



VITAMINS & MINERALS

WHY ARE VITAMINS AND MINERALS IMPORTANT?

Vitamins and minerals are sometimes called micronutrients. Our bodies need them, in small amounts, to support the chemical reactions our cells need to live. Different nutrients affect digestion, the nervous system, thinking, and other body processes.

Micronutrients can be found in many foods. Healthy people might be able to get enough vitamins and minerals from their food. People with HIV or another illness need more micronutrients to help repair and heal cells. Also, many medications can create shortages of different nutrients.

WHAT ARE ANTIOXIDANTS?

Some molecules in the body are in a form called *oxidized*. These molecules are also called *free radicals*. They react very easily with other molecules, and can damage cells. High levels of free radicals seem to cause a lot of the damage associated with aging.

Free radicals are produced as part of normal body chemistry. *Antioxidants* are molecules that can stop free radicals from reacting with other molecules. This limits the damage they do. Several nutrients are antioxidants.

Antioxidants are important for people with HIV, because HIV infection leads to higher levels of free radicals. Also, free radicals can increase the activity of HIV. Higher levels of antioxidants can slow down the virus and help repair some of the damage it does.

HOW MUCH DO I NEED?

You might think that all you have to do to get enough vitamins and minerals is to take a "one-a-day" multivitamin pill. Unfortunately, it's not that easy. The amounts of micronutrients in many of these pills are based on the Recommended Dietary Allowances (RDAs) set by the US government. The problem with the RDAs is that they are not the amounts of micronutrients that are needed by people with HIV. Instead, they are the minimum amounts needed to

prevent shortages in healthy people. HIV disease and many AIDS medications can use up some nutrients. One study of people with HIV showed that they needed between 6 and 25 times the RDA of some nutrients! Still, a high potency multivitamin is a good way to get basic micronutrients.

WHICH NUTRIENTS ARE IMPORTANT?

There has not been a lot of research on specific nutrients and HIV disease. However, one study showed that pregnant women in Tanzania benefited greatly from multivitamin supplementation. Also, many nutrients interact with each other. Most nutritionists believe in designing an overall program of supplements.

People with HIV may benefit from taking supplements of the following vitamins and minerals:

- **B Vitamins:** Vitamin B-1 (Thiamine), Vitamin B2 (Riboflavin), Vitamin B6 (Pyridoxine), Vitamin B12 (Cobalamin), and Folate (Folic Acid).
- **Antioxidants,** including beta-carotene (the body breaks down beta-carotene to make Vitamin A), selenium, Vitamin E (Tocopherol), and Vitamin C
- **Magnesium and Zinc**

WHAT ABOUT OTHER SUPPLEMENTS?

In addition to vitamins and minerals, some nutritionists suggest that people with HIV take supplements of other nutrients:

- **Acidophilus,** a bacterium that grows naturally in the intestines, helps with digestion.
- **Alpha-lipoic acid** is a powerful antioxidant that may help with neuropathy and mental problems.
- **Carnitine** (also called acetyl-L-carnitine) may help prevent wasting and provide other immunologic and metabolic benefits,
- **Coenzyme Q₁₀** may help with immune function.
- **Essential fatty acids** found in evening primrose oil or flaxseed oil can help with dry skin and scalp.
- **N-Acetyl-Cysteine,** an antioxidant, can help maintain body levels of

glutathione. Glutathione is one of the body's main antioxidants.

CAN NUTRIENTS BE HARMFUL?

Most vitamins and nutrients appear to be safe as supplements, even at levels higher than the Recommended Dietary Allowances (RDAs). However, some can cause problems at higher doses, including Vitamin A, Vitamin D, copper, iron, niacin, selenium, and zinc.

A basic program of vitamin and mineral supplementation should be safe. This would include the following, all taken according to directions on the bottle:

- A multiple vitamin/mineral (without extra iron),
- An antioxidant supplement with several different ingredients, and
- A trace element supplement. There are seven essential trace elements: chromium, copper, cobalt, iodine, iron, selenium, and zinc. Some multivitamins also include trace elements.

Any other program of supplements should be based on discussion with a doctor or nutritionist. Remember that higher price may not mean better quality.

FOR MORE INFORMATION

You can get more information on nutrition and HIV from the following web sites and books:

Vitamins and Supplement web links,
<http://sis.nlm.nih.gov/hiv/nutrition.html#a3>

Nutrition and HIV: A New Model for Treatment by Mary Romeyn, MD, published by Jossey-Bass, Inc, telephone 415-433-1740.

A Clinician's Guide To Nutrition In HIV and AIDS, by Cade Fields-Gardner and others, published by the American Dietetic Association, P.O. Box 97215, Chicago IL 60678-7215; or 800-877-1600, ext. 5000; or through the HIV/AIDS Dietetic Practice Group at <http://www.hivaidsdpq.org/>;

Revised April 18, 2006