

FPIN's Help Desk Answers

Effect of Dietary Changes on IBS Symptoms

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Clinical Question

What dietary changes are effective in relieving the symptoms of irritable bowel syndrome (IBS)?

Evidence-Based Answer

A diet low in fermentable oligosaccharides, disaccharides, monosaccharides, and polyols (FODMAPs) decreases IBS symptoms and improves quality of life compared with usual diet. (Strength of Recommendation [SOR]: A, based on a meta-analysis of randomized controlled trials [RCTs].) Soluble fiber supplementation improves IBS symptoms such as abdominal pain. (SOR: B, based on a low-quality meta-analysis of RCTs.) Patients with IBS whose symptoms improve with a gluten-free diet—even without evidence of gluten-sensitive enteropathy—are better off continuing to avoid gluten. (SOR: B, based on an RCT.)

Evidence Summary

A 2016 meta-analysis of 22 RCTs and nonrandomized clinical interventions (N = 934) compared the effects on IBS symptoms of a low-FODMAP diet vs. usual diet.¹ FODMAPs contain short-chain carbohydrates, which can lead to excess gas production in the small intestine. Patients ranged from seven to 74 years of age and met Rome III or National Institute for Health and Care Excellence

criteria for IBS. Outcome measures included scores on the IBS Severity Scoring System and IBS Quality of Life scale. The IBS Severity Scoring System assesses abdominal pain severity and frequency, abdominal bloating, bowel habit dissatisfaction, and interference with quality of life on a 0- to 500-point scale; a decrease of 50 points indicates clinical improvement. The IBS Quality of Life scale measures 41 IBS-specific factors; a decrease of 9 points indicates clinical improvement. Follow-up was conducted over three to six weeks in the RCTs and over two days to 35 months in the nonrandomized interventions. Patients who followed a low-FODMAP diet had a greater chance of achieving at least a 50-point improvement on the IBS Severity Scoring System (six RCTs; N = 354; odds ratio [OR] = 0.44; 95% confidence interval [CI], 0.25 to 0.76; and 16 nonrandomized trials; N = 580; OR = 0.04; 95% CI, 0.00 to 0.38). There was also a greater chance of achieving at least a 9-point improvement on the IBS Quality of Life scale among patients in the RCTs (OR = 1.8; 95% CI, 1.1 to 3.0) and nonrandomized interventions (OR = 2.6; 95% CI, 1.5 to 4.8; number of pooled trials and patients not reported). There was more heterogeneity in the nonrandomized interventions, and the absence of blinding may have skewed results.

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HELP DESK ANSWERS

A 2014 meta-analysis of 14 RCTs (N = 906) evaluated the effects of fiber supplementation on global IBS symptoms and abdominal pain in adults.² The interventions included supplementation with bran (10 to 20 g or unspecified), the soluble fiber ispaghula (20 g or unspecified), linseeds (24 g), or unspecified concentrated fiber for four to 16 weeks, with a minimum of seven days' follow-up. Four studies used the Manning or Rome III criteria for IBS diagnosis, and 10 used author-defined criteria. Outcomes were assessed using several IBS symptom scales, and improvement was measured using Likert scales or individual investigator criteria. Ispaghula supplementation was the only intervention to improve global IBS symptoms and abdominal pain compared with placebo (seven trials; N = 499; relative risk = 0.83; 95% CI, 0.73 to 0.94). No significant improvement was noted with bran, linseeds, or unspecified concentrated fiber. Limitations of this review included variations in IBS definitions, duration and dosage of fiber therapy, and symptom assessment criteria.

A 2011 double-blind RCT analyzed 34 patients whose IBS symptoms were controlled on a gluten-free diet.³ Patients were 29 to 55 years of age with a prior diagnosis of IBS based on Rome III criteria and in whom celiac disease had been excluded by serology or duodenal biopsy. Groups remained on a gluten-free diet and were randomized to one muffin and two slices of bread with or without added gluten each day for six weeks. IBS symptoms including pain, bloating, satisfaction with stool consistency, tiredness, gas, and nausea were evaluated using a visual analog scale. C-reactive protein, celiac antibodies, and fecal lactoferrin levels were measured to ensure that worsening symptoms were not due to celiac disease. Inadequate symptom control was reported more often in the gluten group compared with the gluten-free group (68% vs. 40%; $P = .0001$). There was no significant change in any of the biomarkers for intestinal inflammation or injury. Dietary adherence was high during the study, but some worsening of symptoms was observed in both groups.

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