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The Scoop on Gluten Free: Research and Practice Tips

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Today's Presenter

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- Founded and leads the Logan County Celiac Support group in Bellefontaine, Ohio
- Regular contributor to *Gluten Free Living* magazine and serves on the magazine's dietetic advisory board.
- Chair of the Academy of Nutrition and Dietetics "Dietitians in Gluten Intolerances Diseases" practice group
- Research Interest: Celiac Disease/Non-Celiac Gluten Sensitivity



Objectives

1. State the etiology, symptoms, and diagnostic process of both celiac disease and non-celiac gluten sensitivity (NCGS).
2. Discuss the “fad” of gluten-free and the risks to eating gluten-free without medical necessity.
3. Summarize the gluten-free labeling rule, including controversial and confusing ingredients
4. Discuss three challenges gluten-free patients have when eating away from home.
5. Identify two other food intolerances that could cause continued symptoms in gluten-free patients.

Celiac Disease 101

- Celiac disease is an inherited, autoimmune disorder that affects patients of all ages.¹
 - When a person with celiac disease ingests gluten from wheat, or related prolamins from barley and rye, the body triggers an immune reaction that damages the villi of the small intestine.
 - This exposure causes the villi to become damaged, and can result in malabsorption of nutrients.¹

Prevalence

- Celiac disease was once thought to be rare. (primarily diagnosed in children with diarrhea)
 - The prevalence of celiac disease is now thought to be 1 in 100 people. This includes people of all ages.¹
 - The majority of people (approximately 80%) who have celiac disease do not know they have it.²
 - People with celiac disease may go undiagnosed for years because symptoms overlap with many other conditions.¹
 - The majority of adults newly diagnosed with celiac disease do not have classic GI symptoms.¹

1. Ludvigsson, et.al 2015

2. Celiac Disease Foundation, 2017

The Dietary Triggers

- Wheat (gluten)
- Rye (secalins)
- Barley (hordein)
- Non-Gluten Free Oats
- Brewers' Yeast



100% gluten-free diet is currently the only treatment for celiac disease.

Let's Hear From You

Besides celiac disease or gluten sensitivity, what is the most frequent reason you hear given for trying the gluten-free diet?

- A. Think it is healthier/weight loss
- B. Autism
- C. Irritable Bowel Syndrome (IBS)
- D. "I think I just feel better"
- E. None of the above



Who Should be Tested?¹

Weight loss	Migraines
Diarrhea/Constipation	Fatigue
Cramps	Infertility
Bloating	Joint Pain
Growth Failure/Short Stature	Premature Osteoporosis
Anemia	Depression
Nausea/Vomiting	Neurological symptoms (neuropathy/ataxia)
Malabsorption (Vitamin/Mineral Deficiencies)	Elevated liver enzymes
	Rash (Dermatitis Herpetiformis)

Who Else Should be Tested?

- Those with first degree relatives who have celiac disease
- Those with related conditions¹
 - Type 1 Diabetes
 - Autoimmune thyroid disease (Hashimoto's, Graves)
 - Sjogren's Syndrome
 - Down Syndrome
 - Turner Syndrome
 - Williams Syndrome

The Diagnostic Puzzle

- Serologic testing
- EGD with biopsies
- Response to the gluten-free diet.



Serologic Testing

- **Tissue transglutaminase IgA Antiboidy (TTG)**
 - Most commonly used
 - Pros:** low cost, high specificity (95%) and sensitivity¹
 - Cons:** TTG may be elevated due to other conditions (type 1 diabetes, autoimmune thyroid disease), not accurate in children under the age of 2.¹
 - Also measure total IgA as it affects accuracy of TTG
 - about 2-5% of those with celiac disease are IgA deficient
 - People who are IgA deficient will often have a negative TTG even if they have celiac disease.²

1. Elli, et al. 2015

2. University of Chicago, 2016

Serological Testing

Test	
Endomysial Antibodies (EMA) ¹	Highly specific (almost 100% of those with a positive test will have celiac disease) Higher cost, higher risk for lab error, not as sensitive (5-10% of patients with celiac disease will have a negative EMA)
Deaminated Gliadin Peptides (DGP) ¹	Most recently discovered test. Helpful for diagnosing those with IgA deficiency, also for young children.

- Older tests, like Antigliadin Antibodies (IgA/IgG AGA) are no longer useful for diagnosing celiac disease²

1. Elli, et al. 2015
2. Dennis, Leffler 2010

Putting the Cart Ahead of the Horse

- It is very important for patients to be screened for celiac disease before going gluten-free.
 - Serologic tests are dependent on gluten in the diet.
 - If the patient has been eating gluten-free for a significant period of time (months) they risk a false negative screening result.
 - This has become a issue in clinical practice as more people are “trying” the diet before proper medical diagnosis.

It's in the Genes

- The genetic role in celiac disease is well understood.
 - Almost all of those with celiac disease carry either a HLA-DQ2 or HLA-DQ8 (or both).¹
 - Having a primary relative with celiac disease increases the chances of developing it.
 - 30-40% of the population carries the genes for celiac disease, but only 1% will actually go onto develop it.¹
 - Limited use in the diagnosis of celiac disease

Why Gene Test?

Even though a genetic test cannot diagnose celiac disease, it can be helpful to help rule out the condition.¹

- unclear serological testing or biopsies
- those already on the gluten-free diet and who are unwilling to challenge for serologic testing
 - The gluten challenge involves eating 1-2 slices of bread a day for a few weeks.¹
- A positive genetic test **does not mean** the patient should be on the gluten-free diet.

Endoscopy

- Because no serologic test is perfect, the gold standard for diagnosis remains an endoscopy with biopsies.
 - Looking for increased intraepithelial lymphocytes to more severe villous atrophy. ¹
 - The doctor performing the biopsies must take several samples from the duodenum.
 - Not taking enough samples can cause the diagnosis to be missed as the damage is often “patchy.”²

1. Elli, et al. 2015

2. University of Chicago, 2017

Non-Celiac Gluten Sensitivity

- There are variety of tests purporting to be able to diagnose NCGS (including stool or saliva tests)
 - However, there is currently no valid biomarker for the diagnosis of NCGS
 - Diagnosis is made by elimination/re-challenge once celiac disease and wheat allergy have been ruled out.
 - Some controversy on whether gluten is the real culprit in NCGS¹
 - Most recent research suggests that there is likely an immune reaction to gluten in those with NCGS.

1. Catassi, 2015
2. Uhde, et al. 2016

Celiac disease vs. NCGS

Celiac Disease

- Defined genetic marker
- Serologic testing
- Identifiable villi damage on endoscopy
- Need for careful and close follow-up to prevent long term complications

Non-Celiac Gluten Sensitivity (NCGS)

- No defined genetic marker
- No serologic test/villi damage
- Unclear exactly what the immune response is, but there is likely one.
- Long term complications are unknown.

Why Go Gluten-Free?

- There is some evidence that those with Irritable Bowel Disease (Crohn's disease) may see some symptom benefit.¹
- Some may try the diet for other autoimmune diseases (i.e. rheumatoid arthritis, thyroid disease), as well as behavioral/developmental conditions like ADHD and autism.
 - However, there isn't strong evidence that there are benefits in these populations.²
 - However, there is an increased incidence of thyroid disease in those with celiac disease.³

1. Casella et al. 2015

2. Cruchet, 2016

3. Sun, 2016

Who Else is Eating Gluten-Free?

- Between 2004 and 2011, the market for gluten-free foods grew at an annual rate of 28%.¹
 - \$2.6 billion in sales in 2012,² \$6.6 billion in 2017.³
 - 2013 study found that 30% of Americans showed interest in avoiding gluten.⁴
 - Another 2013 study found that 65% of Americans think gluten-free foods are healthier, and that 27% chose these foods to help lose weight.⁵

1. Gaesser, 2012
2. Gaesser, 2015
3. 3. Schultz, 2013
4. NPD Group, 2012
5. Watson, 2013



Who Else is Avoiding Gluten?

- A 2015 study of patients in celiac disease clinics found that 11% had at some point avoided gluten without a diagnosis of celiac disease.
 - Reasons given included IBS and lactose intolerance.¹
- A 2012 pediatric study found that almost 8% were avoiding gluten without a celiac disease diagnosis.
 - Reasons cited included diarrhea, autism, family history of celiac disease, and behavioral changes.²

1. Tanpowpong, et al. 2015

2. Tanpowpong, et al. 2012

The Fad of Gluten-Free

- Media/celebrities/athletes
- Diet books/celebrity physicians
- Internet
 - How can the RDN help provide factual information?



Are there risks to Gluten-Free?

- Nutritional deficiencies
 - B Vitamins, iron, fiber, and trace minerals
 - Gluten-free grains products are not typically enriched
- Individuals may fail to meet grain serving guidelines.¹
- It's expensive!
 - A 2015 study found gluten-free bakery and bread products to be 267% more expensive than regular, and gluten-free cereals to be 205% more expensive.²

1. Mueller, 2011

2. Missbach, et al. 2015

Putting it into Practice

Mr. Keller calls your office to make an appointment to learn more about the gluten-free diet. He read online that wheat causes diarrhea, and he does admit to having stomach issues for many years. He states he tried gluten-free for a week and felt “a lot better”. What is the most appropriate thing to do?



Gluten-Free Labeling

- In August, 2013, the FDA issued the final rule for the voluntary labeling of food as gluten-free. The rule went into effect in August 2014.¹
 - This rule applies to packaged foods regulated by the FDA. Also dietary supplements.
 - Does not apply to USDA regulated foods, alcoholic beverages regulated by the TTB, prescription and over-the-counter drugs, foods in restaurants, and pet food.



1. FDA Q&A, 2013.

Definition of Gluten-Free

- For a food to be labeled gluten-free, it must contain less than 20ppm gluten.¹
 - This includes ingredients and accidental cross contact with gluten (in fields, transport, manufacturing, or packaging).
 - This is different than food allergy labeling which applies to ingredients only.



What Can Be Labeled Gluten-Free?

1. A naturally gluten-free food (like grapefruit or bottled water)
2. **Not** made from a gluten-containing grain (i.e. spelt or barley)
3. **Not** derived from a gluten-containing grain that has **not otherwise** been processed to remove gluten (i.e. wheat flour)
4. **May** have a gluten-containing grain that has been processed to remove gluten (i.e. wheat starch) **as long as the final product contains less than 20 parts per million (ppm) of gluten.**¹

By Any Other Name

- Other terms that mean gluten-free may include:
 - “Free from gluten,” “Without gluten,” and “No gluten”
- Statements like:
 - “made with no gluten-containing ingredients” and “not made with gluten-containing ingredients” are allowed, but they **DO NOT** have to comply with the law unless a “gluten-free” claim is also made.¹
- Terms like “low gluten” and “reduced gluten” are not regulated terms and not addressed in the rule

Why 20ppm? Why Not 0?

- There are no analytical methods available that are scientifically validated to test for the presence of gluten at <20ppm.
 - 20ppm is considered the standard level of gluten that is tolerated by most with Celiac.
 - This is in line with other countries guidelines.¹

WHY?

Most GF foods test much lower

- Gluten Free Watchdog (independent testing organization) published a study in 2013 which showed:
 - 97.5% of the 112 GF products they tested were below 20ppm, and 93% of them were below 5ppm.¹
 - **Takeaway:** The vast majority of products labeled gluten-free already test at exceedingly low levels of gluten (much less than 20ppm).
 - **www.glutenfreewatchdog.org**

Testing for Gluten

- According to the FDA, manufacturers are **not** required to test for the presence of gluten before making a GF label claim.
 - While this may seem confusing, the FDA also states that manufacturers who choose to use a gluten-free label claim
 - ***“Are responsible for ensuring that foods bearing a gluten-free claim meet the requirements of this final rule.”¹***

Testing for Gluten

- The FDA states that manufacturers may accomplish this by
 - conducting in-house testing of starting ingredients or finished foods
 - employing a third party laboratory to conduct in-house gluten testing
 - requesting certificates of gluten analysis from ingredient suppliers
 - or participating in a third-party gluten certification program ¹

Malt and Malt Extract

- The FDA states that items that contain malt or malt extract cannot be considered ingredients “processed to remove gluten” and are not permitted to be included on items labeled gluten-free, even if the final products contains <20ppm gluten.¹
 - This continues to be a point of controversy for manufacturers.²

Oats

- Oats are not considered a gluten-containing grain under the new rule.
 - However, regular oats are still at great risk for cross contamination.
 - It is still recommend to purchase oats labeled **gluten-free.** ¹
 - The different methods that manufacturers use to produce gluten-free oats continue to be a point of controversy and discussion.²



1. Thompson, 2013
2. Thompson, 2015

Naturally Gluten-Free Foods

- The new labeling ruling states that foods that are inherently free of gluten (i.e. carrots or bottled water) may be labeled gluten-free.
 - But does that mean that Celiac disease patients should exclusively purchase naturally gluten-free foods that are labeled gluten-free?
 - Not necessarily. Foods that are a low risk for cross contact with gluten do not need to be labeled gluten-free.¹



Naturally Gluten-Free Foods

- Gluten-free grains (i.e. amaranth, buckwheat) and mixed food products made with naturally gluten-free grains (corn tortillas, buckwheat noodles) should be labeled gluten-free.
 - These grains are at higher risk of contamination than other naturally gluten free foods.



Ingredients Processed to Remove Gluten

- Example given by the FDA is Wheat Starch.
 - Wheat starch contains very little gluten protein and could be included in a product without raising the concentration of gluten to above 20ppm.
 - However, a qualifying statement of “This wheat has been processed to allow this food to meet FDA requirements for gluten-free foods” must also be included on the package.¹

3rd Party Certifications

- Manufacturers may continue to use gluten-free symbols earned from third party certifiers, like the Gluten-Free Certifying Organization (GFCO), and they can still use that symbol, provided it's "truthful and not misleading."



Allergen Advisory Statements

- Allergen Advisory Statements
 - “processed in a facility that also processes wheat”) are permitted to be on products labeled gluten-free, provided the final product contains <20ppm gluten.
 - This is a confusing point for both patients and clinicians.
- Allergen Advisory Statement are voluntary on the part of the manufacturer
 - Do not take the place of good manufacturing practices (cleaning equipment, etc).

Which foods are not included?

- As with allergen labeling, foods regulated by the USDA are not currently subject to the gluten-free labeling ruling. This includes meat, poultry, and certain egg products.
 - However, the USDA has said that those manufacturers using a gluten-free label should follow the same <20 ppm as set forth by the FDA.¹



Alcoholic Beverages

- The Alcohol and Tobacco Tax and Trade Bureau (TTB) governs all distilled spirits, wines that have more than 7% alcohol by volume, and malted beverages (beer) that is made with both malted barley and hops.
 - In February 2014, the TTB issued a revision to their interim labeling policy from 2012 on alcoholic beverages, which stated that gluten-free claims **cannot** be used on a beverage that is made with wheat, rye, or barley. ¹

Alcoholic Beverages

- However, the TTB will also allow the statement “processed or treated or crafted to remove gluten” for products made with gluten-containing ingredients IF these products have been processed to remove the gluten.
 - Products that wish to use the “processed to remove gluten” statement must also include a statement which says the “gluten content of this product cannot be verified, and this product may contain gluten.”¹

Eating away from Home

- Quality of life (QOL) studies have shown that most people on the gluten-free diet cite eating out to be difficult.
- A 2012 study found that difficulties eating out led many to intentionally eat foods with gluten.¹
 - Even if it was infrequent, it could lead to continued symptoms and delay in intestinal healing.

Dining Out

- Call ahead, ask about availability of a gluten-free menu or if the restaurant is able to modify menu items to gluten-free.
- Try not to dine at the busiest time.
- Identify themselves to the server/manager
- Use words like “severe reaction”
- Ideally, choose a restaurant where items are made to order (and can be easily modified).
- Is there a way the gluten-free dish can be easily distinguished from other dishes (i.e. different color plate/rim)?
- Consider the areas at most risk for cross contact—prep surfaces, grill, fryers, etc.

Even if There is a Gluten-Free Menu

- Is gluten-free pasta cooked in a different pasta water than regular pasta?
- Is there a separate colander available to drain pasta?
- Is there a separate, dedicated fryer for gluten-free items?
- If gluten-free bread is available, request that it be heated separately from gluten-containing bread.
- Are separate toppings used to make gluten-free pizza?
- How is the pizza separated from other items in the oven?
- Are French Fries prepared in a separate fryer from breaded items? ¹

1. Koeller, 2013.

Preventing Cross Contact

- Is there a separate area on the griddle where gluten-free products are cooked? (i.e. rolls and buns not cooked in the same area)
- Are clean pans used to sauté items for gluten-free dishes?
- Be cautious with, seasonings, marinades, sauces, and salsa unless they can be verified as gluten-free.
- Verify original stock (chicken/beef) is gluten-free.
- Verify what is being used to thicken sauces (i.e. cornstarch vs. flour)¹

Restaurant Resources

- **Helpful Websites**

www.glutenfreepassport.com

www.triumphdining.com

www.allergyeats.com

- **Phone apps**

Find Me Gluten-free

Gluten-free Registry

Triumph Dining (translated menu cards)

ieatout (gluten-free passport)



Other Challenging Situations

- Weddings
- Office Lunches/Parties
- Religious Customs (Communion)
- Traveling (by air or car)
- Potlucks
- Holiday Parties
- Hospital/Extended Care Facility Stays

Gluten-Free and Not Feeling Better?

- Persistent symptoms could be from a variety of causes. Also known as Non-Responsive Celiac Disease (NRCD)
 - Gluten exposure (inadvertent)
 - Most likely cause
 - Other Food Allergies/Intolerances
 - Lactose Intolerance
 - IBS/FODMAP intolerance

Food Allergies/Intolerances

- Food Allergies
 - Diagnosis via skin/blood testing
 - Removal of the allergen
 - Diagnosed/managed by allergist
- Food Intolerances
 - Negative allergy testing
 - Food/Symptom Logs
 - Well controlled elimination/reintroduction challenges.

Lactose Intolerance

- Very common in those with celiac disease
 - Common symptoms include gas, bloating, diarrhea, and pain.
 - Typically secondary, caused by damaged villi.
 - May resolve on gluten-free diet.
 - Avoiding dairy can result in reduced calcium and Vitamin D intake.
 - Symptoms can be mild or severe.¹

Getting a Handle on Lactose

- Reduce/eliminate lactose temporarily.
- Choose reduced lactose/lactose-free dairy products. Use lactase enzyme
 - Check to ensure that all products are also gluten-free.
 - Encourage other dietary sources of calcium.
 - Supplements, as necessary¹

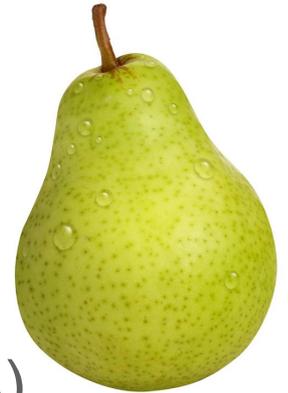


IBS/Celiac Disease

- IBS can co-exist with celiac disease and is more common in those with celiac disease.¹
- IBS symptoms (bloating, pain, diarrhea, gas, and fatigue) often overlap with celiac disease symptoms
- A Low FODMAP diet has been shown to reduce/eliminate symptoms in over 75% of those with IBS.²

FODMAP

- FODMAPs are fermentable sugars that can cause abdominal pain, gas, diarrhea, and bloating in susceptible individuals. ¹
 - **FODMAP is an acronym**
 - **Fermentable** (produces gas)
 - **Oligo** (Fructans and Galacto-oligosaccharides)
 - **Disaccharides** (lactose)
 - **Monosaccharides** (fructose in excess of glucose)
 - **And**
 - **Polyols** (sorbitol, mannitol, xylitol)



Meet the FODMAPs¹

- **Lactose**
 - Milk, ice cream, evaporated milk, yogurt, cream cheese
 - **Fructose**
 - Apples, pears, watermelon, asparagus, sugar snap peas, HFCS, agave syrup, honey.
 - **Fructans**
 - Wheat, rye, inulin, chicory root, kidney beans, baked beans, onion, garlic, pistachios, cashews
 - **Polyols**
 - Sorbitol, mannitol, xylitol, (sugar free gum, mints, cough drops). cauliflower, pumpkin, mushrooms.
- (List is not all inclusive)

Low FODMAP Diet

- Temporarily restrict (a few weeks) high FODMAP foods.
 - Reintroduce different groups in controlled challenges
 - Best managed by an experienced RDN
 - Introduce foods and monitor symptoms
 - The low FODMAP diet is naturally low in gluten, but not ALL foods are gluten-free. Those should still be avoided.

A Learning Diet

- FODMAP diet is a learning diet. ¹
 - Patients should not be on a full elimination diet forever.
 - Goal is to have the most liberal, varied diet possible while controlling symptoms.
 - This can take a lot of trial and error.

Putting it into Practice

Mrs. Smith was diagnosed with celiac disease one year ago. She states she has been compliant with the gluten-free diet with no intentional gluten consumption. However, she continues to feel poorly most days with bloating, constipation, and gas. You ask her to provide you with a food record for review and determine that she isn't ingesting any sources of gluten.

Putting it into Practice

- Food Record
 - **Breakfast:** Gluten-free rice cereal with milk, yogurt, banana, and coffee
 - **Lunch:** Large green salad with chicken or salmon, salad dressing; rice crackers with cheese; canned peaches; iced tea
 - **Dinner:** Pot roast with carrots and potatoes, gluten-free dinner roll with butter
 - **Snacks:** Almonds, popcorn, ice cream

Putting it into Practice

What is the most likely culprit of Mrs. Smith's continued symptoms?

- A. Food allergies
- B. FODMAP intolerance
- C. Lactose Intolerance**

Takeaways from Today

- Strongly encourage proper testing for celiac disease **before** starting the gluten-free diet.
- Discourage the use of unproven tests for the diagnosis of non celiac gluten sensitivity.
- Discourage the use of the gluten-free diet to treat other conditions, including weight loss.

More Takeaways from Today

- The gluten-free label can help protect patients by requiring manufacturers to adhere to a set standard.
- Provide key tips to assist in eating away from home, as this is difficult for many.
- Be aware of other food intolerances which can cause continued symptoms.

Resources

1. Case S. *Gluten-Free--The Definitive Resource Guide*. 5th Edition ed. Regina, Saskatchewan: Case Nutrition Consulting, Inc; 2016.
2. Ludvigsson JF, Card TR, Kaukinen K, et al. Screening for celiac disease in the general population and in high-risk groups. *United European Gastroenterology Journal*. 2015;3(2):106–120. doi:10.1177/2050640614561668.
3. Celiac disease symptoms. Celiac Disease Foundation. <https://celiac.org/celiac-disease/understanding-celiac-disease-2/ceiliacdiseasesymptoms/>. Accessed February 1, 2017.
4. Kelly CP, Bai JC, Liu E, Leffler DA. Advances in diagnosis and management of celiac disease. *Gastroenterology*. 2015;148(6):1175–1186. doi:10.1053/j.gastro.2015.01.044.
5. Could Gluten Be Causing Your Health Problems? Gluten Intolerance Group. <https://www.gluten.org/resources/getting-started/could-gluten-be-causing-your-health-problems/>. Updated 2016. Accessed February 3, 2017.
6. Elli L, Branchi F, Tomba C, et al. Diagnosis of gluten related disorders: Celiac disease, wheat allergy and non-celiac gluten sensitivity. *World journal of gastroenterology*. 2015;21(23):7110–9.
7. IgA Deficiency. University of Chicago Celiac Disease Center. <http://www.cureceliacdisease.org/tag/iga-deficiency/>. Accessed February 3, 2017.
8. Dennis M, Leffler DA. *Real life with celiac disease: Troubleshooting and thriving gluten free*. Bethesda, MD: AGA Institute Press; September 1, 2010.
9. Diagnosis of celiac disease. University of Chicago Celiac Disease Center. <http://www.cureceliacdisease.org/diagnosis/>. Accessed February 3, 2017.
10. Catassi C. Gluten sensitivity. *Annals of Nutrition and Metabolism*. 2015;67(2):16–26.
11. Uhde M, Ajamian M, Caio G, et al. Intestinal cell damage and systemic immune activation in individuals reporting sensitivity to wheat in the absence of coeliac disease. *Gut*. July 2016:gutjnl–2016–311964. doi:10.1136/gutjnl-2016-311964.
12. Casella G, Bella D, Salemme M, et al. Celiac disease, non-celiac gluten sensitivity and inflammatory bowel disease. *Minerva gastroenterologica e dietologica*. 2015;61(4):267–71.
13. Cruchet S, Lucero Y, Cornejo V. Truths, myths and needs of special diets: Attention-deficit/Hyperactivity disorder, autism, non-celiac gluten sensitivity, and Vegetarianism. *Annals of Nutrition and Metabolism*. 2016;68(1):43–50. doi:10.1159/000445393.

Resources, cont.

14. Sun X, Lu L, Yang R, Li Y, Shan L, Wang Y. Increased incidence of thyroid disease in patients with celiac disease: A systematic review and Meta-Analysis. *PLOS ONE*. 2016;11(12):e0168708. doi:10.1371/journal.pone.0168708.
15. Gaesser GA, Angadi SS. Gluten-free diet: Imprudent dietary advice for the general population? *Journal of the Academy of Nutrition and Dietetics*. 2012;112(9):1330–1333.
16. Gaesser G, Angadi S. Navigating the gluten-free boom. *JAAPA : official journal of the American Academy of Physician Assistants*. 2015;28(8).
17. Schultz EJ. Gluten-free food fad gaining momentum among marketers. Advertising Age. <http://adage.com/article/news/gluten-free-food-fad-gaining-momentum-marketers/244174/>. Published 2013. Accessed February 3, 2017.
18. Is the Gluten-Free Eating a Trend Worth Noting? National Purchase Diary Group. <https://www.npd.com/perspectives/food-for-thought/gluten-free-2012.html>. Published 2012. Accessed February 3, 2017.
19. Watson E. Health/weight-conscious consumers are driving the gluten-free market, not celiacs, says Mintel. Food Navigator. <http://www.foodnavigator-usa.com/Markets/Health-weight-conscious-consumers-are-driving-the-gluten-free-market-not-celiacs-says-Mintel>. Published October 13, 2013. Accessed February 3, 2017.
20. Tanpowpong P, Broder-Fingert S, Katz AJ, Camargo CA. Predictors of dietary gluten avoidance in adults without a prior diagnosis of celiac disease. *Nutrition*. 2015;31(1):236–238.
21. Tanpowpong P, Broder-Fingert S, Katz AJ, Camargo CA. Predictors of gluten avoidance and implementation of a gluten-free diet in children and adolescents without confirmed celiac disease. *The Journal of Pediatrics*. 2012;161(3):471–475. doi:10.1016/j.jpeds.2012.02.049.
22. Mueller K, Nahikian-Nelms M, Sharrett MK, Taylor C. A Descriptive Study of Alternative Grain Consumption Among Individuals With Celiac Disease. *Medical Nutrition Practice Group Newsletter*. 2011;03:7–11.
23. Missbach B, Schwingshackl L, Billmann A, et al. Gluten-free food database: The nutritional quality and cost of packaged gluten-free foods. *PeerJ*. 2015;3:e1337.
24. Questions and answers: Gluten-free food labeling final rule. U.S. Food and Drug Administration. <http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/Allergens/ucm362880.htm>. Published 2013. Updated May 2, 2016. Accessed February 3, 2017.
25. Food labeling; Gluten-free labeling of foods. U.S. Food and Drug Administration. <https://www.federalregister.gov/documents/2013/08/05/2013-18813/food-labeling-gluten-free-labeling-of-foods>. Published 2013. Accessed February 3, 2017.

Resources, cont.

26. Thompson T, Simpson S. A comparison of gluten levels in labeled gluten-free and certified gluten-free foods sold in the United States. *European Journal of Clinical Nutrition*. 2014;69(2):143–146.
27. Carol D. New Rules for Gluten Free Labeling: Get the Facts from the Experts. Publisher unknown; March 12, 2014. <http://www.mnpgdpg.org/page/fda-webinar-2>. Accessed January 5, 2017.
28. Thompson T. Call to action regarding barley malt ingredients in foods labeled gluten-free. Gluten Free Watchdog, LLC. <https://www.glutenfreewatchdog.org/news/call-to-action-regarding-barley-malt-ingredients-in-foods-labeled-gluten-free/>. Published January 21, 2016. Accessed February 3, 2017.
29. Tricia Thompson. Follow up fact sheet FDA Webinar part 1 September 18 2013 (1), Beyond Celiac, (2013). [https://www.beyondceliac.org/SiteData/docs/FollowUpFa/b7360ce1879ac1f0/Follow%20Up%20Fact%20Sheet_FDA%20Webinar%20Part%201_September%2018%202013%20\(1\).pdf](https://www.beyondceliac.org/SiteData/docs/FollowUpFa/b7360ce1879ac1f0/Follow%20Up%20Fact%20Sheet_FDA%20Webinar%20Part%201_September%2018%202013%20(1).pdf). Accessed February 3, 2017.
30. Thompson T. Oats produced under a gluten-free purity protocol: Listing of suppliers and manufacturers. <https://www.glutenfreewatchdog.org/news/oats-produced-under-a-gluten-free-purity-protocol-listing-of-suppliers-and-manufacturers/>. Published October 26, 2016. Accessed February 3, 2017.
31. Thompson T, Lee AR, Grace T. Gluten contamination of grains, seeds, and Flours in the United States: A pilot study. *Journal of the American Dietetic Association*. 2010;110(6):937–940.
32. Thompson T. Labeling of USDA-regulated foods straight from the USDA. Food Labeling. <http://www.glutenfreedietitian.com/labeling-of-usda-regulated-foods-straight-from-the-usda/>. Published 2009. Updated 2014. Accessed February 3, 2017.
33. Revised interim policy on gluten content statements in the labeling and advertising of wine, distilled spirits, and malt beverages, Department of the Treasury Alcohol and Tobacco Tax and Trade Bureau No. 2014-2, (2014). <https://www.ttb.gov/rulings/2014-2.pdf>. Accessed February 3, 2017.
34. Lee AR, Ng DL, Diamond B, Ciaccio EJ, Green PHR. Living with coeliac disease: Survey results from the USA. *Journal of Human Nutrition and Dietetics*. 2012;25(3):233–238.
35. Kim K, Robert L. *Let's Eat Out Around the World Gluten Free and Allergy Free: Eat Safely in Any Restaurant at Home or Abroad*. New York, NY: Demos Health; November 1, 2013.
36. Theethira TG, Dennis M. Celiac disease and the gluten-free diet: Consequences and recommendations for improvement. *Digestive Diseases*. 2015;33(2):175–182.
37. Sainsbury A, Sanders DS, Ford AC. Prevalence of irritable bowel Syndrome–type symptoms in patients with celiac disease: A Meta-analysis. *Clinical Gastroenterology and Hepatology*. 2013;11(4):359–365.e1.

Resources, cont.

38. Gibson PR, Mitchell SB, Barrett JS, et al. Manipulation of dietary short chain carbohydrates alters the pattern of gas production and genesis of symptoms in irritable bowel syndrome. *Journal of Gastroenterology and Hepatology*. 2010;25(8): 1366–1373.
39. Shepherd SJ, Halmos E, Glance S. The role of FODMAPs in irritable bowel syndrome. *Current Opinion in Clinical Nutrition and Metabolic Care*. 2014;17(6):605–609.
40. Rosenbloom C. A diet that helps relieve irritable bowel sufferers' pain (finally). *Washington Post*. December 22, 2016. https://www.washingtonpost.com/lifestyle/wellness/a-diet-that-helps-relieve-irritable-bowel-sufferers-pain-finally/2016/12/21/79b81b30-c160-11e6-8422-eac61c0ef74d_story.html?utm_term=.28bfdc2ba4f2. Accessed February 3, 2017.
41. Leffler DA, Dennis M, Hyett B, Kelly E, Schuppan D, Kelly CP. Etiologies and predictors of diagnosis in Nonresponsive celiac disease. *Clinical Gastroenterology and Hepatology*. 2007;5(4):445–450. doi:10.1016/j.cgh.2006.12.006.
42. Bures J, Cyrany J, Kohoutova D, et al. Small intestinal bacterial overgrowth syndrome. *World journal of gastroenterology*. 2010;16(24):2978–90.



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