

Diverticular Disease Overview

A diverticulum is a pouch-like structure that can form through points of weakness in the muscular wall of the colon (i.e., at points where blood vessels pass through the wall). Diverticulosis affects men and women equally. The risk of diverticular disease increases with age. It occurs throughout the world but is seen more commonly in developed countries.

Diverticulosis and Diverticulitis Diagnosis

Diverticulosis is often found during tests performed for other reasons.

- Barium enema — This is an x-ray imaging test where a barium enema is administered to view the lining of the colon. This is an older test and has been largely replaced by computed tomography (CT) scan.
- Flexible sigmoidoscopy — This is an examination of the inside of the sigmoid colon with a thin, flexible tube affixed with a light and camera at one end.
- Colonoscopy — This is an examination of the inside of the entire colon.
- CT scan — A CT scan is often used to diagnose diverticulitis and its complications. If diverticulitis (not just diverticulosis) is suspected, the first three tests above should not be performed because of the risk of perforation.

Treatment

Diverticulosis — People with diverticulosis who do not have symptoms do not require treatment. However, most physicians recommend increasing fiber in the diet, which can help to bulk the stools and possibly prevent the development of new diverticula, diverticulitis, or diverticular bleeding. Fiber is not proven to prevent these conditions in all patients, but may help to control recurrent episodes in some.

- Increase fiber — Fruits and vegetables are a good source of fiber (*table 1*). The fiber content of packaged foods can be calculated by reading the nutrition label (*figure 2*).
- Seeds and nuts — Patients with diverticular disease have historically been advised to avoid whole pieces of fiber (such as seeds, corn, and nuts) because of concern that these foods could induce an episode of diverticulitis. This belief is completely unproven. We do not suggest that patients with diverticulosis avoid seeds, corn, or nuts.

Diverticulitis — Treatment of diverticulitis depends on the severity of your symptoms.

- Home treatment — If you have mild symptoms of diverticulitis (mild abdominal pain, usually left lower abdomen), you can be treated at home with a clear liquid diet and oral antibiotics. However, if you develop one or more of the following signs or symptoms, you should seek immediate medical attention:
 - Temperature >100.1 ° F (38°C)
 - Worsening or severe abdominal pain
 - An inability to tolerate fluids
- Hospital treatment — If you have moderate to severe symptoms, you may be hospitalized for treatment. During this time, you are not allowed to eat or drink; antibiotics and fluids are given intravenously. If you develop an abscess of the colon, you may require drainage of the abscess (usually performed by placing a drainage tube across the abdominal wall) or by surgically opening the affected area.
- Surgery — If you develop a generalized infection in the abdomen (peritonitis), you will usually require emergent surgery. A two-part operation may be necessary in some cases.
 - The first operation involves removal of the diseased colon and creation of a colostomy. A colostomy is an opening between the colon and the skin, where a bag is attached to collect waste from the intestine. The lower end of the colon is temporarily sutured closed to allow it to heal (*figure 3*).
 - Approximately three to six months later, a second operation is performed to reconnect the two parts of the colon and close the opening in the skin. You are then able to empty your bowels through the rectum. Sometimes patients require up to a year to recover from the first operation, depending on how sick they were.

In non-emergency situations, the diseased area of the colon can be removed and the two ends of the colon can be reconnected in one operation, without the need for a colostomy.

- Surgery versus medical therapy — An operation to remove the diseased area of the colon may be necessary if you do not improve with medical treatment. After an episode of uncomplicated diverticulitis, elective surgery is generally not recommended since the risk of another attack or the need for emergent surgery is low. Individuals with persistent symptoms attributable to diverticulitis, a history of complicated diverticulitis, or a compromised immune system should be evaluated for possible surgery to prevent another attack. In such patients, another attack is associated with a higher risk of complications or death. The decision to seek surgical intervention will also depend in part upon your other medical conditions and ability to undergo surgery.

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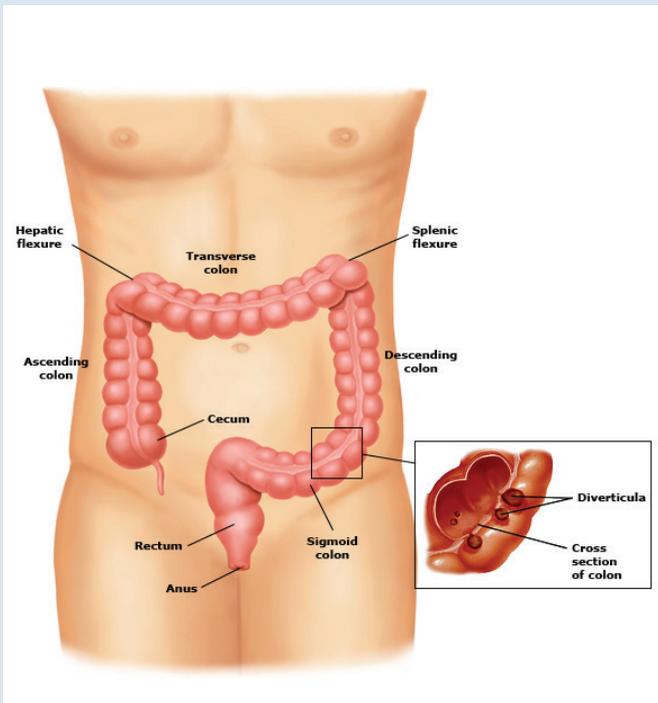
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- In many cases, an elective operation can be performed laparoscopically, using small incisions, rather than the typical vertical (up and down) abdominal incision. Laparoscopic surgery usually allows you to recover more quickly and shortens the hospital stay.
- After diverticulitis resolves — If you have not had a recent colonoscopy, the entire length of the colon should be evaluated to determine the extent of disease and to rule out the presence of abnormal lesions such as polyps or cancer. Recommended tests include colonoscopy, barium enema and sigmoidoscopy, or CT colonography.
- Diverticular bleeding — Most cases of diverticular bleeding resolve on their own. However, some people will need further testing or treatment to stop bleeding, which may include a colonoscopy, angiography (a treatment that blocks off the bleeding artery), bleeding scan, or surgery.

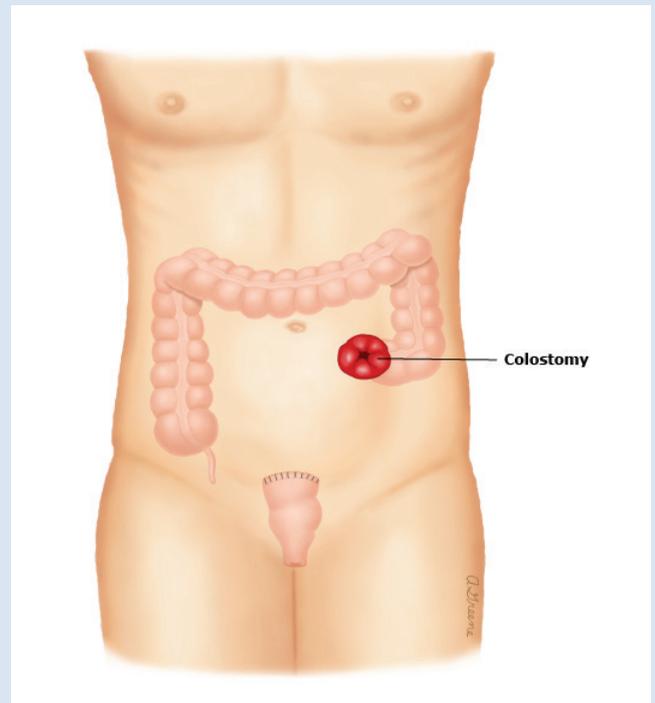
Diverticular Disease Prognosis

- Diverticulosis — Over time, diverticulosis may not cause problems or it may cause episodes of bleeding and/or diverticulitis. Approximately 15 to 25 percent of people with diverticulosis will develop diverticulitis, while 5 to 15 percent will develop diverticular bleeding.
- Diverticulitis — Approximately 85 percent of people with uncomplicated diverticulitis will respond to medical treatment, while approximately 15 percent of patients will need an operation. After successful treatment for a first attack of diverticulitis, one-third of patients will remain asymptomatic, one-third will have episodic cramps without diverticulitis, and one-third will eventually experience a second attack of diverticulitis.
- The prognosis tends to remain similar following a second attack of diverticulitis. Only 10 percent of people remain symptom-free after a second attack. Subsequent attacks tend to be of similar severity, not increasing in severity as previously believed.

Diverticulum



Colostomy



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Amount of fiber in different foods

Food	Serving	Grams of fiber
Fruits		
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
Juices		
Apple, unsweetened, with added ascorbic acid	1 cup	0.5
Grapefruit, white, canned, sweetened	1 cup	0.2
Grape, unsweetened, with added ascorbic acid	1 cup	0.5
Oranges	1 cup	0.7
Vegetables		
Cooked		
Green beans	1 cup	4.0
Carrots	1/2 cup sliced	2.3
Peas	1 cup	8.8
Potato (baked, with skin)	1 medium potato	3.8
Raw		
Cucumber (with peel)	1 cucumber	1.5
Lettuce	1 cup shredded	0.5
Tomato	1 medium tomato	1.5
Spinach	1 cup	0.7
Legumes		
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
Nuts		
Almonds	1/2 cup	8.7
Peanuts	1/2 cup	7.9

Food	Serving	Grams of fiber
Breads, pastas, flours		
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
Pasta and rice, cooked		
Macaroni	1 cup	2.5
Rice, brown	1 cup	3.5
Rice, white	1 cup	0.6
Spaghetti (regular)	1 cup	2.5

Nutrition label — fiber

Nutrition Facts	
about 9 servings per container	
Serving size	1 Cup (59g)
Amount per serving	
Calories	190
% Daily Value *	
Total Fat 1g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	0%
Sodium 210mg	9%
Total Carbohydrate 46g	17%
Dietary Fiber 7g	25%
Total Sugars 18g	
Includes 9g Added Sugars	18%
Protein 5g	
Vitamin D 4mcg	20%
Calcium 25mg	0%
Iron 4.4mg	20%
Potassium 390mg	8%
Thiamin	10%
Riboflavin	10%
Niacin	10%
Vitamin B ₂	10%
Folate 80 mcg DFE (48mcg folic acid)	20%
Vitamin B ₁₂	10%
Phosphorus	20%
Magnesium	20%
Zinc	10%
Copper	10%

* The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

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