

UW HEALTH - ONLINE HEALTH FACT

Restricted Gluten

The treatment for celiac disease is a gluten-free diet. This handout provides guidelines for a gluten-free diet along with shopping tips, recipes and suggestions for buying gluten-free cookbooks and specialty products.

Celiac disease is a digestive disorder that damages the small intestine and blocks absorption of nutrients from food. People who have celiac disease cannot tolerate a protein called gluten, which is found in wheat, rye, barley and possibly oats. When people with celiac disease eat foods with gluten, their immune systems respond by damaging the small intestines. Specifically, tiny fingerlike protrusions called villi on the lining of the small intestine are lost. Nutrients from food are absorbed into the blood stream through these villi. Without villi, a person becomes malnourished no matter how much food is eaten. Anemia, delayed growth and weight loss are signs of malnutrition—not getting enough nutrients.

Because the body's own immune system causes the damage, celiac disease is considered an autoimmune disorder. However, it is also classified as a disease of malabsorption because nutrients are not absorbed. Celiac disease is also known as celiac sprue, nontropical sprue and gluten-sensitive enteropathy.

Dermatitis herpetiformis (DH) is a severe itchy, blistering skin disease caused by gluten intolerance. DH is related to celiac disease since both are autoimmune disorders caused by gluten intolerance, but they are separate diseases. Although people with DH do not usually have digestive symptoms, they often have the same intestinal damage as people with celiac disease. DH is treated with a gluten-free diet and medicine to control the rash.

The only treatment for celiac disease is to follow a gluten-free diet. That is, avoid all foods that contain gluten. For most people, following this diet will stop symptoms, heal existing intestinal damage and prevent further damage. Improvements begin within days of starting the diet. The small intestine is usually completely healed—meaning the villi are intact and working—in 3-6 months. It may take up to 2 years for older adults. A small number of people with celiac disease do not improve on the gluten-free diet.

The gluten-free diet is for a lifetime. Eating any gluten, no matter how small an amount, can damage the intestine. This is true for anyone with the disease, including people who do not have noticeable symptoms.

The gluten-free diet is a completely new approach to eating that affects a person's whole life. People with celiac disease have to be careful about eating out and hidden sources of gluten in processed food, medicines and over-the-counter products.

Dietary Guidelines

A gluten-free diet means avoiding all foods that contain wheat, rye, barley and possibly oats. In other words, avoid most grains, pasta, cereal and many processed foods.

Whether people with celiac disease should avoid oats is controversial because some people have been able to eat oats without having a reaction. Scientists are doing studies to find out whether people with celiac disease can tolerate oats. Until the studies are complete, people with celiac disease should follow their doctor or dietitian's advice about eating oats.

Reading Food Labels

It is important to read all food labels to make sure that the food does not contain gluten. When foods are labeled "gluten-free" in the US and Canada, the foods are expected not to contain gluten, but foods from other countries may contain gluten. Also, "wheat free" does not mean that a food is gluten-free. Foods with questionable ingredients should not be used until you are sure that they are gluten free.

Manufacturers may change their ingredients at any time, so you should review food labels often for gluten-containing ingredients.

Avoid these foods:

- products containing wheat, rye, oats and barley
- wheat and enriched wheat flour
- pasta made from wheat
- rye flour
- graham flour
- cake flour
- semolina
- farina
- bulgur
- kasha
- kamut
- couscous
- wheat starch
- malt, malt extract, malt flavoring
- spelt
- triticale
- kamut
- wheat germ
- bran

Uncertain food additives

Vegetable protein, hydrolyzed vegetable protein, hydrolyzed plant protein. More companies are starting to label the source of the protein, but you should avoid a product using these until you are sure of the source of protein.

Flavorings. In the US, flavorings used in meat products often contain gluten. Barley malt may also be used in flavorings.

Seasonings. Gluten is often used as a carrier.

Modified food starch, modified starch, starch. Starch in the US means cornstarch. Most modified food starch is from corn in the US and most companies are now identifying the source of the modified food starch on the label.

Dextrin. In the U.S., corn or tapioca is usually the source, but wheat is also used.

Use products containing:

- arrowroot
- amaranth
- “pure” buckwheat flour
- corn flour
- corn meal
- cornstarch
- flax
- gluten-free flour
- potato flour
- potato starch
- quinoa
- rice flour (brown, sweet or rice)
- sorghum flour
- soy flour
- tapioca
- teff
- whole bean flour
- wild rice

Gluten-Free Additives (This is not a complete list)

- acetic acid, adipic acid
- annatto
- aspartame
- acacia gum
- BHA and BHT
- benzoic acid
- brewers’ yeast
- brown sugar
- baking yeast
- calcium disodium EDTA
- carageenan
- caramel color
- carboxymethyl cellulose
- carob bean (locust bean)
- corn syrup/solids
- cellulose
- cream of tartar
- dextrose
- ethyl maltol
- fructose
- fumaric acid
- gelatin
- glucose
- guar gum
- glutinous rice (sticky, sweet rice)
- invert sugar
- karaya gum
- lactic acid
- lactose
- lecithin
- malic acid
- maltodextrin
- maltol
- mannitol
- methylcellulose
- molasses
- MSG
- papain
- pectin
- Polysorbate 60, polysorbate 80
- propylene glycol
- psyllium
- sodium benzoate, metabisulphite, nitrate, nitrite, sulphite
- sorbitol
- stearic acid
- sucralose
- sucrose
- tartaric acid
- tartrazine
- titanium dioxide
- tragacanth
- vanilla extract
- vannillan
- white sugar
- xanthan gum
- xylitol

Meal Planning

	Allowed	Foods to Avoid
Milk, Beverages	Milk (fresh, dried or evaporated), buttermilk, cream, carbonated soft drinks, mineral water, instant or ground coffee, tea, cocoa, some soy and rice beverages, cider, whiskey, gin, vodka, rum, wine, pure liqueurs	Malted milk, cereal and malted beverages, beer, ale, lager. Check label on chocolate drinks, chocolate mixes, coffee or non-dairy substitutes, instant tea, flavored and herbal teas, fruit flavored drinks, soy or rice beverages.
Cheese/Yogurt	Cottage cheese, cheese, processed cheese, processed cheese foods, cream cheese, plain yogurt.	Check labels on cheese sauces, cheese spreads, flavored yogurts.
Meat, Poultry, Fish, Nuts	All meat, fish, poultry, eggs, nuts, seeds, peanut butter, legumes, tofu	Any meat, fish, poultry canned, basted, injected with broth containing ingredients not allowed, breaded meats. Check labels on processed meats (luncheon meats, bologna, salami, ham, bacon, wieners, meat and sandwich spreads, meatloaf, frozen meat patties, sausages, pate, imitation meat and fish products), foods containing meat product extenders, hydrolyzed plant or vegetable proteins, egg substitutes, dried eggs, baked beans, dry roasted nuts, flavored soy nuts.
Breads, Starches	Breads, cakes, crackers, muffins, noodles, pancakes, pasta, rolls, tortillas made from allowed flours: rice, corn, cornmeal, cornstarch, potato, soy, arrowroot, gluten-free flour, tapioca, buckwheat, bean, millet, sorghum, teff, wild rice, plain popcorn.	Any product made from gluten-containing flours: wheat, wheat starch, wheat germ, spelt, einkorn, emmer, faro, kamut, barley, oat, graham, bran, triticale, semolina, bulgur, couscous, malt, malt extract or flavoring, commercially prepared mixes. Check label on buckwheat flour, buckwheat pasta, rice crackers, rice and corn cakes, potato and tortilla chips, imported food labeled “gluten free”.

	Allowed	Foods to Avoid
Cereals	Cereals made from corn, rice, millet, buckwheat, soy, amaranth, quinoa	Any cereal containing barley, oats, rye, wheat, bran, wheat germ, malt, malt flavoring or extract Check label on rice and corn cereals, rice and soy infant foods.
Fruits and Vegetables	Any fresh, frozen, and canned fruits and vegetables, canned fruit and vegetable juices, dried vegetables.	Creamed or scalloped potatoes, batter dipped vegetables. Check labels on dried fruits, fruit pie fillings, fruits or vegetables with sauces, some French fries.
Soups	Broth, stock, clear meat and vegetable soups, cream soups made with allowed ingredients.	Soup containing prohibited ingredients (thickeners, noodles, hydrolyzed plant and vegetable proteins) Check labels on bouillon cubes, soup bases, canned soups, dried soup mixes
Fats	Butter, margarine, vegetable oils, lard, shortening, homemade salad dressings, gravies and cream sauces with allowed ingredients.	Check labels on mayonnaise, salad dressings, gravies, cream sauces.
Desserts	Cakes, cookies, pastries made with allowed flours, ice cream, sherbet, gelatin, egg custards.	Cakes, cookies, pastries, pies made with ingredients not allowed; ice cream made with ingredients not allowed, prepared mixes for cakes cookies Check labels on mixes for puddings, commercially prepared pudding, and frozen yogurt.
Miscellaneous	Jam, jelly, marmalade, honey, maple syrup, corn syrup, brown sugar, white sugar, molasses, catsup, mustard, relish, vinegars, (apple, cider, distilled white, wine, spirit) gluten-free soy sauce, olives, plain pickles, tomato paste, pure herbs and spices, black pepper (pure and imitation), chocolate chips, pure baking chocolate, pure cocoa, carob chips and powder, baking soda, yeast, coconut, gluten-free communion wafers	Malt vinegar Check labels on candy, chocolate bars, chewing gum, marshmallows, seasoning packets, Worcestershire sauce, baking powder.

Despite these restrictions, people with celiac disease can eat a well-balanced diet with a variety of foods, including bread and pasta. Based on the USDA Food Guide Pyramid, you should include the following foods every day.

- 6-11 servings of breads, cereals, rice and pasta
- 2-4 servings of fruit
- 3-5 servings of vegetables
- 2-3 servings of milk, yogurt and cheese
- 2-3 servings of meat, poultry, fish, dry beans, eggs and nuts
- Use fats, oils and sweets sparingly

Support groups are very helpful for newly diagnosed people and their families as they adjust to a new way of life. Lists of gluten-free products are available through the celiac disease support groups. These groups provide new members with lists of known, safe products as well as newsletters for up-to-date information on new products, recipes and research.

Shopping for Gluten Free Foods

Supermarket:

Your first few trips to the grocery store will be longer than usual. Read labels as you shop to become familiar with gluten containing additives and derivatives. Check the “specialty” as well as the Asian and Mexican food sections for gluten free products.

Natural Food/Health Food Stores:

Check health food stores for flours, gums and other specialty products your supermarket doesn't carry. Be sure to read the nutritional information provided on the package before using the product.

Ethnic Food Stores

Remember that wheat isn't a staple food for much of the world's population. Asian food stores have a great variety of rice products. Explore Chinese, Japanese, Indian, Vietnamese and Mexican foods. Most of the people in the world prefer corn and rice to wheat.

In Madison:

Try these stores for gluten-free products and flours.

Asian Midway Foods	255-5864
Copp's Food Center East, West	243-1000, 271-6565
Magic Mill Natural Foods	238-2630
Whole Foods Market	233-9566
Woodsman's East, West	244-6630, 274-8944
Willy Street Co-op	251-6776
Yue-Wah Oriental Foods	257-9338

Reorganizing Your Kitchen:

You do need to organize your kitchen. In your baking area, clean out a shelf for all your gluten-free baking needs, including separate baking powder, baking soda, rice baking mix, soy flour, potato starch and so on. Do not use utensils that have been first used for measuring, cutting or sifting gluten containing products. Prepare gluten free foods before preparing gluten-containing items so no crumbs are put into the gluten free products. All gluten-free baked goods should be marked clearly.

Do Your Own Baking

Gluten gives the “spongy” texture to baked goods, breads and buns. However, gluten-free flours do not behave like wheat flour and produce a denser, drier baked product. Gluten free cookbooks describe other flours and offer tips for baking as well as giving recipes for successful gluten-free baking.

Gluten-Free Cookbooks

Check with your library and local bookstore for gluten-free cookbooks available for loan or purchase. Some suggestions are:

The Gluten-Free Kitchen (2000) Roben Ryberg, Prince Publishing, Roseville CA.

Special Diet Solutions: Healthy Cooking Without Wheat, Gluten, Dairy, Eggs, Yeast or Refined Sugar (2001)

Wheat Free Recipes & Menus: Delicious Dining Without Wheat or Gluten (2000)

Special Diet Celebrations – No Wheat, Gluten, Dairy or Eggs, (1999)

Carol Fenster, Savory Palate Press, Littleton, CO

The Gluten-Free Gourmet – Living Well Without Wheat (1990)

More From the Gluten-Free Gourmet – Delicious Dining without Wheat (1993)

The Gluten-Free Gourmet Cooks Fast and Healthy (1996)

The Gluten-Free Gourmet Bakes Bread (1999)

Bette Hagman, Henry Holt & Company, New York, NY

Eating Gluten-Free with Emily (2003) Bonnie J. Kruszka, Xlibris Corp.

Incredible, Edible, Gluten-Free Food for Kids: 150 Family-Testing Recipes (2002), Sheri L. Sanderson, Woodbine House

Wheat-free Gluten-free Cookbook for Kids and Busy Adults (2003), Connie Sarros, McGraw Hill Companies Inc.

Websites

Listed below are a few websites that others with celiac disease have found helpful:

Celiac support page	www.celiac.com
Food and Chemical Allergy Page	www.livingwithout.com
The Gluten-Free Kitchen	http://gfkitchen.server101.com
Gluten-free Diet Information	www.clanthompson.com
National Institutes of Health	www.niddk.nih.gov/health/digest/pubs/celiac
Gluten-Free Recipes	www.recipesource.com

A Few Gluten-Free Companies

Bob's Red Mill Natural Foods, Inc.
5209 SE International Way
Milwaukee OR 97222
1-800-553-2258 or (503) 654-3215
www.bobsredmill.com

Kinnikinnick
10306 112th Street
Edmonton Alberta
Canada T5K 1N1
1-877-503-4466 or (780) 424-2900
www.kinnikinnick.com

Ener-G Foods
PO Box 84487
Seattle WA 98124-5787
1-800-331-5222 or (206) 767-6660
www.ener-g.com

Miss Roben's
PO Box 1149
Frederick MD 21702
1-800-891-0083 or (301) 665-9580
www.missroben.com

Gluten-Free Trading Company
604A W. Lincoln Ave
Milwaukee WI 53515
1-888-993-9933 or (414) 385-9950
www.gluten-free.net

Pamela's Products
335 Allerton Ave
South San Francisco CA 94080
(650) 952-4546
www.pamelasproducts.com

Kingsmill Foods
1399 Kennedy Rd. Unit 17
Toronto, Ontario
Canada M1P 2L6
(416) 755-1124
www.kingsmillfoods.com

Gluten-Free Mall
www.glutenfreemall.com

Additional Resources

American Celiac Society
59 Crystal Avenue
West Orange NJ 07052
Phone: (973) 325-8837
Email: amerceliacsoc@netscape.net

Celiac Disease Foundation
13251 Ventura Blvd. #1
Studio City CA 91604-1838
Phone (818) 990-2354
Email: cdf@celiac.org
Internet: www.celiac.org

Celiac Sprue Association/USA Inc.
PO Box 31700
Omaha NE 68131-0700
Phone: (402) 558-0600
Internet: www.csaceliac.org

Gluten Intolerance Group of North America
15110 10th Avenue SW, Suite A
Seattle WA 98166-1820
Phone (206) 246-6652
Email: info@gluten.net
Internet: www.gluten.net

National Center for Nutrition and Dietetics
American Dietetic Association
216 W Jackson Blvd. Suite 800
Chicago IL 60606-6995
Phone: 1-800-366-1665
Email: hotline@eatright.org
Internet: www.eatright.org

Gluten-Free Diet – A Comprehensive Resource Guide (book)
Case Nutrition Consulting
1940 Angley Court
Regina Saskatchewan
Canada S4V 2V2
Phone/Fax: (306) 751-1000
Email: scase@accesscomm.ca

Kids with Celiac Disease: A Family Guide to Raising Health Happy Kids (book)
Danna Korn

Sully's Living Without (magazine)
PO Box 1132
Clarendon IL 60514
Internet: www.livingwithout.com

Gluten-Free Living (bimonthly newsletter)
PO Box 105
Hastings-on-Hudson NY 10760
Phone: (914) 969-2018
Email: gfliving@aol.com

If you have more questions please contact UW Health at one of the phone numbers listed below.

Nutrition Clinic Room 193
University Station
2880 University Avenue
Madison, WI 53705
(608) 263-5012

Nutrition Clinic Room 1296
UW Health West Clinic
451 Junction Road
Madison, WI 53717
(608) 265-7526

Nutrition Clinic Room 2085
UW Health East Clinic
5249 East Terrace Drive
Madison, WI 53718
(608) 265-0963

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Writing Effective Letters to Food Manufacturers

How often have you taken the time to write a letter to a company regarding a specific ingredient in one of their products and received a letter back that was no help at all? Worse yet, the response was more confusing than your original question! Having seen many letters which fit into both categories, it's time to pass on some pointers which will hopefully diminish the misunderstandings. The following sample letter gives guidelines for information which needs to be included.

Your Address

Date

Dear Sir/Madam:

I am on a gluten-restricted, gliadin-free diet for the treatment of celiac sprue. In this inherited disorder, the gliadin fraction of the gluten protein found in wheat, rye, barley and oats damages the lining of the small intestine. Thus, all gliadin-containing foods must be eliminated from my diet.

Although I would like to use your product, (insert name), your ingredient listing does not give adequate information for me to determine if it would be gliadin free. Specifically, I need to know *

*examples would be

...the source of your "food starch modified"

...whether your "soy sauce solids" are derived from wheat

...what "natural flavorings" you use in this product

...from what source your "vegetable gum" is derived

...the source of the "hydrolyzed vegetable protein"

...the inactive ingredients used in the medication, including those used in the coatings and capsules.

Another likely source of gliadin contamination is the incidental ingredients which are used in the packaging and processing of your product. Since these incidental ingredients are not listed on the packaging, I am relying on your thoroughness to clarify these substances.

If it would be possible, I would appreciate a copy of your response to be forwarded to:

The Gluten Intolerance Group of North America
PO Box 23053
Seattle WA 98102-0353

This will allow your efforts to be shared with others through our national organization which reaches health care personnel as well as persons with celiac sprue. If you have questions regarding celiac sprue and the gluten-restricted, gliadin-free diet, you may also direct them to our office.

Thank you for your efforts on my behalf.