

GLUTEN-FREE DIET

PURPOSE

Gluten is the protein part of wheat, rye, barley, and other related grains. Some people cannot tolerate gluten when it comes in contact with the small intestine. This condition is known as celiac disease (sometimes called non-tropical sprue or gluten sensitive enteropathy).

Celiac disease is now clearly known to be genetically determined. If you or your close relatives have a certain gene, then it is more likely that you will get celiac disease some time in your life. Of great concern and interest is the fact that 9 out of 10 people with celiac disease do not know they have it. A simple blood test can give the physician the first clue to this disease.

In patients with celiac disease, gluten injures the lining of the small intestine. This injury can result in weight loss, bloating, diarrhea, gas, abdominal cramps, and/or vitamin and mineral deficiencies. When patients totally eliminate gluten from the diet, the lining of the intestine has a chance to heal.

GUT BACTERIA

The primary injury in celiac disease is in the small bowel.

But there may be a relationship between what happens in the small bowel and the colon or large bowel. There are very large numbers of bacteria in the colon. Most of these are beneficial and actually provide health benefits. When these good bacteria thrive, they suppress the bad bacteria, which are present in the colon. What has been found is that celiac patients have a different balance of bacteria in the colon as well as in the small intestine.

PREBIOTIC PLANT FIBER

A prebiotic is not a probiotic, which are beneficial bacteria taken by mouth. These probiotics are present in yogurt, other dairy products or pills. Prebiotics, on the other hand, are the necessary plant fibers that contain both oligofructose and inulin. These two fibers are the main nourishment for the good bacteria that reside in the gut. These fibers are found in chicory root, Jerusalem artichoke, leeks, asparagus and others. *Gluten containing wheat and barley also contain these prebiotics* (see the chart starting on page four).

Food Group	Do Not Contain Gluten	May Contain Gluten	Do Contain Gluten
Thickening agents	gelatin; arrow-root starch; corn flour, germ, or bran; potato flour; potato starch flour; rice bran and flour; rice polish; soy flour; tapioca; sago	none	wheat starch; all flours containing wheat, oats, rye, malt, barley, or graham flour; all-purpose flour; white flour; wheat flour; bran; cracker meal; durham flour; wheat germ
Condiments	gluten-free soy sauce, distilled white vinegar, olives, pickles, relish, ketchup	flavoring syrups (for pancakes or ice cream), mayonnaise, horseradish, salad dressings, tomato sauces, meat sauce, mustard, taco sauce, soy sauce, chip dips	none
Seasonings	salt, pepper, herbs, flavored extracts, food coloring, cloves, ginger, nutmeg, cinnamon, bicarbonate of soda, baking powder, cream of tartar, monosodium glutamate	curry powder, seasoning mixes, meat extracts	synthetic pepper, brewer's yeast (unless prepared with a sugar molasses base), yeast extract (contains barley)
Prescription products	none	all medicines: check with pharmacist or pharmaceutical company	none

SAMPLE MENU

Breakfast

cream of rice 1/2 cup
 skim milk 1 cup
 banana 1 med
 orange juice 1/2 cup
 sugar 1 tsp

Lunch

baked chicken 3 oz
 rice 1/2 cup
 green beans 1/2 cup
 apple juice 1/2 cup
 ice cream (made
 with-out wheat
 stabilizers) 1/2 cup

Dinner

sirloin steak 3 oz
 baked potato
 1 med
 peas 1/2 cup
 fruited gelatin
 1/2 cup
 butter 1 Tbsp
 tea 1 cup
 sugar 1 tsp

THIS SAMPLE DIET PROVIDES THE FOLLOWING

Calories..... 1748 Fat..... 62 gm
 Protein..... 77 gm Sodium 1577 mg
 Carbohydrates 225 gm Potassium..... 2934 mg

CELIAC SUPPORT GROUPS

American Celiac Society
 (504) 737-3293
www.americanceiliacsociety.org

**Celiac Sprue
 Association/USA, Inc.**
 (877) CSA-4-CSA
www.csaceliacs.org

Celiac.com
www.celiac.com

Celiac Disease Foundation
 (818) 990-2354
www.celiac.org

GLUTEN INTOLERANCE SUPPORT GROUP

Gluten Intolerance of North America
 (253) 833-6655
www.gluten.net

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Grains are used in the processing of many ingredients, so it is necessary to seek out hidden gluten. The following terms found in food labels may mean that there is gluten in the product.

- **Hydrolyzed Vegetable Protein (HVP)**, unless made from soy or corn
- **Flour** or **Cereal** products, unless made with pure rice flour, corn flour, potato flour, or soy flour
- **Vegetable Protein** unless made from soy or corn
- **Malt** or **Malt Flavoring** unless made from corn
- **Modified Starch** or **Modified Food Starch** unless arrowroot, corn, potato, tapioca, waxy maize, or maize is used
- **Vegetable Gum** unless vegetable gums are carob bean

gum, locust bean gum, cellulose gum, guar gum, gum arabic, gum aracia, gum tragacanth, xanthan gum, or vegetable starch

- **Soy Sauce** or **Soy Sauce Solids** unless you know they do not contain wheat

Any of the following words on food labels often means that a grain containing gluten has been used

- **stabilizer**
- **starch**
- **flavoring**
- **emulsifier**
- **hydrolyzed**
- **plant protein**

The following are lists of various foods that **do not** have gluten, **may** have gluten, and **do** contain gluten.

<u>Food Group</u>	<u>Do Not Contain Gluten</u>	<u>May Contain Gluten</u>	<u>Do Contain Gluten</u>
Oligofructose and Inulin (Prebiotic Plant Fiber)	onion, garlic, leeks, Jerusalem artichokes, asparagus, chicory root, jicama, dandelion, banana, agave, jams	none	wheat, barley, rye
Milk & milk products	whole, low-fat, skim, dry, evaporated, or condensed milk; buttermilk; cream; whipping cream; Velveeta cheese food; American cheese; all aged cheeses, such as Cheddar, Swiss, Edam, and Parmesan	sour cream, commercial chocolate milk and drinks, non-dairy creamers, all other cheese products, yogurt	malted drinks

<u>Food Group</u>	<u>Do Not Contain Gluten</u>	<u>May Contain Gluten</u>	<u>Do Contain Gluten</u>
Meat or meat substitutes	100% meat (no grain additives); seafood; poultry (breaded with pure cornmeal, potato flour, or rice flour); peanut butter; eggs; dried beans or peas; pork	meat patties; canned meat; sausages; cold cuts; bologna; hot dogs; stew; hamburger; chili; commercial omelets, soufflés, fondue; soy protein meat substitutes	croquettes, breaded fish, chicken loaves made with bread or bread crumbs, breaded or floured meats, meatloaf, meatballs, pizza, ravioli, any meat or meat substitute, rye, barley, oats, gluten stabilizers
Breads & grains	cream of rice; cornmeal; hominy; rice; wild rice; gluten-free noodles; rice wafers; pure corn tortillas; specially prepared breads made with corn, rice, potato, soybean, tapioca, arrowroot, carob, buckwheat, millet, amaranth and quinoa flour	packaged rice mixes, ready-to-eat cereals containing malt flavoring, cornbread	breads, buns, rolls, biscuits, muffins, crackers, and cereals containing wheat, wheat germ, oats, barley, rye, bran, graham flour, malt; kasha; bulgur; Melba toast; matzo; bread crumbs; pastry; pizza dough; regular noodles, spaghetti, macaroni, and other pasta; rusks; dumplings; zwieback; pretzels; prepared mixes for waffles and pancakes; bread stuffing or filling
Fats & oils	butter, margarine, vegetable oil, shortening, lard	salad dressings, non-dairy creamers, mayonnaise	gravy and cream sauces thickened with flour

Food Group	Do Not Contain Gluten	May Contain Gluten	Do Contain Gluten
Fruits	plain, fresh, frozen, canned, or dried fruit; all fruit juices	pie fillings, thickened or prepared fruit, fruit fillings	none
Vegetables	fresh, frozen, or canned vegetables; white and sweet potatoes; yams	vegetables with sauces, commercially prepared vegetables and salads, canned baked beans, pickles, marinated vegetables, commercially seasoned vegetables	creamed or breaded vegetables; those prepared with wheat, rye, oats, barley, or gluten stabilizers
Snacks & desserts	brown and white sugar, rennet, fruit whips, gelatin, jelly, jam, honey, molasses, pure cocoa, fruit ice, carob	custards, puddings, ice cream, ices, sherbet, pie fillings, candies, chocolate, chewing gum, cocoa, potato chips, popcorn	cakes, cookies, doughnuts, pastries, dumplings, ice cream cones, pies, prepared cake and cookie mixes, pretzels, bread pudding
Beverages	tea, carbonated beverages (except root beer), fruit juices, mineral and carbonated waters, wines, instant or ground coffee	cocoa mixes, root beer, chocolate drinks, nutritional supplement beverage mixes	Postum, [™] Ovaltine, [™] malt-containing drinks, cocomalt, beer, ale
Soups	those made with allowed ingredients	commercially prepared soups, broths, soup mixes, bouillon cubes	soups thickened with wheat flour or gluten-containing grains; soup containing barley, pasta, or noodles

PREBIOTIC FIBER HEALTH BENEFITS

There is now ample information in the medical literature to indicate that a prebiotic rich diet leads to proven health benefits including:

- Increased calcium absorption
- Stronger bones and increased bone density
- Enhanced immunity
- Reduced allergies and asthma in infants and children
- A lower blood triglyceride level
- Appetite and weight control
- Lower cancer factors in the gut

THE CELIAC WHEAT-PREBIOTIC DILEMMA

Nature has played a trick on celiac people. Wheat and wheat products provide over 80% of the prebiotics that North Americans ingest. And yet, celiac patients must carefully avoid wheat, barley and rye. How do they then feed their good colon bacteria and get the health benefits as outlined above? They must favor the other vegetables and fruit as listed in the prebiotic section. Additionally, they should consider a *gluten free prebiotic supplement such as Prebiotin (prebiotin.com)*.

OATS

At one time, oats were thought to contain some gluten.

However, it has now become apparent that oats frequently were processed in machines that also processed wheat. Most manufacturers no longer do this, although if there are any questions, then a person should get reassurance from the manufacturer by mail, email or phone.

SPECIAL CONSIDERATIONS

Removing gluten from the diet is not easy. Grains are used in the preparation of many foods. It is often hard to tell by a food's name what may be in it, so it is easy to eat gluten without even knowing it. However, staying on a strict gluten-free diet can dramatically improve the patient's condition. Since it is necessary to remain on the gluten-free diet, it will be helpful to review it with a registered dietitian.

The person who prepares the patient's food must fully understand the gluten-free diet. Read food labels carefully.

- **Do not eat** anything that contains the following grains: wheat, rye, and barley.
- The following **can be eaten** in any amount: corn, potato, rice, soybeans, tapioca, arrowroot, carob, buckwheat, millet, amaranth and quinoa.
- **Malt vinegar** does contain gluten.
- **Distilled white vinegar** does not contain gluten.