

# Keeping Your Gut Healthy

## THE NATURAL SOLUTION



Our digestive tract is a dynamic organ which constantly interacts with the environment via the food we consume. Accordingly, the composition of the food affects every single function of our body including musculoskeletal health, cognition, immune competency, hormone production, skin and hair integrity, and more.

For centuries, the brightest medical minds have tried to define the universal healthy diet. From a common sense point of view, a healthy diet is one that provides the body with essential nutrition such as sufficient volume of fluid, adequate amount of protein, essential fatty acids, vitamins, minerals, and calories while also lowering risks of obesity, coronary artery disease, type 2 diabetes, hypertension, and cancer.

Over the last several decades, various nutritional guides have been published by medical and governmental institutions to educate the public on what they should be eating to promote health. The generic recommendations with respect to a healthy diet include:

- Daily caloric consumption should be similar to the daily caloric burn out.
- Consume unprocessed food.
- Limit salt/sodium consumption.
- Eat more vegetables and fruits – the more colorful and varied, the better.

- Limit consumption of fats, and prefer unsaturated fat to saturated and trans fats.
- Drink a sufficient amount of fluid.
- Limit sugar intake.
- Eat fiber-rich food.
- Limit red meat consumption and balance protein sources between fish, poultry, nuts, and beans.
- Preferably, eat organic and non-GMO food.
- Consume sufficient amounts of vitamins and micronutrients.

It is not a surprise that there is no such a thing as a universal healthy diet. Individuals of various ages, ethnicities, and genders have different requirements for daily caloric consumption, protein to carbohydrate ratio, amount of fat, and fat composition in their diet. Currently, there are various approaches to the optimal individualized diet. Some of them are based on blood type and genetic makeup while the others rely on food intolerance testing. Furthermore, individuals with various acute or chronic ailments have specific dietary requirements.

In addition to the “right diet,” the performance of our digestive system can be optimized by specific micronutrients. These micronutrients facilitate food digestion and absorption at different levels of the gastrointestinal tract, normalize intestinal microflora, regulate intestinal motility, and also maintain the integrity of the intestinal lining.



Based on our clinical observations, the top ten essential micronutrients for optimal digestive health include:

### Probiotics

Probiotics are live microorganisms that improve intestinal microbial balance and suppress pathogenic microorganisms. They can be consumed in the form of food supplements or live fermented foods such as pickled vegetables, sauerkraut, live yogurt, buttermilk, kefir, kimchi, and gluten-free soy sauce. Clinical and research data demonstrate that probiotics benefit people with chronic diarrhea and irritable bowel syndrome (IBS). Certain probiotic strains may help with the digestion of lactose, soy, and animal proteins. Probiotics can be used to help prevent colon cancer and to lower cholesterol and blood pressure.

The amount of consumed probiotics is counted in Colony Forming Units (CFUs). In general, if you take probiotics just for maintenance of intestinal health, you should take 20-25 billion CFUs a day. During antibiotic therapy, increase consumption to 100 billion CFUs a day. Treatment of chronic yeast (Candida) infection, leaky gut syndrome, and colitis quite often requires the daily dose of probiotics in the range of 100-500 billion CFUs.

### Prebiotics

Prebiotics are non-digestible carbohydrate-based food

ingredients that stimulate the growth of beneficial bacteria in the gastrointestinal tract. In contrast to probiotics, prebiotics are not live microorganisms but rather heat-resistant, fiber-like substances. Prebiotics increase production of short-chain fatty acids by the stimulated bacteria, which feed normal gut microbiota and provide the energy supply to the epithelial cells that form the intestinal lining. Natural products rich in prebiotics include various vegetables such as asparagus, garlic, leeks, onions, and artichokes. Another valuable source of prebiotics is brewer's yeast.

Consumption of prebiotics not only normalizes intestinal gut microbiota, but also facilitates absorption of calcium, magnesium and vitamin D, stimulates mucosal immune responses, reduces inflammation, prevents colon cancer, and normalizes bowel movements. Our preferred prebiotics include mannan-oligosaccharides (MOS) and galacto-oligosaccharides (GOS). The recommended daily dose varies from 1000 mg up to 5000 mg a day.

### Digestive enzymes

Digestive enzymes are the proteins that break down large food molecules into their smaller fragments in order to facilitate their absorption by the body. Digestive enzymes are diverse and are found in saliva, stomach and pancreatic juice, and in intestinal (small and large) secretions. The production of digestive enzymes is age-dependent. As we get older, the production of enzymes gets sluggish. Therefore, an aging body requires external digestive enzymes in the form of micronutrients.

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There is a broad variety of commercially available digestive enzymes from various animal and plant sources. The choice of the enzyme should be based on the predominant composition of the consumed food. For example, a high protein diet will require consumption of digestive enzymes with high protease concentration and a high fat diet will require digestive enzymes with high lipase concentration. In general, the amount of consumed digestive enzymes should be proportional to the size of the corresponding meal.

### Betaine HCl

Betaine is a naturally occurring substance that can be found in a variety of foods including beets and spinach. Betaine HCl (also abbreviated as betaine HCL) is a hydrochloric salt of betaine which serves as a gastric juice acidifier. By lowering gastric pH, betaine HCl activates gastric protein, which degrades enzymes and stimulates the digestive process. Production of gastric hydrochloric acid declines with age and makes digestion of protein-rich food difficult. Therefore, betaine HCl is recommended as a micronutrient for individuals on a high protein diet. Right before meals, take 400-600 mg per meal. Betaine HCl should not be taken together with anti-inflammatory drugs due to the increased risk of ulcers.

### Magnesium

Magnesium is an essential (macro) mineral that, in the gastrointestinal tract, controls gastric acid production, gastric emptying, and intestinal motility as well as bile secretion and digestive enzyme production. A magnesium deficiency is common in people taking gastric acid suppressants and antibiotics. Early signs of magnesium deficiency include constipation, indigestion, bloating, and muscle cramps. Dietary sources rich in magnesium are whole and unrefined grains, seeds, cocoa, nuts, almonds, and green leafy vegetables. An average diet contains around 300 mg of magnesium daily, of which two-thirds is absorbed. In general, an extra magnesium supplementation for an average person should include 250-500 mg of elemental magnesium per day.

### Bioflavonoids

Bioflavonoids are plant pigments which could be essential for normal physiology in humans and animals. Bioflavonoids possess multiple benefits for the digestive tract. They stimulate bile production, improve circulation within the intestinal wall, inhibit histamine release and prevent allergic reactions. They also optimize mucosal immune responses and suppress yeast overgrowth, prevent inflammation and colon cancer development, and enhance toxin elimination via the digestive tract. The most commonly used bioflavonoids as micronutrients include citrus bioflavonoids and quercetin. The recommended average daily dose of bioflavonoids varies from 500 mg to 2 g a day.

### Turmeric

Turmeric is a plant which is used as the main spice in Indian curry, responsible for its flavor and yellow color. The colorful compound in turmeric is curcumin, a powerful antioxidant.

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It scavenges molecules in the body known as free radicals, which damage cell membranes, DNA, and even cause cell death. Curcumin stimulates the gallbladder to produce bile and stimulates the breakdown of large fat globules, improving digestion. Turmeric reduces inflammation in the gastrointestinal tract and treats colitis. It is also used preventatively for those with a high risk of colon cancer. The suggested daily dose of turmeric varies from 1 g to 5 g a day.

### Glutamine

Glutamine is one of the essential amino acids and is an important nitrogen source for the lining of the small intestine. It plays a key role in maintaining mucosal cell integrity and gut barrier function. Addition of glutamine to the diet in the form of a micronutrient stabilizes intestinal permeability and can be used for prevention and treatment of leaky gut syndrome. It also serves as a detoxification assistant. The daily requirements of glutamine vary from 500 mg to 10 g a day depending on intestinal health.


### Butyrates

Butyric acid, a short-chain fatty acid, and its salts known as butyrates are produced by the fermentation of dietary fibers in the gastrointestinal tract. It serves as a main source of energy for colonocytes, cells that line the colon. Butyrates control intestinal and colon permeability, and regulate production of mucin, a main lubricant and protectant of colon mucosa. Butyrates also control inflammation and prevent development of colon cancer. A butyrate deficiency is associated with leaky gut syndrome. Based on dietary preferences and the health of the digestive system, the daily requirements for butyrates may vary from several hundred up to several thousand milligrams. The magnesium and calcium salts of butyric acid are more slowly absorbed than the sodium and potassium ones. Therefore, the schedule and time for butyrate consumption depends on the salt consumed. Sodium and potassium are typically taken during the day when the gut cycle is more active, and magnesium and calcium at night.

### Triphala

Triphala is a traditional Ayurvedic remedy containing three fruits: Amla (*Emblica officinalis*), Harada (*Terminalia chebula*), and Bahera (*Terminalia bellirica*). It is a traditional digestive cleanse which promotes intestinal peristalsis and bowel stimulated bile flow. According to Ayurvedic medicine, triphala has balancing and rejuvenating effects on the three constitutional elements that govern human life: Vata, which regulates the nervous system; Pitta, which maintains metabolic processes; and Kapha, which supports structural integrity.

Western medical research shows that triphala acts as a strong antioxidant. It improves circulation and liver function, normalizes stress response, improves adrenal function, reduces cholesterol, and possesses anti-microbial, anti-inflammatory, and cancer preventing properties. The typical triphala protocol incorporates consumption of 500-1000 mg of triphala before each meal and 1000-2000 mg before bed.

Optimization of your diet and daily consumption of gut micronutrients will make your body healthier and your mind happier. Please consult your health care provider to discuss specific topics for an individualized diet and micronutrient selection. 

As always, consult a medical professional before beginning any new protocol.



#### ABOUT THE AUTHOR:

**Dr. Alexander Shikhman**, founder of the Institute for Specialized Medicine, is board certified in internal medicine and rheumatology. Dr. Shikhman also launched *Gluten-Free Remedies™*, a line of all natural supplements which help treat the complications that can arise from celiac disease. Find Dr. Shikhman at [www.ifsmed.com](http://www.ifsmed.com) and [www.glutenfreeremedies.com](http://www.glutenfreeremedies.com).