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## **Vitamins and Supplements**

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## Micronutrients and HIV

Vitamins, minerals, and antioxidants are called micronutrients. Even though the body only needs small amounts, micronutrients are essential for good health. They are used for different chemical reactions in and between our cells as part of the body's normal functions. While some people get the nutrients they need from a healthy, balanced diet, many people living with HIV need more micronutrients than they can get from their diet to support the [immune system](#) and help heal cells damaged by the virus. Several studies have shown that taking micronutrient supplements can help keep people living with HIV healthier longer.

[E]ven in resource-rich areas, it is possible to eat well, feel fine, and still not get enough of certain vitamins, minerals, and antioxidants.

## Vitamins

Vitamins generally fall into one of two categories: (1) fat-soluble, or those that dissolve in fats, and (2) water-soluble, or those that dissolve in water.

When you take in fat-soluble vitamins (through foods or supplements), your body uses what it needs and stores the rest. Fat-soluble vitamins include vitamins A, D, E, and K. It is important not to take too much of these vitamins because they can build up in the body and cause harmful [side effects](#). For example, too much vitamin A (beta-carotene) can cause nausea, blurred vision, birth defects, and liver problems.

When you take in water-soluble vitamins, such as B vitamins and vitamin C, your body uses what it needs and filters out the extra vitamins into your urine ("pee"). Side effects from water-soluble vitamins are less common but can occur. For example, large doses of vitamin C can cause nausea, stomach cramps, and diarrhea.

## Minerals

Minerals form the structures in the body (calcium in bone, iron in blood) and play a role in the normal functioning of nerves, muscles, and hormones. Several minerals, including zinc, selenium, and iron, have a role in fighting HIV. Calcium is especially important for women during the time around menopause (perimenopause) and after [menopause](#).

## Antioxidants

The body produces molecules called free radicals as part of its normal functioning. Free radicals can damage your body's cells. Certain factors, such as infection, pollution, and cigarette smoke, can increase the number of free radicals in the body. Antioxidants can keep the extra free radicals from causing damage. Some vitamins, including vitamins A, C and E, are antioxidants. Selenium is also an antioxidant.

## Getting Enough Micronutrients

While micronutrients can be found in food, some people living with HIV cannot get all the nutrients they need through their diet. There are a number of reasons: because of HIV itself, changes in metabolism (the way your body uses food), poor appetite, diarrhea, poor absorption of nutrients, or HIV-related conditions such as HIV wasting and AIDS.

While some people get the nutrients they need from a healthy, balanced diet, many people living with HIV need more micronutrients than they can get from their diet to support the immune system and help heal cells damaged by the virus.

Micronutrients that are often low in people living with HIV include vitamin A, vitamin D, vitamin E, selenium, zinc, and B complex vitamins (B1, Thiamine; B2, Riboflavin; B3, niacin; B6, Pyridoxine; B9, folic acid; and B12, Cobalamin). Some research shows that low levels of these vitamins can lead to lower [CD4](#) cell counts and worsening of HIV. They can also cause other problems, such as [diarrhea](#), [neuropathy](#), and skin conditions.

In resource-poor areas, many women do not get enough micronutrients because they do not have access to enough food or good-quality food. Yet even in resource-rich areas, it is possible to eat well, feel fine, and still not get enough of certain vitamins, minerals, and antioxidants.

The Recommended Dietary Allowance (RDA) for each nutrient is set by the US government as a guideline on the amount of daily nutrients needed to maintain good physical health. Many women in the US do not get even the basic RDA requirements for folic acid, iron, zinc, calcium, magnesium, copper, vitamins A, D, E, and certain B vitamins from food due to dieting for weight loss, eating unhealthy foods, lack of time, or other pressures. This puts women, especially women living with HIV, at special risk for low levels of micronutrients. In addition, women often need more nutrients because of [menstruation](#), [pregnancy](#), or [menopause](#).

Eating a well-balanced diet should be the basis of any plan to correct micronutrient deficiencies (not enough vitamins and minerals). Since different vitamins and minerals are found in different food groups, it is important to include foods from each group in your diet every day. (Read more about food groups at the US Department of Agriculture's "[MyPlate](#)" website.)

- Protein group – Healthy foods from this group include lean red meats, skinless chicken or turkey, fish, nuts, peanut butter, soy products, seeds, beans, quinoa, and peas
- Grains group – Healthy foods from this group include whole grain breads, whole grains such as oats and wheat, oatmeal, and brown rice
- Fruit group – Any fresh fruit is a good choice
- Vegetable group – Fresh and frozen vegetables are the best
- Dairy group – Try to choose one percent or skim (non-fat) milk, low-fat yogurt and cottage cheese, and small amounts of cheese

For more information, see our fact sheet on [Nutrition and HIV](#).

## Taking Supplements

It is important to get as many of the vitamins and minerals you need as possible from food. Nutrients found in food are better for your body than nutrients found in supplements. While supplements do not replace a well-balanced diet, they can help you get the additional micronutrients you need. Supplements include vitamins, minerals, herbs, and other related products used to boost the amount of nutrients in your diet. Supplements are available in pill, capsule, tablet, powder, or liquid form.

Speak to your healthcare provider and see a registered dietitian for a nutritional evaluation. They can help you determine what combination of diet changes and supplements you need.

Here are some common supplements:

- A daily multivitamin/multimineral supplement (without extra iron) taken with food and a full glass of water to help your body absorb (soak up) the vitamins and prevent stomach upset
- Possibly a B complex vitamin and an antioxidant supplement. If you are a vegetarian or a vegan, consider getting your vitamin B12 level checked; if it is low, ask your provider for the correct amount of B12 to take.
- Because women are at higher risk for [bone disease](#), make sure you are getting 1,000 milligrams of calcium (1,200 milligrams if you are over age 50) from food or supplements each day. If you are a vegan, you may need to be extra careful about getting enough calcium. Women who are menopausal (no longer have menstrual periods) do not have the estrogen levels to support new [bone growth](#).
- Humans make vitamin D by exposing our skin to the sun. Many people are low in vitamin D, which is important for absorbing and using calcium. It is important to have your vitamin D level checked and to ask your provider for the correct amount of vitamin D to take if your level is low. The recommended daily allowance for vitamin D is 600 units (or 15 micrograms) per day.
- Iron may be too low in women, especially during their menstrual periods. This can lead to [anemia](#). However, people living with HIV should not take extra iron without talking to their healthcare provider.

- It is also important to know that certain minerals can inhibit (slow or prevent) [HIV drugs called integrase inhibitors](#) from being absorbed (taken up) by your body. These minerals include iron and calcium, as well as multivitamins that contain them. These supplements should be taken either two hours **before** the integrase inhibitor, or six hours **after**).
- Because studies have shown that St. John's Wort (*Hypericum perforatum*), an herb commonly used against depression, affects the levels of protease inhibitors and non-nucleoside reverse transcriptase inhibitors in the blood, people taking any HIV drugs should **not** take St. John's Wort.
- If you are planning to [get pregnant](#), speak to your healthcare provider about prescription pregnancy vitamins that contain folic acid. Folic acid needs to be taken before becoming pregnant, since that vitamin is most important during the first six to eight weeks of pregnancy to protect the developing baby's nervous system.

While few of these supplements have been studied in people living with HIV, you may have heard about:

- Alpha-lipoic acid: for its antioxidant properties and as a treatment for diabetic neuropathy. Suggested dose: 20-50 mg per day for general antioxidant properties, 200-300 mg per day for diabetic neuropathy. Reportedly tolerated well up to 600 mg per day.
- Carnitine (also called acetyl-L-carnitine): to support proper metabolism. It may also help with [neuropathy](#). Suggested dose: 500 mg to 3000 mg (3 g) per day.
- Coenzyme Q10: acts as an antioxidant and supports immune function. Suggested dose: 30-200 mg per day.
- Cysteine (also called N-acetyl-L-cysteine, or NAC): the body converts cysteine to glutathione, a powerful antioxidant. Suggested dose of NAC: 500 mg per day to start; people living with HIV may take up to 4,000 mg per day, under your healthcare provider's supervision.
- Probiotic supplements: these contain "healthy bacteria" such as acidophilus to support digestion and immune health. They are found naturally in yoghurt, fermented fruits and vegetables and kombucha, but can also be taken as supplements. Having healthy bacteria in your gut helps your body absorb more nutrients and make the most of what you eat. A suggested dose of Lactobacillus acidophilus (*L. acidophilus*), one of the most common probiotics, is one to two billion colony-forming units (CFUs). The dose depends on the health condition that is treated. Those using probiotics may take as many as 15 billion CFUs per day for intestinal health under their healthcare provider's supervision.
- Omega-3 fatty acids: these are found naturally in fish, nuts, seeds, and vegetable oils, but can also be taken as supplements. Research among people living with HIV has shown that taking omega-3 fatty acid supplements was associated with lower levels of triglycerides (which can cause heart disease) and a marker for inflammation.

Because of the potential for side effects and interactions with medications, supplements should be taken only under the supervision of a knowledgeable healthcare provider.

Deciding which supplements to take can be difficult and confusing because there are so many different kinds on the market. Try not to choose based on price, fancy or expensive packaging, or product promises. Instead, read the label to see what is really inside.

Micronutrients are essential to your body's healthy functioning. However, making sure you get enough nutrients without taking too much can be tricky. Speak to your healthcare provider or a dietitian who knows about HIV about the supplements you should or are planning to take and possible [side effects](#) or [interactions](#) with your HIV drugs.

## Additional Resources

Select the links below for additional material related to vitamins and supplements.

- [Low Vitamin D Is Common in People With HIV. Are Supplements the Right Prescript...](#)
- [Dietary Supplement Fact Sheets \(US National Institutes of Health\)](#)
- [Vitamins and Minerals \(Helpguide.org\)](#)
- [Dietary Reference Intakes for Energy \(US Department of Agriculture\)](#)
- [Dietary Supplements: What You Need to Know \(US National Institutes of Health\)](#)
- [Using Dietary Supplements Wisely \(US National Center for Complementary and Inte...](#)
- [Omega-3 Fatty Acids May Reduce Triglycerides and Improve Inflammation in People...](#)
- [Recommended Daily Allowances: RDA Chart \(Health Supplements Nutritional Guide\)](#)
- [Herbs and Supplements for HIV and AIDS \(St. Luke's Hospital\)](#)
- [Vitamins, Minerals and Herbal Supplements \(aidsmap\)](#)
- [Vitamins and Minerals for Women \(Office on Women's Health\)](#)
- [Which Vitamins and Supplements May Be Beneficial for People Living With HIV?](#)
- [Important Vitamins and Minerals for People Living with HIV/AIDS \(Food and Agric...](#)



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