

Irritable Bowel Syndrome

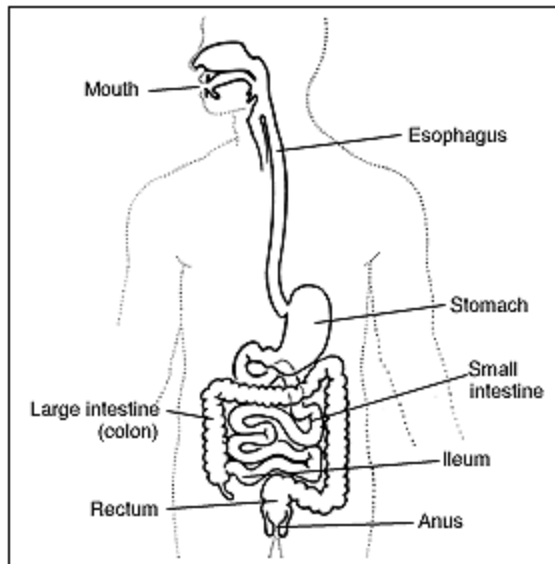
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What causes IBS?

What causes one person to have IBS and not another? No one knows. Symptoms cannot be traced to a single organic cause. Research suggests that people with IBS seem to have a colon that is more sensitive and reactive than usual to a variety of things, including certain foods and stress. Some evidence indicates that the immune system, which fights infection, is also involved. IBS symptoms result from the following:

- The normal motility of the colon may not work properly. It can be spasmodic or can even stop temporarily. Spasms are sudden strong muscle contractions that come and go.
- The lining of the colon (epithelium), which is affected by the immune and nervous systems, regulates the passage of fluids in and out of the colon. In IBS, the epithelium appears to work properly. However, fast movement of the colon's contents can overcome the absorptive capacity of the colon. The result is too much fluid in the stool. In other patients, colonic movement is too slow, too much fluid is absorbed, and constipation develops.
- The colon responds strongly to stimuli (for example, foods or stress) that would not bother most people.



In people with IBS, stress and emotions can strongly affect the colon. It has many nerves that connect it to the brain. Like the heart and the lungs, the colon is partly controlled by the autonomic nervous system, which has been proven to respond to stress. For example, when you are frightened, your heart beats faster, your blood pressure may go up, or you may gasp. The colon responds to stress also. It may contract too much or too little. It may absorb too much water or too little.

Research has shown that very mild or hidden (occult) celiac disease is present in a smaller group of people with symptoms that mimic IBS. People with celiac disease cannot digest gluten, which is present in wheat, rye, barley, and possibly oats. Foods containing gluten are toxic to these people, and their immune system responds by damaging the small intestine. A blood test can determine whether celiac disease is present. (For information about celiac disease, see the *Celiac Disease* fact sheet from the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK).)

The following have been associated with a worsening of IBS symptoms:

- large meals
- bloating from gas in the colon
- medicines
- wheat, rye, barley, chocolate, milk products, or alcohol
- drinks with caffeine, such as coffee, tea, or colas
- stress, conflict, or emotional upsets

Researchers have also found that women with IBS may have more symptoms during their menstrual periods, suggesting that reproductive hormones can exacerbate IBS problems.

What does the colon do?

The colon, which is about 5 feet long, connects the small intestine with the rectum and anus. The major function of the colon is to absorb water, nutrients, and salts from the partially digested food that enters from the small intestine. Two pints of liquid matter enter the colon from the small intestine each day. Stool volume is a third of a pint. The difference in volume represents what the colon absorbs each day.

Colon motility (the contraction of the colon muscles and the movement of its contents) is controlled by nerves and hormones and by electrical activity in the colon muscle. Contractions move the contents slowly back and forth but mainly

toward the rectum. During this passage, water and nutrients are absorbed into the body. What remains is stool. A few times each day, strong muscle contractions move down the colon, pushing the stool ahead of them. Some of these strong contractions result in a bowel movement. The muscles of the pelvis and anal sphincters have to relax at the right time to allow the stool to be expelled. If the muscles of the colon, sphincters, and pelvis do not contract in a coordinated way, the contents do not move smoothly, resulting in abdominal pain, cramps, constipation or diarrhea, and a sense of incomplete stool movement.

What are the symptoms of IBS?

Abdominal pain or discomfort in association with bowel dysfunction is the main symptom. Symptoms may vary from person to person. Some people have constipation (hard, difficult-to-pass, or infrequent bowel movements); others have diarrhea (frequent loose stools, often with an urgent need to move the bowels); and still others experience alternating constipation and diarrhea. Some people experience bloating, which is gas building up in the intestines and causing the feeling of pressure inside the abdomen.

IBS affects the motility or movement of stool and gas through the colon and how fluids are absorbed. When stool remains in the colon for a long time, too much water is absorbed from it. Then it becomes hard and difficult to pass. Or spasms push the stool through the colon too fast for the fluid to be absorbed, resulting in diarrhea. In addition, with spasms, gas may get trapped in one area or stool may collect in one place, temporarily unable to move forward.

Sometimes people with IBS have a crampy urge to move their bowels but cannot do so or pass mucus with their bowel movements.

Bleeding, fever, weight loss, and persistent severe pain are not symptoms of IBS and may indicate other problems such as inflammation or rarely cancer.

How is IBS diagnosed?

If you think you have IBS, seeing your doctor is the first step. IBS is generally diagnosed on the basis of a complete medical history that includes a careful description of symptoms and a physical examination.

No particular test is specific for IBS. However, diagnostic tests may be performed to rule out other diseases. These tests may include stool or blood tests, x rays, or endoscopy (viewing the colon through a flexible tube inserted through the anus). If these tests are all negative, the doctor may diagnose IBS based on your symptoms: that is, how often you have had abdominal pain or discomfort during the past year, when the pain starts and stops in relation to bowel function, and how your bowel frequency and stool consistency are altered.

Criteria for IBS Diagnosis

- Abdominal pain or discomfort for at least 12 weeks out of the previous 12 months. These 12 weeks do not have to be consecutive.
- The abdominal pain or discomfort has two of the following three features:
 - It is relieved by having a bowel movement.
 - When it starts, there is a change in how often you have a bowel movement.
 - When it starts, there is a change in the form of the stool or the way it looks.

What is the treatment for IBS?

No cure has been found for IBS, but many options are available to treat the symptoms. Your doctor will give you the best treatments available for your particular symptoms and encourage you to manage stress and make changes to your diet.

Medications are an important part of relieving symptoms. Your doctor may suggest fiber supplements or occasional laxatives for constipation, as well as medicines to decrease diarrhea, tranquilizers to calm you, or drugs that control colon muscle spasms to reduce abdominal pain. Antidepressants may also relieve some symptoms. Medications available to treat IBS specifically are the following:

- Alosetron hydrochloride (Lotronex) has been re-approved by the U.S. Food and Drug Administration (FDA) for women with severe IBS who have not responded to conventional therapy and whose primary symptom is diarrhea. However, even in these patients, it should be used with caution because it can have serious side effects, such as severe constipation or decreased blood flow to the colon.
- Tegaserod maleate (Zelnorm) has been approved by the FDA for the short-term treatment (usually 4 weeks) of women with IBS whose primary symptom is constipation.

With any medication, even over-the-counter medications such as laxatives and fiber supplements, it is important to follow your doctor's instructions. Laxatives can be habit forming if they are not used carefully or are used too frequently.

It is also important to note that medications affect people differently and that no one medication or combination of medications will work for everyone with IBS.

You need to work with your doctor to find the best combination of medicine, diet, counseling, and support to control your symptoms.

How does stress affect IBS?

Stress--feeling mentally or emotionally tense, troubled, angry, or overwhelmed--stimulates colon spasms in people with IBS. The colon has a vast supply of nerves that connect it to the brain. These nerves control the normal rhythmic contractions of the colon and cause abdominal discomfort at stressful times. People often experience cramps or "butterflies" when they are nervous or upset. But with IBS, the colon can be overly responsive to even slight conflict or stress. Stress also makes the mind more tuned to the sensations that arise in the colon and makes the stressed person perceive these sensations as unpleasant.

Some evidence suggests that IBS is affected by the immune system, which fights infection in the body. The immune system is also affected by stress. For all these reasons, stress management is an important part of treatment for IBS. Stress management comprises

- stress reduction (relaxation) training and relaxation therapies, such as meditation
- counseling and support
- regular exercise such as walking or yoga
- changes to the stressful situations in your life
- adequate sleep

Can changes in diet help IBS?

For many people, careful eating reduces IBS symptoms. Before changing your diet, keep a journal noting the foods that seem to cause distress. Then discuss your findings with your doctor. You may also want to consult a registered dietitian, who can help you make changes to your diet. For instance, if dairy products cause your symptoms to flare up, you can try eating less of those foods. You might be able to tolerate yogurt better than other dairy products because it contains bacteria that supply the enzyme needed to digest lactose, the sugar found in milk products. Dairy products are an important source of calcium and other nutrients. If you need to avoid dairy products, be sure to get adequate nutrients in the foods you substitute or take supplements.

In many cases, dietary fiber may lessen IBS symptoms, particularly constipation. However, it may not help pain or diarrhea. Whole grain breads and cereals, fruits, and vegetables are good sources of fiber. High-fiber diets keep the colon mildly distended, which may help prevent spasms. Some forms of fiber also keep water

in the stool, thereby preventing hard stools that are difficult to pass. Doctors usually recommend a diet with enough fiber to produce soft, painless bowel movements. High-fiber diets may cause gas and bloating, but these symptoms often go away within a few weeks as your body adjusts. (For information about diets for people with celiac disease, please see the *Celiac Disease* fact sheet from NIDDK.)

Drinking six to eight glasses of plain water a day is important, especially if you have diarrhea. But drinking carbonated beverages, such as sodas, may result in gas and cause discomfort. Chewing gum and eating too quickly can lead to swallowing air, which again leads to gas.

Also, large meals can cause cramping and diarrhea, so eating smaller meals more often or eating smaller portions should help IBS symptoms. It may also help if your meals are low in fat and high in carbohydrates, such as pasta, rice, whole-grain breads and cereals (unless you have celiac disease), fruits, and vegetables.

Is IBS linked to other diseases?

IBS itself is not a disease. As its name indicates, it is a syndrome--a combination of signs and symptoms. But IBS has not been shown to lead to any serious, organic diseases, including cancer. Through the years, IBS has been called by many names, among them colitis, mucous colitis, spastic colon, or spastic bowel. However, no link has been established between IBS and inflammatory bowel diseases such as Crohn's disease or ulcerative colitis.

Hope Through Research

The NIDDK conducts and supports research into many kinds of digestive disorders, including IBS. Researchers are studying gastrointestinal motility and sensitivity to find possible treatments for IBS. These studies include the structure and contraction of gastrointestinal muscles as well as the mechanics of fluid movement through the intestines. Understanding the influence of the nerves, hormones, and inflammation in IBS may lead to new treatments to better control the symptoms.

Points to Remember

- IBS is a disorder that interferes with the normal functions of the colon. The symptoms are crampy abdominal pain, bloating, constipation, and diarrhea.
- IBS is a common disorder found more often in women than in men and usually begins around age 20.

- People with IBS have colons that are more sensitive and react to things that might not bother other people, such as stress, large meals, gas, medicines, certain foods, caffeine, or alcohol.
- IBS is diagnosed by its symptoms and by the absence of other diseases.
- Most people can control their symptoms by taking medicines (laxatives, antidiarrhea medicines, tranquilizers, or antidepressants), reducing stress, and changing their diet.
- IBS does not harm the intestines and does not lead to cancer. It is not related to Crohn's disease or ulcerative colitis.

For More Information

International Foundation for Functional Gastrointestinal Disorders

P.O. Box 170864
Milwaukee, WI 53217
Phone: 1-888-964-2001 or (414) 964-1799
Fax: (414) 964-7176
Email: iffgd@iffgd.org
Internet: www.iffgd.org

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National Digestive Diseases Information Clearinghouse

2 Information Way
Bethesda, MD 20892-3570
Email: nddic@info.niddk.nih.gov

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Publications produced by the clearinghouse are carefully reviewed by both NIDDK scientists and outside experts. This fact sheet was reviewed by Michael Camilleri, M.D., Mayo Clinic Rochester.

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