

## **Irritable Bowel Syndrome — An Overview of Treatment Options**

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*Suggested CDR Learning Codes: 3005, 5220; Level 2*

Clients and patients who have been diagnosed with irritable bowel syndrome (IBS) typically mention at least one of two scenarios when seeking nutrition advice from a dietitian: “My doctor told me I have IBS, and there’s nothing I can do other than to avoid certain foods and come back in six months for a reevaluation if my symptoms don’t improve,” or “My doctor suggested I try a FODMAP diet and gave me a list of foods I shouldn’t eat.”

The advice in the first scenario doesn’t take into account the helpful strategies that an RD can provide to clients and patients, while the second scenario lacks adequate information about this dietary lifestyle because clients and patients need to know what they can eat as well as what they can’t.

There’s a need for dietitians to help clients and patients understand IBS and determine not only what foods may be contributing to their distress but also what nutritious food choices will help contribute to their overall good health without aggravating gastrointestinal (GI) symptoms.

This continuing education course provides an overview of IBS and both traditional and nontraditional dietary strategies that can be used to help clients and patients find relief from symptoms.

### **What Is IBS?**

IBS is a functional GI disorder (FGID), meaning it’s caused by changes in the way the GI tract works. Unlike other GI disorders, such as celiac disease, Crohn’s disease, or colitis, in which an endoscopy will reveal abnormalities along the GI tract, there’s no GI damage with IBS.<sup>1</sup>

Common IBS symptoms include abdominal pain, bloating, cramping, diarrhea, and constipation,<sup>2</sup> and the disease typically is classified into one of four subtypes (see Table 1 below) based on patients’ usual stool consistency.<sup>1,3</sup>

**Table 1: IBS Subtypes and Symptoms<sup>1,3</sup>**

<b>Subtype</b>	<b>Symptoms</b>
<b>IBS with constipation</b>	Hard stools > 25% of the time Loose stools < 25% of the time
<b>IBS with diarrhea</b>	Loose stools > 25% of the time Hard stools < 25 % of the time
<b>Mixed IBS</b>	Hard stools > 25 % of the time Loose stools > 25 % of the time
<b>Unsubtyped IBS</b>	Hard stools < 25% of the time Loose stools < 25 % of the time

IBS prevalence in the general population is thought to be as high as 20%,<sup>4</sup> with most studies showing a rate of 10% to 15%.<sup>1</sup> It's estimated to account for 25% of gastroenterologists' time treating patients in outpatient departments.<sup>4,5</sup>

IBS is more common in women vs. men, with a female-to-male ratio of 2 to 2.5:1 in those who seek care for their symptoms. However, it's estimated that only one-third of people with IBS seek treatment.<sup>1,6</sup> In addition, women are more likely to complain of abdominal pain and constipation as their primary symptoms, while men are more likely to report diarrhea-related symptoms.<sup>6</sup>

Although IBS sometimes is diagnosed by excluding other GI disorders, current guidelines emphasize that it isn't a diagnosis of exclusion, and that clinicians should be encouraged to make a positive IBS diagnosis using the Rome criteria,<sup>7</sup> a system developed to rely on clinical symptoms to classify FGIDs, in which symptoms can't be explained by the presence of structural or tissue damage.<sup>8</sup> Examples of other FGIDs include functional dyspepsia, functional heartburn, and functional constipation.

Using the Rome system, IBS can be classified into four subtypes, as noted in Table 1, based on clients or patients experiencing abdominal pain or discomfort at least three days per month during the last three months associated with two or more of the following: improvement with defecation, onset associated with a change in stool frequency, or onset associated with a change in stool form (appearance).<sup>8,9</sup>

The American College of Gastroenterology doesn't recommend routine testing with complete blood counts and other serum chemistries for patients with symptoms suggestive of IBS and no alarm features such as unexplained weight loss, blood in the stool, anemia, and persistent diarrhea.<sup>10</sup> However, the college does recommend that patients with IBS with diarrhea (IBS-D) or mixed IBS (IBS-M) undergo serologic testing for celiac disease, and that colonoscopic imaging be performed in patients who have IBS with alarm features to rule out organic disease.

In addition, lactose breath testing may be recommended when lactose intolerance is a concern. However, there's insufficient data to recommend breath testing for small intestinal bacterial overgrowth (SIBO).<sup>11</sup> A colonoscopy is recommended for patients older than the age of 50, but in younger patients, the need for such testing should be determined by clinical presentation and sound clinical judgment.<sup>10</sup>

After a clinician positively diagnoses IBS, the next challenge is determining the appropriate strategies to help patients find relief from their symptoms. Although IBS is the most recognized and studied FGID, currently there are no specific treatments that encompass the breadth of symptom experience.<sup>12</sup>

A survey of almost 2,000 patients with IBS found that 80% of respondents reported having to restrict their usual activities 20% of the time, and almost 13% couldn't work, presumably because of their IBS. In addition, survey participants said they had consulted up to five different health care providers about IBS and saw their current health care providers an average of 2.7 times in a six-month period.<sup>12</sup>

Almost 9% of the survey respondents reported seeking treatment for IBS symptoms from a dietitian/nutritionist, and almost 76% were taking at least one medication to address IBS symptoms. To the question “How satisfied are you with all types of treatments?” only slightly more than 50% responded that they were somewhat, very, or extremely satisfied with their physicians’ care, indicating there’s room for improvement regarding IBS treatment.<sup>12</sup>

Although there’s no cure for IBS, and it can be difficult to treat once diagnosed, symptoms can be successfully managed with diet, medication, and lifestyle changes or a combination of these approaches. The next two sections will outline current medication and lifestyle recommendations for managing IBS symptoms followed by information on nutrition management for IBS, including both traditional and nontraditional approaches.

### **Prescription Medications**

Lubiprostone (Amitiza) is prescribed only for patients with IBS with constipation (IBS-C) and has been found to improve symptoms of abdominal pain, stool consistency, straining, and constipation. It’s prescribed only when all other treatments have failed. Side effects may include nausea, diarrhea, and abdominal pain.<sup>1,2,13</sup>

Alosetron (LOTROXON) is intended for use only in women with severe cases of IBS-D who haven’t responded to other treatments.<sup>2,13</sup> Because of its potentially severe side effects, including severe constipation and ischemic colitis, it can be prescribed only by physicians enrolled in the Prescribing Program for LOTROXON, which requires them to sign an agreement acknowledging that they understand IBS-D and LOTROXON’s possible side effects.

Tricyclic antidepressants (TCAs) (eg, amitriptyline [Elavil]) and selective serotonin reuptake inhibitors (SSRIs) (eg, sertraline [Zoloft]) have been shown effective in patients with all subtypes of IBS. It’s thought that TCAs may work best for IBS-D by reducing sensitivity to pain in the GI tract and normalizing GI motility and secretion. SSRIs, on the other hand, may be better suited to patients with IBS-C because of effects on colon transit. Side effects may include drowsiness and constipation.<sup>1,2,13</sup>

Antibiotics such as rifaximin (Xifaxan), which stays in the gut without being reabsorbed, may benefit patients with IBS symptoms caused by SIBO.<sup>14</sup> In studies using lactulose or glucose breath testing, SIBO was detected in up to 84% of patients who met the Rome criteria for IBS.<sup>15</sup> Additionally, results from multiple clinical studies have shown that treatment with nonabsorbable antibiotics can reduce or eradicate SIBO and improve IBS symptoms, suggesting that SIBO may indeed play a role in IBS.<sup>15</sup>

Antispasmodic medications such as dicyclomine (Bentyl), which belong to a class of medications called anticholinergics, sometimes are used to treat IBS. Although antispasmodics may be helpful for patients with IBS-D and may help alleviate painful bowel spasms, constipation is one possible side effect, so these drugs should be used only as needed in diarrhea-predominant IBS.<sup>13</sup>

## Over-the-Counter Medications and Supplements

The antidiarrheal loperamide (Imodium) has been found to reduce stool frequency in patients with diarrhea, but it doesn't reduce pain, bloating, or other IBS symptoms.<sup>1,2,13</sup>

Laxatives such as polyethylene glycol 3350 (MiraLAX) sometimes are used to treat IBS but aren't recommended by the American College of Gastroenterology, as there are other treatments that may provide the same relief from constipation but with fewer potential side effects, such as nausea, abdominal cramping, and gas.<sup>1,13</sup>

Fiber supplements may be recommended to relieve constipation when increasing dietary fiber is ineffective. Although wheat and corn bran haven't been shown to be effective in treating IBS, positive results have been seen when adding psyllium, a soluble fiber supplement, to the diet.<sup>16</sup>

Although more research is needed, some studies suggest that probiotic supplements, especially those predominantly containing *Bifidobacterium infantis*, help alleviate abdominal pain, bloating, and irregular bowel movements.<sup>17</sup> Probiotics are microorganisms that supplement the GI tract's natural bacteria, helping to balance intestinal flora.

Several mechanisms of probiotics' beneficial effects on intestinal mucosa have been proposed, including suppression of the growth and binding of pathogenic bacteria, improvement of the epithelium's barrier function, and alteration of the host's immune activity.<sup>18</sup>

In a review of 19 randomized controlled trials that included 1,650 patients with IBS, the authors found probiotics to be significantly better than placebo for addressing symptoms, although the magnitude of the benefits and the most effective species and strains were uncertain.<sup>19</sup>

Regarding *B. infantis*, a large-scale, multicenter clinical trial of women with IBS found significant improvement of symptoms, including abdominal pain, bloating, bowel dysfunction, incomplete evacuation, straining, and the passage of gas, with the probiotic vs. placebo.<sup>20</sup>

## Lifestyle/Psychological Therapies

Studies of patients seeking treatment for IBS have indicated that 50% to 90% of these individuals have a lifetime history or currently have one or more common psychiatric conditions, such as major depressive disorder, generalized anxiety disorder, panic disorder, social phobia, somatization disorder, and posttraumatic stress disorder.<sup>21</sup>

As noted previously, TCAs such as amitriptyline have been shown to be effective for treating IBS, both via reducing sensitivity to pain in the GI tract and normalizing GI motility and secretion, and 13% of patients with IBS have reported using antidepressants.<sup>1,22</sup> More and more patients, however, are seeking nondrug or mind/body treatments for IBS. Although the evidence is moderate, there are some lifestyle and psychological therapies that may benefit IBS patients.<sup>23</sup> For patients with concurrent IBS and mental health problems, several therapies, such as talk therapy, hypnosis, and mindfulness training, may be beneficial.<sup>1</sup>

One study that compared IBS patients who received various medication(s) alone with those that received medication plus cognitive behavioral therapy (CBT), a type of talk therapy, found

that the patients receiving CBT and medication experienced greater resolution of IBS symptoms than did those who received medication alone.<sup>24</sup>

Another study found that IBS patients receiving gut-directed hypnotherapy, a type of therapy that teaches patients hypnotic skills to control gut function, in conjunction with supportive talk therapy, significantly improved physical and psychological well-being vs. those patients who received supportive talk therapy alone.<sup>25</sup>

In addition, patients have been able to successfully reduce IBS symptoms with mindfulness meditation. In one randomized controlled study, 75 women with IBS were randomly assigned to eight weekly and one half-day intensive sessions of either mindfulness training or a support group. Women in the mindfulness training group showed greater reductions in IBS symptom severity, both immediately after training and at three months follow-up, than did those in the support group.<sup>26</sup>

### **Diet and Nutrition Therapies**

Just as there is no single therapy for treating IBS, it's important to remember there's no single dietary strategy either. This section explores some of the more traditional dietary strategies for dealing with IBS as well as several emerging, nontraditional dietary treatments dietitians and other health care professionals are using to manage IBS symptoms.

Traditional dietary recommendations for IBS clients and patients include the following<sup>1,2,27-29</sup>:

- Avoid or minimize high-gas foods such as broccoli, cauliflower, cabbage, and beans as well as carbonated beverages.
- Avoid chewing gum or drinking liquids through a straw, both of which can lead to swallowing air, which causes more gas.
- Minimize consumption of fried or other high-fat foods.
- Avoid consuming large meals, which may promote cramping and/or diarrhea, and consume smaller, more frequent meals instead.
- Minimize consumption of foods high in lactose, such as milk, ice cream, and soft cheeses, especially if lactose intolerance is suspected. Hard cheeses, lactose-free milk, lactose-free ice cream, and low-lactose or lactose-free yogurt or kefir, which either have no lactose or tend to be lower in lactose than other dairy products, may be more easily tolerated.
- Drink adequate amounts of fluid to help alleviate constipation.
- Avoid or minimize alcohol and caffeine intake, especially with IBS-D, as both substances can stimulate the intestines and lead to diarrhea.
- Avoid artificial sweeteners that contain sugar alcohols, such as sorbitol, mannitol, and xylitol, which may cause diarrhea.

- Consume foods rich in soluble fiber, such as oatmeal, oat bran, oranges, strawberries, nuts, and carrots.

It's important to note that while foods with soluble fiber may be beneficial for IBS patients, foods high in insoluble fiber, such as whole wheat, wheat bran, raisins, and corn bran, may further aggravate IBS symptoms in certain individuals. In addition, some IBS patients may not be able to tolerate other sources of soluble fiber, such as lentils, apples, pears, and beans, because they're sources of fermentable carbohydrates (discussed in the next section).

Although the American College of Gastroenterology doesn't recommend using elimination diets for treating IBS, many dietitians are turning towards a low-FODMAP (fermentable oligosaccharides, disaccharides, monosaccharides, and polyols) diet and/or a patient-targeted elimination diet such as Lifestyle Eating and Performance (LEAP) to treat their patients with IBS.<sup>27</sup>

Perhaps the best evidence that consuming certain foods may play a role in triggering GI symptoms has been provided by observations on the effect that prolonged fasting has on improving IBS symptoms.<sup>30</sup>

This section provides a basic overview of these emerging dietary strategies for IBS along with a discussion of the research behind them:

### ***Low-FODMAP Diet***

The low-FODMAP elimination diet is based on limiting certain short-chain carbohydrate-containing foods, including sugars, starches, and fibers that some people can't fully digest and absorb. These dietary carbohydrates are lactose, fructose, fructans, polyols, and galactans/galacto-oligosaccharides and are found in certain grains, fruits, vegetables, dried peas and beans, milk products, and prepared foods and beverages.<sup>31</sup> Table 2 below, although not all inclusive, outlines examples of high-FODMAP foods in each of these carbohydrate categories.<sup>32</sup>

**Table 2: High-FODMAP Carbohydrates<sup>32</sup>**

<b>High-FODMAP Carbohydrates</b>	<b>Examples of High-FODMAP Foods</b>
<b>Lactose</b>	Milk, ice cream, yogurt, soft cheeses
<b>Fructose</b>	Apples, honey, mangoes, pears, watermelon
<b>Fructans</b>	Artichokes, asparagus, beer, garlic, onions, wheat
<b>Polyols</b>	Apricots, cherries, peaches, prunes, sorbitol, xylitol
<b>Galactans/galacto-oligosaccharides</b>	Beans, Brussels sprouts, cabbage, lentils, soy products

Evidence started building in the 1980s and 1990s for restricting poorly absorbed short-chain carbohydrates (lactose, fructose, and sorbitol, a sugar alcohol) to provide symptomatic relief of IBS symptoms.<sup>33</sup> The first research trial confirming the role of a low-FODMAP diet in managing GI complaints was a 2006 retrospective audit of patients with IBS and fructose malabsorption following a low-fructose/fructan diet. In this trial, 74% of patients reported symptomatic improvement on the diet.<sup>33</sup>

Since this study, more details on food composition have become available to fine-tune the low-FODMAP approach, including a broader range of FODMAP-containing foods.<sup>33</sup> More recently, a questionnaire was completed for patients who received either standard dietary advice for symptom control of IBS or low-FODMAP dietary advice. Significantly more patients in the low-FODMAP group experienced improvements in bloating, abdominal pain, and flatulence compared with the standard diet group.<sup>34</sup>

### ***Food Sensitivity Testing and Elimination Diets***

As mentioned earlier, the American College of Gastroenterology doesn't recommend elimination diets for those with IBS, stating that there isn't enough evidence that either food allergy testing or excluding certain foods from the diet effectively treats the condition.<sup>13</sup>

Nevertheless, there are many dietitians and nutrition experts who find nonimmunoglobulin E (non-IgE)-mediated food sensitivity testing and elimination diets invaluable for treating IBS.<sup>27</sup>

In one small, unpublished study, 10 patients who met the Rome II criteria for IBS-D were tested for non-IgE-mediated immunologic food reactions with a patented blood test, Mediator Release Testing. Using an in vitro assay, the patients' blood was tested for reactivity to 150 foods and food additives. A LEAP elimination diet that omitted reactive foods was designed for each patient, and a symptom survey was used to follow the patients for improvement.

Before starting the elimination diet, patients were asked to rate their symptoms in several categories, including GI (heartburn, cramping, diarrhea, constipation, bloating, gas, nausea, vomiting, painful elimination), constitutional, psychological, skin, and musculoskeletal, on a scale of 0 to 4, with 4 being the most severe. At this point, the average symptom score for the entire survey was 56.9 (out of 236), and for the GI portion, it was 19.1 (out of 36).

After at least one month on a LEAP elimination diet, the average scores decreased to 26.3 and 6.3, respectively, indicating a marked improvement in participants' IBS-D symptoms, along with decreased overall symptoms and an increase in feelings of well-being.<sup>35</sup>

In another study, 200 patients with IBS were treated for three weeks with a diet that excluded dairy products, cereals, citrus fruits, potatoes, tea, coffee, alcohol, additives, and preservatives. In addition, any food that the patient already had identified as a potential cause of symptoms was excluded.

Of the 189 patients who completed the study, almost one-half reported symptomatic improvement after the exclusionary period. The patients who reported improvement challenged themselves with the foods they avoided during those three weeks, and 81% could identify individual food intolerances during the study, suggesting that dietary manipulation can be an effective tool for managing IBS symptoms in many patients. Some of the foods most often noted as causing symptoms included cheese, onions, milk, wheat, and chocolate.<sup>36</sup>

### ***Non-Celiac Gluten Sensitivity***

Another dietary intervention involves non-celiac gluten sensitivity's possible role in IBS etiology. Although there's minimal evidence suggesting that gluten triggers FGIDs, wheat has been found to be one of the most common factors inducing GI symptoms in studies using exclusion diets as noted above.

One small double-blind, randomized study involved 34 patients with IBS but without celiac disease and who were symptomatically controlled on a gluten-free diet. Participants received either gluten or placebo in the form of two bread slices plus one muffin per day with a gluten-free diet for up to six weeks. Sixty-eight percent of patients in the gluten group reported that their symptoms weren't adequately controlled compared with 40% of those in the placebo group, suggesting that non-celiac gluten sensitivity may play a role in IBS symptoms. Researchers noted that further evaluation is needed to identify the underlying mechanisms involved.<sup>37</sup>

In addition, a recent study has raised the question of whether some patients with non-celiac gluten sensitivity actually may have a fructan sensitivity. This small, double-blind study randomly assigned 37 subjects with non-celiac gluten sensitivity and IBS to a two-week low-FODMAP diet, then placed them on either a high-gluten, low-gluten, or control (whey protein) diet for one week, followed by a washout period of at least two weeks. Twenty-two of the subjects then crossed over to a diet with gluten, whey, or no additional protein for three days. All of the participants' GI symptoms improved significantly during the low-FODMAP diet but significantly worsened to a similar degree when given gluten or whey protein, and during the three-day rechallenge, participants' symptoms increased by similar levels among groups. No evidence was found for specific or dose-dependent effects of gluten.<sup>38</sup>

### **The Dietitian's Role**

As mentioned earlier, even though IBS is the most recognized and studied FGID, there's no specific treatment recommended to cover the breadth of symptoms experienced by IBS patients. In addition, to achieve the greatest symptomatic relief, IBS patients may require a combination of treatment approaches, including diet therapy, mind/body treatments, and medications and/or supplements. Therefore, it's important for RDs to be familiar with the multitude of available IBS treatments and know about each patient's symptoms and health and nutrition history before creating the nutrition care plan.

The first and perhaps most important step in creating a plan of action for IBS patients is obtaining a detailed diet and symptom history. The Nutrition Care Manual suggests that patients with IBS receive an assessment that includes a food history, anthropometrics, and biochemical and clinical parameters.<sup>27</sup> In addition, before making any dietary suggestions, RDs should work closely with clients to understand their goals for seeking dietetic services and gauge both their current level of pain and symptoms and their willingness to implement any dietary changes.

The following list includes several key questions RDs should ask their patients before developing IBS nutrition care plans:

- What are your primary goals in seeking the services of a dietitian at this time?
- What are your GI symptoms, and how long have you been experiencing them?
- What prescription and over-the-counter medications, supplements, and/or medical/functional foods (eg, psyllium, probiotics) are you taking or have you taken in the past? Are any of these specifically for your IBS? If so, have they helped?



- What treatments (eg, pharmaceutical, dietary, mind/body) have you tried so far to deal with your IBS symptoms? What has helped? What hasn't? Have any treatments made your symptoms worse?
- Have you noted any specific foods, beverages, and/or medications that you believe are contributing to your IBS symptoms? If so, what are they? Have you stopped eating/drinking them? If so, have your symptoms improved?
- Has your physician tested you for celiac disease, SIBO, or IBS? If so, what tests were done, and what were the results?
- Do you cook most of your meals at home? Do you enjoy cooking? If not, why (eg, time constraints, low energy/no motivation, tired of making the same meals)?

After completing the assessment, the following dietary strategies may be implemented, depending on the patient's goals, symptoms, and level of motivation to make major dietary changes.

For patients with minimal symptoms and/or a lower level of motivation to make major dietary changes, consider implementing some of the traditional dietary strategies for treating IBS as noted earlier, including eliminating or minimizing high-gas, high-fat, lactose-rich, and/or fried foods, alcohol, and caffeine; consuming smaller, more frequent meals instead of larger meals; adding foods high in soluble fiber; and ensuring adequate amounts of liquids are consumed.

For patients with moderate to severe symptoms and those who are motivated to make major changes to their diets, consider implementing a minimum two- to three-week low-FODMAP diet. In addition, food sensitivity testing with a patient-specific elimination diet such as LEAP may be considered for patients with IBS-D and motivated clients with moderate to severe symptoms who haven't found relief from a low-FODMAP diet.

### **In Conclusion**

Based on the current findings regarding the high prevalence of IBS and the large percentage of patients who are at least somewhat dissatisfied with their current level of care, clearly there's a need for dietitians to work with these patients, with the ultimate goal of helping them minimize their GI symptoms through appropriate dietary strategies.

It's also important for RDs to remember that, just as there's no one treatment for managing IBS, there's no specific dietary treatment for minimizing GI symptoms. A thorough health, diet, and nutrition history is key to identifying the most appropriate nutrition strategies to best help clients find GI relief and allow them to have a better quality of life.

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## Examination

**1. Based on this article, which of the following statements is true regarding the incidence of irritable bowel syndrome (IBS) in the general population?**

- A. Men and women are equally affected by IBS.
- B. On average, 15% of visits to a gastroenterologist's office are by patients seeking treatment for IBS.
- C. It's estimated that two-thirds of people with IBS haven't sought treatment for their symptoms.
- D. Men are more likely than women to report constipation-related IBS symptoms.

**2. Which of the following symptoms isn't commonly seen with IBS?**

- A. Intermittent vomiting
- B. Abdominal bloating
- C. Diarrhea
- D. Constipation

**3. Dietitians might recommend which of the following menu plans to their IBS patient?**

- A. Roasted chicken, carrots, quinoa, and apple slices
- B. Frittata with tomato, zucchini, and cheddar cheese; sautéed hash browns; and orange slices
- C. Granola, yogurt, and blueberry parfait
- D. Halibut tacos on corn tortillas with cabbage slaw and strawberries

**4. Which of the following probiotic strains shows the most promise in helping to treat IBS?**

- A. *Streptococcus thermophilus*
- B. *Lactobacillus acidophilus*
- C. *L casei*
- D. *Bifidobacterium infantis*

**5. Which of the snack ideas below would be most suitable for IBS patients looking to consume more fiber in their diets?**

- A. Homemade energy bar made with oats, peanut butter, and maple syrup
- B. Peanut butter sandwich on whole wheat bread
- C. Carrots and hummus
- D. Trail mix with peanuts, almonds, chocolate chips, and dried apricots

**6. Approximately what percentage of patients are dissatisfied with their current level of physician care to treat their IBS?**

- A. 15
- B. 25
- C. 50
- D. 75

**7. Based on this article, which of the following statements is true regarding the low-FODMAP diet?**

- A. Olive oil is a significant source of FODMAPs.
- B. Red meat should not be consumed on a low-FODMAP diet.
- C. Eggs are high in FODMAPs.
- D. Refried beans should not be eaten on a low-FODMAP diet.

**8. Which of the following dietary strategies most likely would not be recommended by dietitians to their IBS patients to help minimize GI symptoms?**

- A. Eat small, frequent meals.
- B. Substitute xylitol for maple syrup.
- C. Drink lots of fluids.
- D. Try Swiss cheese instead of cottage cheese.

**9. A physician may refer his IBS patients to an allied health care professional for which of the following?**

- A. Massage therapy
- B. Body alignment
- D. Breath therapy
- D. Mindfulness meditation

**10. Which of the following statements about exclusionary/elimination diets is true, based on this article?**

- A. The American College of Gastroenterology recommends elimination diets as part of its treatment matrix for IBS.
- B. Most dietitians don't find that immunoglobulin E-mediated food sensitivity testing and elimination diets are valuable for treating patients with IBS.
- C. Wheat is one of the most common foods noted to cause gastrointestinal (GI) symptoms in IBS patients.
- D. The majority of patients on an exclusionary diet couldn't identify foods that were causing their GI symptoms after reintroducing those foods to their diet.