



KARYN SHANKS MD

Heart, Hope, Healing

How to Boost Energy Using Nutritional Supplements

BY KARYN SHANKS MD | AUGUST 16, 2019



Food First

I'm a food girl, first and foremost. A nutritionally savvy, nutrient dense food plan will flood our bodies with energy nutrients and help us avoid the toxins and irritants that get in the way of our energy and healing.

However, there are important reasons for using supplements to augment the nutrition we receive from our food.

In Functional Medicine, food and nutritional supplements are foundational tools for optimizing energy and reversing troublesome health problems. Food is always our foundation. Supplements are just that—they *supplement* what we eat and are recommended based on proven need.

Why Do We Need Nutritional Supplements?

Why can't we get all of our nutrients from a savvy, personalized, nutrient-dense food plan?

True, most nutrient deficiencies arise from diets that are missing particular nutrients the body can't make on its own. But we are increasingly challenged by our modern lifestyle and a changing planet.

Factors that Influence Our Need for Nutritional Supplements:

- Modern soil and environmental conditions do not favor nutrient-rich soil for growing plants or raising animals that are optimally nutrient dense.
- Modern farming practices deplete the nutrient content of soil used to grow our food.
- Bodies highly stressed by our modern lifestyles and toxic environment are left depleted of vital nutrients that may not be adequately addressed by our diets, no matter how careful we are about what we eat.
- We are each genetically unique. Some of this uniqueness may endow us with special nutritional needs that cannot be addressed adequately by food alone. We're so fortunate to have these wonderful tools to work with.
- We can use many nutrient and plant supplements to modulate and improve our body's function even when we don't have a deficiency.
- Many of us are highly active, and have protein and micronutrient needs that surpass what we can get from food.
- Many well-made food supplements help make our lives more convenient.

While in my medical practice I choose to perform comprehensive nutrient testing to determine with precision what my clients' nutritional needs are, there are also some sensible supplements that most people benefit from without the scrutiny of testing.

Energy Recovery: Always Address the

Root Cause First

Whether you are experiencing occasional fatigue, chronic fatigue, or fatigue associated with a chronic illness, it is important to understand why. By finding the causes you can focus on treatment that addresses the problem at the root cause level for deep, sustainable resolution.

Work with my series of articles on chronic fatigue:

[*How to Overcome Chronic Fatigue Syndrome—an Expert Guide*](#)

[*How to Treat Chronic Fatigue for Life*](#)

[*How to Treat Chronic Fatigue with Energy Nutrition*](#)

[*How to Heal Chronic Fatigue with Beautiful Natural Sleep*](#)

[*13 Beautiful Natural Sleep Solutions for Chronic Fatigue*](#)

[*How to Heal Chronic Fatigue—Your Beautiful Energy Roadmap*](#)

How to Optimize Energy with Nutritional Testing

While not always necessary, [**precision nutritional testing**](#) can guide how to use nutritional supplements wisely. Testing can reveal areas of nutritional vulnerability and unmet needs so food plans and nutritional supplement regimens can be optimized.

My Top Ten Energy Boosting Foods

I'm not talking about artificial stimulants that get you hyped up with a temporary boost in energy. That's false energy. And with consistent use, that false energy will deplete your energy nutrient reserve.

What I'm interested in are foods high in energy nutrition to support your [**brain-thyroid-adrenal-mitochondrial \(BTAM\) energy operating system**](#), thereby endowing you with a sustainable source of beautiful energy.

The earth is abundant with richly nutritious foods to feed and support our energy. These are my top ten for you to focus on and incorporate into your daily food plan.

Healthy Protein Sources

Protein is required for all the structural and functional business of the body. It is imperative for energy production and all forms of healing.

Eat only grass-fed beef, free-range poultry and eggs, wild game, and wild-caught fatty fish such as salmon, herring, and sardines. Use organ meat from pasture-raised animals. Include protein in every meal and refer to [my protein guide] to determine your total daily protein needs and plan your meals and snacks accordingly.

Healthy Fat Sources

Healthy fat is an essential nutrient in abundant amounts at every meal. Sixty percent of the brain is comprised of fat. Fat is required for the membrane structures where energy is made. Fatty acids are important energy sources and provide the backbone for critical hormones and anti-inflammation molecules (prostaglandins).

Coconut Oil and Cream

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-Fatty Acids

These are derived from fatty fish, fish oil, and 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.

Organ Meat

The liver and heart of healthy pasture-raised animals are particularly rich sources of energy nutrition far beyond any other natural foods. Include these in your diet several times weekly and daily if recovering from fatigue or chronic illness.

Eggs

Eggs from pasture-raised chickens are excellent sources of protein (6 grams high quality protein per average sized egg), healthy fats, and many micronutrients.

Cruciferous Vegetables

These include [broccoli](#), [cauliflower](#), [kale](#), [cabbage](#), watercress, and [Brussel's sprouts](#). They are rich sources of sulfur-containing glucocinolates that support detoxification as well as numerous phytonutrients and micronutrients to support energy.

Allium Vegetables

These include [onion](#), [garlic](#), [leeks](#), scallions, and chives. They are excellent sources of sulfur compounds needed for detoxification.

Dark Berries

These include [blueberries](#), blackberries, [raspberries](#), and aronia berries. They are rich sources of antioxidants and micronutrients.

Dark Green Leafy Vegetables

These include [spinach](#), [kale](#), [swiss chard](#), and [collard greens](#). They are rich sources of phyto- and micro-nutrients. These should be included in every meal.

Fermented Foods

Naturally and cultured fermented foods such as [kimchi](#), yogurt, kefir, kombucha, and fermented veggies can be used liberally to provide excellent sources of probiotic organisms to support the microbiome.

Green Tea

Use whole plant sources such as Sencha and Macha. These provide energy-rich antioxidant catechins, micronutrients, and small amounts of caffeine.

My Top Ten Foundational Nutritional Supplements to Support Energy

Vitamin D

Most of us who don't supplement are deficient (as shown with blood testing). On rare occasions I will have a client who eats vitamin D-rich food every day, like sardines, and will have a normal vitamin D level. Vitamin D is a multi-tasker, with numerous vital functions that relate to energy production and cellular function. Low vitamin D levels are commonly [associated with fatigue.](#)

Take a minimum of 2000 IU daily. It is best to have a blood test for 25-hydroxy-vitamin D. This will determine how much you need long-term. I find that people in my medical practice (myself included) need 5000-10,000 IU per day to achieve the minimally acceptable blood level of 50 ng/ml. Take with a fatty meal for best absorption.

Probiotics

These are the healthy bacteria that reside in our guts that have been shown to have a huge impact on our health, including orchestrating healthy immune function. These fortifying bugs are assaulted from many aspects of our toxic environments, food, and medications that we take (antibiotics, for instance).

A great many of us were exposed to antibiotics as children, the critical period for establishing a healthy microbiome, so we need the support. Eating cultured foods is great, but I think it makes sense to include a daily probiotic as well. Take one that has a combination of species from the lactobacilli and bifidobacteria family, as well as probiotic yeast, *saccharomyces boulardii*: 30-60 billion organisms per day, taken with food.

Fish Oil

The EPA and DHA in fish oil are omega-3-fatty acids, fats that are essential to good health. We can get these from fatty fish (wild-caught salmon and sardines), some nuts (walnuts) and seeds (flaxseeds, hemp seeds), however, there are toxicity concerns about eating fish

frequently, plant sources are often not adequate, and there are often reasons why we would want to use large doses to modify inflammation.

It is important that the source you use has been tested for potency, as well as mercury and pesticide contamination. For general health, take a combination of EPA and DHA that equals approximately 1000 mg per day. For modulating inflammatory conditions, take a combination of EPA and DHA that equals 3-5,000 mg per day. Always take with food to optimize absorption.

Multivitamin-Mineral

After years of testing nutrient levels in my clients it has become clear to me that most people benefit from a high-quality multivitamin-mineral supplement based on their deficiency profiles. There is a wide range of what is available out there. Stick with a trusted company, follow the directions on the bottle, or fine-tune dosing by working with a practitioner trained in Functional Medicine, who knows how to use nutrient supplements wisely.

N-Acetyl-Cysteine (NAC)

This amino acid is rich in the sulfur compounds we must have for detoxification and is a building block for a more complex molecule, Glutathione, a master-level anti-oxidant and detoxicant in humans. Robust glutathione levels are so vital for a healthy body, and so easily depleted due to the toxic environments in which we live, it makes sense to provide our bodies with what they need to manufacture it. NAC is readily converted into Glutathione in most people, is safe, and inexpensive. I recommend 600 mg taken twice daily with food.

Curcumin

Derived from turmeric, this plant compound is profoundly anti-inflammatory and has been shown to be beneficial for many health conditions, including arthritis, allergies, vascular disease (including heart disease and stroke), autoimmune disorders, inflammatory bowel disease, mood disorders and neurodegenerative disease (like Parkinson's disease and Alzheimer's).

Use a product that contains 200 mg of 95% curcuminoids from turmeric extract. To treat painful inflammation, use a minimum of 400 mg, working up to 2000 mg, taken 2-4 times daily. This is very safe supplement to use, so you should feel free to experiment with the higher doses if needed. Curcumin is a great substitute for the more dangerous anti-inflammatory drugs, such as Ibuprofen and Aleve.

Magnesium

This is another power-house nutrient that many people are deficient in. It is a vital mineral, used by the body for energy production, detoxification, neurotransmitter synthesis, and muscle relaxation. It should be a standard part of a good multi-vitamin-mineral supplement. It can be used as a stand-alone nutrient for those who are deficient, are experiencing muscle cramping, low energy, constipation, or migraine headaches.

Use magnesium that is chelated to glycine (magnesium glycinate) or other amino acids (malate, citrate, etc.). Start with 100-200 mg at bedtime. Gradually work up the dose to bowel tolerance (magnesium becomes a stool softener at higher doses). Migraine sufferers may benefit from much higher daily doses—in the 1500-2000 mg range. For those who have kidney disease, consult with your healthcare provider before using.

Protein

Protein is part of running all the business of the body—structure and function. It is critical for producing energy as the major constituent of the complex enzyme systems running energy metabolism. It can be a challenge to get an [optimal amount of protein] in the diet each day, most adults requiring 0.5-1.0 grams per pound of body weight.

I certainly depend on daily protein supplements to support my daily requirements, which, quite frankly, are hard for me to get with food alone. I prefer non-dairy, non-grain, non-legume sources of protein, such as collagen hydrolysate (Great Lakes makes a good one that is made from grass-fed cows) or ground hempseed. I use it as an after work-out protein boost, 30-35 grams, and in the occasional smoothie that I concoct for a meal.

Calculate your [daily protein needs] then decide how much of that you can get from the healthy protein sources in your diet. Supplement the rest.

Branched-Chain Amino Acids (BCCAs)

These are specialized amino acids, found to varying degrees in all proteins, critical for stimulation of [muscle protein synthesis (MPS).] MPS is an important attribute of our body's response to movement and intense physical effort, that must be supported by adequate protein, and most specifically, BCAA intake. We need optimized MPS to make and enjoy robust energy.

To be on the safe side, I add a scoop of BCAA to my post-workout protein supplement, or about 10-15grams. Being able to adequately stimulate MPS is vital to good health, strength, and energy, and becomes increasingly important as we age, when our [protein requirements increase.]

Digestive Enzymes

It has surprised me in my clinical practice how many of us actually benefit from digestive support. A lot of our digestive dysfunction comes about from living fast-paced lifestyles, eating on the run or while working (I routinely eat lunch at my desk while working!). But there are also environmental and genetic factors that come to play.

Sub-optimal digestive enzyme or hydrochloric acid levels will reduce the amount of available nutrition from our food, and may cause uncomfortable post-meal symptoms, such as excessive fullness, bloating, belching, or pain. It results in passage of undigested food into the lower parts of the bowel leading to gut microbiome imbalances, including small intestinal bacterial overgrowth (SIBO).

Use a digestive enzyme formula with a blend of pancreatic enzymes: peptidase, amylase, pepsin, protease, glycoamylase, lactase, lipase, invertase, and betaine HCL 200 mg (limit the betaine HCL to no more than 200 mg, unless you and your healthcare provider have ascertained that you need more—larger doses could cause a burning sensation). Start with one capsule no matter what the actual content in milligrams is. Gradually work your way up to several capsules, taken with a meal (any time during or right after), until you feel more comfortable. If you are still having issues, consult with your healthcare provider.

My Top Ten Specialized Energy Nutrients to Boost Energy

Liposomal Glutathione

Glutathione is considered the “master” antioxidant of the body and is important for detoxification to protect us from environmental and internal toxins. Most of us can make glutathione from cysteine and N-acetylcysteine, amino acids derived from food or taken as supplements. However, it is easily depleted in the presence of persistent environmental and toxic stress. In its absence we are more vulnerable to the effects of oxidative stress and toxic damage, especially to our energy system structures. It is vital to maintain robust levels of glutathione for optimal energy and good health.

Glutathione is best absorbed in a liposomal form. Take 200 mg daily with or without food. For individuals suffering from chronic fatigue or chronic illness, work with a Functional Medicine practitioner to determine your individualized optimal daily dose.

Alpha-Lipoic Acid

Alpha-lipoic acid is another critical antioxidant, responsible for recycling of other key antioxidants in the body (vitamins C and E) and plays a role in detoxification through the removal of heavy metals and toxins from the body. It is available in some foods—richly abundant in organ meat. It can also be taken as a supplement.

It is absorbed well in a powdered capsule form, though we may be able to enhance absorption in a liposomal form. Take 600 mg per day with food. As a heavy metal or toxin binder, or as support for nerve healing in peripheral neuropathy, use 600 mg twice daily. Work with your Functional Medicine practitioner to individualize your dosing.

Coenzyme-Q 10

Coenzyme-Q 10 (CoQ10), also known as ubiquinone, is part of the electron transport chain within the subcellular mitochondria where it participates in making chemical energy (ATP) from carbon atoms and oxygen. It is an essential nutrient that we can obtain in robust amounts in healthy animal meat products, especially organ meat.

CoQ10 can also be taken as a supplement to support those with special energy needs. It has been shown to improve cardiac function in heart failure by supporting energy production within cardiac cells. The dose is 200 mg taken once daily with fat. More may be safely taken for special energy needs.

Acetyl-l-Carnitine

Acetyl-l-carnitine is involved in transporting fatty acids into the subcellular mitochondria where they will be incorporated into cell membranes and used as a carbon atom source for the manufacture of energy. It is found in robust quantities in healthy meat, especially organ meat.

Take it as an energy support supplement: 200 mg per day with food.

Nicotinamide Adenine Dinucleotide + Hydrogen (NADH)

NADH is an energy compound that carries electrons around the body making them available to produce chemical energy (ATP). It has been shown to **improve energy** and function in people with chronic fatigue syndrome.

The usual dose is 5-10 mg per day.

D-Ribose

D-Ribose is a specialized sugar used by the body to form the backbone of chemical energy, ATP. It [has been shown](#) to significantly improve energy, sleep, mental clarity, pain intensity, and well-being in people suffering from chronic fatigue syndrome and fibromyalgia.

The dose is 5 grams taken once up to three times daily.

Ashwaganda

Ashwagandha is a well-known herb widely used as an adaptogen for reducing physiological aspects of stress. It has [been shown](#) to reduce anxiety, improve sleep, increase energy and support resilience in the face of stress.

The dosage range is 200-300 mg once to twice daily.

Ginseng

Both Asian (also known as Panax) and American varieties of Ginseng have [been shown](#) to reduce fatigue and improve well-being in adults with chronic fatigue, chronic fatigue syndrome, and fatigue related to cancer, cancer treatment, and chronic illness.

The usual dosage range is 200-300 mg once to twice daily.

Creatine

Creatine is a muscle energy storage molecule used as a fast source of energy, especially in fast-twitch muscles. During exercise, creatine is an immediate source of high energy phosphate groups to replenish chemical energy, ATP. Creatine, found in abundance in animal meat products, supports energy production in both muscles and the brain, and may have a role in the reversal of [fatigue, muscle tiredness](#) and soreness, exercise recovery, and [mental fatigue](#).

The usual dose of creatine monohydrate powder is 5 grams per day.

Glycophospholipids

Glycophospholipids, popularly known as NT Factors, are fats needed for the structure and function of [cellular and mitochondrial membranes](#). This is where the action of the cell is—communication and transportation that leads to energy and work of the cell. NT Factors participate in repair and support of cellular membrane structure and function. [They are](#)

[useful](#) in the treatment of chronic fatigue and chronic illness associated with fatigue.

A typical dosage range is 500-2000 mg per day.

How to Purchase High-Quality Nutritional Supplements

I've spent years vetting companies for the highest quality ingredients and good manufacturing practices. It's not easy. Even nutritional experts can become befuddled by the complexities of best nutrient formulations, delivery systems, and dosing.

I'll list my favorite companies for you (I do not receive financial compensation for this—I just love and trust them with my clients, family, and myself!). These can be purchased through your Functional Medicine healthcare provider.

Please avoid purchasing nutritional supplements from large retailers or third-party on-line sources. In these settings it is impossible to vet standards for the handling and treatment of these products after they've left the carefully controlled environment of the manufacturer. Nutrients are fragile and must be temperature-controlled and used within a strict time period. Purchase through your healthcare provider or directly from the companies listed to insure quality and potency.

[Designs for Health](#)

[Researched Nutritionals](#)

[Metagenics](#)

[NutriDyn](#)

[Xymogen](#)

[Great Lakes Gelatin](#)

[Thorne](#)

Resources

[World's Healthiest Foods](#). Encyclopedic reference for the health benefits and nutritional profiles of common healthy foods.

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Designs for Health

<http://www.designsforhealth.com/>

Xymogen

<https://www.xymogen.com/>

Metagenics

<http://staging.nutri-dyn.com/> (midwest distributor for Metagenics products)

The World's Healthiest Foods. Whfoods.org. Excellent science-based food nutrition resource.

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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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