



**Colon with Diverticulosis  
and Diverticulitis**

## **PATIENT INFORMATION**

### **DIVERTICULAR DISEASE**

#### **1. What Is Diverticulosis?**

Diverticulosis refers to the presence of small out-pouchings (called diverticula) or sacs that can develop in the lining of the gastrointestinal tract. While diverticula can be present anywhere in the entire digestive tract, they are most common on the left side of the large intestine, the area known as the descending and sigmoid colon.

#### **2. How common is diverticulosis?**

Diverticulosis is a common disorder especially in older people. The condition is rarely seen in people under the age of 30 and is most common in those over 60. Both men and women are equally affected.

#### **3. What causes diverticulosis?**

No one knows for certain why diverticulosis develops; however, a few theories have been suggested. Some experts believe that abnormal contraction, spasm and straining to have a bowel movement may cause diverticula to form in a weak spot of the intestinal wall. Normal use of the colon may contribute as well. Low fiber diets may play a role in the development of diverticulosis. In rural Africa where the diet is high in roughage, diverticulosis is rare. There also appears to be a genetic predisposition to diverticulosis, that is, if your parent or grandparent had diverticulosis you may develop it as well.

#### **4. What are the symptoms of diverticulosis?**

Most patients with diverticulosis have no symptoms. Many will never know they have the condition until it is discovered during an endoscopic or Xray examination. While

most people have no symptoms, some individuals may experience pain or cramping in the left lower abdomen, bloating, a low fever and/or a change in bowel habits.

### **5. How is diverticulosis diagnosed?**

Diverticulosis is generally discovered through barium enema, colonoscopy or CT scan.

### **6. Can diverticulosis be prevented or eliminated?**

It is not known whether diverticulosis can be prevented. Constipation, a major cause of excess intra-colonic pressure and thought to be responsible for some cases of diverticulosis, should be avoided. A diet rich in fiber (bran cereals, whole wheat breads, fresh fruits, and leafy vegetables) may decrease the development of diverticulosis, improve symptoms of constipation and decrease the likelihood of complications. Benefits of a high fiber diet may be seen in those who eat between 15 and 30 grams of fiber a day. Unfortunately people in the United States generally only consume 8-12 grams a day. Diverticulosis does not appear to be associated with alcohol, smoking or caffeine consumption.

Once diverticula have formed they do not go away. For those who do not have symptoms, increasing fiber in the diet to soften and bulk the stool may decrease the development of more diverticula, or prevent complications. Ask your doctor if you have special concerns.

### **7. What are the complications of diverticulosis?**

*Diverticulitis* is an inflammation and/or infection of one of the diverticula. People with this complication characteristically present with:

- Fever
- Abdominal pain, usually on the lower left side
- Diarrhea and/or constipation  
Decreased appetite

Other complications of diverticulitis include development of an abscess or narrowing of the colon (*stricture*). Rarely one can develop a "*fistula*" or connection between the bowel and bladder as a complication of diverticulitis.

*Hemorrhage* or the passage of large amount of bright red blood from the rectum in most cases is due to diverticulosis. It occurs typically without warning and is painless. Severe bleeding has been reported in 3-5% of people with diverticulosis and usually stops without special treatment. Endoscopic examination of the colon may be necessary to diagnose and treat the cause of bleeding. Nuclear medicine bleeding scans can also be used to identify the site of the diverticular bleeding in cases where endoscopy does not reveal the active site. Occasionally angiography (injection of dye into the blood vessels) performed by a radiologist is needed to identify and treat diverticular bleeding. In cases where endoscopic or radiologic management fails to control the bleeding, surgery may be necessary to remove the involved area.

### **8. Treatment for diverticulitis**

Mild bouts of diverticulosis diverticulitis (an inflamed or infected diverticulum) may be managed with diet restrictions. Twenty-four hours of clear liquids followed by several days of a low fiber, caffeine free, low fat diet maybe all that is necessary to rest the bowel and allow healing. Often, treatment for diverticulitis requires the use of antibiotics

and occasionally hospitalization. Surgery is rarely required but may be needed for cases that don't respond to medication. A temporary colostomy may be required during surgery for complicated diverticulitis.

### **9. Can diverticulitis be prevented?**

Persons with diverticulosis in the past were instructed to avoid foods that contain undigestible particles such as popcorn, nuts and fruits with small seeds. The theory of such a diet is that these particles might get "caught" in a diverticulum and cause diverticulitis. In actuality there is little evidence that this type of restrictive diet is effective. Instead your physician recommends a high fiber diet of 30 grams of fiber each day. You should begin with a small amount of fiber and gradually increase your fiber intake to 30 grams a day. Natural bulk laxatives such as Metamucil<sup>®</sup>, Citucel<sup>®</sup> or Fiber Con<sup>®</sup> are safe to use everyday and if taken regularly are very effective. You'll find that generic brands are equally effective.

### **10. Information about nuts, seeds and corn.**

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**Context** Patients with diverticular disease are frequently advised to avoid eating nuts, corn, popcorn, and seeds to reduce the risk of complications. However, there is little evidence to support this recommendation.

**Objective** To determine whether nut, corn, or popcorn consumption is associated with diverticulitis and diverticular bleeding.

**Design and Setting** The Health Professionals Follow-up Study is a cohort of US men followed up prospectively from 1986 to 2004 via self-administered questionnaires about medical (biennial) and dietary (every 4 years) information. Men reporting newly diagnosed diverticulosis or diverticulitis were mailed supplemental questionnaires.

**Participants** The study included 47,228 men aged 40 to 75 years who at baseline were free of diverticulosis or its complications, cancer, and inflammatory bowel disease and returned a food-frequency questionnaire.

**Main Outcome Measures** Incident diverticulitis and diverticular bleeding.

**Results** During 18 years of follow-up, there were 801 incident cases of diverticulitis and 383 incident cases of diverticular bleeding. We found inverse associations between nut and popcorn consumption and the risk of diverticulitis. The multivariate hazard ratios for men with the highest intake of each food (at least twice per week) compared with men with the lowest intake (less than once per month) were 0.80 (95% confidence interval, 0.63-1.01; P for trend = .04) for nuts and 0.72 (95% confidence interval, 0.56-0.92; P for trend = .007) for popcorn. No associations were seen between corn consumption and diverticulitis or between nut, corn, or popcorn consumption and diverticular bleeding or uncomplicated diverticulosis.

**Conclusions** In this large, prospective study of men without known diverticular disease, nut, corn, and popcorn consumption did not increase the risk of diverticulosis or diverticular complications. The recommendation to avoid these foods to prevent diverticular complications should be reconsidered.