

understanding

GI bleeding

a consumer education brochure

American College of Gastroenterology
4900B South 31st Street, Arlington, VA 22206
703-820-7400
www.acg.gi.org



American College of Gastroenterology
*Digestive Disease Specialists Committed to
Quality in Patient Care*

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If you are occasionally slowed down by an upset stomach, indigestion, heartburn or even an ulcer, you certainly are not alone. Over 95 million people in the U.S. experience some kind of digestive problem. Over 10 million people are hospitalized each year for care of gastrointestinal problems and the total health care costs exceed \$40 billion annually. While many digestive problems are more common as people get older, they can occur at any age, even in children. All people are susceptible to digestive problems, regardless of gender, ethnic or socioeconomic background.

The gastrointestinal tract

The gastrointestinal (GI) tract permits food to be made into nutrients that provide energy, and then allows the unused matter to be removed from the body. The GI tract starts with the mouth, where food is eaten, and follows through the digestive system to the esophagus, the stomach, the small intestine, the large intestine (colon) and the rectum. Other organs associated with the GI system include the liver, pancreas and gallbladder.

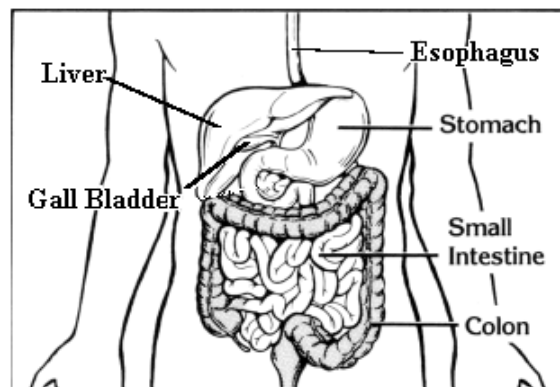


Figure 1: “The GI tract”

GI bleeding: What it is and what it isn't

When your physician speaks about GI bleeding, he/she is usually not talking about an external wound that results in visible bleeding from one or more GI organs, but rather means something more specific. Bleeding in the gastrointestinal tract means that some part of the body represented in the diagram above is bleeding internally, either slightly (which may or may not be very serious) or heavily (which may have serious health consequences).

How do you recognize the symptoms of GI bleeding?

Because GI bleeding is internal, it is possible for a person to have GI bleeding without having pain, literally without knowing you are bleeding. That's why it is important to recognize those symptoms which may accompany GI bleeding. Basically, the symptoms of possible GI bleeding vary, depending upon whether the source of the bleeding is in the upper part of the digestive tract (the esophagus, stomach or the beginning of the small intestine) or in the lower part (small intestine, colon or rectum).

Symptoms of Upper GI Bleeding:

- vomiting bright red blood
- vomiting dark clots, or coffee ground-like material
- passing black, tar like stool

Symptoms of Lower GI Bleeding:

- passing pure blood or blood mixed in stool
- bright red or maroon colored blood in the stool

What are the different types of GI bleeding?

GI bleeding may come from various parts of the GI tract, and may be caused by various things

Place	Type of bleeding	Possible reason(s)
Esophagus	Vomiting bright red (blood) or coffee ground material, Black stools	Ulcer, varices Liver disease
Stomach	Vomiting bright red (blood) or coffee ground material, Black stools	Ulcer, gastritis, varices
Small Intestine	Bright red/maroon bleeding	Ulcer, AVMS, Tumor
Large Intestine (Colon)	Blood in the stool	Colon cancer, polyps, colitis, AVMS, diverticulas
Rectum	Bright red bleeding	Hemorrhoids, Diverticulosis, Tumor

Ulcers

About 20 million Americans will suffer from an ulcer in their lifetime. Duodenal (beginning of the small intestine) ulcers often occur between the ages of 30 and 50, and are twice as common among men. Stomach ulcers occur more often after the age of 60 and are more commonly seen in women.

What is an ulcer?

Most GI bleeding comes from ulcers. An ulcer is an area of the lining of the stomach or duodenum that has been destroyed by digestive juices and stomach acid. Most ulcers are no larger than a pencil eraser, but they can cause tremendous discomfort and pain.

What are the symptoms of ulcers?

The most common symptom of an ulcer is a gnawing or burning pain in the abdomen located between the navel and the bottom of the breastbone. The pain often occurs between meals and sometimes awakens people from sleep. Pain may last minutes to hours and is often relieved by eating, taking antacids or acid blockers. Less common symptoms of an ulcer include nausea, vomiting and loss of appetite and weight, and bleeding.

What causes ulcers?

In the past, ulcers were incorrectly thought to be caused by stress. Doctors now know that there are two major causes of ulcers. Most duodenal and gastric ulcer patients are infected with the bacterium *Helicobacter pylori* (*H. pylori*). Others who develop ulcers are regular users of pain medications called non-steroidal anti-inflammatory drugs (NSAIDs), which include common products like aspirin, ibuprofen, naproxen sodium and ketoprofen.

What should I know about *Helicobacter pylori* (*H. pylori*)?

The largest number of ulcers arise because of the presence of *H. pylori*. Because *H. pylori* exists in the stomachs of some people who do not develop ulcers, most scientists now believe that ulcers occur in persons who have a combination of an hereditary/family predisposition, plus the presence of the bacterium, *H. pylori*.

The use of antibiotics to fight the *H. pylori* infection is a major scientific advance. Studies now show that antibiotics can permanently cure 80-90 percent of peptic ulcers. Blocking stomach acid remains very important in the initial healing of an ulcer.

What should I know about Non-Steroidal Anti-Inflammatory Drugs?

The second major cause for ulcers is irritation of the stomach arising from regular use of non-steroidal anti-inflammatory drugs, or NSAIDs. NSAIDs are available over-the-counter (OTC) and by prescription.

If you are taking over-the-counter pain medications on a regular basis, you will want to talk with your physician about the potential for ulcers and other GI side effects. NSAID- induced gastrointestinal side effects can be reduced by using alternative therapy. Your doctor may recommend that you change the medication you are using; or add some other medication in conjunction with your pain medication.

What are the complications of ulcers?

- **Bleeding** Internal bleeding in the stomach or the duodenum.
- **Perforation** When ulcers are left untreated, digestive juices and stomach acid can literally eat a hole in the intestinal lining, a serious medical problem that requires hospitalization, and often surgery.
- **Obstruction** Swelling and scarring from an ulcer may close the outlet of the stomach, preventing passage of food and causing vomiting and weight loss.

How are ulcers diagnosed?

The two tests most commonly used to evaluate for ulcer are a procedure called an Endoscopy or EGD, and an X-ray known as an Upper GI Series or UGI.

- **Endoscopy**

This test involves insertion of a small lighted flexible tube through the mouth into the esophagus, stomach, and small intestine (duodenum) to examine for abnormalities and remove small tissue samples (biopsy). The test is usually performed using medicines to temporarily sedate you.

– Upper GI Series

Alternately, there is an X-ray test where you are given a chalky material (barium) to drink while X-rays are taken to outline the anatomy of the upper digestive tract.

Tests for *Helicobacter pylori*

There are several tests available to your doctor to evaluate for the presence of the bacterium, *H. pylori*. Samples of blood can be examined for evidence of antibodies to the bacteria; a breath test can be examined for by-products from the bacteria; or biopsies from the stomach can be examined.

How are ulcers treated?

In contrast to past beliefs, diet has little to do with ulcer healing. Doctors now recommend that patients with ulcers only avoid foods that worsen their symptoms. Patients who smoke cigarettes should stop. Smoking has been shown to inhibit ulcer healing and is linked to ulcer recurrence. In general, ulcer patients should not take NSAIDs unless instructed to do so by their physician. Numerous medications which inhibit acid production can rapidly heal ulcers. Antibiotic therapy for *H. pylori* can accelerate healing and prevent recurrence. When an ulcer fails to heal or if complications of bleeding, perforation or obstruction develop, surgery may be necessary.

NSAIDs — Issues that may arise with regular use of NSAIDs

At one time aspirin was virtually the only non-prescription pain reliever available. It has always had excellent pain relief benefits, but it was also recognized that, when used regularly, it could cause digestive problems for some patients. Some modified versions of aspirin came onto the market in an effort to achieve the benefits of aspirin while “buffering” the prospect for stomach discomfort. Acetaminophen, which is not an NSAID, achieves similar benefits of pain relief with minimal, if any, impact on the stomach lining.

New NSAID medications became available in prescription form that also offered excellent pain relief, but like aspirin, these new prescription medications also had the potential to promote the development of ulcers and bleeding in the GI tract. Since they were being administered under a doctor’s prescription, any such effects could be monitored.

NSAIDs became more popular as prescription remedies, and soon they were cleared for OTC marketing by the FDA. A partial list of NSAIDs that are available over-the-counter and recommended maximum daily doses appears on the last page.

Some health benefits associated with aspirin and NSAIDs

As was noted above, the main benefit recognized early on for aspirin was the relief of pain and the reduction in fever. Other important health benefits from aspirin have also come to be recognized. One of the more important of these is the use of aspirin in helping to prevent heart attack and perhaps stroke. The benefit stems from aspirin’s role as a platelet inhibitor. Studies have shown that these benefits can be obtained with a small daily dose of aspirin.

NSAIDs were found to have an additional benefit of reducing inflammation, (dependent on dose), and so helped alleviate not only the symptom of pain, but also served to reduce the actual cause of the pain, e.g., reducing joint inflammation in rheumatoid arthritis.

Balancing pain relief and concerns with side effects

Adverse side effects can accompany the benefits in a portion of patients taking any medication. No drugs escape the need for this kind of risk-benefit evaluation. It has become necessary to balance the benefits of analgesia, platelet inhibition, and anti-inflammatory effect from NSAIDs and aspirin against potential adverse effects on the stomach and digestive system. For patients who are dependent on regular use of pain relievers, this can mean determining whether there are alternate ways to achieve pain relief, without risking ulcers or GI bleeding which may accompany regular use of aspirin and NSAIDs.

In this regard, aspirin and NSAIDs have been found to cause damage to the lining (or mucosa) of the digestive tract primarily in the stomach and upper intestine. This damage can result in an ulcer or intestinal bleeding. Although this can happen to an individual who is an infrequent user of aspirin or NSAIDs, it is of a much greater concern in frequent users, and those consuming higher dosages of these medications.

Personal medical history is important

As with any other risk-benefit analysis, the determination of the risk associated with a particular patient's use of NSAIDs requires a careful look at the patient's medical history. Here are some key issues:

Age – Has been identified as a risk factor in several studies. Older patients also often require pain medications more often or in larger doses, further increasing their risk.

Previous Ulcer – A history of an ulcer or an ulcer complication have been identified in several studies as risk factors for complications due to aspirin or NSAID use.

Alcohol – Alcohol, taken alone can cause irritation of the GI tract. There have been some indications that patients who consume alcohol at the same time they are taking aspirin or NSAIDs have an increased risk of damage to the intestinal lining, including ulcers and GI bleeding. There have been some reports that chronic heavy alcohol users may be at increased risk of liver toxicity from excessive acetaminophen use. Individuals who consume large amounts of alcohol should not exceed recommended doses of acetaminophen. In 1993, FDA Advisory Committees recommended that all OTC pain relievers contain an alcohol warning to date, some, but not all OTC pain relief products have complied with that recommendation. Chronic heavy alcohol users should consult their physician for advice on when and how to take pain relievers.

Steroids – Patients taking NSAIDs who also are taking a prescription corticosteroid, medications like prednisone (in doses over 10 mg), have been found to have a seven fold increased risk of having GI bleeding.

Anticoagulants – Similarly, patients who are taking NSAIDs at the same time they are taking oral prescription anti-coagulants (for example, medications like coumadin) have been found to have a 12-fold increased risk of bleeding.

Magnitude of NSAID use

Adverse effects associated with NSAIDs become more likely as the cumulative amount of NSAID increases, relating both to the size of each dose you take, as well as how frequently how many times a day, how many days a week you consume NSAIDs.

The most important ground rule, however, is to follow the instructions on your medication. No medication whether a prescription or over-the-counter drug should be taken more frequently than is directed in the labeling.

Most NSAID ulcers heal easily if the NSAIDs are stopped. If the medication cannot be stopped, the dose may often be reduced. Even if your physician determines that continued administration of NSAIDs is needed, healing can still occur.

Asymptomatic patients — Patients can have an ulcer or GI bleeding without any obvious symptoms

An individual can develop damage to the intestinal lining without being aware of it significant GI bleeding occurs frequently without any symptoms being present.

Of particular concern are patients with arthritic conditions. More than 14 million such patients consume NSAIDs regularly. Up to 60% will have gastrointestinal side effects related to these drugs and more than 10% will cease recommended medications because of troublesome gastrointestinal symptoms.

Medications that can be taken to inhibit or reverse the NSAIDs-induced injury to the intestinal lining and GI bleeding

Conventional treatments for ulcers (classes of prescription ulcer drugs called H2 blockers and proton pump inhibitors), have been found to have a beneficial effect in treating NSAID-induced ulcers and in preventing GI bleeding. These treatments often will be effective, particularly if NSAID use is stopped or reduced, although healing can occur in many cases where a patient receives these anti-ulcer medications, even when NSAID use continues.

Another medication, misoprostol, has been used effectively to prevent gastric and duodenal ulcers and has been shown to reduce the risk of bleeding in those that must continue using NSAIDs. As with all instances where patients are taking more than one prescription or over-the-counter medication, patients and their physicians need to evaluate any side effects, potential drug interactions, or other factors, e.g., limitations on use during pregnancy.

What can you do if you are concerned about avoiding GI bleeding?

If you are taking over-the-counter NSAIDs on a regular basis, you will want to talk with your physician about the potential for ulcers and other GI side effects. Most patients contact their family doctor, or primary care physician, when they experience GI problems. Many of these disorders, including *Helicobacter pylori*, can be treated readily by your primary care doctor.

In the case of recurring or more serious problems, you may need to see a gastroenterologist, a physician who specializes in disorders and conditions of the gastrointestinal tract. After completing the same training as all other physicians, gastroenterologists study for an additional 2-3 years to train specifically in conditions of the gastrointestinal tract.

Conclusion

GI bleeding is an important, and potentially serious condition. It can arise initially with few if any symptoms. Ulcers, i.e. damage to the intestinal lining that may result in GI bleeding, can be promoted by the use of non-steroidal anti-inflammatory drugs, or NSAIDs. While some damage may occur with modest, short-term doses, problems are more likely to arise in regular NSAID users, and increase with the magnitude of use more frequent use and/or higher dosages.

NSAIDs and aspirin have some very positive health benefits. Like all medications, care must be taken with their use. For example, they should not be taken with alcohol, as the combination can increase the risk of GI bleeding. Patients who need to use NSAIDs regularly should consult regularly with their physician to be alert for any potential GI effects. Since problems may arise with few, if any, symptoms, ongoing monitoring with your physician is important. If problems do arise, and are recognized early, there are a variety of ways to minimize or reverse any adverse effects, either by using alternatives to NSAIDs, or through your physician prescribing medications that can reduce any adverse effects.

Over-the-Counter NSAIDs

OTC Brand	Generic Name	Dose
Actron®	ketoprofen	1-6 pills/day (up to 75 mg/day)
Advil®	ibuprofen	1-6 pills/day (up to 1,200 mg/day)
Aleve®	naproxen sodium	1-3 pills/day* (up to 660 mg/day)
Bayer®	aspirin	1-12 pills/day (up to 4,000 mg/day)
Ecotrin®	aspirin	1-12 pills/day (up to 4,000 mg/day)
Excedrin®	aspirin, acetaminophen, and caffeine	2-8 pills/day (up to 2,000 mg/day aspirin, 2,000 mg/day acetaminophen, and 520 mg/day caffeine)
Motrin IB®	ibuprofen	1-6 pills/day (up to 1,200 mg/day)
Nuprin®	ibuprofen	1-6 pills/day (up to 1,200 mg/day)
Orudis KT®	ketoprofen	1-6 pills/day (up to 75 mg/day)

* 2-pill limit for patients over age 65