

Vitamins & Minerals

Vitamins and mineral supplementation has become an almost universally accepted part of modern health care. It's becoming even more obvious that most people do not get their full nutritional requirements from their diet.

Commonly Used Terms

To gain a better understanding of the role that vitamins and minerals play in establishing a healthy diet and adding to a person's wellness, it is important to learn some commonly used terms.

Vitamin and Mineral Supplement:

Vitamins and minerals provided in tablet or capsule form that are taken in addition to nutrients obtained in the diet. The most commonly taken form of supplement is a multivitamin that contains most needed vitamins and minerals.

Water Soluble Vitamins: These vitamins are soluble in water, so many of these vitamins are lost during cooking. Water soluble vitamins are not stored in the body for very long periods of time and therefore the body must regularly replenish its supply. It is generally recommended that smaller doses be taken several times a day, which will keep body levels of these vitamins more constant. The eight B vitamins (B1, B2, B3, B5, B6, B12, folic acid and biotin) and vitamin C are water soluble.

Fat Soluble Vitamins: These vitamins are soluble in fat and are more stable during cooking. Fat soluble vitamins are stored in the body for relatively long periods of time. Vitamins A, D, E and K are fat soluble vitamins. Because they are stored in the body, it is possible to accumulate an excess of vitamins A and D, which are toxic at large doses. Vitamin K in doses over 500 mg. a day may cause allergic-like symptoms. Vitamin E at megadoses has no known side effects.

Minerals: More than 60 minerals are found in the body, only 22 of which are considered essential. The body has relatively large amounts of the seven macro-minerals, namely calcium, chlorine, magnesium, phosphorus, potassium, sodium, and sulfur. Other minerals are referred to as trace elements because the amount in the body is small, though they are still essential for normal function.

RDA: RDA stands for Recommended Dietary Allowance. The purpose of the RDAs were for guidance for planning food supplies for population groups – it was not intended for use by the consumer. The RDAs were designed as minimums needed to prevent deficiency, not for disease

prevention. As such, they are often believed to be too low for optimal health.

Free Radical: Unstable molecules in the environment that scientists believe can damage cell walls, and structures inside the cell. This type of damage is referred to as "oxidation."

Antioxidant: A compound that prevents oxidation of substances, in food or in the body. There are numerous antioxidants in foods and beverages, but the most often referred to and researched antioxidants are vitamin C, E, and beta carotene.

Why the Need for Supplements?

Though some would argue that in America there is little need for nutritional supplements because of the variety of foods available, studies have shown that very few people actually get the needed vitamins and minerals from their diet. One example is the mineral calcium. It is recommended that pre-menopausal women get a daily intake of 1,200 mg. of calcium and post-menopausal women get 1,500 mg. But only 10% of women get the recommended amount from their diet. Calcium is necessary in formative years for the building of strong bones and teeth, and as one ages because bone begins to lose calcium, which can be replaced in the diet. Adequate supplies of calcium are known to prevent osteoporosis and other bone problems often associated with the elderly (hip fractures, spinal fractures, etc.).

Another example is vitamin C. The recommended intake of vitamin C is 60 mg. per day, but 50% of poor women were found to consume only 51 mg. a day. The 60 mg. are easily had in one 8 ounce glass of orange juice. Vitamin C is essential for healthy teeth and gums (as well as other mucous membranes), increased iron absorption, and wound healing.

There are many possible causes as to why a majority of Americans do not meet even the minimum recommended allowance of vitamins and minerals. It is common for people to consume pre-packaged or prepared meals. Even when the time is taken to prepare "balanced" meals, processing, cooking, and chemicals applied to foods can destroy vitamins and minerals or make them inaccessible to the body. Environmental and behavioral factors, such as pollution, cigarette smoking, and excessive alcohol consumption, as well as illnesses, can lead to absorption problems for some people. Smokers for example are known to require greater intake of vitamin C because the body uses

it faster than normal. Alcohol depletes, stores or blocks absorption of some vitamins and minerals.

Many experts now suggest that most people take a daily multivitamin with minerals to ensure adequate nutrient intake. Ever growing research supporting the value of vitamins and minerals for improved immune response and protection against heart disease, cataracts, birth defects, and diabetes (to name only a few possibilities), has led some to suggest that the cost savings for the health care system resulting from the adequate daily intake of vitamins and minerals would be in the billions.

Who Can Benefit From Supplements?

Though many studies have been done on various supplements, they are generally limited to specific population groups. While there is overwhelming evidence that individuals in these groups should take at least a multivitamin, their special needs make it necessary for them to check with a health care professional qualified in nutrition before self-prescribing. Qualified health professionals include Doctors of Chiropractic, nutritionists, dieticians, physicians that practice wholistic care, and naturopaths.

Women

Pre-menopausal women may benefit from a multivitamin with iron if they have heavy blood flow during menstruation. Women planning to have children should take a multivitamin and perhaps additional supplementation of folic acid. Folic acid has been proven to prevent certain birth defects, but only when taken in the first few weeks of pregnancy, a time when most women still aren't aware they are pregnant. Calcium supplementation is recommended for women of all ages.

Elderly

Older individual may not eat as well or as often as is needed for adequate vitamin and mineral intake. Their bodies are often less able to absorb vitamins and minerals. Vitamin D is a common deficiency in the elderly as many do not spend the time outdoors that is needed for vitamin D conversion (the body can produce vitamin D but direct contact on the skin from the sun is needed). Some have observed that many health problems long considered "due to old age" are in actuality symptoms of nutrient deficiency. Vitamin and mineral deficiencies can adversely affect mental function, bone strength and brittleness, and immune system function. Elderly people who take multivitamins with minerals have been shown to have an increased immune response and therefore get sick less often than their elderly counterparts who do not take a supplement.

Vegetarians

Most vegetarians and all vegans (those who do not eat **any** animal products), may need to take a supplement of vitamin B12, B2 (riboflavin), calcium, iron, and zinc. Some

vegetarian and vegan foods are now supplemented with B12 and calcium, but supplements may still be needed. Iron absorption from plant foods can be increased by eating the iron rich food with a vitamin C food, but supplementation may still be warranted, especially for menstruating women.

Those on Medications

Some medications are known to block or inhibit the absorption of some vitamins and minerals. For example, aspirin interferes with the body's use of vitamin C and folic acid. Women taking hormone replacement drugs or oral contraceptive may also need vitamin supplementation. Some vitamins and minerals affect the effectiveness of some medications, so supplements should not be taken without clearance from a knowledgeable health professional.

Those with Chronic Illnesses or Diseases

As with the elderly, those whose immune system is either slow or overworked because of illness may benefit from vitamin and mineral supplementation. Supplements of vitamins A, E, C, B-complex (all B vitamins), beta carotene, and minerals zinc, selenium, and iron have been shown to increase immunity.

Megadoses

There is evidence that megadoses of some vitamins and minerals are beneficial. Many studies suggest that vitamin E protects against cataracts and heart disease at doses well above the RDA. The nobel prize winner Linus Pauling is known to have been a tremendous supporter of megadoses of vitamin C, believing that it can act against toxic substances in the body, prevent heart disease, among other beneficial uses.

Some vitamins and minerals are toxic in large doses so megadoses should only be taken on the advice of a health care professional knowledgeable in nutrition. Vitamins A and D are know to be toxic at high doses, and in rare instances overdosing is fatal. Though other vitamins are not known to be toxic, very large doses can cause adverse side effects, including nausea, diarrhea, headache, rash, liver damage, cardiac arrhythmias, neurological disorders, and others. Some minerals are also toxic at high levels. The leading cause of accidental poisoning for children is iron supplements. Selenium can be toxic in excess, so doses above the RDA should not be taken unless otherwise instructed by a qualified health care provider. All vitamin and mineral supplements should be labeled according to the percentage of RDA contained in EACH tablet (some supplements, such as calcium, generally require more than one tablet a day.)

Vitamins and mineral supplements are not an excuse to eat poorly. Good health will come with an adequate diet and nutritional supplements. If you want more information on vitamins and minerals, talk to your qualified health care professional.