

About Gluten

What is gluten?

Gluten is a mixture of proteins present in some cereal grains, especially wheat. It consists almost entirely of two proteins, gliadin and glutenin. The exact proportions depend upon the variety of grain. It is responsible for making bread springy. However, gluten does not agree with everyone. Some digestive problems are associated with a gluten intolerance such as celiac's disease. Gliadin has several components. It is a syrupy substance that binds the dough. Gliadin is also the protein in rye flour and in a wheat-and-rye blend, called triticale.

What is a gluten intolerance?

A digestive tract that cannot tolerate gluten is characterized by malabsorption due to damage to the small intestine. When gluten intolerance becomes an extreme condition, it is called celiac's disease, non-tropical sprue, or gluten-sensitive enteropathy. Symptoms may include weight loss, greasy and foul-smelling stools, and diarrhea. There is often multiple vitamin and nutrient deficiencies. Eczema-like skin conditions usually occur with a gluten intolerance.

One of the hallmark signs of celiac's disease is iron-deficiency anemia and extreme fatigue, not corrected by iron supplements. Also present are low serum calcium levels. Breast-fed children, along with the delayed introduction of cereals and cow's milk, can provide a protective effect that greatly reduces the risk of developing gluten intolerance. Most children diagnosed with celiac's disease experience relief soon after starting a gluten-free diet.

Dermatitis, herpetiformis, psoriasis, irritable bowel syndrome, and inflammatory bowel disease may also be the results of a gluten intolerance. It is a common problem for food-sensitive individuals and can trigger more symptoms such as fatigue, joint pains, and headaches. There has recently been an association between gluten intolerance and lichen planus.

A blood test is now available for diagnosing gluten intolerance. Testers use the alpha gliadin antibody level to identify individuals who are likely to respond to a gluten-free diet. People with recurrent oral ulceration, but who had normal small intestinal biopsies, were studied. The study found that people with a gluten intolerance had raised levels of antibodies to alpha gliadin. In 3 out of these 4 people the ulceration disappeared on a gluten-free diet and relapsed after again having gluten. Among the people who did not have raised alpha gliadin antibody levels, none responded to a gluten-free diet.

Am I sensitive to wheat because it contains gluten?

You can be sensitive to wheat, but not because it contains gluten. Other factors to consider are the many molds that grow on wheat and the use of pesticides. When you are ready to reintroduce wheat back into your diet, try organic wheat first.



What other foods besides wheat contain gluten?

Oat, rye, most beers, Postum, products containing cereals, barley, and anything containing barely malt, triticale, kamut, quinoa, millet, spelt, and possibly buckwheat and teff. Products derived from cereal grains are likely to contain gluten. People who are not able to eat other gluten-containing grains can often tolerate spelt and millet. Spelt is one of the easiest grains to digest. Check with your health-food store for availability.

Millet has small amounts of gluten, but virtually no gliadin. Malt comes from sprouted barley and from the hydrolyzed starch of other grains. Barley contains hordein, a protein with similar properties to gliadin. Hordein is so similar to gliadin that it should be avoided by people intolerant to gluten.

What gluten-containing flours should I avoid?

Barley, buckwheat (kasha), oat, rye, spelt, triticale, quinoa, millet, and wheat (white, semolina, durum, kamut, couscous, bulgur, whole wheat).

What gluten-containing pastas should I avoid?

Artichoke, buckwheat, durum, semolina, secale, spelt, wheat. If you are in doubt about the contents of a flour product, write or call the company that makes the product before using it. Read labels!

What are some substitutes for gluten-containing grains?

Gluten-free foods are corn, rice, wild rice, amaranth, soybean, and potatoes. Although not a grain, soy products are free of gluten and often used as a grain substitute.

What are some gluten-free flours?

They are arrowroot, kudzu, amaranth, rice, garbanzo (chick pea), corn, potato, soybean and other bean flours, and all nuts and seeds. Make sure these flours are wheat-free. It is common to find wheat added to other types of flours.

What about other food intolerances?

People who cannot tolerate wheat fiber or gluten often have delicate stomachs or intestinal linings. This creates a sensitivity to many foods. They may experience difficulty tolerating raw vegetables and other fiber-rich foods.

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	Allowed	Avoid
Beverages	carbonated beverages, milk, buttermilk, skim milk, tea, coffee that doesn't contain cereal products, vodka, wine, brandy	coffee substitutes, commercial chocolate, malted milk, Postum, Ovaltine, ale, beer and other alcoholic beverages, instant coffee
Breads	bread products made from arrowroot, corn, gluten-free starch flours, rice, or soybean	all bread products made from wheat, rye, oats, or barley, all commercial products and mixes, buckwheat flour mixes, and bread crumbs
Cereal	hot cereals made from corn meal and rice, all other ready-to-eat cereals made from corn and rice products with allowed ingredients	many commercial cereals contain gluten
Condiments	salt, pepper, sugar, herbs, and spices	none
Desserts	homemade custard, gelatin, or tapioca puddings; ice cream and sherbet without gluten stabilizers; desserts prepared with allowed flours and starches	desserts prepared from wheat, rye, oats, cornstarch, or barley; all commercial desserts and mixes; ice cream and sherbet
Fats	butter, cream, margarine, fats, real gluten stabilizers, shortenings, vegetable oil, and lard	commercial salad dressings with mayonnaise; commercial salad dressings without gluten stabilizers
Fruit and Fruit Juices	all	none
Meats and Substitutes	beef, fish, lamb, pork, poultry, veal, and liver; pure all-meat cold cuts, frankfurters, and sausage; cheese, eggs, and peanut butter; all prepared meats without the addition of wheat, rye, oats, or barley	commercially prepared entrees; processed cheese and cheese products containing gluten stabilizers, processed meat with fillers; meat alternatives or protein substitutes that may have gluten stabilizers

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	Allowed	Avoid
Potato and Substitutes	white and sweet potatoes; grits, rice, hominy, and any non-gluten products	barley, macaroni, noodles, and spaghetti made from wheat; any prepared with wheat, rye, or oats
Soups	clear broth, homemade cream soups thickened with allowed flours, and allowed vegetable soups	any containing wheat, rye, oats, or barley; canned soups containing prohibited ingredients
Sweets	pure candies, honey, jams, jellies, marshmallows, sugars, syrups, molasses, and corn syrup	any containing wheat, rye, oats, or barley
Vegetables and Vegetable Juices	all	any prepared with wheat, rye, oat, or barley such as cream sauces and bread crumbs
Miscellaneous	baking powder, baking soda, chocolate, cocoa, coconut, gravies made with allowed flours and starches, nuts, olives, vinegar, mustard, catsup, pickles	any containing wheat, rye, oats, or barley