



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF BEHAVIORAL HEALTH AND DEVELOPMENTAL SERVICES

Post Office Box 1797  
Richmond, Virginia 23218-1797

Telephone (804) 786-3921  
Fax (804) 371-6638  
[www.dbhds.virginia.gov](http://www.dbhds.virginia.gov)

ALISON G. LAND, FACHE  
COMMISSIONER

### Office of Integrated Health Health & Safety Alert/Information

## Choking Health & Safety Alert

---

### Choking - Airway Obstruction Introduction

Choking occurs when an object is stuck in an individual's airway, and can be a partial or complete obstruction due to a foreign body (e.g. a bead, toy, etc.), whether intentional (pica) or unintentional (typically in childhood). Choking can also occur as a partial or complete obstruction of the airway due to food. Age or other chronic conditions can affect neurological and neuromuscular functioning, and put individuals at increased risk. An increased risk of choking has also been attributed to the consumption of alcohol, certain medications, dysphagia, tardive dyskinesia, poor dentition (loose, missing, or decaying teeth) and poor positioning. Some behaviors can also increase the risk of choking. The risk of choking is multiplied with each additional risk factor the individual has (Berzlanovich et al., 2005).

All those believed to be at an increased risk for choking, (for whatever reason), should be evaluated by a healthcare professional. Please consult the individual's PCP at your earliest convenience for a referral to the appropriate specialist. Healthcare professionals who can assess issues with choking and/or swallowing are: Speech Language Pathologists (SLPs), Otolaryngologists (also called an Ear, Nose and Throat physician or ENT), and Gastroenterologists who specialize in conditions affecting the entire digestive system. The individual's PCP will know which specialist will be best at assessing the individual's particular condition and/or their choking risk.

### What Happens When We Swallow?

Swallowing is a complex process requiring 50 pairs of muscles and many nerves to receive food into the mouth, prepare it, and move it from the mouth to the stomach. Swallowing happens in three stages. During the first stage, called the oral preparatory phase. The tongue collects the food or liquid. Food is chewed by the teeth and mixed with saliva to form a soft consistency called a bolus. The tongue then moves the bolus toward the back of the mouth. Individuals with impairment of the oral preparatory phase may experience: difficulty with creating a lip seal around the fork or spoon, chewing solid consistencies, forming chewed food into a bolus or moving the bolus to the back of the mouth.

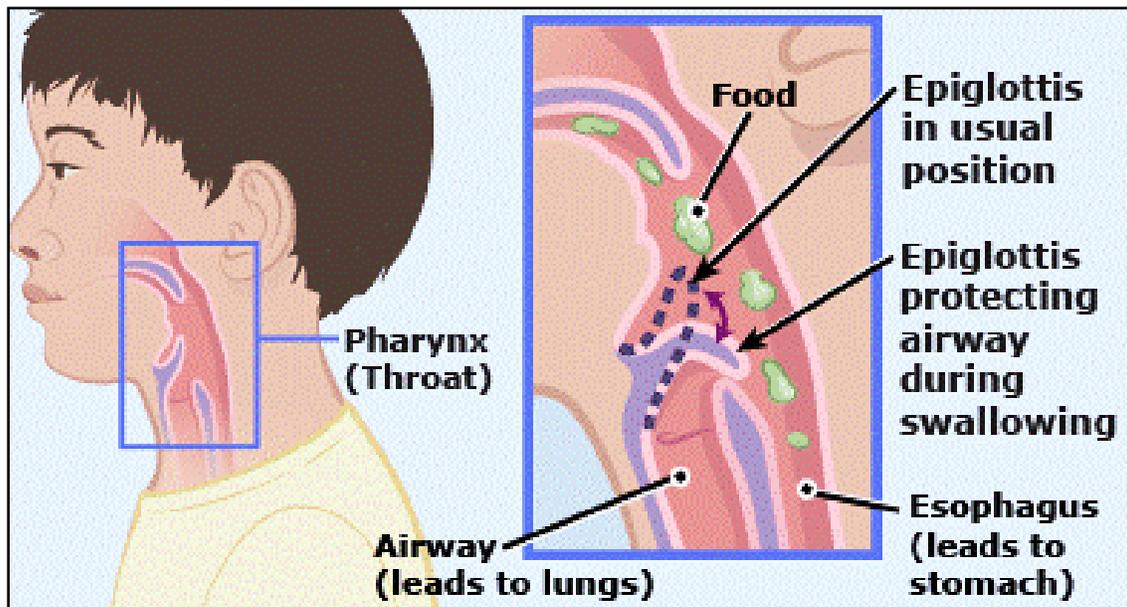
The pharyngeal phase is the second stage of swallowing. It begins when the tongue pushes the bolus of food or liquid to the back of the mouth. This motion triggers a swallowing response which passes the food through the pharynx, or throat (see figure below). During this phase, the vocal cords close to keep food and liquids from entering the airway. The larynx rises inside the neck and the epiglottis moves to cover it, providing even more airway protection.

If the pharyngeal phase is impaired, food or liquid can move into the throat before the automatic swallow is triggered, resulting in food or liquid touching the vocal folds and or penetrating the vocal folds then moving into the lungs.

Common symptoms include:

- Coughing before, during or shortly after swallowing
- A choking sensation
- Shortness of breath
- Changes in voice quality after swallowing
- Repeated pneumonia
- Weight loss

The esophageal phase is the third stage. It begins when food or liquid enters the esophagus, the tube that carries food and liquid to the stomach. This phase usually lasts about three seconds, depending on the texture or consistency of the food, but can take slightly longer in some cases, such as when swallowing a pill. If the esophageal phase is affected, the patient might experience heartburn, vomiting, burping or abdominal pain.



(Rady Children's Hospital, 2020)

## A Diagnosis of Dysphagia Can Increase Choking Risk

What is dysphagia? If an individual is diagnosed with dysphagia it means they have difficult or abnormal swallowing. It can also mean that it hurts to swallow, and/or the swallowing process is unsafe for an individual and can pose a choking and/or an aspiration risk. Watch for the following signs and symptoms of dysphagia in individuals:

- Frequent episodes of gagging, coughing or choking during or after eating/drinking.
- Difficulty managing saliva (drooling).
- Difficulty closing lips.
- Wet vocal quality during or after eating/drinking.
- Running nose and watery eyes during or after eating/drinking (Groves-Wright, et al., 2010).
- Frequent bouts with pneumonia.
- Frequent upper respiratory infections.
- Swallowing food whole in order to “get it down” fast without anyone noticing a problem.
- Eating/drinking quickly.
- Extra effort or time to chew and/or swallow.
- Pain with swallowing.
- Pocketing food or liquid in cheeks.
- Loss of food or liquid.
- Frequent vomiting.
- Weight loss or dehydration from inadequate intake.
- Weak facial muscles.
- Difficulty chewing (Bryant-Waugh et al., 2019; Lindvall et al., 2017; Thomas & Eddy, 2018).

If an individual you care for has any of the symptoms listed above, they may have dysphagia and may be at an increased risk for choking and aspiration. Please contact the individual’s PCP at your earliest convenience to explain your concern. A referral to a speech language pathologist (SLP) for further assessment may be needed. Please be sure to take a list of all of the individual’s medications to their appointment. Certain medications can increase choking risk.

## Factors/Conditions Which Increase Choking Risk

### Health Conditions which Increase Risk of Choking (not all-inclusive):

Below is a list of diagnoses and health conditions (these may be historical or current conditions) known to increase the risk of choking. If an individual you care for has any of the health conditions listed below, they may be at an increased risk for choking (airway obstruction). Please contact the individual’s PCP at your earliest convenience to explain your concern. A referral to a speech language pathologist (SLP) for further assessment may be needed. Please be sure to take a list

of all of the individual's medications to the appointment. Certain medications can increase choking risk.

- A history of aspiration pneumonia.
- Gastroesophageal reflux disease (GERD) and or a history of GERD.
- Any neurological disorder.
- Parkinson's.
- Alzheimer's.
- Cerebral Palsy.
- Multiple Sclerosis.
- Amyotrophic lateral sclerosis (ALS).
- Motor neuron disease.
- Myasthenia gravis (a neuromuscular disorder).
- Prader Willi syndrome (a genetic disorder characterized by intellectual disability).
- Down syndrome (a genetic disorder characterized by intellectual disability).
- Thyromegaly (a disorder characterized by an enlarged thyroid gland in the neck).
- Cervical spine injuries (a neuromuscular condition caused by trauma).
- Congenital laryngeal web (a rare disorder of the laryngeal area).
- Zenker's diverticulum (a disorder that causes an outpouching of the esophagus).
- Neoplasm (cancer) in the head, neck or throat area.
- Polymyositis (an inflammatory disease that causes muscle weakness).
- Muscular Dystrophy (a neuromuscular disorder).
- History of stroke (cerebral hemorrhage).
- Tardive dyskinesia (a condition caused by long-term use of neuroleptic drugs).
- Seizure disorders.
- Muscular disorders.
- Dysphagia (difficulty swallowing).
- Missing teeth (poor dentition), no teeth (edentulous), loose teeth, or decayed teeth.
- Misalignment of the jaw or teeth.
- Cleft Palate.
- Dentures.
- Age: 65+ (Berzlanovich et al., 2005).

## Any DD Diagnosis Can Increase Choking Risk

### Down Syndrome

Among individuals with DD, research suggests that individuals with Down syndrome and those with Prader Willi syndrome (PWS) are at exceptionally high risk for choking, when compared to other genetic disorders (Stevenson et al., 2007; Thacker et al., 2008). Individuals with Down Syndrome lack tongue control and frequently have an underdeveloped jaw, which can lead to impaired chewing, and poor ability to use their tongue thrust to assist during swallowing (Thacker et al., 2008).

### Prader Willi Syndrome

Individuals with Prader Willi syndrome (PWS) are at an increased risk for choking due to poor oral/motor coordination, poor gag reflex, hypotonia, polyphagia or hyperphagia (abnormally strong sensation of hunger or desire to eat), decreased mastication and voracious eating habits (Stevenson et al., 2007; Thacker et al., 2008). Researchers recommend implementation of preventive measures and education for family caregivers and group home care providers for all individuals diagnosed with PWS including the Heimlich maneuver, eyes-on, supervised meals, and food preparation and diet modification recommendations via an assessment with an SLP, to avoid high risk choking textures and foods (Stevenson et al., 2007).

### Certain Medications Can Increase Risk of Choking

There are medications which can impact an individual's ability to swallow. Caregivers should be alerted to the increased risk of choking among individuals who are taking the following classes of drugs. It is important for caregivers to be aware of medication side effect when administering drugs which may alter swallowing.

- Those that affect the smooth and striated muscles of the esophagus that are involved in swallowing may cause dysphagia, such as, Cogentin. (There are many others.)
- Those which cause dry mouth (xerostomia) may interfere with swallowing by impairing the person's ability to move food around the mouth, such as antihistamines.
- Local anesthetics such as Novocain, which is often used for dental work, may temporarily cause a loss of sensation that may affect swallowing before it wears off.
- Antipsychotic/ Neuroleptic medications given for treatment of psychiatric disorders may affect swallowing, as many of them produce dry mouth and some of them can cause movement disorders which impact the muscles of the face and tongue that are involved in swallowing such as, but not limited to Risperdal. Individuals who have been on long-term psychotropic medications and suffer from tardive dyskinesia; are also at higher risk for choking (Lu et al., 2017).
- Those that depress the Central Nervous System (CNS) can decrease awareness and voluntary muscle control that may affect swallowing such as, but not limited to Tegretol.

- Those that may remain in the esophagus too long, potentially causing damage and affecting swallowing such as, but not limited to Tetracycline.
- Other medications such as high dose steroids and chemotherapeutic (anti-cancer) preparations may cause muscle wasting or damage to the esophagus and may suppress the immune system making the person susceptible to infection. (Manduchi et al., 2020).
- Individuals receiving any medications that are anti-dopaminergic or anti-cholinergic are at an increased risk for choking.

If an individual you care for has any of the risk factors listed above, they are at an increased risk for choking, and they should be assessed by a speech language pathologist (or other medical specialist) for dysphagia. Please contact the individual's PCP at your earliest convenience, to explain your concern and request a referral to a speech language pathologist (SLP) (or other medical specialist) for further assessment. Be sure to take a list of all of their medications with you to the appointment. As mentioned previously, certain medications can increase choking risk.

### **Consumption of Alcohol Can Increase Choking Risk**

The consumption of alcohol increases choking risk, and that risk dramatically increases, if the individual has any other risk factors. One study's sample revealed among non-hospitalized persons, more than one-third (33 of 78) were under the influence of alcohol at the moment of laryngeal choking on a bolus (a round mass) of food, most of them were chronic alcohol abusers (Berzlanovich et al., 2005).

If an individual you care for consumes alcohol on a regular basis, they are at an increased risk for choking, and they should be assessed by a speech language pathologist (or other medical specialist). Please contact the individual's PCP at your earliest convenience, to explain your concern and request a referral to a speech language pathologist (SLP) (or other medical specialist) for further assessment. Be sure to take a list of all of their medications with you to the appointment. Certain medications can increase choking risk.

### **Diagnosed Feeding or Eating Disorders Can Increase Choking Risk**

Some individuals may have sensory issues relating to food. This difficulty can be due to any of the reasons listed in this document or it may be due to a diagnosed feeding or eating disorder. Avoidant Restrictive Food Intake Disorder (ARFID), pica, and rumination disorder (RD) are all characterized by avoidant and restrictive eating, which can lead to: a failure to meet nutritional and/or energy requirements; significant weight loss; or failure to gain expected weight; dependence on oral nutritional supplements or enteral feeding; nutritional deficiencies; and/or difficulties with psychosocial functioning. Individuals with ARFID may also restrict or avoid food intake for reasons that relate to the sensory aspects of food or eating (e.g., taste, smell, texture); lack of interest in food or eating; or because of the feared negative consequences (e.g. choking, vomiting) associated with eating (APA, 2013; Lindvall et al., 2017; Thomas & Eddy, 2018; Bryant-Waugh, et al., 2019).

## **Structural Abnormalities (Congenital or Acquired) Can Increase Risk of Choking**

Dysphagia can also be due to functional or structural abnormalities of the oral cavity, pharynx, larynx, esophagus, or esophageal sphincters. Structural abnormalities causing dysphagia can be congenital or acquired. Cleft lip and palate is one congenital structural abnormality. It hampers labial control for sucking, decreases the oral suction, and causes insufficiency of velopharyngeal closure with nasal regurgitation. Impairments affecting the jaw, lips, tongue, or cheek can also hamper the oral phase, or the food-processing phase of eating. The undergrowth of the maxilla, and missing or malalignment of the teeth can also affect mastication difficulties.

Tongue dysfunction can also result in impaired mastication and bolus (a round mass of food) formation, and bolus transport. This can lead to excessive retention of food in the oral cavity (unintentional pocketing of food), after eating, which can become dislodged at any time (during sleep, etc.), and can cause an airway obstruction.

If an individual you care for has any structural abnormality of the oral cavity, pharynx, larynx, esophagus, or esophageal sphincters, they are at an increased risk for choking (airway obstruction). Please contact the individual's PCP at your earliest convenience, to explain your concern. A referral to a speech language pathologist (SLP) for further assessment may be needed. Please be sure to take a list of all of the individual's medications to their appointment. As mentioned previously, certain medications can increase choking risk. The important thing to remember is that all types of difficulty swallowing (dysphagia) can increase an individual's risk of airway obstruction, no matter what the underlying cause is.

## **Certain Behaviors can Increase Risk of Choking**

Strategies for choking prevention should include caregiver education on eating habits of individuals (stuffing food, etc.) that can increase their risk of choking. Caregivers who observe any of the behaviors in the aforementioned list, should notify their direct supervisor immediately and/or follow their agency's policy for notification. The individual's PCP should be notified that a particular risky behavior has been observed, and a protocol for observation (at a minimum), should be developed with the help of a nurse, and/or an SLP, and/or a physician.

If the choking incident is related to the individual's behavior's (in any way), a referral to a specialist in behaviors, such as a Board Certified Behavior Analyst (BCBA) may be needed. A BCBA is a licensed healthcare professional who studies the behavior of children and adults and has experience and training in the development and execution of plans to improve or change a particular behavior, or behaviors.

Some individuals may feel embarrassment when they have difficulty eating, and may move away from others or may want to eat their meals in their bedrooms. This type of behavior places those individuals at an increased risk because they are less likely to be near people who can help. When food is served, be alert to those who may choose to leave, and check on them to ensure they are not in need of assistance.

### Behaviors which increase the risk of choking:

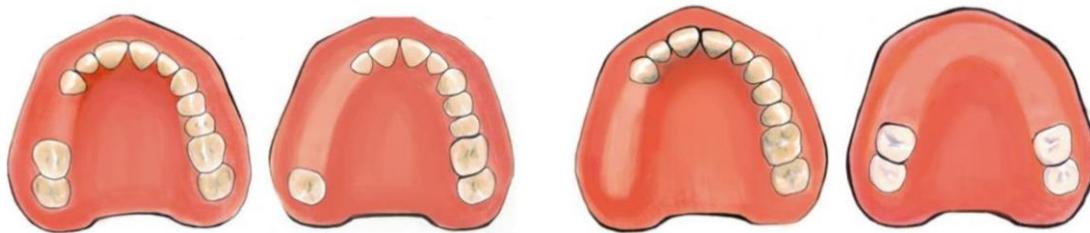
- Placing too much food or medication in one's mouth.
- Not chewing food well enough prior to swallowing.
- Putting large portions of food in one's mouth.
- Eating too fast.
- Drinking too fast.
- Inattention while eating.
- Food stealing - resulting in obtaining non-prescribed/inappropriate diet, etc.
- Swallowing food whole.
- Isolating behaviors.

If an individual has any of the behaviors mentioned in this document, they are at an increased risk for choking (airway obstruction). Please contact the individual's PCP at your earliest convenience, to explain your concern. A referral to a speech language pathologist (SLP) and/or a Board Certified Behavior Analyst (BCBA) may be needed. Please be sure to take a list of all of the individual's medications to their appointment. As mentioned previously, certain medications can increase choking risk.

### **Missing Teeth (Poor Dentition), No Teeth (Edentulous), Loose Teeth, or Decaying Teeth Can Increase the Risk of Choking**

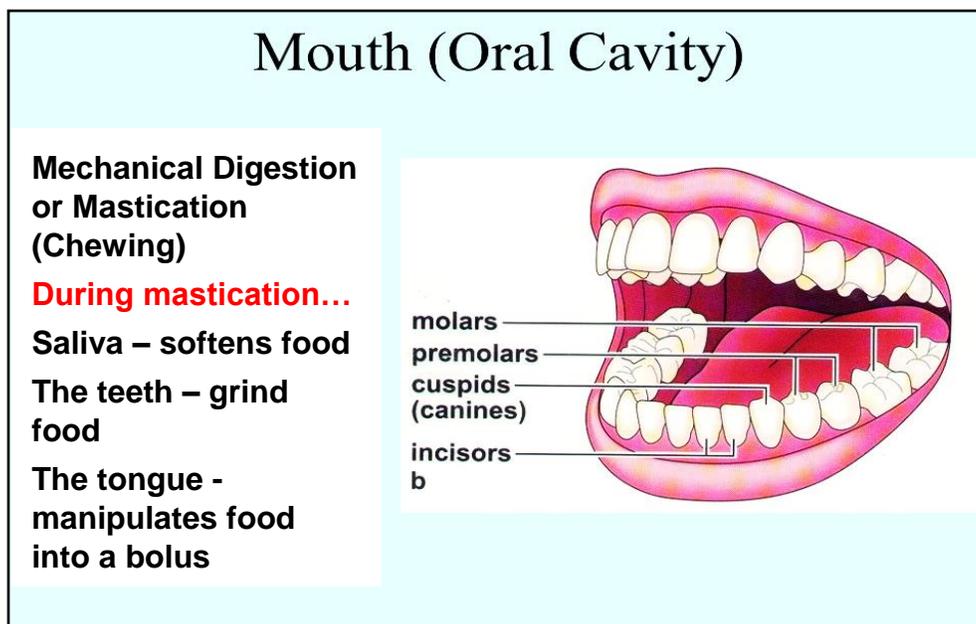
Loss of any teeth reduces masticatory performance. This can result in a bolus that may be too large to safely swallow. If an individual you care for has any loose, decayed or missing teeth, they are at an increased risk for choking (airway obstruction). Please contact the individual's PCP at your earliest convenience, to explain your concern. A referral to a speech language pathologist (SLP) for further assessment may be needed. Please be sure to take a list of all of the individual's medications to their appointment. As mentioned previously, certain medications can increase choking risk.

### **Less Teeth = Lessened Ability to Grind, Chop, and Process Food**



## Difficulties with Chewing Can Increase Risk of Choking

Chewing (mastication) falls under the SLP assessment area of “oral preparatory stage of swallowing”. A speech language pathologist can assess someone with a chewing (mastication) disorder. The mouth and teeth begin the digestion process by breaking food into small pieces that can be formed into a bolus, which can then be swallowed. Saliva softens food, teeth grind food and the tongue manipulates food into a bolus. If an individual has difficulty with any part of this process, they may be at higher risk of choking and need to have an assessment completed by a Speech Language Pathologist or SLP.



## Speech Language Pathology (SLP) Assessments

What happens during an SLP Assessment?

The SLP will likely complete a comprehensive review of the individual’s medical/clinical records, and may want to interview caregivers, parents, or other health care professionals familiar with the individual. The SLP may ask the following questions about the individual’s history before the exam begins:

- Have you witnessed any previous coughing, choking or gagging episodes while eating?
- Have you noticed any food sticking in the individual’s mouth after eating?
- Has the individual complained about any difficulty or pain while swallowing?  
(If so, the frequency, severity, and onset of the difficulty or pain.)
- Has the individual complained of heartburn or any other GERD-related symptoms?
- Has the individual ever been diagnosed with aspiration pneumonia?

- Does the individual have any cognitive/developmental, neurological (dementia), brain injury, or any neuromuscular-related diagnoses/issues?
- Does the individual have poor dentition (missing, loose, or decaying teeth)?

During the exam, the SLP will also carefully evaluate the individual's teeth, lips, jaws, tongue, cheeks and soft palate. The SLP may ask the individual to purse their lips together, stick out their tongue, cough, clear their throat, etc. The SLP may check their gag reflex. The SLP may also complete any or all of the following:

- A structural assessment of face, jaw, lips, tongue, hard and soft palate, oral pharynx, and oral mucosa
- A functional assessment of muscles and structures used in swallowing, including symmetry, sensation, strength, tone, range and rate of motion, and coordination of movement
- An observation of head–neck control, posture, oral reflexes, and involuntary movements
- An assessment of overall physical, social, behavioral, and cognitive/communicative status
- An assessment of the patient's perception of function, severity, change in functional status, and quality of life.
- Monitoring of physiological status, including heart rate and oxygen saturation.
- An assessment of speech and vocal quality at baseline and any changes forming or maneuvering the bolus in the mouth.
- Evaluation of the method the individual uses for food consumption (by spoon, cup, self-fed, examiner-fed) and the time it takes to form a bolus, to assess the effects on swallow function.
- Assessment of secretion management skills, which might include frequency and adequacy of spontaneous saliva swallowing and ability to swallow voluntarily.
- Assessment of the individual's mouth seal and oral control, including mastication and transit, manipulation of the bolus, and time required to complete the swallow sequence.
- Assessment of all skills related to feeding to rule out any negative impact of fatigue on feeding/swallowing safety.
- Assessment of cough strength (American Speech, Language, Hearing Association, n.d.; Martin-Harris et al., 2005).

The individual may need additional follow-up tests, based on the initial SLP assessment. Medical doctors and speech-language pathologists who evaluate and treat swallowing disorders use a variety of tests that allow them to look at the stages of the swallowing process.

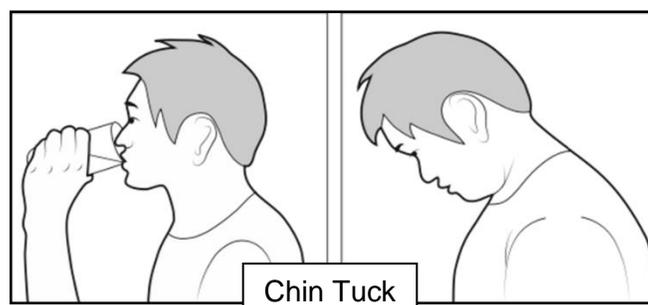
A swallow test will check for signs of dysphagia and aspiration throughout the exam. During the swallow study, the individual may be given a variety of food and drink substances to swallow.

The food/drink may range from water to thicker liquids, pureed foods, soft foods and even regular foods. The SLP will note if the individual has any problems chewing, swallowing or breathing while attempting to swallow. Afterwards, the SLP will assess if their voice sounds “wet” (which can be a sign of aspiration or difficulty swallowing). The SLP will also be observing carefully for other signs and symptoms of dysphagia such as coughing or clearing of the throat throughout the test, or immediately thereafter.

These tests may include:

- A videofluoroscopic swallow study (VFSS), also known as a Modified Barium Swallow, is a test in which a clinician and a radiologist takes a videotaped X-ray of the entire swallowing process by having you consume several foods or liquids along with the mineral barium to improve visibility of the digestive tract. This test is commonly referred to as a barium swallow test.
- The Flexible Endoscopic Evaluation of Swallowing with Sensory Testing (FEESST), uses a lighted fiberoptic tube, or endoscope, to view the mouth and throat while examining how the swallowing mechanism responds to such stimuli as a puff of air, food, or liquids. Fiber optic endoscopic evaluation of swallowing (FEES) is sometimes used as an alternative to the MBS.
- Pharyngeal manometry is sometimes used to assess the pressure inside the individual’s esophagus.

Speech-language pathologist’s use these methods to explore what changes can be made to offer a safer strategy when eating or drinking. The changes may be in food texture, size, head and neck posture, or behavioral maneuvers, such as “chin tuck,” or a neutral head position. This is a positioning strategy which requires an individual to tuck their chin, so that food and other substances do not enter the trachea when swallowing. Neurological and neuromuscular conditions, such as amyotrophic lateral sclerosis (ALS, or Lou Gehrig’s disease), (among others), may require a feeding tube to prevent the individual from aspirating, in order to keep them safe.



For some people, treatment may involve avoiding certain foods. Others may not be able to drink thin liquids and may need to have special thickeners added to them prior to consumption. Other people may have to avoid hot or cold foods or drinks, which can trigger choking incidents in some people. If the individual is diagnosed with dysphagia, caregivers will be instructed on the

protocols and precautions needed to prevent aspiration. This might include diet modification or thickening of liquids, positioning, protocols for eating and drinking, etc. A referral to a dietician or nutritionist may be recommended. PCP orders for diet modification may also be needed.

The individual's PCP, a nurse, a dietician and/or a nutritionist can help you develop a well-thought out protocol for eating and drinking for someone who has a high choking risk. *Do not attempt to formulate protocols without a healthcare professional's input and written order affirming approval. (The SLP may write the protocols, and the PCP will sign them, in some situations.)* Please make sure all caregivers in all settings the individual visits on a regular basis are aware of these changes and protocols. Make sure all changes, protocols, etc. are included in the individual's ISP (or IEP, if the individual is still in school), and update them as needed.

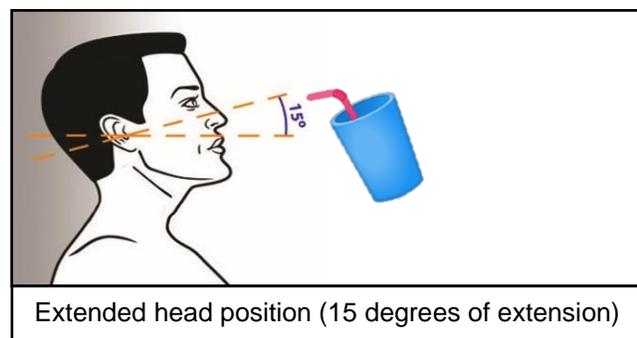
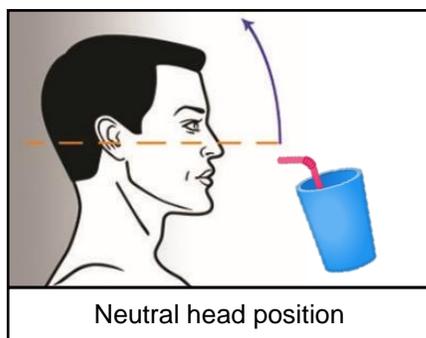
## Caregiver Tips

### Emergency Preparedness to Lower the Risk of Choking Fatalities

**Everyone** is at risk for choking. Individuals with DD are at higher risk for choking. Caregivers should learn the Heimlich maneuver and CPR in a certified first-aid training course and practice putting both into action during your emergency preparedness training drills. The use of caregiver drills or mock emergencies in order to reinforce emergency protocols for choking is a good idea. Practicing an emergency protocol, and allowing direct caregivers to have a chance to ask questions, can build confidence and improve technique. Repetition of any activity increases memory of any skill and gives participants a chance to build their skills (Popov & Reder, 2017). Having all staff trained in the Heimlich maneuver, CPR and First Aid represents best practice. It is also important to keep skill requirements current with refresher courses.

In addition, the use of well-displayed posters with clear instructions on the steps a caregiver should follow (for both the Heimlich maneuver and CPR) is a good idea. A poster can serve as a visual reminder of the steps needed, (e.g. the placement of hands, the sequence, the number of repetitions, etc.), and can help calm caregivers' nerves when, or if, they begin to panic and cannot remember what to do, when an individual is choking.

When holding a cup for an individual to take a drink from, be sure to hold the cup level with their mouth. Holding a cup too high can cause flexion which opens the airway, and can put individuals at greater risk of choking and aspiration.



## What Not to Do

DO NOT give foods or liquids that a particular individual has difficulty swallowing.

DO NOT give foods or liquids restricted by an individual's health care provider.

DO NOT rush mealtimes.

DO NOT start mealtime if the individual is too lethargic, angry, anxious, or if they cannot sit still.

DO NOT plan other activities during mealtimes.

DO NOT permit eating or drinking while the individual is lying down.

DO NOT assist individuals to bed, for at least 30 minutes after eating or drinking.

DO NOT let an individual finish eating a particular food item, if that food item has just caused the individual to choke.

## Make Sure Staff Are Aware of Foods Identified as "High Risk" for Choking

- Hotdogs served whole.
- Chicken on the bone.
- Corn.
- Grapes.
- Peanut butter (plain).
- Peanut butter sandwiches on soft bread.
- Thick chewy bread, e.g. white bread, bagels, pizza, etc.
- Marshmallows.
- Dry, crumbly foods such as cornbread or rice served without butter, jelly, sauce, etc.
- Dry meats such as ground beef served without sauce, gravy.
- Whole, raw vegetables served in large bite-sized pieces.
- Whole, hard fruits like apples or pears.
- Candy with large nuts.
- Bananas.
- Hard nuts.
- Incorrect diet texture - liquids or food items not prepared in accordance with a prescribed diet.
- Eating something with two or more diet textures, especially anything with a thin liquid in addition to a solid component, such as cereal and milk (Sidell et al., 2013).

## Choking Risk Assessment Screening Tool

The Choking Risk Assessment (CRA) Screening Tool (below) is a risk assessment tool designed specifically for adults with intellectual and developmental disability (Sheppard et al., 2017). The CRA is meant to be a screening tool to help unlicensed caregivers identify problems individuals may have with eating or drinking, so they can then be assessed by a healthcare professional. The CRA is not meant to take the place of a formal assessment by a healthcare professional.

Appendix A		
<b>CHOKING RISK ASSESSMENT (CRA)</b>		
<b>Justine Joan Sheppard, Ph.D.</b>		
DATE: _____		
NAME: _____	ID # _____	RISK SCORE: _____
RECENT HISTORY OF CHOKING IN THE PAST YR. OR OTHER RELEVANT HISTORY	ESTIMATED RISK	
	Low risk	<input type="checkbox"/>
	High risk	<input type="checkbox"/>
Instructions: Score each item 10% for any one or more abnormal features. See User's Guide on back of form.		
1) _____	Age of 40 or older	
2) _____	Dysphagia Diagnosis (DMSS)	
	None	Mild    Moderate    Severe    Profound
3) _____	History of Choking	
	_____ Level 5: Hospitalization for pulmonary consequences	
	_____ Level 4: Acute Care for respiratory consequences	
	_____ Level 3: Procedure to clear-suction, Heimlich, finger sweep	
	_____ Level 2: Cleared without assistance (prolonged coughing)	
	_____ Level 1: Coughing during meals, snacks, or on saliva	
4) _____	Medications with Side Effects for Swallowing	
	Name of Meds: _____	
5) _____	Descriptive Mealtime Actions	
	_____ Labile (laughing/talking)	
	_____ Food – stealing	
	_____ Mania	
6) _____	Descriptive Mealtime Behaviors	
	_____ Distractible	
	_____ Lethargic	
7) _____	Reduced Chewing Ability and on Chewable Foods	
8) _____	Rate	
	_____ Rapid spooning	
	_____ Rapid drinking	
9) _____	Excessive Size Mouthfuls (Stuffing; Cramming)	
	_____ Solids	
	_____ Liquids	
10) _____	Other problems	
	_____ Posture (Maintaining upright sitting posture during eating)	
	_____ PICA diagnosis	
	_____ Rapid breathing during eating	
	_____ Recurring seizures	
©2005 Justine Joan Sheppard Forms may be duplicated for clinical and research uses		

**CHOKING RISK ASSESSMENT (CRA)  
USER'S GUIDE**  
Justine Joan Sheppard, Ph.D.

**IDENTIFYING INFORMATION:**

Fill in Date, Name and ID.

Note any relevant history.

**ITEMS and How To Score them:**

Score 10% for each item that applies to the individual (maximum score 100%). A final score of more than 20% indicates "high risk". A final score of 20% or below indicates "low risk". Higher cutoffs represent higher levels of risk tolerance.

1. Age. Score as positive (i.e., 10%) if individual is or will be 40 years old in the current calendar year.
2. Dysphagia diagnosis. Score as positive if a dysphagia diagnosis for any one or more phases of swallowing has been made with clinical or instrumental assessments. Note Dysphagia Management Staging Scale (DMSS) level if available.
3. History of choking. Score as positive if level 3, 4 or 5 choking, as described in this item, has occurred at any time in the past five years. Score as positive if level 2 has been observed to occur one or more times weekly in the past month. Score as positive if level 1 has been observed to occur usually at least once at each meal on liquid or solids.
4. Medications. Score as positive if the individual is currently prescribed any drugs that affect alertness, muscle tone, or salivation or are associated with a side effect of Tardive Dyskinesia Syndrome. These include neuroleptics, seizure medications, tranquilizers (sedatives), muscle relaxants, anticholinergics and antihistamines.
5. Descriptive mealtime actions. Score as positive if individual laughs or talks without adequate self-control or confiscates food that may be other than their prescribed diet consistency during meals one or more times weekly, or has cycles of mania one or more times annually.
6. Descriptive mealtime behaviors/focus. Score as positive if individual exhibits sleepiness, i.e., lethargy during eating, and/or other difficulty maintaining focus on eating, i.e., distractibility, one or more times weekly.
7. Reduced chewing ability. Score as positive if individual is judged to be inconsistent in chewing ability or to have reduced chewing ability and the individual's diet includes foods that require chewing.
8. Rate. Score as positive if the individual exhibits excessively rapid spooning or drinking one or more times at each meal.
9. Excessive size mouthfuls. Score as positive if the individual takes excessively large mouthfuls of solid or liquid food one or more times at each meal.
10. Other. Score as positive if the individual has exhibited difficulties with one or more of the listed items in the past year.

## Protocols for Lowering the Risk of Choking (not all inclusive)

Because of the varied risk factors associated with choking, it is critical caregivers ensure adequate supervision of persons served. Staff require training and be familiar with the individual's person-centered care guidelines and or protocols to help keep the individual safe. It is essential to consult with the individual's primary care physician (PCP) to ensure a person centered support plan and or choking protocol meets their specific needs. All person centered support plans and or protocols must meet human rights guidelines and requires approval with signature from a healthcare professional.

- Protocols for implementing physician orders for prescribed diets.
- Protocols limiting access to food impact an individual's human rights which requires approval from the local human rights counsel (LHRC) prior to implementation.
- Protocols for thickening foods.
- Protocols for hands-on, staff-assisted eating.
- Protocols for intake/output.
- Protocols for tooth brushing instructions (from a dental provider), to avoid gagging.
- Protocols for food preparation (separating food into smaller portions, etc.).
- Protocols for Pica precautions.
- Protocols based on a history of the individual's previous choking incidents or difficulty swallowing.
- Protocols for assisted eating or drinking techniques, using adaptive equipment.
- Positioning protocols, during and after mealtime.
- Protocols for direct visual supervision when the individual is consuming food.

## Emergency Response to Choking (Mayo Clinic, 2017)

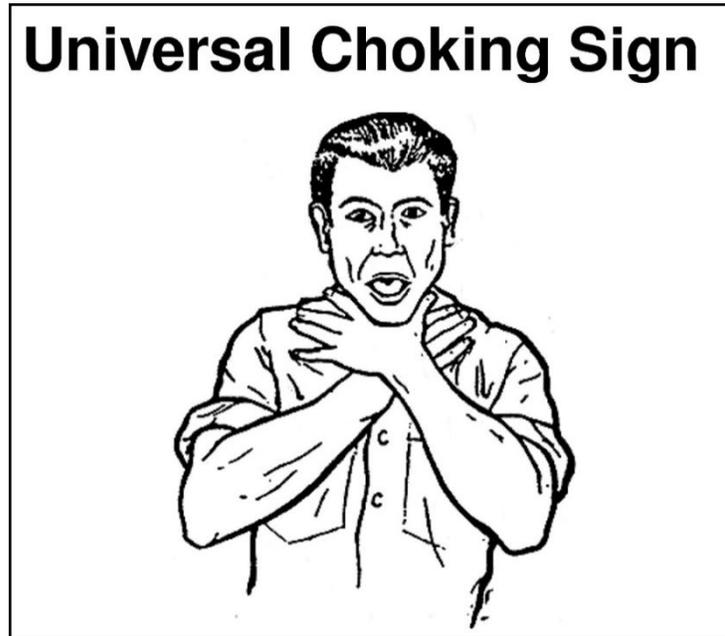
### Generic Protocol for Choking (for reference only\*)

1. Immediately call 911. If another person is present, instruct him or her to call 911.
2. If trained, immediately provide repeated abdominal thrusts, known to some as the Heimlich maneuver, until the object causing the choking is dislodged and the individual can cough forcefully, speak or breathe, or until the individual becomes unconscious.
3. If the individual is unconscious, remove any visible obstructions from the mouth and begin administering CPR. Check periodically to see if the obstruction becomes dislodged.

*\*Please, remember to follow your agency's training for responding to a choking victim. These instructions are not meant to take the place of in-person training.*

## The Universal Choking Sign

The universal sign for choking is both hands clutched to the throat. Demonstrate the Universal Choking Sign to individuals and teach individuals (who are cognitively and physically able) how to do it themselves. Have them demonstrate it to you at routine intervals to make sure they remember how to do it, and when they should use it (i.e. when they are choking).



### *Did you know...*

Some people who choke can still breathe.

Symptoms:

Look of fear or panic  
Reddish face  
Grabbing throat  
Drooling  
Forceful coughing

Some people who choke cannot breathe.

Symptoms:

Cannot speak  
Grayish face or pale face  
Bluish lips  
Grabbing throat  
High-pitched noise or no noise

## A Step-By-Step Guide Explaining What to Do In a Choking Emergency\*

If an individual does not give the universal choking signal, look for the following signs and symptoms, which may indicate they are choking:

- An inability to speak.
- Difficulty breathing or noisy breathing.
- Squeaky sounds when trying to breathe.
- Coughing, which may either be weak or forceful.
- Skin, lips and nails turning blue or dusky.
- Skin that is flushed then turns pale or bluish in color.
- A panicked look on their face.
- Loss of consciousness.
- If the person is able to cough forcefully, the person should keep coughing.
- If the person is choking and can't talk, cry or laugh forcefully, the American Red Cross recommends a "five-and-five" approach to delivering first aid:
- Give five back blows. Stand to the side and just behind a choking adult. For a child, kneel down behind. Place one arm across the person's chest for support. Bend the person over at the waist so that the upper body is parallel with the ground. Deliver five separate back blows between the person's shoulder blades with the heel of your hand.
- Give five abdominal thrusts. Perform five abdominal thrusts.
- Alternate between five blows and five thrusts until the blockage is dislodged.

### Five-and-Five



*\*Please, remember to follow your agency's training for responding to a choking victim.  
These instructions are not meant to take the place of in-person training.*

The American Heart Association does not teach the back blow technique, only the abdominal thrust procedures. It is okay not to use back blows, if you have not learned the technique. Both approaches are acceptable.

## To Perform Abdominal Thrusts on Someone Else\*

- Stand behind the person. Place one foot slightly in front of the other for balance. Wrap your arms around the waist. Tip the person forward slightly. If a child is choking, kneel down behind the child.
- Make a fist with one hand. Position it slightly above the person's navel.
- Grasp the fist with the other hand. Press hard into the abdomen with a quick, upward thrust — as if trying to lift the person up.
- Perform between six to ten abdominal thrusts, until the blockage is dislodged.

If you are the only rescuer, perform back blows and abdominal thrusts before calling 911 or your local emergency number for help. If another person is available, have that person call for help while you perform first aid.

If the person becomes unconscious, perform standard cardiopulmonary resuscitation (CPR) with chest compressions and rescue breaths.

*\*Please, remember to follow your agency's training for responding to a choking victim. These instructions are not meant to take the place of in-person training.*

## To Perform Abdominal Thrusts on yourself\*

First, if you are alone and choking, call 911 or your local emergency number immediately. Then, although you will be unable to effectively deliver back blows to yourself, you can still perform abdominal thrusts to dislodge the item.

- Place a fist slightly above your navel.
- Grasp your fist with the other hand and bend over a hard surface — a countertop or chair will do.
- Shove your fist inward and upward.

*\*Please, remember to follow your agency's training for responding to a choking victim. These instructions are not meant to take the place of in-person training.*



© MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH. ALL RIGHTS RESERVED.

## To Aid Someone Choking in a Wheelchair

- Encourage the person to cough, if they can't cough then start assistance immediately.
- Lock the brakes on the wheelchair with the brake handle.
- Call for assistance from other staff members if available. If you are the only rescuer, perform back blows and abdominal thrusts before calling 911 or your local emergency number for help. *If another person is available, have that person call for help while you perform the steps below.*
- Lean the choking wheelchair user forward and slap their back 5 times between their shoulder blades.
- If they are still choking, stand directly behind them and lean down and wrap your arms around their waist.
- Make a fist and put it above their belly button.
- Place your other hand on top of your fist. Pull in and up. This is called an abdominal thrust. Repeat up to 5 times.
- If they are still choking alternate 5 back blows with 5 abdominal thrusts, checking after each action to see if obstruction has been removed.
- Stand directly behind the individual and wrap your arms around their ribcage, forming a fist with your hands. Grasp the fist with the other hand.
- Press hard into the abdomen with a quick, upward thrusts — as if trying to lift the person up, pulling the individual's body in towards you and up 5 times.

*If another person is available, have that person call for help while you perform the steps above.*

If the person becomes unconscious, pull them to the floor and place them on their backs and begin performing standard cardiopulmonary resuscitation (CPR) with chest compressions and rescue breaths.

*\*Please, remember to follow your agency's training for responding to a choking victim. These instructions are not meant to take the place of in-person training.*



**Video: How to Deal with a Choking Wheelchair User.**  
<https://www.youtube.com/watch?v=1L1dR9qUN0E>

## To Clear the Airway of an Unconscious Person\*

- Lower the person on his or her back onto the floor, arms to the side.
- Clear the airway. If a blockage is visible at the back of the throat or high in the throat, reach a finger into the mouth and sweep out the cause of the blockage. Do not try a finger sweep if you cannot see the object. Be careful not to push the food or object deeper into the airway, which can happen easily in young children.
- Begin CPR if the object remains lodged and the person does not respond after you take the above measures. The chest compressions used in CPR may dislodge the object. Remember to recheck the mouth periodically.

*\*Please, remember to follow your agency's training for responding to a choking victim.  
These instructions are not meant to take the place of in-person training.*

## To Clear the Airway of a Choking Infant Younger than Age 1\*

- Assume a seated position and hold the infant face down on your forearm, which is resting on your thigh. Support the infant's head and neck with your hand, and place the head lower than the trunk.
- Thump the infant gently but firmly five times on the middle of the back using the heel of your hand. The combination of gravity and the back blows should release the blocking object. Keep your fingers pointed up to avoid hitting the infant in the back of the head.
- Turn the infant face up on your forearm, resting on your thigh with the head lower than the trunk if the infant still is not breathing. Using two fingers placed at the center of the infant's breastbone, give five quick chest compressions. Press down about 1 1/2 inches, and let the chest rise again in between each compression.
- Repeat the back blows and chest thrusts if breathing does not resume. Call for emergency medical help.
- Begin infant CPR if one of these techniques opens the airway but the infant does not resume breathing.
- If the child is older than age one and conscious, give abdominal thrusts only. Be careful not to use too much force to avoid damaging ribs or internal organs.

*\*Please, remember to follow your agency's training for responding to a choking victim.  
These instructions are not meant to take the place of in-person training.*



# CONSCIOUS CHOKING

Cannot Cough, Speak, Cry or Breathe

After checking the scene for safety and the injured or ill person, have someone **CALL 9-1-1** and get consent. For children and infants, get consent from the parent or guardian, if present.

## 1 GIVE 5 BACK BLOWS

■ **Adult:**



■ **Child:**



■ **Infant:**



## 2 GIVE 5 ABDOMINAL THRUSTS

■ **Adult:**



■ **Child:**



■ **Infant:** (chest thrusts for infant)



**TIP:** For infants, support the head and neck securely. Keep the head lower than the chest.

## 3 REPEAT STEPS 1 AND 2 UNTIL THE:

- Object is forced out.
- Person can cough forcefully or breathe.
- Person becomes unconscious.

### WHAT TO DO NEXT

- **IF PERSON BECOMES UNCONSCIOUS** — Carefully lower the person to the ground and give **CARE** for unconscious choking, beginning with looking for an object.
- Make sure **9-1-1** has been called.



Copyright © 2011 by The American National Red Cross

## Resources

American Red Cross (2011). First aid conscious choking poster.

<file:///C:/Users/dha92624/Downloads/first-aid-consciouschokingposter-en.pdf>

American Red Cross (n.d.). How do you care for a conscious choking victim?

<https://www.youtube.com/watch?v=UVNxP7K2ATE>

American College of Emergency Physicians. Choking (Heimlich maneuver).

<https://www.emergencyphysicians.org/article/know-when-to-go/choking--heimlich-manuever>

American Academy of Pediatrics. (2011). Choking Prevention and First Aid for Infants and Children <https://www.laborposters.org/first-aid/1805-choking-cpr-for-children-or-infants-poster.htm>

American Red Cross (2010). CPR/AED for professional rescuers and health care providers.

[https://www.redcross.org/content/dam/redcross/atg/PHSS\\_UX\\_Content/CPRO\\_Handbook.pdf](https://www.redcross.org/content/dam/redcross/atg/PHSS_UX_Content/CPRO_Handbook.pdf)



Resuscitate! CPR AED & Choking App Stone Meadow Development LLC

<https://apps.apple.com/us/app/resuscitate-cpr-aed-choking/id363393502>



National Safety Council's Emergency Response App It provides a list of abbreviations and memory aids, as well as an illustrated summary of treatment steps for various illnesses and injuries.

[https://play.google.com/store/apps/details?id=com.nsc.hybrid&hl=en\\_US](https://play.google.com/store/apps/details?id=com.nsc.hybrid&hl=en_US)

If you have any questions about the information contained in this Health & Safety Alert, please email your question to the Office of Integrated Health's nursing team at:

[communitynursing@dbhds.virginia.gov](mailto:communitynursing@dbhds.virginia.gov)

What to do when a Wheelchair User is choking: <https://www.aid-training.co.uk/news/what-to-do-when-a-wheelchair-user-is-choking>

The ARC handout on Choking an Obesity, Choking in a Wheelchair:

<https://hrstonline.com/demo/elearning/live/choking/choking-part-2/Choking%20with%20Morbid%20Obesity%20Protocol.pdf>

How to deal with a choking wheelchair user YouTube video:

<https://www.youtube.com/watch?v=1L1dR9qUN0E>

## References

- A.I.D Training & Operations Ltd (2015). What to do when a wheelchair user is choking. <https://www.aid-training.co.uk/news/what-to-do-when-a-wheelchair-user-is-choking>
- American Academy of Pediatrics. (2011). Choking Prevention and First Aid for Infants and Children <https://www.laborposters.org/first-aid/1805-choking-cpr-for-children-or-infants-poster.htm>
- American College of Emergency Physicians. Choking (Heimlich maneuver). <https://www.emergencyphysicians.org/article/know-when-to-go/choking--heimlich-manuever>
- American Red Cross (2010). CPR/AED for professional rescuers and health care providers. [https://www.redcross.org/content/dam/redcross/atg/PHSS\\_UX\\_Content/CPRO\\_Handbook.pdf](https://www.redcross.org/content/dam/redcross/atg/PHSS_UX_Content/CPRO_Handbook.pdf)
- American Red Cross (2011). Adult first aid/CPR/AED: Ready reference. Retrieved from [https://www.redcross.org/content/dam/redcross/atg/PDF\\_s/Health\\_Safety\\_Services/Trainin\\_g/Adult\\_ready\\_reference.pdf](https://www.redcross.org/content/dam/redcross/atg/PDF_s/Health_Safety_Services/Trainin_g/Adult_ready_reference.pdf)
- American Speech, Language, Hearing Association (n.d.). Adult dysphagia. <https://www.asha.org/PRPSpecificTopic.aspx?folderid=8589942550&section=References>
- Balzer, K. M. (2000). Drug-induced dysphagia. *International Journal of MS Care*, 2(1), 40-50. Retrieved from <http://ijmsc.org/doi/abs/10.7224/1537-2073-2.1.40?code=cmcs-site>
- Berzlanovich, A. M., Fazeny-Dörner, B., Waldhoer, T., Fasching, P., & Keil, W. (2005). Foreign body asphyxia: a preventable cause of death in the elderly. *American journal of preventive medicine*, 28(1), 65-69. <https://www.sciencedirect.com/science/article/abs/pii/S0749379704000777?via%3Dihub>
- Bryant-Waugh, R., Micali, N., Cooke, L., Lawson, E. A., Eddy, K. T., & Thomas, J. J. (2019). Development of the Pica, ARFID, and Rumination Disorder Interview, a multi-informant, semi-structured interview of feeding disorders across the lifespan: A pilot study for ages 10-22. *The International journal of eating disorders*, 52(4), 378-387. <https://doi.org/10.1002/eat.22958>
- Carl, L. L., & Johnson, P. R. (2006). *Drugs and dysphagia: How medications can affect eating and swallowing*. Austin, Tex: Pro-Ed.
- Lindvall Dahlgren, C., Wisting, L., & Rø, Ø. (2017). Feeding and eating disorders in the DSM-5 era: a systematic review of prevalence rates in non-clinical male and female samples. *Journal of eating disorders*, 5, 56. <https://doi.org/10.1186/s40337-017-0186-7>
- Lu, Q. F., Ma, Q., Rithwan, S. M. S., Ng, H. C., Lee, S. L., Lee, K. M., ... & Xie, H. (2017). Risk factors and nursing strategies to manage choking in adults with mental illness: a systematic review protocol. *Journal of Systematic Reviews and Implementation Reports*, 15(8), 1998-2003. [https://journals.lww.com/jbisr/r/Fulltext/2017/08000/Risk\\_factors\\_and\\_nursing\\_strategies\\_to\\_manage.5.aspx](https://journals.lww.com/jbisr/r/Fulltext/2017/08000/Risk_factors_and_nursing_strategies_to_manage.5.aspx)
- Lumsden, A. J. & Cooper, J. G. (2017). The choking hazard of grapes: a plea for awareness. *Archives of Disease in Childhood*, 102, p. 473-474. Retrieved from <https://adc.bmj.com/content/archdischild/102/5/473.full.pdf>
- Manduchi, B., Walshe, M., Burke, É., Carroll, R., McCallion, P., & McCarron, M. (2020). Prevalence and risk factors of choking in older adults with intellectual disability: Results from a national cross-sectional study. *Journal of Intellectual & Developmental Disability*, 1-12. <https://doi.org/10.3109/13668250.2020.1763278>
- Martin-Harris, B., Brodsky, M. B., Michel, Y., Ford, C. L., Walters, B., & Heffner, J. (2005). Breathing and swallowing dynamics across the adult lifespan. *Archives of Otolaryngology-Head & Neck Surgery*, 131, 762-770.
- Mayo Clinic (2017). Choking: First aid. <https://www.mayoclinic.org/first-aid/first-aid-choking/basics/art-20056637#:~:text=Deliver%20five%20separate%20back%20blows.until%20the%20blockage%20is%20dislodged.>
- National Institute of Deafness and other Communication Disorders (NIDCD), National Institutes of Health (NIH) (2017). Dysphagia. <https://www.nidcd.nih.gov/health/dysphagia#2>
- National Safety Council (2017). National Safety Council: Injury facts, 2017 edition. Retrieved from <http://viewer.zmags.com/publication/20020222#20020222/1>
- National Safety Council (2018). Choking prevention and rescue tips: Thousands of people die from choking every year. <https://www.nsc.org/home-safety/safetytopics/choking-suffocation>
- National Safety Council (2020). EMR Guide. [https://play.google.com/store/apps/details?id=com.nsc.hybrid&hl=en\\_US](https://play.google.com/store/apps/details?id=com.nsc.hybrid&hl=en_US)
- Popov, V., & Reder, L. M. (2017). Repetition improves memory by strengthening existing traces: Evidence from paired-associate learning under midazolam. In *CogSci*. <http://venpopov.com/papers/popov-reder-midazolam-cogsci2017.pdf>
- Sheppard, J. J., Malandraki, G. A., Pifer, P., Cuff, J., Troche, M., Hemsley, B., ... & Hochman, R. (2017). Validation of the choking risk assessment and pneumonia risk assessment for adults with intellectual and developmental disability (IDD). *Research in developmental disabilities*, 69, 61-76. <https://doi.org/10.1016/j.ridd.2017.07.016>
- Sidell, D. R., Kim, I. A., Coker, T. R., Moreno, C., & Shapiro, N. L. (2013). Food choking hazards in children. *International journal of pediatric otorhinolaryngology*, 77(12), 1940-1946. <https://doi.org/10.1016/j.ijporl.2013.09.005>
- Stevenson, D. A., Heinemann, J., Angulo, M., Butler, M. G., Loker, J., Rupe, N., Kendell, P., Clericuzio, C. L., & Scheimann, A. O. (2007). Deaths due to choking in Prader-Willi syndrome. *American journal of medical genetics. Part A*, 143A(5), 484-487. <https://doi.org/10.1002/ajmg.a.31502>
- Thacker, A., Abdelnoor, A., Anderson, C., White, S., & Hollins, S. (2008). Indicators of choking risk in adults with learning disabilities: a questionnaire survey and interview study. *Disability and rehabilitation*, 30(15), 1131-1138. <http://ergotherapeutedordogne.fr/wp-content/uploads/2018/01/5-indicators-of-choking-risk-in-adults-with-learning-disabilities.pdf>
- Tippett, D. (2020). Treatments tests and therapies: Dysphagia: What happens during a bedside swallow exam. <https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/dysphagia-what-happens-during-a-bedside-swallow-exam>
- U.S. National Library of Medicine, Medline Plus (2018, Aug). Choking - adult or child over 1 year. Retrieved from <https://medlineplus.gov/ency/article/000049.htm>