

## What is the most beneficial diet for patients with diverticulosis?

### EVIDENCE-BASED ANSWER

A diet high in fiber (particularly fruit and vegetable fiber) and low in fat and red meat may help to decrease the risk of symptomatic diverticular disease (strength of recommendation [SOR]: **C**, case-control studies and a

large prospective cohort study). For people with diverticular disease, a diet high in fiber might decrease the risk of complications (SOR: **C**, case series). No studies have evaluated the effect of nut and seed avoidance.

### CLINICAL COMMENTARY

#### Recommend natural sources of fiber for diverticulosis

“Conventional wisdom” dictates that physicians recommend a high-fiber diet to prevent symptoms in patients who are found to have diverticuli on endoscopic or radiographic studies, or who are diagnosed clinically with diverticulitis. Although there is a relative paucity of data, the clinical evidence, as set forth in this review, supports this practice. Insoluble fiber, and cellulose in particular, appears to be especially helpful.<sup>1</sup>

I tend to recommend natural dietary fiber in the form of vegetables and whole grains (primarily insoluble fiber), as well as legumes (soluble fiber to help reduce cholesterol and

blunt glucose absorption). No studies are available to endorse the advice to avoid seeds and nuts; a survey of colorectal surgeons showed that half believed eating these foods made no difference in the disease course.<sup>2</sup>

It is noteworthy that acute diverticulitis is treated with clear liquids and a low-fiber diet during the exacerbation. This therapy is based on experience and conventional wisdom, and while there is no convincing evidence to support it, I still adhere to this recommendation.

**David M. Schneider, MD**

Sutter Santa Rosa Family Medicine Residency Program

### Evidence summary

Approximately 60% of people living in Westernized countries who are older than 60 years will develop diverticulosis of the colon. Colonic diverticuli are thought to develop from an increase in intraluminal pressure. This pressure can be caused by colonic motility abnormalities, but a low-fiber diet can also result in a smaller stool

mass and a less distended colon, thereby increasing intraluminal pressure.<sup>3</sup>

Because of strong epidemiological evidence that people from cultures with high-fiber diets are far less likely to develop diverticulosis than are people who live in cultures of low-fiber diets, it has been assumed that a diet high in fiber can prevent diverticulosis.<sup>4</sup> Many small,

Anne Eglash, MD,  
Chris Hooper Lane, MLS  
University of Wisconsin,  
Madison

TABLE

## Studies on dietary fiber for diverticulosis

TRIAL DESCRIPTION	INTERVENTION/COMPARISON	RESULTS
20 adults with symptomatic diverticular disease diagnosed by barium enema. Randomized crossover trial <sup>5</sup>	Bran tablets (18 g of fiber total) vs high roughage diet (HRD, amount of fiber unspecified) vs sterculia gum and antispasmodic	20% were symptom free with a HRD, 40% with sterculia gum and antispasmodic, and 60% with bran tablets
58 adults with uncomplicated symptomatic diverticular disease double-blind, crossover RCT, treated for 16 weeks with each intervention <sup>6</sup>	Bran crispbread (6.99 g/d fiber), ispaghula (psyllium) husk drink (9.04 g/d fiber), and placebo (2.34 g/d fiber)	No significant difference among treatments for composite symptom scores. Stools were softer, more frequent, and straining with bowel movements was less with fiber supplements ( $P<.001$ )
43 adults with symptomatic diverticular disease. Randomized trial <sup>7</sup>	Lactulose 15 mL bid vs high-fiber diet (30–40 g/d) for 12 weeks	Pain frequency with a bowel movement was reduced with lactulose ( $P=.017$ ). Pain severity was reduced with lactulose ( $P=.028$ ) and high fiber diet ( $P=.043$ ). Abdominal pain frequency was decreased with lactulose ( $P=.0015$ ) and with a high fiber diet ( $P=.022$ ). Abdominal pain severity was decreased with lactulose ( $P=.009$ ) and with a high fiber diet ( $P=.028$ )
40 adults with symptomatic diverticular disease diagnosed by barium enema. Case series <sup>8</sup>	Wheat bran 24 g/d for at least 6 months	The 40 patients had 391 total symptoms, and 60% were abolished, 28% relieved
100 adults with a history of symptomatic diverticular disease. Case series <sup>9</sup>	High-fiber diet (40 g/d)	91% of patients remained asymptomatic over 5 to 7 years, although only 75% adhered to their high-fiber diet

uncontrolled studies have also investigated the effect of high-fiber diets and supplements on symptoms of diverticulosis and prevention of diverticulitis episodes.

One large, prospective study of 47,888 male health professionals gathered baseline dietary information in 1986. In 1990 and 1992, follow-up questionnaires asked the subjects if they had been diagnosed with diverticular disease in the interim, and whether they had symptoms of diverticulitis. The study showed a strong inverse relationship between fruit and vegetable fiber intake and risk of symptomatic diverticular disease. It also demonstrated a direct relationship between fat intake, particularly red meat, and symptomatic diverticular disease. For men in the highest quintile of total fat intake and lowest quintile of total fiber intake, the relative risk (RR) of diverticular disease was 2.35

(95% confidence interval [CI], 1.38–3.98) compared with men in the highest quintile of total fiber intake and lowest quintile of total fat intake. Men in the highest group of red meat intake and lowest quintile of fiber intake had a RR of 3.22 (95% CI, 1.46–7.54) compared with men with the lowest red meat intake and highest dietary fiber intake. In this study, cereal fiber did not reduce the risk of symptomatic diverticular disease.<sup>1</sup>

Two small randomized crossover studies evaluated the benefit of dietary fiber supplementation on symptomatic diverticular disease, with conflicting results (TABLE).<sup>5,6</sup> One study found that sterculia gum with an antispasmodic, a high roughage diet, and bran tablets all improved symptomatic diverticular disease, with bran tablets associated with the greatest improvement.<sup>5</sup> Another study

found no significant differences between psyllium, bran, and placebo in reducing symptomatic diverticular disease.<sup>6</sup> However, the amount of total fiber supplementation for each treatment regimen was less than in other studies.

A small randomized trial of lactulose vs dietary fiber showed both treatments to be effective in alleviating symptoms of diverticular disease.<sup>7</sup> Two small case series of adults treated with dietary fiber found that fiber alleviated symptoms of diverticular disease,<sup>8,9</sup> and possibly reduced complications of diverticulosis.<sup>9</sup>

We found no studies that investigated the common medical advice to avoid small nuts and seeds, which are thought to cause obstruction of the diverticuli and lead to diverticulitis.

### Recommendations by others

The American College of Gastroenterology states that it is reasonable to recommend a diet high in fruit and vegetable fiber to patients with uncomplicated diverticulosis.<sup>10</sup>

### REFERENCES

1. Aldoori WH, Giovannucci EL, Rimm EB, Wing AL, Trichopoulos DV, Willett WC. A prospective study of diet and the risk of symptomatic diverticular disease in men. *Am J Clin Nutr* 1994; 60:757–764.
2. Schechter S, Mulvey J, Eisenstat TE. Management of uncomplicated acute diverticulitis: results of a survey. *Dis Colon Rectum* 1999; 42:470–475.
3. Floch M, Bina I. The natural history of diverticulitis: fact and theory. *J Clin Gastroenterol* 2004; 38(Suppl 1):S2–S7.
4. Aldoori W, Ryan-Harshman M. Preventing diverticular disease: review of recent evidence on high-fibre diets. *Can Fam Physician* 2002; 48:1632–1637.
5. Taylor I, Duthie HL. Bran tablets and diverticular disease. *Br Med J* 1976; 1(6016):988–990.
6. Ornstein MH, Littlewood ER, Baird IM, Fowler J, North WR, Cox AG. Are fibre supplements really necessary in diverticular disease of the colon? A controlled clinical trial. *Br Med J (Clin Res Ed)* 1981; 282:1353–1356.
7. Smits BJ, Whitehead AM, Prescott P. Lactulose in the treatment of symptomatic diverticular disease: A comparative study with high-fibre diet. *Br J Clin Pract* 1990; 4:314–318.
8. Brodribb AJ, Humphreys DM. Diverticular disease: Three studies. part II—treatment with bran. *Br Med J* 1976; 1(6007):425–428.
9. Hyland JM, Taylor I. Does a high fibre diet prevent the complications of diverticular disease? *Br J Surg* 1980; 67:77–79.
10. Stollman, N, Raskin, J. Diagnosis and management of diverticular disease of the colon in adults. Ad Hoc Practice Parameters Committee of the American College of Gastroenterology. *Am J Gastroenterol* 1999; 94:3111–3112.