

**On Nutrition: by Helayne Waldman, Ed.D., N.E.**

## Is Your MultiNutrient Up to Snuff?

Vitamins and minerals are chemicals found in food that your body requires managing and regulating the metabolic reactions that release energy from within that food. Generally, our richest sources of these vital nutrients come from fresh fruits, vegetables and grains, along with wholesome proteins and fats. Unfortunately, by the time these foods get from the farm to your fork, multiple nutrients have already been lost due to soil depletion, shipping, storage, pesticides, and processing. That's where a good multinutrient supplement comes in.

A foundational supplement with good quality essential vitamins and minerals is now considered a must, even among most mainstream scientists. If you're skeptical, just read what Dr. Bruce Ames, Professor of Biochemistry and Molecular Biology at UC Berkeley, had to say recently on the issue:

*It is a distortion of priorities for much of the world's population to have an inadequate intake of vitamins or minerals...when a year's supply of a daily multivitamin/mineral pill costs less than a few packs of cigarettes.*

But what does an "adequate intake" actually mean? If you look closely at a bottle of typical vitamins and minerals off the supermarket shelf, you'll see that the label indicates the name of the nutrient, the amount of it in the formulation, and the % DV, or daily value. Daily Values are average levels of nutrients for a person eating 2,000 calories a day. They are based on something called the RDA (Recommended Dietary Allowance) designed to help consumers use food label information to plan a healthy diet.



Now for the question on your table.

Do average daily values equal optimal intakes for maintaining health and preventing disease? Ay, there's the rub. 60 mg. of Vitamin C is currently considered 100% DV, that is, it is considered sufficient to prevent scurvy, the severe Vitamin C deficiency disease that befell sailors and befuddled doctors until the mid 18<sup>th</sup> Century, when James Lind discovered he could overcome this terrible disease by feeding sailors citrus fruits or lime juice, rich in Vitamin C (thus giving birth to the nickname "limey.")

But is this amount of Vitamin C adequate for smokers, who need at least twice as much as non-smokers, or for those of us who've been exposed to heavy metals, air pollution or other chemicals known to interfere with nutrient function?

You get the idea. You'll want to use a high quality multinutrient that contains a full spectrum of vitamins and minerals in the amounts and forms your body needs to perform at its best – not just enough to prevent a drastic deficiency disease. Any high quality supplement will provide this. My own multinutrient, for example, contains

500 mg. of Vitamin C – enough to prevent scurvy, keep my immune system humming, provide structural integrity to blood vessels and counteract histamine release during an allergic reaction. For these noble purposes, 60 mg just doesn't cut it.

### Can you get too much of a good thing?

In the ranges that most vitamins and minerals are available as supplements, they are considered extremely safe. However, there are always exceptions. In general, water-soluble vitamins (C and B vitamins) are excreted when they're not needed. That's why even exceptionally high doses of Vitamin C and the B vitamins are normally considered non-toxic, as your body will flush out what it doesn't need. A high quality multi will often contain amounts of water-soluble vitamins that are far in excess of DVs, as these vitamins are easily lost through exercise, illness or stress. For example my multi contains 2000% of the Vitamin B12 daily value. One sign of a "high quality" supplement is that its label does *not* read 100% or *less* in every row down the DV column. In my book, that's a sure sign of an "excessively simplified" supplement with no thought given to the intricate interplay among nutrients.

Fat soluble vitamins (A,D,E,K), on the other hand, are stored in body fat, so excessive levels over time could be harmful so the %DV of those should be much lower.

There are other cautions worth pointing out. Iron, in excessive amounts, i.e., amounts exceeding the DV, can be quite toxic. In fact, unless you are a pregnant or menstruating woman or a growing child, chances

are you don't need additional iron in the form of supplementation. Be on the lookout for this and don't purchase an iron-containing supplement unless you fall into one of these groups, or have been told you have iron deficiency anemia. And parents, *never* let your children "snack" on candy-flavored multivitamins containing iron. Severe iron poisoning can lead to damage to the intestinal lining, liver failure, nausea, vomiting and shock.

On the other hand, don't confuse toxicity with side effects. High dose niacin, for example, (one of the B vitamins) well known for its "flush" effect can also cause itching, tingling and nausea. Nutritionists and nutritionally oriented physicians will nevertheless use this vitamin therapeutically, as it has a stellar reputation in helping to lower elevated cholesterol levels. Note, however, that use of this or any vitamin at therapeutic levels to treat specific conditions should always be done with the guidance of a healthcare practitioner.

### Watch out for "junk vitamins"

Like most things in life, you get what you pay for. Walk into your supermarket or local pharmacy and you'll see shelves of vitamin and mineral supplements. But read the label and you'll discover lots of ingredients in these pills besides vitamins and minerals. A "research" trip to the vitamin aisle in Albertson's the other day provided me with some specifics. . Here's a smattering of what I found on a typical label, in addition to nutrients and their % DV.

Sorbitol (sugar) \* Fructose (sugar) \* Aspartame (artificial sweetener) \*sodium silicoaluminate (salt) \*Red 40 \*Yellow 6 \*Blue 2 \*Artificial flavor \*butylatedhydroxytoluene (preservative) \*titanium dioxide (pigment)

Get the picture? These substances were neither vitamins nor minerals, last time I checked. In fact, these sugars, salts, pigments, colors, flavors and preservatives are really there for

two reasons: to make the pills look (and taste) more appealing, and to give them a longer shelf life.

Keep in mind always that what's good for the shelf life of a food or vitamin is not likely to enhance your own shelf life.

### Natural vs. Artificial

Vitamin E is one of the most powerful antioxidant vitamins known. It shields your body from free radical damage while also protecting heart and cardiovascular health. Here's where it can get complicated. First there is the natural form of Vitamin E, also known as *d* alpha tocopherol. This is the one that mimics the Vitamin E found in food, or perhaps the nutrient manufacturer even encapsulated it within its original food source. Your body recognizes this form of Vitamin E and knows what to do next.

Cheap brands, on the other hand, will often include a form of Vitamin E called *dl* alpha tocopherol. This is the variety of vitamin E that doesn't derive from food, but from a laboratory. Your body sees this form and doesn't quite recognize it. So it's usefulness is limited. Now, to complicate matters even further, we now know that there are several forms of vitamin E, not just alpha tocopherol. In fact researchers have been lately touting the virtues of gamma tocopherol, which we've learned recently plays an equally, if not more vital role than its cousin alpha.

Bottom line: the best formulations will say "mixed tocopherols" on the label, and in this way you'll know that you're getting the full spectrum of value that the Vitamin E family has to offer.

The same goes for the carotenoid family, those indispensable antioxidants found abundantly in brightly colored veggies and fruits such as carrots, tomatoes, peppers, greens, beets, and cantaloupe. Check out your supermarket vitamin and you'll see that it probably only contains beta carotene. But beta

carotene has a huge and growing extended family of other carotenoids that includes alpha carotene, lycopene, lutein, zeaxanthin, and many others (lutein and zeaxanthin are particularly critical to the health of the eyes). Savvy manufacturers are now beginning to introduce lycopene and lutein in their formulations, so you'll want to check for these on the label, or simply a line item called "mixed carotenoids."

### Bioavailability

Bioavailability refers to your body's ability to absorb and utilize the nutrients supplied to it. Specifically, this affects how easily and how completely your multivitamin dissolves in the digestive tract and enters the bloodstream.

One factor that affects bioavailability right off is whether your vitamin pill is a tablet or a capsule. Pressing ingredients into tablets requires binders, such as stearic acid, to hold everything together tightly. But the binding can become an Achilles' heel once the vitamin is in your stomach and it's time to unbind. This is the time when you literally *could* be throwing your money down the toilet. Inexpensive brands are known for using inexpensive bindings, whereas better brands will use more expensive binders such as plant cellulose, to enhance absorption. Personally, I favor capsules, as the gelatin caps dissolves quickly, offering the best absorption for most nutrients, save those which are easily destroyed by stomach acid (probiotics come to mind).

### About minerals

With all of the attention paid to vitamins, it's easy to forget about the necessity of minerals to perform virtually every bodily function. Calcium, for example, the most abundant mineral in the body, keeps your heart beating regularly and your bone matrix intact. Calcium's partner mineral, magnesium is not only responsible for helping to relax muscles – it activates over 300 enzymatic reactions. And potassium,

found abundantly in fruits and vegetables, contributes to nerve transmission, normal blood pressure and basic cellular metabolism.

Dr. Michael Murray, author of The Encyclopedia of Nutritional Supplements, states that there are “at least 18 minerals important in human nutrition.” The major ones, (those of which we need more than 100 mgs. a day), include calcium, phosphorous, potassium, sodium, chloride, magnesium and sulfur. The minor, or trace minerals (those of which we need less than 100 mgs. a day) include boron, chromium, molybdenum, selenium, manganese, silicon and vanadium, plus ones you’re probably familiar with like zinc, copper, iodine, and iron. Major minerals, along with manganese and iron, are generally present in adequate amounts in the food we eat. It’s the trace minerals

that are deficient in commercial soils, hence, in commercial produce.

Because of their relative scarcity in the food supply, you’ll want to make sure your supplement contains these trace minerals, clearly stated on the label. Stick to what’s in the supplement; in large amounts these minerals CAN be toxic.

Moreover, like vitamins, different forms of minerals can be wildly different, bioavailability-wise. A superior supplement will tend to use the high-bioavailability variety and will tell you explicitly what form of the mineral is included in the formulation. Calcium citrate, for example, is more easily absorbed than the more common calcium carbonate. Magnesium glycinate will get to your cells more efficiently than magnesium oxide. And so on. Minerals that are “chelated” (pronounced key-lated)

have been prepared according to a rigorous set of procedures designed to provide the greatest absorption potential, stability and tolerability. A reputable, high quality product will likely contain the chelated forms of several of the minerals listed.

Remember, multivitamins can be a junk food too. As with most things in life, you get what you pay for. Don’t shortchange your own well being.

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