

The Gluten-Free Frenzy: Fad or Fitting?

Linda Johanson

Nancy Wayne, age 42, was diagnosed with rheumatoid arthritis in her early 20s. She currently takes disease-modifying anti-rheumatic drugs to manage her condition. However, after hearing a testimonial from a celebrity on a late night television show, she is considering adoption of a gluten-free diet. The television celebrity contended that after going gluten-free, she has never felt healthier. Nancy wonders if the diet will have the same effect on her life, and has asked the nurse for some information about a gluten-free diet.

This patient is not alone with respect to her interest in a gluten-free diet. In the United States alone, \$2.6 billion was spent on products marketed as gluten-free in 2010 (Steinmetz, 2011). What exactly is a gluten-free diet, and are there legitimate indications for following it?

The Basics of a Gluten-Free Diet

Gluten is a protein complex found in a number of grains, including wheat, barley, rye, and triticale (a cross between wheat and rye). Products containing these grains should be avoided on a gluten-free diet (Mayo Clinic, 2011). The U.S. Food and Drug Administration (2011) identified products that contain less than 20 parts per million of gluten to be considered *gluten-free*. Unless labeled as gluten-free, foods such as breads and pasta, cereals, cookies and cakes, soy, seasoned rice mixes, and seasoned snack foods (e.g., potato chips) contain gluten and should be avoided by strict followers of a

Although the gluten-free diet has been recognized as therapeutic for individuals suffering from celiac disease, it has been promoted recently for other indications, such as autism, chronic fatigue syndrome, and irritable bowel syndrome, or simply as a healthy dietary choice for anyone. The basics of the gluten-free diet are explored, with evidence-based indications and nursing implications when patients choose gluten-free.

gluten-free diet (Mayo Clinic Staff, n.d.). Although opinions are divided, a gluten-free diet also may exclude consumption of oats because of potential cross-contamination when milled in factories that process other gluten-containing grains (Fric, Gabrovskaa, & Nevorai, 2011).

Sometimes gluten is contained in unexpected products such as medications, vitamins, lip balm and lip gloss, and nutritional supplements (Celiac Disease Foundation, n.d.). Gluten also may be included as a stabilizing agent in products such as ketchup and ice cream. Gluten is contained in almost all beers because they are brewed with malted barley or wheat; however, unless they contain flavorings or additives, many types of alcoholic beverages are considered gluten-free because the gluten is removed during distillation. Caution should be used with wine consumption because gluten might be used as a clarifying agent during production (Anderson, 2014). See Table 1 for a list of selected foods containing gluten.

TABLE 1.
Selected Foods to Avoid on a
Gluten-Free Diet *

Beer
Breads
Cakes
Cereals
Cookies
Crackers and croutons
French fries
Flour (bleached, cake, whole wheat)
Gravies
Imitation meat or seafood
Malt beverages
Matzo
Pasta
Processed luncheon meat
Salad dressings
Sauces
Seasoned rice mixes
Seasoned snack foods
Soups
Vegetables in sauce

*Avoid foods containing wheat or wheat products, barley, rye, or triticale.

Source: Celiac Disease Foundation, n.d.

Linda Johanson, EdD, MS, RN, CNE, is Associate Professor and Interim Chair, Department of Nursing, Appalachian State University, Boone, NC.

Indications for a Gluten-Free Diet: Celiac Disease and Gluten Sensitivity

Empirical evidence supports use of a gluten-free diet by persons with celiac disease and gluten sensitivity (Boissonneault, 2013). Celiac disease (also known as celiac sprue) is an autoimmune disorder of the small intestine (Lebwohl & Green, 2012). Individuals with this disorder suffer an immune-mediated intestinal inflammation precipitated by exposure to gliadin, a prolamins (gluten protein) found in wheat. Approximately 0.71% of the U.S. population has celiac disease, which is more common in Caucasians than other ethnicities and twice as common in females as males (Rubio-Tapia, Ludvigsson, Brantner, Murray, & Everhart, 2012).

The inflammation in the small intestine associated with celiac disease results in villous atrophy that causes nutrient malabsorption. Symptoms are variable individually, but may include abdominal pain, bloating, indigestion, vomiting, and constipation and/or diarrhea. Signs of nutrient deficiencies, such as weight loss, weakness, and fatigue, also may be present (Rostami Nejad, Karkhane, Marzban, Nazemalhosseini Mojarad, & Rostami, 2012). Certain comorbid conditions may exist with celiac disease, including osteopenia and osteoporosis. Mager, Qiao, and Turner (2012) found children and adolescents with celiac disease are at risk for poor bone health possibly due to below optimal vitamin D and K. Other conditions that exist more commonly with celiac disease include iron deficiency anemia, type 1 diabetes mellitus, hypothyroidism, nervous system disorders, and liver disease (Kelly & Dennis, n.d.). Up to one-quarter of patients with celiac disease may have a skin condition known as dermatitis herpetiformis, characterized by clusters of raised, fluid-filled blisters on the elbows, knees, buttocks, lower back, or scalp accompanied by intense itching and burning (U.S. Department of Health and Human Services, n.d.). Individuals

with dermatitis herpetiformis may have no symptoms of the disorder other than the skin manifestations.

Psychological implications of celiac disease have been studied, although less comprehensively than the physical symptoms. Quality of life in social settings, such as travel and dining in restaurants, is affected negatively when a person suffers from celiac disease (Lee, Ng, Diamond, Ciaccio, & Green, 2012). Economic burdens also may be associated with adopting the gluten-free diet for treatment of celiac disease because these foods tend to cost more (Singh & Whelan, 2011), and emotional distress can result.

Celiac disease is difficult to diagnose because the symptoms are variable and consistent with a variety of other gastrointestinal disorders. Serologic tests may identify elevated autoantibodies and an intestinal biopsy obtained by endoscopy will confirm the atrophic villi consistent with celiac disease (Green, 2014).

Similar to celiac disease, a person with gluten sensitivity experiences gastrointestinal symptoms such as abdominal pain and diarrhea when gluten is ingested; however, the pathophysiology is different. No villous atrophy occurs in the intestine with gluten sensitivity, and no autoantibodies are produced. Equally, no allergic mechanism is involved in gluten sensitivity (Rostami Nejad et al., 2012). The symptoms are usually not as pronounced with gluten sensitivity when compared to celiac disease.

Research has focused on attempts to engineer gluten-free grains and develop nondietary alternative approaches for celiac disease, such as a vaccine that would render tolerance to gluten (Bakshi, Stephen, Borum, & Doman, 2012). However, the only current treatment for celiac disease and gluten sensitivity has been life-long avoidance of foods containing gluten.

Gluten-Free Dieting and the Nonceliac Patient

Although a gluten-free diet is the recommended therapy for celiac

disease and gluten sensitivity, its ability to improve outcomes with other disorders is less clear. A gluten-free diet has been suggested as therapeutic for a variety of conditions, including irritable bowel syndrome, autism, and chronic fatigue syndrome. However, the role of a gluten-free diet in such cases remains controversial (Gaesser & Angadi, 2012). Children with autism may have comorbid gastrointestinal abnormalities such as gluten sensitivity, in which case the restriction of gluten in their diets could be warranted (Santhanam & Kendler, 2012). A study by Trabal, Leyes, Fernandez-Sola, Forga, and Fernandez-Huerta (2012) analyzed the dietary habits of patients with chronic fatigue syndrome and found restriction of gluten did not improve outcomes of the disorder in any measurable way.

What about the notion of a gluten-free diet as being simply healthier? Certainly many foods containing gluten are also high in calories, such as cookies, cakes, and pasta dishes. Snack foods containing gluten can be not only high in calories but also high in dietary fat, an overabundance of which is wise to avoid. As noted, many alcoholic beverages contain gluten; heavy drinking is associated with cirrhosis of the liver, cancer, cardiovascular disease, depression, and a number of other negative health consequences. While the concept of restricting gluten itself might not have scientific merit, avoidance of many of the foods associated with gluten seemingly could lead to healthier dietary choices. Of the approximately 30% of the U.S. population who now adhere to a gluten-free diet, most do so simply because they perceive it to be a healthier lifestyle choice (Getz, 2014).

On the other hand, the whole grain foods avoided by persons who choose a gluten-free diet generally are recognized as beneficial to good health. Individuals who consume whole grains regularly have a lowered risk of many chronic conditions, including stroke, heart disease, and type 2 diabetes. Gluten-free products are available on the market, but they typically are more

expensive than unprocessed foods (Singh & Whelan, 2011). Adherence to a gluten-free diet can be difficult because it requires many adjustments and great effort by individuals and their families (Samasca, Sur, Lupan, & Deleanu, 2014). If people without celiac disease or gluten sensitivity choose to adopt this diet, they will need to examine carefully the benefits and drawbacks to determine if the effort is personally worthwhile.

Nursing Implications

Nurses may encounter only a small number of patients who have been diagnosed with celiac disease or gluten sensitivity and thus must follow a gluten-free diet. However, many others have heard about the diet, and may be interested in learning the basics and possibly trying it (Getz, 2014). Nurses should be confident with respect to providing accurate advice and direction for persons who are interested in the gluten-free diet.

Assessment of Motives

When a patient without celiac disease expresses interest in the gluten-free diet, the nurse should examine his or her motives for this change. What expectations does the person have regarding potential outcomes? Are there alternative approaches with greater scientific support for outcomes? The nurse should inform the patient about the benefits and drawbacks of the diet, and determine if he or she has sufficient understanding to make an informed decision. Assessment of a patient's ability to understand is key in helping him or her make informed health care choices (Clayton, 2010).

The patient with celiac disease or gluten sensitivity needs to know the rationale for following a gluten-free diet and the importance of strict life-long adherence. Regardless of the degree of symptoms, intestinal damage can occur with ingestion of even a small amount of gluten. The nurse can dispel any misconceptions such as the disease will be cured or outgrown. The nurse should encourage the newly diagnosed patient to

understand recovery after initiation of the gluten-free diet can take up to 2 years (Strauch & Cotter, 2011). Recommending a support group can be very encouraging. The National Foundation for Celiac Awareness provides information about support groups, management of celiac disease, and the gluten-free diet (www.celiaccentral.org).

Emotional Support

The nurse should recognize any change can cause stress. For the patient with celiac disease or gluten sensitivity, the dietary change is a mandate rather than a choice. The diet is difficult to follow for many, and poor availability and palatability of products contribute to diminished quality of life (Samasca et al., 2014). The patient may feel resentful, angry, or anxious regarding this imposed change. The nurse should anticipate these potential reactions, and incorporate psychological and social support in the plan of care. Education should involve all close family members. Collaboration with a nutritionist if available would be helpful. Social services staff may be able to help locate financial assistance if indicated. Diagnosis of celiac disease of gluten sensitivity actually could bring a feeling of relief to the patient, who finally has received an explanation for the gastrointestinal symptoms; the nurse should encourage the client with this perspective.

Persons without celiac disease who are embracing the gluten-free diet also need emotional support. Perhaps they have a physical ailment or chronic illness for which many treatment options have failed. They may have family and friends who lack understanding regarding their distress. They might have uncertainty or insecurity about embracing an unfamiliar new diet. The nurse should present the facts honestly but respect the decisions made, and provide tools and resources for successful implementation of the diet. Sainsbury (2014) found use of effective coping skills to deal with anxiety and depression improved adherence to the gluten-free diet.

Tips for Successful Implementation of the Gluten-Free Diet

Embracing a gluten-free diet often is challenging because gluten is a component in many common foods. Labeling regarding gluten content in foods has been inconsistent and sometimes misleading (Verrill, Zhang, & Kane, 2013). Processing foods to eliminate gluten has increased the price for these products, and foods made with substitutes for gluten may have a different taste and texture. For example, cornmeal may be used as a substitute for flour in baked goods; it results in a more grainy texture. Individuals need to learn not only about the foods to avoid, but also about how to shop for and prepare these foods (Hoyt, 2014).

In part because of the current popularity of the gluten-free diet, general grocery stores now more commonly carry gluten-free foods. Products also can be obtained through Internet resources and at health food stores. Some restaurants offer gluten-free items on the menu. (See Table 2 for a list of common chain restaurants that offer gluten-free menu selections.) Some foods are naturally gluten-free, such as fruits and vegetables, beans, meats, milk, and eggs (Celiac Disease Foundation, n.d.). Regardless, nurses can suggest some general tips to assist patients with successful implementation of the gluten-free diet.

1. *Food diary.* Individuals can begin their quest of a gluten-free diet by keeping a food diary for a few weeks to assess the amount of gluten they currently ingest. Journaling about food intake can reveal how much is eaten, how fast it is eaten, and the patient's perceptions about the food being eaten (Sass, 2014). Adopting this approach will help gluten-free dieters determine the degree of required modifications.
2. *Education.* Individuals should become familiar with the basic foods to be avoided, such as foods containing wheat, rye, brewer's yeast, malt, and possibly oats. They should determine what

TABLE 2.
Partial Listing: Chain Restaurants
with Gluten-Free Menu
Selections*

Applebee's
Arby's
Bonefish Grill
Boston Market
Burger King
Carino's Italian Grill
Carrabba's Italian Grill
Chili's
Chipotle Mexican Grill
Denny's
Godfather's Pizza
Jason's Deli
Longhorn Steakhouse
McAllister's Deli
Mellow Mushroom
Outback Steakhouse
P.F. Chang's
Red Robin
Ruby Tuesday

Source: FindMeGlutenFree, 2014.

foods they commonly eat that contain these items. Finding a mentor or support group can be very helpful (Di Bella, 2013). Reading blogs and books can encourage and inspire motivation.

3. *Alternatives.* The nurse should highlight foods that can be consumed because they are naturally free of gluten, such as rice, corn, and potato. These can serve as alternatives to foods containing gluten. For example, rice flour can substitute for wheat flour in many recipes. Montina, made from Indian rice grass, can be milled into flour. Cornmeal is sometimes used as a substitute for flour in baked products. Buckwheat is not actually wheat but related to the rhubarb plant, and it can be substituted successfully for pasta. Quinoa is related to leafy vegetables and eaten as a side dish, similar to pasta or rice, but it also can be used in baked goods (National Foundation for Celiac Awareness, 2014).

4. *Reading labels.* Nurses should teach individuals to read labels on food items carefully for ingredients containing gluten. This skill takes practice. A variety of products may be advertised as gluten-free, but consumers need to beware. Manufacturers are required by law to indicate if their product contains wheat but many ingredients that sound innocent, such as malt flavoring or vinegar, contain gluten. The nurse can suggest individuals limit their purchase of processed gluten-free products. Several Internet sites offer tutorials on reading labels for a gluten-free diet (e.g., "Celiac Disease and Gluten Sensitivity," <http://celiacdisease.about.com>).

5. *Cooking and baking.* The nurse can encourage experimentation with the variety of gluten-free recipes available in cookbooks and on the Internet. If other persons in the household are not following a gluten-free diet, the nurse should recommend care be taken to avoid cross-contamination of commonly used kitchen utensils. For example, a plastic cutting board should be used for preparation of gluten-free foods because wooden boards can trap gluten particles (Brown, 2013).

6. *Eating away from home.* Individuals following a gluten-free diet do not need to avoid eating away from home because they are on a special diet (Smith, 2014). They can plan ahead for these experiences and still adhere to their diet plans. If dinner hosts know in advance that a guest abstains from gluten, they typically can make accommodations. Packing some gluten-free snacks, such as dried fruit or nuts, is always a good suggestion when traveling. Some ethnic restaurants, such as Asian and Indian, often serve gluten-free foods and may be good options for eating away from home.

7. *Supplements.* Because grains often are enriched with vitamins, avoidance of these products on a gluten-free diet could cause vitamin deficiencies (Shepherd &

Gibson, 2012). A multi-vitamin supplement with iron and calcium should be consumed, or special precautions taken to ensure the intake of vitamins and fiber in other foods.

Conclusion

Nancy Wayne, the patient mentioned at the beginning of this article, suffers from rheumatoid arthritis. She had heard about the gluten-free diet and asked the nurse if it was advisable in her situation. The nurse understands no evidence exists to indicate the diet will decrease joint inflammation experienced in arthritis, but avoiding extra calories in cakes, cookies, breads, and pastas might help the patient lose weight; a lighter weight might be less stressful on her joints. Because the concept interests Nancy, the nurse could encourage her to consult with her primary care provider or rheumatologist regarding her inclination to follow the diet for a while and then later determine collaboratively the possibility of a long-term commitment to it.

Is the gluten-free diet just a fad for those without celiac disorders? Perhaps, but it is a fad that is unlikely to be harmful if individuals get enough fiber and vitamins, and avoid too much sodium ("Gluten-Free Quackery?," 2012). Health professionals should share the facts, provide the resources and support, and let the patients decide. **MSN**

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Objectives

This continuing nursing educational (CNE) activity is designed for nurses and other health care professionals who are interested in gluten-free diets. After studying the information presented in this article, the nurse will be able to:

1. Outline the basics of a gluten-free diet.
2. Describe gluten-free dieting in persons with and without celiac disease and gluten sensitivity.
3. Discuss implications for nurses encountering patients with celiac disease, gluten sensitivity, and others following a gluten-free diet.

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