

# Celiac Disease

Celiac disease is a disorder that damages the lining of the intestines as a reaction to gluten, a protein found in wheat, rye, barley and oats. Consequently, those who suffer from this must go on a gluten-free diet, which can be quite the challenge.

Gluten, obviously in all grains, is also found in foods and drugs under the guise of "food starch. This includes "hydrolyzed vegetable protein" and "natural flavor". You can find it in goods as disparate as salad dressing and canned soups, mouthwash and even Play-Doh.

## Afflicted Americans

Celiac disease affects one in 200 Americans, making it the most common inherited genetic illness in the country. Yet, most sufferers are not even aware they are gluten intolerant. The University of Chicago estimates there are a million undiagnosed celiac sufferers in the United States alone.

Making matters worse for celiac sufferers is the fact that this disease is difficult for doctors to diagnose. Experts say no two cases are alike. Patients must undergo numerous tests before celiac disease is properly diagnosed. Getting an accurate diagnosis of celiac disease is like doing detective work!

## Symptoms of Celiac Disease

Symptoms take the form of digestive problems such as diarrhea, constipation, nausea, vomiting, anorexia, gas, bloating, cramps or lactose intolerance. In relation to these symptoms there can also be failure to grow (particularly in children), weakness, fatigue, infertility, anemia, osteoporosis or skin conditions.

Celiac disease damages the villi, small hair-like projections that line the small intestine and allow the body to absorb nutrients from digested food. In the celiac disease sufferer, these projections shorten and eventually flatten and the intestine then cannot function properly. Vital nutrients (vitamins, minerals, proteins, fats and carbohydrates) are not absorbed.

It is now believed a person who is predisposed to the disease has an event such as an infection, stress, over-indulgence in gluten etc., that triggers or irritates the onset of the illness.

Once diagnosed with celiac disease, one must cut gluten out of their diet and the body will heal entirely. Depending on the amount of damage, this takes approximately six months. If left untreated, one can develop osteoporosis, nerve damage or, in children, symptoms of autism. In addition, it can increase the risk of lymphoma and digestive system cancers.

Once a person is told to make the change to a gluten free diet, the initial reaction is desperation. The difficulty of knowing what contains gluten and just what they can (or cannot) eat is daunting. Fortunately, demand is now being met for celiac sufferers and many products are available to allow them to eat - and enjoy doing so once again.

Flour alone is available in 18 different varieties one can use. Those include arrowroot, garbanzo bean flour, Romano bean flour, cornstarch, cornmeal, and potato starch and tapioca flour, to name a few. Cooks can customize their flour mixes depending on what they

are cooking. Many of the gluten free flours have strong flavors and one uses them in combination with one another. Alternatively, one can use a pre-packaged gluten-free mix, which pre-blends the flours.

## **Flours**

The most commonly used flours are the bean flours. Bean flours contain nearly as much protein as wheat flour. The addition of Xanthan Gum or Gluten-Free Guar Gum gives the dough elasticity and prevents the finished product from being too crumbly.

## **Desserts**

Desserts are always the most difficult struggle for celiac sufferers. Most desserts depend heavily on flour. With some practice and sound knowledge of what products to use, there is no reason a celiac sufferer cannot have their dessert. Of course, this is where shopping for gluten-free products comes into play. This is a task a celiac needs to master.

## **Food Staples**

Staples, such as fruit, vegetables, meats and dairy products can all be purchased at your supermarket as usual. The ingredients in other products must be scrutinized closely. Gluten is everywhere. Even the U.S. made Heinz 57 ketchup contains gluten. The Gluten Free Trading Company sells Heinz 57 shipped from England because it is gluten free.

The bad news for gluten-free shopping in nationwide grocery chains is price. The cost for the special need of gluten-free products can be three times the cost, ounce for ounce, of the "regular" products.

## **Dining Out**

Dining out and/or social gatherings are also a challenge for celiac sufferers. The rule most people use is, the simpler, the better: broiled meat without gravy, sauce or spice or a baked potato and a salad without dressing or croutons. Many celiac sufferers find eating a salad when dining out, even after picking off the croutons, still makes them sick due to the dressing.

Celiac sufferers soon learn and accept the fact that the best route to take is to make your foods from scratch. Doing so really is not all that difficult once you get a system down, and the effort is well worth the relief of symptoms. The convenience of fast food is no longer an option for celiac sufferers. This may take some getting used to in today's society but it can be done; it just takes some time and experience. All the effort put forth will be well worth it because you will feel so much better as a result.

## **Celiac Disease in Children**

A study shows that almost 10 percent of children diagnosed with type 1 diabetes before age four will also develop celiac disease, usually within ten years of their diagnosis of diabetes.

In a person with celiac disease, eating certain foods (mainly wheat) causes a reaction in the intestine. When this happens again and again, the lining of the intestine is damaged.

Nutrients aren't absorbed well. Growth is affected, and bones may be brittle.

Since 1995, the Italian Society of Pediatric Endocrinology and Diabetes has recommended yearly screening for celiac disease in children and teens with type 1 diabetes. Screening is done with a blood test. If certain antibodies are present, a biopsy of the small intestine is done to confirm the diagnosis of celiac disease.

Researchers analyzed data from 4,322 children and teens with type 1 diabetes. Thirty-four were diagnosed with celiac disease before they were diagnosed with type 1, and 258 were diagnosed with celiac after or at the same time as they were diagnosed with type 1. Girls had a higher risk of celiac than boys: 9.2 percent of girls versus 4.8 percent of boys had celiac. When grouped by age, 9.7 percent of those diagnosed with type 1 before age 4 had celiac, while only 5 percent of those diagnosed with type 1 after age nine also had celiac disease. The researchers also found that celiac disease is rarely found after ten years' duration of diabetes.

In those patients who were diagnosed with diabetes first and then celiac, 14.5 percent had symptoms. Most had gastrointestinal symptoms, a few had atypical symptoms of short stature and/or anemia.

## What You Can Do

Be alert for signs and symptoms of celiac disease. In children, these include:

- Diarrhea
- Stools that are foul-smelling, bulky, and that float
- Failure to grow
- Muscle wasting
- Anemia
- Pale skin
- Unexplained hypoglycemia
- Rickets

The authors of this study make the following recommendations:

- Using a blood test, screen children with type 1 diabetes for celiac disease, even those who have no symptoms.
- Do the screening within four years of the diagnosis of diabetes. If finances allow, consider screening every year at least until the child has had diabetes for ten years.
- Pay particular attention to the higher risk groups: girls, and children diagnosed with diabetes before age four.

## Gluten-Free Cooking Tips

A gluten-free diet means avoiding all foods that contain wheat (including spelt, triticale, and kamut), rye, barley, and possibly oats - in other words, most grain, pasta, cereal, and many processed foods. Despite these restrictions, people with celiac disease can eat a well balanced diet with a variety of foods, including bread and pasta. For example, instead of wheat flour, people can use potato, rice, soy, or bean flour. Or, they can buy gluten free bread, pasta, and other products from special food companies.

**Flour:** Start with the most obvious and mostly commonly used ingredient. If your recipe calls for flour, consider using cornstarch or a gluten free flour or mix. Experiment with the many new flours available, like bean flours, sorghum, and amaranth. They are nutritious and add flavor, and they are gluten-free!

Amaranth is sweeter than most alternative flours with an almost nutty taste. Although the taste is good, the texture tends to be very sticky, so no more than 10 percent of your flour mixture should be amaranth. The advantage to including it is that it's more nutritious than most of the alternative flours. It's high in fiber, iron, and calcium.

Soy flour is an option, but it tends to leave a distinctive aftertaste, as do teff and buckwheat. (Buckwheat does not have wheat in it.)

## **Bake that Bread!**

Gluten free breads should be beaten by hand with a wooden spoon or spatula. A whisk doesn't work - the batter should be a bit too thick for this. The mix master over-beats them and they get too fine a texture and tend to fall.

If you put 1-1/2 teaspoon of cream of tartar and 1-teaspoon of baking soda in for two loaves, they do not interfere with the yeast but help the bread to rise and keep it up during baking. Limit the use of potato, bean, arrowroot and tapioca flour to about 25-percent maximum. If the bread is 'sticky' when baked, cut these flours down further.



**Bread crumbs:** Many gluten-free breads turn to crumbs when you look at them. And certainly, there are always plenty of crumbs in the bag; just use them as extras for cooking. Or crumble some bread slices and toast or broil the crumbs to make them crunch.

**Croutons:** Cut fresh, gluten-free bread into cubes, deep fry, and then roll in Parmesan cheese and spices. Some people suggest letting the bread get just a tad stale (not moldy) before making croutons this way. An alternative would be tortilla chips. You can also check out several varieties of gluten free salad toppings in the veggie section of your grocery store, or better yet, make your own!

**Buns and flour tortillas:** Substitute lettuce, gluten-free bread, corn tortillas, or rice wraps (found in Asian markets and often used in Thai cooking). If you like nori (the seaweed wrap on sushi), you can use it as a wrap with anything stuffed inside.

**Duck eggs** are often tolerated by those who have problems with chicken eggs. They can be hard to find. Look for them in Chinese markets.



**Oatmeal/hot breakfast:** Try corn grits. Prepare them like oatmeal and top with butter, cinnamon, and sugar, or fry them. Hot cereals also are available from the producers of gluten-free flours. Some new amaranth and quinoa hot cereals that are nutritional powerhouses are also available.

**Coconut milk** is a good substitute for cow and soy milk.

Xanthan Gum can be substituted for Gluten-Free Guar Gum. If you are new to gluten-free baking, you may see the words xanthan gum (pronounced zan-thun) quite often. It is a gum that helps to hold your baked product(s) together. The result of using the gum is sticky, not the gum itself. Xanthan gum is a cream colored powder that comes packaged either in a pouch or a jar. Adding just a little of this gum to your flour mixture helps

**Guar gum** accomplishes the same thing as the xanthan gum (preventing crumbling). Although guar gum is gluten free, it may cause distress of the lower intestinal tract in some people. Another alternative to using xanthan gum is to use twice the amount of unflavored gelatin. If the recipe calls for 1 teaspoon of xanthan gum, use 2 teaspoons of unflavored gelatin.

**Rice bran** can be substituted for rice polish.

**Sweet rice** is a rice that is low (10 to 18 percent) in the starch compound called amylose.

**White rice** can NOT be substituted for sweet rice (it is not sticky enough).

**Thickeners:** Cornstarch, arrowroot flour, and tapioca starch make great substitutes for flour and other thickeners. Dry pudding mix works well for sweet recipes, and bread or baking mixes work well for just about anything. Tapioca flour works roughly the same as tapioca starch.

**Potatoes.** If you are making mashed potatoes for dinner, bake the potatoes (instead of boiling them); remove most of the insides to make the mashed potatoes, and leave the skins intact. Then make your own potato skins topped with Cheddar cheese, sliced green onions, and crumbled bacon. Potato skins make a fun lunch for kids and adults.

**Soy and teriyaki sauce:** Asian markets carry some absolutely amazing Asian sauces that are gluten free, but you have to read labels carefully. If you can't find a gluten free soy sauce, you can substitute Bragg Liquid Aminos. You can find Bragg in the health food aisle of your grocery store or at a natural foods retailer. To make your own teriyaki, add equal parts of sugar and wine to your favorite soy sauce substitute.

**Sandwiches.** If you're having a difficult time getting used to gluten free bread, but love a good sandwich, you can improvise and make a sandwich out of just about anything else. Try wrapping lunchmeat around a piece of string cheese; or, if you are more daring, add a piece or two of marinated asparagus before wrapping. Make toothpick kabobs of cubes of lunch meat, cheese, pickles, and olives.

Purchase corn tortillas made from either yellow or white corn. Pre-cooked corn taco shells are a crisp holder for a multitude of fillings. Pancakes, waffles and crepes make wonderful wraps. And lettuce leaves are the ideal holders for lunch-meat and cheese. Belgian endive leaves are shaped like boats and make a neat container for tuna and chicken salads.

Tamales, quesadillas, and Chinese stir fry add variety to your meals and warm easily in the microwave, too.

**Trail mix:** Lots of trail mixes that are available at the stores are already gluten free, but if you like to make your own, mix some peanuts, raisins, dried fruit, and gluten free chocolate candies or chips. Dates and some other dried fruits are often dusted with oat flour. Be sure to check the labels. If they've been dusted with oat flour, the ingredients label will say so.

**Use a Thermos.** Pack a gluten free bun and spoon sloppy joe mix into the insulated container. You can also fill a thermos with boiling water and add corn on the cob, or one or two hot dogs. A thermos is great for pork and beans, hot dog slices and beans, or sausage in barbecue sauce. Rice dishes and gluten free pasta entrees - everything from Spanish rice and beans, to gluten free pasta marinara, to fettuccini Alfredo, to macaroni and cheese - hold well in a thermos.

**Pizza Crust.** The challenge with gluten free pizza dough is in the spreading. To get a light textured crust, the dough must be sticky to work with. You can add extra flour if you want to roll out the dough, but the baked crust won't be as light as one that isn't rolled. When spreading the crust in the pan, dip your fingers in warm water to keep the dough from sticking to your hands.

**Meat.** Meat is gluten-free in its natural state. If you buy roasts, chops, or any other whole piece of meat, there is nothing to be concerned about from a gluten standpoint. If, however, you pick up a package of marinated beef kabobs or preseasoned pork tenderloin, you will need to check what ingredients have been used in the marinade and seasonings. When you buy meat from the deli department, be careful. Most premium deli meats are solid meat, but some of the less expensive brands may use extenders. Extenders are inexpensive fillers and binders that can include wheat; they can enhance the flavor of processed meats, but they are primarily added to expand and extend the product. These fillers must be listed on the label, and manufacturers must list wheat on the label.

**Vegetables.** Veggies are gluten-free! All of them!

