

Your Guide to Celiac Disease: Learning to Live a Gluten-Free Lifestyle

VANDERBILT  HEALTH

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Section 1

Introduction To Gluten, Celiac Disease & Common Medical Conditions

Overview of Gluten, Celiac Disease and Diagnosis

What is Celiac Disease?

Celiac disease is an inherited autoimmune disorder caused by exposure to gluten. If you have celiac disease and eat gluten, it causes damage to your small intestine. This damage normally occurs in the beginning of the small intestine in the area called the duodenum. Celiac disease primarily damages the lining of the small intestine, called villi. Villi are small finger-like protrusions that digest and absorb foods. When the villi are damaged, your body may not be able to absorb important nutrients. This may cause you to become malnourished or develop nutrient deficiencies and limits your health and wellbeing. Celiac disease can also impact other parts of the body and is associated with as many as 200-300 different symptoms.

What is Gluten?

Gluten is a general name for the different storage proteins found in **wheat, rye, and barley (malt)**. To be gluten-free, you must avoid eating these foods and avoid eating food products that contain them.

Gluten is the word used to describe the proteins in *wheat, rye, barley* and other grains like *malt*.

Gut Check:

- ✓ *What are the three main gluten-containing ingredients to avoid on a gluten-free diet?*
- ✓ *Why do people with celiac disease need to avoid gluten?*

How Is Celiac Disease Diagnosed?

It is important for you to continue eating gluten until your gastroenterology (GI) doctor has officially diagnosed you with celiac disease. The testing to diagnose celiac disease should include bloodwork and an upper endoscopy (EGD) with biopsies of the small intestine (taking a small piece of tissue to examine). Starting yourself on a gluten-free diet before testing is complete can make the diagnosis of celiac disease difficult.

What Bloodwork is Ordered?

Your immune system makes antibodies, which are proteins in the blood that help to fight off harmful intruders like viruses or bacteria. When you have celiac disease, your body thinks gluten is a harmful intruder and activates your immune system to make certain antibodies. To diagnose or monitor celiac disease your doctor will order bloodwork to see if you have these antibodies in your blood. The three antibodies related to celiac disease are:

- ◆ tissue transglutaminase (TTG)
- ◆ endomysial antibody (EMA)
- ◆ deaminated gliadin peptides (DGP)

Your doctor may order one or more of the antibody tests noted above. If your bloodwork is positive for antibodies, you may have celiac disease but it's not a guarantee. Most of the time you also need to have an EGD with small intestinal biopsy.

What is an Upper Endoscopy (EGD)?

An EGD is a safe procedure where a small flexible tube with a camera and a light is passed through the mouth, esophagus (E), stomach/gastric (G), and small intestine/duodenum (D). The gastroenterologist will take 6-8 small biopsies in your small intestine where celiac disease damage can be found. These are sent to another doctor, a pathologist, who will look at them under a microscope to find signs of active celiac disease. It may take one week to get the biopsy results back after your EGD.

How Should I Prepare for an EGD?

You cannot eat after 12 a.m. the day of your procedure and will need a driver to take you home after the EGD. If you take blood thinners, please discuss this with your doctor before the procedure.

Are There Risks of an EGD?

The risks of this procedure are very low but include reaction to anesthesia, perforation (a hole in the stomach), and bleeding. Your GI doctor will talk with you about the risks before the EGD.

How Often Do I Need an EGD?

You normally need an EGD at diagnosis and then about 1-2 years after diagnosis to look for small intestine healing. If you are not responding to the gluten-free diet, you have ongoing nutritional deficiencies, unexplained weight loss, or do not produce celiac antibodies in your blood, you may require additional EGDs. If you develop any new symptoms such as swallowing problems, severe pain or black stools your doctor may recommend another EGD.

Common Tests For Celiac Disease	
Tissue Transglutaminase (TTG)	This test looks for antibodies in the blood that are elevated when a person with celiac disease eats gluten. If the TTG test is positive you'll need more testing to confirm celiac disease.
Deaminated Gliadin Peptide (DGP)	This test looks for the antibodies to the deaminated gliadin peptide which is present when an individual with celiac disease eats gluten. If the DGP test is positive you'll need more testing to confirm celiac disease.
Endomysial Antibody (EMA)	This test looks for antibodies in the blood that are elevated if you have celiac disease and are eating gluten. This test is used less often than others. Normal results are negative; if your EMA test is positive you may have celiac disease.
Human Leukocyte Antigen (HLA Gene Testing)	HLA-DQ2 and HLA-DQ8 are two genetic markers found in individuals diagnosed with celiac disease. Everyone with celiac disease has at least one of these genes. If you do not have one of these genes you don't have celiac disease. If your test is positive for one of these genes you'll still need additional testing to confirm that you have celiac disease.
Small Intestinal Biopsy (Endoscopy)	Your gastroenterologist will take biopsies of your duodenum (part of the small intestine). A pathologist then looks at the biopsy to identify if there is any damage consistent with celiac disease.
Gluten Challenge	If your diagnosis is unclear and you are already gluten-free your gastroenterologist may ask you to do a gluten challenge before repeating some of these tests. A gluten challenge involves eating 1-2 pieces of bread for a minimum of 4-6 weeks. At the end of the 4-6 weeks, your gastroenterologist will repeat your blood test and biopsies.
Antigliadin Antibody (AGA)	This test is no longer used.

What Other Tests are Done at Diagnosis?

While your doctor is in the process of diagnosing you with celiac disease, they may order bloodwork to check for vitamin and mineral deficiencies. Tests that may be done include:

Complete blood cell count	Liver enzymes
Iron studies	Calcium
Vitamin B studies (B12, Folate, B6)	Vitamin D
Thyroid function tests	Magnesium
Zinc	Copper

What Should I Talk with my Doctor About After Diagnosis?

- ◆ risks of eating foods that contain gluten
- ◆ required follow-up visits and tests
- ◆ testing of family members
- ◆ other diseases I may have
- ◆ any issues concerning my mental health

What Should I Expect At Follow-Up Doctor Visits?

At your follow-up visit, your doctor will check to see how you have been doing with the gluten-free diet. Normally, your doctor will order blood tests to see if your celiac disease is well controlled or not. It's also normal for the doctor to order bloodwork to check on your vitamin and mineral levels. You may meet with a registered dietitian to review your diet. If you have any non-GI symptoms of celiac disease, your doctor may refer you to other specialists that can help to manage the many symptoms of celiac disease.

How Often Should I Follow-Up With My Doctor?

How often you need to see your doctor will depend on how severe your celiac disease is. Even if you are feeling great, you should meet with your doctor once a year to have celiac bloodwork and check for nutrition deficiencies. When you are first diagnosed, you will likely see the doctor or dietitian every 3-6 months until you are feeling well and the small intestine has healed.

Gut Check:

- ✓ *Why is it important to continue eating foods with gluten until all celiac disease testing has been completed?*

What Are Some of the Long-Term Effects of Uncontrolled Celiac Disease?

*rare

- ◆ vitamin and mineral deficiencies
- ◆ osteoporosis (thin bones)
- ◆ anemia
- ◆ neuropathy (numbness)
- ◆ joint pains
- ◆ rash
- ◆ headaches
- ◆ anxiety and depression
- ◆ cancer of the small intestine*
- ◆ lymphoma*

How Can the Long-Term Effects of Uncontrolled Celiac Disease Be Prevented?

If you have celiac disease, avoiding gluten is the only way to heal your small intestine and prevent long-term effects. It may take a year or more on a gluten-free diet for your intestines to heal completely.

While complete healing may take a long time, many people with celiac disease feel better within weeks of starting the diet. A lifelong gluten-free diet is the only way of treating celiac disease at this time. There are currently drugs under investigation that may help people with celiac disease who have troubles with the gluten-free diet.

When you have celiac disease, gluten causes damage to your body. Avoiding gluten allows your body to heal and can improve other symptoms. Avoiding gluten is the lifelong way to manage celiac disease.

Gut Check:

✓ *Name a specific reason you want to manage your celiac disease by avoiding gluten?*

Section 2

The Gluten-Free Diet

Understanding the Details of the Gluten-Free Diet

These are general recommendations. They may change depending on your individual needs.

What Foods Are Gluten-Free?

There are many *naturally gluten-free foods* including **unprocessed fruits, vegetables, dairy products, eggs, fish, shellfish, meats and certain gluten-free grains**. There are also many gluten-free substitute products that replace gluten containing grains and baked goods.

Looking at the ingredient list is very important since not all gluten-containing foods are obvious.

Gluten-free substitute products are not automatically healthy. In fact, they are normally higher in calories, fat, sugar, and sodium. You should eat a wide variety of naturally gluten-free foods to have a healthy diet.

What Foods Are Avoided on a Gluten-Free Diet?

You should not eat gluten-containing grains like wheat, barley, malt and rye. Unfortunately, not all gluten-containing foods are obvious. Many processed foods contain gluten (or are contaminated with gluten). Foods with flavorings, sauces, or added ingredients may also contain gluten.

Foods to Avoid

Barley	Bran	Bulgar	Brewer's yeast	Couscous	Durum
Einkorn	Emmer	Farina	Graham flour	Farro	Kamut
Malt	Orzo	Rye	Semolina	Spelt	Tritical
Wheat					

What are Some **Gluten-Free** Foods?

Acorn	Cottonseed	Quinoa
Almond	Dal	Rice, rice flour
Amaranth	Dasheen flour	Sago
Arrowroot	Fava bean	Sesame
Buckwheat/Kasha	Flax, flax seed	Sorghum
Calrose	Hominy	Soy, soybean, tofu
Canola	Job's tears	Sunflower seed
Cassava	Millet	Tapioca
Channa	Modified corn starch	Taro flour
Chesnut	Modified tapioca starch	Teff
Chia seed	Montina	
Chickpea/Garbonzo	Peanut flour	
Corn (corn flour, cornmeal, cornstarch)	Potato, potato starch	

Section 3

Finding and Avoiding Gluten

Reviewing Food Labels & Cross Contamination

The FDA requires food manufacturers to label foods that contain a major food allergen. This only applies to foods that contain *milk, egg, soy, peanut/tree nut, fish/shellfish, and wheat*. The allergens will be listed in parenthesis or in a “contains” statement. **The FDA doesn’t include barley, malt, or rye as major food allergens so it’s important to read every food label!**

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%
<small>* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.</small>	
INGREDIENTS: RICE, SUGAR, CONTAINS 2% OR LESS SALT, MALT FLAVOR, MILK, ALMONDS, BROWN RICE SYRUP, SALT, CINNAMON, NATURAL FLAVORS	
CONTAINS: MILK, ALMONDS	

Look at the serving size first. All of the information on the label is for 1 serving. If you eat more than 1 serving, you get more calories and nutrients.

Choose foods that are low in saturated and trans fat because these fats are not healthy for your heart.

Each day try to eat less than 2,400mg of sodium (or less than the limit set by your doctor).

If you have diabetes it’s important to pay attention to the total number of carbohydrates not the sugar (sugar is included in the total carbohydrate number). Ask your dietitian for more details on carbohydrate counting.

The general recommendation is to consume 25-30 grams of fiber each day. To help meet this goal, choose gluten-free foods with at least 3-5 grams of fiber per serving.

Look at the “contains” statement for wheat and any other allergens you may have. Read the ingredient list closely for barley, malt, rye or other gluten-containing ingredients.

Foods regulated by the FDA must be less than 20 parts per million (ppm) if they claim to be “gluten-free.” Studies show there is no damage to the intestine when eating foods containing gluten if they contain less than 20 ppm.

Foods that say “*made with no gluten-containing ingredients*” or “*not made with gluten-containing ingredients*” are not required to follow the gluten-free labeling rules. This means these foods are probably **not gluten-free**.

The FDA regulates the majority of our foods but the U.S. Department of Agriculture also regulates foods. The USDA regulates egg products, poultry products, and meat products including hot dogs, deli meats, bacon, processed sausage, and mixed foods like stew or chunky soup. Allergen labeling is voluntary for the USDA but around 80-90% of USDA products are labeled for the top 8 allergens.

Hidden Sources of Gluten

Batter, breading	Flour (if not gluten-free)	Panko
Broth, bouillon	French Fries	Pasta
Candy	Gravy	Processed meats
Cereal products (if not gluten-free)	Imitation bacon	Rice mixes
Coating mixes	Imitation seafood	Salad dressing
Communion wafers	Lipstick, lip balm	Soup bases
Croutons	Matzo	Stuffing
Dressing	Marinades	Thickeners (roux)
	Oats (if not gluten-free)	Toothpaste

Organizations Certifying Gluten-Free Foods

There are many different organizations that certify gluten-free foods. Here are some common examples you may see on food labels. To learn more about privately certified gluten-free foods, ask your dietitian.



The Gluten-Free Certification Program (GFCP): products with this logo contain 20 ppm or less of gluten



The National Celiac Association Gluten-Free Recognition Seal Program: products with this logo contain less than 5 ppm of gluten



SCS Global Services Gluten-Free Standard: products with this logo contain 10 ppm or less of gluten



The Gluten-Free Certification Organization (GFCO): products with this logo contain 10 ppm or less of gluten



NSF International Gluten-Free Certification: products with this mark contain less than 20 ppm of gluten and are manufactured in a facility that prevents cross-contamination.

Common **Gluten-Free** Ingredients/Additives

Acacia gum	Fumaric acid	Propylgallate
Acetic acid	Fructose	Pyridoxine
Adipic acid	Gelatin	hydrochloride
Agar (agar-agar)	Glucose	Riboflavin
Algin (alginic acid)	Guar gum	Sodium acid
Annatto	Gum arabic	pyrophosphate
Ascorbic acid	Invert sugar	Sodium ascorbate
Benzoic acid	Karaya gum	Sodium benzoate
Beta carotene	Lactic acid	Sodium caseinate
BHA	Lactose	Sodium citrate
BHT	Lecithin	Sodium
Biotin	Locus bean gum	hexametaphosphate
Brown sugar	Maltitol	Sodium metabisulphite
Calcium chloride	Magnesium hydroxide	Sodium nitrate
Calcium disodium EDTA	Malic acid	Sodium silica aluminate
Calcium pantothenate	Mannitol	Sorbitol
Calcium phosphate	Methylcellulose	Spices (pure)
Carboxymethylcellulose	Microcrystallin cellose	Stearic acid
Carob bean gum	Molasses	Sucralose
Carrageenan	Monosodium Glutamate	Sucrose
Cellulose	(MSG)	Sulfosuccinate
Cellulose gum	Niacin, niacin amide	Tragacanth gum
Corn sweetener	Papain	Tartaric acid
Corn syrup solids	Pectin	Thiamine hydrochloride
Cream of tartar	Polyglycerol	Titanium dioxide
Demineralized whey	Polysorbate	Tri-calcium phosphate
Dextrose	Potassium citrate	Vanilla extract, vanilla
Diocetyl sodium	Protassium iodine	Whey
Sulfosuccinate	Propylene glycol	White sugar
Folacin, folic acid	Psyllium monostearate	Xanthan gum
		Xylitol

Gut Check:

- ✓ *Why shouldn't you choose foods that say "made with no gluten-containing ingredients"?*
- ✓ *If wheat isn't listed in the "ingredients" statement, is the product gluten-free?*

Finding and Avoiding Gluten: Foods to Allow, Avoid and Question

Food Group	Allowed	Avoid	Question
Breads/ Cereals/ Starches	Products made from gluten-free grains and labeled gluten-free	Grain products made from wheat, barley or rye Panko made from wheat flour Oats (unless labeled gluten-free) Regular pizza crust Flour tacos or tortillas Cereals that contain barley or malt flavoring	Tortillas Rice pilaf Flavored mochi Packaged rice mixes Seasoned potato and tortilla chips
Food Group	Allowed	Avoid	Question
Pasta	Products labeled gluten-free and made from gluten-free grains	All regular pasta Udon noodles	Buckwheat pasta (soba) may have wheat flour
Food Group	Allowed	Avoid	Question
Crackers/ Snack Foods	Plain nuts and seeds Homemade popcorn, some microwave popcorn Plain potato and corn chips Gluten-free pretzels and rice cakes	Regular pretzels, snack crackers, snack mixes, rice cakes Crackers made with oats unless labeled gluten-free Nuts and seeds with wheat starch coating unless labeled gluten free Seasoned or flavored snack foods made with gluten-containing ingredients	Seasoned or flavored potato chips, multi-grain chips, corn chips Rice crackers may contain soy sauce Flavored and multi-grain rice and corn cakes and wafers Dry roasted, coated, flavored/seasoned nuts and seeds
Food Group	Allowed	Avoid	Question
Fruits	Plain, fresh, frozen, or canned fruit Pure fruit juices	Dried fruits from bulk bins	Fruit pie fillings Thickened fruits Dried fruit may be dusted with flour or starch to stop sticking
Food Group	Allowed	Avoid	Question
Vegetables	Fresh potatoes Pure vegetables juices Plain, fresh, frozen or canned vegetables Plain tomato sauce and paste Gluten-free french fries in dedicated fryer	Breaded or batter-dipped vegetables or tempura Frozen potato products with wheat starch or flour Fried onion or potatoes in non-dedicated fryer	Vegetables in sauces Scalloped vegetables Flavored tomato sauces Packaged vegetable mixes

Food Group	Allowed	Avoid	Question
Milk and milk products	Buttermilk Plain yogurt Regular sour cream Cream, half & half, non-dairy creamer Unflavored milk: whole, low fat, skim, evaporated or condensed	Malted milk Yogurt or ice cream with gluten-based mix-in's (cookie crumbs, granola, etc.)	Hot chocolate Chocolate milk Flavored yogurt Instant milk products Soy/hemp/almond/coconut/ rice based milk substitutes
Food Group	Allowed	Avoid	Question
Cheese	Aged cheeses Soft cheeses: cottage cheese, cream cheese Most processed cheeses	Roquefort cheese or blue cheese if wheat, barley, rye, oats, or malt are listed on the label or if the company states their product isn't gluten-free	Nacho cheese Cheese sauces Cheese spreads Processed cheese food Pre-packaged shredded cheese
Food Group	Allowed	Avoid	Question
Meat and Other Protein Foods	Plain tofu Peanut butter Plain nuts and seeds Dried beans and peas Fresh, unprocessed meat, eggs, poultry and fish without added unidentified natural flavorings or seasoning *recommended to select nuts, seeds and nut/seed better labeled gluten-free	Seitan Imitation crab Imitation bacon Roast beef or prime rib with au jus Unidentified natural flavorings or seasonings Poultry, meat or canned fish with hydrolyzed wheat protein	Marinades Flavored tofu Breaded meat/fish Ready to cook ham Hot dog, sausages, cold cuts Pork and beans/baked beans Texturized vegetable protein Reduced fat and flavored peanut butter
Food Group	Allowed	Avoid	Question
Soups	Soy Miso, Rice Miso Homemade gluten-free broths and soups Gluten-free bouillon cubes or gluten-free broth Canned, powdered or boxed soups labeled gluten-free	Roux Barley Miso Package soup starters Soups containing noodles or barley	Restaurant soups (most contain gluten) Meats in broths (Chinese food) Question all canned soups *recommended to select soups labeled gluten-free
Food Group	Allowed	Avoid	Question
Fats and Oils	All vegetable oils Butter, margarine, shortening Salad dressing made without gluten	Packaged suet Wheat germ oil Fats/oils used to cook gluten containing foods	Nonstick baking spray containing flour Commercial salad dressings with gluten stabilizers

Food Group	Allowed	Avoid	Question
Desserts/ Sweets	Coconut Marshmallows Whipped cream Pure maple syrup Sugar, honey, jam/jelly Plain chocolate and cocoa Italian ice, popsicles, sorbet, sherbet Gluten-free cookie and cake mixes labeled gluten-free	Commercial bakery products Ice cream or frozen yogurt with gluten containing mix-ins Licorice candy unless labeled gluten-free Candies, candy bars and chewing gum with malt flavoring or gluten-containing ingredients	Candy Cake frosting Chocolate bars Confectioner's sugar Butterscotch morsels Chocolate with crisped rice Pudding, custard, flan, lemon curd Flourless cakes may be baked in flour dusted pan
Food Group	Allowed	Avoid	Question
Condiments	Olives Salt, monosodium glutamate (MSG) Most vinegar (not malt) Salsa or Tobasco sauce All pure spices and herbs Ketchup, mayonnaise, most prepared mustards, and pickle relish Soy sauce and marinades made without gluten	Malt vinegar Teriyaki sauce, Tamari or shoyu made from wheat Soy sauce made from wheat Sauces, gravies or marinades made with wheat flour	Marmite Sauces (barbecue, Worcestershire sauce, marinades, steak sauce) Prepared mustard (some are made with wheat flour) Spice blends (taco seasoning mixes)
Food Group	Allowed	Avoid	Question
Miscellaneous	Gelatin Fruit pectin Pure or artificial vanilla extract, baking soda, cream of tartar, food coloring, most baking powder Corn starch, corn gluten, or corn malt Gluten-free communion wafers Gums: xanthin, guar, carob bean, cellulose, locust bean, acacia	Matzo Play-doh Brewer's yeast Regular communion wafers Autolyzed yeast and autolyzed yeast extract unless labeled gluten-free	Restaurant sauces, gravies Dental treatments (pastes, flouride, mouthwash, whitening treatment)
Food Group	Allowed	Avoid	Question
Beverages	Water Pure cocoa powder Wine or champagne Fruit juice, soda, sports drinks, some cider, tea Unflavored coffee Gluten-free beer made from gluten-free grains Distilled alcohol without added gluten	Malt flavored milk Gluten removed beers Herb tea with roasted barley or barley malt Beer, ale, lager, liquor or malted beverages Gluten-free beer or cider from taps at bar or restaurant	Flavored coffee or tea Some instant drinks (teas, ciders, hot cocoa) Chocolate drinks and mixes, coffee mixes Alcoholic drinks with unknown flavorings added after distillation; Soy beverages may contain barley flavoring

How to Choose & Prepare Foods Without Cross Contamination?

At The Grocery:

Choose the right foods:

- ◆ Buy pre-sliced deli meats (the deli slicer may be contaminated by marinades and seasonings on different meats that contain wheat).
- ◆ Avoid bulk bins of flour, dried beans, and cereals (proper cleaning is limited and serving utensils may be switched).
- ◆ Buy grains labeled gluten-free (grains are at a high risk for cross contamination, choose products labeled gluten-free).

Ask your registered dietitian for more information on grocery shopping while gluten-free

At Home:

Clean often and well:

- ◆ cutting boards (plastic or glass) and counter tops
- ◆ microwave walls, door, plate and ceiling
- ◆ use dishwasher to clean shared utensils, dishes, pots, pans, etc.
- ◆ measuring cups and spoons
- ◆ potholders
- ◆ baking pans

Use Separate:

- ◆ dish rags, towels, sponges
- ◆ strainers and colanders
- ◆ cooking utensils (don't share wooden cutting boards or wooden utensils)
- ◆ toaster oven and bread machine
- ◆ condiments (peanut butter, jelly, jam, mayonnaise, margarine/butter, etc.)
- ◆ storage space (store gluten-free foods above or separately)

Section 4

Healthy Eating While Gluten-Free

Overcoming Nutrition Pitfalls While Gluten-Free

Are There Any Nutritional Pitfalls of a Gluten-Free Diet?

The gluten-free diet is essential if you have celiac disease. But it's not automatically healthy. Many gluten-free products have more calories, fat, sodium, and sugar than the original. Most gluten-free grains and grain products are not fortified with additional vitamins and minerals. This means you may miss out on these nutrients while living gluten-free.

How to Replace What is Missing in a Typical Gluten-Free Diet?

Many gluten-free foods are low in **iron, calcium, vitamin D, B-vitamins, and fiber**. It's important to learn other foods that have these nutrients. You need to eat a wide variety of foods to make sure your body gets what it needs to be healthy.

Iron:

Iron helps bring oxygen to the tissues in your body. Too little iron can make you tired and lower your immunity. If you have low iron, ask your dietitian for a list of iron-rich foods and tips for making sure your body absorbs the iron.

- ◆ Iron is absorbed most easily from *red meat, fish, and poultry*.
- ◆ Iron can also be absorbed from some fruit, vegetables, dried beans, nuts, and whole or fortified gluten-free grains.
- ◆ Adding foods high in vitamin C (citrus fruits, strawberries, dark leafy greens, and potatoes, etc.) to meals can help your body absorb iron more easily.

Calcium and Vitamin D:

In general an adult with celiac disease should consume about 1,200 mg calcium from food and supplements combined and around 1,000 International Units (IU) of vitamin D per day. If you have low vitamin D, your doctor may ask you to take more.

- ◆ Primary sources of calcium include milk, lactose-free milk, cheese, and yogurt. Milk is normally fortified with vitamin D.
- ◆ Non-dairy sources of calcium include gluten-free almond, rice, and soy milk.
- ◆ If you have problems with bone loss (osteopenia, osteoporosis) or think you're not getting enough calcium or vitamin D, ask your dietitian for a detailed food list.

B-vitamins:

- ◆ B-vitamins are important for brain, muscle, heart, and digestive health.
- ◆ Most gluten-free products are refined. The refining process removes B-vitamins, minerals and fiber. Some of the refined gluten-free products are enriched or fortified which means the B-vitamins and minerals are replaced. **Choose whole grain or enriched /fortified gluten-free products as often as possible.**

B-vitamins	Food Sources
Thiamin (B1)	Lean pork Legumes (garbanzo beans, lentils, pinto beans, soy beans, black beans) Flax seeds Nuts
Riboflavin (B2)	Dairy products Legumes (garbanzo beans, lentils, pinto beans, soy beans, black beans) Nuts Green leafy vegetables (spinach, kale, collard/mustard greens, asparagus, cabbage) Mushrooms
Niacin (B3)	Lean pork Poultry Fish Legumes (garbanzo beans, lentils, pinto beans, soy beans, black beans) Seeds (sunflower, pumpkin, sesame)
Pyridoxine Hydrochloride (B6)	Meat Fish Poultry Bananas Avocado Potatoes Seeds (sunflower seeds, flax seed)
Folate (B9)	Legumes (garbanzo beans, lentils, pinto beans, soy beans, black beans) Green leafy vegetables (spinach, kale, collard/mustard greens, asparagus, cabbage)
Cobalamin (B12)	Fish, Shellfish Meat Poultry Eggs Dairy products

Fiber

If you have celiac disease and are on a gluten-free diet, you may be constipated. This is because many gluten-free foods are low in fiber. You should eat between 25-30 gm of fiber each day.

- ◆ Increase your fiber intake slowly to prevent gas, bloating, or abdominal pain. Add 1-2 higher fiber foods each day to let your body slowly get used to digesting more fiber.
- ◆ Choose gluten-free foods with at least 3-5 g of fiber per serving.
- ◆ Drinking water is important when increasing fiber in your diet. If you don't drink enough water you can become constipated.

Fruits, vegetables, legumes (peas, beans, lentils), flax seeds, chia seeds, and certain gluten-free whole grains are good sources of fiber.

Gluten-Free Whole Grains

These six grains are great sources of protein, B-vitamins, iron and fiber

- ▶ *Amaranth: seed of an amaranth plant*
- ▶ *Buckwheat: seed of a flowering fruit*
- ▶ *Millet: seed from cereal grass*
- ▶ *Sorgham: cereal grain*
- ▶ *Teff: grain from cereal grass*
- ▶ *Quinoa: seed of a goosefoot plant*

You can buy most of these grains as seeds, flakes, flour, puffs, or pastas. Most can be eaten as a hot cereal, added to casseroles, pilafs, stuffings, and soups or as a stand-alone side dish. They can be found in your local grocery store, usually in the specialty foods section.

Gut Check:

- ✓ *Which gluten-free whole grain would you be most willing to try?*
- ✓ *What nutrients are gluten-free foods normally low in?*

Section 5

Socializing While Gluten-Free

Avoiding Gluten When Eating Outside the Home

What are Tips for Eating At Restaurants with Celiac Disease?

Find your voice! While many restaurants have gluten-free options, it's important the staff know you're avoiding gluten due to a medical condition. That way they can take the steps necessary to prevent cross contamination.

- ◆ Check the menu online.
- ◆ Call ahead.
- ◆ Speak with the manager upon arrival.
- ◆ Remind your waitress.
- ◆ Bring a restaurant card outlining the foods you can and cannot eat.

What are Tips for Eating At Social Events with Celiac Disease?

Social events involving food can be stressful if you have a food allergy, intolerance, or special diet. You can work to create a more inclusive food environment for everyone.

- ◆ Call ahead to see what foods are being served, offer to bring similar gluten-free items.
- ◆ Encourage people to place small signs next to each food that identify the ingredients (or have people bring a copy of the recipe to place next to the dish).
- ◆ Position yourself to go through the line first if it is buffet style to reduce chances of gluten cross contamination from serving utensils.

What About Drinking Alcohol with Celiac Disease?

Some alcoholic beverages contain gluten, so it's important that you choose gluten-free options if you are choosing to consume alcohol.

Gluten-Free:

- ◆ Fermented Alcohols:
 - wine
 - true hard cider
 - gluten-free beer (made without malted barley)
- ◆ Distilled Spirits:
 - pure distilled spirits including vodka, gin, whiskies, rum, brandy, tequila
 - liqueurs and cordials

Not Gluten-Free:

- beer and other malt beverages
- flavored hard lemonade, hard cider, and wine coolers containing malt

Section 6

Finding Support for Celiac Disease

Reviewing Available Resources

National Support Groups/Celiac Advocacy Organizations

National Celiac Association: <https://nationalceliac.org>

Celiac Disease Foundation: www.celiac.org

Gluten Intolerance Group (of North America): www.gluten.org

Canadian Celiac Association: www.celiac.ca

Beyond Celiac: www.beyondceliac.org

Is There A Local Support Group?

Yes. NCA-Tennessee, a chapter of the National Celiac Association, meets four or five times a year in the Nashville area, to provide helpful gluten-free living information. To find out more about future meetings, fun events, and membership you may visit their website at: <http://www.nashvilleceliacs.org>

Websites/Blogs with General Information & Recipe Ideas

Gluten-Free Watch Dog: www.glutenfreewatchdog.org

The Gluten-Free Dietitian: www.glutenfreedietitian.com

Gluten-Free Travel: www.celiactravel.com

Gluten-Free Globetrotter: <http://www.glutenfreeglobetrotter.com>

Celiac Now: www.CeliacNow.org

Carol Fenster Cooks: www.carolfenstercooks.com

Gluten-Free Medication List: www.glutenfreedrugs.com

Gluten-Free Girl: www.glutenfreegirl.com

Celiac Chicks: www.celiacchicks.com

Gluten-Free Goddess: www.glutenfreegoddess.blogspot.com

Be Free For Me: www.befreeforme.com

Popular and Informative Books

Many of these authors have a variety of books. Feel free to check out their other titles as well. These books can be found in your local bookstore or online.

- A Clinical Guide to Gluten-Related Disorders by Dr. Alessio Fasano MD
- Acceptability of Foods and Food Ingredients for the Gluten-Free Pocket Dictionary by the Canadian Celiac Association
- Celiac Disease: A Guide to Living with Gluten Intolerance by Sylvia Bower, RN
- Celiac Disease: A Hidden Epidemic by Peter Green, MD and Rory Jones, MS
- Celiac Disease for Dummies by Ian Blumer, MD and Sheila Crowe, MD
- Gluten Exposed: The Science Behind the Hype and How to Navigate to a Healthy, Symptom-Free Life by Peter Green, MD and Rory Jones, MS
- Gluten-Free Diet: A Comprehensive Resource Guide by Shelley Case, RD
- Gluten-Free Hassle Free: A Simple, Sane, Dietitian-Approved Program for Eating Your Way Back to Health by Marlisa Brown, MS, RD, CDE, CDN
- Mayo Clinic Going Gluten-Free: Essential Guide to Managing Celiac Disease and Related Conditions by Joseph Murray MD
- The Essential Gluten-Free Grocery and Restaurant Guide by Triumph Dining
- The Gluten-Free Nutrition Guide by Tricia Thompson, MS, RD
- The Ultimate Guide to Gluten-Free Living by the Celiac Disease Center at Columbia University
- Real Life With Celiac Disease: Troubleshooting and Thriving Gluten-Free by Melinda Dennis, MS, RD, LDN and Daniel Leffler, MD, MS

Available Apps for Smart Phones

Find Me Gluten-Free: www.findmeglutenfree.com/

AllergyFree Passport Apps: www.allergyfreepassport.com/apps/

Check The Academy of Nutrition and Dietetics App Reviews: <http://www.eatright-pro.org/resources/media/trends-and-reviews/app-reviews>

Cookbooks to Provide Support in the Kitchen

Many of these authors have a variety of books. Feel free to check out their other titles as well. These cookbooks can be found in your local bookstore or online.

- Artisanal Gluten-Free Cooking by Kelli and Peter Bronski
- Complete Gluten-Free Cookbook by Donna Washburn and Heather Butt
- Complete Gluten-Free Diet and Nutrition Guide by Alexandra Anca
- Cooking Free by Carol Fenster
- Gluten-Free Baking by Rebecca Reilly
- Gluten-Free Cooking for Dummies by Danna Korn and Connie Sarros
- Gluten-Free on a Shoestring by Nicole Hunn
- Gluten-Free Quick and Easy by Carol Fenster
- Easy Gluten-Free by Marlisa Brown and Tricia Thompson
- The Everything Gluten-Free Slow Cooker by Carrie S. Forbes
- The Gluten-Free Cookbook for Families by Pamela Ellgen
- The Gluten-Free Gourmet Cookbook Series by Bette Hagman
- The How Can It Be Gluten-Free Cookbook by America's Test Kitchen
- The New Gluten-Free Recipes, Ingredients, Tools and Techniques: Demystifying Gluten-Free Baking - A Resource Guide by Lisa Diamond and Areli Hermanson
- Weeknight Gluten-Free by Kristine Kidd (Williams-Sonoma)
- Wheat-Free, Gluten-Free Cookbook Series by Connie Sarros

Magazines with Relevant Articles and Recipes

Delight Gluten Free: <http://delightglutenfree.com>

Simply Gluten-Free: <https://simplygluten-free.com>

Allergic Living: <http://allergicliving.com>

Gluten Free and More: <http://www.glutenfreeandmore.com>

Gluten-Free Living: <https://www.glutenfreeliving.com>

Section 7

Frequently Asked Questions

Reviewing Common Questions about Celiac Disease

Why does mental health come up when talking about celiac disease?

Managing celiac disease can be stressful and lead to increased anxiety and depression. If needed, seek advice from a counselor or psychiatrist. Talk to your doctor about ways to manage celiac disease and look into local support groups. Always be wary of online communities that may not be making accurate recommendations or giving safe advice.

Am I going to get cancer?

People with celiac disease who have ongoing inflammation in the small intestine, are at greater risk of developing lymphoma (cancer of lymph nodes). This ongoing inflammation is usually caused by not following a strict gluten-free diet. People with celiac disease who have intestinal healing have a much lower risk of lymphoma, close to that of the general population. The overall risk of lymphoma in a celiac disease patient is low, around 7 in 1000. Still, it's important to follow up with your doctor after your diagnosis.

Should I take any over-the-counter gluten enzymes?

There are no medicines approved to treat celiac disease. Diet is the only way to control celiac disease at this time.

Should I take a multivitamin?

Not everyone needs a multivitamin, but many people following a gluten-free diet are not meeting their nutrition needs with diet alone. If you are not eating a balanced, gluten-free diet you may need to take a daily multivitamin with minerals. Talk with your doctor or registered dietitian before starting supplements to see if they are appropriate for you. Check all your medicines including supplements to make sure they are gluten-free. When investigating medicines to see if they are gluten-free or not, follow these tips:

- 1) Read the label or package insert to learn the ingredients. If the medicine contains “starch,” you must identify the source. You can call the 1-800 number and speak with a customer service representative. Ask “what is the source of starch?” Corn, rice, potato and tapioca starch are safe. Also ask “Is the medicine coated with any wheat,

- rye or barley ingredients?” If the product isn’t coated with wheat, rye, or barley ingredients and if the product doesn’t contain wheat starch then it is most likely safe.
- 2) Ask your pharmacist to figure out if the medicine is gluten-free.
 - 3) If your medicine doesn’t contain ingredients derived from starch, then it’s not likely your medicine is contaminated with gluten.
 - 4) Internet resources are helpful but be cautious. A helpful website is www.glutenfreedugs.com.

What research is going on?

There are several clinical trials looking at medicines (taken by mouth or through a shot) to help manage celiac disease. These medicines will likely assist the gluten-free diet and not replace it. The gluten-free diet will remain the safest and best treatment for celiac disease. Feel free to ask your doctor if you may qualify for any clinical trials or check out national trials at <https://clinicaltrials.gov>.

Is there anything I can do to prevent my kids from getting celiac disease?

Research finds that genetically at-risk babies are no more likely to develop Celiac disease if they are introduced to gluten earlier vs. later. Families should follow the American Academy of Pediatrics (AAP) recommendations for the timing of introduction of cereals and foods to babies.

We recommend talking to your doctor about screening your family members. Screening can be done through testing the blood and/or genetic testing. If you are interested in having siblings or children screened for celiac disease, please bring it up with your doctor.

Am I allowed to touch bread?

Gluten cannot pass through the skin so simply touching bread will not harm you. But if you touch bread and then touch your mouth without washing your hands in between, you could accidentally “get glutened.” As long as you wash your hands well between touching bread and touching your mouth, there shouldn’t be any problem. Be sure to wash your hands after touching any foods that aren’t gluten-free!

What about oats?

Most people with celiac disease can eat around 50 grams per day or 1/2 cup each day of dry oats with no bad results. Some people with celiac disease will have problems digesting oats so most doctors ask patients not to eat oats or oat products until their celiac disease is well controlled. Once their celiac disease is well controlled they can start eating oats again while they keep track of their symptoms and have their doctor

perform lab tests to monitor celiac disease activity. It's important to talk to your doctor and dietitian before eating oats.

Oats that you buy in stores are often contaminated with wheat or barley. Don't choose any oat products that aren't labeled gluten-free. It is best to choose pure, uncontaminated oats available from several companies in the U.S. and Canada. The uncontaminated oats are processed in dedicated facilities and tested for purity. Ask your dietitian for additional information including common brands of purity protocol oats.

How to Contact the Vanderbilt Celiac Disease Clinic

The Vanderbilt Celiac Disease Clinic is a part of the Center for Human Nutrition Clinic in the Department of Digestive Diseases. The clinic address is 1211 21st Avenue South, Medical Arts Building, Suite 514, Nashville, TN 37212

To Make An Appointment: 615-936-1288

To Contact Your Nurse: 615-322-0128

To Send A Fax: 615-936-0006

To Check Your Lab Results or Message Your Clinical Team:

<https://www.myhealthatvanderbilt.com/>

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