

HEARTBURN & ACID REFLUX

Understanding
Gastro-Oesophageal
Reflux Disease (GORD)



holding your hand through health

The digestive system

The human body is a complex system, with the gastrointestinal tract (GIT) being one of the largest interfaces between the outside world and the inside of the body.^{1,2} The GIT is a large, muscular tube that extends from the mouth to the anus, where digestion of food occurs, along with the release of hormones and enzymes.³

Figure 1: The digestive system

The digestive system is made up of the gastrointestinal tract (GIT), which consists of the oesophagus, stomach, the small intestine and the colon. When food is ingested, it passes from the mouth through the GIT. The ingested food is processed in the stomach, while the absorption of nutrients occurs in the small intestine. In the colon, undigested food is processed to form stools and passed out through the anus.⁴ Figure 2 provides an overview of the passage of food in the GIT.

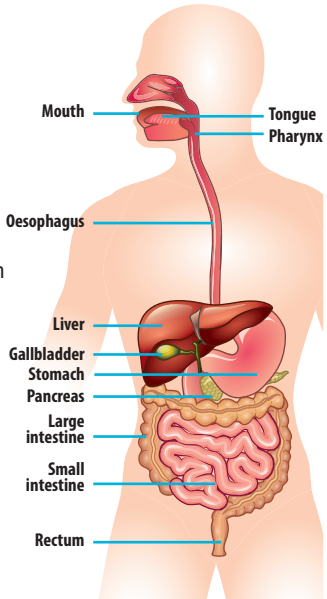


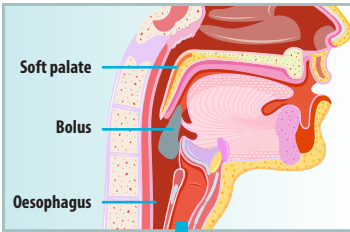
Image adapted from www.istock.com

Gastric acid production

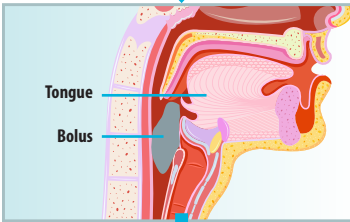
The main role of the stomach is to prepare ingested food for digestion and absorption by producing gastric acid (stomach acid), which is key in the process of digestion. Gastric acid, which is produced by the parietal cells in the stomach, coats the ingested food in order to aid digestion.⁵

Gastric hyperacidity, also referred to as acid dyspepsia, occurs when there is an excessive amount of gastric acid produced by the stomach, and often is a contributor to digestive disorders and illnesses, inflammation of the stomach lining, indigestion, nausea, bloating and flatulence (wind). Lifestyle and diet are contributors of gastric hyperacidity i.e. alcohol, smoking, stress, spicy or oily food.⁶

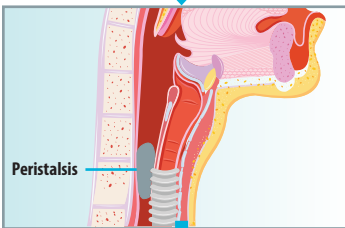
Figure 2: Passage of food into the stomach⁴



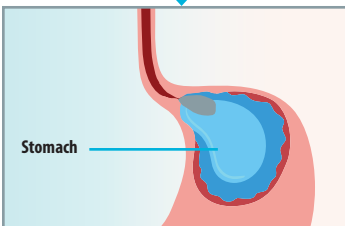
When food is chewed in the mouth, it mixes with saliva to form a bolus which is propelled to the back of the mouth by the tongue⁴



Swallowing is initiated and the bolus is pushed down into the oesophagus through the upper oesophageal sphincter⁴



Coordinated muscle contractions in the oesophagus, a process known as peristalsis, moves the bolus from the upper oesophageal sphincter through the length of the oesophagus to the lower oesophageal sphincter (LOS)⁴



The LOS relaxes to allow the bolus to enter the stomach where further digestion takes place. In the stomach the food mixes with stomach acid and other digestive enzymes. The LOS prevents digested food, stomach acid and digestive enzymes from moving back up into the oesophagus⁴

Image adapted from www.istock.com

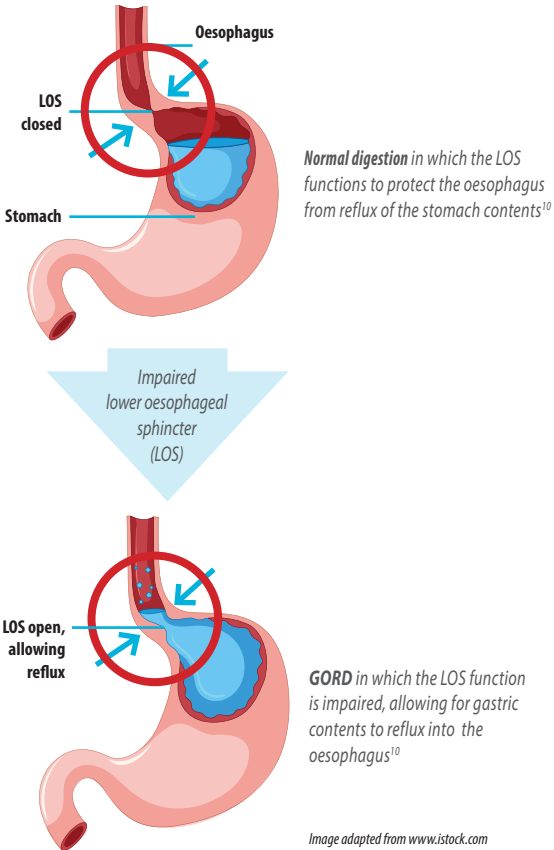
The lower oesophageal sphincter (LOS) is a ring-like muscle at the joint of the oesophagus and stomach which controls the passage of food and liquid between the oesophagus and stomach. As food approaches the closed sphincter, the muscle (LOS) relaxes and allows the food to pass through to the stomach where further digestion takes place.^{3,4} A normal functioning LOS prevents digested food, stomach acid and digestive enzymes from moving back up into the oesophagus.⁴

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What is gastro-oesophageal reflux disease (GORD)?

Gastro-oesophageal reflux disease (GORD), also known as acid reflux, occurs when contents in the stomach flow back into the oesophagus and/or mouth. This happens when the LOS does not close properly and may occur when the LOS is weak or becomes relaxed because the stomach is swollen.^{7,8,9}

Figure 3: GORD and the LOS¹⁰



This backflow of gastric acid and digestive enzymes can cause irritation to the oesophagus which causes the unpleasant symptoms of GORD.^{4,8} Unlike the stomach, the oesophagus has no lining to protect it from gastric acid damage. As a result, the oesophagus is at risk of damage, irritation and complications in the event of continuous reflux, because the oesophagus does not clear the acid quickly.^{4,8,9}

Symptoms of GORD



The two characteristic symptoms of GORD are heartburn and acid regurgitation. The occurrence of these symptoms two or more times a week is suggestive of GORD.^{7,11} **Heartburn** is a burning sensation felt behind the breast bone. It is regarded as the most obvious symptom of GORD and occurs when stomach contents irritate the normal lining of the oesophagus during reflux.

Acid regurgitation occurs when the contents of the stomach reach the mouth during reflux, leaving an acidic taste in the mouth.^{7,8,9} When this happens, symptoms such as a sore throat, hoarseness, cough, or the feeling of a lump in the throat (globus sensation) occur. In some cases, the stomach contents can flow into the lungs, causing a cough and/or wheezing. People who suffer with heartburn continuously may have difficulty in swallowing (dysphagia).^{7,8}

GORD is more likely to occur soon after meals, when the stomach is very acidic due to gastric acid production. In addition, the volume of contents in the stomach is usually high after a meal, which is when the LOS may not perform its function properly. Gravity also has a role to play in the occurrence of symptoms as sitting or standing helps prevent reflux of stomach contents into the oesophagus, while symptoms of reflux worsen when lying down.⁸

Factors contributing to the development of GORD:⁸

- Weight gain
- Eating fatty foods
- Caffeinated and carbonated beverages
- Alcohol
- Tobacco smoking
- Certain medication



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Managing GORD

The following lifestyle and dietary changes are recommended to reduce the discomfort of GORD and in some, may prevent GORD from occurring.^{9,12}

Lifestyle interventions

Weight management

Even a small increase in weight is associated with an increase in symptoms of GORD. Furthermore, weight gain increases the risk of complications. A reduction in waist circumference is also associated with a lower incidence of symptoms of GORD, oesophageal acid exposure and reflux after meals.¹²

In addition, tight-fitting clothing can increase discomfort and may also increase pressure in the abdomen, forcing stomach contents into the oesophagus.⁹



Dietary interventions

Food

Certain foods can trigger GORD in some people, such as excessive caffeine, chocolate, alcohol, tomato-based meals, spicy foods and fatty foods.^{7,9}

Avoid late meals

Lying down with a full stomach may increase the risk of acid reflux. Ensure meals are consumed at least three hours before bedtime to avoid symptoms of GORD.⁹



Sleeping position

Raising the head of the bed

Compared to sleeping flat, sleeping with the head of the bed raised has been shown to reduce reflux symptoms.^{7,12}



Cigarette smoking and alcohol consumption

Cigarette smoking and alcohol consumption have been associated with an increase in reflux symptoms. Therefore, cutting down on these risk factors can improve GORD.¹² Smoking reduces the amount of saliva in the mouth and throat, which usually helps to neutralise refluxed acid. Smoking also lowers the pressure in the LOS, which causes coughing, resulting in frequent episodes of acid reflux. Therefore, quitting smoking can reduce symptoms of GORD or help to avoid GORD.⁹



Medicine to treat GORD

In addition to lifestyle interventions, there are medicines available to treat GORD. The goal of treatment for GORD is to take the lowest possible dose of medication that controls symptoms and prevents complications.⁹

Proton pump inhibitors (PPIs)

A class of medication called the proton pump inhibitors (PPIs), are regarded as the most effective treatment for GORD. Omeprazole, lansoprazole, pantoprazole, esomeprazole and rabeprazole are examples of PPIs available in South Africa. Since PPIs work by blocking the final step of gastric acid secretion in the stomach, they offer the most powerful way to suppress acid production in the stomach.^{7,8}

Treatment with a PPI continues for at least eight weeks when prescribed by the doctor, and depending on the response to treatment, the dose may be reduced or treatment may be discontinued.⁹ It is recommended that PPIs be taken at least 30 to 45 minutes before meals either once or, if necessary, twice a day.^{7,12} While there are alternative treatments for GORD, such as histamine-2 (H_2) blockers, drugs that stimulate the movement of contents through the oesophagus, stomach and intestines (called promotility drugs) and antacids/alginates, these are less effective when compared to the PPIs.⁸ The most common side effects of PPIs include headache, nausea, diarrhoea, abdominal pain, fatigue and dizziness.¹³

Histamine-2 (H_2) blockers

The histamine-2 blockers reduce production of acid in the stomach by blocking the release of histamine, which is one of the steps necessary for gastric acid secretion. Cimetidine and ranitidine are H_2 blockers available in South Africa.¹³

Antacids and alginates

Antacids and alginates do not inhibit the secretion of gastric acid, but offer symptom relief. Antacids may offer brief relief from the discomfort of GORD by neutralising the gastric pH. Its effect, however, is short-term (approximately two hours).^{7,9,13} Alginates on the other hand, form a viscous layer or a barrier that floats within the stomach, preventing the reflux.¹³

**Based on their mechanism of action,
PPIs offer the most effective treatment
for GORD^{7,9,12}**

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When to seek medical attention?

Most cases of GORD can effectively be managed by implementing lifestyle changes and the use of over-the-counter medications. However, medical attention should be sought if:⁷

- Symptoms such as unexplained weight loss, difficulty swallowing or internal bleeding in addition to heartburn and/or acid regurgitation develop.⁷
- Symptoms persist after lifestyle changes have been made.⁷
- Symptom control has not been achieved after 2 weeks of treatment.¹⁴

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