

Barrett's Oesophagus

In Barrett's oesophagus the cells that line the lower gullet (oesophagus) are abnormal. The main cause is long-standing reflux of acid from the stomach into the oesophagus. People with Barrett's oesophagus have an increased risk of developing cancer of the oesophagus. The risk is small. However, you may be advised to have regular endoscopies to detect precancerous changes to the cells in the oesophagus. If precancerous changes develop then treatment to remove or destroy the precancerous cells may be advised.

Understanding the oesophagus and stomach

When we eat, food passes down the gullet (oesophagus) into the stomach. Cells in the lining of the stomach make acid and other chemicals which help to digest food. Stomach cells also make a thick liquid (mucus) which protects them from damage caused by the acid. The cells on the inside lining of the oesophagus are different and have little protection from acid.

There is a circular band of muscle (a sphincter) at the junction between the oesophagus and stomach. This relaxes to allow food down, but normally tightens up and stops food and acid leaking back up (refluxing) into the oesophagus. So, the sphincter acts like a valve.

What is Barrett's oesophagus?

Barrett's oesophagus is a condition which affects the lower oesophagus. It is named after the doctor who first described it.

In Barrett's oesophagus, the cells that line the affected area of gullet (oesophagus) become changed.

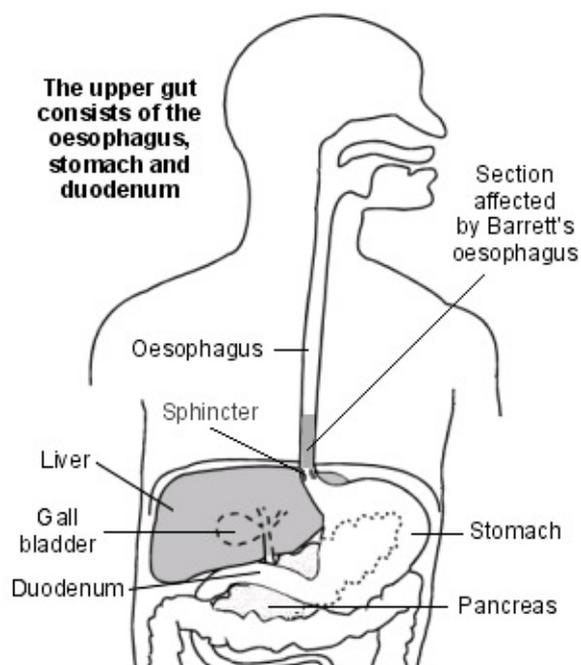
The cells of the inner lining (epithelium) of a normal oesophagus are pinkish-white, flat cells (squamous cells). The cells of the inner lining of the area affected by Barrett's oesophagus are tall, red cells (columnar cells). The columnar cells are similar to the cells that line the stomach.

Another name sometimes used by doctors for Barrett's oesophagus is columnar-lined oesophagus (CLO).

Is Barrett's oesophagus harmful?

The changed cells of Barrett's oesophagus are not cancerous. However, these cells have an increased risk, compared with normal gullet (oesophageal) cells, of turning cancerous in time. The changed cells in Barrett's oesophagus can develop something called dysplasia. A cell with dysplasia is an abnormal cell. It is not cancerous, but is more likely than other cells to develop into cancer. It is often called a precancerous cell.

There are various degrees of dysplasia from low-grade dysplasia to high-grade (severe) dysplasia. Cells that are classed as high-grade dysplasia have a high risk of turning cancerous at some point in the future.



But note: if you have Barrett's oesophagus, the chance that it will progress to dysplasia, then to high-grade dysplasia, and then to cancer, is small. In the majority of cases, the changes in the cells remain constant, and do not progress. About 1 in 20 people with Barrett's oesophagus develop dysplasia (usually after a number of years). And, only a proportion of those with dysplasia progress (over months or years) to develop cancer. Studies have shown that, for a person diagnosed with Barrett's oesophagus, their lifetime risk of developing cancer of the oesophagus is about 1 in 20 for men and about 1 in 33 for women.

What causes Barrett's oesophagus and how common is it?

The cause in most cases is thought to be due to long-term reflux of acid into the gullet (oesophagus) from the stomach. The acid irritates the lining of the lower oesophagus and causes inflammation (oesophagitis). With persistent reflux, eventually the lining (epithelial) cells change to those described above.

It is thought that about 1 in 20 people who have recurring acid reflux eventually develop Barrett's oesophagus. The risk is mainly in people who have had severe acid reflux for many years. However, some people who have had fairly mild symptoms of reflux for years can develop Barrett's oesophagus.

Barrett's oesophagus seems to be more common in men than in women. It typically affects people between the ages of 50 and 70 years. Other risk factors for Barrett's oesophagus that have been suggested include smoking and being overweight (particularly if you carry excess weight around your middle).

More about acid reflux

What are the symptoms of acid reflux and oesophagitis?

Heartburn is the main symptom. It is a burning feeling that rises from the upper tummy (abdomen) or lower chest up towards the neck. (It is confusing, as it has nothing to do with the heart.) Other common symptoms include:

- Pain in the upper abdomen and chest.
- Feeling sick (nauseated).
- An acid taste in the mouth.
- Bloating.
- Belching.
- A burning pain when you swallow hot drinks.

Like heartburn, these symptoms tend to come and go, and tend to be worse after a meal. People with Barrett's oesophagus will usually have (or will have had in the past) the symptoms associated with acid reflux and inflammation of the gullet (oesophagitis).

What causes acid reflux and whom does it affect?

The circular band of muscle at the bottom of the oesophagus (the sphincter) normally prevents acid reflux. Problems occur if the sphincter does not work very well. This is common, but in most cases it is not known why it does not work so well. However, having a hiatus hernia makes you more prone to reflux. A hiatus hernia occurs when part of your stomach protrudes through the lower chest muscle (diaphragm) into the lower chest. (See separate leaflet called [Hiatus Hernia](#) for more details.)

Most people have heartburn at some time, perhaps after a large meal. However, about 1 in 3 adults have some heartburn every few days, and nearly 1 in 10 adults have heartburn at least once a day. In many cases it is mild and soon passes. However, it is quite common for symptoms to be frequent or severe enough to affect quality of life. It is people who have severe and long-standing reflux who are more likely to develop Barrett's oesophagus.

How is acid reflux treated?

A medicine which prevents your stomach from making acid is a common treatment and usually works well. Some people take short courses of treatment when symptoms flare up. Some people need long-term daily treatment to keep symptoms away. An operation to tighten the sphincter muscle is an option in severe cases which do not respond to medication, or where full-dose medication is needed every day to control symptoms.

There are also various things that you can try to change in your lifestyle that may help to treat your acid reflux. These include **losing weight** if you are overweight, **stopping smoking** if you are a smoker and **reducing your alcohol intake** if you drink a lot of alcohol. The treatment of acid reflux is discussed fully in a separate leaflet called **Acid Reflux and Oesophagitis**.

How is Barrett's oesophagus diagnosed?

Barrett's oesophagus *itself* usually causes no symptoms. However, you are likely to have, or have had, the symptoms of long-standing or severe reflux disease described earlier.

Gastroscopy (endoscopy)

You may have a **gastroscopy** if you have severe or persistent symptoms of acid reflux. For this test, a thin, flexible telescope is passed down the gullet (oesophagus) into the stomach. This allows a doctor or nurse to look inside. This test can usually help to diagnose Barrett's oesophagus. The change in colour of the lining of the lower oesophagus from its normal pale white to a red colour strongly suggests that Barrett's oesophagus has developed.

A biopsy

If Barrett's oesophagus is suspected during gastroscopy then several small samples (**biopsies**) are taken of the lining of the oesophagus during the gastroscopy. These are sent to the laboratory to be looked at under the microscope. The characteristic columnar cells which are described above confirm the diagnosis. The cells are also examined to see if they have any signs of dysplasia (see above).

What is the treatment for Barrett's oesophagus?

Treatment of acid reflux

This treatment is as described above. You are likely to be advised to take acid-suppressing medication for the rest of your life. It is unclear as to whether treating the acid reflux helps to treat or reverse your Barrett's oesophagus and more studies are ongoing. However, this treatment should help any symptoms that you may have.

Monitoring (surveillance)

When you have been diagnosed with Barrett's oesophagus, you may be advised to have a gastroscopy and biopsy at regular intervals to monitor the condition. This is called surveillance. The biopsy samples aim to detect whether dysplasia has developed in the cells, in particular if high-grade dysplasia has developed.

The exact time period between each gastroscopy and biopsy sample can vary from person to person. It may be every 2-3 years if there are no dysplasia cells detected. Once dysplasia cells are found, the check may be advised every 3-6 months or so. If high-grade dysplasia develops, you may be offered treatment to remove the affected cells from the gullet (oesophagus). (Treatment details are discussed later.)

However, there is debate as to the value of surveillance and, if it is done, how often it should be done. Briefly, some doctors argue that most people with Barrett's oesophagus do not develop cancer. Many people would need to have regular gastroscopies to detect the very few who develop high-grade dysplasia. In addition, complications are likely to occur in a small number of people who have gastroscopy. And, even if you develop high-grade dysplasia and have treatment, there is a risk of developing complications from treatment. So, in effect, there is a debate as to the benefit versus the risk of surveillance. Your specialist will advise what is best for your particular circumstances.

Surgery may be considered

If you develop high-grade dysplasia or cancer of the oesophagus, the traditional treatment is to have an operation to remove the oesophagus (oesophagectomy). This is a major operation and complications following surgery, sometimes serious and life-threatening, are not uncommon. But remember - most people who develop Barrett's oesophagus do not go on to need an oesophagectomy. Also, newer therapies that have recently been developed are becoming more popular options if you develop high-grade dysplasia or early cancer.

Newer treatments

Various ways of removing just the abnormal dysplastic cells from the lining of the oesophagus (or even early cancers that just affect the lining on the oesophagus) have recently been developed. These include the following:

Laser therapy. The abnormal cells can be destroyed by a laser from an instrument that is inserted into the oesophagus. A recent refinement of this is called photodynamic therapy.

Photodynamic therapy (PDT). This is a type of laser treatment. For this you are given a medicine that makes your cells very sensitive to light for several hours. After taking the medicine you have a gastroscopy. During this procedure, a laser light is shone at the abnormal section of your oesophagus. The cells which are sensitised by the medicine react to the laser light and the cells are destroyed. Nearby normal cells then multiply and replace the destroyed abnormal cells. There are possible side-effects from PDT which include narrowing of the oesophagus (called a stricture) which may affect swallowing. Also, some people may develop skin reactions because of the medicine that is used.

Epithelial radiofrequency ablation (EFA). This treatment uses a radiofrequency energy coil. Again, this involves a gastroscopy. During the procedure a small coil is guided towards the abnormal section of your oesophagus. The coil then emits heat energy which destroys the abnormal cells. Nearby normal cells then multiply and replace the destroyed abnormal cells.

Argon plasma coagulation. This treatment uses a jet of argon gas, together with an electric current, to burn away dysplastic cells.

Endoscopic mucosal resection (EMR). This is a procedure that is done via instruments passed down the side of an gastroscopy. Basically, the affected inner lining of the oesophagus is stripped off.

Research continues to find out which treatment is best. If you are diagnosed with Barrett's oesophagus, your specialist should be able to give you up-to-date information on the pros and cons of surveillance. They should also be able to advise on the current situation about the various treatment options should you develop dysplastic changes to the cells.

A further important note

If you have Barrett's oesophagus and you develop any new symptoms, such as **weight loss**, **bringing up (vomiting) blood** or **difficulty swallowing**, it is important that you see a doctor urgently. These are some of the symptoms that you may get from complications of gastro-oesophageal reflux and Barrett's oesophagus. These complications are rare but can include a sore (ulcer) or cancer of the gullet (oesophagus).

Further help & information

Barrett's Oesophagus Campaign

Division of Surgery and Interventional Science Royal Free and University College Medical School, Rowland Hill Street, London, NW3 2PF

Tel: 020 7472 6223

Web: www.barrettscampaign.org.uk

FORT - Fight Oesophageal Reflux Together

Web: www.fortcharity.org.uk/

Further reading & references

- [Guidelines for the diagnosis and management of Barrett's columnar-lined oesophagus](#); British Society of Gastroenterology (2013)
- [Epithelial radiofrequency ablation for Barrett's oesophagus](#); NICE Interventional Procedure Guideline (May 2010)
- [Photodynamic therapy for Barrett's oesophagus](#); NICE Interventional Procedure Guideline (June 2010)
- [Barrett's oesophagus - ablative therapy](#); NICE Clinical Guideline (August 2010)

- **Endoscopic submucosal dissection (ESD) of oesophageal dysplasia and neoplasia**; NICE Interventional Procedure Guideline (September 2010)
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- **Sharma P, Sidorenko EI**; Are screening and surveillance for Barrett's oesophagus really worthwhile? *Gut*. 2005 Mar;54 Suppl 1:i27-32.
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- **Corley DA, Kubo A, Levin TR, et al**; Abdominal obesity and body mass index as risk factors for Barrett's esophagus. *Gastroenterology*. 2007 Jul;133(1):34-41; quiz 311. Epub 2007 Apr 25.

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Original Author: Dr Tim Kenny	Current Version: Dr Nick Imm	Peer Reviewer: Dr Adrian Bonsall
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