and **dehydration**. Complications such as urinary tract infections, kidney failure, skin infections, and pressure ulcers can result from complications of dysphagia. People with dysphagia are at high risk of **aspiration** and **choking**.

Aspiration:

When food or liquids go into the lungs instead of the stomach. There is often no immediate indication (i.e. coughing) and a person may aspirate frequently without caregivers or family being aware. If a person aspirates frequently, they are at higher risk of developing **aspiration pneumonia**, an infection and irritation of the lungs.

Choking:

When food or an object gets lodged in the airway **and prevents the person from breathing**. The person needs to be treated immediately.



Did You Know?

- According to DDS health care records, about **32% of adults are known to aspirate**, have **dysphagia** or **Gastroesophageal Reflux Disease (GERD)**.
- There were 434 hospital visits among DDS clients in 2012 due to aspiration, choking or aspiration pneumonia.
- Each year, at least **10% of all deaths of DDS clients are due to issues related to aspiration such as acute aspiration, aspiration pneumonia, or choking**.
- More than 50% of Americans over 60 years of age experience dysphagia.** Similar patterns are suspected in the population of people with intellectual disability.

Much of the content in this Brief is taken from previous presentations by Jean Herrick, M.A.,OTR/L. This brief provides general advice for staff to consider. Please consult with the Health Care Provider for specific questions or concerns.

Quality Is No Accident was developed by the Center for Developmental Disabilities Evaluation and Research (CDDER) of the E.K. Shriver Center/University of Massachusetts Medical School in collaboration with the Massachusetts DDS.

Risk Assessment

People with **intellectual disability** and syndromes such as **Down Syndrome, Prader Willi, and Alzheimer's Disease** may have a higher risk of dysphagia than the general population. Safe chewing, drinking and swallowing rely on coordinated movements of the body and adequate sensory input to detect the qualities of food or liquid. Risk factors include:

Abnormal Muscle Tone: Muscles that are too loose or tight can affect the efficiency of chewing and swallowing. Tight muscles may cause abnormal reflexes which can disrupt swallowing.

Behavioral risk when eating: Eating and drinking become unsafe when they are done too quickly or when too much food or drink is put in the mouth at once. Environmental distractions can increase the risk of choking and aspirating. People with Pica also have an increased risk of choking or aspirating when they eat non-food items.

Medication Use: People are most at risk for dysphagia and aspiration when the medications relax the muscles, increase salivation, cause dry mouth or have a sedating effect.

Dependence for eating and drinking: People who can't feed themselves are at greater risk of choking or aspirating because they can't adjust food volume or eating speed to their own sensations. Even well-trained care givers can feed people too quickly or too much at one time.

Age: As people age, they often experience decreased sensory awareness and decreased muscle strength, both of which can affect chewing, drinking and swallowing.

Signs and Symptoms of Dysphagia

Anyone who assists with or observes individuals eating or drinking should be trained to identify common signs and symptoms of dysphagia.

- Frequent coughing or throat clearing, especially during or after eating or drinking
- Loss of interest in, or spitting out, certain foods or textures
- Difficulty eating foods that are sticky, stringy, or crunchy
- Frequent blinking and watering of the eyes; runny nose
- Holding breath or gasping during eating or drinking
- Tiredness after eating or drinking
- Increased agitation during meals, especially pushing away or throwing food
- Frequent respiratory infections or colds, reoccurring pneumonia
- Weight loss, dehydration, malnutrition
- Low grade fever or spiking temperature as soon as 30-60 minutes after a meal

These signs and symptoms should be brought to the attention of nursing, occupational therapy and/or speech therapy.

Evaluation and Intervention Strategies

Step 1: Mealtime Evaluation

When aspiration or dysphagia are suspected, the first step should be a **comprehensive evaluation** by an experienced Occupational Therapist (OTR) or Speech Pathologist (SLP). This evaluation includes assessing the individual's position while eating, how food is managed in their mouth, timeliness of the swallow and other signs that may indicate there are risks for choking or aspiration. Consideration is also given to factors that may negatively influence eating and drinking, such as their physical disability, behavioral issues, sensory losses and the environment.

Step 2: Modified Barium Swallowing Study (MBSS)

MBSS is a non-invasive video x-ray that follows food and liquids (to which barium has been added) during chewing and swallowing. It shows if anything is getting stuck in the throat, is entering the airway, or if extra time is needed to get the food or beverage to the stomach. The results of this test are important to help identify the safest food and beverage textures as well as the safest dining strategies.

Step 3: Intervention Strategies – food and beverages

Developing and implementing an intervention is a team effort. Everyone's understanding is needed to prevent life threatening illness and injury. An experienced OT or SP is essential for developing this plan.

Modify Food Textures: Makes it easier and safer for a person to swallow. These are doctor's orders and must be followed at all times including medications, holidays, and when eating out. Ensure all staff understand the texture definition. Forming purees to resemble food may improve its visual appeal.

Modify Beverage Texture: Thickened beverages can be easier to swallow. Specific directions are provided with commercial thickeners for "nectar", "honey" and "pudding" thicknesses. Sometimes naturally thickened drinks such as peach nectar, fruit smoothies, or pureed fruit can also be used as a thickener. Consult a therapist for the safest recommendations.

Intervention Strategies – positioning, equipment, and protocols

Good Positioning: Allows the person to focus on eating and not on holding their body. Chewing and swallowing is safest when sitting upright, hips back in chair with chin tucked. If not possible, further evaluation is needed by OT, PT or SP to determine best position for dining.

Adapted Mealtime Equipment: Special plates, cups, bowls and utensils can help facilitate a safe swallow by slowing eating pace and keeping bites small. Equipment can also increase independence.

Dining Protocols: Follow the Individualized Plan to ensure safety. Plan may include pacing, alternating bites of food with sips of beverage, use of "dry" swallow, identifying the level of supervision etc.

Coordination of Information: Share mealtime information with residential and work or day staff, family members, and other health care providers. Clarify texture information after a hospital stay in case texture recommendations have changed.

How common is dysphagia, aspiration and choking?

Emergency Room Visits¹

An analysis of HCSIS incident data between Oct. 2011-Sept. 2012 for adults receiving DDS services show several issues associated with dysphagia ranking in the top 15 reasons for Emergency Room visits. These include respiratory infections, dehydration, and choking/aspiration. Dehydration may lead to urinary tract infections and constipation.

Mortality

An analysis of annual mortality data for DDS clients shows that the majority of accidental deaths are due to choking or aspiration. In both 2010 and 2011, aspiration pneumonia was the fourth leading cause of death representing 8.0-12.3% of deaths. Mortality data from these years suggests that for every thousand people served by DDS, at least 2 people die each year from aspiration pneumonia.

		Oct 2011 - Sept 2012	
Rank	Diagnosis	# Incidents	% of diagnoses
1.	Physical injuries (non-burn)	2129	31.0%
2.	Seizures	482	7.0%
3.	Respiratory infections	452	6.6%
4.	Urinary Tract Infection	365	5.3%
5.	G/j-tube related	243	3.5%
6.	Skin Infections	186	2.7%
7.	Cardiovascular Symptoms	179	2.6%
8.	Infection (systemic)	172	2.5%
9.	Psychiatric	144	2.1%
10.	Gastroenteritis & Other Gastrointestinal	141	2.1%
11.	Dehydration	127	1.8%
12.	Constipation	122	1.8%
13.	Choking/Aspiration	86	1.3%
14.	Diabetes-related	74	1.1%
15.	Anxiety	56	0.8%

¹In the Oct 2011- Sept 2012 data, 488 or 6.5% of ER visits did not have enough information to discern the reason for the visit.

Resources:

Dysphagia/Aspiration/Choking Webinar, Jean Herrick, M.A., OTR/L
Recorded presentation and slides: <https://www.umassmed.edu/cdder/webinars/dysphagia.aspx>

DDS Health and Safety Choking Alert: <http://www.mass.gov/eohhs/docs/dmr/awp/choking-alert.pdf>

DDS Overview of Dysphagia and Aspiration including food texture descriptions:
<http://www.mass.gov/eohhs/docs/dmr/awp/hpci-risk-dysphagia-aspiration.rtf>

Frequently used websites for adaptive equipment or training materials:
www.alimed.com www.medline.com www.pattersonmedical.com www.ncmedical.com

To obtain a clinical consult or find local resources: Contact the DDS Area Office nurse for help with accessing local training and resources.

Analyses conducted by:
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