

# Gluten

## What Is Gluten?

Gluten is a combination of proteins found in wheat, barley, rye, kamut, spelt, and triticale. It provides elasticity and creates the smooth, chewy texture in breads and pastas. Essentially, it is the “glue” that holds baked goods together. Because gluten is a binding agent, it is also used in non-baked goods such as salad dressings, to add thickness.

## Is Gluten Bad?

Gluten itself isn't bad; however, many people have negative reactions to gluten. For these people, gluten causes an imbalance in their bodies that can cause mild to severe reactions and illnesses.

## What Is the Difference Between Gluten Allergy, Intolerance, and Sensitivity?

People who have problems with gluten can have one of several different reactions. An intolerance, a sensitivity, and an allergy are not the same thing. They each have different symptoms and effects on the body.

**A gluten allergy** is an adverse reaction to gluten that involves the immune system. Essentially, the body sees gluten as a foreign object and attacks it. The symptoms are similar to season allergies.

**A gluten intolerance** means the body can't properly digest gluten so it begins to ferment in the gut, causing stomach discomfort. An intolerance doesn't usually cause intestinal damage.

**A gluten sensitivity** occurs when the body can't tolerate gluten. The symptoms are similar to Celiac disease, but the intestine is not damaged and symptoms usually occur hours or days after eating gluten.

Symptoms of A Gluten Allergy	Symptoms of Gluten Intolerance	Symptoms of Gluten Sensitivity
Asthma or trouble breathing	Abdominal Cramping/Bloating	Abdominal Cramping/Bloating
Chest pains	Brain Fog/Difficulty Focusing	Brain Fog/Difficulty Focusing
Eczema	Diarrhea	Diarrhea
Hives	Fatigue/Lethargy/Sluggishness	Fatigue/Lethargy/Sluggishness
Nasal Dysfunction	Gas	Headaches/Migraines
Rashes	Headaches/Migraines	Joint Pain
Tissue swelling	Hyperactivity/ADHD	Muscle Weakness/Numbness
	Joint Pain/Muscle Weakness	
	Vomiting	
	Weight Loss	

## **What Is A Wheat Allergy?**

Wheat allergy is a food allergy that generates an allergy-causing antibody to any of the proteins found in wheat. As with most allergies, a wheat allergy causes the immune system to respond to a food protein because it considers it dangerous to the body when it actually isn't. This immune response is often time-limited and does not cause lasting harm to body tissues.

### *Possible Wheat Allergy Symptoms:*

Chronic "hay fever" or nasal dysfunction  
Difficulty breathing  
Diarrhea, cramps, nausea, vomiting  
Itching, hives, swelling of skin  
Itchy, watery eyes  
Sinus congestion/headache/pressure  
Swelling, itching or irritation of the mouth or throat

### *Anaphylactic Symptoms:*

Chest tightness  
Dizziness or fainting  
Pale skin  
Severe difficulty breathing  
Tightness or swelling of the throat, trouble swallowing  
Unusually fast heart rate  
Very low blood pressure

## **What Is Celiac Disease?**

Celiac disease is an inherited autoimmune disorder that affects the digestive process of the small intestine. Normally, people can tolerate gluten proteins, but in people with Celiac disease gluten causes gaps between the cells in the small intestine to open too wide and allow toxins and gluten fragments into the bloodstream. The body's immune system responds by attacking its own cells, causing the small intestine to become inflamed. The small intestine becomes damaged and the body is unable to absorb nutrients, which leads to malnutrition and many other physical problems.

### Typical Celiac Disease Symptoms:

Anemia  
Anxiety/Depression  
Arthritis/Osteoporosis  
Brain Fog/Difficulty Focusing  
Constipation  
Diarrhea  
Delayed Growth in Children  
Fatigue  
Frequent Bruising  
Headaches/Migraines

Infertility/Repeat Miscarriages  
Joint Pain/Muscle Weakness  
Lactose Intolerance  
Skin Rashes  
Tingling  
Weight Loss

An unusually high number of people with (often undiagnosed) Celiac Disease also suffer from:  
Irritable Bowel Disease  
Liver Disease  
Nerve Damage  
Non-Hodgkins Lymphoma  
Obesity  
Thyroid Disorders  
Type 1 Diabetes

### **How Do I Know If I Have An Allergy, Intolerance, Sensitivity, or Celiac Disease?**

Observing your symptoms is a good place to start; however, the only way to make an accurate diagnosis is through testing.

### **What Are My Treatment Options?**

The only way to effectively treat gluten sensitivities and Celiac Disease is a gluten free diet. Because gluten can damage the intestines and other organs, even small amounts can make you sick and prevent healing.

### **What Is A Gluten Free Diet?**

A Gluten Free (GF) diet means eliminating wheat, barley, rye, kamut, spelt, and triticale, and any food that contain proteins from these grains.

Because gluten acts as a “glue” it is hidden in many non-grain foods such as salad dressings and gummy candies. It is important to buy only packaged foods that are labeled GF.

If you are extremely sensitive or have Celiac Disease, it is important to be aware of, and avoid, cross contamination. Cross contamination is where the gluten from one food item is present and can be mixed with a non-gluten food item. Many food manufacturers process a variety of foods in the same plant, so it is important that packaged foods are made in a gluten free facility.

For people with Celiac Disease it is also essential to have non-gluten cookware and utensils.

### **Foods That Are Unsafe – Always Contain Gluten:**

(Many foods are being made gluten free (GF), but they must be made in a gluten free facility and labeled GF on the package in order to be safe.)

- Alcohol
- Baked goods such as bagels, bread, cake, cereal, chapatti, cookies, crackers, croutons, croissants, flour tortillas, fry bread, nan, pastries, pie crust, pizza crust, pretzels
- Barley and barley grass
- Beer, ale, and lager
- Bran
- Breaded and fried foods such as chicken, french fries, and onion rings
- Breakfast cereals
- Couscous
- Dates
- Farina
- Farro
- Frosting
- Fu
- Gravy cubes
- Groats
- Harina or Masa
- Hot Dogs
- Licorice candy
- Matza
- Miso
- Oats
- Pasta, including durum, orzo, semolina, soba noodles, spelt, ramen noodles, udon
- Pearl Barley
- Sauces
- Sausages
- Seasonings
- Seitan and other vegetarian meat substitutes, including imitation bacon, crab, and fish
- Soup
- Soy milk and soy sauce
- Spelt
- Stock cubes
- Surimi
- Tabbouleh
- Tea
- Tempeh
- Teriyaki sauce
- Tofu
- Suet

#### **Ingredients That Are Unsafe – Always Contain Gluten:**

Additives:

- Abyssinian Hard / Durum
- Barley malt
- Brewer's Yeast
- Cereal binding
- Carmel color
- Carob
- Coloring
- Dextrimaltose
- Dextrin
- Dinkle
- Disodium
- Edible coating, film, and starch
- Einkorn
- Emmer
- Flavors
- Hordeum Vulgare Extract
- Hydrolyzed wheat gluten, protein, and starch
- Kecap Manis
- Ketjap Manis
- Malt, including extract flavoring, syrup, malt vinegar, and malted milk
- Matzoh Semolina
- Meripro 711
- Modified wheat starch
- Rice malt
- Roux
- Small Spelt
- Sprouted Wheat or Barley
- Stabilizers
- Starch
- Wheat germ oil or extract
- Wheat grass
- Wild Einkorn
- Wilde Emmer

Flours:

- Atta
- Bleached
- Bread
- Brown
- Enriched
- Flour
- Gluten
- Graham
- Granary
- Malted Barley
- Maida

- Rye
- Strong
- Soba
- Whole-meal

#### Types of Wheat:

- Bulgur
- Club or Common
- Durum
- Germ
- Hard
- Kamut
- MIR
- Oriental
- Persian
- Poulard
- Polish
- Shot
- Spelt
- Timopheevi
- Triticale
- Vavilovi
- Wheat Berries

#### **Read Labels and Know Gluten By Its Other Names:**

Known collectively as prolamins, these proteins have different names depending on the grain in which they are found:

- Hordeum vulgare, or hordein (barley)
- Secale cereal, or secalin (rye)
- Triticale X triticosecale (cross between wheat and rye)
- Triticum spelta (spelt, a form of wheat)
- Triticum turgidum (wheat)
- Triticum vulgare, and gliadin (wheat)

#### **What is Cross Contamination?**

Cross contamination occurs when gluten from one food item is present and can be mixed with a non-gluten food item. Many food manufacturers process a variety of foods in the same plant, so it is important that packaged foods are made in a gluten free facility.

#### **Can I Eat Out While On A Gluten Free Diet?**

Eating out can be risky. Be aware that delis and restaurants often add flour to egg omelets, and breadcrumbs to tuna salad. Gluten-free pasta is sometimes boiled in the same water used for standard pasta. Avoid French fries and fried foods fried in the same oil with glutenous breaded foods (fried onion rings, batter coated fish and chicken).

### **What Are the Benefits of a Gluten Free Diet?**

- Eating fewer processed foods. Because gluten is the glue that holds many foods together, it is “hiding” in many processed foods that also contain a lot of chemicals, artificial flavors, and dyes – which are essentially unhealthy.
- Eating more fruits and veggies.
- Reducing or eliminating excess oil and sugar in your diet.
- Building a stronger immune system that isn’t always overtaxed.
- It may help reduce the risk of heart disease and/or diabetes by eating an anti-inflammatory diet.

### **Are There Any Risks With a Gluten Free Diet?**

The benefits of a GF diet far outweigh the negatives; however, there are some issues you should be aware of:

- Reduced carbohydrate intake due to lack of education on nutrients (not all carbs have gluten)
- Lack of fiber from traditional sources can lead to digestive issues
- Possible weight gain from eating gluten-free products, which often contain higher levels of fat and sugar
- Possible weight gain as the intestinal track recovers and begins to absorb nutrients properly
- Possible weight loss and consumption of a nutrient deficient diet from eliminating too many foods for fear of a negative reaction

### **What about Nutrition and Supplements?**

Watch out for replacements! Many manufacturers will add more sugar and/or fat to increase the flavor of the food, this means more calories.

Most foods that contain gluten are fortified with vitamins and minerals, so when gluten is eliminated entirely from the diet, there is a possibility of not getting enough nutrients.

### **Can I Eat Some Gluten?**

A gluten free diet might seem confusing and restrictive at first. But as you begin to feel better, the benefits far outweigh the challenges. It might help to think of eating gluten free as a new and healthy life-style rather than a diet which has negative connotations. We recommend that you start with the food lists, brands, and resources that we have provided. Once you are familiar and comfortable with

these foods and products it will be easier to read labels and figure out on your own what is and isn't healthy for you.

Although most people can handle moderate amounts of gluten in their diet, the modern American diet contains so many processed foods, that even people without sensitivities or allergies are eating more gluten than is healthy. Everyone can benefit from reducing the amount of gluten in their diets.

**Gluten Free Foods:**

- Agave
- Alfalfa
- Algae
- Artichokes
- Aspic
- Beans – adzuki, chickpea / garbanzo, kidney, lentil, mung, pinto, white, tepary, urad
- Buckwheat
- Butter
- Cheese
- Chocolate
- Coconut
- Corn, corn tortillas, polenta
- Cowitch
- Cowpea
- Egg – yolk and whites
- Fish
- Flaked Rice
- Flax
- Fruit
- Grits
- Hemp
- Herbs
- Hominy
- Honey
- Hops
- Horseradish
- Job's Tears
- Kasha
- Kudzu
- Lard
- Lemon grass
- Meat
- Milk
- Millet
- Milo
- Nuts – acorn, almond, chestnut
- Nut butter

- Oats (if not cross contaminated)
- Oils and fats
- Peas
- Pigeon peas
- Potatoes
- Quinoa, quinoa cereal flakes
- Rice- white, brown, risotto, basmati, jasmine, wild, sticky rice, rice cereal
- Salt
- Seaweed
- Seeds
- Soba
- Sorghum
- Soybean
- Spices
- Stevia
- Sugar – brown, cane
- Taro Root
- Teff
- Vinegar (except malt)
- Wine
- Yogurt

*Gluten Free Pasta:*

- Buckwheat (100%)
- Brown and White Rice
- Corn (100%)
- Quinoa
- Soy

*Gluten Free Flour:*

- Acorn
- Almond / Almond meal
- Amaranth
- Arrowroot
- Artichoke
- Besan, Chickpea, Channa, Ceci, Gram, Garbanzo
- Brown rice
- Buckwheat
- Cashew
- Chestnut
- Chia seed
- Coconut
- Cornflour, Masa, Maize
- Cornmeal
- Corn starch
- Fava Bean

- Flaxseed Meal
- Gari
- Guar Gum
- Hazelnut Meal
- Kudzu starch
- Lotus
- Macadamia
- Malanga
- Millet
- Oat (certified gluten free)
- Pea
- Pistachio
- Plantain
- Potato
- Pumpkin Seed
- Rice
- Sago
- Sorghum, Milo
- Soy
- Sweet Potato
- Sweet Rice
- Tapioca
- Taro
- Teff
- Urad Dal
- Water Chestnut
- Xanthan Gum
- Yam
- Quinoa flour

**Brands that Make Gluten Free Products:**

Packaged Foods:

- All Natural
- Amy's
- Annie's
- Bob's Red Mill
- Delallo
- Glutino
- Hodgson Mill
- Nature's Path
- Sam Mills
- Tinkyada
- Udi's
- Van's

Frozen Foods:

- All Natural
- Applegate
- Van's

**Flagstaff Stores with Gluten Free Products:**

Health Food Stores:

- Natural Grocers
- New Frontiers
- Sprouts

Grocery Stores:

- Albertsons
- Fry's
- Bashas'
- Safeway

Other Stores:

- Big Lots
- Target
- Wal-Mart

**Tips for Cooking and Baking Gluten Free:**

When converting baking recipes to gluten-free, a simple one-to-one flour substitution will not give you the same results as recipes based on wheat flour.

Gluten is a giving, stretchy ingredient that supports rise, structure, texture and kneadability. It takes more than a single gluten-free flour replacement to make a cake, bread, muffin, or cookie recipe work. A combination of gluten-free flours and starches with some extra egg whites or leavening, and xanthan gum added to improve viscosity is necessary for optimum results.