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### Patient information: Ulcerative colitis (Beyond the Basics)

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**ULCERATIVE COLITIS OVERVIEW** — Ulcerative colitis (UC) is a disease in which the lining of the colon (the large intestine) becomes inflamed and develops sores (ulcers), leading to bleeding and diarrhea. The inflammation almost always affects the rectum and lower part of the colon, but it can affect the entire colon ([figure 1](#)).

Although ulcerative colitis cannot be cured, it can usually be controlled. Most people with ulcerative colitis are able to live active and productive lives. Controlling the disease usually means taking medications and seeing a healthcare provider on a regular basis.

This article discusses the causes, symptoms, and treatment of ulcerative colitis. More detailed information about ulcerative colitis is available by subscription. (See "[Clinical manifestations, diagnosis, and prognosis of ulcerative colitis in adults](#)" and "[Management of severe ulcerative colitis](#)".)

**ULCERATIVE COLITIS CAUSES** — Ulcerative colitis is part of a group of conditions called inflammatory bowel diseases (IBD). Crohn disease is another inflammatory bowel disease, although it can affect the entire digestive tract (mouth to anus) ([figure 2](#)). Inflammatory bowel disease is NOT the same as irritable bowel syndrome (IBS). (See "[Patient information: Crohn disease \(Beyond the Basics\)](#)" and "[Patient information: Irritable bowel syndrome \(Beyond the Basics\)](#)".)

The cause of ulcerative colitis is not known. People who develop ulcerative colitis are thought to have an increased risk of the condition, which is passed down from family members. When a person with this inherited risk is exposed to a trigger (an illness or something in the environment), the immune system is activated. The immune system recognizes the lining of the colon as foreign and attacks it, leading to inflammation. This inflammation causes the lining of the colon to develop ulcers and bleed.

**Genetics** — Ulcerative colitis tends to run in families, suggesting that genetics have a role in this disease. About 10 to 25 percent of people with ulcerative colitis have a first-degree relative (either a sibling or parent) with inflammatory bowel disease (either ulcerative colitis or Crohn disease).

**Environment** — Several environmental factors, such as infections, are thought to trigger ulcerative colitis in people who have a genetic susceptibility. In addition, ulcerative colitis can present after smoking cessation. However, no single factor has been proven to be the trigger.

**ULCERATIVE COLITIS SYMPTOMS** — The symptoms of ulcerative colitis can be mild, moderate, or severe, and can

fluctuate over time.

**Bowel symptoms** — The most common symptoms of mild ulcerative colitis include:

- Intermittent rectal bleeding
- Mucus discharge from the rectum
- Mild diarrhea (defined as fewer than four stools per day)
- Mild, crampy abdominal pain
- Straining with bowel movements
- Bouts of constipation

In people with moderate to severe disease, the following symptoms can develop:

- Frequent, loose bloody stools (up to 10 or more per day)
- Low blood count (anemia)
- Abdominal pain, which can be severe
- Fever
- Weight loss

**Non-bowel symptoms** — For poorly understood reasons, people with ulcerative colitis can develop inflammation outside of the colon. Inflammation often affects large joints (hips, knees), causing swelling and pain, as well as the eyes, the skin, and, less commonly, the lungs.

These symptoms usually occur when ulcerative colitis symptoms are active (during a flare). However, inflammation can develop even when symptoms are quiet (in remission).

**ULCERATIVE COLITIS DIAGNOSIS** — Ulcerative colitis is usually diagnosed based upon your symptoms, a physical examination, and laboratory tests. (See "[Clinical manifestations, diagnosis, and prognosis of ulcerative colitis in adults](#)".)

You will likely need a procedure that allows your doctor to look inside your colon, such as sigmoidoscopy or colonoscopy. These tests allow your doctor to take tissue samples from the colon, which can confirm ulcerative colitis and rule out other conditions that have similar symptoms, including Crohn disease, diverticulitis, and certain infections. (See "[Patient information: Colonoscopy \(Beyond the Basics\)](#)" and "[Patient information: Flexible sigmoidoscopy \(Beyond the Basics\)](#)".)

**ULCERATIVE COLITIS TREATMENT** — The two main goals of treatment for ulcerative colitis are to:

- End symptoms (achieve remission)
- Prevent symptoms from coming back (maintain remission)

For most people, ulcerative colitis has a frustrating pattern of flares and remissions. However, about 15 percent of people who have an initial attack will remain in remission without medications, possibly for the rest of their life. (See "[Management of severe ulcerative colitis](#)".)

**Diet and ulcerative colitis** — A well-balanced, nutritious diet can help maintain health and a normal body weight. However, many people can identify foods that worsen symptoms, and it is reasonable to avoid these foods. Table 1 lists foods and beverages that worsen symptoms in some people ([table 1](#)). If you restrict your diet for any reason, you should take a daily multivitamin. A [folic acid](#) supplement is also recommended.

Pain medications that contain nonsteroidal antiinflammatory drugs (NSAIDs), such as [ibuprofen](#) (Advil, Motrin) and [naproxen](#) (Aleve), are not usually recommended if you have ulcerative colitis. These medications can worsen symptoms. [Acetaminophen](#) (Tylenol) should not cause a problem.

**Lactose intolerance** — Lactose intolerance can occur in people with ulcerative colitis. It occurs if you are not able to digest the sugar (lactose) contained in milk products. Symptoms of lactose intolerance may include diarrhea, cramps, or gas. The symptoms of lactose intolerance can be minimized by avoiding dairy products ([table 2](#)).

**Treatments for mild symptoms** — If your symptoms include rectal pain, rectal bleeding, and mild diarrhea, your treatment will include medications that you apply to the rectum. This may include an enema, suppository, or foam. Rectal medications include 5-ASA (aminosalicylic acid) or glucocorticoids (also called steroids), which work by reducing inflammation in the rectum and colon. (See "[Patient information: Sulfasalazine and the 5-aminosalicylates \(Beyond the Basics\)](#)".)

Oral medications may be recommended if your symptoms do not improve completely with the rectal treatments. (See "[Sulfasalazine and 5-aminosalicylates in the treatment of inflammatory bowel disease](#)".)

These treatments improve symptoms in most people after about three weeks. Up to 90 percent of people will have a remission with this treatment, and up to 70 percent of people will stay in remission. Continuous, lifelong treatment with a 5-ASA medication is usually recommended to maintain remission, although it is often possible to taper the dose of medication.

**Treatment for moderate to severe symptoms** — If your symptoms are moderate to severe, or a larger area of your colon is affected, you will probably be given an oral 5-ASA medication. This is sometimes given along with a rectal treatment.

If your symptoms are severe, you may need a glucocorticoid (also called steroid) for a short period of time. Glucocorticoids can be given rectally, in a foam or suppository, or as a pill. The pill is generally preferred for treating severe symptoms. When your symptoms quiet, you will probably stop the oral steroid pill, but you will continue to take one of the oral 5-ASA drugs. (See "[Patient information: Sulfasalazine and the 5-aminosalicylates \(Beyond the Basics\)](#)".)

When taken by mouth, steroids are very effective but may cause a number of bothersome side effects. The most common side effects include an increased appetite, weight gain, acne, fluid retention, trembling, mood swings, and difficulty sleeping. Because of the risk of these and other side effects, most people are tapered off of steroids as soon as possible.

**If symptoms do not improve** — Some people do not respond, or respond incompletely, to the treatments described above. These people are said to have refractory ulcerative colitis. This includes people who depend upon steroids to control their symptoms. (See "[Approach to adults with steroid-refractory and steroid-dependent ulcerative colitis](#)".)

**Medications** — People with refractory ulcerative colitis are usually treated first with medications that suppress the immune system. The most commonly used drugs are 6-mercaptopurine and [azathioprine](#). (See "[Azathioprine and 6-mercaptopurine in inflammatory bowel disease](#)".)

- 6-mercaptopurine and [azathioprine](#) – Azathioprine and 6-mercaptopurine lessen symptoms in 60 to 70 percent of people and help to maintain remission and decrease the need for steroids. It may take three to six months to see the greatest benefit.

If treatment with 6-mercaptopurine and azathioprine is not effective, you may be given a choice between trying another medication, such as [cyclosporine](#) or [infliximab](#), and having surgery to remove your colon. (See '[Ulcerative colitis surgery](#)' below.)

- [Cyclosporine](#) – Cyclosporine is a powerful drug that was designed to prevent rejection after organ transplantation. It can be a very effective treatment to induce remission in people with refractory ulcerative colitis, although it cannot be used long-term (to maintain remission) due to potentially toxic side effects. Once symptoms are under control, other treatments can be slowly substituted.

- [Infliximab](#), [adalimumab](#), and [golimumab](#) – Infliximab (Remicade) and adalimumab (Humira) are powerful medications that have been used to treat Crohn disease and rheumatoid arthritis, and are sometimes used to treat refractory ulcerative colitis. They can be used to induce remission and, long-term, to maintain remission.

Infliximab, adalimumab, and golimumab work differently than other treatments for UC. They are in a class of medications known as biologic response modifiers, which work by interfering with pathways involved in inflammation.

Infliximab, adalimumab, and golimumab may be used alone or in combination with other treatments. Because of the cost and the potential risk of side effects, biologic response agents are generally reserved for people with severe ulcerative colitis who have not responded to steroids, who prefer to avoid surgical removal of the colon, and who cannot take [cyclosporine](#).

**ULCERATIVE COLITIS SURGERY** — People who cannot tolerate the constant battle with their disease sometimes choose to have their colon surgically removed. There are several surgical procedures that may be recommended to treat ulcerative colitis. It is important to discuss all of the benefits and risks of surgery with a doctor, and also to have realistic expectations of the results. (See "[Surgical management of ulcerative colitis](#)".)

The procedures can be divided into two groups:

- Those that preserve your ability to control bowel movements
- Those that require you to wear a bag to collect bowel movements

**Removal of colon with permanent ileostomy** — During this procedure, the surgeon removes your colon, rectum, and anus; this is called proctocolectomy. The surgeon then attaches the ileum, or lower end of the small intestine, to an opening (ostomy) on the lower right side of the abdomen near the waistline. Bodily waste now exits your body through the ostomy, rather than through your anus. You will wear a plastic bag on the outside of the ostomy to catch the bowel movements, and you will empty the bag as needed.

One variation of this surgery involves creating a sac or pouch inside the lower abdomen to collect stool. Waste empties into this internal pouch. A small, leakproof opening is created in your abdomen so that you can insert a tube to drain the pouch.

**Removal of colon and reattachment of anus/rectum** — This procedure is one of the most common surgeries used to treat ulcerative colitis. During the procedure, the surgeon removes the large bowel and all or most of the rectum, but saves the anal sphincter or lower part of the rectum. The surgeon then creates a tubular pouch out of the end of the small intestine and sews it to the anal canal.

This surgery allows you to have bowel movements through the anus, and you will not need a permanent ileostomy. However, in most cases, you will require a temporary ileostomy while the new rectum heals. When the new rectum is healed, the bowel is connected to the anal sphincter.

There is a risk of fecal leakage after this procedure, particularly at night. There is also a risk of recurrent ulcerative colitis in the end portion of the rectum.

**COLORECTAL CANCER AND ULCERATIVE COLITIS** — People with ulcerative colitis have an increased risk of colorectal cancer. Your risk of colorectal cancer is related to the length of time since you were diagnosed and how much of your colon is affected. In general, people who have had the disease for a longer time and those with larger areas of disease have a greater risk than those with a more recent diagnosis or smaller areas of disease.

Colorectal cancer usually develops from precancerous changes in the colon, which grow slowly and can be detected

with a screening test, such as colonoscopy. (See "[Patient information: Colon and rectal cancer screening \(Beyond the Basics\)](#)".)

In general, colonoscopy is recommended 8 to 12 years after your symptoms appear. If this colonoscopy is normal, it is usually repeated once per year. (See "[Colorectal cancer surveillance in inflammatory bowel disease](#)".)

**PREGNANCY AND ULCERATIVE COLITIS** — A separate article discusses pregnancy and UC. (See "[Patient information: Inflammatory bowel disease and pregnancy \(Beyond the Basics\)](#)".)

**WHERE TO GET MORE INFORMATION** — Your healthcare provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site ([www.uptodate.com/patients](http://www.uptodate.com/patients)). Related topics for patients, as well as selected articles written for healthcare professionals, are also available. Some of the most relevant are listed below

**Patient level information** — UpToDate offers two types of patient education materials.

**The Basics** — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

[Patient information: Ulcerative colitis in adults \(The Basics\)](#)  
[Patient information: Colon and rectal cancer screening \(The Basics\)](#)  
[Patient information: Colostomy care \(The Basics\)](#)  
[Patient information: Colectomy \(The Basics\)](#)  
[Patient information: Pyoderma gangrenosum \(The Basics\)](#)  
[Patient information: Erythema nodosum \(The Basics\)](#)  
[Patient information: Ileostomy care \(The Basics\)](#)  
[Patient information: Ulcerative colitis in children \(The Basics\)](#)

**Beyond the Basics** — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

[Patient information: Crohn disease \(Beyond the Basics\)](#)  
[Patient information: Irritable bowel syndrome \(Beyond the Basics\)](#)  
[Patient information: Colonoscopy \(Beyond the Basics\)](#)  
[Patient information: Flexible sigmoidoscopy \(Beyond the Basics\)](#)  
[Patient information: Sulfasalazine and the 5-aminosalicylates \(Beyond the Basics\)](#)  
[Patient information: Colon and rectal cancer screening \(Beyond the Basics\)](#)  
[Patient information: Inflammatory bowel disease and pregnancy \(Beyond the Basics\)](#)

**Professional level information** — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

[Anti-tumor necrosis factor therapy in ulcerative colitis](#)  
[Antibiotics for treatment of inflammatory bowel diseases](#)  
[Arthritis associated with gastrointestinal disease](#)  
[Azathioprine and 6-mercaptopurine in inflammatory bowel disease](#)  
[Clinical manifestations, diagnosis, and prognosis of ulcerative colitis in adults](#)

[Colorectal cancer and primary sclerosing cholangitis](#)  
[Colorectal cancer surveillance in inflammatory bowel disease](#)  
[Definition, epidemiology, and risk factors in inflammatory bowel disease](#)  
[Endoscopic diagnosis of inflammatory bowel disease](#)  
[Fertility, pregnancy, and nursing in inflammatory bowel disease](#)  
[Genetic factors in inflammatory bowel disease](#)  
[Hepatobiliary manifestations of inflammatory bowel disease](#)  
[Management of mild to moderate ulcerative colitis](#)  
[Management of severe ulcerative colitis](#)  
[Sulfasalazine and 5-aminosalicylates in the treatment of inflammatory bowel disease](#)  
[Surgical management of ulcerative colitis](#)  
[Toxic megacolon](#)  
[Treatment of ulcerative colitis in children and adolescents](#)  
[Approach to adults with steroid-refractory and steroid-dependent ulcerative colitis](#)

The following organizations also provide reliable health information:

- National Library of Medicine  
([www.nlm.nih.gov/medlineplus/healthtopics.html](http://www.nlm.nih.gov/medlineplus/healthtopics.html))
- National Institute of Diabetes and Digestive and Kidney Diseases  
([www.niddk.nih.gov/](http://www.niddk.nih.gov/))
- The American Society of Colon and Rectal Surgeons  
([www.fascrs.org](http://www.fascrs.org))
- The American Gastroenterological Association  
([www.gastro.org](http://www.gastro.org))
- The Crohn's and Colitis Foundation of America  
([www.cdfa.org](http://www.cdfa.org))

[1-4]

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## REFERENCES

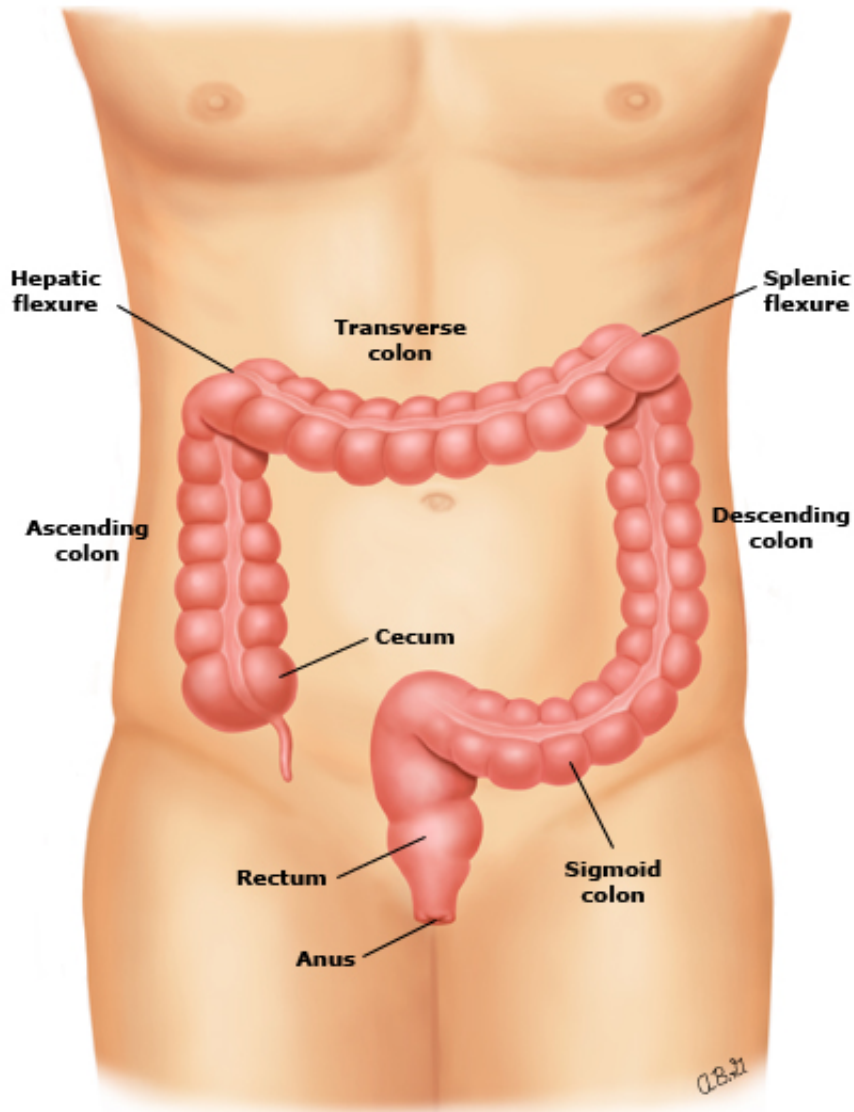
1. Kornbluth A, Sachar DB. Ulcerative colitis practice guidelines in adults. American College of Gastroenterology, Practice Parameters Committee. Am J Gastroenterol 1997; 92:204.
2. Connell WR, Kamm MA, Dickson M, et al. Long-term neoplasia risk after azathioprine treatment in inflammatory bowel disease. Lancet 1994; 343:1249.
3. Schroeder KW, Tremaine WJ, Ilstrup DM. Coated oral 5-aminosalicylic acid therapy for mildly to moderately active ulcerative colitis. A randomized study. N Engl J Med 1987; 317:1625.
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Topic 1991 Version 13.0

## GRAPHICS

### Diagram of the colon and rectum

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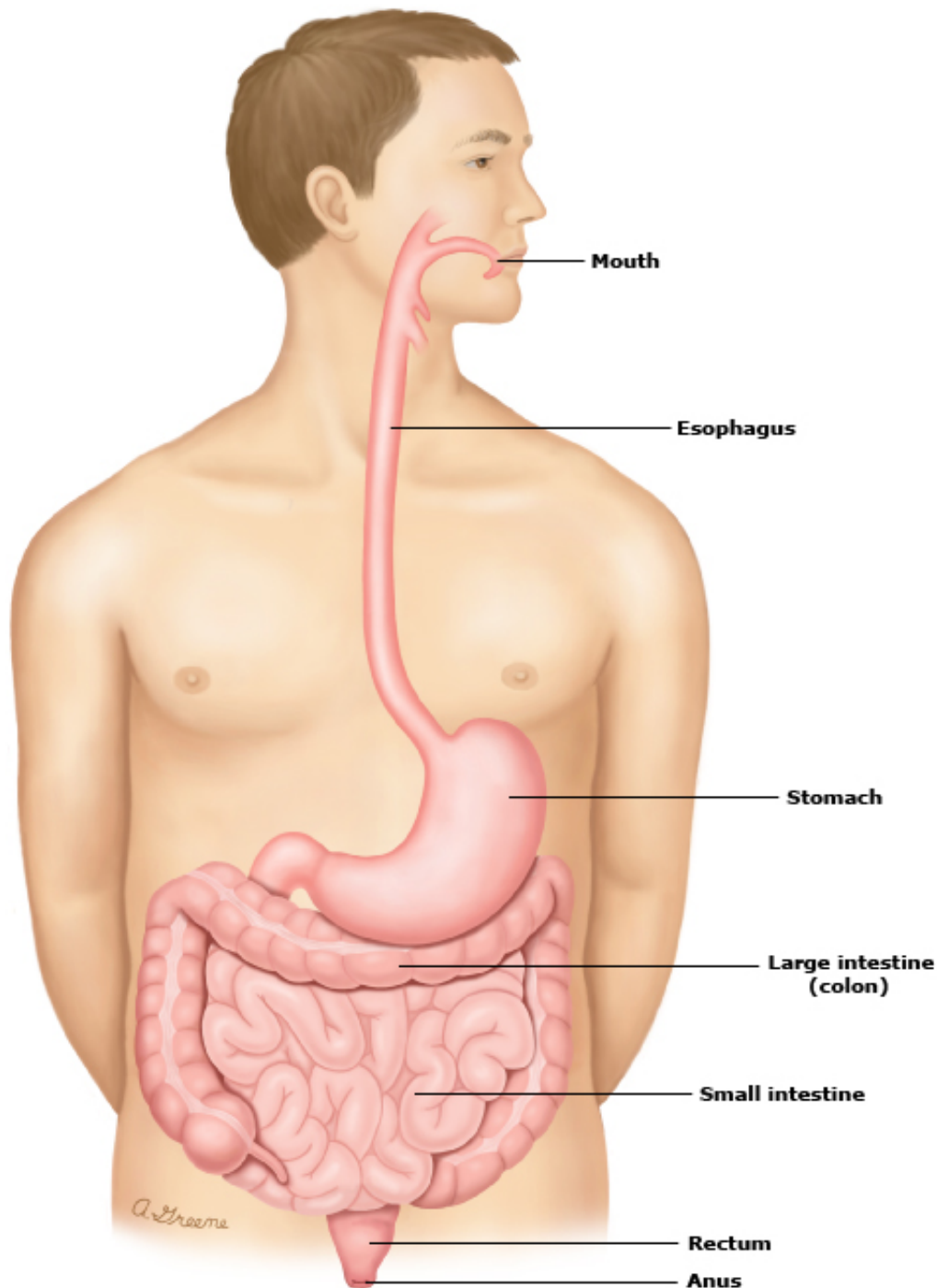
This figure shows the different parts of the colon (also known as the large intestine), the rectum, and the anus.

Graphic 58531 Version 6.0



## Digestive system

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This drawing shows the organs in the body that process food. Together these organs are called "the digestive system," or "digestive tract." As food travels through this system, the body absorbs nutrients and water.

Graphic 66110 Version 4.0

## Foods and beverages that may worsen gastrointestinal symptoms

Milk, milk-containing products, and lactose-free milk products, including ice cream, cream cheese, cheese, cottage cheese, yogurt, pudding, whipped cream, cream, cheesecake, chocolate, pastries, crackers, pretzels, cookies, crackers, cakes, and pies
Caffeine-containing products, including coffee, tea, and sodas
Alcohol products
Fruits and fruit juices
Spices, seasonings, and spicy marinades
Diet beverages, diet foods, diet candies, diet gum, sugar-free products
Fried foods, fatty foods, fast foods, and Chinese food
Condiments including ketchup, mustard, mayonnaise, and relish
Whole-grain or multigrain breads; sourdough breads, bagels, and yeast-containing products
Salads, particularly added components including bacon bits, croutons, onions, and peppers
Salad dressings that contain mayonnaise, cheese, and spices
Vegetables including cabbage, broccoli, and cauliflower
Legumes: beans, lentils, chili
Red meats including steak, hamburger, sausage, bacon, and prime rib
Gravies, spaghetti sauce, soups, stews, and stuffing
Popcorn, peanuts, corn
Artificial colorings, flavorings, and sweeteners
Foods and beverages containing sorbitol, fructose, or high-fructose corn syrup

The foods and drinks listed above may worsen gastrointestinal symptoms (diarrhea, cramps, abdominal pain, nausea, gas, bloating, heartburn, etc.) in some patients with both irritable bowel syndrome and inflammatory bowel disease. These symptoms can begin as soon as 5 to 15 minutes after eating or as many as 12 to 48 hours later.

*Data from: MacDermott, RP. Treatment of irritable bowel syndrome in outpatients with inflammatory bowel disease using a food and beverage intolerance, food and beverage avoidance diet. Inflamm Bowel Dis 2007; 13:91.*

Graphic 79547 Version 1.0

## Lactose content of different foods

Product	Lactose content (grams)
<b>Milk (1 cup)</b>	
Whole, 2 percent, 1 percent, skim	9-14
Buttermilk	9-12
Evaporated milk	24-28
Sweetened condensed milk	31-50
Lactaid® milk (lactose-reduced)	3
Goat's milk	11-12
Acidophilus, skim	11
<b>Yogurt, low fat, 1 cup</b>	4-17
<b>Cheese, 1 ounce</b>	
Cottage cheese (1/2 cup)	0.7-4
Cheddar (sharp)	0.4-0.6
Mozzarella (part skim, low moisture)	0.08-0.9
American (pasteurized, processed)	0.5-4
Ricotta (1/2 cup)	0.3-6
Cream cheese	0.1-0.8
<b>Butter (1 pat)</b>	0.04-0.5
<b>Cream (1 tablespoon)</b>	
Light, whipping, sour	0.4-0.6
<b>Ice cream (1/2 cup)</b>	2-6
<b>Ice milk (1/2 cup)</b>	5
<b>Sherbet (1/2 cup)</b>	0.6-2

Adapted from: Scrimshaw NS, Murray EB. The acceptability of milk and milk products in populations with a high prevalence of lactose intolerance. *Am J Clin Nutr* 1988; 48:1079. Copyright © 1988 American Society for Clinical Nutrition.

Graphic 55938 Version 4.0

## Disclosures

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