Power Nutrients

Supplements can quell symptoms, counter drug side effects and extend life

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Slow disease progression! Eliminate the symptoms that make your life miserable! Decrease drug side effects! Make both your heart and your HAART longer-lasting!

Sound like a pitch for snake oil? It's not. It's the simple step of putting into the body every day the level of nutrients it needs for optimal function. Studies have shown that almost 90 percent of HIV positive people—from infection onward—are consuming less than half the daily Recommended Dietary Allowance (RDA) of one or more micronutrients (vitamins and minerals). Scarier still: Even those who scarf down the RDA seem to be deficient in most micronutrients.

Whether on not you're on HAART (highly active antiretroviral therapy), that's a serious problem for anyone aiming at immune restoration. Virtually every known nutrient affects some aspect of immune function. This helps explain why higher levels of nutrients are linked to slower disease progression and makes combining any drug program with optimal nutrient intake a must. To do that, a high-quality diet is imperative, but only by adding supplements can you ensure adequate levels of greatly depleted nutrients. HAART can weaken the virus' assault, but the body still needs its basic building blocks—nutrients—to rebuild immune cells.

The right nutrients may also help drugs work longer with fewer side effects. Glutamine, for example, can improve intestinal absorption, increasing the chance that the maximum drug dose will reach the bloodstream—the best way to avert resistance and drug failure. Glutamine can also help decrease such common and debilitating side effects as nausea, diarrhea and neuropathy, as can
N-acetyl cysteine (NAC), alpha-lipoic acid and vitamins C and E. The B vitamins and two fatty acids, gamma linolenic acid and alpha-lipoic acid, can help to protect and repair nerves and ward off neuropathy. Above all, boosting nutrient levels may dramatically improve your quality of life.

Although underfunding has curtailed research and limited doctors' awareness, many people with HIV are compelling witnesses to ability of the nutrients to eliminate troubling symptoms. Over 15 years of lecturing on an integrated approach to HIV disease—and working with PWAs to create one—I've had literally thousands of people tell me of their success in using nutrients to overcome complaints related to HIV itself or drug side effects such as fatigue, skin problems, memory loss, neuropathy, digestive problems, appetite loss, depression, diarrhea and more.

It's quite simple: To manage a difficult disease long-term, you need to feel good. Using supplements can work wonders in this department. It's about living not only longer, but better. And nutrients will absolutely improve the chances of that.

Most nutrients are available as tablets, capsules, powders and liquids; choose the form most convenient for you. In general, the best time to take vitamins and minerals is with meals, spread throughout the day. Certain factors in food help the body properly use supplements. In addition, the presence of food signals the release of the hydrochloric acid, pancreatic enzymes and bile salts that aid in the digestion and absorption of both food and supplements. One last warning: Taking pills on an empty stomach causes nausea in many people.

Turn the page and check out the chart—it covers the benefits of just a few of the most important vitamins, minerals, amino acids, fatty acids and other nutrients for HIVers. If the list seems too daunting, start with a multi-vitamin/mineral and an antioxidant formula as the bare minimum, plus nutrients to help with your particular symptoms or medication-created problems. Then, when and if you're ready, slowly work your way into a more comprehensive program. And check out PWA buyers clubs to minimize the bite on your pocketbook.

"In patients with AIDS, nearly every specific nutrient has been found to be deficient."
—Richard Beach, MD
Stratogen Health
Miami Beach, FLorida

"Even in the HAART era, using nutrient supplements to maintain optimal levels is crucial for protection and maintenance of a healthy body."
—Judy Shabert, MD
Instructor, OB-GYN, Harvard Medical School

"The level and functioning of immune system cells is fiercely sensitive to vitamin and mineral deficiencies."
—Charles Smigelski, RD
Dietitian, Harvard University Health Services

"Replacing antioxidants—deficient in many people with HIV—may forestall immune cell destruction and impede viral replication."
—Howard Greenspan, MD
Chair, NIH Conference on HIV and Oxidative Stress

MULTIVITAMIN/ MINERAL
What: A high-potency multiple provides a base of vitamins and minerals that can help make up for overall dietary deficiencies and maintain nutritional balance when other nutrients are taken separately.

Why: Researchers report that daily multivitamin use is associated with slowed disease progression and a significantly reduced risk of low CD4 counts. Scientists also say that studies strongly suggest that nutrient-intake levels recommended for the general population are not sufficient for people with HIV.

How: Check dosage levels on the label (and buy additional supplements as needed). For HIVers, University of Miami researchers suggest 6–10 times the RDA of zinc; 6 times the RDA of vitamins B-2, C and E; 3–4 times the RDA of vitamin A; more than 10 times the RDA of vitamin B-6; and 25 times the RDA of vitamin B-6; and 25 times the RDA of vitamin B-12, with even higher intake of vitamins A and E for PWAs with malabsorption.

ANTIOXIDANTS

What: Key antioxidants include: the carotenoids alpha- and beta carotene, lycopene, lutein, xanthophylls and others; the trace minerals selenium, manganese, copper and zinc; vitamins C and E; the bioflavonoids such as quercetin, hesperidin, rutin and catechin; and the thiols glutathione, alpha-lipoic acid and NAC.

Why: HIV infection produces high levels of unstable molecules called free radicals that cause oxidative damage to cells, a process that antioxidants can counter. Many studies have shown that very early in infection, HIVers show declines in levels of crucial antioxidants, including glutathione. Low levels are strongly tied to speedier disease progression. The nutrients lised above contribute to the body’s antioxidant defenses.

How: Ample research has shown that antioxidants work synergistically—the effect of a combination of multiple antioxidants is much greater than that of any single one. Many formulas are on the market; look for one with the maximum number of the above-listed nutrients.

ALPHA-LIPOIC ACID

What: This fatty acid is a very important antioxidant that both directly reduces oxidative stress in the body and indirectly spares or recycles the other major antioxidants (including vitamins E and C and glutathione), raising levels in the bloodstream.

Why: In addition to contributing to overall antioxidant defenses, it can help protect and repair the liver, so people taking drugs processed there (including protease inhibitors) may get major benefits. Research shows it improves neuropathy in diabetics, and there are anecdotal reports of the same for PWAs. It may also help reverse memory problems and other symptoms of cognitive dysfunction.

How: Researchers suggest that a dose of 100–200 mg, taken three times a day, is probably best.

VITAMIN B-12

What: This B vitamin is necessary for the production of red blood cells, the regeneration of bone marrow and, with the other B vitamins, the conversion of fats, carbohydrates and proteins to energy. It's also essential for the healthy metabolism of nerve tissue.

Why: Many studies have shown that B-12 is deficient in a large percentage of people with HIV, and that those people can progress to AIDS four years faster. Deficiency can also result in memory loss, severe fatigue, neuropathy and low red blood cell counts (although deficiency may be present without low cell counts). Replenishing B-12 can improve energy and help reverse memory loss and nerve problems.

How: Standard blood tests do not accurately reflect B-12 status in HIVers. If you have one or more of the classic deficiency symptoms—fatigue, memory loss or other mental dysfunction, neuropathy, decreased reflexes or weakness—it's worth seeing if B-12 helps. One study showed a need for 2,000 mcg, injected three times per week, to maintain normal levels. Subcuta-neous injections are easier than intramuscular; nasal gel also works; oral forms may not.

VITAMIN C

What: This vitamin is very important as an antioxidant, antiviral, antifungal and general anti-inflammatory agent.

Why: It helps maintain glutathione levels, crucial for antioxidant defenses. White blood cells need vitamin C for normal functioning; it is known to speed wound healing. It also appears to protect against many forms of cancer and, of particular interest to women, against cervical dysplasia (abnormal cellular changes that can progress to cancer).

How: Generally nontoxic. Amounts beyond tissue saturation level—which varies for each individual—can cause gas and diarrhea. No other toxicities are established, although many myths abound. Richard Beach, MD, HIV nutrition researcher, recommends aiming for the tissue saturation level by pushing slightly beyond it (until gas or diarrhea begins), then cutting back to the amount that won't cause those effects.

L-CARNITINE

What: An amino acid that helps move fatty acids into and within cells, carnitine is normally found in high levels in the muscles.

Why: Research has shown that carnitine is deficient in a high percentage of those in later disease stages. Deficiency can cause muscle wasting in the heart and other muscle tissue. One study found that 6,000 mg a day improved immune function, increased energy, strengthened the heart muscle, helped reverse muscle wasting and normalized levels of blood fats, including triglycerides. It can also reverse AZT-induced muscle pains and inflammation.

How: No known toxicity; in doses of more than four grams a day it can cause nausea, cramps or

diarrhea. The prescription form, Carnitor, is best; over-the-counter brands may not contain what they claim.

VITAMIN E

What: This vitamin is an antioxidant crucial to energy production. It protects cell membranes and plays a crucial role in immune defenses.

Why: Research has shown that people with HIV have a progressive decrease of E in blood levels that correlates with increased disease severity, and also that E may help to prevent AZT-induced bone marrow suppression. High vitamin E intake is associated with significantly lower risk of cervical cancer.

How: Warning for people with hemophilia, those on anticoagulants or those with vitamin K deficiencies: Do not supplement with Vitamin E without physician approval. Even relatively low-level coagulation-factor deficiency may result in abnormal bleeding if E is taken in doses greater than 400 IUs a day. For everyone else, vitamin E won't interfere with coagulation.

ESSENTIAL FATTY ACIDS(EFAs)

What: Derived from fats, essential fatty acids are converted into hormone-like chemicals, including the prostaglandins (PGs), which control immune responses and other body functions. EFAs help protect the cardiovascular system and are important in controlling inflam-mation and maintaining skin and nerve health.

Why: EFAs are often deficient in PWAs, partly because of maldigestion and malabsorption of fats. Skin problems and fatigue are two common results.

How: Supplementing with a combination of omega-6 fatty acids such as GLA (found in borage, evening primrose and grapeseed oil) and omega-3 fatty acids such as EPA and DHA (both found in fish oil) or with flaxseed oil (which contains a broad spectrum of fatty acids) often improves dry, itchy skin and energy levels.

GLUTAMINE

What: An amino acid, glutamine is crucial for maintenance of optimal levels of glutathione, building of muscle tissue, maintenance of immune function and repair and maintenance of intestinal tissue.

Why: Deficiency of glutamine appears to be common in people with HIV and can result in intestinal malabsorption of both nutrients and drugs. Deficiency may also result in lowered production of secretory IgA, the antibody that provides the first line of defense against infection in the lungs, gastrointestinal tract, urinary tract and, in women, the cervicovaginal area.

How: Because of the high body demand for glutamine in HIV infection, Judy Shabert, MD, a leading glutamine researcher, suggests 10 to 15 grams per day, accompanied by a good antioxidant mix. Charlie Smigelski, RD, a nutritional researcher, has suggested doses of up to 40 grams per day if needed to repair the intestines or gain weight and muscle tissue.

GLUTATHIONE and N-ACETYL CYSTEINE (NAC)

What: Glutathione is generally considered the most important antioxidant inside cells. Proper glutathione levels are critical for immune function and for the activity of cytotoxic T-cells, which are crucial for HIV control. NAC is an amino acid that studies have found can replenish depleted glutathione in PWAs.

Why: Research has shown that glutathione levels correlate with survival. Levels are frequently low in very early disease stages and slide downhill with disease progression. In addition, the liver uses glutathione for drug detoxification, so inadequate levels may compromise the liver's ability to break down drugs. Glutathione deficiencies may also increase the risk of lung infections.

How: Much of the discussion of ways to raise glutathione in PWAs has focused on NAC, but vitamin C, alpha-lipoic acid and glutamine are also very important. Glutathione itself may also help but is more expensive.

MAGNESIUM

What: A mineral, magnesium is necessary for virtually every major biologic process, including cellular energy production, glucose metabolism, the synthesis of nucleic acids and protein, the building of bones, nerve conduction, muscle contraction and proper heart function.

Why: Researchers have reported deficiencies in a large percentage of HIV positive people. Both chronic HIV infection and any additional infections can increase the likelihood of deficiency. So can malabsorption and many medications. Magnesium deficiency contributes to oxidative stress in the body and can cause muscle cramping, neuropathy, constipation, headaches and, in women, worsened premenstrual symptoms.

How: Take magnesium separately from calcium as they compete for absorption. Magnesium should be avoided by anyone with decreased kidney function or with high-grade atrioventricular blocks or bifascicular blocks. Cardiac patients with such blocks should take magnesium only if they have artificial pacemakers—and always under a physician's supervision.

SELENIUM

What: Selenium is an essential trace mineral that provides powerful antioxidant protection, and is crucial for immune competence.

Why: Research has shown that people with HIV have a progressive decrease in selenium levels

that strongly correlates with disease severity. A clinical trial of selenium supple-mentation to assess its effects on progression is underway at the University of Miami.

How: Warning: A multiple vitamin/mineral supplement may provide enough. Check total from all sources—it’s found in many antioxidant formulas; more than 1,000 mcg a day could be toxic.

For more information, obtain nutrient fact sheets from the Boston Buyers Club at 800.435.5586 or 617.266.2223, or from Direct AIDS Alternative Information Resources (DAAIR) at 888.951.5433 or 212.725.6994; website: www.immunet.org/daair.

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