



# Diverticular Disease

Diverticular disease and diverticulosis are interchangeable terms meaning the presence of diverticula in the large intestine (colon). Diverticula are small sac-like out-pouchings of the colon lining that balloon through the outer colon wall, occurring most frequently in the lower section of the colon (sigmoid), which is located on the left side of the pelvis.

Diverticular disease occurs in about 5% of the Western adult population who are younger than forty years of age, but it rises sharply to occur in at least 50% of those who are older than sixty years of age. It's a disease most prevalent in the elderly; 65% of those who are older than eighty-five years of age have diverticulosis.

The number of diverticula in the gut can vary from a single occurrence (diverticulum) to hundreds. Generally, diverticula increase in number and in size over time. They are characteristically 0.5-1 cm (0.2-0.4") in diameter but can exceed 2 cm (0.8"). Although rare, physicians have reported some extreme cases of large diverticula, spanning up to 25 cm (10").

There is a wide geographic variability of diverticular disease and a striking correlation with an urban diet, which suggests a dietary factor as its root. However, the exact cause of this disease remains unknown. One theory is that diverticula occur when pressure, such as that caused by straining during constipation, builds up inside the colon and makes the intestinal wall balloon out in spots where the wall is weak. These weak spots are the sites between the muscle bundles, which run both lengthwise and circularly throughout the colon. In addition, the bowel tends to become irritable and spastic when there is inadequate bulk passing through and it must contract more intensely to pass contents along.

In about 10-25% of diverticular disease patients, the diverticula become inflamed (diverticulitis).

## Symptoms/Complications

Please pay close attention to the use of the similar but distinctly different definitions: the condition of diverticular

disease (*diverticulosis*) and inflammation of the diverticula (*diverticulitis*).

**Diverticulosis** is often present without any symptoms. Many symptoms are similar to those of irritable bowel syndrome (IBS) and often include changing bowel activities such as constipation, diarrhea, or alternating between the two extreme stool consistencies.

**Diverticulitis** (flare-up) occurs when the diverticula become inflamed and/or infected. There might be an increase in diarrhea, cramping, and bowel irritability, and symptoms can include intense pain, abdominal cramping, bleeding, bloating, and fever. The pain and tenderness is often in the left lower portion of the abdomen.

Rarely, fistulae, bowel obstruction, and lower intestinal hemorrhage occur, or a diverticulum can perforate, causing a local abscess with a marked increase in the degree and nature of the pain. Additional symptoms are likely to include fever, nausea, and vomiting. Sometimes these complications require urgent surgery.

## Diagnosis

The presence of colonic diverticula is challenging to diagnose as most patients are asymptomatic and the nonspecific symptoms overlap considerably with those of IBS. Your symptom history and a careful physical examination can reveal important clues to your physician. It is easier to diagnose this condition during a flare-up, as this typically presents with a fever, more tenderness over the abdomen, and more severe symptoms.

Blood tests may reveal the degree of inflammation present and a number of other tests can help pinpoint a diagnosis. X-rays can be helpful to observe the shape and function of the colon. For this test, you undergo a barium-containing enema, which shows up as bright white on X-rays, providing a contrasting picture of the contours of the bowel. Another method is by colonoscopy examination, during which a physician inserts an instrument called a colonoscope via the anus to view the inside

of the colon. The scope is made of a hollow, flexible tube with a tiny light and video camera.

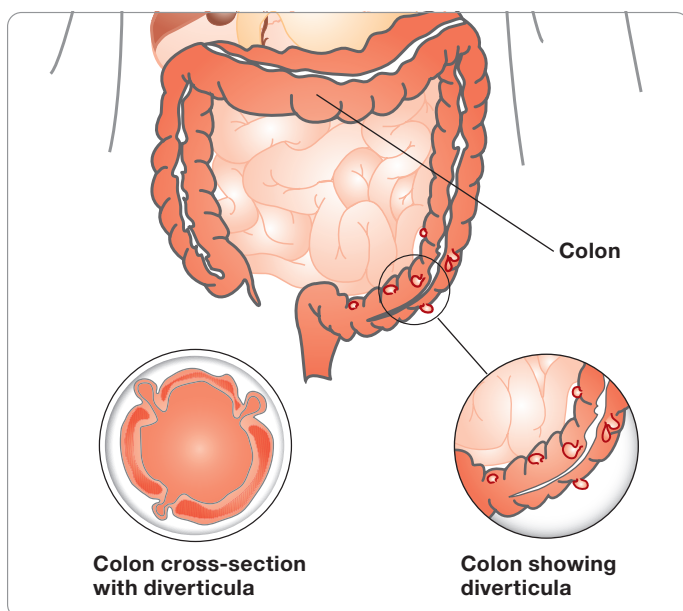
Colonoscopies usually require conscious sedation; however, since most diverticula form in the sigmoid colon, your physician might suggest a flexible sigmoidoscopy examination instead. This is a less invasive procedure during which the physician looks at only the lower portion of the bowel, and sedation is not typically required. During periods of flare-up, the bowel might be too tender to perform these investigations and the risk of bowel perforation might be too high, so a physician might choose a computed tomography (CT) scan or an even less invasive procedure known as virtual colonoscopy (VC) during diverticulitis. All imaging tests for the colon require some advance bowel preparation.

Your physician will also consider other conditions that could be causing your symptoms and will eliminate these as possibilities before confirming a diverticular disease diagnosis.

## Management of Diverticulosis

Recommendations for the ongoing dietary management of diverticular disease include consuming well-balanced meals and snacks, and ensuring high-fibre content and adequate fluid intake, as outlined in *Canada's Food Guide*. Fibre and fluid help soften stool, allowing it to move more quickly and easily through the colon, thereby avoiding excessive pressure against the colon wall.

Aim for 20-35 g of fibre daily, consumed evenly throughout the day. To help monitor your fibre intake, check the nutrient content on the labels of packaged foods. In the Nutrition Facts table, you will find fibre listed in grams (g) and the percentage (%) of the recommended Daily Value (DV) per serving. When the content has less than 5%, the product has a low-fibre content;



when the content has 15% or greater, the product has a high-fibre content.

Make gradual changes while increasing fibre intake, as this approach will help avoid bloating, gas, and general abdominal discomfort that can occur as your body adapts to the dietary modifications. Be sure to increase the amount of liquid you drink, especially when increasing fibre.

There is no evidence that excluding whole pieces of fibre from the diet, such as nuts, corn, and seeds, will benefit the disease course, so there is no reason to avoid your favourite high-fibre foods, even if they contain small seeds. Ask us for information regarding a high-fibre diet or consult a registered dietitian in your area, or check our website.

Antispasmodic medication may provide bowel symptom relief; however, this could be treating co-existing irritable bowel syndrome rather than the diverticular disease itself.

## Management of Diverticulitis

When a flare-up (diverticulitis) occurs, your physician will most likely recommend an immediate transition to a restricted-fibre or fluid diet and physical rest, and is likely to prescribe antibiotics, possibly antispasmodics, and pain medications. In severe cases, your physician might recommend hospital admission for intravenous feeding so that your bowel may rest for a few days.

Diverticulitis may respond to medical management, but if episodes become frequent, then surgical resection of the affected area might be necessary. Only about 1% of those with diverticular disease require surgery. In many cases, the surgeon can remove the damaged portion of the bowel (colectomy) and connect the remaining ends together. If this is not safe or possible, the surgeon may bring the end of the colon to a new surgical opening through the abdominal wall (colostomy). The patient then wears a removable appliance to collect the bowel contents. A colostomy might be required temporarily or permanently, depending upon the particular circumstances.

## Outlook

Once a diverticulum forms, it does not go away on its own. The best preventative measure to avoid diverticular disease would seem to be a well-balanced, high-fibre diet beginning as early on in life as possible. There are many other health benefits associated with this diet. By also drinking adequate fluids, and staying physically active, you might be able to prevent further diverticula from forming and avoid unpleasant flare-ups. Many individuals are able to live symptom-free with diverticular disease by making these lifestyle changes. Medical and surgical treatments are available for those whose disease is persistent and unresponsive to these modifications.

