

# VITAMINS

## Vitamin A and Beta Carotene

### Why do I need vitamin A?

Vitamin A helps you see in the dark. In particular, it helps your eyes adjust to darkness after being exposed to bright light, like the headlights of an oncoming car at night. You can also thank vitamin A for healthy skin, strong bones, and a sound immune system. The vitamin itself shows up primarily in organ meats, but many fruits and vegetables contain beta-carotene and other carotenoids that are converted to vitamin A in the intestine. Eating foods rich in these substances may protect you against heart disease and certain forms of cancer.

### What foods are the best sources of vitamin A?

Orange, red, and dark green vegetables and fruits are particularly rich in beta-carotene and the 50 other carotenoids that the body converts to vitamin A. Just one red pepper or half a cup of spinach contains enough to meet your daily requirement for A. But the more carotenoids you get, the better, so don't be afraid to load up on foods with vitamin A!

Liver is by far the richest source of vitamin A -- so rich that you probably shouldn't eat it more than once a week. Fish and egg yolks are also packed with it, and some brands of milk are fortified with A, to help your bones absorb calcium.

### Should I take a supplement?

No. You're not likely to be deficient in the vitamin, and A supplements can easily give you a toxic dose, and while beta-carotene supplements are probably not harmful, they won't give you all the health benefits of carotenoid-rich foods. Researchers in Finland found that smokers who took vitamin A supplements were slightly more likely to develop lung cancer.

### Can I get too much vitamin A?

Yes. As little as 10,000 mcg of vitamin A per day can cause birth defects in pregnant women and, over time, headaches, hair loss, and liver damage. But unless you're eating a lot of liver, it's hard to get that much from your diet. You can't overdose on carotenoids, and your body will only convert what it needs to vitamin A.

# B VITAMINS: Folic Acid, B-6, B-12

## Why do I need B vitamins?

You need the Bs for basic maintenance -- to ensure robust red blood cells and a sound nervous system. Lately they've been getting attention for other reasons as well. Folic acid, the most famous B, can prevent neural tube birth defects such as spina bifida. Along with B-6 and B-12, it may also protect your heart by helping to rid the body of homocysteine, a by-product of animal protein that seems to contribute to hardened arteries. In fact, a recent US study showed that getting your Bs is nearly as important in preventing heart disease as stopping smoking and controlling cholesterol and blood pressure. Among 80,000 women, those who got plenty of the Bs suffered only about half as many heart attacks as those who got the least.

## What are the best food sources?

Folic acid shows up naturally as folate in foods such as orange juice (109 mcg per cup), spinach, liver, and lentils but it's harder for the body to absorb than the synthetic kind in fortified foods and supplements. B-6 is widely available in meats, fruits, and vegetables. One banana will give you a third of what you need for the day. B-12 is found in meat, fish, and dairy products. Vegans can find it in brewer's yeast.

## Should I take a supplement?

If you're even thinking of having a baby, the answer is yes. It's crucial for women to be getting at least 400 mcg of folic acid a day when they conceive, and unless you're downing a bowl of fully fortified cereal (look for the folic acid flash symbol on the box) every day, you're probably not even close.

Older people should also be particularly concerned about B-6 and B-12. About half of people over age 50 end up deficient in these two vitamins, in part because they tend to produce less stomach acid and therefore have trouble absorbing them from food. You can buy separate supplements, but the safest and easiest way to get everything you need is to take a multivitamin. Some older people may need to get injections of B12.

## Can I get too much?

Not if you stick to a multivitamin, which contains safe levels of all three Bs. Too much folic acid can mask a B-12 deficiency, which can cause nerve damage.

## Drug interactions

Folic acid deficiency can be caused by anti-epilepsy drugs such as phenytoin and phenobarbitone. Folic acid deficiency can also be caused by methotrexate which is a drug used for severe arthritis and some skin conditions such as psoriasis. Folic acid

supplements are needed when taking these drugs and your doctor will inform you of this.

Vitamin B6 (pyridoxine) can cause reductions of 40 to 50% in the epilepsy drugs phenytoin and phenobarbitone.

## Vitamin C

### Why do I need vitamin C?

Vitamin C (also called ascorbic acid) is one of the most versatile vitamins. It keeps you from bruising too easily and helps wounds heal. It strengthens capillaries, the tiny blood vessels that carry oxygen and nutrients to all parts of your body, and is involved with the production of collagen, the connective tissue that underlies your skin and stabilises your bones. Vitamin C is a powerful antioxidant, which means it helps to rid your body of free radicals, harmful oxygen molecules that can cause the cell damage that may lead to cancer, heart disease, cataracts, arthritis, and many other health problems. Vitamin C keeps your immune system going strong, and although taking extra C won't keep you from getting a cold, it may ease your symptoms if taken at the first sign of sniffles.

### Which foods are good sources of vitamin C?

Orange, red, and green fruits and vegetables are your best bet. A cup of orange juice has about 100 mg. Melon, kiwi fruit and strawberries are also very good sources. One potato will supply 30 mg, or a serving of broccoli gives you approximately 60 mg, as does half a red pepper. Many fruit drinks, such as cranberry juice are fortified with C.

### Should I take a supplement?

It's easy to get plenty of vitamin C through your diet as long as you're not completely shunning fruits and vegetables. There's no evidence that taking supplements regularly has any health benefits. But if you feel a cold coming on, it can't hurt to boost your intake for a few days. Studies have shown that taking 1,000 mg of C a day can reduce the severity of cold symptoms by about 20 percent and shorten your suffering by about a day on average. Take it in smaller doses to keep your blood levels high around the clock and avoid side effects. However, many doctors do not subscribe to the notion that vitamin C supplements ease the effects of a cold.

### Can I get too much?

Most people can probably take up to 3,000 mg of C a day without ill effects, but the majority of it passes right through the body. Some people can get diarrhoea from as little as 500 mg but these are a minority. But remember: there is no evidence to suggest that taking extra vitamin C confers any health benefits. It is far better to make sure that you are eating a healthy diet rich in vitamin C, rather than to spend money on purchasing vitamin C pills.

## Drug interactions

Aspirin reduces the absorption of Vitamin C by about a third.

# Vitamin D

## Why do I need vitamin D?

Vitamin D grabs calcium and phosphorus out of your intestines and dumps them into your bloodstream where they can be absorbed by your bones, keeping your skeleton strong. Children who get too little vitamin D can develop rickets, a bone deforming condition that can lead to bowlegs and knock-knees. In adults, a D shortage can contribute to osteoporosis, the "brittle bones" disease, and bring on pain in the bones and joints. (The symptoms are sometimes misdiagnosed as arthritis.) There is even some evidence that a daily dose of 270 mg (400 International Units, IU) of D may slow the progression of osteoarthritis in the knees.

## What are good sources of Vitamin D?

Your body can actually manufacture D on its own (with a little help from the sun); technically, that makes it a hormone, not a vitamin. With 10 to 15 minutes of direct sunshine on your hands and face three times a week, most people can make all they need. But because your exposure to sunlight can vary widely depending on the time of year, your location, and other factors, experts recommend that you fulfil your daily requirement through your diet or through supplements if necessary. Many types of milk, along with some breads and cereals, are fortified with vitamin D. You can also find D naturally in fatty fish such as salmon.

## Do I need a supplement?

You might need a supplement if you're older than 50, don't get much sun, and you're not a big milk and cereal fan. Many Irish people may not get enough direct sun in the winter to meet their vitamin D needs. This is particularly a problem for older people, whose bodies don't synthesise the vitamin as efficiently and who may not be able to stomach dairy products. Most multivitamins contain 270 mg (400 IU) of D. People over 70 can pick up another 135 mg (200 IU) by adding a calcium-plus-D supplement. They're easier to find than D alone, and you probably need the extra calcium anyway.

## Can I get too much?

Not from sunshine. But taking more than 1350 mg (2,000 IU) of vitamin D a day in supplement form can cause headaches and fatigue. And at that dose, it won't be long before calcium starts building up in the blood, heart valves, and kidneys, which can eventually prove fatal.

## New Research

New research has found that a daily supplement of 700 to 1000IU of vitamin D reduces

the risk of fractures from falls among older people by 19%. In-fact the British Medical Journal shows that a dose of less than 700IU per day has no effect in reducing fractures.

### **Drug interactions**

Some blood pressures called diuretics (eg) Thiazides can reduce the urinary excretion of vitamin D hence increasing the risk of too much vitamin D. Some epilepsy medication such as phenytoin can reduce vitamin D levels.

## **Vitamin E**

### **What's important about vitamin E?**

Vitamin E helps protect your body from the damage that can cause heart disease and cancer as cells decay. It works together with other antioxidants, such as vitamin C and selenium, to help prevent chronic illnesses such as diabetes and heart disease.

### **Can it prevent heart disease?**

Vitamin E captured the attention of cardiologists in 1993, when a Harvard University study showed that men who took vitamin E had a 35 percent lower risk of heart disease than those who didn't take the supplement. These results bolstered the theory that vitamin E helps keep heart problems at bay by preventing so-called bad cholesterol (LDL) from clogging up your arteries.

But despite a parade of other studies supporting the role that vitamin E plays in preventing heart disease, more recent findings are mixed.

Because researchers can't reach a consensus, scientists are reluctant to endorse vitamin E supplements, except for use by people who can't absorb the vitamin from their diet.

The Food Safety Authority recommends 10 milligrams (mg) a day for men, 8 mg a day for women. The RDA for children is 6 mg a day.

Some studies have found the antioxidant has protective effects on the arteries of people taking 66 mg a day, but other researchers say the real benefits come from taking 130 to 270 mg daily.

### **How can I tell if I have a vitamin E deficiency?**

The symptoms can vary from person to person. Many people lose sensation, are unable to feel pain, or experience muscle weakness when they don't get enough vitamin E. People with severe deficiency or young people born with an inability to absorb the vitamin may also suffer from blindness and anaemia.

### **Can I get enough vitamin E from eating grains and vegetables?**

You can get the recommended daily allowance of vitamin E by eating a healthy combination of different foods. Vitamin E is most commonly found in small amounts in vegetable oils, nuts, fatty fish such as tuna and salmon, dark, leafy vegetables, and whole grains.

If you prefer to mix up your foods in a healthy meal, you could eat a small spinach salad topped with two tablespoons of sunflower seeds, a bowl of tomato soup made with milk, and a peanut butter sandwich.

Vitamin E often doesn't survive long periods of storage, so don't count on getting much from that jar of wheat germ that's been sitting in the back of your fridge for a year. Since it's a fat-soluble vitamin, substantial losses wouldn't occur if you're cooking in water.

However, frying or cooking with a lot of oil could cause a loss of vitamin E.

### **Should I take a supplement?**

If you tend to skimp on vegetables, nuts, and whole grains, you'd probably benefit from taking a supplement.

When choosing supplements, remember vitamin E from natural sources is more potent and easier for your body to use than the synthetic version. Taking the supplement with food will also help you absorb the E.

### **Drug interactions**

You are not advised to take more than 270 mg without consulting your doctor. High daily doses can cause bleeding among people who are taking anti-clotting drugs. You should also consult your doctor before taking an E supplement if you're on blood-thinning medications, take aspirin regularly, or plan to undergo surgery soon.