

BioBites: Supplements: A Worthwhile Investment

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Discussion

What are dietary supplements? A product in the form of a liquid, tablet, capsule or powder that contains substances intended to supplement or support the diet. Supplements may contain vitamins, minerals, herbs or other non-pharmaceutical ingredients, like amino acids, botanicals, enzymes, etc. Can be used in a preventative manner or therapeutically. You cannot supplement your way out of a poor-quality diet or lifestyle.

Why might I need supplements if I'm eating a healthy diet? Many foods today are less nutritious than their predecessors. Industrial farming has decreased nutrient levels in soil. Monocropping has further increased nutrient diversity. Hyper sanitation has diminished the amount of probiotics available to us in foods. And over-processing also leads to the removal of natural, vital nutrients; while many nutrients are added back in manufacturing, these tend to be less bio-available (able to be absorbed efficiently by the body).

Why else might I need supplements? People might have a high need for certain nutrients due to stress, injuries, or disease. Infections, like gut infections, can impede absorption and also rob you of nutrients. Food allergies and sensitivities lead to inflammation, which can also impede absorption. A high stress lifestyle means that we're infrequently in "rest and digest" mode, which makes it difficult for our bodies to properly absorb and utilize nutrients from the foods we consume. Certain medications can deplete certain nutrients, which increases the need for those. Heavy training and athletic sports also put different nutrient demands on the body. Dental issues can lead to difficulty in the digestive processes. And finally, dietary restrictions can lead to deficiencies of certain nutrients.

Multivitamins. These contain a broad range of vitamins to ensure adequate intake of key vitamins and minerals needed for all organ systems to function optimally and to maintain homeostasis. Most "Daily Values" are set to avoid deficiencies, not to maintain optimal levels; they cover the widest group of people and do not reflect individual needs. Patients who have severe deficiencies may need to take individual vitamin/mineral supplements to meet optimal individual levels. Look for a multivitamin that has 100% DV of Vitamins A, C, D, E, and K and B Vitamins (B1, B2, B3, B5, B6, B7, B9, and B12) and Choline in methylated forms (bioavailable; testing can suggest an individual's methylation status). Also look for a multivitamin that includes minerals such as zinc, selenium, calcium, magnesium, chromium, molybdenum, and manganese. Finally, a multi-dose multivitamin is preferable to maximize absorption and reduce the likelihood that water-soluble vitamins and minerals are excreted out prematurely. Be careful to avoid products that try to cram too much in or that include non-therapeutic doses of ingredients to seem like a more attractive offering. Pure Encapsulation's Nutrient 950 is a brand recommended by the BioMed Center NE.

Allstars. Vitamin D is one of those vitamins that most people need. It's recommended that individuals get checked by their PCP (primary care provider) at least once a year (better is twice a year - summer and winter) to ascertain levels. Magnesium is more difficult to test for through blood levels; but most people are deficient as a result of low levels of magnesium in our soils today

and indoor living. Magnesium is involved in many of the body's processes. Vitamin K is just beginning to get the credit it deserves. Vitamin K works with Vitamin D and Calcium; calcium is needed for strong bones - Vitamin D is needed for absorption and Vitamin K tells calcium where to go and to prevent calcification. Vitamin K1 is found in leafy greens and is good for clotting; Vitamin K2 which is found mostly in grass-fed butter and cheeses and is good for blood thinning. Cows make Vitamin K when they're grass-fed, which underscores the importance of ensuring that your dairy is coming from grass-fed cows. Calcium is another all-star important for strong bones. Many foods are fortified with calcium carbonate, which, like chalk, is more likely to calcify. Getting enough calcium is important; but it's also important to get enough Vitamin D, Vitamin K and Magnesium so that calcium is properly absorbed and utilized in the body. Vegans tend to be more likely to need to supplement calcium. You can get calcium through other sources, like leafy greens, but calcium is more bioavailable when it comes from meat products.

Fish Oils. Your body needs two essential fats: Omega 3's and Omega 6's. Omega 6's are pro-inflammatory and Omega 3's are anti-inflammatory. The ideal ratio is 2:1-4:1 of Omega 6's to Omega 3's. In the standard American diet, it's projected that that ratio goes as high as 20:1 due to overconsumption of corn oil, soybean oil, etc. found in many ingredients, including salad dressings. Lowering Omega 6's and incorporating more Omega 3's into the diet are two ways to improve these ratios. Vegetarian sources of Omega 3's include hemp seeds, flax seeds, and walnuts. These are available to the body as alpha-linolenic acids (ALA), which the body is not as efficient at converting as it is DHA and EPA found in fish oils. Look for a fish oil that has at least 2,000mg of Omega 3 oils and contains both DHA and EPA. It's generally recommended that the ratio of these be 1:1, but sometimes practitioners will recommend a varied ratio to meet individual needs. Products sourced from small fish (likely to have fewer toxins) tend to be healthier. Only buy products from reputable companies and be sure to store fish oil properly. BioMed Center NE recommends Super EFA Forte Liquid from Genestra.

Probiotics. Each organ system contains its own microbiome. The gut contains trillions of bacteria that we rely on for digestion, nutrients like short-chain fatty acids, vitamin production, cell signaling, and immune function. Overuse of antibiotics, chlorine in our foods, ultra pasteurization of foods, stress, and lack of probiotic-rich foods lead to imbalances in the microbiota in the gut. There are various strains of probiotics available for specific applications. For overall health, lactobacillus and bifidobacterium strains tend to be best. Look for about 10-15 billion per dose for maintenance; if you've just been on antibiotics, you might look for a product that has 50 billion or more. You might also rotate your probiotics to expose yourself to more bacteria and to improve diversity. Prebiotics "feed" bacteria and are found in a good-balanced diet that includes a lot of fiber (prebiotics are best as a supplement for individuals with poor digestion or restrictive diets). Soil-based probiotics can be very helpful for people with GI sensitivities. Some probiotics are shelf-stable while others require refrigeration. Some practitioners recommend taking probiotics with food while others recommend avoiding this. Read directions on packaging or consult with your practitioner to learn more about how you might take probiotics.

Protein Powders. Protein powders are common in terms of offering nutrition and convenience. There are two key types, vegan and whey. Vegan powders are made from plant proteins (pea, rice, pumpkin seed); whey is dairy-derived. Whey is better for building muscle. Recommended 15-20 grams per serving; be conscious if adding more protein content through nut butters or yogurt. Also be mindful of sugars, additives, and artificial flavorings. Typically natural flavors include

vanilla or chocolate. Also look for organic, Non-GMO and/or Glyphosate-free products. It's also recommended you might have small bites of something with a protein drink to remind the body that it has the job of breaking down these nutrients as they enter the body.

Q&A Synopsis

Do you agree with the recommendation to not take magnesium and zinc at the same time?

Certain minerals compete with others. If you're taking larger than typical doses of any of these, it's recommended that you take these separately, about 1-2 hours apart. You might take calcium in the morning, magnesium at night, and zinc midday with a meal. Also be conscious of how long you're on these supplements, as they can disrupt other mineral levels, like copper.

Do you consider melatonin to be a helpful supplement for better quality sleep?

Melatonin can be a great supplement if changing time zones or if your sleep routine is disrupted (active mind, travel). It's not recommended that melatonin become part of a sleep regime. Melatonin is produced naturally in the body, opposite cortisol. Supplementing with melatonin can disrupt that natural process. If sleep patterns are sub-optimal, start with sleep hygiene - dark room, no lights, blue light-blocking glasses, white noise, routine bedtime; if that doesn't work, you might start by micro-dosing with melatonin. Start small, which is about 300 micrograms about 2 hours before bed to help nudge the body to make its own melatonin. If that doesn't work, you can go up to 1 milligram. Work your way up.

Relatively healthy but experiencing significant hair loss. Are there supplements that can help with this or testing to help get to the root of this?

You might consider testing a thyroid panel over a TSH to look for hormone disruption or other imbalances in the thyroid; you might also consider a micronutrient panel to better determine whether some nutrient imbalance is contributing before turning to supplements.

What would you suggest to replace Vitamin K if someone is on a blood thinner like coumadin or Xarelto?

When it comes to coumadin and Vitamin K, while you don't want to supplement with it, you can consistently take Vitamin K and consume Vitamin K-rich foods. You just want to be consistent/avoid fluctuations and consult with your practitioner to ensure you're not taking too much. One of the contraindications of coumadin is taking a supplement of Vitamin K, so that is not recommended.

Is ground flax more bioavailable than the seed?

Yes. Any type of seed has a defense mechanism. It doesn't want to be broken down; it wants to be planted so that it can reproduce. People with GI issues or inferior digestion might grind it; in general, though, this will make it more bioavailable. The same is true with chia seeds.

Regarding centella asiatica and Gotu Kola, what are the uses/benefits and recommended dosages?

Gotu Kola is good for varicose veins and helps with circulation. It's also good for relaxation. For the dosages, a lot depends on what type - dried, root. I think Gotu Kola is about 2,000 milligrams max per day; you could take 500-1000 milligrams once or twice per day depending on what your goals are and the dose that helps you see results.

What about dandelion leaf uses/benefits and recommended dosages?

Dandelion is good for liver and kidney support. It also has diuretic properties. It's good as a tea, to be sipped throughout the day. Dandelion is also high in nutrients like potassium, Vitamin K, Vitamin C; if you purchase in a capsule, about 250 milligrams 2-3 times per day is an acceptable dosage;

though, again, this depends on your goals. It's always good to work with an experienced practitioner who can make recommendations specific to the individual.

Are chelation suppositories as effective as IV chelation? Most suppositories that are meant for chelation use EDTA. The dose is typically between 600-1,000 milligrams per suppository. Suppositories have been shown to remove the same amount of heavy metals as IV chelation. Whether you use IV therapy or suppositories is based on your personal health goals. If you've had recent exposure to heavy metals, IV chelation may be more immediate; for others, this may be too much for the body and a suppository may be a more gentle form of detoxification. EDTA can bind to other minerals, so this is also something to keep in mind. It's always best to work with a practitioner who can determine nutrient status going into the treatment and make a recommendation based on personal goals and health needs.

What do you recommend as a prophylactic for blood platelet stickiness? Vitamin K2 and fish oils can help thin the blood.

Does the glutathione that is in suppositories, like Detomaxin brand suppositories, remove medications and supplements? It is unclear how glutathione would behave in this way as it is not a binder. EDTA, which is sometimes added in chelation suppositories, can bind to important minerals. This is why many practitioners who recommend chelation also recommend taking a minerals supplement. EDTA acts like a magnet to metals and minerals. I am not sure whether it would bind to medications; it may depend on the medication.

How important is re-esterified fish oil? Re-esterified fish oils are usually better tolerated and absorbed. Most quality brands will be re-esterified. We recommend Genestra brand and Nordic Naturals at the BioMed Center NE.

I am looking for a low-histamine probiotic. What is your recommendation? Lactobacillus rhamnosus and Lactobacillus paracasei are strains that have been shown to lower histamine and are tolerated well by those who have histamine intolerance. You may find it helpful to try one of those two strains and start with $\frac{1}{4}$ - $\frac{1}{2}$ capsules and work your way up to one capsule per day, if tolerated. Rotate later to a different strain to encourage diversity. Again, start low and work your way up.

Can you recommend a vegan protein powder? Biotics Research has a good pea protein powder that comes in chocolate and vanilla.

Are there certifications in supplementation that you can recommend as legitimate? GMP (Good Manufacturing Practice) certified, certified organic by QAI, and FDA registered are all certifications you might look for for quality assurance.

You mentioned that calcium carbonate is like chalk. What is a good form of calcium to take? Calcium citrate is more absorbable than calcium carbonate.

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