THE AUTOIMMUNE DIET

The Gut-Brain Repair Guide

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The Autoimmune Diet

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INTRODUCTION

Many people wonder what they can do immediately to manage their chronic health condition. The science can be confusing and complex, especially to those with Hashimoto's hypothyroidism and other autoimmune diseases. These disorders can lead to brain fog, fatigue, and loss of cognitive function that make it hard to figure out what to do next.

What people frequently fail to realize is that underlying all of these conditions is the most important foundation of all – your diet.

While for most people, diet is not the only factor in relieving the suffering autoimmunity causes, it's a vital foundation to that process.

The autoimmune diet is a useful tool for healing

In this e-book you'll learn the basics for the autoimmune diet, an effective protocol that helps autoimmune patients overcome the core underlying factors preventing recovery: inflammation, leaky gut, hormone imbalances, blood sugar imbalances, impaired brain function, micronutrient deficiencies, and immune system dysregulation.

You will also learn about blood sugar balance and about how the brain and the gut team up to support or undermine your health.

Chapter One

WHAT IS THE AUTOIMMUNE DIET?

The autoimmune diet is an elimination and reintroduction protocol. For a time you eliminate foods that might drive inflammation and resulting symptoms, and then you reintroduce foods methodically to rule out reactivity.

While no one diet will work for everyone, the autoimmune diet is one of the most effective tools you can use to reduce or remove symptoms and bring your body back into balance.

The autoimmune diet focuses on these key areas

1. **Gut health:** Gut inflammation, gut dysbiosis (imbalances in gut bacteria), and a leaky gut lining contribute to poor absorption of nutrients and systemic inflammation that feeds the autoimmune response. In the diet, foods that irritate the gut lining are avoided, while foods that support gut health are included.
2. **Nutrient density:** Every system in the body needs a wide array of nutrients to function at its best, including the immune system. Micronutrient deficiencies are common in autoimmune patients. Nutrient-dense foods are central to the diet, giving the body the tools it needs to heal deficiencies and support immune system function.
3. **Blood sugar balance:** High and low blood sugar can lead to systemic inflammation, immune flares, hormonal imbalances, and compromised brain function. Supporting balanced blood sugar is critical for recovery from any inflammatory condition. The autoimmune diet gives you the tools to support healthy blood sugar balance.
4. **Immune system regulation:** Inflammation, leaky gut, hormone imbalances, blood sugar imbalances, and micronutrient deficiencies all contribute to immune system dysregulation. By reducing bacterial overgrowth and inflammation in the gut, removing food-borne immune triggers from your diet, providing dense nutrition and supporting blood sugar regulation, the autoimmune diet helps to support healthy immune function.

Tips for using the autoimmune diet

- Focus on eating 6-9 servings of vegetables per day, including the full color spectrum
- Eat plenty of essential fatty acids (ideal omega-6 to omega-3 ratio: between 1:1 and 4:1)
- Eat plenty of fermented foods to support gut healthy gut flora
- Eat frequently enough to avoid energy crashes caused by low blood sugar
- Stay hydrated with plenty of fresh, filtered water
- Strictly avoid foods on the "Foods to avoid" list. Even just a small snack or a bite of these foods can trigger an immune reaction, inflammation, and an autoimmune flare-up. The cravings will pass quickly, especially as you start to feel and function better.
- Elimination/Reintroduction: This protocol is intended as a elimination diet to quell inflammation and immune response, then a reintroduction protocol to determine food sensitivities and know the best foods for you. More information on elimination and reintroduction is below.

Important daily lifestyle habits to support your healing

- Get enough sleep: Aim for 8 to 10 hours per night, and more when possible
- Manage stress: What stressful factors can you reduce or eliminate from your life? What daily stress-reducing activities can you engage in?
- Exercise: Light to moderate is good – avoid over-exerting yourself
- Maintain social connections: Many studies show that those who maintain healthy social connections are healthier, happier, and live longer. Laugh!

Foods to eat

Most organic vegetables: Include as much variety as possible, making sure to include the full color spectrum; anise, arrugula, artichoke, asparagus, beets and their greens, bok choy, broccoli, cabbage, carrots, cauliflower, celery, chives, cucumbers, garlic, kale, kohlrabi, leeks, lettuce, mustard greens, olives, onions, parsley, radishes, rhubarb, shallots, spinach, squash, sweet potatoes and yams (not true potatoes), water chestnuts, watercress, zucchini, etc.

Quality meats: beef, chicken, bison, pork, lamb, turkey, and wild game. Select hormone-free and antibiotic-free chicken, turkey, and lamb. Chicken has high Omega 6 content; eat in moderation, and if you consume more, also eat a lot of Omega 3 oils to compen-

sate (see the end of this section for proper ratios). Select beef that is grass fed, hormone free, and antibiotic free. Best choice are locally-raised grass-fed and pastured meats; second best is organic. Avoid factory-farmed meats that contain antibiotics and hormones.

Organ meats and offal: heart, liver, kidney, tongue, and bone broth. An important concentrated form of nutrients including vitamins, minerals, healthy fats, and essential amino acids.

Glycine-rich foods: Include foods containing connective tissue, organ meat, joints, skin, or bone broth.

Fish and shellfish: Seek out ocean-caught cold water, low mercury fish with high fat content. Swordfish, most tuna, and king mackerel are very high in mercury.

Quality fats: pasture-raised, grass-fed animal fats, fatty cold water fish, olive oil, avocado oil, coconut oil, low-mercury Omega 3 supplements.

Low glycemic organic fruits: apples, apricots, avocados, berries, cherries, grapefruit, lemons, peaches, pears, plums, etc. Keep intake between 10 and 20g per day.

Probiotic and fermented foods: sauerkraut, kimchi, pickled ginger, fermented cucumbers, coconut yogurt (guar-gum free), kombucha, water kefir, coconut milk kefir, supplements, etc. You may need to make your own or buy one of the few brands that are genuinely fermented and free of sugars or additives. Also, search for information about anaerobic fermented foods in air-tight containers; these ferments do not produce histamines that some people react to (including rashes, digestive upset, inflammation) commonly found in aerobic, or open, ferments typically using mason jars.

Noodles: Shirataki yam noodles (sold in Asian grocery stores) are fine, but avoid the noodles that contain tofu (soy).

Edible mushrooms: Mushrooms are generally fine for most individuals. However, some people with autoimmune conditions may react to immune-stimulating fungi such as Maitake and mushroom-derived beta-glucan, so monitor your response.

Coconut: coconut aminos, coconut milk (guar gum free), coconut water and coconut water vinegar, coconut cream (not concentrate), and coconut oil. Whole coconut products (coconut butter, coconut cream concentrate, coconut flakes and chips, unsweetened coconut yogurt, fresh coconut) have high inulin fiber and moderately high phytic acid, which causes some individuals digestive issues – consume in moderation until you know your tolerance level.

Herbs and spices: basil, cilantro, cinnamon, coriander, clove, cumin, garlic, ginger, horseradish, lemongrass, mace, mint, oregano, parsley, rosemary, sage, saffron, sea salt, thyme, turmeric (black pepper is considered a reintroduction item).

Vinegars: apple cider, balsamic, champagne, coconut, red wine, sherry, ume plum, white wine. Avoid grain-based vinegars: rice and distilled white.

Teas: black, green white, yerba mate (avoid tea if you have adrenal fatigue).

Other: herbal teas, carob, rooibos tea, Deglycyrrhizinated licorice (DGL) (but not whole licorice root), vanilla extract (if cooked). In moderation: fructose (in fruit and starchy vegetables), pomegranate molasses. Very occasionally: maple syrup and maple sugar, honey, dried fruit, dates and date sugar, molasses, unrefined cane sugar (sucanat, evaporated cane juice, muscovado). Each person has unique tolerance to sugars – monitor your response.

Grey areas depending on individual sensitivities: legumes with edible pods (green beans, snow peas). Whole bean coffee in moderation (caution: many instant coffees show gluten contamination). Sugars: Some people have strong reactions to even small amounts of sugars; monitor your response. Seaweeds (high in iodine): Some people with Hashimoto's may not do well with additional iodine in the diet.

A note on fatty acids: Consuming a proper ratio of omega-6 to omega-3 fatty acids is key for minimizing inflammation in the body. Too much omega-6 is highly inflammatory, so it's important to get enough omega-3 (anti-inflammatory) to compensate. The average American ratio is close to 25 parts omega-6 to 1 part omega-3, resulting in high levels of inflammation. Researchers recommend a ratio of omega-6 to omega-3 fatty acids that ranges from 1:1 to 4:1 for optimal health and prevention of disease.

Foods to avoid

Grains: barley, bulgur, corn, couscous, kamut, millet, oats, rice, rye, spelt, wheat, wheat germ.

Pseudograins: amaranth, buckwheat, chia, quinoa.

Nuts: all nuts and nut butters including peanuts (actually a legume).

Seeds: chia, cocoa, flax, sesame, sunflower, instant coffee (many brands tested for gluten contamination).

Seed-based spices: anise, annatto, celery seed, coriander, cumin, fennel, fenugreek,

mustard, nutmeg, poppy seed, sesame, allspice, star anise, caraway, cardamom, juniper, peppercorns, sumac, whole vanilla bean.

Dairy: butter, cheese, cow milk, creams, frozen desserts, goat milk, margarine, mayonnaise, sheep milk, whey, yogurt (coconut yogurt free of guar gum is acceptable).

Eggs: During reintroduction, introduce yolks and whites separately, yolks first.

Beans and legumes: black beans, lentils, peanuts, peas, pinto beans, etc., and all soy products (edamame, miso, soy milk, soy protein, soy sauce, tempeh, tofu, soy lecithin, etc.).

Nightshades: eggplant, goji berries, sweet and hot peppers, hot pepper sauces, tomatillos, tomatoes, and potatoes (sweet potatoes and yams are okay – not in the same family).

Nightshade-based spices: cayenne, chili powder, paprika, red pepper, curry, and spice blends that contain these.

Medicinal mushrooms: Some people with autoimmune conditions may react to immune-stimulating fungi such as Maitake and mushroom-derived beta-glucan, so monitor your response.
Refined and processed oils: including vegetable oils.

Sugars: agave, candy, chocolate, corn syrup, high fructose corn syrup, sucrose, etc.

Stevia and non-nutritive sweeteners: acesulfame potassium, aspartame, neotame, and sucralose.

Emulsifiers, thickeners, and other food additives: guar gum, carrageenan, zanthan gum, cellulose gum, soy lecithin.

Alcohol: all alcohol.

Gluten-containing compounds: barbecue sauce, binders, bouillon, brewer's yeast, cold cuts, condiments, emulsifiers, fillers, chewing gum, hot dogs, hydrolyzed plant and vegetable protein, ketchup, soy sauce, lunch meats, malt and malt flavoring, malt vinegar, matzo, meat glue, modified food starch, monosodium glutamate, nondairy creamer, processed salad dressings, seitan, some spice mixtures, stabilizers, teriyaki sauce, textured vegetable protein. Beware of non-specific ingredients like "natural flavorings" or "spices".

Potential gluten cross-reactive foods: dairy, oats, yeast (brewer's, baker's, nutritional) instant coffee, milk chocolate, millet, soy, corn, rice, potato. Cyrex Labs offers a good cross-reactivity test.

NSAIDS: non-steroidal anti-inflammatory drugs such as aspirin and ibuprofen.

Other: canned foods, processed foods, wheat grass (contains wheat germ agglutinin), barley grass, brown rice protein, pea protein, hemp protein, licorice root (DGL is okay), aloe, slippery elm bark, commercial egg replacers, supplements containing ashwagandha (a nightshade) or oat seed, immune stimulants such as chlorella and spirulina.

Elimination and reintroduction

Remember, the autoimmune diet is an elimination and reintroduction protocol. First you eliminate foods that might cause your symptoms. Then you reintroduce foods methodically to rule out reactivity.

When to reintroduce foods depends on the individual. A good rule of thumb is to wait for reintroductions until you notice a marked improvement in your symptoms and quality of life. For some that's 30 days, for others it's months or even a year.

It may take some time to unwind the self-perpetuating inflammatory cycles that lie beneath your symptoms, and it's important to not rush into reintroductions. If you do, you will likely sabotage your efforts to recover.

For some people, the diet is all that's necessary to experience relief of autoimmune symptoms. For others, it is necessary to work with a qualified healthcare practitioner to determine what health issues underlie their symptoms.

Either way, the diet is the foundation for creating change.

Your stress level, sleep quality, exercise level, nutrient intake, genetics, oral tolerance, and underlying health issues will affect your reactions to foods.

This affects when you can start reintroductions. It also means as these things improve you may be able to reintroduce certain foods to which you previously reacted.

If symptoms start to return a short while after you reintroduced a food, you may need to continue avoiding that food for a while or perhaps permanently.

Don't consider the autoimmune diet a one-shot deal where you get to go back to your old bad eating habits. For most people with autoimmunity, a customized version of the

diet based on your individual reactions becomes a way of life.

Summary of reintroduction rules

1. Select the food to reintroduce. Plan to eat it two to three times in one day.
2. The first time you consume it, eat half a teaspoon or less. Wait fifteen minutes.
3. If you experience immediate symptoms, do not consume the food again.
4. If you have no immediate symptoms, eat one teaspoon of the food. Wait fifteen minutes, monitoring for symptoms.
5. If you have no immediate symptoms, eat a slightly larger bite.
6. Wait two to three hours and monitor for symptoms.
7. If you had no symptoms, eat a normal sized portion, either by itself or with a meal.
8. Do not eat that food again for three to seven days, and do not reintroduce any other new or suspect foods during that time. Monitor for symptoms.
9. If you have no symptoms in the three to seven day period, that food is potentially safe for you to eat.
10. To confirm that food, eat a bit of it every day for another week, and monitory closely for reactions. Food reactions typically come in two forms; a strong reaction that leaves no doubt, and a slower inflammatory response that builds slowly to become noticeable later. If you have no reaction after this week, you may add this food back into your diet. You may now move on to your next food reintroduction.

Symptoms can be represented by any change; digestive upset, mood changes, fatigue, pain, sleep issues, brain fog, skin rash, etc.

IMPORTANT: If you have a reaction to a food reintroduction, you must wait until those symptoms are completely gone before moving on to the next reintroduction.

General order of food reintroductions

Some foods are more likely cause a reaction than others. It's best to reintroduce foods lowest on that list first, ending with the most-likely items. If you have had food sensitivity testing done, leave any foods you have a diagnosed sensitivity for until the end of reintroductions. A general order of reintroduction is:

Egg
Egg yolks first: Most people tolerate the yolks well; intolerance is more common to the whites. Research shows soy protein is transferred to eggs; soy is a common chicken feed, so if you are intolerant to soy, you may find soy-fed chicken eggs are reactive for you.

Seeds before nuts
Introduce one item at a time, not mixed: seed-based spices (no nightshades), oils, butters, flours; raw nuts (soaked); toasted (beware store-bought seeds roasted in non-compliant oils); cocoa; coffee (in moderation).

Dairy
Grassfed ghee then butter; raw goat yogurt/kefir, milk, cheese; raw cow dairy in the same order. Why raw, why this order? Raw dairy has live enzymes that make it easier to digest. Dairy has three components; butterfat, lactose and casein. Butterfat doesn't cause a problem for many people; intolerance is more common for lactose and casein. Therefore ghee and butter come first. Goat dairy is easier to digest than cow dairy.

Nightshades
These come last because they are the most common food intolerance for those with autoimmune conditions, and if you have an inflammatory reaction, it takes longer to calm down and continue with reintroductions. Be sure to reintroduce one vegetable at a time. You might react to all, or only to some.

Consider never consuming
Tomatoes
NSAIDS (they disrupt gut health)
Grains/Gluten

Reintroduction of other foods depends on your individual health history and needs.

Chapter Two

IT'S NOT JUST ABOUT DIET: THE GUT-BRAIN AXIS AND BLOOD SUGAR STABILITY

While the diet itself is important, it's also important to improve communication between the brain and the gut and really focus on stabilizing blood sugar.

These factors are key for improving your health.

The gut-brain axis – how the brain and gut talk

Many people who end up on the autoimmune diet also suffer from poor brain function and chronic gastrointestinal complaints. It's important to learn how to address the intimate relationship between the gut and the brain, called the gut-brain axis, when embarking on the autoimmune diet.

This communication between the brain and the gut is bi-directional, meaning communication travels in both directions.

If your brain is not working, it can lead to chronic digestive symptoms, and if your gut function is impaired, it can affect your brain function.

This entire pathway of communication happens through the vagus nerve, a large, meandering nerve that connects the brain with all the organs of the body.

Gut-brain axis basics

Let's start with the basics of how everything works. Your brain constantly receives sensory messages from your eyes, skin, ears, joints and muscles, tongue, and nose. These inputs activate your brain, causing neurons (brain cells) to fire.
Constant stimulation keeps neurons healthy and strong, just as physical exercise keeps your muscles healthy and strong. Your brain processes inputs from the body and responds by sending messages out to various parts of your nervous system via the vagus nerve. The vagus nerve also carries information from the body back to the brain.

A small percentage of these messages are voluntary, such as moving your arms and legs, while the majority are involuntary, such as heart rate, respiration, and digestion.

The brain affects the gut

Via the vagus nerve, the brain plays a major role in gastrointestinal function, controlling the movement of food through the intestines (motility), releasing digestive enzymes to break down food, and regulating blood flow that carries vital nutrients to support gut health.

When the brain ages, degenerates, or otherwise becomes impaired, this hinders activation of the brainstem, an area at the base of the brain that leads to the vagus nerve.

Lack of sufficient output through the brainstem (like a muscle not getting exercised) can impair the vagus nerve, which may result in poor gut motility and constipation, among other problems such as fermentation in the gut, overgrowth of intestinal bacteria and yeast, a reduced ability to create stomach hydrochloric acid (HCl) to digest proteins properly, and faltering ability to digest fats.

Poor brain function contributes to leaky gut

Poor brain health, brain trauma, or brain degeneration decrease activation of the vagus nerve. This lack of activation inhibits blood flow to the intestines, which prevents the intestinal wall from functioning and regenerating normally.

This can lead to the development of intestinal permeability, more commonly known as “leaky gut;” the gut wall weakens and becomes overly permeable.

The over-permeable gut wall allows large, improperly digested proteins, bacteria, fungus, and other pathogens to cross the intestinal wall into the bloodstream, where they alert the immune system to attack and destroy not only the pathogens, but eventually body tissue as well when autoimmunity develops.

With leaky gut this immune activation is constant, leading to systemic inflammation that causes pain, food sensitivities, rashes, brain health issues, mood issues, and other symptoms.

The irritation can lead to a buildup of mucous on the intestinal wall that results in malabsorption of key nutrients. In addition, damage to the intestinal mucosa can cause the gastrointestinal tract to be unable to produce the enzymes necessary to properly digest food.

This leads to malnutrition, further intestinal inflammation, further permeability, and the development of food sensitivities, bacteria overgrowths, yeast overgrowths, and poor intestinal immune health.

Leaky gut and systemic inflammation

With leaky gut, as these compounds pass through the tight junctions they trigger the intestinal immune system, releasing inflammatory cytokines, or immune messenger cells.

These cytokines make their way into the bloodstream, where they cause inflammation throughout the body (systemic inflammation), including in the brain, joints, heart, skin, blood vessels, and other tissues. This explains why systemic inflammation can manifest in so many different ways.

Leaky gut affects brain function

Leaky gut has also been shown to play a role in severe depression by allowing harmful bacteria into the bloodstream. These bacteria carry in their membranes lipopolysaccharides (LPS), large molecules that trigger inflammation. LPS inflame the gut wall and, once in the bloodstream, cause inflammation throughout the body.

These inflammatory cytokines also activate the brain's immune system, creating brain inflammation and degeneration, altering how well neurons function and communicate. This can ultimately change brain function and cause severe depression.

This inflammatory mechanism is called the "cytokine model of depression," and revolves around inflammation in the brain instead of a lack of neurotransmitters.

In essence, leaky gut syndrome impacts a vast network of mechanisms, which all feed back into creating more leaky gut. It is not uncommon for these individuals to suffer from chronic leaky gut and depression for years or decades.

Exercises to improve vagus nerve function

Constant stimulation of neurons keeps them healthy and strong, just as physical exercise keeps a muscle healthy and strong. The same is true for your vagus nerve.

If you have a poorly functioning gut-brain axis and vagus nerve, neurological exercises can increase the function of the vagus pathway. Vagal exercises are easy to perform at home. The exercises below can be very helpful for patients who have poor vagal tone and gut-brain axis failure.

Gargling. The first exercise is to gargle with water several times a day. The vagus nerve activates the muscles in the back of the throat that allow you to gargle. Gargling contracts these muscles, which activates the vagus nerve and stimulates the gastrointestinal tract.

Drink several large glasses of water per day and gargle each sip until you finish the glass of water. Gargle long enough and deep enough to make it a bit challenging.

It will not work unless it is more challenging. Do this exercise for several weeks to help strengthen the vagal pathways.

Sing loudly. Sing as loudly as you can when you are in your car or at home. This works the muscles in the back of the throat to activate the vagus.

Gag reflex. Purchase a box of tongue blades so you can stimulate your gag reflex throughout the day.

Do not to jab the back of your throat; just lay the tongue blade on the back of your tongue and push down to activate a gag reflex.

Gag reflexes are like doing push-ups for the vagus while gargling and singing loudly are like doing sprints.

Coffee enemas. Patients with brain degeneration who are having significant difficulty with regular bowel movements are encouraged to perform daily coffee enemas.

Distending the intestines with an enema activates the vagus. The caffeine in the coffee stimulates intestinal motility by acting on cholinergic receptors. This allows the patient to relieve bowel contents, which is very important for overall health.

Many people notice bowel function improves over time and they can begin weaning off the enemas. This is because the enemas help develop positive change in their vagal system pathways.

Unfortunately, some people have such rapid brain degeneration that it outpaces the ability to gain positive changes. In this case the coffee enema is used to prevent impacted bowels.

Coffee enema how-to:
A coffee enema is very easy to do. Purchase an enema bag with an anal insert tube and a lubricant such as KY Jelly. There are many enema kits specific for coffee enemas available online these days.

Then make organic coffee and cool it all the way to room temperature. (Do not use instant coffee as many brands are contaminated with gluten.) Make sure it's not too hot. You can also find coffee specific for coffee enemas online.

The next step is to fill the enema bag with coffee and lubricate the anal tip of the tube. You will then need to lie on your right side. It is best to perform this in the bathtub in case you spill anything.

Then insert the tube into your anus and raise the bag with your hand so it is higher than your head. The higher you raise the bag the faster the bag will empty.

Once the coffee has drained from the bag into your intestines try to hold the contents in your bowel for five to 10 minutes. You will have urges to have a bowel movement, but hold the contents as long as you can.

The coffee will stimulate the cholinergic receptors in your intestines and activate motility as well as stimulate your vagal system to develop plasticity. The cholinergic stimulation from coffee will also cause your gallbladder to contract, helping release liver metabolism end-products into your bowel for elimination.

Be patient with the exercises

It will take some time using these exercises to strengthen vagal tone and the gut-brain axis. You may need to perform them for several weeks to produce change, just as you would with weight training.

The gut also affects the brain

Like the brain, the gastrointestinal tract has a nervous system that includes neurons, neurotransmitters, and electrical signals. Called the enteric nervous system, it is sometimes referred to as the "second brain."

It appears the gastrointestinal tract contains chemical messengers – peptides and hormones – that profoundly impact the brain's immune system and its neurotransmitter pathways. Neurotransmitters are brain chemicals that relay information between neurons and profoundly affect brain function, mood, personality, and more.

We know multiple communication pathways travel back and forth between the gut and the brain, and that gut health affects brain function.

For example, have you ever eaten something that made you bloated and then you became irritable and angry afterwards? This is an example of how a chemical introduced to your gastrointestinal environment immediately impacted your brain chemistry.

Gut flora and the brain

Researchers have also discovered our gut flora, the several pounds of bacterial organisms we carry in our intestines, affects brain chemistry.

Healthy gut flora serves many beneficial roles. However, poor diets, stress, excess sugars and carbs, repeated antibiotic use, and other factors tip the balance of gut flora so that harmful bacteria outweigh the beneficial.

Newer studies implicate imbalances in gut flora in mood disorders such as depression and various psychiatric disorders. Has taking antibiotics for several days ever changed your brain function or mood? It is quite possible the antibiotics could have imbalanced your gastrointestinal flora and thus your gut-brain neurochemistry.

Chapter Three

WHY BLOOD SUGAR BALANCE IS SO IMPORTANT TO THE GUT AND THE BRAIN

Along with diet as a foundation for relieving autoimmune suffering, a key player is blood sugar balance. Most patients who suffer from chronic illness have some kind of issue with blood sugar imbalance, also called dysglycemia.

This not only affects your energy level, weight, inflammation levels, and thyroid function, it also affects your brain function, trickling down to digestive function and mood.

Glucose is the brain's fuel source, making stable blood sugar vital to healthy, balanced brain chemistry and the prevention of neurodegeneration. When blood sugar is unstable – either too high or too low – not enough glucose gets to the brain and the brain will degenerate and not function well.

Remember that the brain is directly connected to digestive function. When brain function is compromised, gut function can become compromised, and that's when we get into trouble with leaky gut and other issues.

Symptoms of Blood Sugar Imbalances

Reactive hypoglycemia symptoms (low blood sugar spikes)

- Increased energy after meals
- Craving for sweets between meals
- Irritability if meals are missed
- Dependency on coffee and sugar for energy
- Becoming light headed if meals are missed
- Eating to relieve fatigue
- Feeling shaky, jittery, or tremulous
- Feeling agitated and nervous

- Become upset easily
- Poor memory, forgetfulness
- Blurred vision

Insulin resistance symptoms (high blood sugar spikes)

- Fatigue after meals
- General fatigue
- Constant hunger
- Craving for sweets not relieved by eating them
- Must have sweets after meals
- Waist girth equal to or larger than hip girth
- Frequent urination
- Increased appetite and thirst
- Difficulty losing weight
- Migrating aches and pains

Hypoglycemia, or low blood sugar

The list of reactive hypoglycemia symptoms above may be very familiar to you. The reasons to avoid sugary, high-carb diets and the resultant blood sugar swings are well known.

The most obvious is the effect of low blood sugar in the person with hypoglycemia. As the brain is deprived of fuel when blood sugar drops too low, it stops functioning well, producing shakiness, headache, blurred vision, difficulty concentrating, and other neurological symptoms.

Hypoglycemia is also often linked with adrenal fatigue, a condition in which the adrenal glands do not produce enough cortisol. Cortisol, a hormone that helps us cope with stress, is responsible for raising blood sugar levels when they drop too low, as they do in hypoglycemia.

However, when cortisol levels are low the body is not able to boost blood sugar up to a healthy level. The result is the familiar symptoms of feeling shaky, lightheaded, spaced out, and irritable.

Adrenal function is related to production of other hormones as well that come into play with systemic inflammation and autoimmune symptoms.

Insulin resistance, or high blood sugar

If you relate to the list of insulin resistance symptoms above, then you'll want to know that excess sugar and starchy foods are a major promoter of inflammation in the brain. When inflammation affects the brain, neurons die rapidly and in great numbers, speeding up brain aging and increasing the risk for neurological diseases such as Alzheimer's.

Like sugar, inappropriate levels of insulin are also pro-inflammatory in the brain. This inflammatory cascade affects how the vagus nerve communicates with the gut, mentioned in more detail above.

Although these facts alone are alarming, they don't take into account the effect of sugar, starchy foods, and insulin surges on hormonal balance, gut health, thyroid function, and adrenal health.

By skewing function in those areas, brain degeneration is promoted even further. A brain free of inflammation and degeneration requires balanced hormones, a healthy gut, good thyroid function, and good adrenal function.

You can have both high and low blood sugar

Some people have symptoms of both high and low blood sugar. Whether you have hypoglycemia, insulin resistance, or both, you must make changes to your diet if you want to improve your brain health; there are no exceptions to this.

Although using popular neurotransmitter supplements for the brain may buy you a little time or a little relief, as long as blood sugar imbalances dominate brain function you will never enjoy lasting success.

With insulin resistance, you can no longer simply eat what you please when you please.

With hypoglycemia, you cannot continue missing meals or snacking on something sugary or starchy.

Nutrients to support a healthy response to insulin resistance

Certain nutrients help the cells to regain their sensitivity to insulin so that it can bring glucose into the cells for energy. Key ingredients include chromium, vanadium, alpha lipoic acid, mixed tocopherols, magnesium, biotin, zinc, inositol, and gymnema sylvestre.

Insulin resistant folks are those who become drowsy after meals or even need to lie down and take a nap, especially after a meal heavy in rice, pasta, bread, or other carbohydrates.

Women with insulin resistance tend to have excess facial hair, some balding, and a large belly. Men may also have a large belly, as well as “breasts” or a tendency toward being more emotional.

The rule of thumb for insulin resistance is that if you feel sleepy after you eat, you just ate too many carbohydrates.

What if your meal was virtually carbohydrate-free, say a chicken breast and green beans drizzled in olive oil, and you still feel sleepy after eating? It means your insulin resistance has advanced to such a degree that you may need specialized nutrients to correct insulin resistance.

Nutrients to support a healthy response to hypoglycemia

Key ingredients include chromium, bovine adrenal gland, choline bitartrate, bovine liver gland, bovine pancreas gland, inositol, L-carnitine, co-enzyme Q10, rubidium chelate, and vanadium aspartate.

Nutrients for when you have both low and high blood sugar

Sometimes a person will swing back and forth between insulin resistance and hypoglycemia. In these cases, it’s recommended to take nutritional compounds for insulin resistance with meals, and nutritional compounds for hypoglycemia between meals.

It’s important to work with a qualified health care practitioner so you take the right nutrients and botanicals in the right amounts. Taking the wrong nutrients for your blood sugar condition has the potential to make your condition worse.

Using the autoimmune diet to stabilize blood sugar function

Hypoglycemia and insulin resistance are not mutually exclusive. If you have one you most likely have some degree of the other. Either way, both are a sign your blood sugar is unstable and either dropping too low, spiking too high, or both.

Both cause the insulin surges that skew many others systems in the body. In this case, you have to determine which nutritional compounds you need and at which time.

For instance, you may need insulin resistance support with your meals to help sensitize

your cells to insulin so blood sugar levels don't climb too high. However, between meals and before bed you may need support for hypoglycemia so that blood sugar doesn't drop too low.

Also, regardless of whether you have one, the other, or both, the most fundamental change you can make is to follow the autoimmune diet. All the herbs and special supplements in the world cannot fully support you until you make the necessary, brain-friendly dietary and lifestyle changes.

Sticking to a diet that stabilizes blood sugar can be challenging at first, due to intense cravings and the addictive nature of certain foods, and how ubiquitous these foods are in our culture.

Also, unidentified food intolerances stimulate the adrenals so that people actually get an "adrenaline rush" from the foods to which they are sensitive, which also creates intense cravings. Knowing this fact can make it easier to resist.

Mindfulness about eating habits on the autoimmune diet, support with the right nutritional compounds that stabilize blood sugar, and the determination to weather the hardest period – that is, the first three days after changing your diet – will make it easier and more rewarding for you to follow a healthier way of eating.

Tools to balance blood sugar

Whether you have hypoglycemia or insulin resistance or both, a few basic rules apply to boost your brain health and balance your brain function:

1. Eat a breakfast of high-quality protein and fat. When you wake up in the morning, you have been fasting for hours. Chances are your adrenal fight-or-flight hormones have been called into action (particularly if you woke up at 3 or 4 a.m. feeling anxious). You need to calm down your system by eating a breakfast high in protein and fats, and low in carbohydrates.

You may wake up with nausea or no appetite. That is a side effect of your adrenal hormones, and that cup of coffee is only making the problem worse by stressing the adrenals. You simply must force yourself to eat some protein, even if it's a little bit.

By eating this breakfast, you are setting your body up for blood sugar stability throughout the day. In just two to three days of stabilizing your blood sugar you will no longer wake up feeling nauseous.

Supporting blood sugar issues is futile unless you eat breakfast. If you like to work out first thing in the morning, just make sure you eat within one hour of waking up.

2. If you have hypoglycemia, eat a small amount of protein every two to three hours – a few bites will do. The goal is to keep your blood sugar stable and leave the adrenal glands out of the picture (they kick into action when blood sugar is low).

Going for long stretches without eating exacerbates the imbalance, which can accelerate degeneration of the brain and contribute to brain chemistry imbalances. As your dysglycemia improves, you will find you can go longer between snacks.

3. Find your carbohydrate tolerance and stick to it. A high-carbohydrate diet is at the root of blood sugar imbalances and accelerated brain degeneration.

A good rule of thumb for how many grams of carbohydrates should you eat each day: If you feel sleepy or crave sugar after you eat, you have eaten too many carbs.

Many symptoms of blood sugar imbalances, such as sleep issues, irritability, and energy crashes start to diminish on a lower-carbohydrate diet.

Also, unidentified food intolerances can create sugar cravings or fatigue after meals, so it's important to find out if that's an issue for you.

4. Never eat high-carb foods without some fiber, fat, or protein. These will slow down the rate at which the glucose is absorbed into the bloodstream and help prevent "insulin shock."

5. Do not eat sweets or starchy foods before bed. This is one of the worst things the hypoglycemic person can do. Your blood sugar will crash during the night, long before your next meal is due. When this happens, your adrenals kick into action, creating restless sleep or that 3 a.m. wake up with anxiety.

6. Avoid all fruit juices and carrot juice. These can be more sugary than soda, and will quickly have you crashing.

7. Avoid or limit caffeine. The energy boosting drinks on the market should also be avoided. Blood sugar imbalances are hard enough on the adrenal glands, the glands that handle our stress response, and adding in adrenal stimulants fatigues them further.

8. Eat a well-balanced diet consisting mostly of vegetables, and quality meats and fats. A diet of junk food, fast foods, and other processed foods works against you.

A diet dominated by leafy, green vegetables and adequate in quality protein and fats is enormously restorative.

9. Eliminate food allergens and intolerances. Whenever a food creates an immune response, it also creates blood sugar instability and insulin surges. Eating these foods can create sugar cravings and fatigue after meals. To stabilize blood sugar and promote brain health, problem foods should be eliminated and the gut repaired.

Conclusion

AUTOIMMUNE DIET RESOURCES AND ONGOING SUPPORT

The autoimmune diet protocol can seem daunting at first, and planning is essential to success.

You must have the right foods on hand at all times. To succeed, it's helpful to make clear menus and grocery lists, and to clean out your cupboards of non-diet-compliant foods to make it easier for you to stick to the plan.

It's very helpful to batch cook so you have meals at hand and are not tempted to fall 'off the wagon.'

Thankfully, there are now plenty of great websites that offer recipes compliant with the autoimmune diet, also called the Autoimmune Protocol or AIP.

I hope you have benefited from this guide.

To learn more about why these foods are so important to include or avoid, please see my Oral Tolerance and Save Your Brain courses.

Also, please check out my books Why Do I Still Have Thyroid Symptoms When My Lab Tests Are Normal? and Why Isn't My Brain Working?

Autoimmune Gut-Brain Diet: Foods to Eat

MOST ORGANIC VEGGIES

Include as much variety as possible, making sure to include the full color spectrum; anise, arrugula, artichoke, asparagus, beets and their greens, bok choy, broccoli, cabbage, carrots, cauliflower, celery, chives, cucumbers, garlic, kale, kohlrabi, leeks, lettuce, mustard greens, olives, onions, parsley, radishes, rhubarb, shallots, spinach, squash, sweet potatoes and yams (not true potatoes), water chestnuts, watercress, zucchini, etc.

LOW-GLYCEMIC FRUITS

Organic apples, apricots, avocados, berries, cherries, grapefruit, lemons, peaches, pears, plums, etc. Keep intake between 10 and 20 g of carbs per day.

MUSHROOMS

Mushrooms are generally fine for most individuals. However, some people with autoimmune conditions may react to immune-stimulating fungi such as Maitake and mushroom-derived beta-glucan, so monitor your response.

FERMENTED FOODS

Sauerkraut, kimchi, pickled ginger, fermented cucumbers, coconut yogurt (guar-gum free), kombucha, water kefir, coconut milk kefir, supplements, etc. You may need to make your own or buy one of the few brands that are genuinely fermented.

HERBS AND SPICES

Basil, cilantro, cinnamon, coriander, clove, cumin, garlic, ginger, horseradish, lemongrass, mace, mint, oregano, parsley, rosemary, sage, saffron, sea salt, thyme, turmeric (black pepper is considered a reintroduction item).

VINEGARS

Apple cider, balsamic, champagne, coconut, red wine, sherry, ume plum, white wine. Avoid grain-based vinegars: rice and distilled white.

QUALITY MEATS

Beef, chicken, bison, pork, lamb, turkey, and wild game. Select hormone-free and antibiotic-free chicken, turkey, and lamb. Best choice are locally-raised grass-fed and pastured meats; second best is organic. Avoid factory-farmed meats.

GLYCINE-RICH FOODS

Include foods containing connective tissue, organ meat, joints, skin, or bone broth.

FISH AND SHELLFISH

Seek out ocean-caught cold water, low mercury fish with high fat content. Swordfish, most tuna, and king mackerel are very high in mercury.

QUALITY FATS

Pasture-raised, grass-fed animal fats, fatty cold water fish, olive oil, avocado oil, coconut oil, low-mercury Omega 3 supplements.

COCONUT

Coconut aminos, coconut milk (guar gum free), coconut water and coconut water vinegar, coconut cream (not concentrate), and coconut oil. Whole coconut products (coconut butter, coconut cream concentrate, coconut flakes and chips, unsweetened coconut yogurt, fresh coconut) have high inulin fiber and moderately high phytic acid, which causes some individuals digestive issues – consume in moderation until you know your tolerance level.

TEAS

Black, green white, yerba mate (avoid tea if you have adrenal fatigue).

OTHER

Herbal teas, carob, rooibos tea, Deglycyrrhizinated licorice (DGL) (but not whole licorice root), vanilla extract (if cooked). In moderation: fructose (in fruit and starchy vegetables), pomegranate molasses. Very occasionally: maple syrup and maple sugar, honey, dried fruit, dates and date sugar, molasses, unrefined cane sugar (sucanat, evaporated cane juice, muscovado). Each person has unique tolerance to sugars -- monitor your response.

GREY AREAS

Legumes with edible pods (green beans, snow peas). Whole bean coffee in moderation (caution: many instant coffees show gluten contamination). Sugars: Some people have strong reactions to even small amounts of sugars; monitor your response. Seaweeds (high in iodine): Some people with Hashimoto's may not do well with additional iodine in the diet.

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Autoimmune Gut-Brain Diet: Foods to Avoid

GRAINS

Barley, bulgur, corn, couscous, kamut, millet, oats, rice, rye, spelt, wheat, wheat germ.

SEEDS

Chia, cocoa, flax, sesame, sunflower, instant coffee (many brands tested for gluten contamination).

DAIRY

Butter, cheese, cow milk, creams, frozen desserts, goat milk, margarine, mayonnaise, sheep milk, whey, yogurt (coconut yogurt free of guar gum is acceptable).

NIGHTSHADES

Eggplant, goji berries, sweet and hot peppers, hot pepper sauces, tomatillos, tomatoes, and potatoes (sweet potatoes and yams are okay – not in the same family).

REFINED AND PROCESSED OILS

Including vegetables oils, soybean oil, and canola oil.

SUGARS

Agave, candy, chocolate, corn syrup, high fructose corn syrup, sucrose, etc.

ALCOHOL

All alcohol.

NSAIDS

Non-steroidal anti-inflammatory drugs such as aspirin and ibuprofen.

OTHER

Canned foods, processed foods, wheat grass (contains wheat germ agglutinin), barley grass, brown rice protein, pea protein, hemp protein, licorice root (DGL is okay), aloe, slippery elm bark, commercial egg replacers, supplements containing ashwagandha (a nightshade) or oat seed, immune stimulants such as chlorella and spirulina.

PSEUDOGRAINS

Amaranth, buckwheat, chia, quinoa.

NUTS

All nuts and nut butters including peanuts (actually a legume).

SEED-BASED SPICES

Anise, annatto, celery seed, coriander, cumin, fennel, fenugreek, mustard, nutmeg, poppy seed, sesame, allspice, star anise, caraway, cardamom, juniper, peppercorns, sumac, whole vanilla bean.

BEANS AND LEGUMES

Black beans, lentils, peanuts, peas, pinto beans, etc., and all soy products (edamame, miso, soy milk, soy protein, soy sauce, tempeh, tofu, soy lecithin, etc.).

NIGHTSHADE-BASED SPICES

Cayenne, chili powder, paprika, red pepper, curry, and spice blends that contain these.

MEDICINAL MUSHROOMS

Some people with autoimmune conditions may react to immune-stimulating fungi such as Maitake and mushroom-derived beta-glucan, so monitor your response.

STEVIA AND ARTIFICIAL SWEETENERS

Acesulfame potassium, aspartame, neotame, and sucralose.

GUMS, THICKENERS, ADDITIVES

Acesulfame potassium, aspartame, neotame, and sucralose.

HIDDEN SOURCES OF GLUTEN

Barbecue sauce, binders, bouillon, brewer's yeast, cold cuts, condiments, emulsifiers, fillers, chewing gum, hot dogs, hydrolyzed plant and vegetable protein, ketchup, soy sauce, lunch meats, malt and malt flavoring, malt vinegar, matzo, meat glue, modified food starch, monosodium glutamate, nondairy creamer, processed salad dressings, seitan, some spice mixtures, stabilizers, teriyaki sauce, textured vegetable protein. Beware of non-specific ingredients like "natural flavorings" or "spices."

GLUTEN CROSS-REACTIVE FOODS

Dairy, oats, yeast (brewer's, baker's, nutritional) instant coffee, milk chocolate, millet, soy, corn, rice, potato. Cyrex Labs offers a good cross-reactivity test.

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