

# LESSON 11

## Digestive Disorders 1



### 1. The Basics of Diarrhea

Diarrhea describes bowel movements (stools) that are loose and watery. It is very common and usually not serious. Many people will have diarrhea once or twice each year. It typically lasts two to three days and can be treated with over-the-counter (OTC) medicines. Some people have diarrhea often as part of irritable bowel syndrome or other chronic diseases of the large intestine.

Doctors classify diarrhea as "osmotic," "secretory," or "exudative."

- Osmotic diarrhea means that something in the bowel is drawing water from the body into the bowel. A common example of this is "dietetic candy" or "chewing gum" diarrhea, in which a sugar substitute, such as sorbitol, is not absorbed by the body but draws water from the body into the bowel, resulting in diarrhea.
- Secretory diarrhea occurs when the body is releasing water into the bowel when it's not supposed to. Many infections, drugs, and other conditions cause secretory diarrhea.
- Exudative diarrhea refers to the presence of blood and pus in the stool. This occurs with inflammatory bowel diseases, such as Crohn's disease or ulcerative colitis, and several infections.

#### What Causes Diarrhea?

The most common cause of diarrhea is a virus that infects the gut. The infection usually lasts for two days and is sometimes called "intestinal flu" or "stomach flu." Diarrhea may also be caused by:

- Infection by bacteria (the cause of most types of food poisoning)
- Infections by other organisms
- Eating foods that upset the digestive system
- Allergies to certain foods
- Medications
- Radiation therapy
- Diseases of the intestines (Crohn's disease, ulcerative colitis)
- Malabsorption (where the body is unable to adequately absorb certain nutrients from the diet)
- Hyperthyroidism
- Some cancers
- Laxative abuse
- Alcohol abuse
- Digestive tract surgery
- Diabetes
- Competitive running

Diarrhea may also follow constipation, especially for people who have irritable bowel syndrome.

## What Are the Symptoms of Diarrhea?

Symptoms of diarrhea can be broken down into uncomplicated (or non-serious) diarrhea and complicated diarrhea. Complicated diarrhea may be a sign of a more serious illness.

Symptoms of uncomplicated diarrhea include:

- Abdominal bloating or cramps
- Thin or loose stools
- Watery stool
- Sense of urgency to have a bowel movement
- Nausea and vomiting

In addition to the symptoms described above, the symptoms of complicated diarrhea include:

- Blood, mucus, or undigested food in the stool
- Weight loss
- Fever

Contact your doctor if you have prolonged diarrhea or a fever that lasts more than 24 hours. Also see your doctor promptly if vomiting prevents you from drinking liquids to replace lost fluids.

## How Is Diarrhea Treated?

If you have a mild case of diarrhea, you can just let it run its course, or you can treat it with an over-the-counter medicine. Common brand names include Pepto-Bismol, Imodium A-D, and Kaopectate, which are available as liquids or tablets. Follow the instructions on the package.

In addition, you should drink at least six 8-ounce glasses of fluid per day. Choose fruit juice without pulp, broth, or soda (without caffeine). Chicken broth (without the fat), tea with honey, and sports drinks are also good choices. Instead of drinking liquids with your meals, drink liquids between meals. Drink small amounts of fluids frequently.

## How Can I Relieve Discomfort in the Rectal Area?

If your rectal area becomes sore because of frequent bowel movements, or if you experience itching, burning, or pain during bowel movements:

- Try warm baths. Afterwards, pat the area dry (do not rub) with a clean, soft towel.
- Apply a hemorrhoid cream or white petroleum jelly to the anus.

## Can Diarrhea Harm My Health?

Yes. Ongoing diarrhea causes the body to lose large amounts of water and nutrients. If you have watery stools more than three times a day and you are not drinking enough fluids, you could become dehydrated, which can cause serious complications if not treated.

Notify your doctor if you have ongoing diarrhea and are experiencing any of the following signs of dehydration:

- Dark urine
- Small amount of urine
- Rapid heart rate
- Headaches
- Dry skin
- Irritability
- Confusion

Signs of dehydration in young children include:

- Dry mouth and tongue
- Sunken eyes or cheeks
- No or decreased tear production
- Decreased number of wet diapers
- Irritability or listlessness
- Skin that stays pinched instead of flattening out after being pinched

### When Should I Call My Doctor About Diarrhea?

Some cases of diarrhea require medical attention. Diarrhea can quickly deplete the body's supply of water and electrolytes (such as sodium and potassium) that tissues need to function. People who are very young, old, or sick may have difficulty replacing lost fluids. Also, when diarrhea lasts for several weeks or contains blood, a serious illness may be the cause. In these cases, you should contact your doctor immediately.

## 2. The Basics of Constipation

Constipation is one of those topics few like to talk about. If you've suffered from this problem, though, you know it can be both painful and frustrating.

Almost everyone gets constipated at some time during his or her life. It affects approximately 2% of the population in the U.S. Women and the elderly are more commonly affected. Though not usually serious, constipation can be a concern.

### What Is Constipation?

Constipation occurs when bowel movements become difficult or less frequent. The normal length of time between bowel movements ranges widely from person to person. Some people have bowel movements three times a day; others, only one or two times a week. Going longer than three days without a bowel movement is too long. After three days, the stool or feces become harder and more difficult to pass.

You are considered constipated if you have two or more of the following for at least 3 months:

- Straining during a bowel movement more than 25% of the time.
- Hard stools more than 25% of the time.

- Incomplete evacuation more than 25% of the time.
- Two or fewer bowel movements in a week.

### What Causes Constipation?

Constipation is usually caused by a disorder of bowel function rather than a structural problem. Common causes of constipation include:

- Inadequate water intake.
- Inadequate fiber in the diet.
- A disruption of regular diet or routine; traveling.
- Inadequate activity or exercise or immobility.
- Eating large amounts of dairy products.
- Stress.
- Resisting the urge to have a bowel movement, which is sometimes the result of pain from hemorrhoids.
- Overuse of laxatives (stool softeners) which, over time, weaken the bowel muscles.
- Hypothyroidism.
- Neurological conditions such as Parkinson's disease or multiple sclerosis.
- Antacid medicines containing calcium or aluminum.
- Medicines (especially strong pain medicines, such as narcotics, antidepressants, or iron pills).
- Depression.
- Eating disorders.
- Irritable bowel syndrome.
- Pregnancy.
- Colon cancer.

In some cases, lack of good nerve and muscle function in the bowel may also be a cause of constipation.

### What Are the Symptoms of Constipation?

Symptoms of constipation can include:

- Infrequent bowel movements and/or difficulty having bowel movements.
- Swollen abdomen or abdominal pain.
- Pain.
- Vomiting.

### How Is Constipation Diagnosed?

Most people do not need extensive testing to diagnose constipation. Only a small number of patients with constipation have a more serious medical problem. If you have constipation for more than two weeks, you should see a doctor so he or she can determine the source of your problem and treat it. If constipation is caused by colon cancer, early detection and treatment is very important.

Tests your doctor may perform to diagnose the cause of your constipation include:

- Blood tests if a hormonal imbalance is suspected.
- Barium studies to look for obstruction of the colon.
- Colonoscopy to look for obstruction of the colon.

The vast majority of patients with constipation do not have any obvious illness to explain their symptoms and suffer from one of two problems:

- Colonic inertia. A condition in which the colon contracts poorly and retains stool.
- Obstructed defecation. A condition in which the person excessively strains to expel stool from the

### How Can I Prevent Constipation?

There are several things you can do to prevent constipation. Among them:

- Eat a well-balanced diet with plenty of fiber. Good sources of fiber are fruits, vegetables, legumes, and whole-grain bread and cereal (especially bran). Fiber and water help the colon pass stool.
- Drink 1 1/2 to 2 quarts of water and other fluids a day (unless fluid restricted for another medical condition). Liquids that contain caffeine, such as coffee and soft drinks, seem to have a dehydrating effect and may need to be avoided until your bowel habits return to normal. Some people may need to avoid milk, as dairy products may be constipating for them.
- Exercise regularly.
- Move your bowels when you feel the urge.

### What Should I Do If I Am Constipated?

If you are constipated, try the following:

- Drink two to four extra glasses of water a day (unless fluid restricted).
- Try warm liquids, especially in the morning.
- Add fruits and vegetables to your diet.
- Eat prunes and/or bran cereal.
- If needed, use a very mild stool softener or laxative (such as Peri-Colace or Milk of Magnesia). Do not use laxatives for more than two weeks without calling your doctor, as laxative overuse can aggravate your symptoms.

### Warning About Constipation

Call your doctor if:

- Constipation is a new problem for you.
- You have blood in your stool.
- You are losing weight even though you are not dieting.
- You have severe pain with bowel movements.
- Your constipation has lasted more than two weeks.

### 3. Diverticulitis Diet

Sometimes, especially as they get older, people can develop little bulging pouches in the lining of the large intestine. These are called diverticula, and the condition is known as diverticulosis.

When the pouches become inflamed or infected, it leads to a sometimes very painful condition called diverticulitis. In addition to having abdominal pain, people with diverticulitis may experience nausea, vomiting, bloating, fever, constipation, or diarrhea.

Many experts believe that a low-fiber diet can lead to diverticulosis and diverticulitis. This may be why people in Asia and Africa, where the diet tends to be higher in fiber, have a very low incidence of the condition.

Diverticulosis usually causes no or few symptoms; leaving many people unaware that they even have diverticula present.

Diverticulitis may need to be treated with antibiotics or, in severe cases, surgery.

#### Diet for Diverticulitis

If you're experiencing severe symptoms from diverticulitis, your doctor may recommend a liquid diverticulitis diet as part of your treatment, which can include:

- Water
- Fruit juices
- Broth
- Ice pops

Gradually you can ease back into a regular diet. Your doctor may advise you to start with low-fiber foods (white bread, meat, poultry, fish, eggs, and dairy products) before introducing high-fiber foods.

Fiber softens and adds bulk to stools, helping them pass more easily through the colon. It also reduces pressure in the digestive tract.

Many studies show that eating fiber-rich foods can help control diverticular symptoms. Try to eat at least 25-35 grams of fiber a day.

Here are a few fiber-rich foods to include in meals:

- Whole-grain breads, pastas, and cereals
- Beans (kidney beans and black beans, for example)
- Fresh fruits (apples, pears, prunes)
- Vegetables (squash, potatoes, peas, spinach)

If you're having difficulty structuring a diet on your own, consult your doctor or a dietitian. They can set up a meal plan that works for you.

Your doctor may also recommend a fiber supplement, such as psyllium (Metamucil) or methylcellulose (Citrucel) one to three times a day. Drinking enough water and other fluids throughout the day will also help prevent constipation.

## Foods to Avoid With Diverticulitis

In the past, doctors had recommended that people with diverticular disease (diverticulosis or diverticulitis) avoid hard-to-digest foods such as nuts, corn, popcorn, and seeds, for fear that these foods would get stuck in the diverticula and lead to inflammation. However, recent research has noted that there is no real scientific evidence to back up this recommendation.

In fact, nuts and seeds are components of many high-fiber foods, which are recommended for people with diverticular disease.

## 4. Gallstones

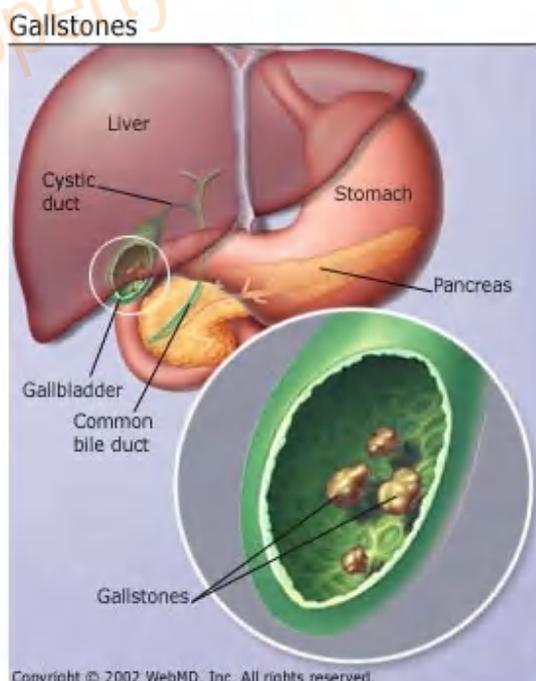
Gallstones form in the gallbladder, a small organ located under the liver. The gallbladder aids in the digestive process by storing bile and secreting it into the small intestine when food enters. Bile is a fluid produced by the liver and is made up of several substances, including cholesterol, bilirubin, and bile salts.

### What Are Gallstones?

Gallstones are pieces of solid material that form in the gallbladder. These stones develop because cholesterol and pigments in bile sometimes form hard particles.

The two main types of gallstones are:

- Cholesterol stones (approximately 80% of gallstone cases): These are usually yellow-green in color.
- Pigment stones: These stones are smaller and darker and are made up of bilirubin.



## What Causes Gallstones?

Several factors may come together to create gallstones, including:

- genetics (others in your family have had gallstones)
- body weight
- decreased motility (movement) of the gallbladder
- diet

Gallstones can form when there is an imbalance in the substances that make up bile. For instance, cholesterol stones may develop as a result of too much cholesterol in the bile. Another cause may be the inability of the gallbladder to empty properly.

Pigment stones are more common in people with certain medical conditions, such as cirrhosis (a liver disease in which scar tissue replaces healthy liver tissue) or blood diseases such as sickle cell anemia.

## What Are the Risk Factors for Gallstones?

Risk factors for getting gallstones include:

- Obesity. This is one of the biggest risk factors. Obesity can cause a rise in cholesterol, and can also keep the gallbladder from emptying completely.
- Estrogen. Women who are pregnant or who take birth control pills or hormone replacement therapy have higher levels of estrogen. This can cause a rise in cholesterol, as well as a reduction in gallbladder motility.
- Ethnic background. Certain ethnic groups, including Native Americans and Mexican-Americans, are more likely to develop gallstones.
- Gender and age. Gallstones are more common among women and among older people.
- Cholesterol drugs. Some cholesterol-lowering drugs increase the amount of cholesterol in bile, which may increase the chances of developing cholesterol stones.
- Diabetes. People with diabetes tend to have higher levels of triglycerides (a type of blood fat), which is a risk factor for gallstones.
- Rapid weight loss. If a person loses weight too quickly, his or her liver secretes extra cholesterol, which may lead to gallstones. Also, fasting may cause the gallbladder to contract less.

## What Are the Symptoms of Gallstones?

Gallstones often don't cause symptoms. Those that don't are called "silent stones." A person usually learns he or she has gallstones while being examined for another illness.

When symptoms do appear, they include the following:

- Pain in the upper abdomen and upper back. The pain may last a long time (several hours).
- Nausea
- Vomiting
- Other gastrointestinal problems, including bloating, indigestion, and gas

## How Are Gallstones Diagnosed?

If your doctor suspects you have gallstones, he or she will do a physical examination and may perform various other tests, including the following:

- Blood tests to check for signs of infection or obstruction and/or to rule out other conditions.
- Ultrasound: This procedure transmits high frequency sound waves through the body. The echoes are recorded and transformed into images of various parts of the body. An ultrasound can be used to identify gallstones.
- CAT scan: This test uses specialized x-rays to create cross-section images of organs and body tissues.
- Cholescintigraphy (HIDA scan): This test can determine whether the gallbladder is contracting correctly. A radioactive material is injected into the patient and makes its way to the gallbladder. The technician can then observe the movement of the gallbladder.
- Endoscopic ultrasound: This test combines ultrasound and endoscopy to look for gallstones.
- Endoscopic retrograde cholangiopancreatography: The doctor inserts an endoscope through the patient's mouth down to the small intestine and injects a dye to allow the bile ducts to be seen. The doctor can then remove gallstones that have moved into the ducts.

## How Are Gallstones Treated?

Gallstones are usually treated with surgery to take out the gallbladder. The traditional operation is called an open cholecystectomy. A more recently developed procedure, called laparoscopic cholecystectomy, is less invasive, has fewer complications, and is used in most cases.

- Laparoscopic cholecystectomy. During this procedure, instruments and a light and a camera are passed through several small incisions in the abdomen. The surgeon views the inside of the body by looking at a video monitor. This procedure is used in approximately 80% of gallbladder removals. After the surgery, the patient spends the night in the hospital.
- Open cholecystectomy. This is a more invasive procedure in which the surgeon makes incisions in the abdomen to remove the gallbladder. The patient stays in the hospital for a few days after the surgery.

If gallstones are in the bile ducts, endoscopic retrograde cholangiopancreatography (ERCP) may be used to find and remove them before or during gallbladder surgery.

## Are There Any Nonsurgical Treatments for Gallstones?

If you have a medical condition and your doctor feels you shouldn't have gallstone surgery, he or she may prescribe the medications ursodiol (Actigall) or chenodiol (Chenix). These drugs work by dissolving cholesterol stones. Mild diarrhea is a side effect of both medications.

The downside of using either medication is that you may have to take it for years to completely dissolve the stones. In addition, the stones may come back after you stop taking the drug.

## 5. Blood in Stool

Blood in the stool can be frightening, whether you discover it while wiping after a bowel movement or from a test ordered by your health care provider. While blood in stool can signal a serious problem, it doesn't always. Here's what you need to know about the possible causes of bloody stools and what you -- and your doctor -- should do if you discover a problem.

### Causes of Blood in Stool

Blood in the stool means there is bleeding somewhere in your digestive tract. Sometimes the amount of blood is so small that it can only be detected by a fecal occult test (a test to check for hidden blood in the stool). At other times it may be visible on toilet tissue or in the toilet after a bowel movement as bright red blood. Bleeding that occurs higher up in the digestive tract may make stool appear black and tarry.

Possible causes of blood in stool include:

**Diverticular disease.** Diverticula are small pouches that project from the colon wall. Usually diverticula don't cause problems, but sometimes they can bleed or become infected.

**Anal fissure.** A small cut or tear in the tissue lining the anus similar to the cracks that occur in chapped lips or a paper cut. Fissures are often caused by passing a large, hard stool and can be painful.

**Colitis.** Inflammation of the colon. Among the more common causes are infections or inflammatory bowel disease.

**Angiodysplasia.** A condition in which fragile, abnormal blood vessels lead to bleeding.

**Peptic ulcers.** An open sore in the lining of the stomach or duodenum, the upper end of the small intestine. Many peptic ulcers are caused by infection with a bacterium called *Helicobacter pylori* (*H. pylori*). Long-term use or high doses of anti-inflammatory drugs such as aspirin, ibuprofen, and naproxen can also cause ulcers.

**Polyps or cancer.** Polyps are benign growths that can grow, bleed, and become cancerous. Colorectal cancer is the third most common cancer in the U.S. It often causes bleeding that is not noticeable with the naked eye.

**Esophageal problems.** Varicose veins of the esophagus or tears in the esophagus can lead to severe blood loss.

### Blood in Stool Diagnosis

It is important to have a doctor evaluate any bleeding in the stool. Any details you can give about the bleeding will help your doctor locate the site of bleeding. For example, a black, tarry stool is likely an ulcer or other problem in the upper part of the digestive tract. Bright red blood or maroon-colored stools usually indicate a problem in the lower part of the digestive tract such as hemorrhoids or diverticulitis.

After getting a medical history and doing a physical exam, the health care provider may order tests to determine the cause of bleeding. Tests may include:

**Nasogastric lavage.** A test that may tell your doctor whether bleeding is in the upper or lower digestive tract. The procedure involves removing the contents of the stomach through a tube inserted into the stomach through the nose. If the stomach does not contain evidence of blood, the bleeding may have stopped or is more likely in the lower digestive tract.

**Esophagogastroduodenoscopy (EGD).** A procedure that involves inserting an endoscope, or flexible tube with a small camera on the end, through the mouth and down the esophagus to the stomach and duodenum. The doctor can use this to look for the source of bleeding. Endoscopy can also be used to collect small tissue samples for examination under a microscope (biopsy).

**Colonoscopy.** A procedure similar to an EGD except that the scope is inserted through the rectum to view the colon. As with an EGD, colonoscopy can be used to collect tissue samples to biopsy.

**Enteroscopy.** A procedure similar to EGD and colonoscopy used to examine the small intestine. In some cases this involves swallowing a capsule with a tiny camera inside that transmits images to video monitor as it passes through the digestive tract.

**Barium X-ray.** A procedure that uses a contrast material called barium to make the digestive tract show up on an X-ray. The barium may either be swallowed or inserted into the rectum.

**Radionuclide scanning.** A procedure that involves injecting small amounts of radioactive material into a vein and then using a special camera to see images of blood flow in the digestive tract to detect where bleeding is happening.

**Angiography.** A procedure that involves injecting a special dye into a vein that makes blood vessels visible on an X-ray or computerized tomography (CT) scan. The procedure detects bleeding as dye leaks out of blood vessels at the bleeding site.

**Laparotomy.** A surgical procedure in which the doctor opens and examines the abdomen. This may be necessary if other tests fail to identify the cause of bleeding.

Health care providers also order lab tests when there is blood in stools. These tests may look for clotting problems, anemia, and the presence of H. pylori infection.

### Associated Symptoms

A person with blood in the stool may be unaware of bleeding and have reported no symptoms. On the other hand, they may also have abdominal pain, vomiting, weakness, difficulty breathing, diarrhea, palpitations, fainting, and weight loss depending on the cause, location, duration, and severity of the bleeding.

## Blood in Stool Treatments

A doctor may use one of several techniques to stop acute bleeding. Often endoscopy is used to inject chemicals into the site of bleeding, treat the bleeding site with an electric current or laser, or apply a band or clip to close the bleeding vessel. If endoscopy does not control bleeding, the doctor may use angiography to inject medicine into the blood vessels to control bleeding.

Beyond stopping the immediate bleeding, if necessary, treatment involves addressing the cause of bleeding to keep it from returning. Treatment varies depending on the cause and may include medications such as antibiotics to treat *H.pylori* or anti-inflammatory drugs to treat colitis, or surgery to remove polyps or the parts of the colon damaged by cancer, diverticulitis, or inflammatory bowel disease.

In many cases, however, treatment involves simple things you can do on your own. These including eating a high-fiber diet to relieve constipation that can cause and aggravate hemorrhoids and anal fissures and sitting in warm or hot baths to relieve fissures.

Your doctor will prescribe or recommend treatment based on the diagnosis.

## 6. Understanding Ulcers

### What Are Ulcers?

There is no clear evidence to suggest that the stress of modern life or a steady diet of fast food causes ulcers in the stomach and small intestine, but they are nonetheless common in our society: About one out of every 10 Americans will suffer from the burning, gnawing abdominal pain of a peptic (or gastric) ulcer sometime in life.

Peptic ulcers are holes or breaks in the protective lining of the duodenum (the upper part of the small intestine) or the stomach -- areas that come into contact with stomach acids and enzymes. Duodenal ulcers are more common than stomach ulcers. Comparatively rare are esophageal ulcers, which form in the esophagus -- or swallowing tube -- and are often a result of alcohol abuse.

Until the mid-1980s, the conventional wisdom was that ulcers form as a result of stress, a genetic predisposition to excessive stomach acid secretion, and poor lifestyle habits (including overindulging in rich and fatty foods, alcohol, caffeine, and tobacco). It was believed that such influences contribute to a buildup of stomach acids that erode the protective lining of the stomach, duodenum, or esophagus.

While excessive stomach acid secretion certainly plays a role in the development of ulcers, a relatively recent theory holds that bacterial infection is the primary cause of peptic ulcers. Indeed, research conducted since the mid-1980s has persuasively demonstrated that the bacterium *Helicobacter pylori* (*H. pylori*) is present in more than 90% of duodenal ulcers and about 80% of stomach ulcers.

Other factors also seem to contribute to ulcer formation. Overuse of over-the-counter painkillers (such as aspirin, ibuprofen, and naproxen), heavy alcohol use, and smoking exacerbate and may promote the development of ulcers. Research indicates that heavy smokers are more prone to developing duodenal ulcers than are nonsmokers, that people who drink alcohol are more susceptible to esophageal ulcers, and that those who take aspirin frequently for a long period of time are more likely to develop stomach ulcers than those who don't.

Other studies show that stomach ulcers are more likely to develop in older people. This may be because arthritis is prevalent in the elderly, and alleviating arthritis pain can mean taking daily doses of aspirin or ibuprofen. Another contributing factor may be that with advancing age the pylorus (the valve between the stomach and duodenum) relaxes and allows excess bile (a compound produced in the liver to aid in digestion) to seep up into the stomach and erode the stomach lining.

Also, for no known reason, people with type A blood are more likely to develop cancerous stomach ulcers.

Duodenal ulcers tend to appear in people with type O blood, possibly because they do not produce the substance on the surface of blood cells that may protect the lining of the duodenum.

Fortunately, peptic ulcers are relatively easy to treat; in many cases they are cured with antibiotics, antacids, and other drugs that reduce the amount of acid produced by the stomach. There are also a variety of self-help and alternative treatments that can aid in relieving pain. Still, the dangers associated with peptic ulcers -- such as anemia, profuse bleeding, and stomach cancer -- are serious, so ulcers should always be monitored by your doctor.



Reference:

<http://www.webmd.com>