

Should I Take Vitamin/Mineral Supplements?

Some *Practical* Facts About Vitamins

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Vitamins are substances vital for biochemical reactions in the body. Forget about all the chemistry and biology. We need an answer to the following question:

Does (as we have been told over and over) an adequate, balanced diet provide all the vitamins and minerals needed in the otherwise healthy person?

At present, neither The American Heart Association nor The American Cancer Society has formally recommended vitamin or mineral supplements. The prevailing conventional wisdom from many experts says that diet is enough. However, there is much more to consider.

How many people actually eat an *adequate, balanced* diet every day or even most days? This theoretical, optimum diet would be loaded with fresh fruits and vegetables, plenty of whole grain breads and cereals, low-fat dairy products, skinless poultry, fish, and lean meats that are low in saturated fat and cholesterol—and includes foods with plenty of fiber and minerals. But our typical diet might include fruits on Monday and then no more until Saturday; vegetables once a week; fast-food meals six times a week; cereal one morning; fish on Friday; a candy bar and peanut butter and crackers from a vending machine on Saturday; five colas a week; and too many alcoholic drinks on weekends. So, really, there is no way most of us would get the needed amount of vitamins.

Standards

MDR refers to the Minimum Daily Requirement; *RDA* the Recommended Daily Requirement; *RDI* to the Reference Daily Intake; *ODA* means Optimum Daily Allowance; *DV* refers to the Daily Value.

Help! Where do all these confusing standards come from? Various groups developed recommendations that turn out to be based on unrealistic statistical norms, overlooking individual differences.

Actually, the *minimum* daily requirement refers to the *absolute minimum amount* you need of the vitamin, a bare-bones amount that will keep you from getting a vitamin deficiency, say scurvy from lack of vitamin C or rickets from lack of vitamin D.

True, in medical practices in the United States vitamin deficiency diseases are almost non-existent. But, what about problems resulting from marginal intake of vitamins—from being close to "running on empty?"

Do we need more—or in the case of vitamin C, even much more—than the recommended amounts? How much for *optimum* health—not just to prevent a deficiency?

The "just eat right" suggestion overlooks vast differences in age, sex, weight, lifestyle, activity, health, heredity, stress, climate (sunlight helps make vitamin D), and individual biochemistry.

Much present-day thinking is that these recommendations should be changed. Vitamins may do much to prevent heart disease, cancer, and aging, plus help to keep us active, feeling good, and in optimum health, another step toward the goal of "dying young at a very old age." So, do we need supplements?

Many experts now think so. Of course, at the basis of all discussions of vitamins and minerals is the assumption that we must eat a healthful, balanced diet—as the *first* step toward good health. Supplemental vitamins are the *second* step. (Our diets probably contain many essential nutrients yet undiscovered.)

Popping vitamins won't make up for poor diets or skipped meals. Vitamin supplements should not be relied upon for "nutritional insurance" or to counterbalance fast-food meals.

Reasons vitamin supplements are recommended:

- The B vitamins folic acid, B6, and B12 lower **homocysteine** (you may not even have heard of it) levels in the blood. New studies indicate that elevated homocysteine may promote atherosclerosis and blood vessel damage as much as cholesterol. Inexpensive tests for homocysteine will soon be available.
- It's now generally accepted that heavy accumulation of free radicals that result from our body's metabolism and energy use can damage healthy cells. This can cause cardiovascular disease, cancer, cataracts, aging, arthritis, and damage to our DNA. This toxic damage can be lessened and maybe prevented by antioxidants. What are the three major antioxidants? Vitamin C, vitamin E, and beta-carotene.

Kenneth H. Cooper, MD. health and fitness guru and author of *Aerobics*, has written an entire book devoted to this subject, *Dr. Kenneth Cooper's Antioxidant Revolution*. He noted that many athletes who overtrained (high-intensity, exhaustive exercise) succumbed to heart attacks and cancer.

He theorized that the overexertion produced high levels of free radicals, which then injured cells lining the arteries and caused other cells to become cancerous. (The muscle aches and pains we all have after heavy exercise are largely caused by the accumulation of free radicals.) He now recommends low-intensity exercise to replace the killer-paced regimens that many feel a compulsion to perform. As a part of our regular health program, his book advises a adults to have a

daily "cocktail" of the three antioxidants.

Natural sources of antioxidants, supplements, and daily needs

For vitamin C, the answer is pretty easy. Most fruits and vegetables contain plenty of C (also called ascorbic acid). Take more than the recommended minimum allowance of about 60 milligrams (mg) a day that you can easily get from your diet. Dr. Cooper suggests taking a supplement of at least 500 mg per day. Costs about two cents a day.

You just can't get enough vitamin E from your diet. It is in vegetables, wheat germ, and vegetable oils such as safflower, corn, and sunflower. The animal products that contain lots of vitamin E also contain high fat, so this is not such a good choice. A reasonable supplemental dose is 400 International Units (IU). Get natural vitamin E—it will say **d-alpha tocopherol** (or -yl) on the bottle.

With beta carotene dietary intake is the answer, and the food choices make it easy. A large carrot and a large sweet potato—they each have very high levels — give you way over Dr. Cooper's recommendation of 25,000 I.U. daily.

A carrot has almost 25,000 I.U., and a baked sweet potato contains about 20,000 I.U. — the next closest foods have only about a third as much. So, get more bang for the buck by choosing sweet potatoes and carrots. Beta carotene is found in yellow and dark green vegetables—they are "color coded" by nature — making selections easy: carrots, sweet potatoes, pumpkins, yellow corn, spinach, kale, turnip greens, collards, winter squash, cantaloupes, oranges, and apricots.

Recent studies have shown that only natural beta carotene seems to have full protective effect, *so you can probably omit this antioxidant from your shopping list.* (Beta carotene is one of the precursors of vitamin A.)

The antioxidants vitamin C, beta-carotene (part of the vitamin A complex), and vitamin E help prevent many chronic diseases, including heart disease, cancer, cataracts, aging, depressed immune system, and DNA damage. They reduce levels of the toxic free-radicals that are produced by all biochemical reactions in the body.

So, what's the bottom line on vitamins and mineral supplements? To a healthful, balanced diet loaded with deeply-colored (carrots, oranges, spinach, cantaloupe, apples) fruits and vegetables, add:

- One multivitamin/mineral tablet a day
- 500 mg of vitamin C
- 400 IU of vitamin E

- 1000-1500 mg of calcium (to prevent bone loss through osteoporosis)

Factoids

- A good multiple vitamin with minerals (generic) costs about 3 cents a day. You can get this, all the antioxidants, calcium (1000 mg), and a baby aspirin or equivalent (81 mg) for a total of 17 cents a day, or a little over 5 bucks a month.
- *A little-known secret:* Only a few companies, maybe four or five, make vitamins. They sell carloads of bulk vitamins to thousands of stores, who repackage them and sell them under their own brand name. So, the same batch of multivitamin/supplements may be sold under dozens of brand names and at many different prices. Generics cost much less than the name brand (fewer advertising dollars) but are exactly the same thing. A rule of thumb is to never spend over \$10 a month for supplements. Avoid subscribing to expensive rip-off programs that send you a box of supplements costing enough money to start payments on a small car. The generic form sells for much less. Most supermarkets and discount stores carry their own line of reputable vitamins and supplements. Some companies offer "designer" vitamins and food supplements for an exorbitant cost. Don't get ripped off. Stay with the basics.
- If you are taking anticoagulants or large amounts of aspirin—the standard adult aspirin is 325 mg—don't take vitamin E without consulting your physician. Vitamin E is a natural anticoagulant.
- Natural vitamins have no advantage over synthetic ones, with the possible exception of vitamin E and beta-carotene (part of vitamin A).
- Natural vitamin E is slightly more expensive, but is probably better than the synthetic form. One large carrot or one sweet potato daily will give you plenty of beta-carotene.
- Avoid the marketing ploys of such creative label prefixes as stress-, silver-, gold-, extra strength-, high potency-, vitamin C from rose hips, therapeutic formulas, or such. The only *special* vitamin/mineral supplements are those given to pregnant or nursing women.
- The minerals listed on the bottle label should include (at least) iron, zinc, calcium, selenium, iodine, magnesium, chromium, and copper.
- Chewable vitamin C (ascorbic acid) over the years might do a number on the enamel of your teeth. Just get plain vitamin C.
- The fat-soluble vitamins (A, D, E, and K) are stored in the body for a much longer time—for months—than the water-soluble ones, which can last for only a few weeks at most. The bad news is that the fat-soluble vitamins could, in massive doses, accumulate to a dangerous level. This is especially true of vitamins A and D, which in *huge* doses can actually be so toxic as to cause illness and even death. As in most things, more is not necessarily better. Don't join the megadose fanatics.

- Take your vitamin/mineral supplements with meals for better absorption.
- On the label, *mg* means milligram, or a thousandth of a gram; *mcg* refers to *microgram*, or a millionth of a gram; *I.U.* means *International Unit*. While you are reading the label, make sure the product has not expired or will expire before you use all of it.

I can't see that any valid objection could be made to this schedule. It is a reasonable choice between the timid advice of the diet-only people and the megadoses recommended by zealots. People taking adequate vitamins are unquestionably healthier than those who do not. I think these recommendations are both safe and reasonable, and should answer the question, "*Should I take vitamin/mineral supplements?*"

Yours for good health and safe flying,

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Note: The views and recommendations made in this article are those of the author and not necessarily those of the Federal Aviation Administration.