

Swallowing Problems – There Is Help

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We do it about 600 times a day, yet chances are we never think about this extremely vital act, swallowing, until something goes wrong. It's estimated that about one in 10 people over 50 have some type of swallowing disorder. Besides being unpleasant, swallowing disorders can have a negative effect on overall health and well-being. Unfortunately, many people don't realize that help exists for swallowing disorders, and the majority never seeks treatment. Impaired swallowing, or dysphagia, can cause significant morbidity and mortality. Dysphagia may result from or complicate disorders such as stroke, Parkinson's disease and cancer. Indeed, aspiration pneumonia is a common cause of death in hospitalized patients.

In children successful emergence of communication skills relates to successful feeding and swallowing. Oral feeding that requires suckling, swallowing, and breathing coordination is the most complex sensorimotor process the newborn infant undertakes. Feeding and swallowing disorders are relatively common in early infancy and in some instances may be markers for significant health implications that do not become obvious until later. As many as 35% of infants exhibit food selectivity and refusal. Feeding problems are relatively common in various infant populations, including, but not limited to, preterm "at-risk" infants, infants with congenital heart disease following open-heart surgery, infants diagnosed with nonorganic failure to thrive, and children with cerebral palsy.

What is normal swallowing?

Swallowing is a complex act that involves the coordinated activity of the mouth, pharynx, larynx and esophagus. A swallow has four phases: oral preparatory, oral propulsive, pharyngeal and esophageal.

Swallowing starts with the oral phase, in which food is placed in the mouth and moistened and chewed with the aid of the muscles of mastication (chewing). During this phase food is "prepared" into a pellet of an appropriate size so that it can be easily passed from the front to the back of mouth, and from there into the oropharynx. The oral preparatory phase refers to the processing of the bolus to render it "swallowable," and the oral propulsive phase refers to the propelling of food from the oral cavity into the oropharynx. From the oropharynx, the food bolus is further channeled by the back of the tongue and other muscles into the pharynx, a step that also requires the voluntary elevation of the soft palate in order to prevent food from entering the nose.

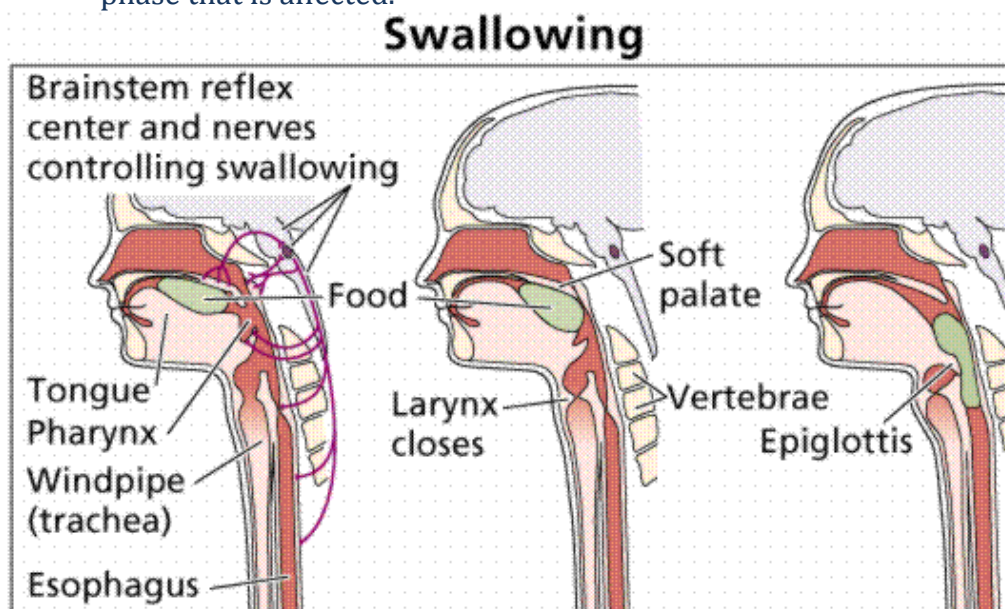
With single swallows of liquid, the pharyngeal phase follows immediately. For swallows of solid foods, there may be a delay of five or 10 seconds while the bolus accumulates in the oropharynx. The pharyngeal phase involves a rapid sequence of overlapping events. The soft palate elevates. The hyoid bone and larynx move upward and forward. The vocal folds move to the midline, and the epiglottis folds backward to protect the airway. The tongue pushes backward and downward into the pharynx to propel the bolus down. A critical part of the pharyngeal phase is the involuntary closure of the larynx by the epiglottis and vocal cords, and the temporary inhibition of breathing, both of which prevent food from going into the trachea and the lungs.

The Esophageal Phase starts as food leaves the pharynx and enters the esophagus, a tube-like muscular structure that leads food into the stomach due to its rhythmic contractions. The esophagus has two important sphincters, namely the upper and lower esophageal sphincters, which under normal conditions prevent food or saliva from being regurgitated toward the mouth. In doing so, the esophageal sphincters serve as a physical barrier to regurgitated food.

Disorders of Swallowing

A person is said to have swallowing problems when one

- Has trouble initiating or starting to swallow once food or liquid is in mouth.
- Once swallowed, it often feels as if the food has stuck in throat or chest.
- Has cough or choke frequently during eating.
- Has voice developed with a wet or “gurgling” quality, and feel the need to clear throat often, especially while eating.
- After eating often regurgitate or bring up bits of food.
- Often experience heartburn or a bitter taste in the mouth.
- Disorders of swallowing may be categorized according to the swallowing phase that is affected.



Oral Phase

Disorders affecting the oral preparatory and oral propulsive phases usually result from impaired control of the tongue, although dental problems may also be involved. When eating solid food, patients may have difficulty chewing and initiating swallows. When drinking a liquid, patients may find it difficult to contain the liquid in the oral cavity before they swallow. As a result, liquid spills prematurely into the unprepared pharynx, and this often results in aspiration.

Pharyngeal Phase

With dysfunction of the pharyngeal phase of swallowing, food transport to the esophagus may be impaired. As a result, food is retained in the pharynx after a swallow. In normal persons, small amounts of food are commonly retained in the valleculae or pyriform sinus after swallowing. With obstruction of the pharynx by a stricture, web or tumor, weakness or incoordination of the pharyngeal muscles, or poor opening of the upper esophageal sphincter, patients may retain excessive amounts of food in the pharynx and experience overflow aspiration after swallowing and nasal regurgitation of food.

Esophageal Phase

Impaired esophageal function can result in the retention of food and liquid in the esophagus after swallowing. This retention may result from mechanical obstruction, a motility disorder or impaired opening of the lower esophageal sphincter. The body of the esophagus may be obstructed by a web, stricture or tumor. Esophageal propulsive forces may be reduced because of weakness or incoordination of esophageal musculature. Overactivity of the esophageal musculature may result in esophageal spasm, which also reduces the effectiveness of esophageal food transport.

Common causes

The cause of dysphagia may be organic or behavioral; if organic, it may be because of disordered anatomy or function; if it is because of disordered function, the dysfunction may have roots in neurosensory, neuromotor, or central processing functions.

Until recently many experts thought the ability to swallow deteriorated naturally with age. But newer research suggests that age alone doesn't impair swallowing enough to cause dysphagia – although many medical problems and other conditions that affect swallowing do tend to occur later in life. The swallowing disorder can also be caused or aggravated by hundreds of commonly used drugs that adversely affect the flow of saliva in the mouth and throat – for example, some anticholinergic drugs, some antihistamines, antidepressants, diuretics and calcium channel blockers used to treat high blood pressure. Another type of dysphagia originates in the esophagus itself. There may be structural abnormalities, and chronic gastric reflux disease can cause the esophagus to become inflamed and abnormally narrow. Drugs can also damage the lining of the esophagus, for example, potassium and iron supplements. It's also possible to injure the esophagus by swallowing too many pills

(or very large pills) without water, or by swallowing them while lying down. For this reason, older people with or without swallowing problems should always swallow pills with plenty of fluids and remain upright for 15 to 20 minutes.

Why to assess swallowing problems

Swallowing disorders may present with a number of signs and symptoms. Some of these presentations can be quite subtle. It is important to assess the problems in swallowing in order to recognize the problem, because some patients are not consciously aware of their difficulty with swallowing. It is also important to identify the anatomic region involved and to acquire clues to the etiology of the condition.

Treatment Principles

There are different treatments for various types of dysphagia. First, doctors and speech-language pathologists who test for and treat swallowing disorders use a variety of tests that allow them to look at the parts of the swallowing mechanism. One test, called a fiber optic laryngoscopy, allows the doctor to look down the throat with a lighted tube. Other tests, including video fluoroscopy, which takes videotapes of a patient swallowing, and ultrasound, which produces images of internal body organs, can painlessly take pictures of various stages of swallowing. A barium fluoroscopy adaptation even more specific for the evaluation of dysphagia is the "modified swallowing study," currently usually designated the videofluoroscopic swallowing study. This study is a gold-standard technique to evaluate dysphagia, particularly in instances with suspected misdirection of swallows into the airway. Endoscopy of the upper gastrointestinal tract can provide useful information regarding inflammatory conditions contributing to nonspecific esophageal dysmotility. These days computerized assessment a totally noninvasive technique has gained popularity owing to the fact that these measurements are done during the active stage of swallowing and also efficacy of treatment is immediately determined.

Once the cause of the dysphagia is found, surgery or medication may help. If treating the cause of the dysphagia does not help, the doctor may have the patient see a speech-language pathologist who is trained in testing and treating swallowing disorders. The speech-language pathologist will test the person's ability to eat and drink and may teach the person new ways to swallow.

The goals of dysphagia therapy are to reduce aspiration, improve the ability to eat and swallow, and optimize nutritional status. When possible, treatment is directed at the underlying disorder, such as Parkinson's disease or polymyositis. However, many of the disorders that cause dysphagia, such as stroke or progressive bulbar palsy, are not amenable to pharmacologic therapy. In these situations, therapy is individualized based on the functional and structural abnormalities.

A basic principle of rehabilitation is that the best therapy for any impaired activity is the activity itself. For instance, walking is generally the best exercise to improve ambulation skills. Similarly, swallowing is generally the best therapy for swallowing disorders. Thus, the pretreatment evaluation is directed at identifying

circumstances for safe and effective swallowing in the individual patient. The treatment modality includes dietary modification. The patients vary in their ability to swallow thin and thick liquids. A patient can usually receive adequate oral hydration with thin or thick liquids. Rarely, a patient may be limited to foods with a pudding consistency if thin and thick liquids are freely aspirated. Most patients with significant dysphagia are unable to eat meats or similarly tough foods safely. Hence, they require a mechanical soft diet.

Swallow therapy, a common form of rehabilitation, can be divided into three types: compensatory techniques (i.e., postural maneuvers), indirect therapy (exercises to strengthen swallowing muscles) and direct therapy (exercises to perform while swallowing). Maintaining oral feeding often requires compensatory techniques to reduce aspiration or improve pharyngeal clearance.

Surgery is rarely indicated in patients with oral or pharyngeal dysphagia, but it can be effective in selected patients. In some patients, enteral feeding may be necessary to bypass the oral cavity and pharynx. In general, enteral feeding is indicated in any patient who is unable to achieve adequate alimentation and hydration by mouth. Enteral feeding is not always required in patients who aspirate. With a modified diet and use of compensatory maneuvers, most patients with minimal aspiration can learn to take sufficient food and drink by mouth to meet nutritional requirements. Patients with impaired level of consciousness, massive aspiration, silent aspiration, esophageal obstruction or recurrent respiratory infections often require enteral feeding.

Treatment may involve muscle exercises to strengthen weak facial muscles or to improve coordination. For others, treatment may involve learning to eat in a special way. For example, some people may have to eat with their head turned to one side or looking straight ahead. Preparing food in a certain way or avoiding certain foods may help other people. For instance, those who cannot swallow liquids may need to add special thickeners to their drinks. Other people may have to avoid hot or cold foods or drinks.