AMERICAN COLLEGE OF GASTROENTEROLOGY
Advancing Gastroenterology, Improving Patient Care

Acid Reflux / GERD (gastroesophageal reflux disease)

Acid Reflux / GERD Overview

- What is GERD?
  Gastroesophageal reflux disease (GERD) is a chronic medical condition caused by the flow of contents from the stomach upwards into the esophagus resulting in both symptoms and complications. The most common symptoms of GERD are heartburn and regurgitation. Heartburn is a burning sensation in the chest behind the breastbone. Regurgitation is a feeling of fluid or food coming up into the chest. Many people experience both symptoms; however, some patients can have one without the other.

- How common is GERD?
  GERD is one of the most common gastrointestinal diseases. It is thought that up to 20% of the US population has GERD. Almost everyone will experience heartburn at some point, especially after a heavy meal. However, GERD is defined as frequent symptoms (two or more times a week) or when the esophagus suffers damage from reflux such as narrowing, erosions, or pre-cancerous changes. GERD is more common amongst the elderly, obese and pregnant women.

- Are Acid Reflux, GERD and Heartburn the same?
  These terms are often used interchangeably, but they actually have very different meanings. GERD is the disease or diagnosis defined as regular symptoms caused by the flow of gastric contents into the esophagus. Heartburn is one of the symptoms of GERD. Acid reflux is the reason why patients have GERD. There is actually reflux that can be non-acidic that can be seen in GERD as well.

Causes

- What causes GERD?
  GERD is caused by the flow of gastric acid and bile into the esophagus. The stomach is designed to handle these fluids. When the gastric contents come into contact with the esophagus, it can produce the classic symptoms of heartburn and regurgitation. In addition, these fluids are toxic to the lining of the esophagus and can cause damage such as ulcers or even pre-cancerous changes such as Barrett's esophagus.

  GERD is almost never caused by the production of too much acid. It is caused by abnormal reflux of gastric contents into the esophagus. The body has multiple barriers to prevent gastric contents from refluxing into the esophagus, including a flap valve at the bottom of the esophagus, the breathing muscle (the diaphragm), and gravity. In GERD, certain foods, lifestyle habits, and anatomic issues (hiatal hernia) can weaken these barriers.

Treatment Options

- What are the treatments for infrequent heartburn?
  In many cases, doctors find that infrequent heartburn can be controlled by lifestyle modifications and proper use of over-the-counter medicines.

Lifestyle Modifications

  - Avoid certain trigger foods and beverages: chocolate, coffee, peppermint, greasy or spicy foods, tomato products, and alcoholic beverages.
  - Stop smoking. Tobacco may result in acid reflux and is one of the biggest risk factors for esophageal cancer.
  - Weight loss if overweight. Excess abdominal fat is one of the biggest risk factors for heartburn.
  - Wait at least 2-3 hours after eating before laying down to sleep. Gravity is one of our biggest protections against acid reflux. Because of that, keeping our head or bed elevated at an angle is also very helpful for nighttime symptoms.

Over-the-Counter Medications

  There are a number of over the counter medicines available for treatment of occasional heartburn. These include medicines that neutralize acid in the stomach, medicines that block flow of fluids back into the stomach, and finally medicines that decrease the production of fluids in the stomach itself.

  Recently a class of medications called proton pump inhibitors (PPI) became available over the counter. It is important to note that the dosage available over the counter may be different than the dosages available as a prescription.

  Over-the-counter medications have a significant role in providing relief from heartburn and other occasional GI discomforts. More frequent episodes of heartburn or acid indigestion may be a symptom of a more serious condition that could worsen if not treated. If you are using an over-the-counter product more than twice a week, you should consult a physician who can confirm a specific diagnosis and develop a treatment plan with you, including the use of stronger medicines that are only available with a prescription.

- Why is it important to discuss GERD with your physician?
  GERD can result in serious complications including severe chest pain that can mimic a heart attack, esophageal stricture (a narrowing or obstruction of the esophagus), bleeding, or a pre-cancerous change in the lining of the esophagus called Barrett's esophagus.

  When symptoms of heartburn are not controlled with lifestyle modifications or over-the-counter medicines are needed two or more times a week, you should see your doctor. You may have GERD and be at risk for complications of GERD.

  Symptoms suggesting that serious damage may have already occurred include:

  - difficulty swallowing or a feeling that food is trapped behind the chest.
  - Bleeding: vomiting blood, or having tarry, black bowel movements.
  - Choking: sensation of acid refluxed into the windpipe causing shortness of breath, coughing, or hoarseness of the voice.
  - Weight Loss
  - If you have any of these symptoms, you should speak to your doctor immediately

- What are the treatment goals for GERD?

Treatment should be designed to eliminate symptoms, heal irritation of the esophagus and prevent the long-term complications of GERD. In most patients outside of significant lifestyle changes such as weight loss, GERD is a chronic disease. As such, long-term maintenance treatment to control symptoms and prevent complications may be necessary. Maintenance therapy will vary in individuals ranging from mere lifestyle modifications to prescription medication as treatment. The medicines are treatments and not cures.

All treatments are based on attempts to decrease the amount of acid that refluxes from the stomach back into the esophagus or make the refluxed material less irritating to the lining of the esophagus.

- What are the treatments for GERD?

Lifestyle Modification

In order to decrease the amount of gastric contents that reach the esophagus, certain simple guidelines should be followed:

- Raise the Head of the Bed. Use an under-mattress foam wedge to elevate the head about 6-10 inches. Pillows are not an effective alternative for elevating the head in preventing reflux.
- Change Eating and Sleeping Habits. Avoid lying down for two hours after eating. Do not eat for at least two hours before bedtime. This decreases the amount of stomach acid available for reflux.
- Avoid Tight Clothing.
- Weight loss if overweight. Patients who are overweight are significantly more likely to have GERD compared to ideal body weight
- Change Your Diet. Avoid foods and medications that trigger GERD (fats, chocolate and caffeinated drinks) and foods that may irritate the damaged lining of the esophagus (citrus juice, tomato juice, and probably pepper).
- Both smoking and alcoholic beverages lower LES pressure, which contributes to acid reflux.

Medications for GERD

GERD can be improved with lifestyle changes but often requires medicines for complete management. If you are using over-the-counter medications two or more times a week, or are still having symptoms despite taking daily medicines, you need to see your doctor.

- What are the medications often prescribed for GERD?
  The main prescription medications to treat GERD include drugs called H2 receptor antagonists (H2 blockers) and proton pump inhibitors (PPIs). These medicines reduce the amount of acid produced in the stomach.

H2 Receptor Antagonists

Since the mid 1970's, acid suppression agents, known as H2 receptor antagonists or H2 blockers, have been used to treat GERD. H2 blockers improve the symptoms of heartburn and regurgitation.

H2 blockers are generally less expensive than proton pump inhibitors and can provide adequate initial treatment or serve as a maintenance agent in GERD patients with mild symptoms. Current treatment guidelines also recognize the appropriateness and in some cases desirability of using proton pump inhibitors as first-line therapy for some patients, particularly those with more severe symptoms or esophagitis on endoscopy. Proton pump inhibitors will be required to achieve effective long-term maintenance therapy in a significant percentage of heartburn/GERD patients.

- Surgery
  Surgical management of GERD can be considered in patients who do not completely respond to medical management, patients who are unable to tolerate the medicines due to adverse reactions or in patients who do not want to take a chronic medicine. Surgical management prevents gastric reflux by strengthening the barrier between the stomach and the esophagus. There are a number of different surgical approaches to GERD. Consultation with both a gastroenterologist and a surgeon is recommended prior to such a decision. Additional testing is usually required.

Diagnosis

- What is a Gastroenterologist?
  A gastroenterologist is a physician who specializes in the diagnosis and management of disorders and conditions of the gastrointestinal tract. After completing medical school, they first complete a 3-year training (residency) in internal medicine. This is followed by a 3-4 year training (fellowship) specifically focused on conditions of the gastrointestinal tract.

- What types of tests are needed to evaluate GERD?
  Your doctor or gastroenterologist may wish to evaluate your symptoms with additional tests when it is unclear whether your symptoms are caused by acid reflux, or if you suffer from complications of GERD such as dysphagia (difficulty in swallowing), bleeding, choking, or if your symptoms fail to improve with prescription medications. Your doctor may decide to conduct one or more of the following tests.

Upper GI Series

For the upper GI series, you will be asked to swallow a liquid barium mixture. The radiologist then takes a series of pictures and videos to watch the barium as it travels down your esophagus and into the stomach.

You will be asked to move into various positions on the X-ray table while the radiologist watches the GI tract. Permanent pictures (X-ray films) will be made as needed.

Endoscopy

This test involves passing a small lighted flexible tube through the mouth into the esophagus and stomach to examine for abnormalities. The test is usually performed with the aid of sedatives. It is the best test to identify inflammation of the esophagus and pre-cancerous conditions of esophagus (Barrett's esophagus), or other complications of the esophagus.

Acid (pH) Testing

The diagnosis of GERD is often made based on physical and history alone. However occasionally direct measurement of the amount of acid/fluid refluxed into the esophagus is necessary to help diagnose and treat GERD. A pH test involves either placement of a small catheter through the nose into the esophagus or a small chip directly attached to the esophagus during endoscopy which can provide objective data about the the degree of acid reflux.

Atypical Symptoms

Besides heartburn and regurgitation, GERD can result in a number of other symptoms outside of the esophagus.

Chest Pain: Patients with GERD may have chest pain similar to angina or heart pain. Usually, they also have other symptoms like heartburn and acid regurgitation. If your doctor says your chest pain is not coming from the heart, do not forget about the esophagus. On the other hand, if you have chest pain, you should not assume it is your esophagus until you have been evaluated for a potential heart cause by your physician.

Asthma: Acid reflux may aggravate asthma. Recent studies suggest that the majority of asthmatics have acid reflux. Clues that GERD may be worsening your asthma include: 1) asthma that appears for the first time during adulthood; 2) asthma that gets worse after meals, lying down or exercise; and 3) asthma that is mainly at night. Treatment of acid reflux may cure asthma in some patients and decrease the need for asthmatic medications in others.

Ear, Nose, and Throat Problems: Acid reflux may be a cause of chronic cough, sore throat, laryngitis with hoarseness, frequent throat clearing, or growths on the vocal cords. If these problems do not get better with standard treatments, think about GERD.

- Patients with longstanding GERD can experience severe complications

Peptic Stricture: This results from chronic acid injury and scarring of the lower esophagus. Patients complain of food sticking in the lower esophagus. Heartburn symptoms may actually lessen as the esophageal opening narrows down, preventing acid reflux. Stretching of the esophagus and proton pump inhibitor medication are needed to control and prevent peptic strictures.

Barrett's Esophagus: A serious complication of chronic GERD is Barrett's esophagus. In Barrett's esophagus, the lining of the esophagus changes to resemble the intestine due to chronic acid exposure. Barrett's esophagus is a recognized risk factor for cancer of the esophagus and needs long-term follow up.

Esophageal Cancer: GERD is the biggest risk factor for the most common type of esophageal cancer in the US (adenocarcinoma). In patients with chronic heartburn, an endoscopy will often be recommended to identify any suspicious or pre-malignant lesions, such as Barrett's esophagus. So, do not ignore your heartburn. If you are having heartburn two or more times a week, it is time to see your physician.

Risk/Complications

- GERD can masquerade as other diseases

Increasingly, we are becoming aware that the irritation and damage to the esophagus from continual presence of acid can prompt an entire array of symptoms other than simple heartburn. Experts recognize that often the role of acid reflux has been overlooked as a potential factor in the diagnosis and treatment of patients with chronic cough, hoarseness and asthma-like symptoms. In some instances, patients have never reported heartburn, and in others the potential causal link between reflux and the onset of these so-called "extra-esophageal manifestations" has not been fully recognized. Physicians are increasingly becoming aware that it is good clinical practice to evaluate the possible presence of reflux in patients with chronic cough and asthma-like symptoms, as well as the importance that acid suppression and treating underlying reflux can have in potentially improving the symptoms in these patients.

    - Chest Pain: Patients with GERD may have chest pain similar to angina or heart pain. Usually, they also have other symptoms like heartburn and acid regurgitation. If your doctor says your chest pain is not coming from the heart, don't forget the esophagus. On the other hand, if you have chest pain, you should not assume it is your esophagus until you have been evaluated for a potential heart cause by your physician.
    - Asthma: Acid reflux may aggravate asthma. Recent studies suggest that the majority of asthmatics have acid reflux. Clues that GERD may be worsening your asthma include: 1) asthma that appears for the first time during adulthood; 2) asthma that gets worse after meals, lying down or exercise; and 3) asthma that is mainly at night. Treatment of acid reflux may cure asthma in some patients and decrease the need for asthmatic medications in others.
    - Ear, Nose and Throat Problems: Acid reflux may be a cause of chronic cough, sore throat, laryngitis with hoarseness, frequent throat clearing, or growths on the vocal cords. If these problems do not get better with standard treatments, think about GERD.
- Patients with longstanding GERD can experience severe complications
    - Peptic Stricture: This results from chronic acid injury and scarring of the lower esophagus. Patients complain of food sticking in the lower esophagus. Heartburn symptoms may actually lessen as the esophageal opening narrows down preventing acid reflux. Stretching of the esophagus and proton pump inhibitor medication are needed to control and prevent peptic strictures.
    - Barrett's Esophagus: A serious complication of chronic GERD is Barrett's esophagus. Here the lining of the esophagus changes to resemble the intestine. Patients may complain of less heartburn with Barrett's esophagus — that's the good news. Unfortunately, this is a pre-cancerous condition: patients with Barrett's esophagus have approximately a 30-fold increased risk of developing esophageal cancer. These patients should be followed by endoscopy by a trained gastroenterologist familiar with this disease.
    - Esophageal Cancer: Recent scientific reports have confirmed that if GERD is left untreated for many years, it could lead to this most serious complication — Barrett's esophagus and esophageal cancer. Frequent heartburn symptoms with a duration of several years cannot simply be dismissed — there can be severe consequences of delaying diagnosis and treatment. This increased risk of chronic, longstanding GERD sufferers to develop cancer demonstrates the true severity of heartburn. In patients with chronic heartburn, an endoscopy will often be recommended to visually monitor the condition of the lining of the esophagus and identify or confirm the absence of any suspicious or pre-malignant lesions, such as Barrett's esophagus. So, do not ignore your heartburn. If you are having heartburn two or more times a week, it is time to see your physician and in all likelihood a gastrointestinal specialist. In most cases an endoscopy should be performed to evaluate the severity of GERD and identify the possible presence of the pre-malignant condition — Barrett's esophagus. The preventative strategy is to treat GERD. If it goes untreated and cancer does develop, the survival rate for esophageal cancer, at this time, is dismal.
- Ignoring persistent heartburn symptoms can lead to severe consequences

Study links duration of heartburn to severity of esophageal disease

Esophageal disease may be perceived in many forms, with heartburn being the most common. The severity of heartburn is measured by how long a given episode lasts, how often symptoms occur, and/or their intensity. Since the esophageal lining is sensitive to stomach contents, persistent and prolonged exposure to these contents may cause changes such as inflammation, ulcers, bleeding and scarring with obstruction. A pre-cancerous condition called Barrett's esophagus may also occur. Barrett's esophagus causes severe damage to the lining of the esophagus when the body attempts to protect the esophagus from acid by replacing its normal lining with cells that are similar to the intestinal lining.

Research was conducted to determine whether the duration of heartburn symptoms increases the risk of having esophageal complications. The study found that inflammation in the esophagus not only increased with the duration of reflux symptoms, but that Barrett's esophagus likewise was more frequently diagnosed in these patients. Those patients with reflux symptoms and a history of inflammation in the past were more likely to have Barrett's esophagus than those without a history of esophageal inflammation.

Study links chronic heartburn to esophageal cancer

Over the past 20 years, the incidence of esophageal cancer, a highly fatal form of cancer, has rapidly increased in the United States. A research study has linked chronic, longstanding, untreated heartburn with an increased risk of developing esophageal cancer. As reported by Lagergren et al. in the study that was published in the New England Journal of Medicine, patients who experienced chronic, unresolved heartburn markedly increase the risk of esophageal cancer, a rare but often deadly malignancy. According to the study, the incidence of adenocarcinoma of the esophagus was nearly eight times more likely among frequent heartburn sufferers (two times a week or more) compared to individuals without symptoms, while among patients with longstanding, severe and unresolved heartburn (e.g. frequent symptoms 20 years duration), the risk of developing esophageal cancer was 43.5 times as great as for those without chronic heartburn.
Persistent symptoms of heartburn and reflux should not be ignored. By seeing your doctor early, the physical cause of GERD can be treated and more serious problems avoided.

Key Points

- Some Key Points to Remember about GERD
  - Heartburn is a common, but not trivial condition.
    In fact, if left untreated, longstanding, severe and chronic heartburn has been linked with esophageal cancer. Don't ignore frequent heartburn — instead consult with your physician regarding an endoscopy and treatment to achieve early symptom resolution.
  - If you suffer infrequent heartburn, antacids, or H2 blockers or proton pump inhibitors may provide the relief you need.
  - If you are experiencing heartburn two or more times a week, you may have acid reflux disease, also known as GERD, which, if left untreated, is potentially serious.
  - If you are self-medicating for heartburn two or more times a week, or if you still have symptoms on your over-the-counter or prescription medication, you need to see a doctor and perhaps be referred to a gastroenterologist.
  - GERD has a physical cause that's not your fault and can only be treated by a physician.
  - If left untreated, longstanding, severe and chronic heartburn/GERD has been linked with esophageal cancer. Don't ignore frequent heartburn — instead consult with your physician regarding an endoscopy and treatment to achieve early symptom resolution.
  - GERD has a significant role in asthma, chronic cough and ear, nose and throat problems — all referred to as extra-esophageal manifestations (EEM) although this connection may often go unrecognized. GERD should be actively considered in physician evaluations of these conditions, or it could go undetected.
  - With effective treatment, using the range of prescription medications and other treatments available today, you can become symptom free, avoid potential complications and restore the quality of life you deserve.

Self-Test

- Do you have GERD?

Measure Yourself on the Richter Scale/Acid Test

How significant is your heartburn? What are the chances that it is something more serious? If you need a yardstick, here's a simple self-test developed by a panel of experts from the American College of Gastroenterology.

Remember, if you have heartburn two or more times a week, or still have symptoms on your over-the-counter or prescription medicines, see your doctor.

Take this "Richter Scale/Acid Test" to see if you're a GERD sufferer and are taking the right steps to treat it.

1. **Do you frequently have one or more of the following:**
   a. an uncomfortable feeling behind the breastbone that seems to be moving upward from the stomach?
   b. a burning sensation in the back of your throat?
   c. a bitter acid taste in your mouth?
2. **Do you often experience these problems after meals?**
3. **Do you experience heartburn or acid indigestion two or more times per week?**
4. **Do you find that antacids only provide temporary relief from your symptoms?**
5. **Are you taking prescription medication to treat heartburn, but still having symptoms?**

If you said yes to two or more of the above, you may have GERD. To know for sure, see your doctor or a gastrointestinal specialist. They can help you live pain free.

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GERD and the Elderly

- What is GERD?
  Gastroesophageal reflux disease (GERD) is a chronic condition where fluids in the stomach reflux into the esophagus causing bothersome symptoms such as heartburn, and regurgitation. This can also cause serious symptoms such as chest pain mimicking heart attack, hoarseness, asthma, difficulty swallowing and even esophageal cancer.

- Why do we have acid in the stomach?
  Acid in the stomach is the first line of defense against the food-borne pathogens that we ingest. Moreover acid in the stomach plays a role in absorption of vitamins (Vitamin B12), the digestion of proteins, and initiation of peristalsis which causes the food to move through the digestive tract.

- What are the risk factors for GERD?
  Advancing age, obesity, pregnancy, regular use of aspirin and non-steroidal anti-inflammatory drugs, loss of physical mobility, and an incompetent valve between the stomach and esophagus (Lower Esophageal Sphincter or LES) are found to be among the many associated risk factors for GERD.

- How does aging affect GERD?
  About 8% of males and 15% of females over 65 years suffer from GERD and potentially use an acid medication. Aging by itself can cause changes in the pressure of the LES, which may increase the risk of GERD in the elderly. Decreased physical mobility secondary to multiple medical problems including arthritis increases the risk of becoming overweight and increase the risk of GERD. Many take aspirin or other medications that may

contribute to the increased occurrence of GERD symptoms in the elderly. Aging also decreases the force of swallowing contractions, which causes delayed clearance of acid when refluxed into the esophagus. Thus there is potential for increased exposure of the esophageal lining to the regurgitated acid and thus increases the risk of damage.

- What tests may your physician offer to diagnose GERD?
    a. *EGD (Esophago-Gastro-Duodenoscopy)* –– This test is also called an upper endoscopy or gastroscopy. For this test you will be given medicine to make you sleepy. A small tube is then inserted through the mouth, down into the esophagus and then through the stomach into the first part of your small bowel. The test only takes about 15 minutes but can give a lot of information about whether you have an ulcer, inflammation in your stomach and esophagus, and whether you might have a cancer or a narrowing of your esophagus.
    b. *Esophagram/Upper GI* –– This is an X-ray that evaluates how your esophagus works. You will swallow a dilute solution of barium (a dye to visualize the esophagus in X-ray) and photographs are taken as you swallow. This can be very helpful in determining where the problem might be in your esophagus.
    c. *Manometry Study* –– This test diagnoses whether you have a problem with the way your esophagus squeezes, and finds out the condition of your LES.
- How do we treat GERD in the elderly?
  The management guideline for GERD in the elderly remains the same as in a young patient. However, the physician may individualize the treatment based on the patient's overall condition. The treatment can be broadly classified into lifestyle modifications, over-the-counter medications and prescribed medications.

  Lifestyle modifications include raising the head end of the bed to use gravity as a leverage to allow early clearance of regurgitated acid from the esophagus. Avoiding tight fitting clothes to decrease abdominal pressure, decrease fats, chocolate, peppermint, coffee, and alcohol from the diet to try to help reduce reflux.

- What are the medications used for treatment of GERD?
  Mild reflux symptoms can be controlled by over-the-counter medications like antacids such as TUMS® and Pepto-Bismol®, which neutralize the acids. This is only effective in 20% of the patients. They have to be taken frequently after meals (such as 1-3 hours). One of the main disadvantages is the inability of these products to heal any areas of esophageal inflammation caused by the acid reflux.

  Antacids contain aluminum and magnesium which can cause constipation and diarrhea in some patients. Constipation occurs in fewer than 2 percent of persons in the nonelderly population but affects as many as 26 percent of men and 34 percent of women over 65 years of age. Patients with chronic kidney disease (CKD) should be careful with these medications as the mineral ingredients may worsen kidney function. You consult with your care provider if you have chronic kidney disease.

- What is an H2 blocker?
  Another class of anti-reflux medications is histamine-2 receptor antagonists (H2 blockers). Cimetidine, ranitidine and famotidine, are available over-the-counter. Although they act more slowly compared to antacids, they remain active longer compared to the latter. There are combination H2blocker/antacids which may be helpful in symptom relief.

- What are the side effects of H2 Blockers?
  Cimetidine and ranitidine may increase the blood concentrations of anti-seizure medications, blood thinners, and anti-arrhythmic medications. Newer generations of this class of drugs do not cause this problem.

  If the symptoms of GERD persist even after using these medications for more than two weeks, you should consult your doctor.

- What is a proton pump inhibitor (PPI)?
  A proton pump inhibitor is a medication that is designed to decrease the amount of acid your stomach makes by inhibiting both meal stimulated and night-time acid secretion and has better effect than H2 blockers. This type of medication is also better at healing ulcers in the esophagus and stomach.

- What are the side-effects of a PPI?
  PPIs are mostly well tolerated. The only known contraindication is very rare allergy to this drug group. The most commonly noted side effects are headache, nausea, diarrhea, abdominal pain and in some cases constipation. Very few persons need to stop taking the medication because of side-effects.

  There have been a number of reported side effects of PPI in the press including dementia, kidney disease and bone disease. At this time, there has never been a convincing study to show that this class of medications is directly responsive for any of these diseases. It is thought to be an association rather than a true causation.

- How long should I take this type of medicine?
  This really depends on the severity of your symptoms and response to therapy. For example mild cases may respond to treatment and therapy can be stopped after a short course of treatment. If you have inflammation of the esophagus (esophagitis) or ulcers in the esophagus/stomach you may need to continue treatment for a longer period of time and remain on maintenance therapy. When elderly patients with reflux esophagitis were followed up for a period of 3 years, 68% of them needed treatment for more than six months and 46% needed therapy for 3 years to prevent recurrence of esophagitis. Without the therapy 80-90% of the patients suffered a relapse in a period of one year.

- I take clopidogrel, can I take a PPI?
  There have been many studies addressing this issue because of concern of an interaction between PPIs and Clopidogrel. Current data suggests that it is safe to use a PPI and Clopidogrel together in patients who need both compounds. It is possible that some PPIs will have less effect on interactions with Clopidogrel and this may affect which of the PPIs your care provider will prescribe. Some PPIs have label recommendations regarding their use with Clopidogrel. Please discuss this with your care provider.

- I have osteoporosis, can I take a PPI? Does it mean that I will have an increased risk of a hip fracture if I do take it?
  It has been suggested that people who take a PPI for a long period of time at high doses have an increased risk for fractures of the hip, wrist and spine. No evidence exists to suggest that PPIs cause or accelerate osteoporosis. If there is an increased risk of fractures on PPI it is in patients who are at increased risk because of other conditions predisposing to osteoporosis and fractures.

  The FDA however, released a warning that doctors and those who take PPIs should be aware of the possible increased risk of fractures. If there is an increased risk of fracture, the overall risk is extremely small.

- I have a low vitamin B12 can I take a PPI?

There has long been a concern that there might be a very gradual decrease in vitamin B12 levels over a long time in persons who take a PPI but there has not been any report of disease being caused by this. There are usually other reasons for a low vitamin B12 in older persons. There is no need to monitor vitamin B12 levels in persons taking a PPI unless they have another condition.

- Does acid suppression by PPI/H2 blockers increase the incidence of *Clostridium difficile* associated diarrhea?
  Available data are controversial but raise concern for an association between these medicines and *C. difficile* infection (a colon infection that usually happens after taking certain antibiotics). The risk is perhaps related to the degree and duration of acid suppression, other conditions increasing susceptibility of the patient to this infection and nature and strength of the strain of *C. difficile* infection.

  This association should prompt the physicians to use PPI/H2 blockers in patients, specifically older patients on multiple medications and on frequent antibiotics for recurrent infections, only in those who need them.

- Does use of PPI/H2 blockers increase the incidence of pneumonia in the elderly?
  This is another area of controversy with perhaps a slight increase in the incidence of pneumonia in some patients who use PPIs. This risk has been shown to be more likely with initiation and recent use of an acid-suppressive agent rather than chronic treatment.

  It is true that the PPI/H2 blockers may decrease the acidic environment in the gut facilitating the existence of some pathological bacteria that may lead to pneumonia. When you have reflux, however, it may be that your reflux is responsible for the problem and not the medication.

  Please consult with your care provider if you have any questions.

Gastro Girl and Patient Care Committee Podcasts

What You Should Know About the New ACG Clinical Guideline on Gastroesophageal Reflux Disease (GERD)

Presented by the ACG Patient Care Committee, in partnership with GastroGirl, with special guests Dr. Tauseef Ali, Clinical Assistant Professor at the University of Oklahoma and Chief of Gastroenterology at SSM Health St. Anthony Hospital & Dr. Pooja Singhal, Director of Women's Digestive Health at SSM Health St. Anthony Hospital

GERD Patient Facing Questions

Presented by Dr. Jasmohan Bajaj, Dr. Millie Long, and Dr. Phillip Katz

Patient Links

- ACG Infographic on Acid Reflux & GERD
- National Institute of Diabetes, Digestive and Kidney Diseases