



## Dietary Factors in Gastrointestinal Diseases

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The gastrointestinal (GI) complaints commonly associated with reactions to food include dyspepsia, heartburn, bloating, excessive gas, diarrhea, and constipation. The exact dietary factors that contribute to these symptoms in functional GI disorders, such as IBS, are poorly understood. Clearly, there is a need for more research to examine the relationship between food intake and functional GI symptoms.

However, a substantial amount of research has been done to determine the relationship between food and other digestive diseases. This article will examine five such diseases that affect the GI system – gastroesophageal reflux disease (GERD), celiac disease, food allergies, lactose intolerance, and eosinophilic gastroenteritis.

The possible presence of these five diseases should be considered in the diagnosis of a functional GI disorder. Not only can some of the symptoms associated with these diseases be found in functional GI disorders, but some of these diseases can coexist with, or be confused with, a functional GI disorder. These diseases do have distinguishing characteristics that, upon investigation, differentiate them from functional GI disorders.

### Identifying Dietary Factors

Keeping a diary for 2 to 3 weeks can help identify possible connections between specific foods and symptom onset. If dietary factors seem to trigger symptoms, a health care professional should be consulted.

Diagnosis begins with a detailed dietary history. If a specific food can be identified as a cause of symptoms, elimination of that food may be recommended.

Care should be taken with any elimination diet. Many individuals with functional GI disorders believe that specific foods are responsible for their symptoms, yet no clear resolution of symptoms occurs when the offending foods are eliminated. Unnecessary elimination diets can limit an individual's quality of life. Unmonitored elimination diets can produce malnutrition.

Elimination diets have been associated with anemia, vitamin deficiencies, and osteoporosis. Eliminating major food categories (i.e., fat, protein, carbohydrate) from the diet can have adverse consequences and should be avoided. An elimination diet should only be undertaken with the help of a knowledgeable health care professional.

If a dietary factor is suspected of causing symptoms, additional tests may be performed. These may include lactose breath testing, upper intestinal endoscopy, and blood tests. If necessary, allergy testing may be performed.

All of the diseases discussed below are associated with reactions to food. With the exception of eosinophilic gastroenteritis, these diseases are associated with specific dietary therapies that improve symptoms. Eosinophilic gastroenteritis is a rare syndrome that is usually treated with medications rather than dietary therapy.

### GERD

Gastroesophageal reflux disease (GERD) is defined as chronic and recurrent reflux (back-flow) of gastric contents into the esophagus. Frequent heartburn is the most common symptom of GERD.

While generally not the cause, dietary factors can be associated with symptoms. Patients report that peppers, spicy foods, fatty foods, citrus fruits, alcoholic beverages, and coffee exacerbate the symptoms.

There are three dietary factors that contribute to the symptoms of reflux: 1) Foods with high acidity or astringency (e.g., citrus fruits or juice, tomato juice, peppers) may stimulate sensory nerves and irritate the esophagus. 2) Some foods (e.g., coffee, alcohol) have a powerful influence on stimulation of gastric secretion causing an increase in the production of stomach acid. 3) Ingestion of certain foods (e.g., fat, chocolate, alcohol) stimulates GI hormones that relax the lower esophageal sphincter, or LES (a muscle that acts as a valve to prevent back-flow of gastric contents), thus facilitating reflux.

The diet prescribed for patients suffering from GERD includes avoidance of large meals (especially at night), and avoidance of alcohol, chocolate, coffee, and fatty foods. Treatment of GERD usually includes prescribed medications.

### Celiac Disease

Celiac disease is commonly called gluten enteropathy, celiac sprue, or wheat allergy. It is a disorder caused by direct contact between gluten and the intestinal mucosa (muscle lining) in susceptible people. Gluten is found in wheat, barley, rye, and oats. Celiac disease most frequently occurs in first-degree relatives of people with the disease. In susceptible people, the ingestion of gluten results in an immune response in the intestine. This causes damage to portions of the small intestines which inhibits the absorption of important nutrients.

One symptom of celiac disease is weight loss. Other symptoms – diarrhea, bloating, and flatulence – resemble symptoms of irritable bowel syndrome.

Celiac disease is treated by eliminating gluten from the diet. Once gluten is eliminated, symptoms improve within days. The intestinal mucosa usually recovers within 2-3 months. Adherence to a strict gluten-free diet can be difficult because cereal products are a common ingredient in many prepared foods.

There are organizations that can help by providing dietary information and support to people affected. These include: Celiac Disease Foundation, (1-818-990-2354); The Celiac Sprue Association, (1-402-558-0600); and the Gluten Intolerance Group of North America, (1-206-246-6652).

## Lactose Intolerance

Lactose intolerance is the inability to digest milk sugar. Symptoms, which often include watery stool, abdominal cramps, and diarrhea, are experienced after eating milk products. The symptoms of IBS are nearly identical to those of lactose intolerance and the two syndromes can coexist. In one study, nearly 25% of patients with a diagnosis of IBS had evidence of lactose malabsorption by hydrogen breath tests (a measurement of hydrogen gas in the breath after ingestion of lactose).

In another study, hydrogen breath tests were performed on patients who had been diagnosed with IBS but who had no apparent symptoms related to the ingestion of milk. Lactose malabsorption was diagnosed in 68% of these patients. Symptoms improved after a lactose-restricted diet was introduced. All patients with a diagnosis of IBS should have hydrogen breath testing to rule out lactose malabsorption. Patients with IBS whose hydrogen breath tests prove negative will not be helped by a lactose free diet.

Treatment of lactose intolerance involves the complete elimination of all lactose-containing products from the diet. Only patients with positive hydrogen breath tests should eliminate lactose from the diet.

## Food Allergies

A food allergy is an immune system response by which the body creates antibodies as a reaction to certain food. Symptoms similar to those of IBS include diarrhea and abdominal pain. Other symptoms can include vomiting, hives, itching, swelling of the lips, tightness in the throat, and wheezing. Allergic symptoms usually occur within a few minutes to an hour after ingesting the causative food. Eight foods cause 90% of all allergic reactions: milk, egg, wheat, peanut, soy, tree nuts (almonds, walnuts, pecans, etc.), fish, and shellfish.

In response to a mailed consumer questionnaire that surveyed 5,000 representative Americans, 16% reported conditions that they felt were food allergies. However, studies show that true food allergies are present in only 1-2% of adults. In people with IBS, reactions to food are rarely allergic reactions.

If a food allergy is suspected, the offending food should be eliminated from the diet and then reintroduced. If the symptoms improve on the elimination diet, and then consistently recur when the food is introduced back into the diet, formal allergy testing should be performed. Sometimes an elimination diet to exclude all known allergens can help distinguish food allergy from other symptoms. Studies have shown that the onset of symptoms in a person can be influenced by even a mistaken belief that they have food allergies. Therefore, allergy testing is done to make a definitive diagnosis.

## Eosinophilic Gastroenteritis

Eosinophilic gastroenteritis is a rare disease characterized by food-related reactions, infiltration of certain white blood cells (eosinophils) in the GI tract, and an increase in the number of eosinophils in the blood. The symptoms are nausea, vomiting, abdominal pain, and occasionally diarrhea. The diagnosis is confirmed by a blood test showing a high eosinophil count, and a diagnostic intestinal biopsy that shows a large number of eosinophils in the stomach and/or small intestine.

This disorder can be distinguished from food allergy by the lack of a specific offending food and the lack of a response to an elimination diet. Most cases require steroid medication

(commonly prednisone) to induce remission. (Steroids are not effective in treating food allergies.)

## Summary

People with functional GI disorders can have symptoms that are confused with another disease (or another disease that is confused with IBS). A functional GI disorder, such as IBS, can also coexist with another disease. This can make an accurate diagnosis difficult to achieve, causing frustration for both patient and doctor. For example, celiac disease that does not appear to respond to a gluten free diet may actually be coexisting with IBS as a second diagnosis (both causing similar symptoms). Lactose malabsorption can also coexist with IBS.

If a diagnosis of a functional GI disorder is indicated and specific foods are associated with symptoms, the physician should look for the diseases discussed in this article. If the investigations are completed and no diagnosis of any of these described diseases is obvious, the physician and patient can be satisfied that a functional GI disorder is the cause of symptoms.

## General Dietary Guidelines

Specific dietary guidelines for functional GI disorders are highly individualized. Modification of diet requires personal investigation, trial and error, and a close working relationship between the patient and physician. In general, most people with functional GI disorders can benefit from the following principles:

- Consume adequate fiber. (Note that some individuals cannot tolerate a high-fiber diet.)
- Drink plenty of water – a minimum of 64 ounces (around eight cups) per day.
- Eat three (or six small) meals per day.
- Minimize intake of high fat food – especially high fat meats and fried foods.
- Minimize consumption of alcohol and caffeine.
- Avoid or restrict intake of fructose and sorbitol (two common food additives).

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This article is in no way intended to replace the knowledge or diagnosis of your doctor. We advise seeing a physician whenever a health problem arises requiring an expert's care.

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