

# Understanding GERD

Heartburn Treatment Center at Inova Alexandria Hospital





## Understanding GERD

### What is GERD?

Gastroesophageal reflux disease (GERD) occurs when the lower esophageal sphincter (LES) opens spontaneously, for varying periods of time, or does not close properly and stomach contents rise up into the esophagus. The esophagus is the tube that carries food from the mouth to the stomach. The LES is a ring of muscle at the bottom of the esophagus that acts like a valve between the esophagus and stomach. GERD is also called acid reflux because the digestive juices and food that rises up into the esophagus has acid mixed in with it.

When acid reflux occurs, food or fluid can often be tasted in the back of the mouth. When refluxed stomach acid touches the lining of the esophagus it may cause a burning sensation in the chest or throat called heartburn or acid indigestion. Occasional reflux is common and does not necessarily mean one has a serious problem. Persistent reflux that occurs more than twice a week is considered GERD, and it can eventually lead to more serious health problems. People of all ages can have GERD.

### What are the symptoms of GERD?

The main symptom of GERD in adults is frequent heartburn, also called acid indigestion. Patients often describe a burning type pain in the lower part

of the mid-chest, behind the breastbone, and in the mid-abdomen. Often a foul or oily taste accompanies the pain. Most children under 12 years with GERD, and some adults, have GERD without heartburn. Instead, they may experience a dry cough, asthma symptoms, or trouble swallowing. This condition is called laryngeal pharyngeal reflux or LPR.

### What causes GERD?

The reason some people develop GERD is still unclear. In some people with GERD, the LES simply relaxes at an inappropriate time. Anatomical abnormalities such as a hiatal hernia may also contribute to GERD. A *hiatal hernia* occurs when the upper part of the stomach and the LES move above the diaphragm (a thin layer of muscle that separates the stomach cavity from the chest cavity). When the LES is in its normal position the diaphragm helps keep stomach contents and acid from rising up into the esophagus. When a hiatal hernia is present, acid and non-acid reflux can occur more easily. A hiatal hernia can occur in people of any age and is most often a common finding in otherwise healthy people over age 50. Like hernias in other parts of the body, this defect can be acquired over time from straining, coughing or gaining weight. Fortunately every hiatal hernia does not cause GERD or significant symptoms.

Other factors that may contribute to GERD include:

- Obesity/pregnancy
- Heavy or repetitive lifting and/or straining
- Smoking

The food you eat **does not cause reflux** but foods that commonly worsen reflux symptoms include:

- Citrus fruits
- Chocolate
- Drinks with caffeine or alcohol
- Fatty and fried foods
- Garlic and onions
- Mint flavorings
- Spicy foods
- Tomato-based foods, like spaghetti sauce, salsa, chili, and pizza



## Treating GERD – Medical Options

### How is GERD treated?

See your health care provider if you have had symptoms of GERD and have been using antacids or other over-the-counter reflux medications for more than 2 weeks. Your health care provider may refer you to a gastroenterologist, a doctor who treats diseases of the stomach and intestines. Depending on the severity of your GERD, treatment may involve one or more of the following lifestyle changes, medications, or surgery.

### Lifestyle Changes

- If you smoke, stop.
- Avoid foods and beverages that worsen symptoms.
- Lose weight if needed.
- Eat small, frequent meals.
- Wear loose-fitting clothes.
- Avoid lying down for 3 hours after a meal.
- Raise the head of your bed 6 to 8 inches by securing wood blocks under the bedposts or using a wedge under the mattress. Just using extra pillows will not help.

## Medications

Your physician may recommend over-the-counter antacids or medications that stop acid production. You can buy many of these medications without a prescription; however, see your physician before starting or adding a medication.

- **Antacids**, such as Alka-Seltzer, Maalox, Mylanta, Rolaids, and Riopan, are usually the first drugs recommended to relieve heartburn and other mild GERD symptoms. Many brands on the market use different combinations of three basic salts—magnesium, calcium, and aluminum—with hydroxide or bicarbonate ions to neutralize the acid in your stomach. Antacids, however, can have side effects.

Magnesium salt can lead to diarrhea, and aluminum salt may cause constipation. Aluminum and magnesium salts are often combined in a single product to balance these effects.

Calcium carbonate antacids, such as Tums, can also be a supplemental source of calcium. They can cause constipation as well.

- **Foaming agents**, such as Gaviscon, work by covering your stomach contents with foam to prevent reflux.
- **H2 blockers**, such as cimetidine (Tagamet HB), famotidine (Pepcid AC), nizatidine (Axid AR), and ranitidine (Zantac 75), decrease acid production. They are available in prescription strength and over-the-counter strength. These drugs provide short-term relief and are effective for about half of those who have GERD symptoms.



- **Proton pump inhibitors** include medications like: omeprazole (Prilosec, Zegerid), lansoprazole (Prevacid), pantoprazole (Protonix), rabeprazole (Aciphex) esomeprazole (Nexium), dexlansoprazole (Dexilant) which are available by prescription. Many of these are now available in over-the-counter strengths that do not require a prescription. Proton pump inhibitors are more effective than H2 blockers and can relieve symptoms and heal the esophageal lining in almost everyone who has GERD by providing a less acidic environment that promotes healing but they do not stop the reflux/regurgitation from occurring. .
- **Prokinetics** help strengthen the LES and make the stomach empty faster so that there may be less fluid in the stomach to be refluxed or regurgitated. This group includes bethanechol (Urecholine) and metoclopramide (Reglan). Metoclopramide also improves muscle action in the digestive tract. Prokinetics can have side effects that limit their usefulness—fatigue, sleepiness, depression, anxiety and problems with movement in some patients.

Because drugs work in different ways, combinations of medications may help control symptoms. People who get heartburn after eating may take both antacids and H2 blockers. The antacids work first to neutralize the acid in the stomach, and then the H2 blockers act on acid production. By the time the antacid stops working, the H2 blocker will have stopped acid production. Your physician is the best source of information about how to use medications for GERD.

**It is important to note that medications do not “cure” reflux like antibiotics “cure” infections. Medical management of GERD is designed to control the symptoms and lessen the damage caused by stomach fluid splashing into the esophagus and airway. Medications and lifestyle adjustments do not repair the mechanical defects that allow reflux to occur. Most patients experience a rapid return of their previous symptoms when medications are discontinued.**

## Treating GERD – Surgical Options

### What if GERD symptoms persist?

If your symptoms do not improve with lifestyle changes or medications, you may need additional tests.

- **Barium swallow radiograph** uses x-rays to help spot abnormalities such as a hiatal hernia and other structural or anatomical problems of the esophagus. With this test, you drink a solution and then x-rays are taken. The test will not detect mild irritation, although strictures/narrowing of the esophagus—and ulcers can be observed.
- **Upper endoscopy** is more accurate than a barium swallow radiograph and may be performed in a hospital or a doctor's office. The doctor may spray your throat to numb it and then, after lightly sedating you, will slide a thin, flexible plastic tube with a light and lens on the end called an endoscope down your throat. Acting as a tiny camera, the endoscope allows the doctor to see the surface of the esophagus and search for abnormalities. If you have had moderate to severe symptoms and this procedure reveals injury to the esophagus, usually no other tests are needed to confirm GERD.  
The doctor also may perform a biopsy. Tiny tweezers, called forceps, are passed through the endoscope and allow the doctor to remove small pieces of tissue from your esophagus. The tissue is then viewed with a microscope to look for damage caused by acid reflux and to rule out other problems if infection or abnormal growths are not found.
- **Esophageal Function Testing (EFT)** formerly called esophageal manometry is used to monitor the strength and coordination of the contractions in the esophagus and LES. This test typically takes less than 20 minutes and is used to identify problems with swallowing and to guide surgical and medical management.
- **24hr pH monitoring examination** involves inserting a small recording wire into the esophagus that will stay there for 24 hours. While you go about your normal activities, the device measures when and how much acidic and non-acidic fluid is refluxing into your esophagus. It can even determine how high it gets in your throat.

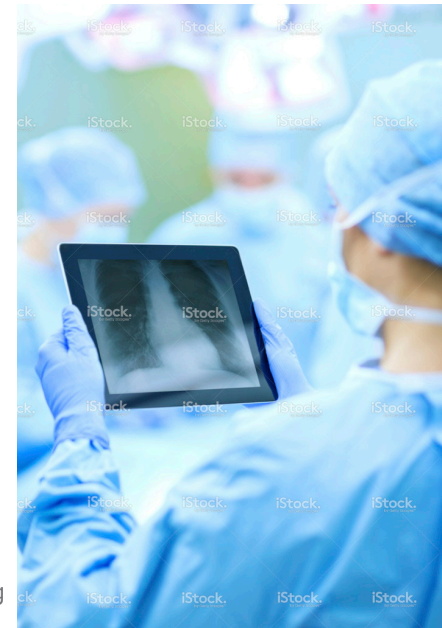
This test is very useful when combined with a symptom diary. This allows the doctor to see correlations between symptoms and reflux episodes. The procedure is sometimes helpful in detecting whether respiratory symptoms, including wheezing and coughing, are triggered by reflux.

**The perfect diagnostic test for GERD does not exist. The tests mentioned above all have their strengths and weaknesses. It often takes a combination of tests and physician evaluations to accurately determine the cause of symptoms and to design and implement an appropriate therapy to control those symptoms and repair any damage from chronic reflux.**

### Surgery

Surgery is an option when medicine and lifestyle changes fail to successfully manage the symptoms and damage associated with GERD. The procedures utilized are designed to correct the mechanical/physical defect that allows reflux to occur. Some patients also choose surgery as a reasonable alternative to a lifetime of drugs and lifestyle restrictions that were detailed above.

- **Fundoplication** is the standard surgical treatment for GERD. Usually a specific type of this procedure, called Nissen fundoplication, is performed. The Nissen fundoplication is considered the “gold standard” for controlling reflux and repairing hiatal hernias. It is the technique by which all other procedures are judged. During the Nissen fundoplication, the hiatal hernia is repaired and the upper part of the stomach is wrapped around the LES to strengthen the sphincter, preventing acid reflux.  
The Nissen fundoplication is typically performed with minimally invasive surgical techniques (laparoscopic surgery). During a laparoscopic Nissen fundoplication small cameras and instruments are utilized to perform the repair through very small incisions. The small incisions greatly reduce the post-operative pain and allow for a much faster recovery.



When performed by experienced surgeons, laparoscopic fundoplication is safe and effective in people of all ages, including infants. A “Robotic” Nissen Fundoplication is identical to a laparoscopic Nissen with respect to the actual operative steps. It may offer some advantage in some cases for the operating surgeon with respect to improved vision and dissection. Most people can leave the hospital after an overnight stay and return to work in 1 to 2 weeks. **More importantly, because the reflux is controlled, medications for GERD are usually no longer needed for most patients.**

- **Endoscopic techniques** have been developed in the past to attempt to control reflux. They are done via the mouth and do not involve incisions or extended recovery but none have shown the efficacy of laparoscopic surgery at controlling reflux long term in all patients but in highly selected patients with mild disease and small hiatal hernias they can be very effective. The Trans-oral Incisionless Fundoplication or TIF procedure is a good example. It is often chosen by patients who find medical management unsatisfactory but feel that even a minimally invasive surgery is too big of a step for them. A similar procedure called MUSE has recently been developed and placed into practice. These procedures do not “burn any bridges” so a surgical fundoplication can be done at a later date if the incisionless route doesn’t maintain durable results.
- **Magnetic Sphincter Augmentation** utilizing the **LINX procedure** is one of the newest mechanisms for controlling reflux. This FDA approved device is implanted by the Surgeon around the LES utilizing a minimally invasive surgical technique that takes less than an hour to perform in most cases. The magnetic bracelet opens and closes to let food pass through but resists regurgitation of acid and gastric contents from below. Unlike a Nissen the repaired valve has the ability to relax, which allows belching and vomiting to occur if needed. Dr. Gillian was the first Surgeon in Virginia and the DC Metro area approved to implant this device and is currently the leading implant center for this procedure in the Eastern United States. Inova Alexandria Hospital is one of only four training sites in the country for surgeons to learn this procedure because of the expertise of Dr. Gillian and his team.

The Heartburn Treatment Center at Inova Alexandria Hospital provides state-of-the-art evaluation of patients with symptoms like gastroesophageal reflux disease (GERD), esophageal motility disorders, dysphagia and non-cardiac chest pain. The center provides patients and their doctors with rapid access to a unique “one-stop-shop” approach to evaluating and defining unresolved patient complaints.

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