

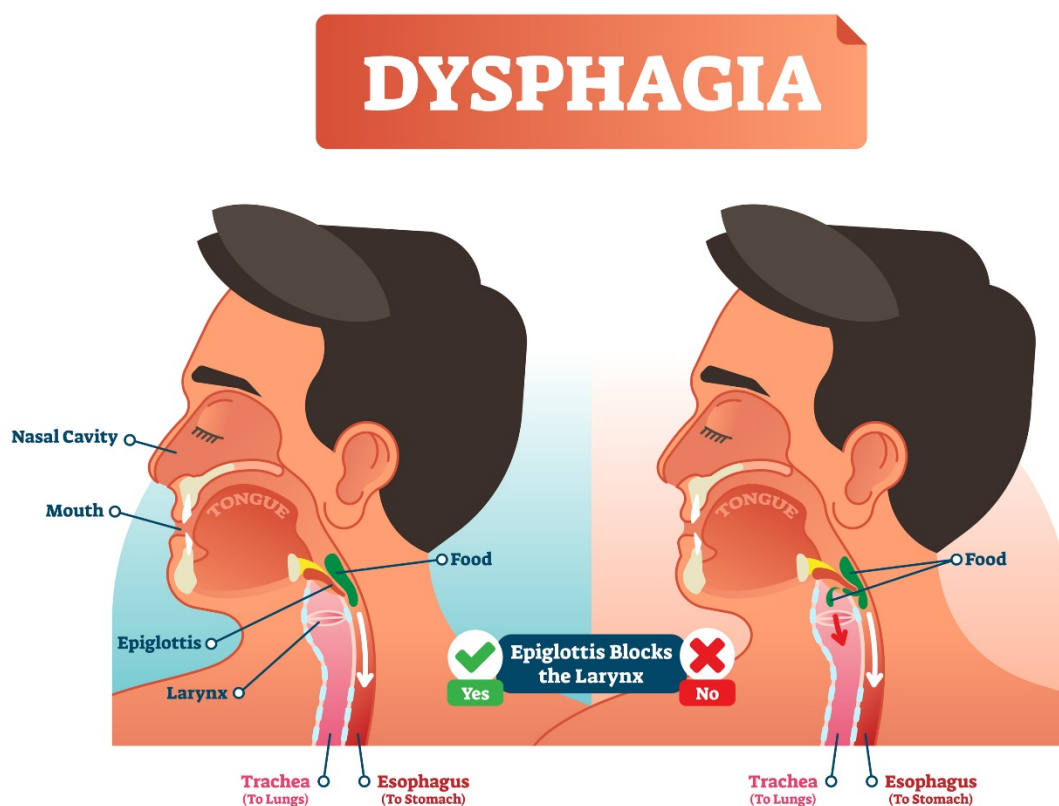
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### Definition

The Royal College of Speech and Language Therapists (RCSLT)'s definition states that 'Dysphagia is the term used to describe a swallowing disorder usually resulting from a neurological or physical impairment of the oral, pharyngeal or oesophageal mechanisms.'

The diagram below illustrates what occurs during a swallow, with and without dysphagia.



The swallow process can be described in four stages:

1. oral preparatory– saliva is produced, food is prepared in the mouth by chewing and/or movement, and a food bolus (ball of food) is formed
2. oral – the tongue moves the food bolus to the back of the mouth
3. oropharyngeal – the tongue pushes the food bolus through the throat to the oesophagus; the epiglottis covers the larynx at this point to prevent the food bolus from entering the trachea
4. oesophageal – the muscles of the oesophagus push the food bolus through to the stomach in a process called peristalsis.<sup>8</sup>

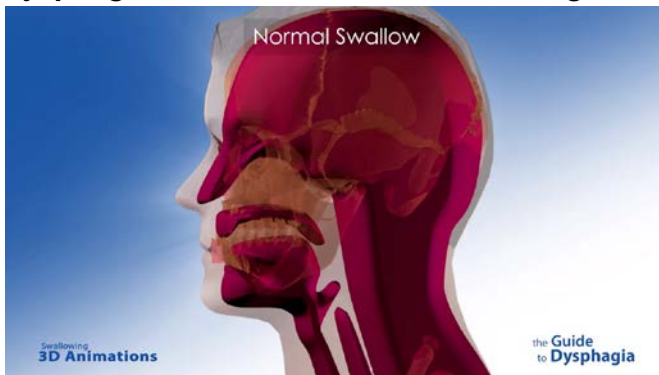
(The process can be described in three stages; in this case, 2 and 3 are grouped together.)

The first three stages are called the oropharyngeal phase; dysfunction during this phase leads to oropharyngeal dysphagia. The last stage is called the oesophageal phase; dysfunction during this phase leads to oesophageal dysphagia<sup>1</sup>. For a normal swallow to take place, there needs to be synchronisation of

the respiratory, oral, pharyngeal, laryngeal and oesophageal anatomical structures. This synchronisation depends on the motor and sensory nervous system being intact.

Dysphagia can be acute or chronic. Acute dysphagia may be a result of an exacerbation of gastroesophageal reflux disease, while chronic dysphagia may be a result of a **stroke** or **Parkinson's disease**, for example.<sup>2</sup>

To view animations of a normal swallow and a dysphagic swallow, watch the following video, **Guide to dysphagia – 3D animations of swallowing**.



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### Prevalence and incidence

According to the RCSLT, 'research has found the following rates of prevalence and incidence:

- Between 50-75 percent of nursing home residents
- Between 50-60 percent of head and neck cancer survivors
- Between 40-78 percent of stroke survivors – of those with initial dysphagia following stroke, 76% will remain with a moderate to severe dysphagia and 15 percent with profound dysphagia
- In 48 percent of patients undergoing cervical discectomy and fusion
- In 33 percent of the people with multiple sclerosis
- In 27 percent of those with chronic obstructive pulmonary disease
- In 10 percent of acutely hospitalised older people
- In 5 percent of adults with a learning disability, 5 percent of community-based individuals with learning disabilities and 36 percent of hospital-based individuals.<sup>3</sup>

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### Signs and symptoms

The main symptom of dysphagia is difficulty or inability to swallow. Other symptoms include:

- coughing or choking when eating or drinking
- recurrent chest infections
- gasping for breath when eating and/or drinking
  - regurgitation
  - a sensation that food is stuck in throat or chest
  - drooling

- inability to chew food properly
- a 'gurgly' wet sounding voice when eating or drinking.<sup>4</sup>

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### Causes/risk factors

Dysphagia may be due to:

- structural impairment, eg, pharyngeal pouch, cleft palate, or a cancer of the tongue or larynx
- developmental impairment, eg, **learning disability** or cerebral palsy
- neurological disorders, eg, **stroke**, multiple sclerosis, **Parkinson's disease**, motor neurone disease, **dementia**, muscular dystrophy or traumatic brain injury
- respiratory disease, eg, **chronic obstructive pulmonary disease (COPD)**, emphysema or **asthma**
- **gastroesophageal reflux disease**.<sup>3,5</sup>

The risk of dysphagia also depends on factors such as:

- a person's position and strength
- posture
- the size and texture of the food bolus (thickened fluids and soft foods are easier to swallow)
- disuse of swallow due to illness
- aging (which can reduce saliva production and weaken muscles)<sup>3</sup>
- cognition
- respiratory and cardiac problems.

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### Prognosis and complications

In people with neurological conditions, oropharyngeal dysphagia is associated with poorer outcomes including **pneumonia** and increased mortality. Dysphagia can also lead to an increased anxiety and fear of eating, leading to malnutrition, dehydration, depression and isolation<sup>4,6</sup>. Dysphagia can also lead to problems with medicine administration.

Aspiration pneumonia is a serious problem which is associated with dysphagia. 40 percent of people with learning disabilities and dysphagia experience recurrent respiratory tract infections, and aspiration pneumonia is reported to be a significant cause of death<sup>7</sup>. Over 50 percent of those with advanced dementia develop pneumonia and pneumonia causes 30 percent of post-stroke deaths<sup>8</sup>.

In the following **National Foundation of Swallowing Disorders** video, we meet several people affected by dysphagia and learn about how it impacts on their lives.

***National Foundation of Swallowing Disorders - Swallow: a documentary - dysphagia***

Warning: this video contains some strong language.



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### Diagnosis/detection

Diagnosis of dysphagia may be made based on a clinical history, and after tests such as a swallow test, endoscopy, barium videofluoroscopy (also known as the modified barium swallow) and other imaging tests.

Indicators of dysphagia are described by National Institute for Health and Care Excellence (NICE) in clinical guideline ***Nutrition support for adults: oral nutrition support, enteral tube feeding and parenteral nutrition [CG32]***.

More information about the tests used to diagnose dysphagia can be found on the NHS page ***Dysphagia (swallowing problems) – Diagnosis***.

Diagnosis and assessment of dysphagia also involves determining the underlying cause and ruling out differential diagnoses. Speech and language therapists (SLTs), neurologists and gastroenterologists may be involved in this process<sup>9</sup>.

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### Management

The management of dysphagia depends on the underlying cause and type of dysphagia.

In oropharyngeal dysphagia, the improvement of the way that food and drink is moved to prevent aspiration and other complications is highly important<sup>6</sup>.

Management options include:

- swallowing rehabilitation and re-education
- nutrition and dietary modification, including food texture and fluid consistency modification
- the use of feeding tubes<sup>6</sup>
- surgical treatments<sup>1</sup>
- transcutaneous neuro-muscular electrical stimulation (NMES).

### Swallowing rehabilitation and re-education

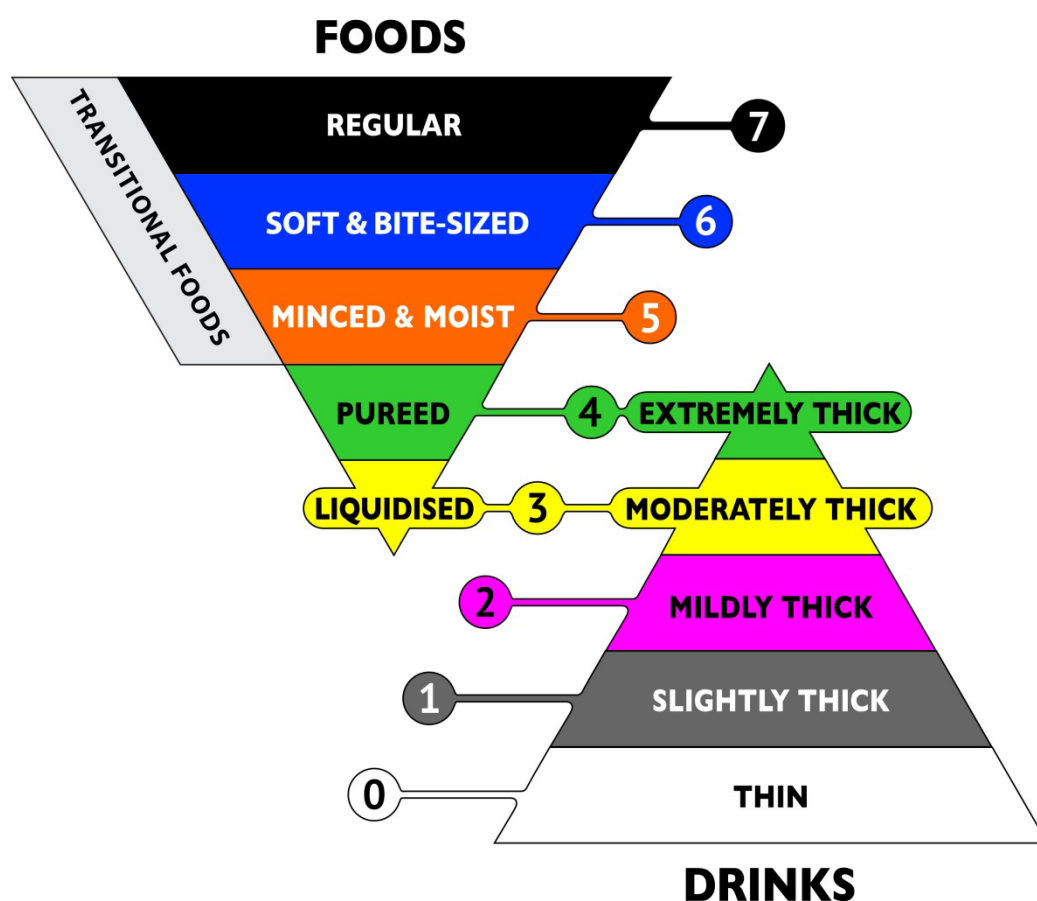
This is offered by swallow specialists such as SLTs. It may involve changing a person's posture and encouraging changes in their behaviour. Strengthening exercises may also be offered.<sup>6</sup>

### Nutrition and dietary modifications

Altering food texture and consistency can aid swallowing.<sup>1</sup>

#### Change in terminology

Before discussing the manipulation of food and medicines, we should consider a recent change in terminology. Due to issues with standardisation of terminology used to describe food texture, the International Dysphagia Diet Standardisation Initiative (IDDSI) has produced **the framework** shown below.



Credit: The International Dysphagia Diet Standardisation Initiative. 2016.

This framework introduces standard terminology to describe texture modification for food and drink<sup>10</sup>. More information can be found in the **Complete IDDSI framework: Detailed definitions** document.

NHS Improvement's patient safety alert, **Resources to support safer modification of food and drink**, requires all NHS organisations to transition from using the term 'soft diet' to the terminology in the IDDSI framework to reduce patient safety incidents.<sup>11</sup>

A previous patient safety alert, **Stage One: Warning – Risk of death from asphyxiation by accidental ingestion of fluid/food thickening powder**, was issued to raise awareness of the need for proper storage



and management of thickening powder used as part of the treatment for people with dysphagia. This was due to reports of harm due to accidental swallowing of the powder.

### *Manipulation of diet*

It should be noted that the resources in the remainder of this section use the previous dysphagia diet food texture descriptors that were in use prior to the introduction of the IDDSI framework.

The PrescQIPP bulletin, **Care homes - assisting people with swallowing difficulties**, looks at treatment strategies for adults with swallowing difficulties, including people in both care homes and domiciliary care settings. It includes dietary modification by prescribing thickeners, and other options such as environmental modifications, safe swallowing advice, and the application of swallowing strategies.

### **Managing medicines in dysphagia**

Altering texture and consistency can also aid swallowing of medicines.

### *Manipulation of medicines*

Not all tablets and capsules are suitable for dispersing, crushing or opening for administration in soft food or via a feeding tube. The following *Pharmaceutical Journal* (PJ) article, by Barnett and Parmar, explores how to manage medicines for people with dysphagia. It covers alternative formulations and manipulating solid dosage forms: **How to tailor medication formulations for patients with dysphagia**.

As discussed in the PJ article, crushing tablets or opening capsules makes a medicine unlicensed. The use of medicines in this way has legal and professional implications for not only the prescriber, but also the supplier of the medicine and person who administers it. More information can be found on the **Specialist Pharmacy Service (SPS) website**.

### Thickening agents

There are two types of thickeners; starch based and gum based.

Macragol laxatives (polyethylene glycol laxatives) must not be mixed together with starch based thickeners as they can oppose the thickening action, resulting in a thin liquid putting the patient at increased risk of aspiration.

More information can be found on the SPS website [www.sps.nhs.uk/articles/thickening-agents-and-thickened-fluids-do-they-interact-with-medicines/](http://www.sps.nhs.uk/articles/thickening-agents-and-thickened-fluids-do-they-interact-with-medicines/) and the MHRA alert [www.gov.uk/drug-safety-update/polyethylene-glycol-peg-laxatives-and-starch-based-thickeners-potential-interactive-effect-when-mixed-leading-to-an-increased-risk-of-aspiration](http://www.gov.uk/drug-safety-update/polyethylene-glycol-peg-laxatives-and-starch-based-thickeners-potential-interactive-effect-when-mixed-leading-to-an-increased-risk-of-aspiration).

### *Information sources*

The **Healthcare professionals** section of the Swallowing Difficulties website provides prescribing information, guidelines, and advice on formulation and administration.

There are two resources that are widely used when considering the administration of medicines for those with swallowing difficulties or via enteral feeding tubes. These resources require subscriptions, which your organisation may hold:

- **Handbook of drug administration via enteral feeding tubes** via MedicinesComplete.

- The **NEWT guidelines** for administration of medicines to patients with enteral feeding tubes or swallowing difficulties.

### Care homes

Care home staff may only administer medicines in an unlicensed manner on the instructions of the prescriber. This means that a written direction to crush or disperse tablets, or open capsules, must be documented on the person's prescription and in their care plan<sup>1</sup>.

The SPS hosts UK Medicines Information (UKMi) guidance relating to the manipulation of solid dosage forms in care homes and managing medicines for those who are unable to take solid dosage forms:

- **What are the therapeutic options for patients unable to take solid oral dosage forms?**
- **What are the considerations when crushing tablets or opening capsules in a care home setting?**

It should be noted that covert administration, where medicines are concealed in food or drink, is a more complex issue. For more information about covert administration, access the following *PJ* article by Kelly-Fatemi, **Covert administration of medicines in care homes**.

### Enteral feeding tubes

Feeding tubes may be offered in more severe cases of dysphagia. They may be used short term while someone's ability to swallow recovers, or more long term if this is required.

The most common types of enteral feeding tubes are:

- Nasogastric (NG) tubes and nasojejunal (NJ) tubes are passed through the nose into the stomach (NG), or jejunum (NJ), and are designed for more short-term use, usually being replaced monthly.
- Percutaneous endoscopic gastrostomy (PEG) or percutaneous endoscopic jejunostomy (PEJ) tubes are passed through the skin directly into the stomach and are replaced less frequently than NG/NJ tubes.

The Patient.info article, **Enteral feeding**, for medical professionals contains more information about enteral feeding tubes.

When nutrition is delivered via enteral feeding tubes, close monitoring of the person receiving this nutrition is required. The British Association for Parenteral and Enteral Nutrition's (BAPEN) **Enteral feed monitoring** offers recommendations for monitoring that should be undertaken.

### Medicine administration via enteral feeding tubes

Both feeds and medicines may be administered by enteral feeding tubes. Tube diameter, material size and the administration of feeds need to be considered when making recommendations on the administration of medicines via enteral feeding tubes. The SPS document prepared by UKMi (**How do the different types of enteral feeding tubes available affect drug administration?**) is a quick reference summary to different types of enteral feeding tubes for medicine issues.

The resources outlined above under *Managing medicines in dysphagia* are useful when making decisions about administration of medicines via enteral feeding tubes.



BAPEN also offers a practical guide to **Administering drugs via enteral feeding tubes**, which can be used when offering advice on administration of medicines via enteral feeding tubes.

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### Patient support

There are support organisations for people who suffer from the underlying cause of dysphagia:

- **Parkinson's UK**
- **Stroke Association**
- **MS Society**
- **Huntington's Disease Association**
- **Age UK**
- **Cancer Research UK**
- **Macmillan Cancer Support**

The NHS offers a **Dysphagia (swallowing problems)** page, which covers causes, diagnosis and treatment.

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### Further resources

The following guidelines contain further information which can support the management of those with dysphagia:

- NICE clinical guideline, **Stroke and transient ischaemic attack in over 16s: diagnosis and initial management [NG128]**
- NICE clinical guideline, **Stroke rehabilitation in adults [CG162]**
- Scottish Intercollegiate Guidelines Network (SIGN) clinical guideline 119, **Management of patients with stroke: identification and management of dysphagia**
- The patients association, **Care Home Charter for Swallowing and Medicines**
- Specialist Pharmacy Service, **How can medicines be managed for Parkinson's patients with swallowing difficulties?**
- Herts Valley CCG, **'Special's alternative guide'**
- Leeds Medicine Advice Service, **Administering medicines for patients who have thickened fluids - pragmatic advice**
- Specialist Pharmacy Service, **Thickening agents and thickened fluids: do they interact with medicines?**
- Medicines and Healthcare products Regulatory Agency. *Drug Safety Update* April 2021;14(9)

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### Webinars

The following webinars contain further information that can support the management of those with dysphagia:

- Specialist Pharmacy Service, MUS webinar, **Improving patient safety in dysphagia through medicines optimisation**

### E-learning

To further support your knowledge and understanding of the management of dysphagia, complete the e-learning assessment:

[www.e-lfh.org.uk/programmes/dysphagiaguide/](http://www.e-lfh.org.uk/programmes/dysphagiaguide/)

### External websites

CPPE is not responsible for the content of any non-CPPE websites mentioned on this page or for the accuracy of any information to be found there.

All web links were accessed on 4 August 2021

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### References

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2. Wright D and Tomlin S. **How to help if a patient can't swallow.** *Pharmaceutical Journal.* 2011:286;5.
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6. World Gastroenterology Organisation. **Global guidelines – Dysphagia.** 2014.
7. Public Health England. **Dysphagia in people with learning difficulties: reasonable adjustments guidance.** 2016.
8. Barnett N and Parmar P. **How to tailor medication formulations for patients with dysphagia.** *Pharmaceutical Journal.* 2016:297;7892.
9. NHS. **Dysphagia (swallowing problems). Diagnosis.** 2018.
10. International Dysphagia Diet Standardisation Initiative. **Complete IDDSI framework: Detailed definitions.** 2017.
11. NHS Improvement. **Patient safety alert: Resources to support safer modification of food and drink.** 2018.
12. UK Medicines Information. **Medicines Q&As – What are the therapeutic options for patients unable to take solid oral dosage forms?** 2013.

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Last review: August 2021

Next review due: February 2022