

This factsheet is about Barrett's Oesophagus

Barrett's Oesophagus is the term used for a condition where the normal cells lining the oesophagus, also known as the gullet or food pipe, have been replaced with abnormal cells. The abnormal cells start from where the oesophagus meets the stomach and spread upwards. The main concern with this condition is that it can increase the risk of developing oesophageal cancer, now the 6th most common cause of cancer death in the UK, the 4th most common in men.

What is Barrett's Oesophagus

Barrett's Oesophagus can affect men and women, though it is significantly more common in white men, who have a 3 fold increased risk for the condition. Although the exact cause remains unknown, it is strongly associated with long-term Gastro-Oesophageal Reflux Disease (GORD), which can cause the symptom of heartburn. Approximately 1 in 10 patients with GORD will develop Barrett's Oesophagus and the risk increases with length and frequency of symptoms. GORD involves reflux of acidic and non-acidic stomach (gastric) contents into the oesophagus, which irritates (inflames) and injures the lining (epithelial cells). Over time, in some patients with GORD, the lining of the oesophagus changes from the normal structure, made up of a type of cells known as "squamous epithelial" cells, to an abnormal type made up from a different type of cells, known as "columnar epithelial" cells. Often (but not always) the lining of the oesophagus starts to resemble the lining of the stomach, in a process known as intestinal metaplasia.

The condition was named after a surgeon, Norman Barrett, 60 years ago, and its incidence has increased significantly over that time. Risk factors that can lead to Barrett's Oesophagus include older age, male sex, family history, obesity, smoking, high alcohol intake and a hiatus hernia (where the stomach extends abnormally from the abdomen into the chest).

What are the usual symptoms?

Barrett's Oesophagus is associated with reflux, which can cause heartburn, regurgitation of food (bringing food back up), nausea and pain in the upper abdomen. Reflux symptoms that wake you at night time are a particularly strong risk factor. Often though patients with Barrett's oesophagus do not report symptoms, or manage with over the counter antacids, and this can lead to delay in diagnosis,

How is Barrett's Oesophagus diagnosed?

Barrett's Oesophagus is diagnosed by examining the oesophagus lining using a procedure called endoscopy. This is where a small tube (the width of a small finger), with a camera on the end is inserted into the oesophagus and stomach via the mouth or nose. The area of interest is where the oesophagus meets the stomach (gastro-oesophageal junction). Barrett's oesophagus is identified when, instead of a normal whitish lining, a pinker lining is seen that extends from the junction and up the oesophagus. Biopsies (a small sample of tissue) are then taken to confirm diagnosis and look for abnormal cells (dysplasia). Sedation can be used to make the procedure more comfortable.

Why is Barrett's oesophagus important?

Barrett's Oesophagus is a pre-cancerous condition, and can result in progression to oesophageal adenocarcinoma. Although the majority of patients with Barrett's oesophagus do not progress to cancer, some risk factors have been shown to increase risk - male sex, older age, family history and early onset of GORD. The strongest marker of risk however is an abnormality of the Barrett's cells called dysplasia. These changes can be diagnosed with a biopsy, a small sample taken at the time of endoscopy, and are checked by a pathologist who will grade the dysplasia – high grade or low grade. If low grade dysplasia is found then a repeat endoscopy in 6 months is ordered to reassess and consider if referral to a specialist centre for treatment is needed. Patients found to have high grade dysplasia are typically referred more quickly to a specialist centre, as the risk of progression to cancer is higher.

What treatment is available for Barrett's Oesophagus?

The treatment for Barrett's Oesophagus has changed significantly over recent years. Previously patients with dysplasia were either monitored more closely (intense surveillance) until cancer was found or referred for surgery to remove the

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oesophagus. Removal of the oesophagus (oesophagectomy) is a major operation however and is increasingly now used for patients with actual cancer.

More recently the introduction of minimally invasive Endoscopic Therapy to remove the Barrett's segment has transformed how the condition is managed. In Endoscopic Therapy a treatment procedure is carried out during the endoscopy and is considered to be minimally invasive when the endoscope enters the body through a cavity (the mouth) as opposed to through an incision in the body. Techniques to treat dysplasia or early cancer include endoscopic mucosal resection (EMR), HALO radiofrequency ablation (RFA) and argon plasma coagulation (APC). Photodynamic therapy has been replaced by HALO RFA and is seldom used. These techniques are usually performed at specialist centres that have Endoscopic therapy available.

Endoscopic Mucosal Resection

EMR stands for Endoscopic Mucosal Resection. This is a technique for removing small polyps or growths from the lining of the oesophagus (gullet), stomach or first part of the small bowel (duodenum). This technique enables the endoscopist to remove a larger area of tissue than is possible with a simple biopsy. EMR is able to more accurately assess the abnormal Barrett's tissue than a standard biopsy, so gives more information to your doctor about the treatment that is right for you. As well as providing more information the EMR also treats the abnormal area by removing pre-cancer cells, or small areas of cancer, without the need for major surgery. When EMR is performed there is a risk (approximately 1:50) of bleeding. If bleeding does occur it will usually stop by itself, but observation and further treatment in hospital may be necessary. Rarely (approximately 1:200) a small hole in the lining of the area removed can develop (perforation). If this happens it would mean a stay in hospital for antibiotics and artificial feeding and possibly an operation to repair any damage. After the procedure the removed area will form a scar and heal, and it is quite common to get some chest discomfort and pain on swallowing for the first 2-3 days. If this continues, or you find it difficult to swallow food, then the scar may have caused a narrowing of the oesophagus. This occurs in approximately 1:20 patients, and can be treated with an endoscopy to stretch the scar.

HALO RFA

RFA stands for Radiofrequency Ablation. This technique enables the endoscopist to burn away the abnormal cells and is carried out under sedation. It is very safe and effective in removing abnormal cells, but can only be used in flat areas, so will often be used after EMR has removed any raised areas. There are different types of HALO devices, the most common is HALO 360 and HALO 90. Your doctor will decide which is best to use depending on various factors. The HALO 360 device treats the entire wall of the oesophagus. The HALO 90 device is similar, but treats a smaller area. We usually treat patients with the HALO 360 device initially and if, at the next endoscopy, there is any abnormal lining left, we retreat with either the HALO 360 or HALO 90 device, depending on how big the area needing treatment is. Patients often need several treatments to remove the Barrett's entirely. HALO RFA has been widely used for years in the UK, America and Europe for Barrett's oesophagus, and is now recommended as the first line (preferred) technique in the UK for high grade dysplasia. It is NICE approved for this and the device has recently been approved by NICE for low grade dysplasia. Your doctor can give you more information if you are suitable for these procedures.

Does Barrett's Oesophagus need to be monitored and, if so, how?

Barrett's Oesophagus does need to be monitored, mainly using endoscopy. This is because even if no dysplasia is found on biopsy at one endoscopy, this does not mean the patient will never get dysplasia or cancer in the future. Patients are usually entered into a surveillance programme, but this does depend on fitness and other medical risk factors. The

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frequency of surveillance endoscopy varies from person to person and is based upon the type and length of the abnormal lining seen. In cases where no dysplasia cells are seen endoscopy may only be needed every 2-5 years. Those with very long segments of Barrett's (over 10cm) are also often referred to specialist centres as the risk of cancer increases significantly.

What other treatment options are there?

At present endoscopic therapy is only recommended for patients with dysplasia. This is because the risk of cancer progression is significant enough to warrant treatment. In general a patient without dysplasia would be considered low risk, and as endoscopic therapy has some side effects, the risks outweigh the benefits. There are certain exceptions that may warrant treatment (very long segment, strong family history of cancer) but these need to be discussed with a specialist.

Medications most commonly used in the treatment of Barrett's oesophagus are called Proton Pump Inhibitors (PPI). Omeprazole and Lansoprazole belong to this group (though there are others) and work by reducing acid production in the stomach, with the aim to reduce the amount of acid refluxing into the oesophagus. Most patients with Barrett's oesophagus tend to use PPI medications to improve reflux symptoms, and there is some evidence of reduction of cancer risk, though larger studies are awaited. Clinical research into other medication to reduce risk of cancer progression (chemoprevention), such as aspirin and statins, is ongoing.

There are certain medications that can make reflux worse, and are best avoided. These include anti-inflammatory medications (e.g. ibuprofen, naproxen, diclofenac), medications that affect the oesophageal movement (nitrates) and certain antidepressants (tricyclic agents).

Lifestyle changes can improve GORD and include weight loss, reduction in alcohol intake, stopping smoking, reducing portion sizes and avoiding eating within three hours of going to bed.

If medication and lifestyle intervention does not help, then there are surgical options to repair the hiatus hernia, if this is the cause of GORD. These include a procedure called Nissen Fundoplication (where the upper part of the stomach is wrapped and stapled around the lower oesophagus) and LINX (where a bracelet of magnetic beads is wrapped around the lower oesophagus, to narrow it). It must be noted that these non-surgical and surgical treatments do not remove the Barrett's oesophagus and therefore, do not eradicate the risk of developing oesophageal cancer.

How does Barrett's Oesophagus behave over time?

Some patients with Barrett's Oesophagus may have good control of symptoms, but some patients may experience worsening symptoms, and may need surgical treatment despite medications. Overall, 1 in every 10-20 patients with Barrett's oesophagus will develop cancer over 10-20 years.

What impact can Barrett's Oesophagus have?

The diagnosis of Barrett's Oesophagus can affect a person in many ways. These include the complications of the condition and its overall impact on general wellbeing due to the symptoms and fear of cancer.

The most significant complication is the development of cancer of the oesophagus. Symptoms to watch out for include persistence of reflux, difficulty swallowing, unexplained weight loss, bringing up blood or change in voice. If any of

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these are experienced, then a doctor should be consulted. Further tests may be carried out and if cancer is detected, it may be treated endoscopically, with surgery or with chemotherapy, depending on the stage of the cancer (the stage of a cancer describes how big the tumour is and how far it has grown).

Other complications include narrowing of the oesophagus (strictures), which can cause difficulty swallowing and sometimes weight loss due to decrease food intake. Strictures can be treated by dilating them during endoscopy, but this can sometimes cause ulceration and inflammation of the oesophagus leading to bleeding. This can cause patients to vomit up blood or pass black, tarry, offensive stools. If these symptoms occur, medical attention must be sought immediately.

Symptoms from Barrett's Oesophagus can be long term and occur every day. It is recognised that ongoing symptoms and fear of developing cancer can cause major upset, frustration and feelings of hopelessness amongst many patients. If any of these feeling are experienced, it is important to let the doctor know so that appropriate support can be offered.

What to ask your doctor when you see them?

May I be referred to a dietician to see if there are any changes to my diet that may help with my symptoms?

Are there any other medications I can try? If not, am I suitable for surgery? How often do I need an endoscopy?

What further research needs to be done on Barrett's Oesophagus?

Several research areas are needed to improve the treatment of Barrett's Oesophagus. Early diagnosis is a key strategy in cancer research, and work using non-endoscopic methods to find Barrett's include saliva biomarkers and breath testing as well as the Cytosponge. This is a sponge on a string that is swallowed as a capsule and opens up in the stomach. The sponge then collects cells from the oesophagus when drawn back up the oesophagus. There is also work needed to assess more accurately which patients are likely to progress to cancer, improving the quality of surveillance endoscopy and the improving access to specialist centres for treatment.

Core funds research on all conditions and diseases that affect the gut, liver and pancreas. The scope is huge so Core prioritises areas where research is underfunded and where it can make a significant difference. The upper gastrointestinal (upper GI) tract, which comprises the oesophagus (gullet), the stomach and the duodenum (the upper section of the small intestine) is one of these priority areas. This area includes some of the most common conditions, such as acid reflux, and some of the most lethal diseases, such as cancer of the oesophagus and the stomach. Core has a dedicated Fellowship for research on upper GI conditions and diseases. Core also supports work that helps us identify what is important to patients suffering from upper GI conditions, such as the research prioritisation exercise we carried out on Barrett's Oesophagus and acid reflux. Learn more about the Fellowship and the prioritisation exercise on Core's website:

<http://corecharity.org.uk/research/research-awards-information/derek-butler-fellowship/>

<http://corecharity.org.uk/2017/09/new-research-priority-setting-in-barretts-oesophagus-and-gastro-oesophageal-reflux-disease/> For more information about research in this area please contact Core.

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