



## Following a Gluten-Free Diet

Your doctor has prescribed a gluten-free diet for you. For any patient diagnosed with celiac disease or dermatitis herpetiformis (DH), the gluten-free diet is essential to prevent damage to the small intestine that is caused by gluten present in wheat, rye, and barley. If you do NOT have celiac disease or DH, but have experienced bloating, flatulence (gas), diarrhea, constipation, headaches, weight loss or other symptoms caused by a sensitivity to gluten, the gluten-free diet should help to decrease these symptoms. If this is the case, please speak to your doctor.

The diet requires the elimination of all foods containing wheat, rye, barley, and oats (\*see end for more information on oats), and their derivatives. When using this diet guide, remember to also take into consideration any further dietary restrictions (such as lactose intolerance, food allergies) or other medical conditions you may have.

To avoid accidental gluten ingestion, you must always carefully check food labels for possible gluten-containing ingredients. If, in the rare case an ingredient list is not provided (single-serving pre-packaged food), 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-containing environment).

When eating out, it is essential to ask questions about the food you order. Ingredients made from gluten must be avoided, even if used in small amounts. In addition to ingredient questions, you must also inquire about possible cross-contamination, which can occur quite easily in a restaurant kitchen. For example, French fries cooked in the same deep fryer as breaded onion rings will be contaminated with bread crumbs. 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. Department of Agriculture's My Plate ([www.choosemyplate.gov](http://www.choosemyplate.gov)) 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 Academy of Nutrition and Dietetics by calling 1-800-877-1600, or at the website and checking their dietitian referral line at [www.eatright.org](http://www.eatright.org). Choose "Find a Registered Dietitian" and if you select "Expertise Area" you can find a dietitian with experience in gluten related disorders.

# The Gluten-Free Diet

## GRAIN AND FLOUR-BASED PRODUCTS

Allowed	Avoid	Question
<p><b>When choosing among the grains and grain-based products listed below, it is recommended to select those that are labeled gluten-free.</b></p> <p>Grains/Starches: corn (maize), corn bran, corn starch, corn meal, corn flour, corn germ, corn gluten, rice, rice bran, rice flour, glutinous white rice, rice polish, soy (soya), arrowroot, pure wild rice, sago, potato starch, potato flour, sweet potato flour, legume flours (garbanzo, chickpea, garfava, lentil, pea, whole bean), nut flours (almond, chestnut, hazelnut), flax seed, flax seed meal, , sorghum, tapioca (also called cassava or manioc), buckwheat, millet, teff, amaranth, quinoa</p> <p><b>Grain products:</b> Products made with gluten-free grains and labeled gluten-free: bread, muffins, pizza crust, cakes, cookies, rolls, bread crumbs, taco shells, tortillas, croutons</p> <p>Panko (Japanese breading) made from gluten-free flour</p> <p>Plain mochi</p>	<p>Grains: wheat, rye, triticale, barley, wheat flour, wheat germ, wheat bran, graham flour, gluten flour, durum flour, bulgur, farina, semolina (couscous), spelt, kamut, einkorn, emmer, farro, orzo, atta</p> <p>Wheat starch (except in labeled gluten-free foods with FDA statement – see Wheat starch note at end)</p> <p>Grain products: All baked products, crackers, croutons, cakes, cookies made with any of the gluten-containing grains listed above</p> <p>Wheat flour tacos, wheat tortillas</p> <p>Regular pizza crust</p> <p>Matzo/matzo meal</p> <p>Panko (Japanese breading) made from wheat flour</p> <p>Oats (in any form) unless uncontaminated and labeled gluten-free oats. (See Oats Statement at end.)</p> <p>Items stored in bulk bins (See note at end.)</p>	<p>Packaged rice mixes</p> <p>Rice pilaf - may contain Italian vermicelli (a wheat based pasta) and other gluten-based ingredients</p> <p>Buckwheat flour (pure buckwheat is gluten-free but buckwheat flour may be a blend of buckwheat and wheat)</p> <p>Flavored mochi</p> <p>Foods labeled gluten-free which contain wheat starch (See Wheat Starch Notes at end.)</p>

## CEREALS – HOT

Allowed	Avoid	Question
<p><b>When choosing among the hot cereals below, select those that are labeled gluten-free.</b></p> <p>Cream of rice, soy cereal, hominy, hominy grits, kasha (buckwheat groats), millet, cornmeal, quinoa flakes, soy flakes, soy grits, amaranth flakes, rice and corn based cereals without malt flavoring, malt extract or other gluten-containing ingredients</p>	<p>Cereals made from wheat, rye, triticale, barley, graham, wheat germ, bulgur, kashi, wheat bran, spelt, or from other grains/flours to avoid (listed above)</p> <p>Cereals containing malt extract and malt flavoring</p> <p>Oats, oat bran, oatmeal (oats in any form unless uncontaminated and labeled gluten-free oats) See Oats Statement at end.</p> <p>Items stored in bulk bins (see note at end)</p>	<p>Rice and corn based cereals - may contain barley, malt flavoring or malt extract</p>

## CEREALS – COLD

Allowed	Avoid	Question
<p><b>When choosing among the cold cereals below, select those that are labeled gluten-free.</b></p> <p>Some puffed corn, puffed rice, puffed millet, puffed amaranth, puffed buckwheat cereals</p> <p>Some rice flake cereals and some corn flake cereals</p>	<p>Cereals made from wheat, rye, triticale, barley, graham, wheat germ, bulgur, kashi, wheat bran, spelt, or from other grains/flours to avoid (listed above)</p> <p>Cereals containing malt extract and malt flavoring</p> <p>Infant mixed grain cereals containing wheat, barley, or rye</p> <p>Cereals made with oats (unless uncontaminated and labeled gluten-free oats). See Oats Statement at end.</p> <p>Items stored in bulk bins (See note at end.)</p>	<p>Rice, corn, millet, amaranth and buckwheat, etc based cereals – may contain barley or malt flavoring</p>

## CRACKERS AND SNACK FOODS

Allowed	Avoid	Question
<p><b>When choosing among nuts, seeds, crackers and snack foods below, it is recommended to select those that are labeled gluten-free.</b></p> <p>Plain corn chips                      Plain potato chips                      Plain popcorn                      Plain rice cakes                      Plain popped corn cakes                      Plain popped sorghum                      Plain nuts                      Plain seeds</p>	<p>Seasoned or flavored snack foods (chips, nuts, seeds, etc) made with gluten-containing ingredients</p> <p>Nuts and seeds with wheat starch coating unless labeled gluten-free with FDA statement (see Wheat starch note at end)</p> <p>Wheat or rye-based crackers</p> <p>Crackers made with oats (unless specially produced to be pure and uncontaminated and labeled gluten-free oats). See Oats Statement at end.</p> <p>Items stored in bulk bins (see note at end)</p>	<p>Seasoned or flavored potato chips, tortilla chips, etc)</p> <p>Rice crackers - may contain soy sauce</p> <p>Flavored and multi-grain rice and corn cakes and wafers</p> <p>Dry roasted, coated, flavored/seasoned nuts and seeds – may contain wheat starch or other gluten-containing ingredients</p>

## PASTA

Allowed	Avoid	Question
<p><b>When choosing among the pasta products below, select those that are labeled gluten-free.</b></p> <p>Gluten-free macaroni, spaghetti, pasta, and noodles made from rice, corn, soy, lentil, quinoa, dried beans, potato, pea or other gluten-free flours</p>	<p>All regular pastas made from wheat, wheat starch, semolina, spelt and other grains/flours not allowed (listed above)</p> <p>Udon noodles</p> <p>Items stored in bulk bins (see Notes at end)</p>	<p>Buckwheat pasta (soba) frequently contains wheat flour</p>

## MEAT AND OTHER PROTEIN FOODS

Allowed	Avoid	Question
<p>Fresh, plain, frozen, and smoked meat (beef, pork), poultry, fish, seafood without added, unidentified natural flavorings or seasonings</p> <p>Veggie burgers and meat substitutes that are labeled gluten-free and do not contain any questionable ingredients</p> <p>Processed meat or poultry products (such as deli or luncheon meats) labeled gluten-free or free of gluten-containing ingredients</p>	<p>Canned fish containing hydrolyzed wheat protein</p> <p>Poultry or meat basted with or containing hydrolyzed wheat protein</p> <p>Most veggie burgers and many vegetarian meat substitutes – most contain gluten in the form of soy sauce made from wheat, textured wheat protein/seitan, wheat gluten, bulgur wheat, wheat flour or oats</p> <p>Roast beef or prime rib with au jus (many beef sauces/gravies contain hydrolyzed wheat or wheat flour)</p> <p>Processed, prepared, or preserved meat and meat products (luncheon meats, hot dogs, sausages, etc), processed poultry products (seasoned chicken breast, etc), and processed mixed food products [that generally contain more than 3% raw meat or 2% or more cooked meat or poultry meat] that contain modified food starch, dextrin and/or starch derived from gluten or other gluten-containing ingredients are present</p>	<p>Any meat, poultry or fish product containing unidentified natural flavoring or seasonings (beef, fish or chicken burgers may contain fillers such as wheat flour, wheat starch, bread crumbs)</p> <p>Seasonings may include ingredients derived from wheat, barley, or rye (See Notes at end)</p> <p>Ham (ready to cook) – glaze may contain wheat protein, wheat flour or wheat starch</p> <p>Poultry, fish, or meat marinades – may be made with soy sauce, malt vinegar or other gluten-containing ingredients</p> <p>Surimi (imitation crab/seafood)</p> <p>Imitation bacon</p> <p>Processed, prepared, or preserved meat and meat products (luncheon meats, hot dogs, sausages, etc), processed poultry products (seasoned chicken breast, etc), and processed mixed food products [that generally contain more than 3% raw meat or 2% or more cooked meat or poultry meat] that contain modified food starch, dextrin and/or starch UNLESS labeled gluten-free or it is confirmed that the modified food starch, dextrin, and/or starch are not derived from gluten and there are no other gluten-containing ingredients present</p>
<b>EGGS/EGG PRODUCTS</b>		
Allowed	Avoid	Question
<p>Fresh eggs (in the shell)</p> <p>Most cholesterol-reduced liquid egg products</p>	<p>Processed egg products (dried, frozen, or liquid eggs with or without added ingredients) that contain modified food starch,</p>	<p>Processed egg products (dried, frozen, or liquid eggs with or without added ingredients) UNLESS labeled gluten-free or it</p>

	dextrin, and/or starch derived from gluten	is confirmed that the modified food starch, dextrin, and/or starch are not derived from gluten and there are no other gluten-containing ingredients
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**MILK PRODUCTS AND DAIRY ALTERNATIVES**

<b>Allowed</b>	<b>Avoid</b>	<b>Question</b>
Milk: whole, low fat, skim, plain powdered, evaporated or condensed Soy, hemp, nut (almond), coconut, rice and sunflower seed based milk substitutes labeled gluten-free Buttermilk Cream, half & half, non-dairy creamer Regular sour cream Plain yogurt	Malted milk Oat milk (*see Oats Statement at end) Yogurt with gluten-based mix-ins (cookie crumbs, granola, etc.)	Soy, hemp, nut (almond), coconut, and rice based milk substitutes - may contain barley flavoring and/or barley-derived enzymes (see notes at end) Chocolate drinks and mixes- may contain barley malt or other gluten-containing ingredients Flavored yogurt may contain gluten-containing ingredients

**CHEESE**

<b>Allowed</b>	<b>Avoid</b>	<b>Question</b>
Aged cheeses (i.e. Cheddar, Swiss, Edam, Parmesan) Soft cheeses, (i.e. cottage cheese, cream cheese) Most processed cheese	Roquefort cheese or blue cheese (grown on bread mold) if wheat, barley, rye, oats, or malt is listed on the label or the company states their product is not gluten-free (see Notes at end.)	Processed cheese foods - some may be thickened or stabilized with gluten-containing ingredients Pre-packaged shredded cheese- may contain gluten-containing anti-caking agents (such as wheat flour) Cheese sauces and cheese spreads - may be thickened with wheat starch

## OTHER PROTEIN FOODS

Allowed	Avoid	Question
<p>It is recommended to select nuts, seeds, and nut and seed butters that are labeled gluten-free.</p> <p>(Lentil, chickpea (garbanzo), dried peas, soybean, garfava (garbanzo and fava), whole dried beans [navy, pinto, black, etc.]</p> <p>Most peanut and nut butters</p> <p>Plain tofu</p> <p>Plain soy miso, rice miso</p> <p>Plain nuts (almond, walnut, chestnut, hazelnut, etc)</p> <p>Plain peanuts</p> <p>Plain seeds (sesame, sunflower, chia, pumpkin, hemp, flax)</p> <p>Tempeh (made without gluten-containing ingredients)</p>	<p>Items stored in bulk bins (see note at end)</p> <p>Barley miso</p>	<p>Baked beans - may be thickened with wheat flour</p> <p>Reduced fat and flavored peanut and nut butters- check for gluten-containing ingredients</p> <p>Flavored/seasoned tofu - may be made with soy sauce or other gluten-based ingredients</p> <p>Miso (may be barley based)</p>

## FRUITS

Allowed	Avoid	Question
<p>All plain fresh, frozen and canned fruits</p> <p>Pure fruit juices</p>		<p>Canned fruit pie filling-may contain gluten-containing ingredients</p> <p>Dried fruit (esp. dates)- may be dusted with flour or starch to prevent sticking</p> <p>Bulk bin dried fruit-may be contaminated with items from other bins (see note on Bulk Bins at end)</p>

<b>VEGETABLES</b>		
<b>Allowed</b>	<b>Avoid</b>	<b>Question</b>
<p>All plain fresh, frozen, dried and canned vegetables</p> <p>Pure vegetable juices</p> <p>Plain tomato sauce</p> <p>Plain tomato paste</p> <p>Spaghetti sauce made with allowed ingredients</p> <p>Fresh potatoes</p> <p>Gluten-free French fries cooked in dedicated fryer</p>	<p>Breaded or batter-dipped vegetables, tempura, vegetables with sauces containing wheat-based soy sauce, teriyaki sauce, or unknown ingredients</p> <p>Frozen potato products made with wheat starch (unless labeled gluten-free with FDA statement - see Wheat starch note at end ) or flour</p>	<p>French fries-"seasoned" or flavored fries-often contain wheat starch or wheat flour</p> <p>Restaurant/fast food French fries-often cooked in oil used to cook gluten containing foods (i.e. onion rings, breaded chicken fingers)</p> <p>Scalloped potatoes-are usually made with flour</p> <p>Potato mixes- may contain gluten-based ingredients</p>
<b>SOUPS</b>		
<b>Allowed</b>	<b>Avoid</b>	<b>Question</b>
<p>It is recommended to select soups that are labeled gluten-free.</p> <p>Homemade soups using gluten-free ingredients</p> <p>Gluten-free bouillon cubes/broth</p> <p>Canned, powdered or boxed soups labeled gluten-free</p>	<p>Soups with unknown ingredients, soups thickened with flour, containing hydrolyzed wheat protein, wheat-based soy sauce, or unidentified natural flavoring (see Notes at end); soups containing noodles, barley, soups made with roux (i.e. gumbo, chowder)</p>	<p>Canned soup, soup mixes, bouillon cubes/powders and commercial soup bases -frequently contain hydrolyzed wheat protein or other gluten based flavorings</p> <p>Restaurant soups-most contain gluten-containing ingredients/flavorings</p>
<b>FATS</b>		
<b>Allowed</b>	<b>Avoid</b>	<b>Question</b>
<p>Butter, margarine, shortening, all vegetable oils (olive, sunflower, safflower, canola, grapeseed, etc.) except wheat germ oil</p>	<p>Wheat germ oil, nonstick baking spray containing flour, fats/oils that have been used to cook gluten containing foods</p> <p>Packaged suet</p>	
<b>DESSERTS</b>		
<b>Allowed</b>	<b>Avoid</b>	<b>Question</b>

<p>Most ice cream and frozen yogurt, sherbet, sorbet, popsicles, gelatin, Italian ice, whipped cream</p> <p>Cookies, cakes, pie crusts, meringues, macaroons made with allowed ingredients and labeled gluten-free</p> <p>Gluten-free ice cream cones</p>	<p>All desserts made with wheat or other gluten containing flours, including cakes, cookies, pies, ice cream cones, waffles, etc.</p> <p>Ice cream or frozen yogurt containing gluten-based ingredients and/or mix-ins made from gluten-based ingredients (such as cookie crumbs)</p>	<p>Pudding, custards, flan, lemon curd (homemade or from mix)-may be made with flour</p> <p>"Flourless" cakes- may be baked in pans dusted with flour</p>
<b>SWEETS</b>		
<b>Allowed</b>	<b>Avoid</b>	<b>Question</b>
<p>Pure chocolate, honey, maple syrup, jelly, jam, marmalade, molasses, sugar (white and brown), coconut, fructose, powdered/confectioner's sugar (if corn starch based), artificial sweeteners, pure cocoa powder, pure carob chips and pure carob powder, marshmallows, most chocolate syrups, some rice syrups</p> <p>Choose candy labeled gluten-free</p> <p>Licorice candy labeled gluten-free</p>	<p>Candies, candy bars and chewing gum containing malt flavoring or other gluten-containing ingredients</p> <p>Licorice candy unless labeled gluten-free</p> <p>Items stored in bulk bins (see Notes at end)</p>	<p>Chocolate with crisped rice- may contain malt flavor</p> <p>Chocolate bars may contain barley malt extract/flavoring, wheat starch or wheat flour</p> <p>Cake frosting/icing – check for gluten-containing ingredients</p> <p>Rice syrup-may contain enzymes from barley (see Notes on barley-derived enzymes)</p> <p>Butterscotch morsels-may contain barley flavoring</p> <p>Confectioner's sugar- may contain wheat as an ingredient</p>
<b>CONDIMENTS</b>		
<b>Allowed</b>	<b>Avoid</b>	<b>Question</b>
<p>Most relish, ketchup, prepared mustards, olives, salsa</p> <p>Many salad dressings</p> <p>Mayonnaise</p> <p>Most vinegars (except malt vinegar)</p> <p>All pure spices and herbs, pure black pepper, mustard flour (ground mustard seeds), tahini</p> <p>Soy sauce and marinades made without wheat or gluten-containing ingredients (labeled gluten-free)</p> <p>Salt</p> <p>MSG (monosodium glutamate)</p>	<p>Soy sauce made from wheat</p> <p>Teriyaki sauce, Tamari or shoyu made from wheat</p> <p>Malt vinegar</p> <p>Sauces, marinades or gravies made with wheat flour, wheat starch (unless labeled gluten-free with FDA statement -see Wheat starch note at end ) or other unknown ingredients</p> <p>Salad dressings containing wheat-based soy sauce, malt vinegar or other gluten-containing ingredients</p> <p>Salsa containing malt vinegar or other gluten-containing ingredients</p>	<p>Spice blends or seasoning mixes (i.e. taco seasoning mix,)- may contain wheat starch or hydrolyzed wheat protein</p> <p>Steak sauce, Worcestershire sauce, BBQ sauce and marinades (poultry, fish or meat)-often contain malt vinegar, wheat-based soy sauce or other gluten-containing ingredients</p> <p>Smoked flavorings (see last page)</p> <p>Salad dressing-may contain wheat-based soy sauce or gluten-based ingredients</p> <p>Prepared mustards-some made with wheat flour</p>

<b>MISCELLANEOUS</b>		
<b>Allowed</b>	<b>Avoid</b>	<b>Question</b>
<p>Sauces and gravies thickened without flour and made without gluten-based flavorings/labeled gluten-free</p> <p>Pure or artificial vanilla extract</p> <p>Baking soda, yeast (except Brewer's yeast), most baking powder, cream of tartar, corn starch</p> <p>Corn gluten, corn malt</p> <p>Gluten-free Communion wafers (See Communion Wafers Note at end.)</p> <p>Gums: xanthan, guar, carrageenan, acacia, carob bean, cellulose, Arabic, locust bean, tragacanth,</p>	<p>Barley malt, barley flavoring, malt flavoring or malt extract</p> <p>Regular Communion wafers</p> <p>Brewer's yeast</p> <p>Autolyzed yeast and autolyzed yeast extract unless the source is identified as gluten-free or the product is labeled gluten-free</p>	<p>Restaurant sauces, gravies-most thickened with flour or use flavoring ingredients containing gluten</p>
<b>BEVERAGES</b>		
<b>Allowed</b>	<b>Avoid</b>	<b>Question</b>
<p>Pure tea, most herbal tea, unflavored coffee (instant or ground), pure cocoa powder, soft drinks, cider (without gluten-containing ingredients)</p> <p>Most distilled alcoholic beverages (i.e. rum, whiskey, vodka) without added gluten-containing flavorings</p> <p>Wine</p> <p>Water</p> <p>Most hot chocolate mixes, most liqueur, some soy beverages</p> <p>Beer labeled gluten-free and made from gluten-free grains (such as sorghum)</p>	<p>Malted beverages, beer, ale, lager</p> <p>Herb tea containing roasted barley, barley malt</p> <p>Postum™ or other grain-based coffee substitutes</p> <p>Beer made with gluten containing grains –“processed or treated or crafted to remove gluten.” Note: The gluten content of these products cannot be verified.</p>	<p>Flavored or herb tea-may contain barley</p> <p>Flavored coffee – may contain gluten-containing ingredients</p> <p>Chocolate drinks and mixes, coffee flavored mixes- may contain barley malt or other gluten-based ingredients</p> <p>Alcoholic beverages containing unknown flavorings added AFTER distillation</p> <p>Soy beverages may contain barley flavoring – may be listed as natural flavoring</p>

## **Important Notes:**

**Barley-derived enzymes:** It is unclear whether enzymes derived from barley contain enough residual protein to cause a product to contain 20ppm or more gluten; however, this seems unlikely.<sup>1</sup> Choose to avoid or include this ingredient at your own discretion.

**Bulk bins:** It is recommended to avoid purchasing items from bulk bins since there is a great risk of cross contamination with other gluten-containing ingredients stored next to or above the gluten-free ones. Scoops can also be easily contaminated by traveling from one bin to another. It is recommended to purchase gluten-free items that are packaged by the manufacturer and labeled gluten-free.

**Communion Wafers (as of the revision of this diet guide; May 2016):** The Benedictine Sisters of Perpetual Adoration produce and supply a wheat containing low gluten communion wafer that is approved by the Catholic Church and contains <100ppm gluten.<sup>2</sup> Parish Crossroads and GlutenFreeHost.com Inc. supply wheat containing gluten-free communion wafers testing < 20 ppm gluten. All three meet Canon Law for approval in the Catholic Church and are allowed on the gluten-free diet per Dr. Alessio Fasano, Director of the Center for Celiac Research at Massachusetts General Hospital for Children. If you choose to use the low gluten wafers that test <100 ppm gluten discuss it with your doctor and notify your health care team.

**Natural Flavorings:** Gluten-containing grains are not commonly used as natural flavorings. For FDA-regulated foods, if a natural flavoring contains protein derived from wheat, the word wheat must be stated on the food label. It cannot be hidden under the listing "natural and/or artificial flavoring." Instead, it will be listed as "hydrolyzed wheat protein."

Natural flavoring could be derived from barley. If it is, it will most likely be listed as malt flavoring on the food label. Since the vast majority of products with natural flavoring DOES 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 of such ingredients.

Natural flavoring could be derived from rye, but products with rye flavoring are likely to be bread products that a person with celiac disease would not eat. For USDA-regulated foods, if a natural flavor contains wheat, barley, or rye proteins, this ingredient will be listed on the food label by its common or usual name (e.g., malt).

**Bottom line: If you don't see the word "wheat" under the Contains statement or the words "barley, rye or malt" in the ingredients list, the natural flavoring is probably free of gluten protein.**<sup>1</sup>

Oats  
Celiac Center, Beth Israel Deaconess Medical Center Statement on Oats  
May 2016

Oats have always been a controversial and very complex topic in the gluten-free community. They were originally discouraged from use in the gluten-free diet due to mistaken concerns that they were toxic themselves; concerns over issues with contamination came later. Until recently, gluten-free oats that have

been grown and processed under a purity protocol (dedicated gluten free oats, field, truck, facility and processing) and tested using best current practices have been the only oats labeled gluten-free and recommended for the gluten-free community.

News of the relatively new mechanically/optically sorted oats methodology and its use by General Mills (Cheerios) and Quaker Oats has been widespread since last year. In recent months we have come to learn that certain gluten-free grain millers have been mechanically sorting oats and selling them to manufacturers (both large and small companies) of gluten-free oats and oat based products since 2012. We have also learned that it is nearly impossible to tell by the food label whether the oats used in a product are grown under a gluten-free purity protocol or are mechanically sorted (per Gluten Watchdog, referenced in the paragraph below) or are a combination of both types.

Although this method of mechanically separating wheat and barley from regular oats is promising, there can be a risk of cross contamination. At this time, it is not clear that the testing measures are sufficiently rigorous to consistently and sufficiently identify gluten contamination in all cases. In addition, different companies are using different testing methods, some more stringent than others. For this reason, GlutenFreeWatchdog.org, an independent program which performs independent testing on gluten-free foods and provides online results, recommends that each manufacturer using this methodology must be assessed on an individual basis.

We, as clinicians, feel more comfortable with the gluten-free oats grown under the purity protocol process at this time. However, we recognize that some companies may be doing a good job at consistently providing mechanically sorted gluten-free oats. We encourage our patients to look into how the gluten-free oats you may choose to purchase are grown, processed, and tested to confirm that they are indeed gluten-free. Tricia Thompson of GlutenFreeWatchdog.org has written extensively on this topic. We encourage you to read the information on Glutenfreewatchdog.org about Cheerios, Quakers, and the companies that are using mechanically sorted versus purity protocol oats so that you can determine your own comfort level. Keep in mind that some companies are using a combination of both purity protocol oats and mechanically sorted oats. Talk to your celiac health care team to help you make an informed decision about what choices may be best for you.

We believe best practices methodology, rigorous and precise testing, and transparency of gluten-free testing data are necessary to ensure the safety of gluten-free oats. We are optimistic that the millers and companies using the mechanically sorted oats will come up with a solution to offer consistently safe oats and oat-based products that are proven to be gluten-free, be transparent about their process, and provide evidence of consistent favorable results. We also acknowledge that cross contamination is a concern regardless of the type of oat that is eaten – purity protocol or mechanically sorted.

Please note: the decision to include gluten free oats in a patient's gluten-free diet should be discussed first with his/her doctor. The anti-TTG antibody should be monitored before and 3-6 months after introducing any gluten-free oat containing product to monitor for celiac disease re-activation. Oats and products containing oats should only be eaten if they are labeled gluten-free.

If you have decided to consume any type of gluten-free oats, please consider the following:

- Gluten-free oats can add diversity, fiber, and many nutritional benefits to the gluten-free diet and, overall, we find them well tolerated by our patients. However, although gluten-free 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. Some people may need to

avoid oats due to a food allergy to oats. Others may experience symptoms due to an intolerance to the increase in fiber or due to food intolerances (e.g. Fermentable Oligo-saccharides, Disaccharides, Mono-saccharides and Polyols in oat products). For these reasons, close monitoring by a healthcare professional experienced in celiac disease/NCGS is recommended during introduction of oats into a gluten-free diet.

- Currently, we recommend that newly diagnosed patients avoid consumption of oats until it can be clearly demonstrated that their 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 uncontaminated labeled gluten-free oats up to 50 grams/day (a little more than ½ cup dry rolled oats or ¼ cup steel cut oats\*) may be attempted. Patients are advised to drink adequate water if they are adding gluten-free oats to their diet since they are high in fiber.
- Follow-up with the patient's gastroenterologist should occur within three to six months after the addition of oats into the gluten-free diet.
- Patients are advised to diligently maintain routine follow-ups with their medical team.
- Patients with persistent symptoms and/or an elevated anti-TTG antibody level should avoid all gluten-free oats and oat products until these symptoms and/or level have substantially improved and they have followed up with their medical team.
- Patients who develop new symptoms that seem to correlate with gluten-free oat ingestion should follow up with a physician who is expert in the monitoring of celiac disease/NCGS to determine whether gluten exposure or an alternative diagnosis can account for these symptoms.
- The Food and Drug Administration (FDA) advises consumers with complaints related to potential gluten contamination from a product to contact MedWatch, the FDA's Adverse Event Reporting System by phone: 800-332-1088 (choose option #4 to speak to a representative) or online: <https://www.accessdata.fda.gov/scripts/medwatch/index.cfm?action=reporting.home>. Keep the product's box or package to report the batch/lot number to the representative.

Even before the Cheerios recall in the fall of 2015, we recognized that some patients were having issues with oats and that there was a need for better data on oat contamination and the safety of oats in celiac disease in the United States. Nearly all clinical trials done to date on this topic are from Europe.

Nothing is risk free. Cross contamination is always a concern. We hope the gluten-free community will work together to continue to understand and improve the safety of the gluten-free food supply. We are in favor of methodologies and rigorous testing measures that will ensure the final product consistently guarantees less than 20ppm gluten. The safety of oats in the gluten-free diet is a constantly evolving, multi-faceted, and complex issue and we look forward to reviewing new data as it arises.

The information on [Glutenfreewatchdog.com](http://Glutenfreewatchdog.com) can help patients stay current on the oats situation in the United States.

<https://www.glutenfreewatchdog.org/news/the-gluten-free-oats-situation-why-it-is-such-a-sticky-wicket/>

For a list of companies following the purity protocol as well as comments from several companies using mechanically sorted oats, see: <https://www.glutenfreewatchdog.org/news/oats-produced-under-a-gluten-free-purity-protocol-listing-of-suppliers-and-manufacturers/>

Update as of May 18, 2016: <https://www.glutenfreewatchdog.org/news/gluten-contamination-levels-of-oat-products-labeled-gluten-free-summary-test-results-from-gluten-free-watchdog/>

\*Reference: Dennis M, Kupper CR; Lee AR, Sharrett MK, Thompson T. Medical Nutrition Therapy Encounter Process for Celiac Disease. Celiac Disease Toolkit. Chicago, IL: American Dietetic Association, 2011.

**Roquefort/Blue cheese:** Blue cheese or Roquefort cheese is made with skim milk, cream and spores of *Penicillium roqueforti*. Spores of *P. roqueforti* may be harvested from mold grown on mixed substrates: some may be gluten-free, while others may contain malt extract. Health Canada has investigated the status of Roquefort and Blue cheese and concluded through testing that these cheeses are safe on the gluten-free diet.<sup>3</sup> See the test results here: <http://www.glutenfreediet.ca/img/bluecheese.pdf>. Regardless of the medium used to grow the spores of *Penicillium roquefortii*, blue cheese most likely contains less than 20ppm gluten.<sup>1</sup>

Per research by Tricia Thompson, MS, RD, blue cheese made with bread-derived mold will contain extremely small amounts of gluten (but very unlikely to contain 20ppm or more gluten). It is, therefore, safe for persons with celiac disease to eat UNLESS the label contains the words wheat, barley, rye, oats, or malt or the company states their product is not gluten free.<sup>4</sup> The decision, therefore, to consume or avoid these products is up to the individual.<sup>4</sup>

**Seasonings:** Seasonings may include ingredients derived from wheat, barley, or rye. Unless wheat, barley, rye or malt is included in the sub-ingredient list for seasoning, it is probably free of gluten protein.<sup>1</sup>

**Smoke flavoring:** Some dry smoke flavoring may use malted barley flour as a carrier for the smoke. It is unknown how often this occurs or how much gluten smoke flavoring may contain. If there are concerns about this ingredient, the manufacturer should be contacted. If this ingredient is used in an FDA regulated food, component ingredients (called “subingredients” of an ingredient) may or may not be included. Check with the manufacturer to determine if malted barley flour was used in the processing.”<sup>1</sup> If this ingredient is in a meat or poultry product (regulated by the USDA), any barley ingredient used in the smoke flavoring will be listed in the ingredient’s list by its common or usual name [i.e. malt].”<sup>1</sup>

### **Wheat starch**

We at the Celiac Center recommend caution when choosing to eat a product containing wheat starch. The FDA allows the ingredient “wheat starch” in foods labeled gluten free. Wheat starch is considered to be “an ingredient processed to remove gluten.” Foods labeled gluten-free containing wheat starch must contain less than 20 ppm gluten.<sup>5</sup> To avoid consumer confusion, foods labeled gluten-free that include the word “wheat” in the ingredients list and/or Contains statement as required by FALCPA must also include the phrase, “The wheat has been processed to allow this food to meet the Food and Drug Administration requirements for gluten-free foods.” Of note, it is difficult to completely separate the starch portion of wheat from the protein portion (gluten). Wheat starch may contain varying levels of wheat protein depending upon the level of purity achieved by the manufacturer.

## **FDA and USDA Regulations: General References on the Food Labeling Laws:**

Food and Drug Administration. Food Allergen Labeling and Consumer Protection Act of 2004. Available at <http://www.cfsan.fda.gov/~dms/alrgact.html>.

US Food and Drug Administration. Federal Register. Food Labeling; Gluten-Free Labeling of Foods. <https://www.federalregister.gov/articles/2013/08/05/2013-18813/food-labeling-gluten-free-labeling-of-foods>.

United States Department of Agriculture. A Guide to Federal Food Labeling Requirements for Meat and Poultry Products. Available at [http://www.fsis.usda.gov/pdf/labeling\\_requirements\\_guide.pdf](http://www.fsis.usda.gov/pdf/labeling_requirements_guide.pdf).

Thompson T. Foods Labeled Gluten Free Must Now Be in Compliance with the FDA Gluten Free Labeling Rule. <https://www.glutenfree watchdog.org/news/foods-labeled-gluten-free-must-now-be-in-compliance-with-the-fda-gluten-free-labeling-rule/>.

### Specific References for this Document:

1. Thompson T. ADA Pocket Guide to Gluten-Free Strategies for Clients with Multiple Diet Restrictions. American Dietetic Association, 2011.
2. Falini, N.P. “Celiac Disease and Religious Practices” - Dennis, M., Leffler, D, eds. In Real Life with Celiac Disease: Troubleshooting and Thriving Gluten Free. AGA Press, Bethesda, MD. 2010.
3. Blue cheese in the gluten-free diet – A research update. March 2009. Canadian Celiac Association. <http://www.glutenfreediet.ca/img/bluecheese.pdf>.
4. Blue Cheese. <http://www.glutenfreedietitian.com/newsletter/blue-cheese/>.
5. US Food and Drug Administration. Federal Register. Food Labeling; Gluten-Free Labeling of Foods. <https://www.federalregister.gov/articles/2013/08/05/2013-18813/food-labeling-gluten-free-labeling-of-foods>.

Disclaimer: The gluten-free diet should only be followed under the advice and supervision of a physician. This document 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.

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 New England Celiac Organization (formerly Healthy Villi, Greater Boston Celiac/DH Support Group).

2012 version edited by Shelley Case, RD

Acknowledgements: Case, Shelley, Gluten-Free Diet by Food Groups in Gluten-Free Diet: A Comprehensive Resource Guide, Case Consulting, 2010.

2015 version edited by Pam Cureton, RD

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