



## Patient information: Anal fissure (Beyond the Basics)

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### ANAL FISSURE OVERVIEW

An anal fissure is a tear in the lining of the anus, the opening where feces are excreted. The tear typically extends into a circular ring of muscle called the internal anal sphincter ([figure 1](#)). The fissure is described as acute if it has been present for less than six weeks, or chronic if present greater than six weeks.

Once a fissure develops, the internal anal sphincter typically goes into spasm, causing further separation of the tear, impairing healing and causing pain. Exposure to feces also slows healing.

There are no reliable estimates of the frequency of anal fissures in the general population; some studies suggest that as many as one in five persons develop a fissure during their lifetime. This may be an underestimate since some people may be too embarrassed to discuss it with their healthcare provider.

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### ANAL FISSURE SYMPTOMS

Patients with an anal fissure may first note bleeding and a sensation of tearing, ripping or burning following a bowel movement. Once a fissure develops, these symptoms can occur after every bowel movement; the rectal pain can last several minutes to hours.

Bleeding is usually mild and limited to a small amount on toilet paper or the surface of stool. However, the bleeding may discolor the toilet bowl, giving it the appearance of heavy bleeding. As the fissure becomes chronic, the bleeding may stop, although the pain persists. Some patients also note itching or irritation of the skin around the anus.

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### ANAL FISSURE CAUSES AND RISK FACTORS

Anal fissures are usually caused by trauma that stretches the anal canal, such as after passage of large or hard bowel movement or explosive diarrhea.

Less commonly, fissures are caused by foreign body insertion or anal intercourse. Anal fissures can also occur in patients who have other medical conditions such as Crohn's disease (an inflammatory disease of the intestines). As a result, part of the evaluation may include testing for these conditions.

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### ANAL FISSURE DIAGNOSIS

Anal fissures can usually be diagnosed based on the symptoms described above and a physical examination. The physical examination involves gently separating the buttocks, allowing for visual inspection of the region around the anus. A fissure most commonly appears in the 12 or 6 o'clock position. Fissures located in other locations are more likely to be associated with an underlying disorder (eg, Crohn's disease).

A rectal examination (insertion of a gloved finger into the anus) or anoscopy (insertion of a small instrument to view the anal canal) can often be avoided in the initial diagnosis of a fissure. These examinations can cause increased pain and are often unnecessary in a clear cut situation. They may, however, be necessary. Further evaluation may be required if there is concern that another medical condition may have contributed to the development of the fissure.

Once healing has occurred or if the diagnosis is unclear, a sigmoidoscopy or colonoscopy is usually recommended, especially if there has been rectal bleeding. A colonoscopy is preferred in patients 50 years and older, and can also be used to screen for colorectal cancer. In younger patients with no risk factors for colorectal cancer or intestinal diseases, a sigmoidoscopy or regular monitoring may suffice.

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## ANAL FISSURE TREATMENT

The goal of treatment for anal fissures is to relieve the pain and spasm and heal the fissure. People who have a new anal fissure may heal on their own without special treatment. By contrast, those with a chronic anal fissure usually require additional therapy.

Initial treatment is aimed at eliminating constipation, softening stools and reducing anal sphincter spasm. There are several approaches to reducing anal sphincter spasm, which will be described below. These measures are successful in 60 to 90 percent of patients. However, some patients may not heal or develop frequent recurrences. Such patients may require surgery, which is successful more than 95 percent of the time.

**Fiber therapy** — Avoiding hard bowel movements will prevent over-distension of the anus, which could open a healing fissure. Increasing fiber in the diet is one of the best ways to soften and bulk the stool. Fiber is found in fruits and vegetables. The recommended amount of dietary fiber is 20 to 35 g/day ([table 1](#)). (See "[Patient information: High-fiber diet \(Beyond the Basics\)](#)".)

Fiber supplements are commercially available, including psyllium seed (Metamucil®), methylcellulose (Citrucel®), wheat dextran (eg, Benefiber®), and calcium polycarbophil (Fibercon®). These products work by absorbing water and increasing stool bulk, which increases the frequency of bowel movement and softens stool. Bulk forming laxatives are very safe but side effects may include gas and bloating, especially when they are first started. They may be used alone or in combination with dietary changes, and are safe to use every day. Bulk forming laxatives are not habit forming, and can be used lifelong. (See "[Patient information: Constipation in adults \(Beyond the Basics\)](#)".)

**Laxatives** — A variety of drugs and natural products are available for treating constipation.

People are often concerned about the regular use of laxatives, fearing that they will not be able to have a bowel movement when the laxative is stopped. However, there is little to no evidence that laxatives are "addictive" or that using laxatives increases the risk of constipation in the future. Instead, use of laxatives for at least several months can actually prevent long-term problems with constipation.

**Sitz baths** — During Sitz baths, the rectal area is immersed in warm water for approximately 10 to 15 minutes two to three times daily. Sitz baths are available in most drugstores, and portable bowls are available to use at work or school. It is also possible to use a bathtub as a sitz bath by simply filling it with

2 to 3 inches of warm water. Additives such as soap and bubble bath are not recommended. Sitz baths work by improving blood flow and relaxing the internal anal sphincter.

**Topical nifedipine and topical nitroglycerin** — Topical nifedipine is a blood pressure medication that works by reducing the internal anal sphincter pressure. Nifedipine is available in pill form for other indications, but is best used for fissure treatment when compounded into gel form and applied directly to the fissure. Topical treatment with 0.2 percent nifedipine four times a day has few side effects.

Nitroglycerin works to dilate blood vessels, increasing blood flow to injured tissues. It also works to reduce pressure in the internal anal sphincter, which decreases pain and further facilitates healing.

The dosage of nitroglycerin is usually a small, pea-sized dot of 0.2 percent ointment applied around the anal opening two to three times daily, as well as before and after bowel movements. This strength of nitroglycerin must be compounded (custom-made) by a pharmacist. It is very important to use the correct strength and amount of nitroglycerin ointment to avoid dangerous side effects. It is also important to wash the hands before and after applying the ointment.

Nitroglycerin side effects can include headache and low blood pressure. Headaches are generally mild, last less than 30 minutes, and resolve after two weeks of nitroglycerin use. Dizziness is another possible side effect; patients should sit or lie down to apply the ointment, and should sit or stand up slowly. Nitroglycerin should not be used within 24 hours of medications used for erectile dysfunction, such as Viagra (sildenafil), Cialis (tadalafil), and Levitra (vardenafil). There is no risk of explosion with nitroglycerin ointment.

**Botulinum toxin** — Botulinum toxin is a neurotoxin produced by a bacterium, *Clostridium botulinum*. It temporarily paralyzes muscles for up to three months, and can be injected into the internal anal sphincter muscle in a clinician's office without anesthesia or sedation. The dose is extremely low, and has virtually no risk of causing botulism poisoning. Botulinum can cause temporary, mild anal incontinence (leakage of gas or stool) in some patients (7 percent in one study) [1]. Because it involves an injection (rather than topical application), it is usually reserved for patients who do not respond to topical therapy.

**Surgery** — Surgical procedures are generally reserved for people with anal fissure who have tried medical therapy for at least one to three months and have not healed. The procedure of choice is called lateral sphincterotomy, which relaxes the internal anal sphincter by cutting a small nick into the internal anal sphincter of the anal canal. This is generally performed as a day surgery after the patient is given general anesthesia. The pain from the sphincterotomy is usually mild and is often less than the pain of the fissure itself. Patients often return to normal activity within one week.

The main concern with surgery is the development of anal incontinence. Anal incontinence can include inability to control gas, mild fecal soiling, or loss of solid stool. Some degree of leakage can occur in up to 45 percent of patients in the immediate surgical recovery period secondary to the surgical healing process and may be mistaken for incontinence by patients. However, this immediate postsurgical incontinence is rarely permanent and is usually mild. The risk should be discussed with your surgeon.

Comparison among surgery and nitroglycerin, botulinum toxin, and nifedipine or diltiazem reveals that surgery has a higher success rate. In one study, close to 100 percent of patients with fissure who underwent surgery were completely healed by two months after surgery [2]. This compared to only 64 percent of patients healed two months after botulinum toxin injections. However, the number of patients with complications (anal incontinence, infection) was higher in the surgical group, and the time it took patients to recover from surgery was longer than those who had injections. Similar results have been described in studies comparing botulinum toxin, nifedipine, and diltiazem to surgery.

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## 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: Anal fissure \(The Basics\)](#)

[Patient information: Bloody stools \(The Basics\)](#)

[Patient information: Anal pruritus \(anal itching\) \(The Basics\)](#)

**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: High-fiber diet \(Beyond the Basics\)](#)

[Patient information: Constipation in adults \(Beyond the Basics\)](#)

**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.

[Anal fissure: Clinical manifestations, diagnosis, prevention](#)

[Approach to the patient with anal pruritus](#)

[Perianal complications of Crohn's disease](#)

[Management of chronic constipation in adults](#)

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 on 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)

[1-4]

**Literature review current through:** Jul 2012. | **This topic last updated:** Sep 12, 2011.

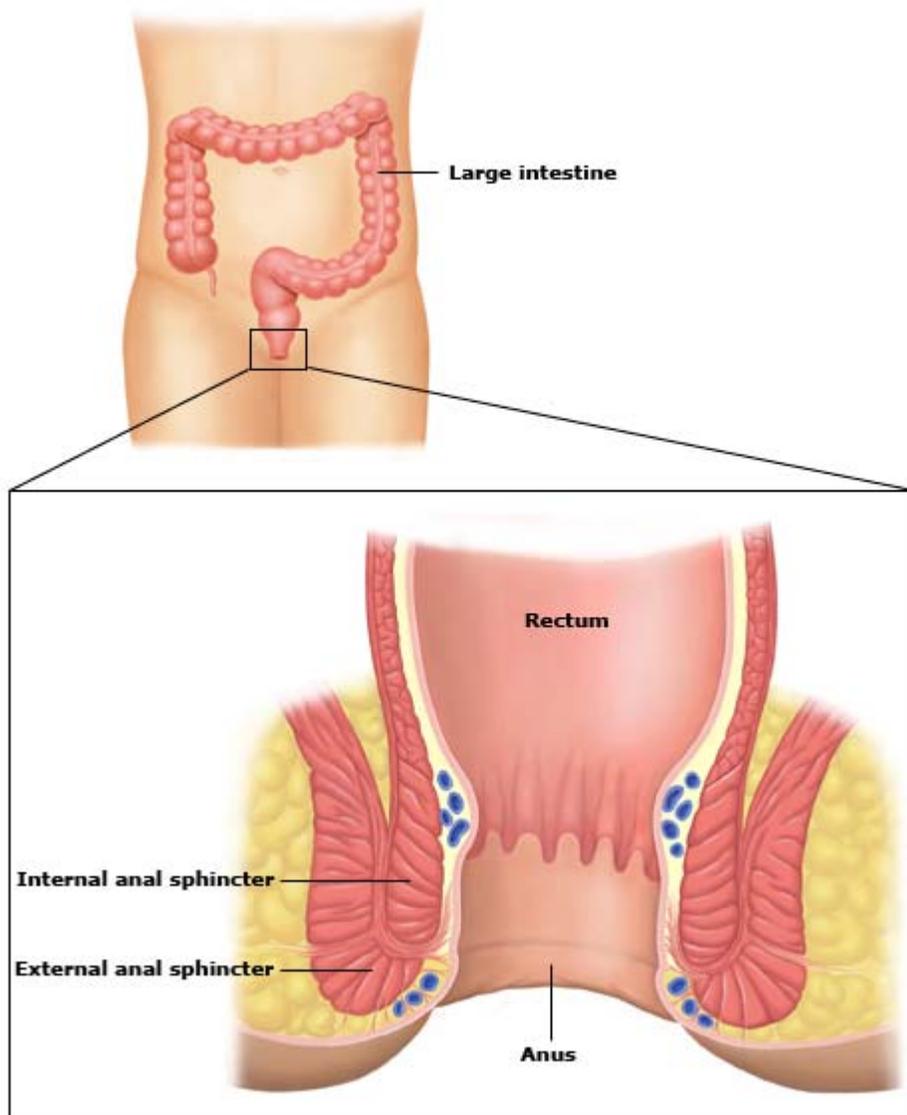
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## GRAPHICS

### Anal sphincter

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The anal sphincter is made up of two sets of muscles called the "internal" and "external" sphincters. These muscles form a ring around the anus. When these muscles are working normally, they squeeze the anus shut so that gas and bowel movements cannot leak out.

**Amount of fiber in different foods**

| <b>Food</b>                                | <b>Serving</b>  | <b>Grams of fiber</b> |
|--|-----------------|-----------------------|
| <b>Fruits</b>                              |                 |                       |
| Apple (with skin)                          | 1 medium apple  | 4.4                   |
| Banana                                     | 1 medium banana | 3.1                   |
| Oranges                                    | 1 orange        | 3.1                   |
| Prunes                                     | 1 cup, pitted   | 12.4                  |
| <b>Juices</b>                              |                 |                       |
| Apple, unsweetened, w/ added ascorbic acid | 1 cup           | 0.5                   |
| Grapefruit, white, canned, sweetened       | 1 cup           | 0.2                   |
| Grape, unsweetened, w/added ascorbic acid  | 1 cup           | 0.5                   |
| Orange                                     | 1 cup           | 0.7                   |
| <b>Vegetables</b>                          |                 |                       |
| <b>Cooked</b>                              |                 |                       |
| Green beans                                | 1 cup           | 4.0                   |
| Carrots                                    | .5 cups sliced  | 2.3                   |
| Peas                                       | 1 cup           | 8.8                   |
| Potato (baked, with skin)                  | 1 medium potato | 3.8                   |
| <b>Raw</b>                                 |                 |                       |
| Cucumber (with peel)                       | 1 cucumber      | 1.5                   |
| Lettuce                                    | 1 cup shredded  | 0.5                   |
| Tomato                                     | 1 medium tomato | 1.5                   |
| Spinach                                    | 1 cup           | 0.7                   |
| <b>Legumes</b>                             |                 |                       |
| Baked beans, canned, no salt added         | 1 cup           | 13.9                  |
| Kidney beans, canned                       | 1 cup           | 13.6                  |
| Lima beans, canned                         | 1 cup           | 11.6                  |
| Lentils, boiled                            | 1 cup           | 15.6                  |
| <b>Breads, pastas, flours</b>              |                 |                       |
| Bran muffins                               | 1 medium muffin | 5.2                   |
| Oatmeal, cooked                            | 1 cup           | 4.0                   |
| White bread                                | 1 slice         | 0.6                   |
| Whole-wheat bread                          | 1 slice         | 1.9                   |
| <b>Pasta and rice, cooked</b>              |                 |                       |

|                     |       |      |
|---------------------|-------|------|
| Macaroni            | 1 cup | 2.5  |
| Rice, brown         | 1 cup | 3.5  |
| Rice, white         | 1 cup | 0.6  |
| Spaghetti (regular) | 1 cup | 2.5  |
| <b>Nuts</b>         |       |      |
| Almonds             | 1 cup | 17.4 |
| Peanuts             | 1 cup | 12.4 |

To learn how much fiber and other nutrients are in different foods, visit the United States Department of Agriculture (USDA) National Nutrient Database at: <http://www.nal.usda.gov/fnic/foodcomp/search/>. *Created using data from the USDA National Nutrient Database for Standard Reference. Available at <http://www.nal.usda.gov/fnic/foodcomp/search/>.*

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