

Cancer Association of South Africa (CANSA)



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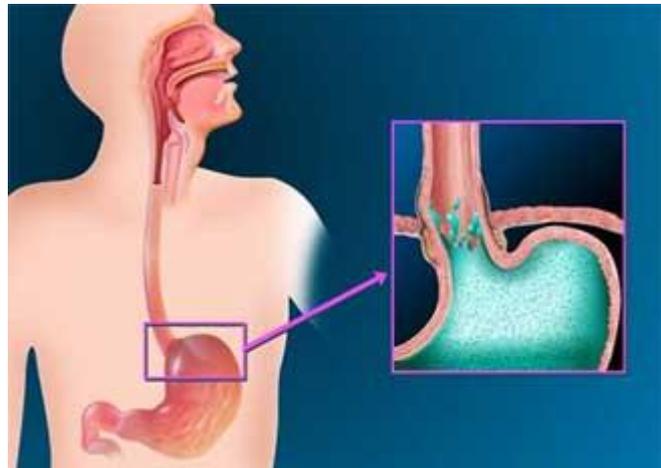
Fact Sheet on Barrett's Oesophagus

Introduction

Barrett's Oesophagus is a disorder in which the lining of the oesophagus is damaged. This damage occurs when parts of the oesophageal lining are repeatedly exposed to stomach acid, and are replaced by tissue that is similar to what is found in the intestine. This process is called intestinal metaplasia.

[Picture Credit: Barrett's Oesophagus]

The cells in the lining of the oesophagus and the stomach have different functions, and are different types of cells. Also, their appearance is very different, making it easy for a physician to tell them apart when examining the oesophagus and stomach. At the end of the oesophagus, there is an area that marks the border between the cells of the oesophagus and the cells of the stomach. With Barrett's Oesophagus, abnormal intestinal-like cells develop above this border.



Understanding how the Oesophagus and Stomach Functions

When food is ingested, it passes down the gullet (oesophagus) into the stomach. Cells in the lining of the stomach make acid and other chemicals which help to digest the 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, however, are different and have little protection from the acid produced in the stomach.

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 and protects the oesophagus in unaffected individuals from being exposed to stomach acid. (Patient.co.uk).

Causes and Risks for Barrett's Oesophagus

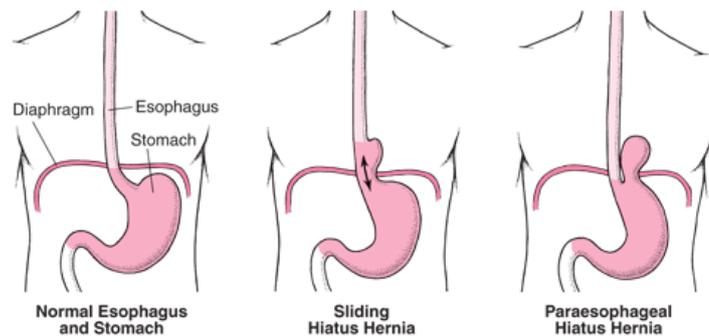
The following are the two main causes of Barrett's Oesophagus:

Acid Reflux - this happens when the valve at the lower end of the oesophagus is weak and allows stomach contents to splash up into the oesophagus. Reflux of acid is very common and many people have symptoms at some point in their lives.

Certain factors can make people more likely to have reflux. These include:

- being overweight
- smoking
- excessive alcohol consumption
- eating spicy, acidic, or fatty foods.

Acid reflux can also be caused by a hiatus hernia. A hiatus hernia is when a small piece of the stomach is displaced and pokes up through the diaphragm. The diaphragm is the sheet of muscle that divides the tummy area from the chest.



[Picture Credit: Hiatus Hernia]

GORD (gastro-oesophageal reflux disease) - this is when stomach acid irritates the oesophagus. The stomach produces acid to help digest food. While the stomach is lined by tissue that is resistant to acid, the oesophagus is not. In some people, the acid can inflame and irritate the oesophagus, causing pain and heartburn. This is often referred to as gastro-oesophageal reflux disease (GORD) or reflux oesophagitis (inflammation of the oesophagus).

Not everyone who has acid reflux will develop Barrett's Oesophagus. Up to 1 in 10 people with acid reflux (10%) will develop Barrett's Oesophagus. It is more likely to happen in people who have had severe reflux for many years. It is also more likely in people over 50, and in men.

(MacMillan Cancer Support).

The risk of having acid reflux is higher if one:

- is overweight
- smokes tobacco
- drinks large amounts of alcohol
- eats spicy or fatty foods
- is a white male

Researchers are currently looking into the causes of Barrett's Oesophagus including:

- Why some people develop it and others do not
- Whether there is an increased risk of developing it if someone in the family has it
- Whether there is a link between being very overweight (obesity) and developing Barrett's Oesophagus

(Cancer Research UK).

The Risk of Oesophageal Cancer from Barrett's Oesophagus

It is known that Barrett's Oesophagus can increase one's risk for cancer of the oesophagus. Barrett's oesophagus is most likely to be diagnosed in people who have a long history of burning indigestion. So it is important to see one's doctor if one has had burning indigestion for any extended period of time.

If a person has Barrett's Oesophagus he/she will need to see a doctor regularly. They will also need to have regular examinations of the inside of the oesophagus (food pipe). These examinations are called endoscopies. These examinations do not prevent oesophageal cancer, but should help to pick it up early on when there is a better chance for successful treatment (Cancer Research UK).

Incidence of Barrett's Oesophagus in South Africa

Barrett's Oesophagus is not a cancerous condition itself, therefore the National Cancer Registry (2013) does not provide any information on its incidence in South Africa. According to the National Cancer Registry (2013) the following number of oesophageal cancer cases was histologically diagnosed in South Africa during 2013:

Group - Males 2013	No of Cases	Lifetime Risk	Percentage of All Cancers
All males	844	1:167	2,35%
Asian males	9	1:621	1,02%
Black males	572	1:164	5,31%
Coloured males	110	1:131	2,65%
White males	156	1:178	0,77%

Group - Females 2013	No of Cases	Lifetime Risk	Percentage of All Cancers
All females	651	1:319	1,78%
Asian females	17	1:395	1,65%
Black females	515	1:275	3,30%
Coloured females	56	1:332	1,37%
White females	63	1:634	0,40%

The frequency of histologically diagnosed cases of oesophageal cancer in South Africa for 2013 was as follows (National Cancer Registry, 2013):

Group - Males 2013	0 – 19 Years	20 – 29 Years	30 – 39 Years	40 – 49 Years	50 – 59 Years	60 – 69 Years	70 – 79 Years	80+ Years
All males	0	2	21	80	266	247	138	51
Asian males	0	0	1	1	1	3	2	0
Black males	0	1	13	59	179	149	70	33
Coloured males	0	0	3	10	32	30	19	4
White males	0	0	4	6	40	46	40	10

Group - Females 2013	0 – 19 Years	20 – 29 Years	30 – 39 Years	40 – 49 Years	50 – 59 Years	60 – 69 Years	70 – 79 Years	80+ Years
All females	0	2	16	74	162	164	141	65
Asian females	0	0	1	2	5	1	2	2
Black females	0	1	12	48	125	123	108	43
Coloured females	0	0	1	10	9	20	9	3
White females	0	0	0	9	15	13	10	11

N.B. In the event that the totals in any of the above tables do not tally, this may be the result of uncertainties as to the age, race or sex of the individual. The totals for 'all males' and 'all females', however, always reflect the correct totals.

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Signs and Symptoms of Barrett's Oesophagus

The exact causes of Barrett's Oesophagus are unknown, but it is thought to be caused in part by the same factors that cause GORD. Although people who do not have heartburn can have Barrett's Oesophagus, it is found about three to five times more often in people with this condition. Indeed 10-20% of people with chronic GORD will develop Barrett's Oesophagus.

The muscular layers of the oesophagus are normally pinched together at both the upper and lower ends by muscles called sphincters. When a person swallows, the sphincters relax automatically to allow food or drink to pass from the mouth and into the stomach. The muscles then close rapidly to prevent the swallowed food or drink from leaking out of the stomach back into the oesophagus or into the mouth. These muscles make it possible to swallow while lying down or even upside-down. When people belch to release swallowed air or gas from carbonated beverages, the sphincters relax and small amounts of food or drink may come back up briefly; this condition is called reflux. The oesophagus quickly squeezes the material back into the stomach, and this is considered normal.

When a person experiences this regularly, especially when not trying to belch, then it is considered a medical problem or disease. The stomach produces acid and enzymes and when this mixture refluxes into the oesophagus frequently, it may produce symptoms. These symptoms, often called acid reflux, are usually described by people as heartburn, indigestion or 'gas'. The symptoms usually consist of a burning sensation below and behind part of the breastbone or sternum. Most people have experienced these symptoms at least once, typically as a result of overeating. Other situations that provoke GORD symptoms include obesity, eating certain types of food and pregnancy. In most people, GORD symptoms may last only a short time and require no treatment. However, the more persistent and numerous these symptoms become, it is recommended that the person consult a doctor. These symptoms, if continuing for some time without relief from 'over-the-counter' antacid agents, can contribute to the development of GORD and eventually Barrett's Oesophagus.

The average age of patients diagnosed with Barrett's Oesophagus is 50 to 60; diagnosis of this condition diminishes the younger the person is, as Barrett's Oesophagus develops over a longer time than GORD. Indeed it is uncommon for Barrett's Oesophagus to be diagnosed in children. It is about twice as common in men as in women, and much more common in white men than in men of other racial background. (Centre for Digestive Diseases).

Diagnosis of Barrett's Oesophagus

To make a diagnosis of Barrett's Oesophagus an endoscopy of the oesophagus must be done. In this procedure a tube is inserted through the mouth and down the oesophagus to view and biopsy the lining of the oesophagus.

[Picture Credit: Endoscopy]

The two requirements to make a diagnosis are:

During endoscopy of the lower oesophagus, an abnormal pink lining is seen as replacing the normal whitish lining of the oesophagus. This abnormal lining is seen to extend a



short distance up the oesophagus from the gastro-oesophageal junction, which is where the oesophagus joins the stomach.

Biopsy (tissue sampling) of this abnormal lining shows (under the microscope) the presence of intestinal or stomach-like cells called columnar cells.
(WebMD).

Management of Barrett's Oesophagus

Once Barrett's Oesophagus has been identified, patients should undergo periodic surveillance endoscopy to identify histologic markers for increased cancer risk (dysplasia) or cancer that is at an earlier stage and is amenable to therapy. Dysplasia is the best histologic marker for cancer risk.

The management options for high-grade dysplasia include the following:

- Surveillance endoscopy, with intensive biopsy at 3-month intervals until cancer is detected
- Endoscopic ablation: In most major medical centres, ablation is first-line therapy
- Surgical resection: While studies have shown surgery to be efficacious in the control of GORD symptoms, no good evidence indicates that surgical therapy provides regression in Barrett's Oesophagus

Pharmacologic treatment for Barrett's Oesophagus should be the same as that for GORD, although most authorities agree that treatment should employ a proton pump inhibitor (PPI) instead of an H2-receptor antagonist, due to the relative acid insensitivity of patients with Barrett's Oesophagus. While PPIs have been found to be better than H2-receptor antagonists at reducing gastric acid secretion, the evidence as to whether PPIs induce regression of Barrett's Oesophagus remains inconclusive.

Diet:

The diet for patients with Barrett's Oesophagus is the same as that recommended for patients with GORD.

Patients should avoid the following:

- Fried or fatty foods
- Chocolate
- Peppermint
- Alcohol
- Coffee
- Carbonated beverages
- Citrus fruits or juices
- Tomato sauce
- Ketchup
- Mustard
- Vinegar
- Aspirin and other nonsteroidal anti-inflammatory drugs (NSAIDs)

(Medscape).

Treatment of Barrett's Oesophagus

Treatment for Barrett's Oesophagus depends on the degree of dysplasia found in the oesophagus cells and the person's overall health.

No dysplasia or low-grade dysplasia

The doctor will likely recommend:

- Periodic endoscopy to monitor the cells in your oesophagus. If your biopsies show no dysplasia, you'll probably have a follow-up endoscopy in one year and then every three years if no changes occur. If low-grade dysplasia is found, your doctor may recommend another endoscopy in six months or a year.
- Treatment for GORD. Medication and lifestyle changes can ease your signs and symptoms. Surgery to tighten the sphincter that controls the flow of stomach acid may be an option. Treating GORD doesn't treat the underlying Barrett's oesophagus but can help make it easier to detect dysplasia.

High-grade dysplasia

High-grade dysplasia is thought to be a precursor to oesophageal cancer. For this reason, the doctor may recommend:

- Endoscopic resection, which uses an endoscope to remove damaged cells.
- Radiofrequency ablation, which uses heat to remove abnormal oesophagus tissue. Radiofrequency ablation may be recommended after endoscopic resection.
- Cryotherapy, which uses an endoscope to apply a cold liquid or gas to abnormal cells in the oesophagus. The cells are allowed to warm up and then frozen again. The cycle of freezing and thawing damages the abnormal cells.
- Photodynamic therapy, which destroys abnormal cells by making them sensitive to light.
- Surgery in which the damaged part of the oesophagus is removed and the remaining portion is attached to the stomach.

If the patient has treatment other than surgery to remove the oesophagus, the doctor is likely to recommend medication to reduce acid and help the oesophagus heal.

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