MAYO CLINIC

MAYO CLINIC WOMEN'S HEALTHSOURCE

Special Report

Supplement to Mayo Clinic Women's HealthSource

Inside

Vitamins and Minerals

What You Should Know About Essential Nutrients

Nutrients	Easy access
Vitamin A/ beta carotene	One small carrot (5 inches) provides about 6,000 international units (IU) of vitamin A.
Vitamin B-3 (niacin)	Three ounces of tuna (canned in water) has 11 milligrams (mg) of niacin.
Vitamin B-6	One medium banana contains about 0.4 mg of vitamin B-6.
Vitamin B-9 (folate/folic acid)	Half a cup (4 ounces) of cooked spinach contains 130 micrograms (mcg) of folate.
Vitamin B-12	Three ounces of salmon contains about 5 mcg of vitamin B-12.
Vitamin C	One medium orange has about 70 mg of vitamin C.
Vitamin D	One cup (8 ounces) of fortified milk contains 100 IU of vitamin D.
Vitamin E	One ounce of almonds (about 23 nuts) has more than 7 mg of vitamin E.
Calcium	One cup (8 ounces) of milk contains 300 mg of calcium.
Iron	Three ounces of beef, pork, lamb or veal contains 2 to 3 mg of iron.
Magnesium	One cup of cooked spinach has 150 to 160 mg of magnesium.
Potassium	One medium banana has 422 mg of potassium. One medium baked potato (with skin) contains 926 mg of potassium.
Selenium	One slice of whole-wheat bread contains 10 mcg of selenium.
Zinc	Three ounces of lean sirloin contains 5 mg of zinc.

Vitamins and minerals are substances your body needs to grow properly, function normally and stay healthy. It's possible — and highly recommended — that you get these substances from the foods you eat. However, it sometimes can be difficult to get the recommended amount of some vitamins and minerals from diet alone. That's why it's not unusual to hear that taking a multivitamin or other supplement on a daily basis can make good sense.

Nevertheless, knowing when you might need a supplement, what kind of vitamin and minerals are best, and how much your body needs can often be confusing. In this Special Report, you'll find out why vitamins and minerals are considered essential to good health and what you should know about the latest research regarding their benefits.

Food vs. supplements

You can get your entire daily requirements of vitamin C by just popping a pill. You can get the same amount by eating a large orange. So which is better? In most cases, the orange is better.

Whole foods — such as fruits, vegetables, grains and dairy products — have benefits you can't find in a pill, including:

- Greater nutrition. Whole foods contain a variety of nutrients your body needs — not just one. An orange, for example,

provides vitamin C as well as beta carotene, calcium and other nutrients. Vitamin C supplements lack these other nutrients.

- Essential fiber. Fiber is important for digestion. It also helps prevent certain diseases. For instance, soluble fiber (found in beans, some grains, and some fruits and vegetables) and insoluble fiber (found in whole grains and some fruits and vegetables) may help prevent heart disease, diabetes and constipation.
- Phytochemicals. Many foods — including some fruits, vegetables, whole grains, legumes and nuts — contain naturally occurring food substances called phytochemicals. These substances may help protect you against cancer, heart disease, osteoporosis and diabetes.

Do you need a supplement?

Although supplements may not offer all the benefits that whole foods can provide, there are times when taking vitamins and minerals in pill form may be appropriate. For instance, if you don't eat the recommended servings of fruits, vegetables and other healthy foods, you may benefit from a multivitamin that contains a variety of essential nutrients. Multivitamins can also be helpful if you are a strict vegetarian, eat a diet that's limited because of food allergies or intolerances, or have a disease or condition that doesn't allow you to digest or absorb nutrients properly. Older age and certain lifestyle habits, such as smoking and excessive alcohol consumption, also can make it difficult to get all the nutrients you need from food.

As for boosting the amount of specific vitamins and minerals, there are times when this can make sense, especially for women. If you're pregnant or trying to become pregnant, certain nutrients — such as calcium, folic acid and iron — are needed more than ever to protect your health and the health of your developing baby. In addition, supplementing your diet with additional calcium and vitamin D is often considered crucial following menopause to protect against osteoporosis and the risk of fractures.

Having the right balance of vitamins and minerals in your body is important for good health. However, getting too much of some nutrients, usually from high-dose supplements, can be dangerous. This is especially true with some fat-soluble vitamins, which are absorbed and then stored in your body's fat for use as needed. Yet, it's generally not recommended that you take megadoses of water-soluble vitamins either. Even though these vitamins aren't stored in large amounts in your body, some can be toxic in large amounts. Here's more of what you should know about some key vitamins and minerals.

Defining Terms

When it comes to vitamins and minerals, it helps to understand a few important terms, including:

- *Recommended Dietary Allowance (RDA).* The amount of each vitamin and mineral needed daily to meet the needs of nearly all healthy people, as determined by the Food and Nutrition Board of the Institute of Medicine. RDAs for vitamins and minerals are based on your sex, age and physical condition, such as pregnancy.
- *Adequate Intake (AI).* An AI is a recommended intake level of certain nutrients based on estimates of how much healthy people need. It's used when there isn't enough data to establish an RDA.
- *Daily Value (DV).* This term, set by the Food and Drug Administration, is used on food and supplement labels. DVs are based on a 2,000-calorie-a-day diet, but your DVs may be higher or lower, depending on your calorie needs.
- *Percent Daily Value.* What percentage of the DV one serving of a food or supplement supplies. For instance, if the label on a multivitamin bottle shows that 30 percent of the DV for a vitamin is provided, you'll need 70 percent from other sources throughout the day to meet the recommended goal. ■

Fat-soluble vitamins

Vitamin A/beta carotene

Vitamin A plays a role in healthy vision, bone and tissue growth, and reproduction. It also helps regulate your immune system, which prevents and fights infections.

Research findings: Although your body can convert plant sources of beta carotene into vitamin A, animal sources of vitamin A are better absorbed. So, if you're a vegetarian who relies on fruits and vegetables to meet your daily vitamin A requirements, you need to eat at least five daily servings of these foods. Vitamin A deficiency is rare in the United States, but people with certain diseases, such as celiac disease, Crohn's disease or pancreatic disorders, may have trouble absorbing the vitamin and need supplements. Dietary intake studies suggest an association between diets rich in beta carotene and vitamin A and a lower risk of some

types of cancer. However, if too much vitamin A is stored in the body, it may increase the risk of birth defects, liver abnormalities and reduced bone mineral density — which could lead to osteoporosis. Research has also found that beta carotene, taken in supplement form, can be dangerous. In several recent studies, smokers and former smokers who took beta carotene had an increased risk of lung cancer. It's not possible, however, to get too much beta carotene from foods.

Recommended Dietary Allowance: 2,330 international units (IU)/day (adult women), 3,000 IU/day (adult men). Although beta carotene from plant sources is considered safe, beta carotene in supplement form is not recommended as a source of vitamin A.

Vitamin D (calciferol)

Vitamin D helps your body absorb calcium, a mineral that's responsible for the normal development and maintenance of healthy teeth and bones. This vitamin also helps maintain proper blood levels of calcium and phosphorus. Vitamin D is often called the sunshine vitamin because your skin produces it after being exposed to ultraviolet rays from the sun.

Research findings: Getting adequate amounts of vitamin D and calcium can prevent or slow osteoporosis and reduce bone fractures. A growing body of research also suggests that maintaining healthy levels of vitamin D may reduce the risk of developing muscle pain and weakness, autoimmune diseases (such as rheumatoid arthritis and multiple sclerosis), cardiovascular disease and certain cancers. In addition, vitamin D deficiency appears to be a growing problem in the United States. (See Vitamin D: Are You Getting Enough?, below). As a result, supplemental vitamin D is commonly recommended for many people.

Adequate Intake: 200 international units (IU)/day (adults ages 19 to 50), 400 IU/day (adults 51 to 70), and 600 IU/day (adults 71 or older). Despite current recommendations, many experts now believe that adults should get at least 800 to 1,000 IU/day of vitamin D. Some even advise getting up to 2,000 IU/day.

Vitamin D: Are You Getting Enough?

A few years ago, vitamin D rarely made news. Now, the so-called sunshine vitamin is regularly in the headlines.

One reason is that recent research has found that this essential nutrient does much more than help your body absorb the calcium it needs to build and maintain strong bones. It also appears to play a role in reducing the risk of many illnesses — including common cancers, autoimmune diseases and cardiovascular disease.

The other reason for this vitamin's increasing notoriety: Studies show vitamin D deficiency is commonplace in nearly every segment of society. In fact, vitamin D levels appear lower among Americans today than 15 to 20 years ago, according to a recent report in *The American Journal of Clinical Nutrition*.

Researchers attribute vitamin D deficiency to many factors, including more time spent indoors and the increasing use of sun protection, which blocks skin from absorbing the sunlight it needs to create vitamin D naturally. Still, most health professionals continue to recommend limiting sun exposure and wearing sunscreen to protect against other problems, such as skin cancer.

Another problem may be that there are a limited number of foods that provide or are fortified with vitamin D. Many experts also believe that current government recommendations regarding adequate intakes of vitamin D are far too low. As a result, standard multivitamins, which are influenced by these recommendations, may do little to guard against deficiency. The U.S. government recommends adults get anywhere from 200 to 600 international units (IU) of vitamin D a day, depending on their age. However, many experts now say vitamin D intakes should be at least 800 to 1,000 IU a day in all adults. Some even recommend a higher daily intake.

If you're over age 50, live in a northern latitude (where sunlight is rare in certain months), have darker skin or have a condition that makes it difficult for you to absorb nutrients, your risk of vitamin D deficiency may be even higher than it is for others.

Although vitamin D deficiency is a potentially serious problem, it can be avoided or corrected. The first step is to talk with your doctor. If he or she is concerned about your vitamin D status, a blood test can be used to check for a deficiency. Your doctor can also advise you on how much vitamin D you should be getting every day and whether you should consider taking supplements to boost your daily intake. ■

Choosing and Using Supplements

Supplements are not substitutes for the nutrients and healthy compounds in whole foods. However, if you do decide to take a vitamin or mineral supplement, here are some guidelines you should follow:

- *Avoid megadoses.* High-dose supplements can cause toxic levels of nutrients to build up in your body. Therefore, it's better to choose a multivitamin-mineral supplement that provides about 100 percent of the Daily Value (DV) of all vitamins and minerals — unless your doctor advises otherwise. One notable exception to this guideline is calcium. You may notice that calcium-containing supplements don't provide 100 percent DV. Instead they may contain 50 percent and need to be taken twice a day. That's because calcium is best absorbed in smaller doses.
- *Look for "USP Verified" on the label.* The initials "USP" ensure that the supplement meets the standards for strength, quality and purity established by the testing organization U.S. Pharmacopeia. Other third party verification services also are becoming increasingly recognized. Importantly, the Food and Drug Administration (FDA) Good Manufacturing Practices regulation is intended to ensure the quality and purity of all dietary supplements in the United States by 2010.
- *Beware of extras.* Don't give in to the temptation of added herbs, enzymes, amino acids or unusual "special" ingredients. These additions usually add nothing but cost. In some instances, they may adversely interfere with medications or medical conditions.
- *Check the expiration date.* Supplements can lose potency over time, especially in hot and humid climates. If a supplement doesn't have an expiration date, don't buy it.
- *Get medical advice.* Check with your doctor or pharmacist before taking even a standard multivitamin-mineral supplement. This is especially important if you have a health problem or are taking any medication. At your next checkup, take all of your supplements along so that your doctor can review and discuss whether you're taking the right types and amounts. ■

Vitamin E (tocopheral)

Vitamin E is an antioxidant that protects red blood cells and may play a role in immune function, DNA repair and other metabolic functions.

Research findings: It's long been thought that diets rich in antioxidants, such as vitamin E, could help lower the risk of some cancers and other conditions, such as heart disease. However, recent studies suggest that vitamin E supplements don't provide the same health benefits as dietary sources do, and may even be harmful to your health. In fact, some research indicates that vitamin E supplementation in high doses may increase the risk of heart failure or death. If vitamin E is taken with certain other supplements, it may slow the progression of early age-related macular degeneration. But it's best not to use vitamin E for this purpose until you've discussed the pros and cons, and safe dosages, with your doctor.

Recommended Dietary Allowance: 15 milligrams/day (adults). Dosages of vitamin E may also be listed in international units (IU). In this case, the recommended amounts are 22 IU for natural sources of vitamin E and 33 IU for synthetic sources for adults. Recent research has found that taking 400 IU/day or more of vitamin E may pose health risks and should be avoided. Before taking any vitamin E supplement, talk with your doctor.

Water-soluble vitamins

Vitamin C (ascorbic acid)

Vitamin C is an antioxidant that maintains healthy tissue and helps the body absorb iron. It also plays a role in wound healing.

Research findings: Studies have shown that eating foods high in vitamin C can lower rates of can-

Fortified and Enriched Foods

These days, you may notice that a number of the products you buy at the grocery store have been "fortified" or "enriched" with certain vitamins or minerals. What does this mean?

If a food or beverage is said to be fortified, it means that one or more nutrients have been added that weren't originally there. Enriched, on the other hand, means that the nutrients lost during processing have been added back. The Nutrition Facts list on the product label will tell you which nutrients have been added. It will also show what percentage of the Daily Value (DV) for each nutrient is met with one serving of the product. ■

Vitamins and Disease Prevention

Vitamin pills offer an easy way to get the nutrients your body needs but may not always get from diet alone. But if you regularly take a multivitamin or other dietary supplement to guard against cancer or heart disease, you may be disappointed.

Recent research has found that most supplemental vitamins and minerals fail to provide women with any added protection from these illnesses. In one study, published earlier this year in the *Archives of Internal Medicine*, researchers tracked more than 161,000 older women participating in the Women's Health Study. More than 40 percent of these women used multivitamins. However, after eight years of follow-up there wasn't any evidence that these supplements had any impact on the risk of cancer, heart disease or death.

Another study, published in the *Journal of the National Cancer Institute*, had no better news. It involved more than 8,000 women over age 40, who were randomly assigned to take a placebo; a supplement containing beta carotene, vitamin C or vitamin E; or a combination of these antioxidant supplements. Researchers found the women who took the supplements either individually or in combination developed cancer at the same rate as did the women who took the placebo.

These studies follow closely on the heels of other research that has shown that antioxidant vitamins, in supplement form, offer few, if any benefits when it comes to warding off chronic illnesses. This appears to be particularly true of vitamin C, vitamin E and beta carotene — a compound your body converts into vitamin A. When these vitamins are obtained through foods, they can protect against damage caused by free radicals — substances that can harm cells, tissues and organs. In pill form, however, these vitamins don't appear to have the same benefit. And, in some cases, they may even be dangerous, especially when taken at levels that exceed recommended dosages.

So does this mean you should stop taking your vitamins? Not necessarily. If you want to reduce your risk of heart disease, cancer or other illnesses, health experts still say it's best to focus on eating a balanced diet that's high in vitamin-rich fruits and vegetables. Yet if your diet is lacking, or you have trouble digesting or absorbing vitamins because of your age or certain health conditions, a multivitamin can help you avoid developing any deficiencies that might affect your health. Other supplemental nutrients, such as calcium and vitamin D, also may be recommended, especially as you age. (See Vitamin D: Are You Getting Enough?, page 3)

When in doubt, it's always best to talk with your doctor about what supplements might be best for you and to avoid taking excessive doses of any one vitamin or mineral without your doctor's knowledge. ■

cer and heart disease. It's unclear whether vitamin C supplements can provide the same benefits. In fact, taking megadoses of vitamin C in supplement form is discouraged because there aren't any established benefits. For instance, there's still little evidence that vitamin C can prevent colds or lessen cold symptoms. On a brighter note: Vitamin C supplements, taken with some other antioxidants and zinc, may slow the progression of age-related macular degeneration. However, this treatment should only be used under a doctor's supervision to ensure proper dosages.

Recommended Dietary Allowance: 75 milligrams (mg)/day (adult women), 110 mg/day (women who smoke), 90 mg/day (adult men), 125 mg/day (men who smoke).

Vitamin B-3 (niacin)

Vitamin B-3, commonly known as niacin, is one of the eight B complex vitamins that help your body convert food to energy. Niacin also helps improve blood circulation and cholesterol levels.

Research findings: In high doses, niacin can reduce low-density lipoprotein (LDL, or "bad") cholesterol and triglycerides and raise high-density lipoprotein (HDL, or "good") cholesterol. Studies show niacin may also slow the development of atherosclerosis when used with other cholesterol-lowering drugs, diet and exercise. However, in the doses needed for these effects (usually greater than 1,000 mg/day), niacin can cause liver damage. Therefore, high-dose intakes should be considered a prescribed medication, not a vitamin, and taken under a doctor's supervision.

Recommended Dietary Allowance: 14 milligrams (mg)/day (adult women), 16 mg/day (adult men).

Vitamin B-6 (pyridoxine)

Vitamin B-6 is needed to help your body use protein, form red blood cells and maintain brain function.

Research findings: Serious deficiencies of vitamin B-6 are rare, but they can increase your level of homocysteine, and potentially boost your risk of heart disease and stroke. High doses of vitamin B-6 have been touted as a treatment for carpal tunnel syndrome and premenstrual syndrome. But studies have generally not supported the effectiveness of this treatment in relieving these conditions. In addition, large daily doses of the vitamin have been associated with neurological problems, such as numbness in the hands and feet (peripheral neuropathy), and skin lesions.

Recommended Dietary Allowance: 1.3 milligrams (mg)/day (women and men ages 19 to 50), 1.5 mg/day (women 51 or older), 1.7 mg/day (men 51 or older).

Vitamin B-9 (folate/folic acid)

Vitamin B-9, also called folate, is important in red blood cell formation and for healthy cell growth and function. It's also important for the developing fetus during pregnancy. Folic acid is the synthetic form of folate.

Research findings: Folic acid has been shown to work together with vitamins B-6 and B-12 to control elevated blood levels of homocysteine, which is associated with an increased risk of heart disease. However, there's no clear evidence that folic acid can prevent or treat heart disease. Studies do indicate that folate or folic acid can help prevent anemia during pregnancy and reduce the risk of neural tube defects, such as spina bifida. Some research also suggests that folate may reduce the

Vitamin-Rich Foods

Vitamins and minerals	Food sources
Vitamin A/beta carotene	Carrots, sweet potatoes, broccoli, spinach, apricots, cantaloupe, liver, egg yolks and fortified milk
Vitamin B-3 (niacin)	Lean meats, poultry, fish, organ meats, brewer's yeast, peanuts and peanut butter
Vitamin B-6	Fortified and enriched grains, whole-grain products, poultry, fish, soybeans, nuts, pea,s and bananas
Vitamin B-9 (folate/folic acid)	Citrus juices and fruits, beans, nuts, seeds, liver, dark green leafy vegetables, and fortified breads and cereals
Vitamin B-12	Meat, fish, shellfish, poultry, eggs, dairy products and fortified cereals
Vitamin C	Citrus juices and fruits, berries, tomatoes, potatoes, green and red peppers, broccoli, and spinach
Vitamin D	Fatty fish (such as salmon and sardines), cod-liver oil, and fortified milk and cereals
Vitamin E	Vegetable oils, wheat germ, whole-grain products, avocados and nuts (especially almonds)
Calcium	Dairy products, calcium-fortified cereals and juice, greens (spinach, bok choy, collards, kale, turnips), broccoli, green soybeans (edamame), and fish eaten with their bones (salmon, sardines)
Iron	Meat, seafood, poultry, whole-grain products, beans, peas and dark green leafy vegetables
Magnesium	Nuts, legumes, whole-grain products and dark green vegetables
Potassium	Citrus fruits, apples, bananas, apricots, cantaloupe, potatoes (especially with skin), tomatoes, spinach, Brussels sprouts, mushrooms, beans, peas and almonds
Selenium	Milk, poultry, fish, seafood, organ meats, Brazil nuts and whole-grain products
Zinc	Meat, fish, poultry, liver, milk, oysters, wheat germ, whole-grain products and fortified cereals ■

risk of breast, cervical, pancreatic and colon cancers — particularly among people who consume alcohol. However, folic acid supplementation currently isn't specifically recommended for the prevention or treatment of cancer.

Recommended Dietary Allowance: 400 micrograms (mcg)/day (adults). Women who are pregnant or breast-feeding should get more — 600 mcg/day and 500 mcg/day, respectively.

Vitamin B-12

Vitamin B-12 plays essential roles in red blood cell formation, cell metabolism and nerve function.

Research findings: If you're over age 50 or don't eat any animal foods, you're likely to need supplements containing B-12 to prevent a deficiency in this vitamin. (Many older adults are at risk of deficiency because, with age, it can be harder to absorb B-12 from animal foods.) A vitamin B-12 deficiency can cause permanent nerve damage, resulting in numbness and tingling in the hands and feet, and balance problems. Deficiency can also cause anemia, depression, confusion, poor memory and dementia. Concerns have also been raised about the apparent link between low levels of B-12 and an increase in homocysteine, an amino acid that can cause problems within your coronary arteries.

Recommended Dietary Allowance: 2.4 micrograms/day (adults). If you have vitamin B-12 deficiency or have had a portion of your gastrointestinal tract removed, your body can't absorb enough of an oral vitamin. In such cases, your doctor will likely recommend getting this vitamin through injections.

Minerals

Calcium

Calcium is important for strong teeth and bones. It's also needed for your heart, muscles and nerves to function properly.

Research findings: Many Americans don't get enough calcium in their diets. However, calcium supplements can help prevent deficiencies that can lead to bone loss and the brittle bone disease osteoporosis — especially when taken regularly and combined with vitamin D. Calcium and vitamin D, taken in combination with prescribed medications, can also be used to help treat osteoporosis or low bone mineral density (osteopenia).

Adequate Intake: 1,000 milligrams (mg)/day (adults ages 19 to 50); 1,200 mg/day (adults 51 and older and postmenopausal women of all ages). For the best absorption, limit supplemental doses to 500 to 600 mg at one time and space doses evenly throughout the day. If you have osteoporosis or early signs of bone thinning, your doctor may recommend you get more calcium than what's typically recommended.

Iron

Iron plays an essential role in delivering oxygen to the body via the bloodstream. It also has many muscular and metabolic functions.

Research findings: A lack of iron can lead to anemia and reduce your resistance to infection. Studies show that iron supplements can prevent or treat iron deficiency anemia. Research also has demonstrated that iron supplements may benefit women during menstruation or pregnancy. Iron deficiency is uncommon in postmenopausal women.

Recommended Dietary Allowance: 18 milligrams (mg)/day (women ages 19 to 50), 8 mg/day (women 51 or older), 8 mg/day (adult men). Postmenopausal women and healthy men rarely need supplemental iron. If you're taking a multivitamin and are no longer menstruating, choose a pill with little or no iron (8 mg/day or less) unless your doctor advises otherwise.

Magnesium

Magnesium is involved in many biochemical reactions in the body, helping maintain normal heart rhythm, immune system and muscle function.

Research findings: Low magnesium levels are linked with a variety of conditions, including hypertension, heart disease, osteoporosis and poor-

Upper Limits

More is not necessarily better when it comes vitamins and minerals. In fact, taking too much of some nutrients — usually in supplement form — could cause health problems. High doses of niacin, for instance, can result in liver problems.

That's why a Tolerable Upper Intake Level (UL) has been established for some vitamins and minerals. A UL is defined as the highest level of daily intake that is likely to pose no risk of adverse health effects. This amount includes how much of a nutrient you get from both food and supplements.

Therefore, to be safe, you should try to stay under the UL for any nutrient — unless your doctor has recommended otherwise. If you have a chronic health condition, or are taking prescription medication, it's also a good idea to check with your doctor before taking supplements. Many have possible drug interactions and side effects. ■

ly controlled diabetes. Use of certain medications, such as diuretics and some antibiotics, also may affect magnesium levels.

Recommended Dietary Allowance: 310 milligrams (mg)/day (women ages 19 to 30), 320 mg/day (women 31 or older), 400 mg/day (men 19 to 30), 420 mg/day (men 31 or older). In large doses, magnesium supplements can cause abdominal cramps, nausea and diarrhea. However, taking supplements with food may reduce the risk of these potential side effects.

Potassium

Potassium is an electrolyte that is critical to the function of nerve and muscle cells, including those in your heart.

Research findings: Some studies indicate that low potassium may contribute to hypertension, and that increasing potassium intake through diet may help prevent or help treat this problem. Other studies indicate that increased potassium intake is linked with a lower risk of stroke, but more research is needed.

Adequate Intake: 4,700 milligrams/day (adults). Don't take potassium supplements unless your doctor recommends them.

Selenium

Selenium has antioxidant properties, which may help your body fight off illnesses. It also helps maintain the immune system and regulate thyroid function.

Research findings: Some studies suggest that selenium may help prevent certain types of cancer. However, research on supplementation hasn't demonstrated that selenium, in pill form, can aid in cancer prevention. Preliminary studies have also looked at the relationship between selenium and arthritis. So far, selenium supplements haven't been recommended for any type of disease prevention.

Recommended Dietary Allowance: 55 micrograms/day (adults).

Zinc

Zinc is needed for normal growth, development and sexual maturation, and helps regulate appetite, stress level, and sense of taste and smell. It also has antioxidant properties and plays an essential role in the immune system.

Research findings: Studies have produced conflicting evidence on whether zinc lozenges reduce the duration and severity of cold symptoms. Some studies indicate that taking a daily multivitamin-mineral supplement may increase the immune response in older adults, while other studies suggest supplementation may weaken the immune response. Supplementation with zinc and certain antioxidants may slow the progression of age-related macular degeneration. But, a doctor's supervision is considered crucial to ensure proper dosages.

Recommended Dietary Allowance: 8 milligrams (mg)/day (adult women), 11 mg/day (adult men).

Playing it safe

In general, vitamins have proved to be safe. However, it's best to think twice before chasing the latest headlines. Sound health advice regarding vitamins and minerals, especially when taken as supplements, is generally based on research over time. That's why you should be wary of any scientific "evidence" that claims a certain product or formulation can offer a quick fix or a miracle cure — especially if that evidence departs from accepted research findings and established dietary guidelines. Supplemental vitamins can be a part of your overall wellness plan. But it's important to use them wisely, and remember that they can't replace a nutritious diet. ■

Additional Resources

Department of Health and Human Services
Dietary Guidelines for Americans
www.health.gov/dietaryguidelines

National Institutes of Health
Office of Dietary Supplements
http://dietary-supplements.info.nih.gov

Department of Agriculture
National Agricultural Library
www.nal.usda.gov
(Click "Food and Nutrition")

MayoClinic.com
Nutrition and Healthy Eating
www.MayoClinic.com
(Search on "vitamins")

Mayo Clinic
Mayo Clinic Book of Alternative Medicine
http://bookstore.mayoclinic.com/home.cfm ■

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