

Following a Gluten-Free Diet

Your doctor has prescribed a gluten-free diet for you. The gluten-free diet is critical for any patient diagnosed with celiac disease or Dermatitis Herpetiformis to prevent the damage that gliadin causes to the small intestine. Gliadin, a protein fraction of gluten, is found in wheat, rye, barley, and oats* (see diet). If you have experienced bloating, flatulence, diarrhea and/or weight loss caused by a sensitivity to gliadin, the gluten-free diet will help to decrease these symptoms, as well.

Celiac disease is also known as gluten-sensitive enteropathy, nontropical sprue, or celiac sprue. Tropical sprue, a similar diarrheal disease, is not responsive to a gluten-free diet.

The diet requires the elimination of all foods prepared with wheat, rye, barley, and oats*, and their derivatives. Individuals following a gluten-free diet need to also consider their allergies, and possible intolerances, such as lactose intolerance, and any other medical conditions when using this diet guide.

Food labels must be read carefully for possible gluten-containing ingredients. If an ingredient list is not provided, contact the company directly for product information. Ingredients and labels may change without notice at any time; that is, a product that was made without gluten in the past may now contain gluten. It is also important to consider the possibility of cross-contamination (when gluten-free products are produced in a gluten environment) and unlisted ingredients which may have been used in processing.

It is essential to ask questions about the food you order when eating out. Ingredients made from gluten must be avoided, even if used in small amounts. Remember to be vigilant when eating out as you strive to keep your diet as gluten-free as possible.

Maintaining a balanced, healthy diet is important for overall health. The gluten-free diet is nutritionally adequate when appropriate quantities of recommended foods from the U.S. Food Guide Pyramid are eaten. You should contact a registered dietitian to discuss questionable ingredients and products, and concerns regarding the nutritional quality of your diet. A dietitian can be found by contacting the Medical Nutrition Therapy (MNT) Clinic at Beth Israel Deaconess Medical Center at (617) 667-2565. Additionally, you can find a dietitian through the American Dietetic Association and checking their dietitian referral line at www.eatright.org or by calling 1-800-877-1600.

Please note that this information is intended for educational purposes only and is not a substitution for a nutrition consult with a trained celiac dietitian.

****Bleu cheese or Roquefort cheese made with bread-derived mold will contain extremely small amounts of gluten and, as such, the decision to consume or avoid these products is left to the individual.**

The Gluten-Free Diet

MILK PRODUCTS		
Allowed	Avoid	Question
Milk: whole, low fat, skim, dry, evaporated or condensed Potato milk Buttermilk Cream, half & half, non-dairy creamer Regular sour cream	Malted milk Oat* milk (see oats explanation on last page)	Soy and rice milk-may contain barley flavoring and/or barley-derived enzymes Chocolate drinks and mixes- may contain barley malt or other gluten-based ingredients Reduced fat milks and creams- some may be made with oat-based gums* or other gluten additives Sour cream (fat free or light)-may contain questionable ingredients
Plain yogurt	Yogurt with gluten-based mix-ins (cookie crumbs, granola, etc.)	Flavored and fruited yogurt, yogurt containing mix-ins &/or fruit
CHEESE		
Allowed	Avoid	Question
Aged cheeses (i.e. Cheddar, Swiss, Edam, Parmesan) Most processed cheese	Any cheese product containing oat* gum	Processed cheese foods - some may be thickened or stabilized with gluten-based ingredients Pre-packaged shredded cheese- may contain gluten-based anti-caking agents
Cottage cheese, cream cheese, soft cheeses	Roquefort cheese (grown on bread mold)**	Blue cheese- may be made with bread-derived mold** Cheese sauces and cheese spreads - may be thickened with wheat starch
EGGS		
Allowed	Avoid	Question
Whole fresh eggs Most cholesterol-reduced liquid egg products		Powdered egg substitutes - may contain gluten-based ingredients

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GRAIN PRODUCTS

Allowed	Avoid	Question
Products made from corn (maize), corn bran, corn starch, corn meal, corn flour, corn germ, rice, rice bran, rice flour, glutinous white rice, rice polish, soy (soya), arrowroot, pure wild rice, sago, potato starch, potato flour, sweet potato flour, whole-bean flour, legume flours (garbanzo, chickpea, garfava, lentil, pea), nut flours (almond), seed flours (sesame), flax seed, sorghum, tapioca (also called cassava or manioc), Montina™ Indian rice grass, buckwheat, millet, teff, amaranth, quinoa Corn tacos, corn tortillas Plain mochi Gluten free pizza crust	Bread and baked products containing wheat, rye, triticale, barley, oat*, wheat germ, wheat bran, graham flour, gluten flour, durum flour, wheat starch, oat bran*, bulgur, farina, semolina, spelt, kamut, einkorn, emmer, farro, orzo Croutons Imported foods labeled “gluten-free” that contain wheat starch Wheat flour tacos, wheat tortillas Regular pizza crust	Packaged rice mixes Rice pilaf - may contain vermicelli (a wheat based pasta) and other gluten-based ingredients Buckwheat flour (pure buckwheat is gluten-free but buckwheat flour may be a blend of buckwheat and wheat) Flavored mochi Oats*

CEREALS – HOT

Allowed	Avoid	Question
Cream of rice, soy cereal, hominy, hominy grits, kasha (buckwheat groats), millet, cornmeal, quinoa flakes, soy flakes, soy grits	Cereals made from wheat, rye, triticale, barley, oats*, graham, wheat germ, bulgur, kashi, wheat bran, spelt, or from other grains/flours to avoid (listed above) Cereals with added malt extract and malt flavoring	Rice and corn mix cereals - may contain barley or malt flavoring

CEREALS – COLD

Allowed	Avoid	Question
Some puffed corn, puffed rice, puffed millet, puffed amaranth, puffed buckwheat cereals Some rice flake cereals and some corn flake cereals	Cereals made from wheat, rye, triticale, barley, oats*, graham, wheat germ, bulgur, kashi, wheat bran, spelt, or from other grains/flours to avoid (listed above) Cereals with added malt extract and malt flavoring Infant mixed grain cereals containing barley and/or wheat	Rice and corn mix cereals – may contain barley or malt flavoring

CRACKERS AND SNACK FOODS

Allowed	Avoid	Question
Plain corn chips Plain potato chips Plain popcorn Plain rice cakes Plain popped corn cakes	Flavored chips made with gluten-based ingredients	Seasoned or flavored potato chips Rice crackers - may contain soy sauce Flavored and multi-grain rice cakes and wafers
Plain nuts Plain seeds	Nuts and seeds with wheat starch coating Regular crackers	Dry roasted, coated, flavored/seasoned nuts and seeds - may contain wheat starch or other gluten-based ingredients

PASTA

Allowed	Avoid	Question
Gluten-free macaroni, spaghetti and noodles from rice, corn, soy, lentil, quinoa, beans, potato, pea or other allowed flours	All regular pastas made from wheat, wheat starch, semolina, spelt and other ingredients not allowed Udon noodles Buckwheat pasta (soba) -generally contains wheat flour	

MEAT AND OTHER PROTEIN FOODS

Allowed	Avoid	Question
Fresh, plain, frozen, and smoked meat, poultry, fish, seafood without added, unidentified natural and artificial flavorings	Canned fish containing hydrolyzed wheat protein Poultry or meat basted with or containing hydrolyzed wheat protein	Any meat, poultry or fish product containing unidentified natural and/or artificial flavoring Poultry or meat marinades – may be made with soy sauce, malt vinegar or other gluten-based ingredients
	Roast beef or prime rib with au jus (many beef sauces/gravies contain hydrolyzed wheat) Any meat product containing Lean Maker® (oat-based fat substitute)	Surimi (imitation crab/seafood) Prepared or preserved meats, such as luncheon meat, ham, bacon, bacon bits, jerky, chicken and meat broths, meat and sandwich spreads, meat loaf, meat product extenders, frozen meat patties, sausages, pate, wieners, bologna, salami and imitation meats – may contain fillers made from wheat or hydrolyzed wheat protein

OTHER PROTEIN FOODS

Allowed	Avoid	Question
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Lentils, chickpeas, peas, beans Most peanut butters All natural peanut butters Plain tofu		Baked beans - may be thickened with wheat flour Reduced fat and flavored peanut butters- may contain gluten-based ingredients Flavored/seasoned tofu - may be made with soy sauce or other gluten-based ingredients
FRUITS		
Allowed	Avoid	Question
All plain fresh, frozen & canned fruits Fruit juices		Canned fruit pie filling-may contain gluten-based ingredients Dried fruit (esp. dates)- may be dusted with flour or starch to prevent sticking Bulk bin dried fruit-may be contaminated w/items from other bins
VEGETABLES		
Allowed	Avoid	Question
All plain fresh, frozen, dried & canned vegetables Pure vegetable juices (e.g. V8®) Plain tomato sauce Plain tomato paste Spaghetti sauce made with allowed ingredients Fresh potatoes	Breaded or batter-dipped vegetables, tempura, vegetables with sauces containing soy sauce, teriyaki sauce, or unknown ingredients Frozen potato products made with wheat starch or flour	French fries-"seasoned" or flavored fries-often contain wheat starch Restaurant/fast food fries-often cooked in oil used to cook gluten containing foods (i.e. onion rings, breaded chicken fingers) Scalloped potatoes-usually made with flour Potato mixes- may contain gluten-based ingredients
SOUPS		
Allowed	Avoid	Question
Homemade soups using GF ingredients, GF bouillon cubes/broth	Soups w/unknown ingredients, soups thickened with flour, containing hydrolyzed wheat protein or unidentified natural and/or artificial flavoring; soups containing noodles, barley, oats*, soups made with roux (i.e. gumbo, chowder)	Canned soup, soup mixes, bouillon cubes/powders and commercial soup bases -frequently contain hydrolyzed wheat protein or other gluten based flavorings. Restaurant soups-most contain gluten-based ingredients/flavorings
FATS		
Allowed	Avoid	Question
Butter, margarine, canola oil, shortening, all vegetable oils	Wheat germ oil, baking shortening containing flour, nonstick baking	Bacon grease

except wheat germ	spray containing flour, fats/oils that have been used to cook gluten containing foods (i.e. deep fryers), Packaged suet Oat*-based fat substitutes (i.e. Oatrim™, Z trim™)	
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DESSERTS

Allowed	Avoid	Question
Some ice cream and frozen yogurt (made in a batch processed manner), sherbet, sorbet, popsicles, gelatin, Italian (water) ice, GF cookies, GF cakes and pie crusts, whipped cream, some puddings, custards, meringues, macaroons made w/ allowed ingredients	All desserts made with wheat or other gluten containing flours, including cakes, cookies, pies, ice cream cones, waffles, etc. Ice cream or frozen yogurt containing gluten-based ingredients and/or mix-ins made from gluten-based ingredients (such as cookie crumbs)	Ice cream made on a continuous line - may be contaminated by gluten-containing ice cream made on the same production line Pudding, custards, flan, lemon curd (homemade or from mix)-may be made with flour "Flourless" cakes- may be baked in pans dusted with flour

SWEETS

Allowed	Avoid	Question
Pure chocolate, milk chocolate, honey, maple syrup, jelly, jam, marmalade, molasses, sugar (white and brown), coconut, fructose, artificial sweeteners, pure cocoa powder, carob chips and pure carob powder, most chocolate syrups, some rice syrups	Candies and candy bars containing malt flavoring or other gluten-based ingredients Licorice candy	Chocolate w/ crisped rice- may contain malt flavor Powdered sugar-typically made with cornstarch but a few brands use wheat starch instead Chewing gum, marshmallows, and some candies and candy bars-may be dusted with undeclared starch during production Rice syrup-may contain barley Butterscotch morsels-may contain barley flavoring

CONDIMENTS

Allowed	Avoid	Question
Relish, ketchup, most prepared mustards, olives, most salad dressings, most mayonnaise, most vinegars except malt vinegar, all pure spices and herbs, pure black pepper, mustard flour (ground mustard seeds), tahini Soy sauce made without wheat Salt MSG (monosodium glutamate) Accent	Soy sauce made from wheat or unknown ingredients, Teriyaki sauce, Tamari or shoyu made from wheat Malt vinegar Sauces made from unknown ingredients and/or soy sauce. Salad dressings containing wheat-based soy sauce or malt vinegar	Spice blends or seasoning mixes (i.e. chili powder, taco seasoning mix, curry powder)- may contain wheat starch or hydrolyzed wheat protein Steak sauce, Worcestershire sauce, BBQ sauce and marinades-often contain malt vinegar or soy sauce Smoked flavorings Flavored vinegars-may contain gluten

		Salad dressing-may contain soy sauce or gluten-based ingredients Prepared mustards-some made with wheat flour Imitation pepper (may be used in individual packets in airline meals, cafeterias, restaurants) may contain wheat
MISCELLANEOUS		
Allowed	Avoid	Question
Sauces and gravies thickened without flour and made without gluten-based flavorings Vanilla extract Baking soda, yeast, most baking powder, cream of tartar, corn starch Corn gluten, corn malt Rice miso, soybean miso, plain miso GF Communion wafers Gums: xanthan, guar, carageenan, acacia, carob bean, cellulose, arabic, locust bean, tragacanth	Sauces and gravies with unknown ingredients or made with gluten-based ingredients or thickened with flour Barley malt, barley flavoring, malt flavoring or malt extract Barley miso Oat*gums Regular Communion wafers	Restaurant sauces, gravies-most thickened with flour or use flavoring ingredients containing gluten Baking powder-typically made with cornstarch but could be made with wheat starch
BEVERAGES		
Allowed	Avoid	Question

Pure tea, most herbal tea, coffee (instant or ground), pure cocoa powder, soft drinks, cider, some distilled alcoholic beverages (i.e. rum, whiskey, vodka) without added gluten-based flavorings, wine (red & white), most hot chocolate mixes, most liqueurs, some soy beverages	Malted beverages, beer, ale, lager Herb tea containing roasted barley, barley malt Postum™ or other grain-based coffee substitutes	Flavored or herb tea-may contain barley Chocolate drinks and mixes, coffee flavored mixes- may contain barley malt or other gluten-based ingredients Alcoholic beverages containing flavorings/colorings added after distillation Soy beverages may contain barley flavoring – may be listed as natural or artificial flavoring
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Notes:

Natural and Artificial Flavorings:

Gluten-containing grains are not commonly used as natural and artificial flavorings. Barley malt, used as a flavoring agent, is generally listed as "barley malt, barley malt extract or barley malt flavoring," however, it may only be listed as "flavoring" or "natural flavoring." Examples of barley being listed only as "flavoring" or "natural flavoring" have been found in one snack bar, a soy beverage, a generic brand of cereal, butterscotch morsels and, possibly, other categories of food. For this reason, to be technically correct, one would need to research any natural and/or artificial flavoring that does not list its source. However, since the vast majority of products with natural or artificial flavoring DO NOT contain barley and, therefore, do not contain gluten, it is up to the discretion of the consumer to decide when to research the source on an ingredient label.

Since wheat has a poor flavor and must be hydrolyzed to be used as a flavoring agent, it will not be hidden under the listing "natural and/or artificial flavoring." Instead, it will be listed as "hydrolyzed wheat protein."

Starches:

Modified food starch is usually derived from corn or potato, but theoretically may be made from wheat. In the United States, the single word "starch" on a food ingredient label refers to starch made from corn. Starches derived from other grains must be identified on the label.

***Oats:**

Recommendations on Oat Consumption
Celiac Center, Beth Israel Deaconess Medical Center
Boston, MA
December 2005

The role of oats in celiac disease and the gluten-free diet remains controversial. Based on numerous studies conducted with adults and children in Europe and the United States, it appears that the majority of individuals with CD can tolerate oats ⁽¹⁻⁴⁾.

Oats, however, are often grown or processed with other cereals leading to cross-contamination with wheat, barley or rye. Currently, there are also very few known producers of pure gluten-free oats in North America. The American Dietetic Association recommends that those with newly diagnosed celiac disease avoid oats, and that the addition of oats be discussed with the individual's clinician only after the intestine has healed as documented by normalization of blood work and small intestinal biopsy appearance.

Although oats appear to be safe in the vast majority of individuals with celiac disease, there is evidence that, in some individuals, the protein in oats (avenins) can trigger an immune response similar to gluten⁽⁵⁻⁶⁾. In addition, some people may need to avoid oats due to sensitivities or allergies, similar to other foods, such as nuts or shellfish. For these reasons, close monitoring by a healthcare professional experienced in celiac disease is recommended during introduction of oats into a gluten free diet.

Currently, avoiding consumption of oats is recommended by the clinicians of the Celiac Center at BIDMC for newly diagnosed patients until it can be clearly demonstrated that celiac disease is well-controlled. Good control is demonstrated by the complete resolution of symptoms (diarrhea, other symptoms of malabsorption or DH skin rash) and a normal tissue transglutaminase level (IgA tTG). At that point, under physician guidance, the gradual addition of pure oats up to 50 grams/day (a little more than 1/2 cup rolled oats or 1/4 cup steel oats) from a dedicated gluten-free facility may be attempted. Follow-up with the patient's gastroenterologist should occur within three to six months after the addition of oats into the gluten-free diet.

We remain optimistic that uncontaminated sources of oats will become more widely available and affordable in this country and can be a safe and useful addition to the gluten-free diet.

References

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2. Janatuinen EK, Pikkarainen PH, Kempainen TA, et al. A comparison of diets with and without oats in adults with celiac disease. *N Engl J Med.* 1995;333:1033-1037.
3. Hogberg L, Laurin P, Flath-Magnusson K, et al. Oats to children with newly diagnosed coeliac disease: a randomized double blind study. *Gut* 2004; 53:649-654.
4. Janatuinen EK, Pikkarainen PH, Kempainen TA, et al. Lack of cellular and humoral immunological responses to oats in adults with coeliac disease. *Gut* 2000;46:327-331.
5. Peraaho M, Kaukinen K, Mustalahti K, Vuolteenaho N, Maki M, Laippala P, et al. Effect of an oats-containing gluten-free diet on symptoms and quality of life in coeliac disease. A randomized study. *Scand J Gastroenterol.* 2004, Jan;39(1):27-31.
6. Arentz-Hansen H, Fleckenstein B, Molberg O, Scott H, Koning F, Jung G, Roepstorff P, Lundin KE, Sollid LM. The molecular basis for oat intolerance in patients with celiac disease. *PLoS Med.* 2004 Oct;1(1):e1. Epub 2004. Oct 19.

New Food Labeling Laws:

For information on how the new food labeling laws (Food Allergen Labeling and Consumer Protection Act of 2004) affect you, please speak with your dietitian, as well as read information on-line.

1. www.americanceeliac.org. (American Celiac Disease Alliance)
2. <http://www.cfsan.fda.gov/~dms/alrgact.html>
3. <http://www.cfsan.fda.gov/~dms/alrgqa.html>

For on-line information about the gluten-free diet and other resources for the patient with celiac disease, go to www.celiac.com and follow the links. As always, use caution when taking information from the internet and confirm all sources of information.

The gluten-free diet should only be followed under the advice and supervision of a physician. This list does not constitute medical advice nor is it a substitution for a nutrition consult with a dietitian trained in celiac disease and the gluten-free diet.

References:

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3. Raymond, N., Dennis M. Following a Gluten-Free Diet. Beth Israel Deaconess Medical Center Diet Handout. Boston, MA. 2001.
4. "Gluten Free Living: The Resource for People with Gluten Sensitivity," Ann Whelan, P.O. Box 105, Hastings-on-Hudson, NY 01706.

This version of the gluten free diet is adapted from the original compiled by Nixie Raymond, MS, RD, LDN and Melinda Dennis, MS, RD, LDN, Nutrition Advisors to the Healthy Villi, Greater Boston Celiac/DH Support Group, Chapter #67 of CSA/USA, Inc.

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