



The ABC's of vitamins

The human body needs various vitamins for essential bodily functions such as metabolism of foods, healthy bones and teeth, good vision, energy, fighting off illness, and maintenance of good general health. Most of the necessary vitamins can be taken from a good, balanced diet, with a variety of foods daily. Sources of vitamins are plants (fruits/vegetables), dairy products, and living animals. Before beginning any type of vitamin or supplement regimen, you should discuss with your primary care provider.



There are two categories of vitamins:

1. **Fat soluble**- vitamins A, D, E, K. These are vitamins that are stored in the liver and fat tissue, thus generally stay in the body longer. Because they are stored in the body, excessive supplement amounts can be toxic.

Vitamin A: helps with vision, bone growth, healthy teeth, reproduction, healthy mucous membranes (lining of the mouth, throat, tears), and assists with good vision. Dietary sources of Vitamin A include dairy products, fruits, carrots, seafood, organ meat (liver), green leafy vegetables, sweet potatoes, pumpkin, and melon. Lack of enough Vitamin A can result in difficulty with night vision, poor dentition, diarrhea, intestinal problems, and poor vision in children. The recommended dose of Vitamin A (as beta-carotene) for adults is 3,000- 4,000 IU daily. Since Vitamin A is stored in the liver and fatty tissue, it is more common to have too much in the body than too little. Vitamin A toxicity can be very dangerous, as too much Vitamin A can result in nausea, dry skin, vision changes, liver problems, hair loss and bone pain. Most people who eat a healthy diet with a variety of fruits, vegetables, dairy products and meats will not need a Vitamin A supplement.

Vitamin D: helps with healthy bones, strong teeth, and absorption of calcium. The importance of Vitamin D is under considerable research. Recent studies indicate that Vitamin D also helps with depression, osteoporosis, and possibly even some memory problems. Vitamin D deficiency in children is called Rickets, and in adults can lead to osteomalacia (softening of the bones). Dietary sources of Vitamin D include dairy products, fish oil (salmon, tuna), fortified orange juice, and eggs. Exposure to sunlight (about 10 minutes/day) will help absorption of Vitamin D, therefore, many people need

more vitamin D in winter months when there is less sun exposure. Too much Vitamin D can result in nausea, weight loss, kidney problems, and growth problems (in children). There is a blood test your provider can do, called hydroxyVitamin D level, that can determine if you have enough Vitamin D in your body. Most people need a blood level >30 to be within a “normal” range. The recommended daily dose of Vitamin D depends on the individual’s age, but is generally 600 IU daily. Having a blood test will help to determine exactly how much is needed as a supplement.

Vitamin E: is an anti-oxidant that helps to maintain healthy tissues and red blood cells. There is also some evidence that Vitamin E keeps skin soft and healthy. Vitamin E can be found in vegetable oil, green leafy vegetables, whole grains (fortified cereals), nuts, and eggs. The recommended dose for adults is 15mg/day. Too much Vitamin E can result in nausea and problems with the intestines.

Vitamin K: helps with the mechanisms that allow blood to clot, as well as formation of healthy bones. Good sources of Vitamin K include green leafy vegetables, and liver. Low levels of vitamin K can lead to excessive bleeding. If you are taking any type of blood thinner (Coumadin, Lovenox, Aggrenox, etc), you should consult your primary care provider prior to taking any additional Vitamin K.



2. **Water Soluble-** Vitamins B and C. These are vitamins that are not stored in the body, and may need to be replenished with supplements. Food preparation (such as over-cooking) can destroy some of the beneficial effects of water soluble vitamins. Eating fresh (instead of cooked), green leafy vegetables maintains some of the benefits of water soluble vitamins.

Vitamin B: complex of 8 different compounds: Thiamin (B1), Riboflavin (B2), niacin, folate, vitamin B6, Vitamin B12, biotin and pantothenic acid. The B complex vitamins are important for vision, healthy skin, formation of red blood cells, reproduction, and cognitive functions. Some disorders, such as rheumatoid and headaches can be treated with supplemental Vitamin B complex. Disorders such as pernicious anemia, pellagra and Beriberi are linked to Vitamin B deficiencies. Dietary sources of the B vitamin complex include fortified cereals, fresh vegetables, meat, fish, eggs, milk, berries, melon, nuts, citrus fruits, and legumes.

Vitamin C: (also called ascorbic acid) helps the body heal wounds, and helps the immune system to fight off illness. Low levels of Vitamin C can result in weakness, bleeding from the gums and scurvy. Good sources of Vitamin C include citrus fruits, fortified fruit juices, and dark green leafy vegetables. Some processed cereals are fortified with Vitamin C.



Tips about Vitamins

- Most essential vitamins can be consumed with a healthy, balanced diet rich in fruits, vegetables, dairy products, grains and protein
- Go for the rainbow- yellow pepper, green cucumber, blueberries, strawberries, cantaloupe, carrots, and tomatoes add a colorful menu rich with vitamins and minerals
- Always discuss any vitamin supplements you are taking with your primary care provider, as some will interfere with your other medications
- Always consider other medications you may be taking, as some medications will interact with vitamin supplements
- Children should not take vitamin supplements without guidance from a pediatrician
- Always keep vitamins out of the reach of children, as many can be toxic
- Taking vitamin supplements with food can help to reduce the incidence of stomach upset
- Do not take extra vitamin E if you are taking blood thinners, unless instructed to do so by your primary care provider
- Boiling or over-cooking some vegetables will reduce the amount of vitamins. Try eating fresh or steamed vegetables instead
- Nuts are a good source of many vitamins, but be alert for signs of nut allergies (symptoms include skin rash, itching, stomach upset, diarrhea, shortness of breath, or anaphylaxis- which is a medical emergency)
- About 10 minutes in the sun daily will help the body use Vitamin D
- Foods rich in Calcium and Vitamin D (such as milk, yogurt, cheese) may help to prevent osteoporosis
- Calcium is absorbed better when taken in combination with Vitamin D

- Most generic vitamins have the same compounds as brand names, and are less expensive
- Go lean with meats- choose skinless chicken breast, skinless turkey breast, lean ground beef (>93% lean), or lean pork (pork chops or pork loin)
- Bake, broil or grill meat and avoid fried foods
- Instead of meat, Substitute fish at least 1 time per week
- Choose beans, lentils or peas as part of the meal- many recipes use these as substitute for meats
- Add nuts to yogurt, cereal or salad to increase antioxidants
- Reach for seasonal fruits and vegetables- the fresher the better
- Juice may not really be juice- many fruit juices contain more sugar and sweeteners than actual juice--- read the label
- 1 serving of vegetables or fruits is generally about 1 cup
- 1 serving of meat is generally about the size of a playing card
- Read the label—some foods that you think are low in fats and calories really are not



Great web resources

<http://www.mypyramid.gov/pyramid/printpages.html>

www.cdc.gov/nutrition/everyone/basics/vitamins/index.html

http://kidshealth.org/kid/stay_healthy/food/vitamin.html

<http://www.health.gov/dietaryguidelines/dga2010/DietaryGuidelines2010.pdf>



EAT HEALTHY- BE HEALTHY