



# 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. We get them from food or supplements because our bodies don't manufacture them. 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 some other illnesses 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. They tend to work together, so it is better to use a combination than just a single antioxidant (like taking beta-carotene by itself).

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! A high potency multivitamin is a good way to get basic micronutrients.

## WHICH ARE IMPORTANT?

There has not been a lot of research on specific nutrients and HIV disease. A meta-analysis of studies showed a simple multi can help. 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).
- **Niacin**, also a B vitamin, can help increase good cholesterol and decrease bad cholesterol
- **Other Vitamins:** Vitamin D3 is often very low in people with HIV, especially people of color. Vitamin C can also help immune function. Vitamin K for clotting and bone formation.
- **Antioxidants**, including beta-carotene (the body breaks down beta-carotene to make Vitamin A), selenium, Vitamin E (Tocopherol), and Vitamin C
- **Magnesium, Selenium, Calcium and Zinc** Magnesium is important for nerve function and can help with muscle cramps. Selenium is a vital antioxidant, reduced in HIV disease. Calcium for bones and zinc for immune function.

## 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. There are a several kinds of bacteria that are healthy. They are known as *probiotics*.

- **Alpha-lipoic acid** is a powerful antioxidant that may help with neuropathy and mental problems.
- **Carnitine** (a similar form is acetyl-L-carnitine) may help prevent wasting and provide other immunologic and metabolic benefits,
- **Coenzyme Q<sub>10</sub>** may help with immune function and heart health.
- **Essential fatty acids** found in evening primrose oil or flaxseed oil can help with dry skin and scalp. Also found as omega-3 fatty acids in fish oil, they can help with cholesterol, triglycerides and depression.
- **N-Acetyl-Cysteine**, an antioxidant, can help maintain body levels of glutathione. Glutathione is one of the body's main antioxidants.

## IS TOO MUCH 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 these web sites:

National Center for Complementary and Alternative Medicine at [nccam.nih.gov/](http://nccam.nih.gov/)  
Foundation for Integrative AIDS Research: <http://www.fiar.us>

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