



KARYN SHANKS MD

Heart, Hope, Healing

How to Heal Fatigue with Optimal Energy Nutrition (2019)

BY KARYN SHANKS MD | AUGUST 16, 2019



Energy Nutrition is Essential to Fatigue and Chronic Fatigue Recovery

Optimal energy nutrition is absolutely essential to heal all forms of fatigue no matter what the underlying cause.

Your grandma was right after all: “You are what you eat.” *Literally.*

The constituents of our food—each individual protein, fat, carbohydrate, and molecule we ingest—become *our* proteins, fats, carbohydrates, and the molecules that run all the business of our bodies—including the making of energy.

Food becomes our energy. And without optimal energy nutrition, food becomes an energy roadblock that must be fixed to recover from chronic fatigue.

Food: Our Tools and Materials to Create Vital Energy

Creating energy with food is like building a house. Not only do you need fuel, but you've got to have the right materials and tools, right? And nothing can be missing, or you're in trouble. Neglect a beam or a few nails? Yikes.

Our bodies need the same level of care and attention to detail as the house we're building. We've got to have the fuel and all the right materials and tools—nutritious food, special nutrients to address unique needs, good eating habits, healthy digestion, and avoidance of food irritants and toxins.

Consider Joy, one of the countless clients who've reclaimed their lives through the power of optimal energy nutrition.

Joy's Story

Joy was a world of hurt after years severe chronic fatigue and back pain. She'd just about given up hope after consulting with many medical specialists over the years and receiving countless therapies that did not work—including drug and surgical interventions that added to her suffering.

She decided to consult with me as a last ditched effort. After listening to her story, it was clear that her nutrient-poor standard American diet was playing an important role in her suffering.

We decided to treat her with the basics: a nutrient-dense food plan that removed food irritants, healed her gut, reduced inflammation, and flooded her body with healing energy nutrition.

To our delight, when she returned in one month, her energy was soaring, and she had experienced complete resolution of all back pain. Her head was clear, and her headaches were gone. She felt like a new woman. Because of the dramatic nature of her response to these relatively simple interventions, she was highly motivated to continue them for life.

Joy was amazed at the change that was possible. But I wasn't. Joy's is not an unusual story at all. The crux of Joy's chronic fatigue was inadequate nutrient intake that is an inevitable part of eating the standard American diet. So, although the result of fixing things was profound, the fix, itself, was easy—eating healthy energy-enhancing food, personalized to her needs.

Bottom line? If we eat healthy energy food, we get better at making energy. To reverse

chronic fatigue, we must optimize the body's energy nutrition.

How the Body Makes Energy: The Brain-Thyroid-Adrenal-Mitochondrial (BTAM) Energy Operating System

The core problem in all forms of fatigue, including persistent forms like chronic fatigue syndrome, is [dysfunction of the brain-thyroid-adrenal-mitochondrial \(BTAM\) energy operating system](#)—the biological system by which we make energy to support all functions of the body.

What does the BTAM energy operating system run on? You guessed it—food, the ultimate source of all essential energy nutrition. Optimal energy nutrition keeps all components of this system healthy and in prime working order.

Primary components of the brain-thyroid-adrenal-mitochondrial (BTAM) operating system:

Brain

Literally the “brains” of the operation: the brain perceives our energy needs and orchestrates all the aspects of manufacturing and transporting energy throughout the body. Key components of the brain-energy axis are the hypothalamus and pituitary glands, where key hormones involved in energy production and transportation are regulated.

Thyroid Gland

The thyroid is the thermostat for energy regulation throughout the body. Makes thyroid hormones that regulate work and energy use levels within all body cells.

Adrenal Glands

The adrenal glands are sources of key hormones for energy regulation: **cortisol** (makes available carbon atom sources used as fuel to make energy), **aldosterone** (regulates circulation for energy substrate transportation throughout the body), and **DHEA** (protects the brain from potentially harmful effects of cortisol and participates in learning aspects of stress).

Mitochondria

Mitochondria are tiny subcellular organelles within most body cells that use carbon atoms

and oxygen to manufacture chemical energy (ATP).

What Can Go Wrong with the BTAM Energy Operating System

All aspects of this BTAM energy operating system must be functioning at full capacity to meet our energy needs optimally. This system is very complex with many moving parts, so there are enumerable ways things can go wrong.

Common Temporary Fatigue

We're all familiar with how it feels to over exert, skip a meal, or skimp on sleep. We feel tired from the temporary energy debt but can recover when we get back on track.

More Complex Fatigue

In chronic fatigue the problem with the BTAM energy operating system is more complex, leading to more profound and persistent fatigue, and not enough energy to sustain basic body functions.

When any aspect of our BTAM energy operating system has been depleted or damaged, we're at risk for critical energy loss. Deficiencies of critical energy nutrients will result in some degree of function loss for all aspects of the BTAM energy operating system.

Damage to the brain and its structures, the thyroid gland, adrenals, and mitochondria can occur as a result of trauma, infection, toxins, or widespread inflammation. All these conditions can be discovered and treated.

BTAM Energy Operating System Dysfunction is Easy to Diagnose and Treat

Dysfunction of the hypothalamus, pituitary, thyroid, or adrenals are easy to diagnose and can be treated with appropriate measures such as nutrients, hormone replacement, and removal of the damaging influences.

Mitochondrial dysfunction can be genetic, though more commonly it results from loss of essential mitochondrial nutrients and the systemic effects of mitochondrial poisons such as drugs, environmental toxins, infections, allergens, and inflammation. These conditions can likewise be readily diagnosed and treated. Persistent fatigue always raises the question of mitochondrial dysfunction.

Optimal Energy Nutrition is Essential

All aspects of the BTAM energy operating system depend on optimal energy nutrition to function at their highest capacity. A single missing nutrient can result in a functional energy deficit that you experience as fatigue.

To assess and resolve problems with the BTAM energy operating system, work with a health practitioner who is an expert in Functional Medicine.

Common Symptoms of BTAM Energy Operating System Dysfunction

The profound dysfunction of the BTAM energy operating system in chronic fatigue and CFS is directly responsible for the energy deficit and all of the most common symptoms experienced by CF and CFS sufferers:

Fatigue

Fatigue is the universal experience of energy deficiency. This can be experienced as tiredness, poor exertion tolerance, and generalized weakness.

Muscle pain

Muscle pain occurs when short, contracted muscles don't have enough energy to relax. They become tight and sore.

Brain Fog and Cognitive Dysfunction

The brain is highly energy dependent and its function will decline with reduced energy.

Dizziness and Orthostatic Intolerance (POTS or Postural Orthostatic Tachycardia Syndrome)

In the setting of chronic fatigue (distinct from other syndromes causing **POTS**, such as hypermobility syndrome or autonomic neuropathy), POTS is an entirely appropriate response of the cardiovascular system to profound fatigue and energy deficit as it attempts to shunt additional blood to vital organs. But when increased heart rate outstrips the heart's ability to contract more deeply to keep up with the demand, the outcome is reduced cardiac output. Most people feel lightheaded, short of breath, and weak when this happens.

Sleep Disturbance

Normal sleep function requires an energy-rich brain. Suboptimal sleep will also *lead* to fatigue.

Exercise or Exertion Intolerance

In CF and CFS there is no energy reserve for more than survival-oriented functions. Any level of exertion (for some this is being upright or walking across a room) can cause exhaustion.

Mood Disturbance

Mood disturbances, such as anxiety and depression, are common and the result of the energy-depleted brain and the emotional response to illness.

Irritable Bowel Symptoms

Symptoms of an irritated bowel—pain, cramping, bloating, excess gas, diarrhea, constipation, or poor digestion, can result from an energy-depleted gut and/or underlying gut disturbance contributing to the energy debt. These symptoms can also indicate gut microbiome imbalances that contribute to or are the result of an energy deficit.

What Causes Deficiency of Energy Nutrients in Chronic Fatigue?

Nutrient availability for energy production is simple supply and demand. We have to have sufficient intake of energy nutrition to meet the energy demands of our bodies. When supply comes up short, so does energy.

Higher Nutritional Demands

What goes wrong? In addition to eating food that is nutrient poor, we're increasingly challenged by environmental stresses and toxicities that increase our nutrient requirements for energy.

Energy

High stress requires high energy—the whole point of stress biology is to ramp up our bodies' energy producing systems to help us rise to our challenges—including chronic illness. But energy production is expensive, requiring an enormous array of hormones, enzymes, vitamins, minerals, and cofactors to operate. Where do these come from? We make them from the food we eat.

Detoxification

Likewise, toxin removal from the body is necessary to sustain life. [Detoxification](#) is also energy and nutrient expensive. We've got to support it every day with the nutrients we get from food. Sluggishness in this process, which occurs when nutrient need outweighs supply, is a common cause of chronic fatigue.

A yearly detox program doesn't magically fix everything. Detoxification is a 24/7 proposition that requires healthy protein, fat, vitamins, minerals, and antioxidants from food.

In the face of high need for energy nutrition we must have nutrient dense diets to meet those demands.

Abundance of Bad Food

The sheer abundance of poor-quality food that is part of the standard American diet contributes greatly to our epidemic of chronic fatigue.

Our obsession with sugar and processed grain products (which are digested into sugar) leads to dangerous exposure to the [number one toxin](#) in the Western world today (you guessed it—sugar!), and an important factor in energy nutrition-depleted diets.

The Energy Nutrition Deficiency Solution

Our first order of business in healing from chronic fatigue is to eat well and use high quality nutritional supplements when necessary. To do this we concentrate on two key factors:

- Letting go of food that is nutrient-poor, toxic, or irritating.
- Consume an energy nutrition-rich diet.

Put on your seatbelt! This is where we're heading: optimal energy nutrition. Energy recovery!

Energy Nutrition Healing: Call Back Your Power to Choose

Eating well can be hard at first as you learn new things. But you can do hard things—you've done them before. First, you've got to call your power back.

Eating poorly is a lifestyle choice. There are consequences. And the choice is a question of balance. Making everything from scratch is not feasible for most families. But eating nothing but processed, nutrient-poor food is not feasible for the body. It's all a question of balance, and always a decision, however consciously or unconsciously those decisions are made.

Realizing it's a choice is the first step to improving how you eat.

Do you find healthy choices hard even when you know they're what you need? You're not alone. There may be a tenacious story standing in your way. Work with the [five common stories](#) that slam the brakes on healing every time.

You can decide what and how to eat. Many will say they don't have time for that. But ["not enough time" is just a story](#). It's always an excuse. We must create the space and time for adding energy-rich healthy food to our lives. But no one expects you to suddenly start growing and preparing all your food. Starting with baby steps (remember, the ["rule of threes"?](#)), we can all become more conscious and thoughtful about how and what we eat.

I'm here to help.

How to Build a Nutrient-Rich Energy Food Plan

It's hard to say what the specifics of any one person's food plan should be without knowing them. For our food plans to work for us as individuals, they must address our unique needs as well as our likes and dislikes. Asking someone to switch to a diet they can't stand eating is not going to work.

So, while you will have to tailor my suggested food plan to your own circumstances, here is the core energy food plan I teach to my own clients: [The Foundational Intensive Nutrition Energy \(FINE\) food plan](#). It intensifies nutrition while eliminating common food irritants, toxins, and nutrient-depleted foods.

Special Note for Vegans and Vegetarians

My food plan will be a challenge for vegetarians and vegans in the [protein] and complete nutrition departments. Without animal flesh, fish, dairy products, eggs, beans, or legumes as protein sources, you will have to be much more mindful of the protein content of the foods that you eat.

You will likely need to incorporate [healthy protein supplements] into your diet, particularly if you are highly active or recovering from chronic illness—both increasing the demand for optimal energy nutrition. Some important nutrients can only be obtained from animal products in levels that are adequate to support optimal health (vitamin B12, choline, omega-3 fatty acids, many minerals, iron, and vitamin D, for example).

Consider working with a trusted health practitioner or functional nutrition specialist well versed in this style of eating.

Your Challenge for Energy-Rich Eating

Success starts with a decision—a commitment.

I challenge you to commit to **six weeks** of complete strictness to your chosen food plan.

Keep a food journal and carefully document your food and liquid intake as well as any symptoms. If you experience symptoms, such as pain, fatigue, or brain fog, rate them daily on a scale of zero to ten. Observe the change.

Once the six-week introduction period is over, if you decide to stray, do so mindfully. Choose your “off-plan” food carefully, eat it joyfully, and document what you did so you can observe the consequences. Many food sensitivity-related symptoms don’t occur right away, but as long as several days later.

If you are not able to achieve a six-week trial at this time, you may benefit from shorter periods. In general, it takes six to twelve weeks to correct the immune and hormonal responses that cause many chronic symptoms, including fatigue. However, in just two weeks (shorter periods than two weeks may not allow you to get over the initial period of not feeling well) you may get to experience some of the benefits of flooding your body with energy nutrition.

You May Feel Worse Before You Feel Better

Remember, many people feel worse before they feel better, especially those who are making a dramatic overhaul of their usual eating plan. This will last a few days up to a few weeks. Track your symptoms carefully and hang in there. If you are concerned, talk to your trusted healthcare provider before giving up.

Where Optimal Energy Nutrition Begins: Support Healthy Digestion and Absorption of Food

No food plan, regardless of how nutrient-rich and suited to your needs it is, will provide the nutrients we expect if you can’t digest or absorb well. This is where optimal energy nutrition begins.

How do we do this?

First, we follow the food plan that intensifies nutrition while avoiding food irritants and toxins, as outlined in the following sections of this article. The removal of irritant and toxic food while flooding the gut with nutrients with this plan, will allow the gut lining to heal to its maximum potential. This will allow the digestive juices to perform their job and the small bowel to absorb the nutrients released from the digestive process, making them available to support energy.

It is important to eat in an environment conducive to the best digestion. Sit down and eat in a relaxed fashion and avoid eating on the run. Chew your food slowly and carefully. Don’t over eat.

If you feel excessively full, bloated, or uncomfortable when you eat you may benefit from

using digestive aids to enhance gastric emptying and digestion.

Consider the Use of Digestive Aids:

- Digestive bitters (increase gastric emptying).
- Digestive enzymes (assists with digestion).
- Betaine hydrochloric acid (assists with digestion).
- Herbs and spices that support digestion: ginger, pepper, cinnamon, fennel, rosemary, garlic, curry spices, chili spices.

The Foundational Intensive Nutrition Energy (FINE) Food Plan for Optimal Energy Nutrition

In some ways this food plan is about going back to our roots. It's about eating real food, grown in favorable conditions, prepared simply and deliciously, shared with those we love, eaten slowly, and just enough to meet our needs.

The FINE food plan provides intensive nutrition to support energy and all of our body's needs while [eliminating foods that cause inflammation](#), toxicity, elevated blood sugar levels, and damage to our metabolism. Those who eat this way get to enjoy robust energy, reversal of inflammatory conditions, clearer thinking, attainment of ideal body weight, and more joyful lives.

The FINE Optimal Energy Nutrition Food Plan Is Simple

- Eat real food only and always.
- Avoid all processed, refined, or altered (other than cooking or blending) foods.
- Avoid all sugars (most of the time), aside from those occurring naturally in healthy plant foods (we'll get into what "healthy" is in a bit).
- Eat healthy fat.
- Eat enough healthy protein to meet your needs.
- Eat mostly plants.
- Eat a variety of plants of many colors.

- Feed your microbiome (the microorganisms that share your body with you!).
- Eat fresh food, farm-to-table, seasonably.
- Eat mindfully, joyfully, and socially.
- Don't overeat.

Foods to *Include* in Your FINE Optimal Energy Nutrition Food Plan

Healthy Meat Choices, Eggs, and Fish

Eat only grass-fed beef options, free-range poultry and eggs, wild game, and wild-caught fatty fish such as salmon, herring and sardines.

Use organ meat from pasture-raised animal.

Include protein in every meal and refer to the protein counter on my website to determine your total daily protein needs and plan your meals and snacks accordingly. Most people will need four to six ounces—approximately the size of a deck of cards—of protein at a meal to meet their protein requirements.

Non-Starchy Vegetables

Eat mostly greens but make sure to include a multitude of other colors.

Eat dark-green leafy vegetables daily—spinach, kale, collard, arugula, chard.

Emphasize the crucifer family: cabbage, kale, broccoli, broccoli sprouts, and Brussels sprouts.

Include garlic and onions liberally.

Minimize starchy vegetables such as carrots, yams, and potatoes but do include them in small quantities, as they are rich in nutrition.

A simple guideline for quantity is that veggies should take up two-thirds of your plate at each meal, or eight to twelve cups total (when raw—note that steamed and sautéed vegetables will shrink considerably).

Those with metabolic syndrome (high blood pressure, high blood sugar, diabetes, vascular disease, or obesity): avoid starchy veggies altogether!

Low Sugar-Content Fruit

Eat mostly berries (blueberries, raspberries, blackberries, and so on), and may include apples and pears. Pomegranates and cranberries are good options. Save sweeter fruits (e.g. peaches, bananas, apples, pineapple) for special treats and desserts.

Those with metabolic syndrome: avoid all fruit other than berries, tart apples, cranberries and pomegranates.

Nuts and Seeds

Stick to raw, fresh options and avoid peanuts (these are actually legumes and can promote inflammation). Roasting can damage the fats in many nuts, making them more toxic.

Nuts and seeds contain healthy fats, which are vital to our good health; however, be aware of their high calorie content to avoid over-consumption. Ground flax and hemp seeds and whole chia seeds provide a lot of fiber, protein, and healthy fats—include these daily. They mix well in smoothies.

Bone Broth

Make bone broth from the leftover bones of free-range chickens, grass-fed beef, or game. Include it in soups and stews, sauté vegetables with it, or drink it by itself. You may add beef-derived collagen hydrosylate (see below) to increase protein content and make a substantial meal or snack out of it. Plus, your dog will love you for adding bone broth to his/her food!

Spices, Condiments, Food Supplements

Some of my favorite highly nutritive varieties of spices and flavoring agents are cinnamon, turmeric, cayenne, cardamom, black pepper, paprika, ginger, rosemary, thyme, basil, Sencha ground green tea, vegetable proteins (such as hemp and pea proteins), gelatin or hydrolyzed collagen derived from grass-fed cows (to use as a protein supplement).

Healthy Fats

Coconut oil and coconut milk:

For coconut milk, use the full-fat culinary version sold in cans or make your own. Avoid the diluted version of coconut milk sold in cartons. Make sure your coconut milk and oil are organically sourced. The fats in coconut are rich in medium-chain triglycerides, important for structure and energy production. They are also rich in fats (lauric acid, caprylic acid, capric

acid) that may have important antimicrobial effects.

Avocados and Avocado oil:

These contain potent antioxidants known as carotenoids, phytosteroids, and polyhydroxylated fatty alcohols, all of which help modulate inflammation in the body. The oleic acid in avocados is a monounsaturated fat that reduces the risk of vascular disease.

Olives and Olive Oil:

Olive oil is one of the healthiest foods on the planet. Not only is it rich in heart and vasculature-protective monounsaturated fats, but it also contains a diverse array of antioxidant and anti-inflammatory nutrients that have been shown to reduce inflammation, cancer risk, allergies, cardiovascular problems, osteoporosis and more. Buy only organic, unrefined varieties and store in dark containers in cool areas to prevent spoilage. Buy only “extra virgin” or “fresh pressed” varieties.

Omega-3 Fats: (fish oil, algae-derived DHA):

These have many health benefits as necessary structural fats for cell membranes and anti-inflammatory molecules. If you don't eat fatty fish like wild-caught salmon regularly, you would benefit from supplementing with a good quality DHA and/or (the major omega-3-fatty acids) extract.

Beans and Legumes

Use the full spectrum of beans, legumes, lentils, and other split legumes. Limit the amount you consume to keep the sugar content of your diet low. Omit them entirely if you suspect you have food sensitivities.

Teas

You may include unsweetened green tea (preferably sencha ground green tea powder, which is grown in the sun and higher in antioxidants while lower in caffeine content compared to matcha, which is grown in the shade), black and white tea varieties, rooibos, and all herbal teas in your food plan.

Fermented Foods

Fermented vegetables such as sauerkraut and kimchi are allowed and provide essential probiotic organisms. Kombucha may be consumed in moderation (one half to one cup per day).

Fluids

It is important to stay well hydrated. Most people need a minimum of two quarts of liquid per day. You may use filtered water, mineral water, green tea, herbal tea, and bone broth.

Smoothies

This is a convenient and potentially delicious way to create a meal while on this plan. Simply include only those foods allowed on the plan. Include hydrolyzed collagen as your protein, some fat and water and/or coconut milk to create a meal that includes all major food groups to sustain you through part of your day.

Nutritional Supplements

Most [nutritional supplements] that have been specifically prescribed for you to meet your unique needs are allowed on the FINE food plan if manufacturers have been careful to exclude the undesirable ingredients. Work with your Functional Medicine practitioner on this if necessary.

Foods to *Avoid* on Your FINE Optimal Energy Nutrition Food Plan

All Grains (wheat, rye, barley, oats, corn, rice)

Grains can be irritants to the immune system as well as the lining of the gastrointestinal tract. All of today's genetically engineered grain varieties are high in sugar content and release excesses of sugar through the digestive process.

Check with your nutrition consultant, but some "pseudo-grains," such as quinoa and millet, which are actually seeds, may be allowed.

All Animal Milk Products (includes cow, goat, and sheep's milk)

Animal milk is proinflammatory by virtue of its major protein, casein, and one of its predominant fats, arachidonic acid. Casomorphins are produced in the digestive process of milk and behave like opiates that can cause mood and cognitive dysfunction in susceptible

individuals.

All Processed, Synthetic Foods, Preservatives and Additives

Most of these are manufactured molecules that displace real food, are void of nutrition, often high in calories, and can be irritants harmful to human health.

Unhealthy Meats

These include commercial corn-fed feedlot beef, commercial poultry and eggs, many farm-raised fish and all large predator fish (such as tuna and swordfish). (The status of farm-raised fish is changing as growers are responding to the need for ethically and nutritionally raised fish. See National Resources Defense Council's, NRDC, website for more information.)

Feedlot beef are treated with the utmost cruelty and are obese, unhealthy animals. Their meat is less nutritious than their pasture-raised counterparts, containing an abundance of unhealthy fats and higher levels of pesticide and antibiotic residues.

Fish not wild-caught as well as larger predator fish are suspect for pesticides or heavy metal contamination. Refer to the NRDC's detailed guide about choosing fish with the lowest mercury content.

Excesses of Sugar

This includes the sugar naturally occurring in fruits and vegetables (sweet fruit and starchy veggies). The literature is now huge on negative health impact of dietary sugars.

Artificial and Non-Nutritive Sweeteners

Avoid all sugar substitutes and artificial sweeteners that add sweetness to food and beverages but have no nutritional value. These include sucralose, Splenda, aspartame and sugar alcohols (such as mannitol, sorbitol, dextrose and xylitol). Stevia and monk fruit may be consumed sparingly—the sweet taste leads to insulin release, promotion of inflammation, and may support sugar addiction.

Unhealthy Fats

Omit all trans or hydrogenated fats, fat from commercial meats, damaged fats found in rancid oils or fatty foods exposed to excess heat. Protect your oils from excess exposure to

heat or ambient air. Consume only raw fresh nuts to avoid damaged fats produced by excess heat. Store nuts and oils in the refrigerator if you don't plan to use them within a few days.

Processed and rancid fats promote inflammation and lead to tissue damage and disease. Avoid consuming and cooking with vegetable oils derived from canola, sunflower, or safflower as they are easily damaged both on the shelf and through the cooking process.

Beyond FINE Optimal Energy Nutrition for Chronic Fatigue Resolution: Ketogenic Diets and Intermittent Fasting

In addition to the energy nutrition of my FINE food plan, many people benefit from more intensive carbohydrate restriction through [ketogenic diets](#) or [intermittent fasting](#). These can be further ways to support energy and reverse chronic fatigue.

There is growing evidence that ketogenic diets, low in carbohydrates and high in healthy fats, are [good for the brain](#) by enhancing energy production and neuroplasticity. In my experience, once a ketogenic diet becomes a well-established part of someone's lifestyle, increased energy is the most common outcome.

Nutritional Healing for Chronic Fatigue and Autoimmunity

Chronic fatigue often accompanies autoimmunity and inflammatory disorders. Common autoimmune disorders include autoimmune thyroid disease, rheumatoid arthritis, lupus, multiple sclerosis (MS), psoriasis, inflammatory bowel diseases (ulcerative colitis and Crohn's disease), and many others.

The common denominators of all autoimmune disorders are genetic susceptibility, impaired gut permeability, immunological triggers, and energy deficit.

If you are suffering with chronic fatigue and also have an autoimmune disorder, or if you suspect you might have an autoimmune disorder, please work with the Gut-Immune Restoration Intensive Nutrition (GRIN) food plan, discussed in the next section.

The Gut-Immune Restoration Intensive Nutrition (GRIN) Food Plan

The Gut-Immune Restoration Intensive Nutrition (GRIN) food plan is designed to help heal those whose chronic fatigue is part of a chronic inflammatory or autoimmune condition and take their healing to a deeper level.

The GRIN food plan is an extension of the Foundational Intensive Nutrition Energy (FINE) food plan, going a bit further by excluding additional food groups that are common irritants to the gut lining (thereby increasing intestinal permeability—see discussion below), as well as triggers for inflammation and toxicity.

GRIN provides foundational gut-immune-nutritional healing that leads to improvement in biological energy, with resolution of chronic fatigue and the constellation of problems arising from the energy deficit.

Who Needs to Follow the GRIN Food Plan?

This plan should be considered for anyone with persistent gut or inflammatory-autoimmune disorders who do not achieve optimal healing with the FINE Food Plan. Chronic autoimmune disorders that respond beautifully to GRIN are: rheumatoid arthritis, lupus, Hashimoto's thyroiditis, celiac disease, multiple sclerosis, inflammatory bowel disease, ankylosing spondylitis, as well as others.

Use GRIN Without an Autoimmune Disease Diagnosis

The GRIN food plan may also be appropriate for people with chronic disease or dysfunction without an obvious inflammatory component who fail to recover with less aggressive approaches.

Often inflammation is covert, without a readily recognized presentation, but may still be a factor. I see this in my practice frequently with people who have fatigue, chronic mood or cognitive dysfunction, or difficulty losing weight. They don't have sore joints or other signs of overt irritation in their bodies, but we know that inflammation can be a "hidden" player in these issues that respond well to gut-healing, anti-inflammatory approaches to healing.

How the GRIN Food Plan Works: Restoration of Normal Gut Permeability and Immune Function

A central theme to chronic inflammatory and autoimmune disorders is impairment of the gut lining that leads to increased gut permeability ("leaky gut"). This problem inevitably leads to

an increase in immune cell responsiveness to food and gut microbes. It also leads to increased transfer of gut-derived or ingested toxins out of the gut and into the systemic circulation, engendering additional immune activation and inflammation.

A normal gut, some thirty feet long from mouth to anus, and the surface area of ten tennis courts, provides us with a very tightly controlled interface between the inside and outside worlds. As you can imagine, just as our skin is a crucial barrier for keeping the outside world out, the gut lining is designed to protect us from all potential threats, while at the same time selectively allowing in nutrients the body needs.

As vast as the gut interface is, the body must contribute more than seventy percent of its immune cells to stand guard along its borders. If the barrier is breached, there is an instantaneous response by immune cells. That response is quite complex and involves a direct attack to the offender as well as chemical signaling to other immune cells throughout the body, inviting them to participate in the protective response. This rapidly becomes a full-body process, amplifying protection as well as potentially spreading havoc from the gut to tissues throughout the body, as far away as the brain.

The gut lining damage that is a foundational part of systemic inflammatory-autoimmune disorders arises from many potential stressors and irritants to the gut. The susceptibility to injury varies from one person to the next.

Common Gut Lining Stressors and Irritants

- anti-inflammatory drugs such as Ibuprofen, Aleve, aspirin, and steroids
- antibiotics
- alcohol
- acid-blocking drugs (like proton pump inhibitors and H2 blockers)
- heavy metals (from environmental contamination, contaminated food, dental mercury amalgams)
- infections (bacteria, parasites, fungi, viruses)
- food proteins
- excessive exercise
- excesses of stress
- persistent insomnia or suboptimal sleep
- nutrient deficiencies and nutrient-poor diets
- microbiome imbalances

Current scientific thinking is that a key aspect of initiating and perpetuating chronic inflammatory and autoimmune disorders is activation of the immune response when the normal gut barrier is compromised. Exposure of the immune cells that line the gut to ingested food components and toxins results in immune activation that begins and sustains

the process.

To successfully heal chronic inflammatory and autoimmune disorders at the root cause level, we must heal the gut.

Gut Healing Strategy

- Repair the gut lining through targeted nutrition and removal of toxins and irritants.
- Restore normal gut permeability.
- Restore normal digestion and absorption of nutrients.
- Restore a healthy microbiome.
- Decrease immune system responsiveness through food modulation and intensive targeted nutrition.

This comprehensive gut healing effort, when combined with other approaches to reduce physical stress and restore immune balance, will lead to improvement and sustainable resolution of symptoms at a root cause level. The process involves many steps. Food is where we start.

GRIN Is Not Meant to Be a Lifelong Plan

The GRIN food plan is designed to heal your gut, remove the common triggers for inflammation, intensify nutrition, and reverse systemic symptoms related to gut-immune dysfunction and nutrient deficiencies. *GRIN is not meant to be a lifelong eating strategy.* The vast majority of people use this plan to heal, then are able to successfully reintroduce food groups into their diet without a recurrence of symptoms.

When working with clients one-on-one, I make personalized recommendations depending on how sick they've been and what their preferences are. It can be very helpful to have the support and experienced guidance from a Functional Medicine practitioner or functional nutrition professional. However, many people successfully navigate this journey on their own.

The GRIN Food Plan Details

The foundation for the GRIN food plan is FINE. We will be modifying that plan by excluding additional food groups that act as irritants to the gut and immune system.

Recall the Foods to Exclude in [FINE](#):

- All grains and grain-based products;
- All animal milk products;

- All processed, synthetic foods, preservatives, and additives;
- Unhealthy meats;
- Excesses of sugar;
- Artificial and non-nutritive sweeteners;
- Unhealthy fats.

Recall the Foods to Include in [FINE](#):

- Healthy meat choices, eggs, and fish;
- Non-starchy vegetables;
- Low sugar content fruit;
- Nuts and seeds;
- Bone broth;
- Spices, condiments, food supplements;
- Healthy fats
- Beans and legumes;
- Teas;
- Fermented foods;
- Fluids;
- Smoothies;
- Appropriate nutritional supplements.

Additional Foods to Avoid on Your GRIN Food Plan

Follow all guidelines for foods to avoid listed under the FINE food plan.

In addition, you will need to exclude the following foods and food groups: (But, remember, this food plan is not about deprivation—though it may feel like that right now—it’s about substitution. Eat as much as you like, just of the good stuff.)

Eggs

Proteins contained in both the whites and yolks of eggs are common immunological triggers, commonly seen in the setting of impaired gut permeability. Avoid using eggs and all egg-containing products.

Beans and Legumes

This includes all beans, legumes (such as lentils and other dals), and dried peas. These

contain abundant lectins on their surfaces, defense molecules that are known to trigger immune cells, resulting in inflammation and gut lining injury.

Nightshades

Nightshades are sources of alkaloids, plant defense molecules that can injure the gut lining. Avoid all white potatoes, tomatoes and tomato products, eggplants, sweet bell peppers (all colors), hot peppers, cayenne pepper, goji berries, paprika, pimentos, tomatillos and some curry powders (check ingredients!). Ashwagandha, an herb commonly contained in adrenal support formulas, is also a nightshade, so look at your supplements carefully.

Note: sweet potatoes and yams are fine to eat.

Nuts

Avoid all nuts and nut-derived oils. This includes almonds, walnuts, cashews, pecans, Brazil nuts, pine nuts, hazelnuts, and pistachios, along with all nut oils, flours, butters, and milks.

Alcohol

Alcohol is always a gut lining irritant and detoxification challenge in spite of evidence that it is health promoting when consumed in moderation. Avoid all alcohol in beverages as well as cooking during this initial intense phase of the food plan. Moderate alcohol consumption may be added later for many individuals.

Seeds

Seeds contain protease inhibitors, enzyme inhibitors which may contribute to maldigestion and gut lining irritation. In my experience, seeds seldom result in true food sensitivity, and can be eaten in quantities small enough that the protease inhibitors they contain should not create a problem. I generally allow them in the GRIN food plan, but recommend removing them if sufficient healing and symptomatic progress is not made otherwise.

Most Protein Supplements

The only commercially available protein supplements allowed during this intensive phase of your GRIN food plan are gelatin and collagen derived from grass-fed beef, hemp seed, and other seed-derived proteins (if allowed).

I like the hydrolyzed collagen from Great Lakes. It is odorless, tasteless, and performs extremely well, dissolving completely in any liquid at any temperature. It can be added to veggie smoothies, soups, stews, bone broth, and all liquids you wish to consume.

GRIN Strategy and Reintroduction of Foods

As I said, GRIN is not meant to be a lifelong food plan.

We want to put out the fire of inflammation and heal the gut. We want to build tolerance to foods and create resilience.

Once healed, many people are able to put food groups back into their diet without recurrence of symptoms.

Follow these simple guidelines for food reintroduction:

- Strictly adhere to the GRIN food plan guidelines for at least three months. Your body needs this time to remove immunological debris, heal damaged tissue, restore normal gut permeability, reestablish a healthy gut flora, and decrease the overall responsiveness to culprit foods.
- Keep a detailed daily log of food and symptoms.
- If your symptoms are not resolved by three months, keep going with the strict GRIN food plan and consult with a Functional Medicine professional.
- If your symptoms have resolved, choose the foods you would like to reintroduce first—do not plan to reintroduce gluten or animal milk products initially, or other foods you know for certain have caused you significant problems in the past.

Start with just one food at a time:

- Have one healthy serving (one-half to one cup) of a pure form of the food you are reintroducing, for example one half cup of almonds or one cup of a nightshade vegetable.
- Do not eat more of your chosen foods (or other foods on your forbidden list) for three days as you carefully observe for symptoms that may be related to the introduced food.
- If you feel well, try it a second time, and this time eat one serving per day for a week, while not introducing any other foods you've been avoiding on GRIN. This will allow you to discover if your sensitivity to this food occurs gradually with repeated exposures. If all goes well, feel free to add this particular food back to your diet, but don't eat it every day (increases the risk of re-sensitizing to it). Instead plan to include it on a rotational basis every three to four days.
- If a food makes you feel unwell at any time during this process, stop eating it and strictly exclude it from your diet.

Once you've finished exploring your first food, move on to a second in the same careful fashion. If you go too fast, you may end up with symptoms and not know which food caused

them, necessitating going back to strict GRIN eating and starting this process over.

Last Thoughts: Let a Pro Help You with Optimal Energy Nutrition Eating

Feeling daunted? Bring in some help! Work with a nutrition specialist or physician trained in Functional Medicine (FM) and FM nutrition. This is big stuff and may involve big change—let a pro help you get knowledgeable, organized, and create a plan that fits you and your needs. Follow up with them as often as you need to create deep sustainable changes in the way you eat and live.

And if the food changes leave you feeling deprived, learn to transform that powerful energy into something empowering—work with my [deprivation exercise](#).

Resources

Karyn Shanks MD. [How to Overcome Chronic Fatigue Syndrome 2019 \(Expert Guide\)](#). 2019.

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Karyn Shanks MD. [Simple is Better: the “Rule of Threes”](#). 2017.

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Karyn Shanks MD. [Deprivation: The Challenge of Lifestyle Change](#). 2017.

Chris Kresser. [A Complete Guide to the Keto Diet](#). 2019.

Anthony Gustin, DC, MS. [The Ultimate Start Up Guide to The Ketogenic Diet](#). 2018.

KARYN SHANKS MD

Karyn Shanks, MD, is a physician who lives and practices in Iowa City. Her work is inspired by the science of Functional Medicine, body-mind principles, and wisdom gleaned from the transformational journeys of thousands of clients over her twenty-five-year career. Her work honors each individual and the power of their stories, their inner wisdom, and innate healing potential. She believes that the bones of healing are in what we do for ourselves. She is the author of *Liftoff*, a manual of energy recovery and healing through essential self-care practices.

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