Dysphagia

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Project N:2020-1-ES01-KA204-083288

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Goals of the lesson

The aim of this lesson is to understand the definition of dysphagia.

(Source: obtained from Canva Pro)

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Learning outcomes

- To discuss main characteristics of swallowing (definition of swallowing, swallowing phases).
- To understand the definition of dysphagia.
- To learn about prevalence and dysphagia classification.
- To learn about main health consequences: Security complication (choke, obstruction, respiratory infections: including aspiration pneumonia) .
- To emphasize the importance of efficacy complication (risk for malnutrition and dehydration, decrease the quality of life).
- To identify the signs of dysphagia.

(Source: obtained from Canva Pro)

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Ice Breaker

How do you think, how many times a person swallow per day?

a) 2500
b) 1500
c) 900

(Source: obtained from Canva Pro)

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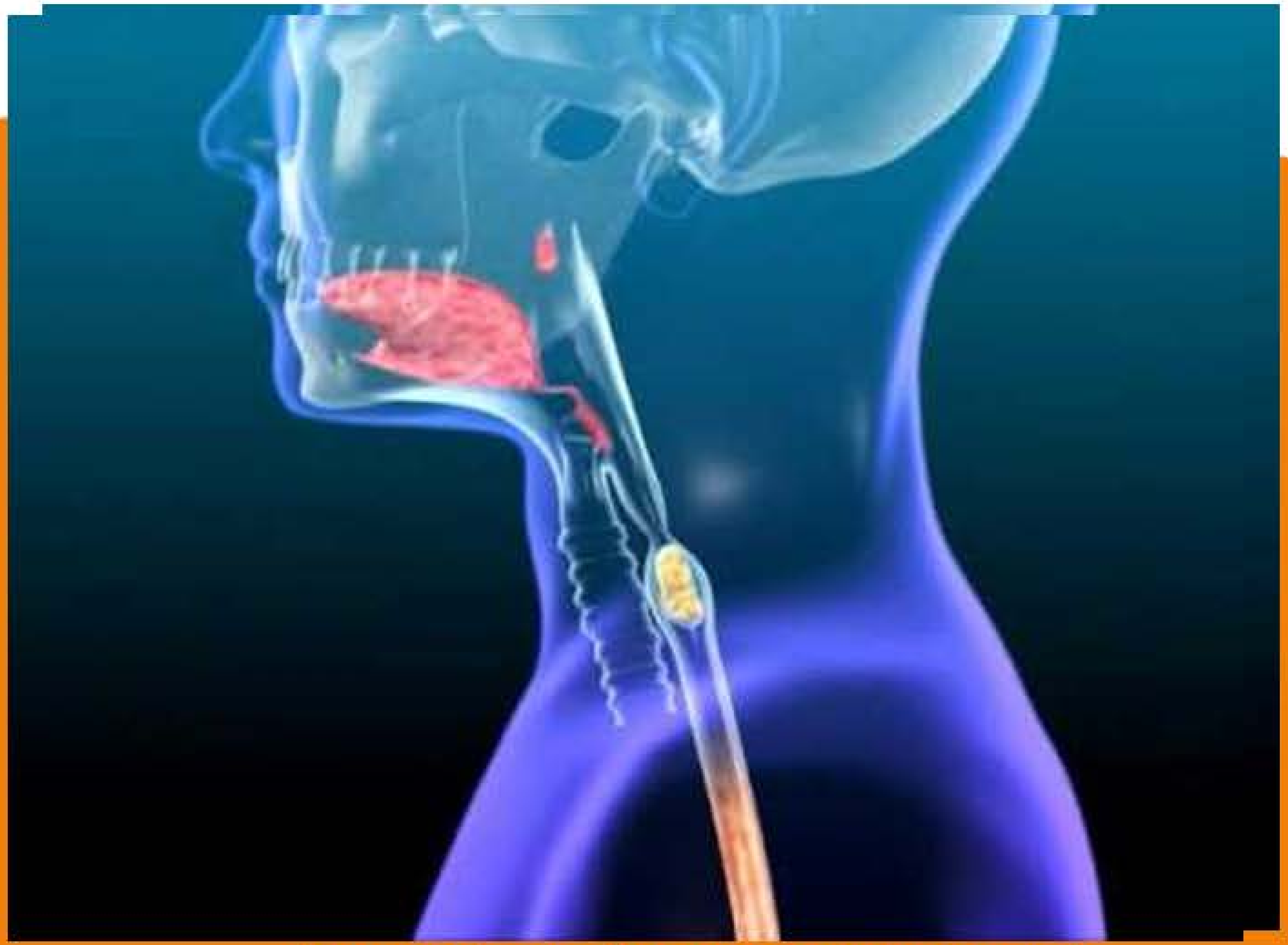
Swallowing

Definition

Swallowing is a complex process. Some 50 pairs of muscles and many nerves work to receive food, drink, medicines or saliva, prepare it and move it from the mouth to the stomach.



(Source: https://www.istockphoto.com)

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Swallowing phases

1. Oral phase

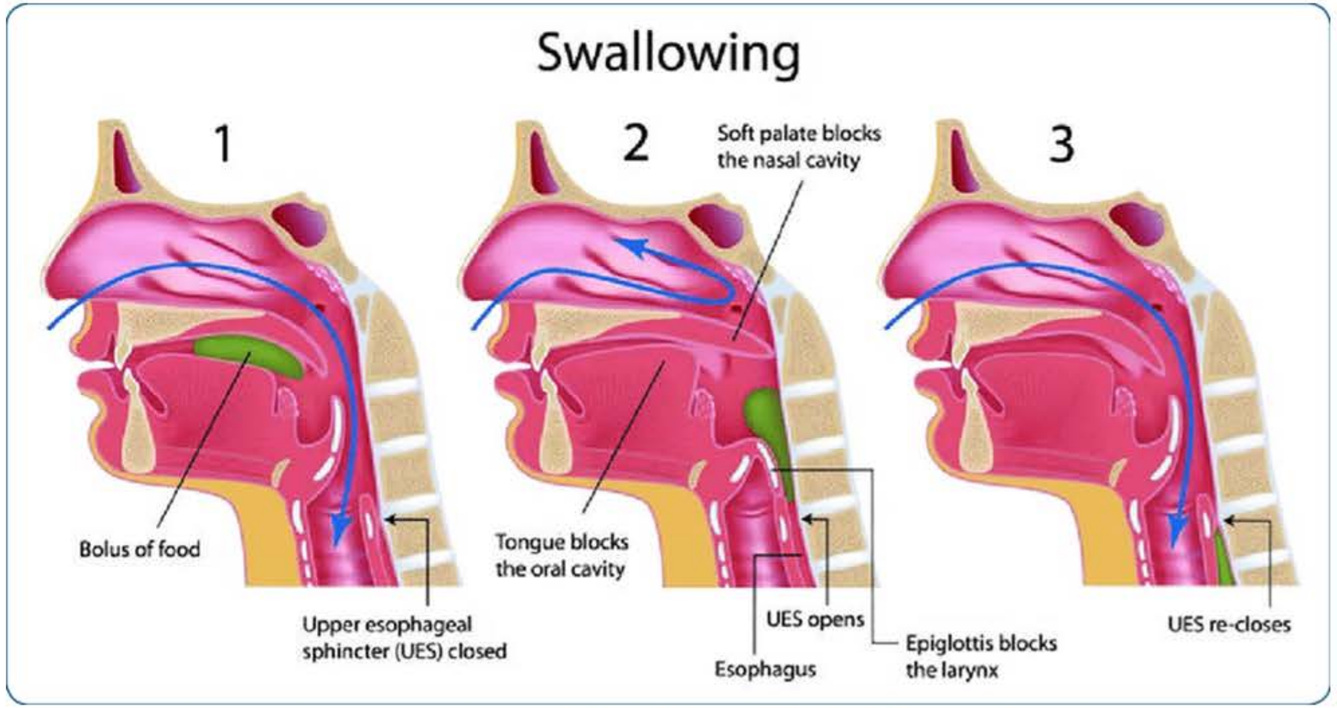
Voluntary, movement of the bolus from the oral cavity into the oropharynx.

2. Pharyngeal phase

Involuntary, movement of the bolus from the oropharynx into the esophagus.

3. Esophageal phase

Involuntary, movement of the bolus through the esophagus and into the stomach.



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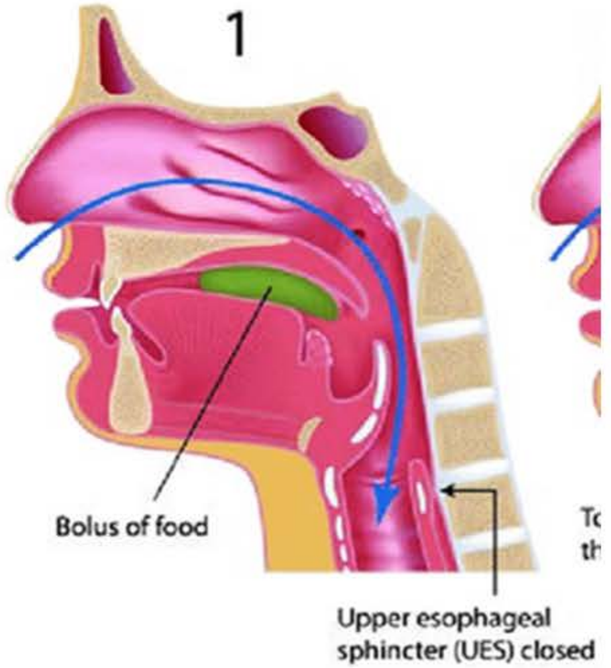
Swallowing phases

Oral phase

- The oral phase of swallowing is the first stage of deglutition, and it is a voluntary process. It is also commonly known as the **buccal phase.**
- It involves the contraction of the tongue to push the bolus up against the soft palate and then posteriorly into the oropharynx by both the tongue and the soft palate.



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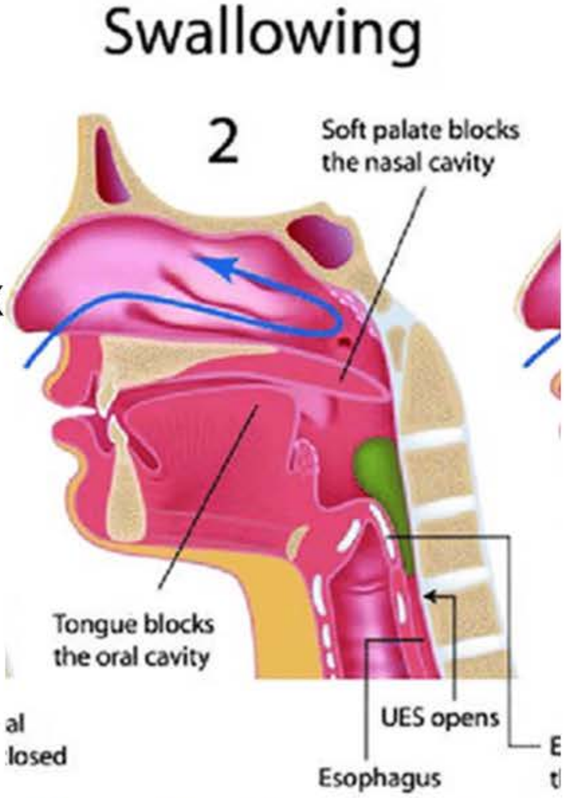
Swallowing phases

Pharyngeal phase

- Unlike the oral phase, the pharyngeal phase is an involuntary process.
- First, the tongue is blocking the oral cavity. Then, the nasopharynx is sealed off from the oropharynx and laryngopharynx by elevation of the soft palate and its uvula. The pharynx will then receive the bolus after shortening and widening, at the same time, the larynx will elevate. Finally, the upper esophageal sphincter relaxes and opens, allowing food to enter the esophagus.
- During this phase, respiration is inhibited, and the epiglottis blocks off the upper airway to prevent the food bolus and liquids from entering the airway and being inhaled. If food does enter the airway, the coughing reflex is triggered. This can happen if someone talks or inhales while swallowing.



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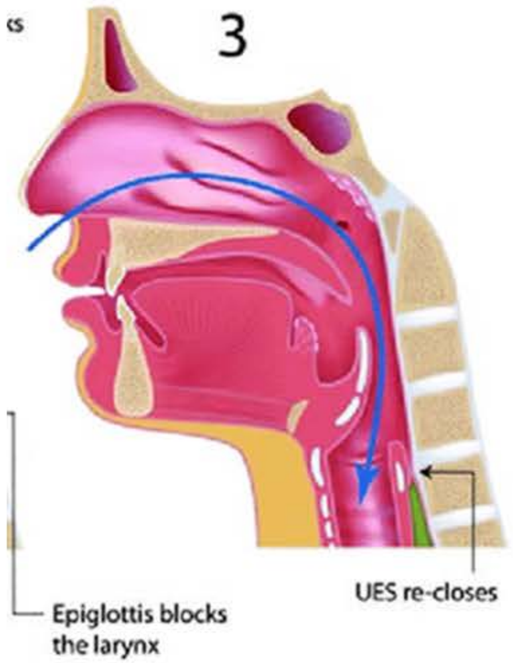
Swallowing phases

Esophageal phase

- The final stage of deglutition is the esophageal phase, which is involuntary.
- The food bolus is forced inferiorly from the pharynx into the esophagus. Muscle contraction creates a peristaltic ridge. Once the food bolus has fully entered the esophagus, the upper esophageal sphincter will contract and close again.
- The food bolus then moves through the esophagus via peristalsis, the sequential contractions of adjacent smooth muscle to propel food in one direction. Gravity also aids in the movement of food to the stomach.



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Dysphagia

Dysphagia is a swallowing disorder that causes difficulty or sensation of having difficulty swallowing certain foods, liquids, medicines or saliva.

It may involve the oral cavity, pharynx, esophagus or gastroesophageal junction and it can range from difficulty with deglutition (the coordinated, active process of passing food and liquids from the oral cavity into the oropharynx and below) to the passive passage of contents from the oropharynx through the esophagus and into the stomach.

(Source: obtained from Canva Pro)

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Other swallowing disorders

Odynophagia, which is often confused with dysphagia, is defined as **pain during swallowing**. Both of these symptoms indicate an abnormality - either benign or malignant - that should be further worked up and evaluated.

(Source: obtained from Canva Pro)

Presbyphagia is the medical term for the characteristic **changes in the swallowing mechanism of otherwise healthy older adults**. Although age-related changes place older adults at risk of swallowing problems, an older adult's swallow is not necessarily an impaired swallow but there are definite changes that can make swallowing more challenging.

Some changes that impact swallowing with ageing may be obvious; for example, **missing teeth or dentures** may make it more difficult to chew. Other changes are not as easy to see such as changes in the muscles and tissues. In fact, the muscle fibers decrease in size and strength, referred to as sarcopenia, leading to the slowing of pressure generated during swallowing. The elderly often learn to successfully adapt to these physiological changes in early stages. However, with progressing age, swallowing function may deteriorate beyond the patients' compensatory capacity, eventually presenting as dysphagia.

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Dysphagia classification

Oropharyngeal dysphagia

Difficulty or discomfort arising during the swallowing process, from the time the food or drink reaches the mouth and the food bolus is formed, until the upper esophageal sphincter of the esophagus opens.

It includes disorders of oral, pharyngeal, laryngeal and upper esophageal sphincter origin and **accounts for almost 80% of diagnosed dysphagia**. Symptoms usually appear in the first moments after initiating swallowing, although they can also occur during, after or a few minutes after swallowing. Sometimes they can go unnoticed, giving rise to silent aspirations

Esophageal dysphagia

Difficulty or discomfort arising during the swallowing process, from the time the food or drink bolus passes through the upper esophageal sphincter until it reaches the stomach.

The main esophageal alterations arise from mechanical obstructive lesions, motor disorders of the upper esophagus, the esophageal body, the lower sphincter or the cardia. Symptoms usually appear several seconds after swallowing and are characteristically referred to the retrosternal and even cervical region. It accounts for 20% of diagnosed dysphagia.

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Dysphagia classification

Other classifications can also be made according to:

- **Cause**: organic or functional.
- **Establishment**: acute or progressive.
- **Duration**: transient or permanent.
- **Texture affected**: dysphagia to solids, dysphagia to liquids or dysphagia to mixed textures.

(Source: obtained from Canva Pro)

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Videos and exercises

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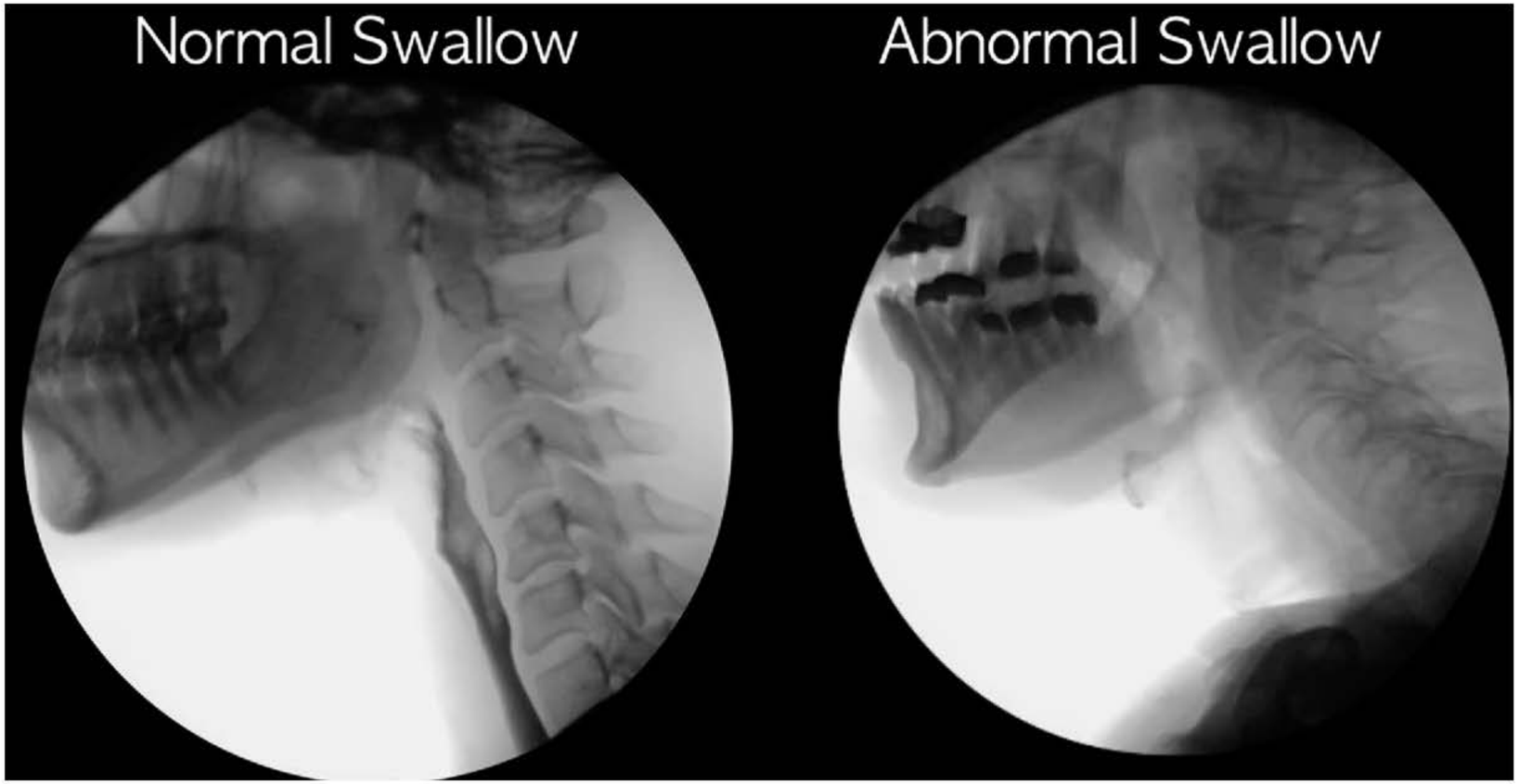
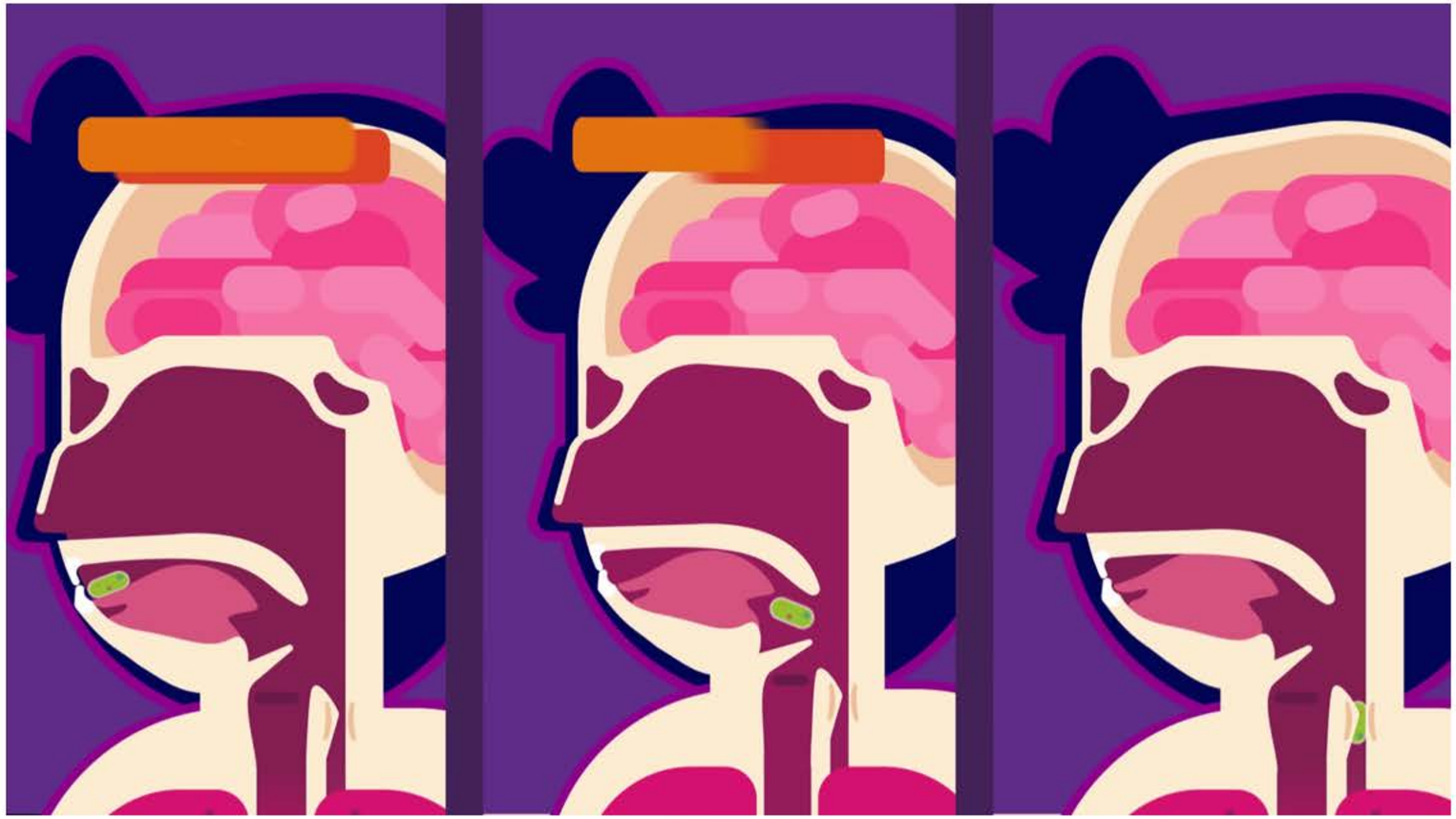
Video — normal swallowing and Dysphagia (press here)



Autor: Ianessa Humbert, Year: 2020

Web: https://www.youtube.com/watch?v=fqG0QmIaFMs

Video — dysphagia explanation (press here)



Video information:

Autor: FreeMedEducation, Year: 2018

Web: https://youtu.be/KNYgbN9Slfk

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Video — indeed project (press here)

Video information:

Autor: IDEC S.A., Year: 2021

Web: https://www.youtube.com/watch?v=Z5FmfFOD5g0

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Exercise

Connect the names with their correct definition:

Dysphagia	Swallowing disorders due to ageing.
Odynophagia	Is the difficulty or sensation of having difficulty swallowing certain foods, liquids, medicines or saliva.
Presbyphagia	Is defined as pain during swallowing.

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PREVALENCE

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Overview

- Occasional difficulty swallowing, which may occur when you **eat too fast or don't chew** your food well enough, usually isn't cause for concern. But persistent dysphagia may indicate a serious medical condition requiring treatment.
- Dysphagia can occur at any age or it may also be **associated with pain, disability, chronic diseases and other medical situations**. The causes of swallowing problems vary and treatment depends on the cause.
- **The prevalence of dysphagia is about 8% among the world adult population**. This prevalence is even higher in certain cases; 20-60% in people over the age of 55 and between 35-84% in neurological disease (CP, Alzheimer, ELA …) and other medical situations (surgery, cancer and so on).

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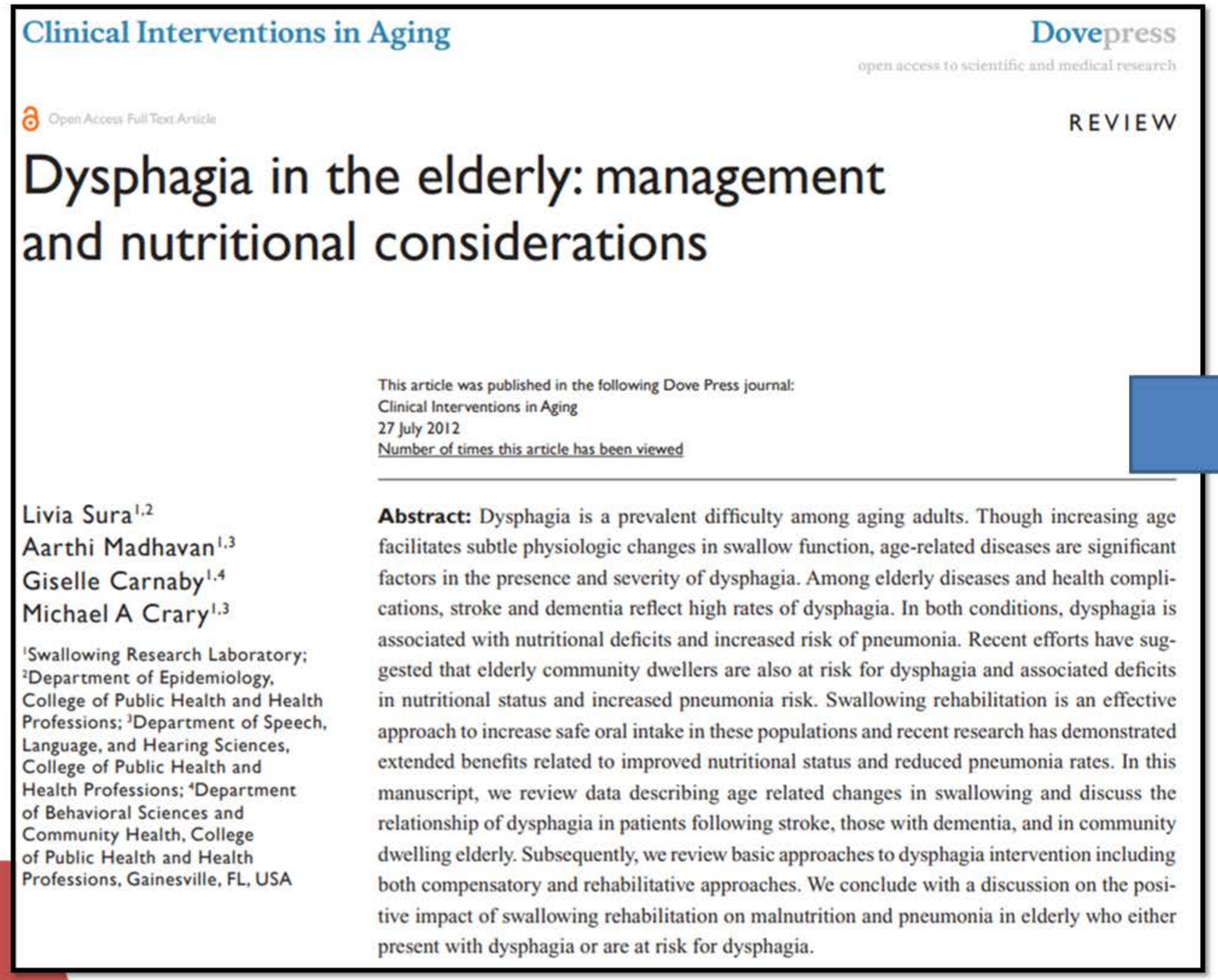

Clinical Interventions in Aging

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REVIEW

Dysphagia in the elderly: management and nutritional considerations

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Clinical Interventions in Aging
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Number of times this article has been viewed

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Abstract: Dysphagia is a prevalent difficulty among aging adults. Though increasing age facilitates subtle physiologic changes in swallow function, age-related diseases are significant factors in the presence and severity of dysphagia. Among elderly diseases and health complications, stroke and dementia reflect high rates of dysphagia. In both conditions, dysphagia is associated with nutritional deficits and increased risk of pneumonia. Recent efforts have suggested that elderly community dwellers are also at risk for dysphagia and associated deficits in nutritional status and increased pneumonia risk. Swallowing rehabilitation is an effective approach to increase safe oral intake in these populations and recent research has demonstrated extended benefits related to improved nutritional status and reduced pneumonia rates. In this manuscript, we review data describing age related changes in swallowing and discuss the relationship of dysphagia in patients following stroke, those with dementia, and in community dwelling elderly. Subsequently, we review basic approaches to dysphagia intervention including both compensatory and rehabilitative approaches. We conclude with a discussion on the positive impact of swallowing rehabilitation on malnutrition and pneumonia in elderly who either present with dysphagia or are at risk for dysphagia.

Dysphagia is a prevalent difficulty among aging adults. Though increasing age facilitates subtle physiologic changes in swallow function, age-related diseases are significant factors in the presence and severity of dysphagia. Among elderly diseases and health complications, stroke and dementia reflect high rates of dysphagia.

In both conditions, **dysphagia is associated with nutritional deficits and increased risk of pneumonia**. Recent efforts have suggested that elderly community dwellers are also at risk for dysphagia and associated deficits in nutritional status and increased pneumonia risk.

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Dysphagia is projected to become more common in the near future, it is critical to acknowledge it as a national health concern.

The prevalence of dysphagia is about 8% among the world's adult population. This prevalence is even higher in certain cases; 20-60% in people over the age of 55 and between 35-84% in neurological disease (CP, Alzheimer, ELA …) and other medical situations (surgery, cancer and so on).

(Source: obtained from Canva Pro)

Diseases prevalence rises with age, and dysphagia is a typical co-occurrence of many disease processes or therapies.

The prevalence of dysphagia was found to be 11.4 percent in this ‘healthy' older population, which is significant given the demographics.

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Prevalence of Dysphagia

- Oropharyngeal dysphagia is a condition that **causes difficulty eating and drinking.** The personal, social, and economic costs of the situation are not reflected in this sympathetic statement.

- **Dysphagia is a hidden** disorder because it can't be seen like hemiplegia or a broken leg. It is frequently a concomitant condition with various neurodegenerative conditions, most notably stroke.

- Dysphagia prevalence has been **reported as a function of care setting**, disease condition, and country of inquiry, making it difficult to identify the true prevalence.

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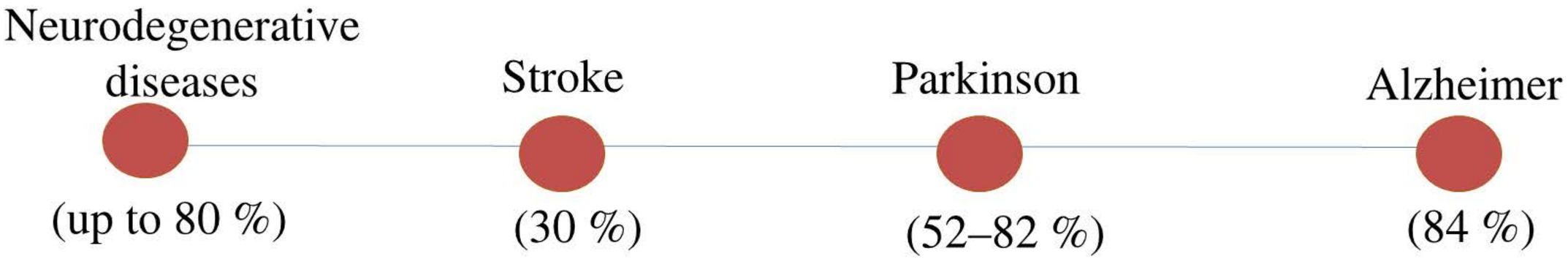
Prevalence of OD is higher in;



Oropharyngeal dysphagia has been well-documented as a result of neurologic disorders. Dysphagia in the ‘healthy' population, on the other hand, **few research have evaluated** the prevalence of dysphagia in European populations.

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The data published in World Gastroenterology Organization about prevalence of dysphagia is as follows;

Prevalence of dysphagia

	Condition	Prevalence (%)
1	Adults aged 65 and older	≥ 13%
2	Institutionalized elderly patients	≥ 51%
3	Stroke	40 – 70%
4	Neurodegenerative Disease	60 – 80%
5	Head & Neck cancer patients undergoing radiotherapy	60 – 75%

(Source: World Gastroenterology Organization)

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Health Consequences - Security Complication: Choke, Obstruction, Respiratory Infections, including Aspiration Pneumonia

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CONSEQUENCES OF DYSPHAGIA

Consequences of dysphagia include **malnutrition and dehydration, aspiration pneumonia, compromised general health, chronic lung disease, choking, and even death.**

Adults with dysphagia may also experience disinterest, reduced enjoyment, embarrassment, and/or isolation related to eating or drinking.

Dysphagia may increase caregiver costs and burden and may require significant lifestyle alterations for the patient and the patient's family. It is necesary an interprofessional team to diagnose and manage oral and pharyngeal dysphagia.

Some people have dysphagia and are unaware of it — in these cases, it may go undiagnosed and not be treated, raising the risk security and efficacy complications.

(Source: https://www.istockphoto.com)

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Complications

Difficulty swallowing can lead to:

Aspiration Pneumonia

Aspiration pneumonia is a type of lung infection caused by a substantial amount of debris entering the lungs via the stomach or mouth.

Obstruction

Swallowing can be made difficult by conditions that cause a blockage in the throat or a constriction of the esophagus (the tube that transports food from your mouth to your stomach).

Choking

Choking can happen when food becomes caught in the throat. Death can occur if food fully plugs the airway, and no one intervenes with a successful Heimlich maneuver.

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Respiratory Infections: Including Aspiration Pneumonia

Respiratory tract infections (RTIs) are infections of parts of the body involved in breathing, such as the sinuses, throat, airways or lungs. Most RTIs get better without treatment, but respiratory infections as pneumonia need obligatory treatment.

Increased risk of aspiration **results in a number of serious consequences, including chest infections, aspiration pneumonia and increased incidence of mortality.**

Pneumonia is a breathing condition in which there is inflammation (swelling) or an infection of the lungs or large airways.

(Source: https://www.istockphoto.com)

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People with disphagia develop an **aspiration pneumonias** occurs when food, saliva, liquids, or vomit is breathed into the lungs or airways leading to the lungs, instead of being swallowed into the esophagus and stomach.

All of these things may carry bacteria that affect lungs. The 52% of patients with dysphagia suffer from aspiration.

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What are the symptoms of aspiration pneumonia?

- chest pain
- shortness of breath
- wheezing
- fatigue
- blue discoloration of the skin
- cough, possibly with green sputum, blood, or a foul odor
- difficulty swallowing
- bad breath
- excessive sweating

Anyone exhibiting these symptoms should contact their doctor to get medical attention and a quick diagnosis.

Interesting note: The airway is a complex system of tubes that transmits inhaled air from your nose and mouth into your lungs.*

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Obstruction

An airway obstruction is a blockage in any part of the airway due to a food or foreign object. An obstruction may totally prevent air from getting into lungs that It would be life threatening emergencies that require immediate medical attention.

How is an airway obstruction treated?

An airway obstruction is usually a medical emergency. Call national emergency phone number someone near you is experiencing an airway obstruction. There are some things you can do to help while you're waiting for emergency services to arrive.

(Source: obtained from Canva Pro)

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Choking

It is the sensation that food is stuck in your throat or chest and it partially prevent air from getting into lungs. It persist breath and start the coughing to eliminate this estrange particle. Sometimes the coughing produces persistent drooling of saliva, regurgitation, nausea, vomiting or other symptoms.

(Source: obtained from Canva Pro)

How is an airway choke treated?

It is advisable to encourage the person to cough until the element is expelled. It should be **avoid** drink liquids, eat food or back blows because the foreign object could be fall into airway.

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If the person with dysphagia has lost weight accidentally in the last few weeks or months, see a professional.

Many dysphagia patients are concerned about choking or coughing while drinking liquids.

Dysphagia is associated with a decrease in water intake, which is exacerbated by the degradation of thirst sense in elderly persons. They are at a high risk of dehydration as a result of this.

(Source: designed with Canva Pro)

The first approach in preventing dehydration is to keep track of how much modified texture fluids you consume on a daily basis.

Aspiration pneumonia is a leading cause of death in the elderly and feeble, as well as in patients who do not cough after aspiration or whose repeated aspirations or pneumonia go unrecognized.

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Health Consequences - Efficacy Complications: Malnutrition, Dehydration, Decrease Quality of Life

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Malnutrition, Dehydration, Decrease Quality of Life

Due to a loss of appetite or discomfort when swallowing, people who have trouble swallowing generally lower their dietary quantity and diversity.

The lack of attraction of crushed or pureed food is another reason why patients with swallowing issues limit their food intake. Colours that are too similar and flavours that are too unfamiliar may be some of the causes for your disinterest.

It's also worth noting that persons with dysphagia are more likely to have chronic conditions like cancer, Alzheimer's disease, stroke, or Parkinson's disease, all of which raise nutritional requirements.

(Source: https://www.istockphoto.com)

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All of these reasons could explain why patients with dysphagia are more likely to lose weight and become malnourished. Malnutrition can be as high as 40% in nursing homes for elderly individuals with dysphagia, according to research published in medical publications.

Oropharyngeal dysphagia can range in severity from little difficulties to full inability to swallow. In older people, oropharyngeal dysphagia can cause two types of clinically significant complications: malnutrition and/or dehydration due to a decrease in deglutition efficacy, which can occur in up to 25%–75% of patients with dysphagia; and choking and tracheobronchial aspiration due to the obstruction of the airway.

(Source: https://www.istockphoto.com)

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Difficulty swallowing can lead to:

Malnutrition

Malnutrition can result from a reduction in oral eating due to swallowing difficulties.

Dehydration

Dehydration occurs when the body loses more water than it takes in, primarily from the intracellular volume (ICV).

Decrease quality of life

Dysphagia can lead to serious complications like pneumonia, dehydration, starvation, and even death. It has a negative impact on the patients' quality of life and mental health.

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Malnutrition

Malnutrition has been defined as a clinical condition of an imbalance of energy, protein, and other nutrients (a lack of important vitamins and minerals) that causes measurable negative effects on body composition, physical function, and clinical outcomes.

The 51% of people with dysphagia are at risk of malnutrition and severity of dysphagia correlates with increase incidence of malnutrition.

Treatments in malnourished residents suffering from dysphagia are of compensative or rehabilitative nature and include e.g:

- Diet modifications.
- Nutritional supplementation.
- Oral-motor therapy.
- Postural techniques.
- Facilitation techniques.
- Others.

(Source: https://www.istockphoto.com)

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(Source: https://www.istockphoto.com)

In general, a multidisciplinary approach from an otolaryngologist and/or neurologist and/or gastroenterologist, a clinical geriatrician/ elderly care physician, a radiologist, a speech/ language therapist, a dietician, and a nurse and caregiver, is recommended for safe and efficient swallowing management

https://www.malnutritionpathway.co.uk/dysphagia.pdf

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Dehydration

Dehydration occurs when you use or lose more fluid than you take in, and your body doesn't have enough water and other fluids to carry out its normal functions.

Because fluid intake is restricted in most patients with dysphagia, these individuals are at risk of dehydration. It leading to increased medical costs, morbidity, and mortality. Therefore, the patient's hydration status must be closely monitored and rapidly corrected.

Dehydration may lead to lethargy, mental confusion, and increased aspiration. In addition, dehydration depresses the immune system, making the patient susceptible to infection, and it may also be a risk factor for pneumonia, because it decreases salivary flow (thus promoting altered microbial colonization of the oropharynx).

(Source: designed with Canva Pro)

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Other symptoms of dehydration include:

(Source: designed with Canva Pro)

- Feeling very thirsty
- Dry mouth
- Urinating and sweating less than usual
- Dark-colored urine
- Dry skin
- Feeling tired
- Dizziness
- Confusion
- Fainting
- Rapid heartbeat
- Rapid breathing
- Shock

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Quality of Life

Quality of life may defined as the degree to which an individual is healthy, comfortable, and able to participate in or enjoy life events.

Previous main complications associated with dysphagia may lead to decreased quality of life and social isolation, besides that place people at high risk for co-morbidities and mortality.

When dysphagia are underestimated, unrecognized (so-called silent dysphagia) or left untreated, they may lead to previous risk as: aspiration pneumonia, dehydration, malnutrition, etc, served with feelings of social isolation, anxiety or even depression.

All this leads to an increase in dependency, a greater burden of personal and medical care, as well as an increase in institutionalization.

(Source: https://www.istockphoto.com)

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SIGNS

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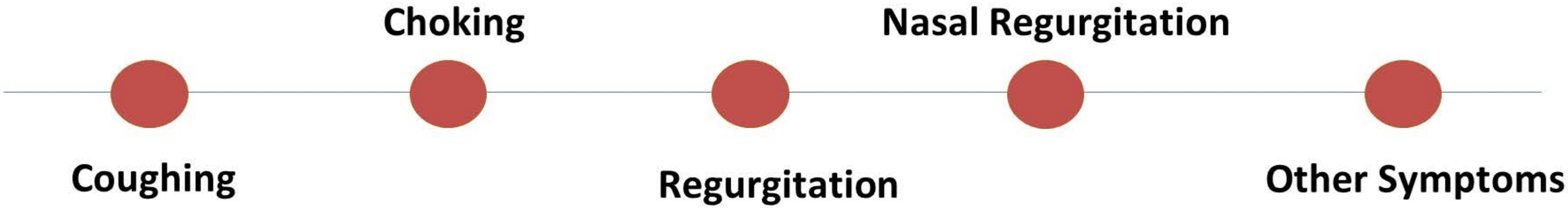
The most common symptoms



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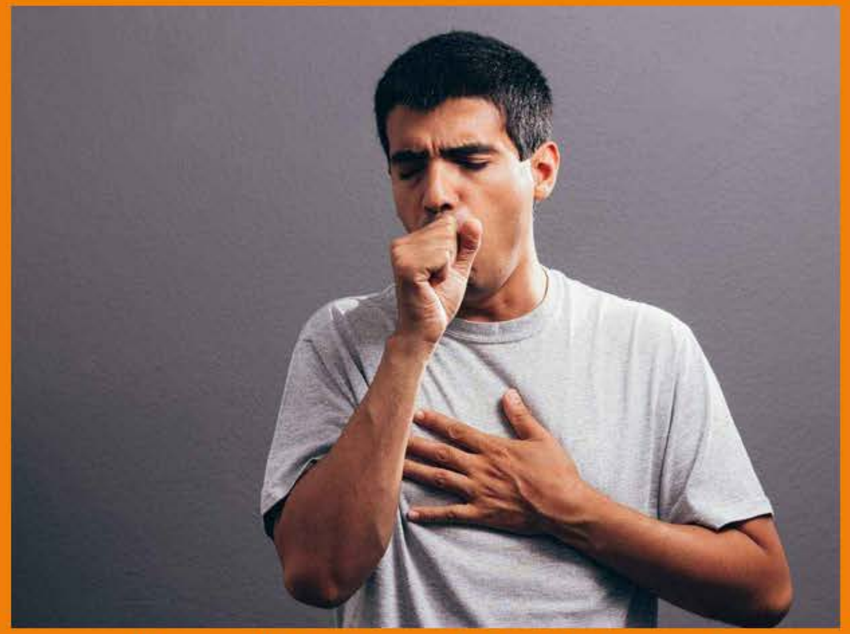
Coughing

Coughing is a generic reaction to a wide range of stimuli that usually originates in the pharynx, larynx, or lungs.

Coughing that happens during or shortly after swallowing is a clear indicator of a swallowing difficulty.



(Source: https://www.istockphoto.com)

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Patients may not perceive the timing association between coughing and swallowing since human's swallow throughout the day.

Coughing may be caused by early leaking of oral contents into the pharynx, insufficient clearing of the bolus from the pharynx, or regurgitation of esophageal contents back to the pharynx, all of which obfuscate this link.

Rather of coughing, the phrase "choking" is frequently used to refer to a sensation of food clinging to the throat.

(Source: https://www.istockphoto.com)

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Choking

Patients (and clinicians) frequently use the term "choking" to describe the sensation of food stuck in the esophagus or coughing. Both symptoms are common in people with swallowing difficulties, but they indicate different sources of malfunction. As a result, it's critical to pinpoint exactly what's causing the symptoms when examining them.

(Source: https://www.istockphoto.com)

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Regurgitation

The swallowing process is designed to ensure that the swallowed bolus moves in a single direction. The term "regurgitation" refers to the return of food or fluids to the mouth or pharynx after it has appeared to have passed through.

Regurgitation is the effortless return of material to the mouth or throat. This is in contrast to vomiting, which is characterized by nausea and retching, as well as the contraction of the abdominal muscles and diaphragm.

A swallowing issue is frequently seen when patients say the

regurgitated material tastes like eaten food.

(Source: https://www.istockphoto.com)

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Nasal Regurgitation

(Source: https://www.istockphoto.com)

The nasopharynx shuts by elevating the soft palate and contracting the upper pharyngeal constrictor muscles (superior pharyngeal constrictors).

Nasal regurgitation can be caused by a failure of this closure mechanism, pharyngeal retention, or esophagogastric regurgitation.

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Other Symptoms

Patients may experience a scratchy throat, hoarseness, shortness of breath, and chest discomfort or pain, depending on the type of swallowing dysfunction.

It's possible that the link between swallowing and these symptoms isn't clear.

None of these symptoms are particular to swallowing difficulties and could develop from a variety of other causes.

(Source: https://www.istockphoto.com)

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All signs

Signs and symptoms associated with dysphagia may include:

- Difficulty picking up food from the cutlery;
- Storage food in the mouth;
- Increased time chewing and oral handle;
- Inability to keep the bolus in the oral cavity;
- Difficulty performing and coordinating oral movements with the facial, oral and lingual muscles;
- Loss of strength during chewing;
- Excessive chewing pattern;
- Lack or decrease in the perception of the food in the mouth;
- Difficulty gathering the bolus at the back of the tongue;
- Hesitation or inability to initiate swallow;
- Frequent repetitive swallows;
- Drooling;
- Rejection of food or beverages that they previously consumed.

(Source: https://www.istockphoto.com)

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(Source: https://www.istockphoto.com)

- Delayed or absent laryngeal elevation;
- Food residue in the mouth after swallowing;
- Frequent throat clearing Swallow-related cough or gagging: before, during, and after swallowing;
- Feeling of residue or compaction in the mouth or pharynx;
- Pain, discomfort or a feeling of stuck in the throat;
- Sweating, watery eyes and discomfort;
- Nasal or oral regurgitation;
- Changes in tone of voice, hoarseness or "wet voice" or nasal;
- Frequent choking;
- Airway obstructions;
- Feeling of choking when swallowing;
- Changes in breathing during eating.

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Signs of esophageal dysphagia:

- Nausea or vomiting
- Nasal, oral or tracheotomy regurgitation
- Reflux
- Sensation of food getting stuck in the throat or chest, or behind the breastbone.
- Retrosternal pain related to swallowing.

Other frequently signs:

- Recurrent respiratory infections
- Cough during meals or up to 20 minutes later
- Recurrent fever or low-grade fever
- Color change in the fingers or lips
- Low oxygen saturation in the blood
- Weight loss
- Dehydration
- Others.

To know more, press here https://www.medicalnewstoday.com/articles/177473#causes

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Time for discussion

Any questions?

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Reflect on the session

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Feedback

How many stars would you give this workshop?

(1 to 5)?

What did you like the MOST?

What reasonable change would you recommend?

What did you like the LEAST?

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To Know More

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