

# Swallowing and Esophageal Disorders



Esophageal disorders – especially those involving swallowing problems – affect more than 15 million Americans of all ages. For many, they’re temporary issues that can be managed with over-the-counter medicines and lifestyle changes. But for others, they are chronic concerns that plague daily life and can lead to more serious conditions.

The good news is that esophageal disorders often can be successfully treated before long-term damage occurs. But it is important to get an early diagnosis and treatment plan. At Cleveland Clinic, we’ve assembled an entire team of all the specialists you need – including gastroenterologists, radiologists, pathologists, thoracic surgeons and swallowing therapists – to offer leading-edge diagnosis and treatment options.

Ranked No. 2 in the country and the top in Ohio by *U.S. News & World Report* for gastroenterology, the Digestive Disease Institute offers one of the few centers in the country dedicated to swallowing disorders. Through the Center for Swallowing & Esophageal Disorders, patients benefit from the extensive experience of physicians who diagnose and treat nearly 2,000 patients a year.

The Miller Family Heart & Vascular Institute is one of the largest thoracic and cardiovascular specialty groups in the world. The commitment of its physicians to research, education and patient care has led to innovative treatment, better outcomes and improved quality of life for patients.

## USING THIS GUIDE

Please use this guide as a resource as you begin to learn about esophageal disorders and examine your treatment options. Remember, it is your right as a patient to ask questions and to seek a second opinion.

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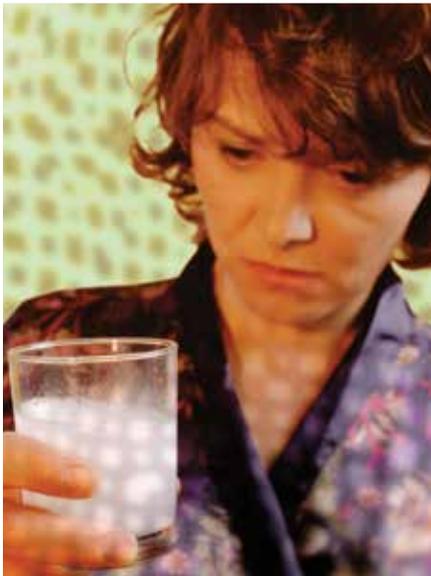


## The mechanics of swallowing

In order to understand diseases of the esophagus, it's helpful to know what takes place during the swallowing process.

The esophagus is a muscular tube through which food and drink pass from the mouth to the stomach. It is designed to push food into the stomach. To prevent food from moving backward – a condition called reflux – muscles at both ends of the esophagus close when food is not moving forward through them. These constricting, ring-shaped muscles are called sphincters.

The sphincters act like valves and must constrict in an exact order for normal swallowing to occur. The upper muscles stop food from moving into the windpipe and voice box. The lower ones prevent food and stomach acid from moving backward into the esophagus. Problems with the relaxation of the sphincter muscles can result in choking or inability to eat. Difficulties with the constriction (tightening) of the sphincter muscles cause reflux, which may result in symptoms such as heartburn or even damage to the esophagus.



## What are the symptoms of swallowing problems?

There are a number of swallowing disorders that can cause a variety of symptoms. Early diagnosis and intervention are important to prevent long-term complications. See your physician if you experience any of the following:

- Food sticking in the throat
- Heartburn
- Choking on food
- Inability to swallow liquids
- Pain when swallowing
- Persistent cough or sore throat
- Hoarseness or a gurgly voice during or after eating
- A “lump in the throat” sensation
- Wheezing without a history of asthma or lung problems



## What causes swallowing problems?

More than 15 million Americans have a swallowing disorder, such as esophagitis, gastroesophageal reflux or achalasia. They can occur at any age. Swallowing problems may be temporary, or they may be an indication of a serious medical problem. There are many causes, including nerve and muscle problems, head and neck injuries and cancer. Or they may occur because of a stroke. Certain medications can also contribute to the disorder.



## How are swallowing problems diagnosed?

Your doctor can determine the location and the extent of the problem based on symptoms, a physical examination and diagnostic tests, which may include:

- **Barium swallow** – This special video X-ray study shows the entire swallowing process and anatomy. It is a painless test that can pinpoint specific problem areas and determine appropriate treatment.
- **Motility study** – A test that records movement and pressures of the esophagus.
- **X-rays** – Imaging of the neck, head or thyroid can help diagnose swallowing problems.
- **pH monitoring** (conventional 24-hour pH/impedance and 48-hour Bravo capsule) – This test measures and records the pH in your esophagus to determine if you have gastroesophageal reflux disease (GERD). It can also be done to determine the effectiveness of medications or surgical treatment for GERD.
- **Endoscopy** – This test uses a long, flexible lighted tube with a camera called an endoscope to look at the esophagus.
- **Endoscopic ultrasound** – A type of ultrasound testing to determine the nature and extent of tumors and other lesions.

## How are swallowing problems treated?

Sometimes just learning different physical techniques is enough to improve swallowing ability. Other times, and depending on the precise ailment, medical intervention, and/or surgery may be needed. Here is a closer look at each type of treatment:

### PHYSICAL TECHNIQUES

A swallowing therapist can tailor these general strategies to your particular situation:

- Avoid eating when tired or stressed
- Change head position and posture when swallowing (chin to chest is usually best)
- Minimize head movements
- Eat smaller, more frequent meals
- Lubricate dry food by mixing it with a sauce
- Always swallow all of the food in your mouth before taking another bite
- Do not eat foods that will stick together
- Thicken liquids to make them easier to swallow

### MEDICAL TREATMENT

Sometimes, medical interventions are needed. For instance, stretching the esophagus can be done without surgery. Also, medications are effective for some people. Some medications can do the following:

- Reduce stomach acid
- Overcome spasms of the esophagus
- Allow the stomach to empty better

### Cleveland Clinic Center for Swallowing and Esophageal Disorders

Cleveland Clinic has one of the nation's few centers dedicated to swallowing disorders. Heading a team of four physician specialists and two full-time nurses is Sigurbjorn Birgisson, MD, MA.

Our Swallowing Center team collaborates with multidisciplinary specialists, including radiologists, otolaryngologists, thoracic and general surgeons, pathologists, speech pathologists and others, to manage more than 2,500 patients a year. Monthly meetings gather the center's staff with these colleagues from other specialties to discuss the management of complex cases.

"These sessions are stimulating," says Dr. Birgisson, "and underscore the broad expertise and resources we can bring to bear for patients with the most challenging swallowing and esophageal disorders."





## Lifestyle changes can help

Lifestyle changes may control your symptoms and help reduce your risk of complications from GERD. Choose from a variety of healthy foods, but keep a food diary to discover what foods trigger your reflux or heartburn. Common triggers include:

- Citrus juices or fruits
- Spicy foods, garlic and onion
- Mint flavoring
- Chocolate
- Alcohol
- Drinks with caffeine or carbonation
- Tobacco
- Fatty and fried food
- Tomato-based foods, like spaghetti sauce, chili and pizza

Eat smaller meals and avoid lying down for at least three hours after eating. You also can sleep with the head of your bed elevated, as this can help prevent stomach acid from flowing up into the esophagus.

Lose weight if you are carrying extra pounds, as those who are overweight tend to have more problems with acid reflux or heartburn.

## SURGERY

Surgery also may be an option for people with swallowing disorders. Surgical treatments depend on the location of the swallowing disorder and may involve strengthening or loosening the esophageal sphincters or removing scar tissue and/or tumors from the esophagus.

## What is esophagitis?

Esophagitis is a general term for any inflammation of the lining of the esophagus. It can be caused by leakage of stomach acid into the esophagus (known as gastroesophageal reflux disease, or GERD), vomiting, medications such as aspirin, and viruses, fungi, bacteria or diseases that weaken the immune system.

Symptoms include difficult and/or painful swallowing, heartburn and acid regurgitation.

## How is esophagitis diagnosed?

Once your doctor has performed a thorough physical examination and reviewed your medical history, there are several tests that can be used to diagnose esophagitis. These include:

- **Endoscopy** – This test uses a long, flexible lighted tube with a camera called an endoscope to look at the esophagus.
- **Biopsy** – During this test, a small sample of the esophageal tissue is removed and then sent to a laboratory to be examined under a microscope.
- **Barium X-ray** – During this procedure, X-rays are taken of the esophagus after the patient drinks a barium solution. Barium coats the lining of the esophagus and shows up white on an X-ray. This characteristic enables doctors to view any abnormalities.

## How is esophagitis treated?

The treatment for esophagitis depends on its cause. While medications such as H2 blockers and proton pump inhibitors that block acid production may be recommended, other drugs may be prescribed for infectious and inflammatory causes of esophagitis. To treat pain brought on by esophagitis, your doctor may give you an analgesic to gargle with and then swallow.

While being treated for esophagitis, there are certain steps you can take to help limit any discomfort that you may feel. These include avoiding spicy and acidic foods, adding more soft foods to your diet, taking small bites, chewing thoroughly, and avoiding alcohol and tobacco.

The causes of esophagitis usually respond to medical and lifestyle-based treatments; however, some causes such as acid reflux may require long-term treatment.

## What is GERD?

GERD stands for gastroesophageal reflux disease. It's a condition in which stomach contents leak backward from the stomach into the esophagus.



Acid is produced by the stomach to digest food. When this acid refluxes and touches the lining of the esophagus, it causes the burning sensation known as heartburn. The fluid may also be tasted in the back of the mouth, a condition called acid indigestion.

Some people have GERD without heartburn. Instead, they may experience pain in the chest, hoarseness in the morning, trouble swallowing, a dry cough and bad breath. Other symptoms include the feeling of food stuck in the throat or tightness in the throat.

Occasional heartburn is common, but if it occurs more than twice a week it may be considered GERD.

## What causes GERD?

GERD is a result of the lower esophageal sphincter (LES) – the muscle at the bottom of the esophagus – not closing properly. When it doesn't close, food, liquids and stomach acid can move back up into the esophagus.

The causes of GERD are uncertain. A hiatal hernia may be a contributing factor. A hiatal hernia occurs when the stomach bulges up into the chest through the opening in the diaphragm (the muscle wall that separates the chest cavity from the abdomen). The diaphragm normally helps the LES keep stomach contents from going back up into the esophagus. But the hernia disrupts the normal anatomy of the LES and makes it easier for reflux to occur.

Other factors that may contribute to GERD:

- Alcohol use
- Smoking
- Obesity
- Pregnancy
- Medications
- Fatty foods

If you think that any of your medications are causing heartburn, talk to your doctor. Never change or stop a medication you take regularly without first talking to your doctor.

## How is GERD diagnosed?

Your doctor will perform a physical exam and review your medical history. Tests may be ordered to confirm the diagnosis. These include:

- **Barium swallow test** – In this test, X-rays are taken after you drink a contrast solution that contains the chemical barium. This allows the doctor to see if there is a narrowing of the esophagus, ulcer, hiatal hernia or other problems.
- **Endoscopy** – An exam in which your doctor numbs your throat and then slides in a thin, flexible tube with a tiny camera on the end. This lets the doctor see the surface of the esophagus.





- **24-hour pH monitoring** – This test involves a tiny tube that stays in the esophagus for 24 hours, measuring when and how much acid comes up into the esophagus. The Bravo esophageal pH test works using a small capsule, about the size of a gel cap, which is temporarily attached to the wall of the esophagus during an upper endoscopy. The capsule measures pH levels in the esophagus and transmits readings by radio telecommunications to a receiver (about the size of a pager) worn on your belt or waistband. The receiver has several buttons, which you will press to record GERD symptoms such as heart burn (the nurse will tell you what symptoms to record).
- **Esophageal manometry** – Another test using a thin, flexible tube to measure the function of all of the muscles of the esophagus. It indicates how well food moves down the esophagus and how well the muscles are working to prevent reflux.

## Are there long-term effects?

GERD can have serious complications. Inflammation of the esophagus from stomach acid may cause bleeding or ulcers. Scars from tissue damage can narrow the esophagus and make swallowing difficult. Some people (between 5 and 10 percent of GERD patients) may develop Barrett's esophagus, which, over time, increases your risk of developing esophageal cancer. In addition, studies have shown that asthma, chronic cough and pulmonary fibrosis may be aggravated by GERD.

If you have symptoms of GERD, be sure to discuss it with your doctor.

## How is GERD treated?

All forms of GERD treatment are designed to eliminate the symptoms, heal any injury to the esophagus, and prevent relapse and complications. Here is a look at the available medical, surgical and endoscopic treatment options:

### MEDICAL TREATMENT

Since the primary symptom of GERD is heartburn, the medical management of GERD usually begins with diet lifestyle changes. Your doctor and a swallowing therapist can tailor strategies to your specific situation, which may include:

**Over-the-counter antacids** – Available without a prescription, these include such products as Alka-Seltzer®, Maalox®, Mylanta®, Pepto-Bismol®, Roloids® and Riolpan®. These medications may have side effects, such as diarrhea or constipation. Talk to your doctor or pharmacist about the product that is best for you.

**Foaming agents** – These drugs, such as Gaviscon®, work by covering your stomach contents with foam to prevent reflux. These may help if you have no damage to the esophagus.

**H2 blockers** – These medications, including cimetidine (Tagamet HB®), famotidine (Pepcid AC®), nizatidine (Axid AR®) and ranitidine (Zantac 75®), block acid production. They are available over-the-counter and in prescription strength, but long-term use should only be undertaken with the supervision of your physician.





**Proton pump inhibitors** – Available by over the counter and by prescription, this group of drugs can relieve symptoms in almost all GERD patients. These include omeprazole (Prilosec®), lansoprazole (Prevacid®), pantoprazole (Protonix®), rabeprazole (Aciphex®) and esomeprazole (Nexium®). Long-term use should only be undertaken with the supervision of your physician.

**Prokinetics** – Another group of medications, prokinetics help strengthen the sphincter and make the stomach empty faster. These drugs have frequent side effects and this limits their usefulness. Also, long-term use should only be undertaken with your physician's supervision.

Because medications work in different ways, combinations of drugs may be the best approach to controlling your symptoms.

### SURGERY

If lifestyle changes and medications don't work or have stopped working after initial benefit, a small number of patients may require surgery to treat GERD. Most often used is a procedure called Nissen fundoplication. It involves repairing the hiatal hernia and tightening the LES.

This fundoplication procedure may be done with small cuts in the abdomen and the use of a thin, lighted instrument that holds a tiny camera (laparoscope). It usually requires a short hospital stay and general anesthesia. The procedure has been safely and effectively performed in patients of all ages, and most patients are satisfied with the results when undertaken for the right reasons.

In some cases, the procedure may need to be repeated. This can be done successfully when the valve mechanism created by the first fundoplication is no longer effective. However, results of repeat operations are more variable and must be performed at experienced high volume centers.

### ENDOSCOPIC THERAPIES

In addition, two endoscopic devices have been approved to treat chronic heart-burn. The Bard® EndoCinch™ Suturing System reinforces the LES with stitches. The Stretta system creates tiny cuts in the LES. When the cuts heal, the scar tissue toughens the muscle. The long-term effects of these procedures are unknown.

## What is Barrett's esophagus?

Barrett's esophagus is the result of acid irritation of the tissue lining the esophagus. This irritation causes the tissue cells to be replaced by a type of cell not normally found there. These abnormal cells are similar to those found in the lining of the intestines. The exact cause is unknown, but GERD is a risk factor.

Barrett's esophagus does not have specific symptoms, although patients may have symptoms related to GERD. It does, however, increase the risk of developing esophageal cancer. Although that risk is very small (less than 1 percent), patients with Barrett's esophagus should be regularly monitored for changes that may indicate the development of this cancer.



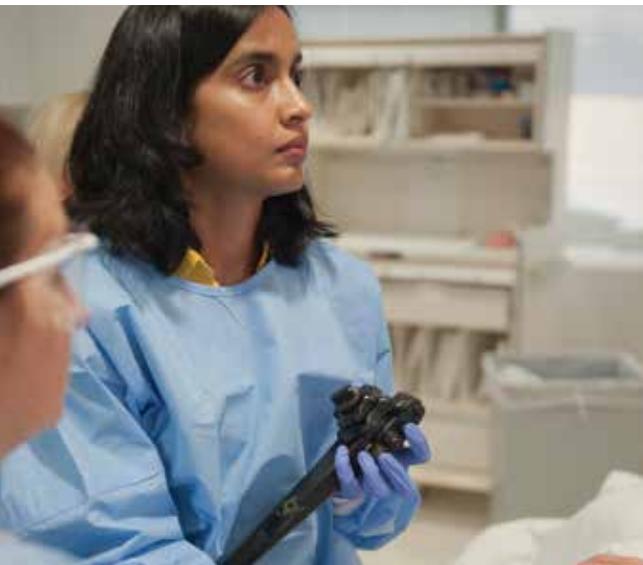


## Esophageal cancer

Although less than 1 percent of Barrett's esophagus develops into esophageal cancer, you can take comfort in the fact that our Digestive Disease Institute works hand-in-hand with our colleagues at Cleveland Clinic's Taussig Cancer Institute, should the need arise.

Taussig Cancer Institute experts provide the most leading-edge care to patients with cancer, and are at the forefront of new and emerging clinical trials and cancer research. The Cancer Institute can help answer questions you have about cancer, schedule appointments for consultation with a physician, provide a cancer treatment plan, support you and promote your well-being during your treatment and your life beyond treatment.

To speak with a cancer nurse specialist for answers to your questions, or to request an appointment, call our Cancer Answer Line toll-free at 866.223.8100.



## Does GERD always cause Barrett's esophagus?

No. About 8 to 20 percent of those with chronic GERD symptoms develop Barrett's esophagus.

However, anyone can develop Barrett's esophagus, even those who do not have GERD. Men develop the disease twice as often as women, and white men are affected more frequently than those of other races. Other risk factors include obesity, increasing age and family history. Barrett's esophagus is uncommon in children.

## How is Barrett's esophagus diagnosed?

The only way to confirm a diagnosis of Barrett's esophagus is with a test called an upper gastrointestinal endoscopy. A gastroenterologist (a doctor specializing in digestive diseases) or a surgeon performs this test. The doctor inserts a small, flexible tube with a light down the esophagus. A tiny camera mounted on the end transmits a video image that allows the doctor to closely examine the lining of the esophagus.

Although changes in the appearance of the lining may suggest Barrett's esophagus, the only way to be certain is with a biopsy. Using the endoscope, the doctor removes small tissue samples from several different areas of the esophagus. These tissue samples are then closely examined in a laboratory under a microscope to determine whether Barrett's esophagus cells are present.

## What are the complications of Barrett's esophagus?

Barrett's esophagus can lead to cancer of the esophagus in a small number of patients. Roughly 1 in 300 patients with Barrett's esophagus will develop esophageal cancer each year.

This cancer, adenocarcinoma, develops through a series of precancerous changes in the cells of the esophagus. These changes are known as dysplasia, and the condition is classified as low grade (slight cellular change) or high grade (moderate to severe cellular change). Like Barrett's esophagus, these changes can only be detected with a biopsy.

Because of the cancer risk, patients with Barrett's esophagus should have endoscopies at regular intervals. This is known as surveillance, and will help detect any cancer at an early and potentially curable stage.

## How is Barrett's esophagus treated?

### MEDICAL TREATMENT

The treatment of Barrett's esophagus is similar to the treatment of GERD and is likely to involve lifestyle changes. It also may include medications, called proton pump inhibitors, to block the formation of acid.



Available mostly by prescription, this group of drugs includes omeprazole (Prilosec®), lansoprazole (Prevacid®), pantoprazole (Protonix®), rabeprazole (Aciphex®), esomeprazole (Nexium®) and dexlansoprazole (Dexilant®). The medication is used to prevent further damage and typically is taken once or twice a day, with meals.

H2 blockers may relieve symptoms for some patients. This class of drugs, which includes cimetidine (Tagamet HB®), famotidine (Pepcid AC®), nizatidine (Axid AR®) and ranitidine (Zantac 75®), block acid production. They are available over-the-counter and in prescription strength.

Both proton pump inhibitors and H2 blockers work by building up the medication levels in your body and therefore, continually suppressing acid production. They do not work effectively when taken intermittently.

### ENDOSCOPIC THERAPIES

There are several possible treatments that specifically focus on the abnormal tissue found in Barrett's esophagus:

- **Radiofrequency ablation** – Also known as RFA, this therapy uses radio waves to kill precancerous and cancerous cells. An electrode mounted on a balloon or endoscope sends heat to the Barrett's tissue, destroying the cells.)
- **Endoscopic mucosal resection (EMR)** – This treatment lifts the abnormal lining and cuts it away from the wall of the esophagus. The lining is then removed through the endoscope. The goal is to remove any precancerous or cancer cells in the lining.
- **Cryotherapy** – This is a new emerging technique which involves freezing the tissue with liquid nitrogen.

### SURGERY

Surgery to remove most of the esophagus is an option when severe dysplasia (precancer) cannot be eradicated or cancer has been diagnosed. After the removal, the esophagus is rebuilt from part of the stomach or large intestine. The earlier the stage of the cancer for which surgery is done, the more likely the chance for a cure.

## What is achalasia?

Achalasia is a rare condition in which the esophagus cannot move food into the stomach. The muscle at the lower end of the esophagus stays closed during swallowing. This prevents the food from entering the stomach, causing the food to back up. Other symptoms include difficulty swallowing, vomiting of undigested food, chest pain, heartburn and weight loss.

## What causes achalasia and how serious is it?

Although the exact cause is unknown, researchers believe that achalasia may be linked to a virus, and is the result of damage to the nerves of the esophagus that allow the LES to relax. These nerves are attacked by the patient's own immune system and slowly degenerate.

### Specialized help for Barrett's esophagus

Researchers have discovered a genetic link to Barrett's esophagus and esophageal cancer. A study led by Charis Eng, MD, PhD, Chair and Founding Director of the Genomic Medicine Institute of Lerner Research Institute At Cleveland Clinic, identified three mutated genes present in 11 percent of patients with Barrett's esophagus or esophageal cancer. This is considered a significant genetic predisposition to the diseases.

Identifying these genes also gives valuable insight into how the diseases occur. "This is essential for improving risk assessment, disease management and saving lives," says Dr. Eng. However, there are no approved genetic tests that are currently used in the management of Barrett's esophagus.

For patients with Barrett's esophagus, Cleveland Clinic offers:

- Expertise in diagnosis and treatment, including new endoscopic techniques
- Expertise in pathologic diagnosis
- Entry into Barrett's registry to study the disease progression and remind patients of their next follow-up surveillance date
- Opportunities to participate in clinical research programs examining:
  - New endoscopic imaging
  - New approaches to medical therapy and chemoprevention
- Entry into the Ohio Familial Barrett's Esophagus Consortium Research Program for patients with a family history of Barrett's esophagus or esophageal cancer.



Although achalasia is relatively rare, Cleveland Clinic treats about two cases each week, and has treated more patients than any other center in the country. It is also one of the few centers in the world that is researching the cause and treatment of achalasia.

Over time, people with achalasia have increasing trouble eating and drinking. As the condition advances, it can cause major weight loss and malnutrition. Patients also may inhale food contents into the lungs, which can lead to pneumonia. They also have a slightly increased risk of developing esophageal cancer.

## How is achalasia diagnosed?

Your doctor will perform a physical exam and review your medical history. Tests may be ordered to confirm the diagnosis. These include:

- **Barium swallow test** – In this test, X-rays are taken after you drink a contrast solution that contains the chemical barium. This allows the doctor to see if there is a narrowing of the esophagus, ulcer, hiatal hernia or other problems.
- **Endoscopy** – An exam in which your doctor numbs your throat and then slides in a thin, flexible tube with a tiny camera on the end. This lets the doctor see the surface of the esophagus.
- **Esophageal manometry**– Another test using a thin, flexible tube to measure the function of all of the muscles of the esophagus. It indicates how well food moves down the esophagus and how well the muscles are working to prevent reflux.

## How is achalasia treated?

Most patients with achalasia are treated with surgery, although some people also benefit from endoscopic therapy and medical treatment. Here is a closer look at each of these options:

### SURGERY

The gold standard surgical treatment is the Heller myotomy. In this operation, the muscles of the valve between the esophagus and the stomach are cut to allow food to pass through.

Today, a minimally invasive approach is used for most patients. Using five small incisions, a Heller myotomy can be accomplished through a laparoscope (a thin, lighted instrument that holds a tiny camera). Coupled with a partial fundoplication (a surgical procedure to repair the hiatal hernia and recreate a functioning LES), the procedure allows food to move into the stomach while minimizing reflux. It usually requires a one-day hospital stay and general anesthesia. The recovery generally is faster than that of the traditional approach.

The majority of patients are successfully treated with surgery, although in rare cases the procedures may need to be repeated.

### ENDOSCOPIC THERAPY

Some patients can be treated without surgery using endoscopic balloon dilation. While the patient is under light sedation, the doctor inserts a specially designed balloon through the lower esophageal sphincter and inflates it. This disrupts the muscle and widens the opening for food to enter the stomach. The treatment may have to be repeated every few years to ensure long-term results. A new emerging procedure called POEM (per oral endoscopic myotomy) is currently being explored where the muscles are cut from inside the esophagus. However, there is no long-term data available to determine if this is as effective a Heller myotomy.





## MEDICAL TREATMENT

Patients who are not good candidates for the more common surgical remedies may benefit from injections of botulinum toxin (Botox®). Botox is a protein made by the bacteria that causes botulism. When injected in very small amounts, Botox can relax the muscles and keep them from contracting. The injections must be repeated frequently and generally are not the first line of treatment for achalasia.

Other medications may offer good results for a short period of time in early achalasia. These include nifedipine and nitroglycerin.

## Why choose Cleveland Clinic?

Cleveland Clinic esophageal disorders specialists tailor treatment plans to their patients' needs, taking into account the extent of the problem and the patient's overall health. Using this type of multidisciplinary approach means you will get the care you need right away, rather than waiting for separate appointments with various specialists.

Cleveland Clinic is top-ranked in Ohio according to *U.S. News & World Report*, and since 2003, has been named one of the nation's top two digestive disease programs and the No. 1 in heart care since 1995.

## Contacting Cleveland Clinic

### READY TO SCHEDULE AN APPOINTMENT?

To make an appointment with an esophageal disorders specialist at Cleveland Clinic, call 216.444.7000.

## Need a second opinion?

Our MyConsult® service offers secure online second opinions for patients who cannot travel to Cleveland. Through this service, patients enter detailed health information and mail pertinent test results to us. Then, Cleveland Clinic experts render an opinion that includes treatment options or alternatives and recommendations regarding future therapeutic considerations. To learn more about MyConsult, please visit [clevelandclinic.org/myconsult](http://clevelandclinic.org/myconsult).

## MyChart

Cleveland Clinic's MyChart® is a secure, online tool that connects you to portions of your electronic medical record from the privacy of your home. Utilize this free service to manage your healthcare at any time, day or night. With MyChart you can view test results, renew prescriptions, request appointments and more. You can also manage the healthcare of your loved ones with MyChart • Caregiver. To register or learn more, log on to [clevelandclinic.org/mychart](http://clevelandclinic.org/mychart).

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## Who's who?

**Gastroenterologist** – A doctor who specializes in the digestive system and its disorders.

**Radiologist** – A doctor who specializes in creating and interpreting pictures of areas inside the body.

The pictures are produced with X-rays, sound waves, or other types of energy.

**Pulmonologist** – A doctor who is trained to diagnose and treat pulmonary (lung) conditions and diseases.

**Swallowing therapist** – A master's level trained professional who helps teach patients specific exercises or techniques that may improve their swallowing difficulties.

**Thoracic surgeon** – A surgeon who specializes in operating on organs inside the chest, including the heart and lungs.

**Pathologist** – A doctor who identifies diseases by studying cells and tissues under a microscope.

**Medical oncologist** – A doctor who specializes in diagnosing and treating cancer. A medical oncologist often is the main health care provider for someone who has cancer. He/she also gives supportive care and may coordinate treatment given by other specialists.



**Every life deserves world class care.**

9500 Euclid Avenue, Cleveland, OH 44195

At the Digestive Disease Institute, our gastrointestinal specialists, colorectal and general surgeons, and nutrition experts serve more than 66,000 patients annually. Innovative procedures and decades of experience enable our physicians to achieve success in preventing and treating the full spectrum of digestive diseases. The Digestive Disease Institute is one of 27 institutes at Cleveland Clinic, a nonprofit academic medical center ranked among the nation's top hospitals (*U.S. News & World Report*), where more than 3,000 physicians and researchers in 120 specialties collaborate to give every patient the best outcome and experience.

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