

GLUTEN-FREE DIET

WHAT IS GLUTEN?

Gluten is a group of proteins found in the seeds of grasses. The gluten proteins in WHEAT (gliadin), BARLEY (hordein), and RYE (secalin) are particularly damaging and must be completely avoided by individuals who have a gluten sensitivity or Celiac Disease. There is some debate whether the gluten proteins in other grains (i.e. "zein" in corn, "avenin" in oats, etc) are problematic in some individuals as well, which is why some argue that a grain-free diet is the only *true* gluten-free diet.

TIP: When trying to remember which grains must be avoided on a gluten-free diet, use the acronym "BROW": (B = barley, R = rye, O = oats, W = wheat). Although oats don't contain the most damaging family of gluten proteins, they are cross-contaminated with wheat during growing, storage, and transportation, so they are considered a source of gluten unless you specifically get certified gluten-free oats.

WHY IS GLUTEN SUCH A HARMFUL SUBSTANCE?

Gluten is a highly inflammatory substance that triggers increased intestinal permeability in EVERYONE. Research has shown that *even if there is no immunologic response* to gluten, it still stimulates the production of a protein called zonulin which increases gut permeability and blood-brain barrier permeability.

While this "leaky gut" condition is only *temporary* for most individuals to begin with, once they cross the threshold where their immune system starts to produce antibodies against gluten, they are then considered to have a gluten sensitivity.

Gluten sensitivity exists on a spectrum. At one end is Celiac Disease—an autoimmune reaction to gluten where the intestines are damaged—which only a small percentage of individuals have. A much greater number of people have what is called non-celiac gluten sensitivity (NCGS) which *may or may not* cause intestinal damage or symptoms.

Symptoms of NCGS vary greatly from one person to the next. According to gluten researcher Dr. Hadjivassiliou, "gluten sensitivity can be primarily, and at times, exclusively, a neurological disease." For others, gluten causes antibodies to be made against the thyroid gland, and they develop Hashimoto's.

A review paper in *The New England Journal of Medicine* listed 55 "diseases" that can be caused by eating gluten, including osteoporosis, IBD, canker sores, rheumatoid arthritis, multiple sclerosis, and most autoimmune diseases, as well as many psychiatric and neurological diseases such as anxiety, depression, dementia, schizophrenia, migraines, and neuropathy.

Hippocrates, the Father of Medicine, said "All disease begins in the gut." Because gluten causes inflammation in the gut, it is really not healthy for anyone, but it is especially damaging for those who already struggling with their health. In those situations, eating gluten is like throwing gasoline on an out-of-control fire in your body. This is why a gluten-free diet is often one of the first steps recommended to help heal the body.



GLUTEN SENSITIVITY SYMPTOMS:

Although many symptoms of non-celiac gluten sensitivity are GI related, gluten is just as likely or perhaps even more likely to affect the brain.

There are 3 different ways that gluten can harm the brain: through inflammation, as an excitotoxin (glutamate), and by being broken down during the digestion process into opiate-like peptides called gluteomorphins. It's not surprising, then, that gluten can drastically change brain function and behavior.

Common symptoms include:

- Digestive issues (gas, bloating, abdominal pain, constipation, diarrhea)
- Skin rashes / Eczema
- Headaches / Migraines
- Brain Fog
- Poor cognitive function
- Fatigue
- Anxiety / Depression
- Mood changes / Irritability
- Hyperactivity
- Numbness in extremities
- Joint Pain
- Neurological symptoms (neuropathy, migraines, dementia, schizophrenia, ataxia)

GLUTEN-FREE FOOD LIST

- **Do any lab tests for gluten sensitivity (such as Cyrex Array #3) BEFORE beginning a GF diet**, as antibody levels start to fall after gluten is removed from the diet and you can get a false negative.
- Because **DAIRY is the second most inflammatory food after gluten** and over 50% of people with a gluten sensitivity also react to dairy, it is best to follow a **GLUTEN-FREE + DAIRY-FREE** diet. At some point, it may be possible to successfully reintroduce dairy to the diet (especially less reactive dairy products like ghee, butter, or cream).
- The healthiest Gluten-Free diet is one that consists of **whole foods that are naturally gluten-free** instead of highly refined "gluten-free" packaged food. Build your diet around high-quality protein, fats, vegetables, fruits, and nuts/seeds.
- **Because one tiny exposure to gluten can cause antibodies to be produced in the body for 3-6 months, it is essential to be 100% gluten-free; simply reducing gluten is not enough!** It only takes 1/1000 of a gram of gluten exposure (a tiny crumb of bread) to reactivate the immune system, so it is also not sufficient to just take the bun off your burger or pick the croutons off your salad. Be as strict when it comes to gluten as you would be if you had a severe peanut allergy. Cross-contamination must be avoided.
- **Be aware that since gluten is a highly addictive substance that has an opiate-like effect on the brain, some people go through a period of "withdrawal" when they first remove gluten.** Withdrawal symptoms may include fatigue, headaches, depression, and nausea. Taking an enzyme called DPP-IV while transitioning to a gluten-free diet can be helpful, especially if you are the type of person who really craves bread, pasta, and other foods containing gluten.
- **Look for hidden sources of gluten.** Soups and sauces/gravies often are thickened with wheat flour. Beer has gluten, so does nearly all soy sauce. Balsamic vinaigrette often has soy sauce added to it. Foods with "malt" in their name almost always contain gluten, such as barley malt, malt extract, and malt vinegar. Communion wafers contain gluten (many churches now offer a GF option). Imitation seafood and seitan contain gluten. Instant coffee is almost always contaminated with traces of gluten. Most mushrooms are grown on gluten-containing grains (rye/wheat) and can be cross-contaminated with low levels of gluten. Many spices and spice blends (particularly curry powder) contain wheat flour to prevent clumping. Blue cheese is frequently inoculated with mold spores grown on breads or cultures that contain gluten. French Fries are often prepared in the same fryer that fries foods breaded with wheat flour (chicken fingers / onion rings). Restaurants like IHOP use pancake flour when making scrambled eggs and omelets to increase egg fluffiness. Shampoo, conditioner, & hair products often contain hydrolyzed wheat or oats, and lotions sometimes have wheat germ oil. Toothpaste, mouthwash, and cosmetics (be especially mindful of lipstick) may contain gluten. Seek out certified gluten-free supplements (and avoid green drink powders with barley grass or wheat grass even if they are labeled "gluten free"). For kids, Play-Doh and art supplies (particularly finger paints and craft paste) are often an overlooked source of gluten. Pet food often contains gluten – look for grain-free dog and cat food (it's healthier for them, too!).

NATURALLY GLUTEN-FREE	GLUTEN-FREE GRAINS / FLOURS	GLUTEN—AVOID
<ul style="list-style-type: none"> - MEAT, POULTRY, FISH, & EGGS - VEGETABLES - FRUIT - NUTS & SEEDS - BEANS 	<ul style="list-style-type: none"> - Amaranth - Bean Flours (garbanzo/chickpea, etc) - Buckwheat - Coconut Flour - Corn - Millet - Montina - Nut Flours (almond, chestnut, pecan, etc) - Potato Flour/Starch - Quinoa - Rice & Wild Rice - Seed Flours (sunflower, pumpkin, etc) - Sorghum - Tapioca & Cassava Flour - Teff - Tigernut Flour 	<p>AVOID <u>ALL</u> FOODS <u>CONTAINING</u> OR <u>DERIVED FROM</u>:</p> <p>- WHEAT - BARLEY - RYE - OATS</p> <p>NOTES:</p> <ul style="list-style-type: none"> - There are numerous varieties and forms of wheat – <u>all of which must be avoided</u>: durum, semolina, graham, bulgar, kamut, spelt, einkorn, emmer, farina, faro, triticale, orzo, couscous, matzo, and cake flour. - Sprouted grains (Ezekiel Bread) contain LESS gluten but are <u>NOT</u> gluten-free. - Certified Gluten-Free Oats would be acceptable on a GF Diet since great care is taken to ensure no cross-contamination.