GLUTEN

Foods containing gluten

- Wheat
- Wheat germ
- Rye
- Barley
- Bulgar
- Couscous
- Farina
- Graham flour
- Kamut Matzo
- Semolina
- Spelt
- Riticale

Some foods that often contain added / hidden gluten				
Malt	Malt flavouring	Soups	Bullion & broths	Beer
Cold cuts of meat	French fries	Processed cheeses	Mayonnaise	Meatballs
Ketchup	Malt vinegar	Soy sauce	Teriyaki sauce	Meatloaf
Salad dressings	Egg substitutes	Tabbouleh	Sausages	Blue cheeses
Non-dairy creamer	Fried vegetables	Tempura	Gravy	Vodka
Marinades	Canned baked beans	Cereals	Chocolate milk	Syrups
Breaded foods	Fruit fillings	Veggie burgers	Roasted nuts	Hot dogs
Ice cream	Flavoured coffees	Energy bars	Wheatgrass	Puddings
Instant hot drinks	Oats or oat bran (unless certified GF)			

Miscellaneous sources of potential gluten

- Shampoos
- Cosmetics
- Medications
- Lip balms
- Play-doh
- Lipsticks
- Some vitamins and supplements
- **CHECK labels for medications and supplements**

The following are often code for gluten

- Avena sativa (oats)*
- Fermented grain extract
- Hydrolised malt extract
- Hydrolised soya protein
- Hydrolised vegetable protein
- Yeast extract
- Hordeum distichon
- Dextrin
- Hordeum vulgare
- Maltodextrin
- Hydrolysate
- Phytosphingosine extract
- Triticum vulgare
- Caramel colour (often made from barley)
- Tocopherol/vitamin E
- Modified food starch
- Brown rice syrup
- Natural flavouring
- Secale cereale
- Samino peptide complex
- Cyclodextrin

Check labels on foods, supplements, cosmetics to make sure they are gluten-free
* oats do not contain gluten but may have been processed on machines that have also processed gluten so gluten contamination must be avoided for Coeliacs.

Continued…

GLUTEN

Some of the Medical conditions associated with gluten sensitivity				
Malnutrition - deficiencies in iron, zinc, calcium, magnesium, potassium, Vitamins B6, B12, folic acid, A, D, E and K – and their associated conditions				
Abdominal bloating, distension	Abortions	Adenovirus gastroenteritis	Addison's disease	Heartburn / reflux
AIDS	Albumin & prelbumin, serum	Alkaline phosophatase, serum and bone	Alopecia areata	Respiratory allergies, shortness of breath,
Amenorrhea	Anaemia, folic acid deficiency, iron deficiency	Anorexia nervosa	Aphthous stomatis / canker sores	Clumsiness, falling over feet
Arthritis	Arthralgia	Polyarthritis, seronegative	Juvenile arthritis	Tobacco or alcohol addiction
Rheumatoid arthritis	Asperger's syndrome	Asthma, bronchitis, wheezing, difficulty breathing	Ataxia	Difficulty getting to sleep
Allergic rhinitis	Eczema	Chronic urticaria	ADD	Getting up to urinate in the night
Insulin-dependent diabetes mellitus	Hyperthyroidism	Hypothyroidism	Inflammatory bowel disorders	An excessive need for sleep
Vitiligo	Systemic lupus erythematosus	Coeliac disease (CD)	Chronic active hepatitis	Bed wetting
Dermatomyositis	Pemphigus vulgaris	Myasthenia gravis	Hashimoto's thyroiditis	Colic
Dermatitis hyperformis	Sjogren-Larsson syndrome	Berger's disease	Axonal neuropathy	Short stature
Biliary cirrhosis	Biliary duct atresia	Osteoporosis	Osteopenia	Hip fractures
Osteomalacia	Bone (growing) pains	Elevated bone alkaline phosphatase	Hyperparathyroidism, secondary	Elevated serum osteocalcin
Hypothyroidism (magnesium-deficiency induced)	Frequent bone fractures	Elevated urinary hyroxyproline excretion	Hypocalcemia (low calcium) Calcium deficiency	Bleeding / bruising (low Vit K)
Hypocalcuria	Breast feeding – absence of	Bullous pemphigoid	Autism	Low blood pressure
Adenocarcinoma of small intestine	B-cell lymphoma	Bladder cancer	Brain cancer	Psoriasis
Prostate cancer	Squamous cell carcinoma of pharynx and oesophagus	T-cell lymphoma small intestine	Testicular cancer	Disorientated, confused on waking
Cardiomyopathy, idiopathic dilated	Cerebellar atrophy / cerebellar syndrome	Epilepsy	Cerebral calcification	No energy for life's demands
Headache	Mental deterioration	Visual disturbances	Chest pain (non-cardiac)	Fainting / light headedness
Cholangitis, primary sclerosing	Cholecystokinin (CKK) inhibition	Colitis	Crohn's disease	Patches of red or purple patches
Dementia	Depression	Diarrhoea, chronic	Down syndrome	Short fifth finger
Duodenal ulcers	Dysarthria	Dyslexia	Dysphagia	Orange palms
Edema	EEG abnormalities	Irritability	Querulousness, petulance	Clubbed fingertips
Impulsivity	Anxiety	Aggressiveness	Autism	Fingernails spoon-shaped, thin, brittle
Schizophrenia	Oesophageal symptoms	Oesophageal reflux	Eustachian tube dysfunction	Nail beds remain pale when pressed
Exorphin / opioid-like activity	Failure to thrive	Family members of Coeliacs	Fatigue, chronic	
Flatulence	Malabsorption	Food sensitivities	Gallbladder malfunction	Infertility (regardless of spouse)
Gallstones	Gastric inhibitory polypeptide reduction	Gastric ulcers	Gastrointestinal bleeding	Failure to thrive
Abdominal pain	IBS	Ulcerative colitis	Steatorrhea	Elevated liver enzymes
Polyneuropathy	Abnormal intestinal permeability (leaky gut)	Pancreatic insufficiency	Dyspepsia, oesophageal reflux	High homocysteine
Genetics	Glomerulonephritis	Grave's disease	Amenorrhea	Delayed puberty
Delayed menarche	Delayed puberty	Early menopause	Premature greying hair	Selenium deficiency
Villous atrophy	Ischemia heart disease	Cardiomyopathy	Chest pain	Sexual behaviour disorders
Pericarditis, recurrent	Haematuria	Hepatitis	Elevated plasma testosterone	Short stature / growth
Reduced plasma dihydrotestosterone	Elevated luteinising hormone	Hyperprolactinemia	Growth hormone deficiency	Vitiligo

Continued…….

"Let food be thy medicine, and medicine be thy food" Hippocrates

GLUTEN

Multiple sclerosis (MS)	Hypoalbuminemia	Hypocomplementemia	Hypogonadism	Dental caries, periodontal disease
Hypoperfusion, frontal cortex	Hyposplenism	Impotence, loss of libido	Failure to thrive	Non-digestion of fats
Intellectual impairment / mental deterioration	Iron deficiency anaemia	Kidney disease	Lactose intolerance	Fatty stools (floating stools)
Leaky Gut syndrome	Lipofuscin storage	Lymphocyte reactivity	Lymphocytic gastritis	Middle ear infections
Macroglossia (enlarged tongue)	Prolactin elevated	Subfertility	Low haemoglobin	Sicca syndrome
Ramsay Hunt's syndrome	Reduced time span of fertility	Weight loss with wasting	Chronic fatigue	Sperm abnormalities
Malignancies	Dizziness, imbalance	Mast cell degranulation	Delayed menarche (+ 1 year)	Steatorrhea
Early menopause (2-3 earlier)	Inability to concentrate	Mental lethargy	Distractibility	Suicide
Optic neuropathy	Vasculitis	Paraesthesia	Myasthenia gravis	Weight loss/failure to gain weight
Mycosis fungoides	Mycolonic ataxia	Nephropathies	Brain atrophy	Thrombocytopenic purpura
Miscarriages	Recurrent abortions	Stillbirths	Progressive neuromyopathy	Turner's syndrome

We (hominids) have been on earth for around four million years. Our hunter-gatherer ancestors (and a few tribes still left today) likely lived off roots, shoots, nuts, berries, seeds, tubers and fish, rabbits, poultry, game, and other animals, when they could get them. However, it was not until the agricultural revolution, somewhat recently in terms of our evolution, around 12,000 BC., that humans decided to live in one place, in communities, and grow grains. Grains were helpful as they had a longer storage time and were a useful food source at a time when some large mammals were becoming extinct or reduced in number.

Our immune sensitivities and nutritional requirements are determined by the millions of years during which nature shaped our genes, our biochemistry, and our bodies, providing us with specific digestive enzymes to break down the food we have evolved with. Rarely, prior to 15,000 BC, did our ancestors eat wild cereal grains - wheat is a late arrival of food source, something we have only been eating for a miniscule **0.25%** of our existence. Gluten and cow's milk dairy products are two of the most commonly reported allergens in the world yet make up huge parts of most people's diets. Functional medicine doctors estimate that 1 in 3 people are gluten sensitive or intolerant.

Skeletons show that when we switched our diets to grains, our ancestors became 5-6 inches shorter than their direct forebears, and their head circumferences decreased - you will see below that Osteoporosis is one of the gluten-associated conditions, as gluten can contribute to mineral and vitamin deficiencies, which are vital for growth.

Gluten is the storage protein in certain grasses (below). Today's wheat contains even more gluten than original grains. Today, many people have not yet evolved the digestive enzymes to break down gluten. Our genetics have not changed, but our diets have been radically transformed. Without the digestive enzymes to break down gluten appropriately, some proteins remain intact, which are passed undigested into the bloodstream through the intestinal wall (only 1cm thick, with the highest concentration of immune cells in the body).

Although the majority of people can tolerate and safely eliminate gluten, no one is able to completely digest it. Proteins are like a pearl necklace with a single "pearl" the protein's amino acid. Our digestive enzymes break the "pearl necklace" into pieces. Proteins except gluten are digested within 60 minutes, but gluten can resist digestion for 24 hours. All of the proteins we ingest can be completely dismantled, with the exception of one, **gluten** (and its components gliadins and glutenins).

GLUTEN

Gluten weakens the protective mucosal gut lining, and these large unbroken gluten proteins mentioned above, can leak, or escape through gaps in the wall of the small intestine into the blood stream, where they should not be. The body sees these unbroken proteins as foreign invaders, just as if they were bacteria, which can trigger an antibody immune response (measurable in the blood), and inflammation, contributing to Leaky Gut, which can be indicated in various tests.

Unbroken gluten proteins in the bloodstream can trigger an immune attack on many differing parts of the body, in particular the thyroid. Wheat raises insulin more than sugar. Gluten sensitivity is often silent in early stages, with few identifiable symptoms until adulthood. It triggers biological responses in everybody but not everyone has reactions to it. Gluten is a chemoattractant for neutrophils (immune cells) – so there is always a level of inflammation with gluten. It binds to receptors meant for microbiome, blocking adhesion of some probiotics (beneficial species).

Many people think they do not have a problem with gluten because they have no digestive symptoms, but 2/3 of people with gluten sensitivity experience neurological symptoms. This is because the tissue most affected by a gluten sensitivity is nerve tissue. Wheat / gluten grains are large proteins, which are hard for anyone to digest, but some more than others. They are inflammatory foods, but some can react more to them than others. If you have inflammation (especially if you have anything that ends in 'itis'), then removing inflammatory foods are likely going to help reduce inflammation. Many clients find their mood disorders significantly improve by eliminating wheat / gluten grains and cow's dairy foods from their diet.

This is because the tissue most affected by a gluten sensitivity is nerve tissue. Wheat / gluten grains are large

Gluten cross reacts with dairy, especially cow's dairy (goat and sheep is fine for most), meaning the immune system recognises dairy as gluten.

Gluten-free substitutes are often loaded with sugar, bad fats, and additives, and are still refined carbohydrates (flours) which can very quickly release sugars and contribute to blood sugar imbalance.

If bacteria in the small intestine (in the wrong place) have damaged the disaccharide-digestive enzymes of the microvilli, removing starch and milk from the diet can often provide great relief.

If someone has a head or brain injury, concussion, whiplash, serious infection, PTSD or traumatic psychological event, special cells called microglia in the brain at the site of trauma change shape permanently and become primed for inflammation. If a person was already high in inflammation before this occurred, then their inflammation will be even higher. This inflammation can continue to increase like a forest fire, unless controlled with anti-inflammatory nutrients and balancing blood sugar. This means that any other inflammation in the body, will cause symptoms in the area of impact in the brain – bang on the forehead: eyes, ears etc., bang to the back of the head: dizziness, loss of balance, PTSD: the limbic system that controls emotions e.g. anxiety, depression. Inflammatory foods such as gluten and cow's dairy, sugar, alcohol (and possibly other foods that someone is sensitive to that produces an inflammatory response) will fuel the forest-fire and they may then become sensitive to these foods for life as the microglia cells in the brain in the damaged area, do not change back to their original non-inflammatory state. This is the reason why many people are not able to eat the foods they were able to eat previously.

For more information on gluten, read *Dangerous Grains* by James Braly, MD and Ron Hoggan MD – with lots of scientific references. Also. *Gluten Freedom* by Alessio Fassano

GLUTEN

Some people can have different measurable immune reactions to the proteins in certain grains in the species Triticum. There are two classes of protein in Triticum: gluten and gliadin.

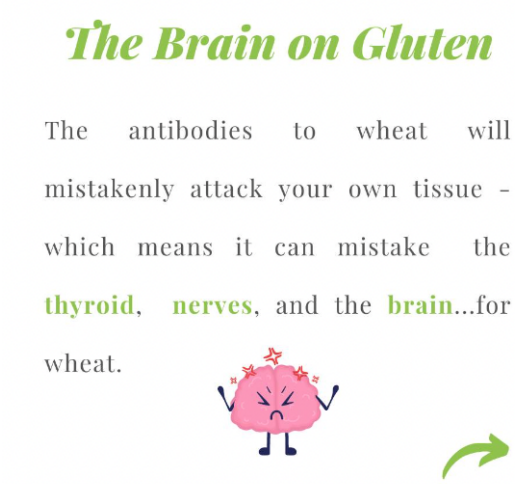
Gluten can attack the cerebellum in the brain, the area at the back of the brain that looks like a cauliflower. "The cerebellum controls movement and balance. Inside the cerebellar cortex there are large neurons called Purkinje cells. The cerebellar antibodies test measures antibodies against the Purkinje cells. These antibodies are associated with autism, celiac disease, gluten ataxia and paraneoplastic cerebellar degeneration syndrome. Elevated levels of this antibody are often why older people sometimes don't feel steady walking up and down stairs. The reason is not that they are getting old.

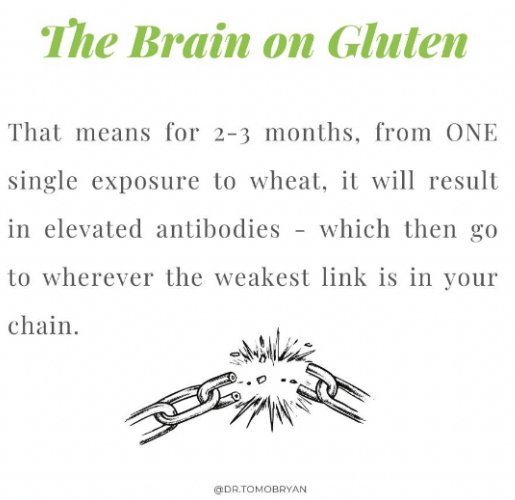
Gluten and Potential Role in Neurodegeneration. https://pubmed.ncbi.nlm.nih.gov/33808124/

Instead, their cerebellum, the part of the brain associated with balance, is shrinking because of years of elevated antibodies to the cerebellum slowly killing off the Purkinje cells.

Molecular mimicry

The immune system fights gluten, and in this case, brain tissue looks similar to gluten peptides, so it gets attacked. Both genetic and functional studies tell us that one way that gluten can affect us is via molecular mimicry with Synapsin 1. Synapsin 1 is a protein in our nerves responsible for one nerve cell talking to the next nerve cell through hormones called neurotransmitters. Molecular mimicry is when the immune system produces antibodies to gluten, and those antibodies can attack Synapsin 1 causing local inflammation " – Dr Tom O'Bryan. The same can happen with thyroid tissue also.





- *Dr Tom O'Bryan*

GLUTEN

There are different types of reactions to gluten.

- **Coeliac disease** is a genetic autoimmune disorder which involves the life-long avoidance of gluten/gliadin containing grains (see below for more information). According to Dr Alessio Fasano's research, 1 in 133 in the US and UK have coeliac disease. Autoantibodies are almost always present. Those with coeliac disease have the HLA DQ2/8 gene. Co-morbidities of Hashimoto's and Type 1 diabetes are often signs of coeliac disease

- **Non-coeliac gluten sensitivity** can closely mimic coeliac disease, but coeliac disease and gluten sensitivity are different. Some individuals do not have coeliac disease, but nonetheless definitely *do* experience nasty symptoms when they consume foods that contain gluten. This produces a different immune response, and immune antibody than coeliac disease. Antibodies will not be present.

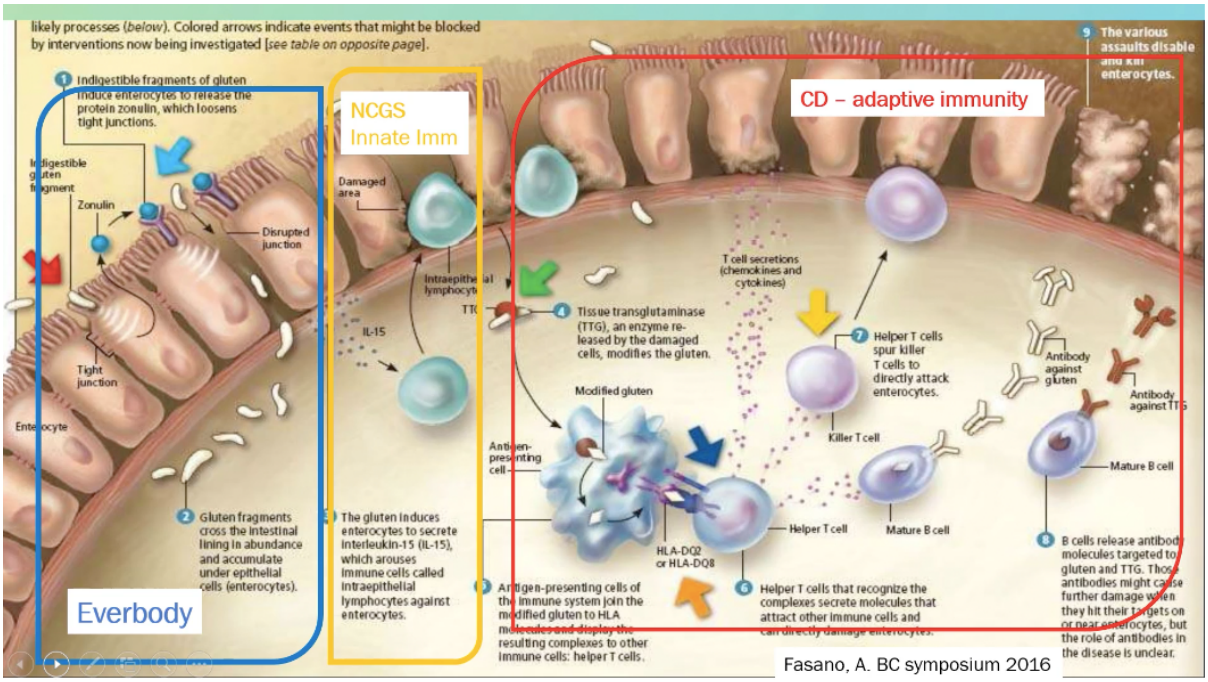
- **Gluten Intolerance** can give uncomfortable symptoms after eating foods with gluten, but does not produce a measurable immune response i.e. an antibody.

- **Wheat allergy** is an allergy to the wheat itself involving more components than just the gluten, so gluten-free bread in this instance would still produce a reaction. Reactions can include nasal congestion, itchy or watery eyes, stomach cramps, diarrhoea, nausea, vomiting, skin rashes, hives, dizziness, fainting, rapid heartbeat, chest pain, swelling of throat, asthma or even anaphylaxis and can be a reaction to a range of wheat proteins. Individuals can have a dietary and / or respiratory reaction to wheat. This produces more of an immediate allergic reaction than coeliac or non-coeliac gluten sensitivity, minutes, or hours after eating wheat. Those with wheat intolerance working in environments such as bakeries involving wheat flour, may also have allergic respiratory reactions such as asthma on exposure to the flour dust (Baker's asthma).

- **Gluten Ataxia** is a rare autoimmune condition (but growing in prevalence) which involves an attack by the immune system on the brain and neurological system in response to the consumption of gluten-containing foods. People with gluten ataxia need to follow a gluten-free diet to avoid further neurological damage. This is a relatively new discovery and so not yet widely accepted in the medical profession. Research is being conducted in this area. Digestive issues are not normally an issue, but symptoms can include problems with general movements, such as walking or arm control, unsteadiness, issues with coordination, loss of precise movement skills, such as the ability to write or button a shirt, difficulty talking, vision issues, symptoms of nerve damage in the hands, feet, and limbs. (More information here) https://www.medicalnewstoday.com/articles/320730.php#diagnosis

GLUTEN

Dr Fasano's image below shows the immune reaction in everybody, non-coeliac gluten sensitivity, and coeliac disease (as denoted by the appropriately coloured words in this sentence).



"When wheat is treated with glyphosate herbicide, the wheat protein binds with the chemical. This changes the structure of gluten to a form the body's immune system doesn't recognize. As a result, it tags it as a foreign invader and attacks it for removal. This sets into motion the development gluten sensitivity in some people. It also may help explain the explosion of gluten sensitivity worldwide. Other factors such as how food is manufactured, hybridization of wheat, barley, and rye, and the growth of mould aflatoxins in wheat storage also promote a rise in gluten sensitivity. We especially see gluten sensitivity in people with autoimmune diseases, particularly Hashimoto's". Datis Kharrazian, PhD, DHSc, DC

"Humans do not have the enzymes to break down the long chain of wheat gluten or any grasses for that matter. The issue is that in our grandmother or great grandmother's time, and before that, they did not live in today's toxic modern world. Our immune systems are taxed.

For example, if you have a person who lives an unhealthy lifestyle, changes are they have health issues, and the immune system is very taxed. These proteins cause micro-tears in the intestines, but the immune system heals it every time. At some point, because of lifestyle, stress, or any number of environmental influences, the immune system does not heal those micro-tears any longer. This is called loss or oral tolerance.

So, this person continues to eat wheat gluten over and over again, and these micro-tears become intestinal permeability, or Leaky Gut. Leaky gut is one of the 3 factors that is involved in the development of autoimmune disease.

Have a look at the NIH's research database - https://pubmed.ncbi.nlm.nih.gov/ - and search wheat gluten and leaky gut and you will find there is a lot of science out there proving this, even from Harvard. They shot a video with a camera of someone's intestines after they ate wheat." Dr Tom O'Bryan

GLUTEN

Dr Datis Kharrazian PhD, DHSc, DC

The gluten that is eaten today is not the same gluten that your Grandparents ate. Although not technically genetically modified, gluten has been significantly hybridized and deamidated over the years, processes that have rendered it inflammatory to humans. Unlike genetic modification, which inserts or deletes genes, hybridization creates a new protein by combining different strains of wheat. This can alter a protein sequence by as much as 5 percent, making it quite different from the original source and hence more prone to triggering immune reactions.

Deamidation uses acids or enzymes to make gluten water soluble (it is normally only soluble in alcohol) so it mixes more easily with other foods. This has been shown to create a severe immune response in people. The hybridization and deamidation of wheat appear to play a role not only in the sharp increases of gluten sensitivity and celiac disease, but also in inflammation, degeneration, and even autoimmunity of the brain and nervous system.

Glyphosate, the commonly used herbicide in wheat crops, binds to the protein in wheat, making it foreign to the immune system. Research suggests this makes wheat more immune-reactive, triggering a gluten sensitivity. Additionally, glyphosate preferentially kills the bacteria in your gut that help digest wheat, making undigested wheat more immune-reactive.

The effects of gluten on the gut can be affected after eating gluten for 2-3 months, and for someone with Hashimoto's, it can affect a person for up to 6 months. There may be no signs of gut disturbance though, it could manifest as anxiety, aching muscles, depression etc.

Many people with gluten sensitivity test negative on a standard gluten test. If you test for gluten sensitivity with a test that only measures alpha gliadin, a component in gluten, you could end up with a false negative result. See my Fact Sheet on Food Sensitivity for more information.
That is because people can react to 12 different compounds in gluten grains. In fact, one study showed that an alpha-gliadin test — the most common screen for gluten sensitivity — detected gluten sensitivity in only 1/5 of subjects. The other subjects reacted to different compounds in wheat, such as lectins or other forms of gliadin.

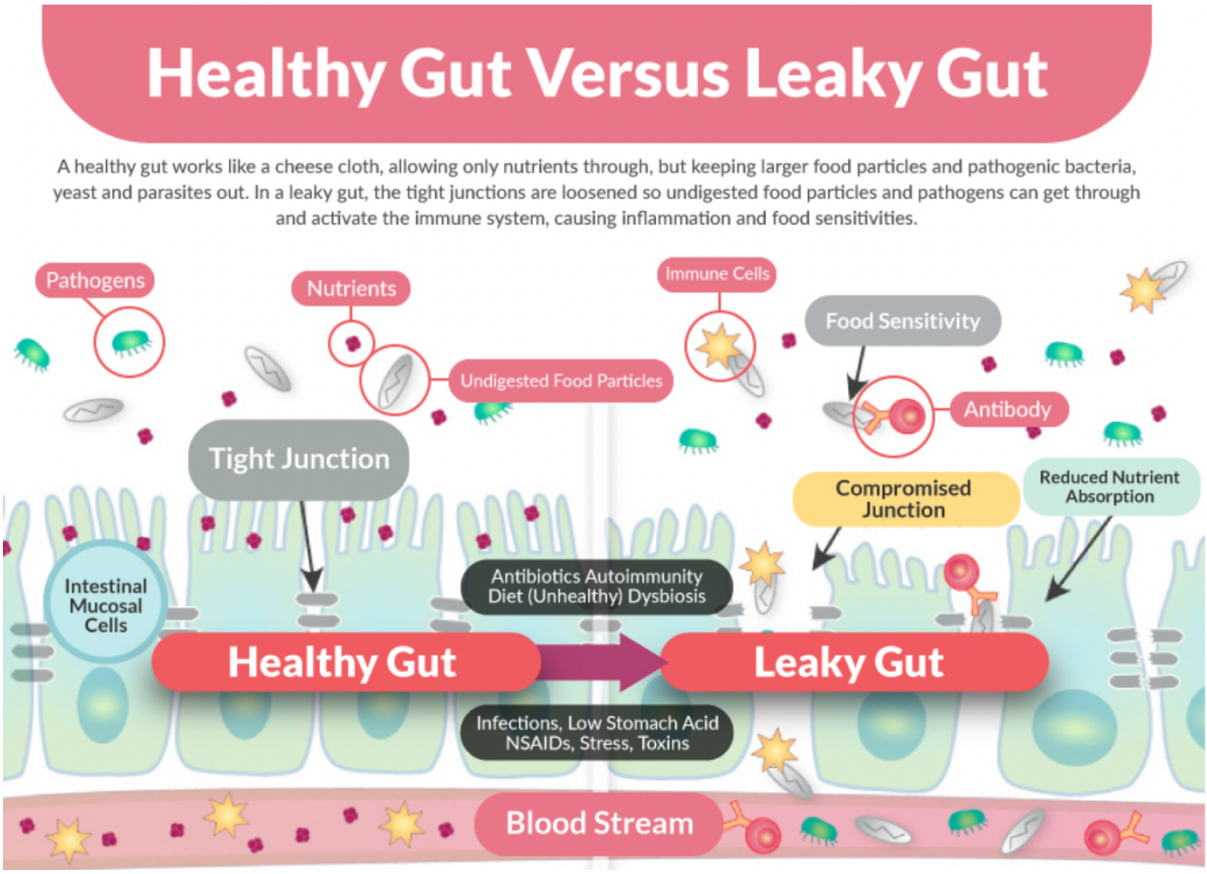
This is important to know if you are trying to manage your autoimmunity and have been told you are not gluten sensitive. For most of my autoimmune patients and readers over the years, avoiding gluten and dairy have been integral to keeping their autoimmunity in remission.

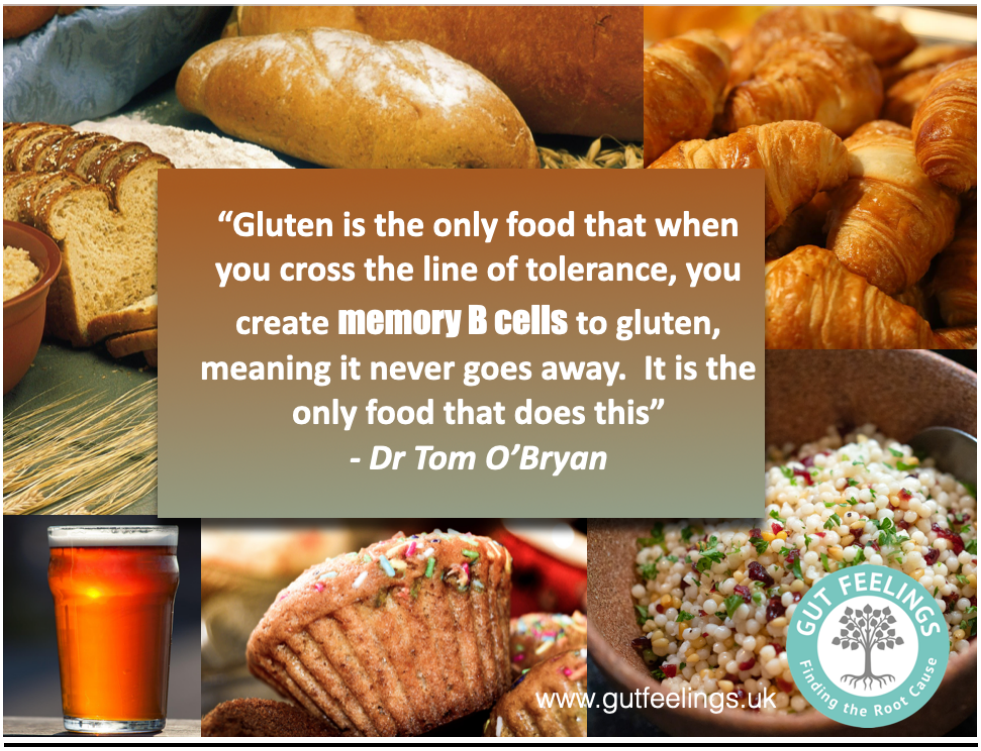
You don't have to have celiac disease for this to be the case as it also holds true for gluten sensitivity (when the immune system produces antibodies to gluten). Although celiac disease can also present solely as neurological symptoms.

Research shows that two thirds of people who produce antibodies to gluten manifest their symptoms neurologically. These individuals may not have any gastrointestinal complaints at all.

When either celiac disease or gluten sensitivity causes brain symptoms, a strict gluten-free diet can bring about a profound reversal of symptoms. You may also need to remove dairy from the diet as it cross reacts with gluten, meaning the immune system mistakes dairy for gluten.

GLUTEN


Healthy Gut Versus Leaky Gut
A healthy gut works like a cheese cloth, allowing only nutrients through, but keeping larger food particles and pathogenic bacteria, yeast and parasites out. In a leaky gut, the tight junctions are loosened so undigested food particles and pathogens can get through and activate the immune system, causing inflammation and food sensitivities.
Pathogens
Nutrients
Undigested Food Particles
Immune Cells
Food Sensitivity
Antibody
Tight Junction
Compromised Junction
Reduced Nutrient Absorption
Intestinal Mucosal Cells
Antibiotics Autoimmunity Diet (Unhealthy) Dysbiosis
Healthy Gut
Leaky Gut
Infections, Low Stomach Acid NSAIDs, Stress, Toxins
Blood Stream


"Gluten is the only food that when you cross the line of tolerance, you create memory B cells to gluten, meaning it never goes away. It is the only food that does this"
- Dr Tom O'Bryan
www.gutfeelings.uk
GUT FEELINGS
Finding the Root Cause

GLUTEN

Gluten and Brain Inflammation – by Dr Datis Kharrazian, author of Why is My Brain Not Working

A gluten sensitivity manifests *neurologically* in 2/3 of people — most people do not have gut symptoms in response to gluten. Researchers call gluten sensitivity a neurological disease. Gluten sensitivity is significantly under diagnosed due to incomplete testing. You do not have to have coeliac disease for gluten to impact the brain. Modern farming practices have changed wheat and made gluten more immune-reactive.

Cross-reactivity, also known as molecular mimicry, is one of the ways gluten impacts the brain. This occurs when the immune system mistakes brain tissue for gluten and attacks and destroys the tissue. It does this because both gluten and brain tissue have proteins made up from identical amino acid sequences.. For instance, eating dairy can trigger a gluten-like immune response because the body sees their protein structure as one and the same.

"For the most part, inflammation in the gut causes inflammation in the brain, and it is not uncommon to see what are called hyperintensities, these white matter lesion with people that have gluten sensitivity. And numerous studies have now shown that people that have any kind of inflammation in the gut like any kind of inflammatory bowel disorder, have a much, much, much higher rate of these white matter lesions on their brain, which is basically inflammation."

"When you look at the protein portion of wheat, gluten can be broken down to gliadin and glutenin, so there are different structures of the gluten protein and different branches of gliadin. These gluten proteins get metabolised by an enzyme in the gut called transglutaminase into what is called deamidated gliadin. So, there are many different parts of gluten you can have an immune response to. You can technically have an immune response just to glutenin and not to gliadin. When most people get tested for gluten sensitivity, they are getting an alpha-gliadin test, they are not getting Geta or Gamma gliadin or other parts of wheat."

Coeliac Disease

Coeliac disease is a genetic autoimmune disorder which involves the life-long avoidance of gluten/gliadin containing grains. In coeliac disease, gluten triggers the immune system to attack the lining of the small intestine, eventually eating away the lining in a process known as villous atrophy. Villi are small finger-like projections that increase the internal surface area of the intestinal walls making available a greater surface area for absorption.

The presence of coeliac disease and gluten intolerance has been rising significantly over the past several decades and has risen by more than 400% since the 1960s but it is believed that many more people might actually have coeliac disease but are not aware of it. This disease can be difficult to diagnose because it affects people on many different levels and in various ways. It is worth noting however, that people with non-coeliac gluten sensitivity can have more severe symptoms than those with Coeliac disease.

For some people, practically no symptoms might be present. For others, their symptoms might start out as ongoing headaches, unexplained weight changes or feeling more anxious than usual. This can then continue to progress and lead to insomnia, feeling "wired but tired," joint pain, symptoms of depression and eventually cognitive decline or dementia in older people.

GLUTEN

Around 1 in 100 people worldwide have coeliac disease. In the past 50 years, we've come to understand much more about how coeliac disease symptoms and gluten sensitivity or intolerances manifest, along with the dangers of untreated food allergies, such as malnutrition, stunted growth, neurological and psychiatric illness, and much more. For people who have been diagnosed with coeliac disease, following a gluten-free or gluten sensitivity diet is considered "medical nutrition therapy" and is the only definitive way to improve symptoms and prevent future health problems.

Many coeliac disease symptoms relate to dysfunction within the digestive tract, including the gut and intestines. Coeliac disease is a type of autoimmune disease in which an inflammatory response to gluten damages tissue within the small intestine.

Coeliac Disease – signs and symptoms	
IBS	Numbness in hands or feet
Burning, stabbing or shooting pains	Chronic diarrhoea
Abdominal pain after eating	Low iron, B12 zinc, calcium
Infertility	Hypothyroid or Hyperthyroid
Parathyroid disorders	Chronic fatigue or lethargy
Joint or bone pain	Seizures
Recurrent miscarriages	Thinning hair
Trouble concentrating	Sleep disturbances, insomnia
Poor memory	Asthma
Loss of balance or co-ordination	Muscle weakness, particularly feet
Cut or ulcer in the foot that is not getting better	Bloating
Elevated liver enzymes (may only show if the liver is particularly damaged)	Type 1 Diabetes
Constipation	Chronic headaches
Anxiety	Irregular periods
Canker sores in the mouth	Dull skin
Changes in weight	Depression
Food allergies	Dermatitis, eczema
Heart complications	ADHD
Anaemia	Intestinal cancer
May be misdiagnosed as arthritis	Increased chance of Addison's disease, Crohn's, or arthritis