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.

Understanding how the Oesophagus and Stomach Functions
When food is ingested, it passes down the oesophagus into the stomach. Cells in the lining of the stomach produce acid and other chemicals which help to digest the food. Stomach cells also make a thick liquid (mucus) which protects the lining of the stomach from damage caused by the acid. The cells on the inside lining of the oesophagus, are not protected from the acid produced in the stomach.

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.

Gastro-Oesophageal Reflux Disease (GORD) - this is when stomach acid irritates the oesophagus. The risk of having acid reflux is higher in individuals who:

- are overweight
- smoke tobacco
- consume large amounts of alcohol
- eat a lot of spicy or fatty foods
- are white males

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. Such individuals will also need to have regular examinations of the inside of the oesophagus. This is called an endoscopy.

**Tan, W.K., d’Pietro, M. & Fitzgerald, R.C. 2017.**

“Barrett’s oesophagus is a condition which predisposes towards development of oesophageal adenocarcinoma, a highly lethal tumour which has been increasing in incidence in the Western world over the past three decades. There have been tremendous advances in the field of Barrett’s oesophagus, not only in diagnostic modalities, but also in therapeutic strategies available to treat this premalignant disease. In this review, we discuss the past, present and future of Barrett’s oesophagus. We describe the historical and new evolving diagnostic criteria of Barrett’s oesophagus, while also comparing and contrasting the British Society of Gastroenterology guidelines, American College of Gastroenterology guidelines and International Benign Barrett’s and CAncer Taskforce (BOBCAT) for Barrett’s oesophagus. Advances in endoscopic modalities such as confocal and volumetric laser endomicroscopy, and a non-endoscopic sampling device, the Cytosponge, are described which could aid in identification of Barrett’s oesophagus. With regards to therapy we review the evidence for the utility of endoscopic mucosal resection and radiofrequency ablation when coupled with better characterization of dysplasia. These endoscopic advances have transformed the management of Barrett’s oesophagus from a primarily surgical disease into an endoscopically managed condition.”

**Alknasser, S., Agnihotram, R., Martel, M., Mayrand, S., Franco, E. & Ferri, L. 2019.**

**BACKGROUND:** It is unknown why some cases of Barrett’s esophagus progress to invasive malignant disease rapidly while others do so more slowly or not at all. The aim of this study was to identify demographic and endoscopic factors that predict dysplastic and neoplastic progression in patients with Barrett’s esophagus.

**METHODS:** Patients with Barrett’s esophagus who were assessed in 2000–2010 were assessed for inclusion in this retrospective study. Demographic and endoscopic variables were collected from an endoscopy database and the medical chart. Dysplastic and neoplastic progression was examined by time-to-event analysis. We used Cox proportional hazard regression modelling and generalized estimating equation methods to identify variables that were most predictive of neoplastic progression.
RESULTS: A total of 518 patients had Barrett’s esophagus confirmed by endoscopy and pathology and at least 2 surveillance visits. Longer Barrett’s esophagus segment (≥ 3 cm) (odds ratio [OR] 1.2, 95% confidence interval [CI] 1.1–1.3) and increased age (≥ 60 yr) (OR 3.5, 95% CI 1.7–7.4) were independent predictors of progression from nondysplasia to dysplastic or neoplastic grades. Presence of mucosal irregularities (OR 8.6, 95% CI 2.4–30.4) and increased age (OR 5.1, 95% CI 1.6–16.6) were independent predictors of progression from nondysplasia to high-grade dysplasia or adenocarcinoma.

CONCLUSION: Increased age, longer Barrett’s segment and presence of mucosal irregularities were associated with increased risk of dysplastic and neoplastic progression. In addition to dysplasia, these factors may help stratify patients according to risk of neoplastic progression and be used to individualize surveillance. More prospective studies with larger samples are required to validate these results.

Incidence of Barrett’s Oesophagus in South Africa
Barrett’s Oesophagus is not a cancerous condition itself but rather a precursor to increased risk of dysplastic and neoplastic progression, therefore the National Cancer Registry (2014) does not provide any information on its incidence in South Africa.

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.

Diagnosis of Barrett’s Oesophagus
To make a diagnosis of Barrett’s Oesophagus an endoscopy of the oesophagus is usually done. A tube is inserted through the mouth and down the oesophagus to view the inside of the oesophagus to take a biopsy of the lining of the oesophagus.

Zakko, L., Lutzke, L. & Wang, K.K. 2017. “Barrett’s esophagus is the only known esophageal precursor for the development of esophageal adenocarcinoma. However, screening for Barrett’s esophagus remains controversial. Although screening is advocated in selected populations, it is unclear how it should be implemented. In this review, the current definition of Barrett’s esophagus will be discussed. There will be a review of the emerging evidence supporting the cost-effectiveness of screening and surveillance for Barrett’s esophagus in preventing esophageal adenocarcinoma. The known risk factors for Barrett’s esophagus and the development of esophageal adenocarcinoma, currently utilized to determine the appropriate populations to screen, will be reviewed. Finally we will review the standard techniques utilized to screen for Barrett’s esophagus and examine new technologies that might improve the efficacy and availability of Barrett’s esophagus screening.”
“Risk stratification of patients with Barrett’s esophagus (BE) presently relies on the histopathologic grade of dysplasia found in esophageal biopsies, which is limited by sampling error and inter-pathologist variability. p53 immunostaining of BE biopsies has shown promise as an adjunct tool but is not recommended by American gastroenterology societies, who cite insufficient evidence of its prognostic value. We have conducted a systematic review and meta-analyses to clarify this value. We searched for studies that: (1) used immunohistochemistry to assess p53 expression in esophageal biopsies of BE patients and (2) reported subsequent neoplastic progression. We performed separate meta-analyses of case-control studies and cohort studies. We identified 14 relevant reports describing 8 case-control studies comprising 1435 patients and 7 cohort studies comprising 582 patients. In the case-control study meta-analysis of the risk of neoplasia with aberrant p53 expression, the fixed- and random-effect estimates of average effect size with aberrant p53 expression were OR 3.84, p < .001 (95% CI 2.79-5.27) and OR 5.95, p < .001 (95% CI 2.68-13.22), respectively. In the cohort study meta-analysis, the fixed- and random-effect estimates of average effect size were RR = 17.31, p < .001 (95% CI 9.35-32.08) and RR = 14.25, p < .001 (95% CI 6.76-30.02), respectively. Separate meta-analyses of case-control and cohort studies of BE patients who had baseline biopsies with p53 immunostaining revealed consistent, strong, and significant associations between aberrant p53 immunostaining and progression to high-grade dysplasia or esophageal adenocarcinoma. These findings support the use of p53 immunostaining as an adjunct to routine clinical diagnosis for dysplasia in BE patients.”

“Surveillance of Barrett’s esophagus (BE) is a clinical challenge; metaplasia of the distal esophagus increases a patient’s risk of esophageal adenocarcinoma (EAC) significantly but the actual percentage of patients who progress is low. The current screening recommendations require frequent endoscopy and biopsy, which has inherent risk, high cost, and operator variation. Identifying BE patients genetically who are at high risk of progressing could deemphasize the role of endoscopic screening and create an opportunity for early therapeutic intervention. Genetic alterations in germline DNA have been identified in other disease processes and allow for early intervention or surveillance well before disease develops. The genetic component of BE remains mostly unknown and only a few genome-wide association studies exist on this topic. This review summarizes the current literature available that examines genetic alterations in BE and EAC with a particular emphasis on clinical implications.”

Management of Barrett’s Oesophagus
Once Barrett’s Oesophagus has been identified, patients usually undergo periodic surveillance to detect possible cancerous changes in time.

Pharmacologic treatment for Barrett’s Oesophagus is usually the same as that for GORD.

The diet for patients with Barrett’s Oesophagus is the same as that recommended for patients with GORD. Patients should try and avoid the following:

- Fried or fatty foods
- Chocolate
- Peppermint
- Alcohol
- Coffee
- Carbonated beverages
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. It may include:

- Periodic endoscopy to monitor the cells in your oesophagus.
- Treatment for GORD.
- Endoscopic resection
- Radiofrequency ablation
- Cryotherapy
- Photodynamic therapy
- Surgery in which the damaged part of the oesophagus is


“Turmeric obtained from the rhizomes of Curcuma longa has been used in the prevention and treatment of many diseases since the ancient times. Curcumin is the principal polyphenol isolated from turmeric, which exhibits anti-inflammatory, antioxidant, antiapoptotic, antitumor, and antimetastatic activities. The existing evidence indicates that curcumin can exert a wide range of beneficial pleiotropic properties in the gastrointestinal tract, such as protection against reflux esophagitis, Barrett’s esophagus, and gastric mucosal damage induced by nonsteroidal anti-inflammatory drugs (NSAIDs) and necrotizing agents. The role of curcumin as an adjuvant in the treatment of a Helicobacter pylori infection in experimental animals and humans has recently been proposed. The evidence that this turmeric derivative inhibits the invasion and proliferation of gastric cancer cells is encouraging and warrants further experimental and clinical studies with newer formulations to support the inclusion of curcumin in cancer therapy regimens. This review was designed to analyze the existing data from in vitro and in vivo animal and human studies in order to highlight the mechanisms of therapeutic efficacy of curcumin in the protection and ulcer healing of the upper gastrointestinal tract, with a major focus on addressing the protection of the esophagus and stomach by this emerging compound.”

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**Sources and References Consulted or Utilised**


**Barrett’s Oesophagus**
http://www.barretts-oesophagus.co.uk/patients_what.htm


**Cancer Research UK**

**Centre for Digestive Diseases**


**Endoscopy**
http://www.tbee.net/a-1187.htm


**MacMillan Cancer Support**
http://www.macmillan.org.uk/Cancerinformation/Cancertypes/Oesophagusgullet/Pre-cancerousconditions/Barrettoesophagus.aspx


**Medscape**

**National Cancer Institute**
http://www.cancer.gov/about-cancer/treatment/clinical-trials/what-are-trials


WebMD
