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Dyspepsia (Indigestion)

Dyspepsia (indigestion) is a term which describes pain and sometimes other symptoms which come from your upper gut (the stomach, oesophagus or duodenum). There are various causes (described below). Treatment depends on the likely cause.

Understanding digestion

Food passes down the gullet (oesophagus) into the stomach. The stomach makes acid which is not essential but helps to digest food. Food then passes gradually into the first part of the small intestine (the duodenum).

In the duodenum and the rest of the small intestine, food mixes with chemicals called enzymes. The enzymes come from the pancreas and from cells lining the intestine. The enzymes break down (digest) the food. Digested food is then absorbed into the body from the small intestine.

What is dyspepsia?

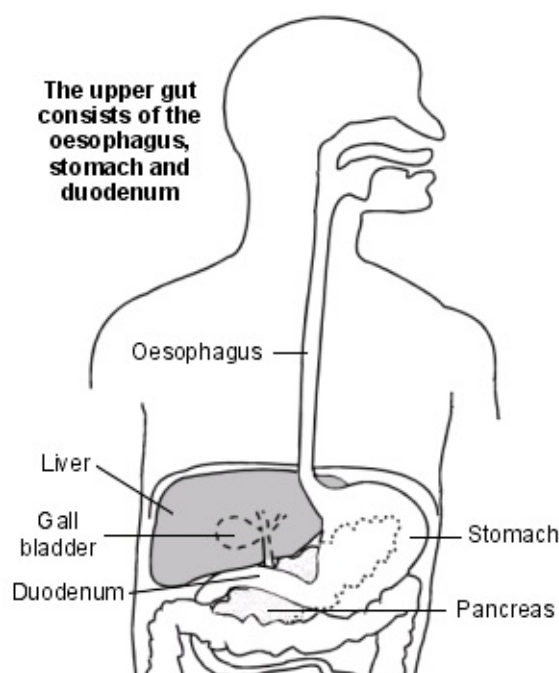
Dyspepsia is a term which includes a group of symptoms that come from a problem in your upper gut. The gut (gastrointestinal tract) is the tube that starts at the mouth and ends at the anus. The upper gut includes the oesophagus, stomach and duodenum.

Various conditions cause dyspepsia. The main symptom is usually pain or discomfort in the upper tummy (abdomen). In addition, other symptoms that may develop include:

- Bloating.
- Belching.
- Quickly feeling full after eating.
- Feeling sick (nausea).
- Being sick (vomiting).

Symptoms are often related to eating. Doctors used to include heartburn (a burning sensation felt in the lower chest area) and bitter-tasting liquid coming up into the back of the throat (sometimes called 'waterbrash') as symptoms of dyspepsia. However, these are now considered to be features of a condition called gastro-oesophageal reflux disease (GORD, see below).

Symptoms tend to occur in bouts which come and go, rather than being present all the time. Most people have a bout of dyspepsia, often called indigestion, from time to time. For example, after a large spicy meal. In most cases it soon goes away and is of little concern. However, some people have frequent bouts of dyspepsia, which affects their quality of life.



What causes dyspepsia?

Common causes

Most cases of repeated (recurring) dyspepsia are due to one of the following:

- **Non-ulcer dyspepsia.** This is sometimes called functional dyspepsia. It means that no known cause can be found for the symptoms. That is, other causes for dyspepsia, such as duodenal or stomach ulcer, acid reflux, inflamed oesophagus (oesophagitis), gastritis, etc, are not the cause. The inside of your gut looks normal (if you have a test called an gastroscopy (endoscopy) - see below). It is the most common cause of dyspepsia. About 6 in 10 people who have recurring bouts of dyspepsia have non-ulcer dyspepsia. The cause is not clear, although infection with a germ (bacterium) called *Helicobacter pylori* (commonly just called *H. pylori*) may account for some cases (see below). See separate leaflet called **Non-ulcer (Functional) Dyspepsia** for more detail.
- **Duodenal and stomach (gastric) ulcers.** An ulcer occurs when the lining of the gut is damaged and the underlying tissue is exposed. If you could see inside your gut, an ulcer looks like a small, red crater on the inside lining of the gut. These are sometimes called peptic ulcers. See separate leaflets called **Duodenal Ulcer** and **Stomach (Gastric) Ulcer** for more detail.
- **Duodenitis and gastritis** (inflammation of the duodenum and/or stomach) - which may be mild, or more severe and may lead to an ulcer.
- **Acid reflux, oesophagitis and GORD.** Acid reflux occurs when some acid leaks up (refluxes) into the oesophagus from the stomach. Acid reflux may cause oesophagitis (inflammation of the lining of the oesophagus). The general term gastro-oesophageal reflux disease (GORD) means acid reflux, with or without oesophagitis. See separate leaflet called **Acid Reflux and Oesophagitis** for more detail.
- **Hiatus hernia.** This occurs when the top part of the stomach pushes up into the lower chest through a defect in the diaphragm. The diaphragm is a large flat muscle that separates the lungs from the tummy (abdomen). It helps us to breathe. A hiatus hernia commonly causes GORD. See separate leaflet called **Hiatus Hernia** for more detail.
- **Infection with *H. pylori*** - see below.
- **Medication.** Some medicines may cause dyspepsia as a side-effect.
 - **Anti-inflammatory medicines** are the most common culprits. These are medicines that many people take for arthritis, muscular pains, sprains, period pains, etc. For example: **aspirin, ibuprofen, and diclofenac** - but there are others. Anti-inflammatory medicines sometimes affect the lining of the stomach and allow acid to cause inflammation and ulcers.
 - **Various other medicines** sometimes cause dyspepsia, or make dyspepsia worse. They include: **digoxin, antibiotics, steroids, iron, calcium antagonists, nitrates, theophyllines and bisphosphonates.**
(**Note:** this is not a full list. Check with the leaflet that comes with your medication for a list of possible side-effects.)

H. pylori and dyspepsia

The germ (bacterium) *H. pylori* can infect the lining of the stomach and duodenum. It is one of the most common infections in the UK. More than a quarter of people in the UK become infected with *H. pylori* at some stage in their lives. Once you are infected, unless treated, the infection usually stays for the rest of your life.

Most people with *H. pylori* have no symptoms and do not know that they are infected. However, *H. pylori* is the most common cause of duodenal and stomach ulcers. About 3 in 20 people who are infected with *H. pylori* develop an ulcer. It is also thought to cause some cases of non-ulcer dyspepsia, duodenitis and gastritis. The exact way *H. pylori* causes problems in some infected people is not totally clear. In some people this bacterium causes inflammation in the lining of the stomach or duodenum. This causes the defence mucous barrier to be disrupted in some way (and in some cases the amount of acid to be increased) which seems to allow the acid to cause inflammation and ulcers. See separate leaflet called **Helicobacter Pylori and Stomach Pain** for more detail.

Other uncommon causes of dyspepsia

Other problems of the upper gut such as **stomach cancer** and **oesophageal cancer** can cause dyspepsia when they first develop.

There are separate leaflets which describe the above conditions in more detail. The rest of this leaflet gives an overview of what might happen if you see your doctor about dyspepsia.

What is normally done if you develop dyspepsia?

Your doctor is likely to do an initial assessment by asking you about your symptoms and examining your tummy (abdomen). The examination is usually normal if you have one of the common causes of dyspepsia. Your doctor will want to review any medicines that you have taken in case one may be causing the symptoms or making them worse. Following the initial assessment, depending on your circumstances, such as the severity and frequency of symptoms, your doctor may suggest one or more of the following plans of action.

Antacids taken as required

Antacids are alkali liquids or tablets that can neutralise the stomach acid. A dose may give quick relief. There are many brands which you can buy. You can also obtain some on prescription. If you have mild or infrequent bouts of dyspepsia you may find that antacids used as required are all that you need.

A change or alteration in your current medication

This may be possible if a medicine that your are taking is thought to be causing the symptoms or making them worse.

Test for *H. pylori* infection and treat if it is present

A test to detect *H. pylori* is commonly done if you have frequent bouts of dyspepsia. As mentioned, it is the underlying cause of most duodenal and stomach ulcers and some cases of gastritis, duodenitis and non-ulcer dyspepsia. Various tests can detect *H. pylori* and your doctor may suggest one:

- A breath test can confirm that you have a current *H. pylori* infection. A sample of your breath is analysed after you have taken a special drink. **Note:** prior to this test you should not have taken any antibiotics for at least four weeks. Also, you should not have taken a proton pump inhibitor (PPI) or H2-receptor antagonist (also known as an H2 blocker medicine) for at least two weeks. (These are acid-suppressing medicines - discussed further below.) Also, you should not eat anything for six hours before the test. The reason for these rules is because they can affect the test result.
- An alternative test is the stool antigen test. In this test you give a pea-sized sample of your stools (faeces) which is tested for *H. pylori*. **Note:** prior to this test you should not have taken any antibiotics for at least four weeks. Also, you should not have taken a PPI or H2-receptor antagonist medicine for at least two weeks. (These are acid-suppressing medicines.)
- A blood test can detect antibodies to *H. pylori*. This is sometimes used to confirm that you are, or have been, infected with *H. pylori*. However, it takes six months or more for this test to become negative once the infection has cleared. So, it is no use to confirm whether treatment has cleared the infection (if this needs to be known). If needed, the breath test or stool antigen test are usually used to check if an infection has cleared following treatment.
- Sometimes a small sample (biopsy) of the lining of the stomach is taken if you have a gastroscopy (endoscopy). The sample can be tested for *H. pylori*.

If you are found to be infected with *H. pylori* then treatment may cure the symptoms. Briefly, to clear *H. pylori* infection you need to take two antibiotics at the same time. In addition, you need to take a medicine to reduce the acid in the stomach. This allows the antibiotics to work well in the stomach. You need to take this combination therapy for a week. It is important to take all the medicines exactly as directed and to take the full course.

Note: after combination therapy, a test may be advised to check that *H. pylori* has gone (has been eradicated). This test will usually be a breath test or a stool antigen test (described earlier). If a test is done, it needs to be done at least four weeks after the course of combination therapy has finished. In most cases, the test is negative, meaning that the infection has gone. If it has not gone and you still have symptoms, then a repeat course of combination therapy with a different set of antibiotics may be advised.

Some doctors say that for most situations, this confirmation of eradication test is not necessary if symptoms have gone. The logic is that if symptoms have gone it usually indicates that whatever was causing the dyspepsia has gone. But, some doctors say it is needed to play safe. Your own doctor will advise if you should have this test following treatment to clear *H. pylori*.

Acid-suppressing medication

A one-month trial of full-dose medication which reduces stomach acid may be considered - in particular, if:

- Symptoms are more suggestive of acid reflux or oesophagitis. *H. pylori* does not cause these problems.
- Infection with *H. pylori* has been ruled out.
- *H. pylori* has been treated but symptoms persist.

There are two groups of medicines which reduce stomach acid - **proton pump inhibitors (PPIs)** and **H2-receptor antagonists**. They work in different ways to block the cells in the stomach lining from making acid. A PPI (such as **omeprazole**, **lansoprazole**, **pantoprazole**, **rabeprazole**, or **esomeprazole**) is usually better and is normally tried first. H2-receptor antagonists include: **cimetidine**, **famotidine**, **nizatidine** and **ranitidine**. There are several brands in each group.

Reducing acid in the stomach can help in many cases of dyspepsia, whatever the underlying cause. If acid-suppressing medication works then symptoms should go. If symptoms return at a later date, once the medication is stopped, further courses may be advised. Many people take acid-suppressing medication as required. That is, waiting for symptoms to develop and then taking a short course of treatment to clear the symptoms. Some people take them regularly if symptoms occur each day. If this is the situation, you should aim to find the lowest dose of medication that keeps symptoms away.

Further tests

Further tests are not needed in most cases. One or more of the above options will often sort the problem. Reasons why further tests may be advised include:

- If additional symptoms suggest that your dyspepsia may be caused by a serious disorder such as stomach or oesophageal cancer, or a complication from an ulcer such as bleeding. For example, if you:
 - Pass blood with your stools (blood can turn your stools black).
 - Bring up (vomit) blood.
 - Lose weight unintentionally.
 - Feel generally unwell.
 - Have difficulty swallowing (dysphagia).
 - Vomit persistently.
 - Develop anaemia.
 - Have an abnormality when you are examined by a doctor, such as a lump in the abdomen.
- If you are aged over 55 and develop persistent or unexplained dyspepsia.
- If the symptoms are not typical and may be coming from outside the gut. For example, to rule out problems of the gallbladder, pancreas, liver, etc.
- If the symptoms are severe and do not respond to treatment.
- If you have a risk factor for stomach cancer, such as Barrett's oesophagus, dysplasia, atrophic gastritis, or had ulcer surgery over 20 years earlier.

Tests advised may include:

- **Gastroscopy (endoscopy)**. In this test a doctor or nurse looks inside your oesophagus, stomach and duodenum. They do this by passing a thin, flexible telescope down your oesophagus. See separate leaflet called **Gastroscopy (Endoscopy)** for more detail.
- **A blood test to check for anaemia**. If you are anaemic, it may be due to a bleeding ulcer, or to a bleeding stomach cancer. You may not notice the bleeding if it is not heavy, as the blood is passed out unnoticed in your stools.
- Tests of the gallbladder, pancreas, etc, if the cause of the symptoms is not clear.

Treatment depends on what is found or ruled out by the tests.

Lifestyle changes

For all types of dyspepsia, the National Institute for Health and Care Excellence (NICE) recommends the following lifestyle changes:

- Make sure you eat regular meals.
- Lose weight if you are obese.
- If you are a smoker, consider giving up.
- Don't drink too much alcohol.

For dyspepsia which is likely to be due to acid reflux - when heartburn is a major symptom - the following may also be worth considering:

- **Posture.** Lying down or bending forward a lot during the day encourages reflux. Sitting hunched or wearing tight belts may put extra pressure on the stomach, which may make any reflux worse.
- **Bedtime.** If symptoms recur most nights, the following may help:
 - Go to bed with an empty, dry stomach. To do this, don't eat in the last three hours before bedtime and don't drink in the last two hours before bedtime.
 - If you are able, try raising the head of the bed by 10-20 cms (for example, with books or bricks under the bed's legs). This helps gravity to keep acid from refluxing into the oesophagus. If you do this, do not use additional pillows, because this may increase abdominal pressure.

Further reading & references

- [Dyspepsia and gastrooesophageal reflux disease: Investigation and management of dyspepsia - symptoms suggestive of gastrooesophageal reflux disease - or both; NICE Clinical Guideline \(Sept 2014\)](#)
- [Dyspepsia - proven GORD; NICE CKS, November 2012 \(UK access only\)](#)
- [Dyspepsia - proven non-ulcer; NICE CKS, December 2012 \(UK access only\)](#)
- [Suzuki H, Nishizawa T, Hibi T; Can Helicobacter pylori-associated dyspepsia be categorized as functional dyspepsia? J Gastroenterol Hepatol. 2011 Apr;26 Suppl 3:42-5. doi:](#)
- [Ang D, Talley NJ, Simren M, et al; Review article: endpoints used in functional dyspepsia drug therapy trials. Aliment Pharmacol Ther. 2011 Mar;33\(6\):634-49. doi:](#)

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