

These are not well known, but have an important place in health.

Dr Mercola -

There are three types of vitamin K

Vitamin K1, or phylloquinone, is found naturally in plants, especially green vegetables; K1 goes directly to your liver and helps you maintain healthy blood clotting.

This is thought to reduce coronary calcification, thereby decreasing your risk of cardiovascular disease. However, studies have reported inconsistent results, possibly because of the different effects of vitamin K1 (phylloquinone) and vitamin K2 (menaquinone or MK). Few studies have included both.

Spinach has a lot of vitamin K.

Vitamin K2, called menaquinone, is made by the bacteria that line your gastrointestinal tract, and goes straight to your blood vessel walls, bones, and tissues other than your liver. Vitamin K2 works in tandem with Vitamin D3, so should be taken at the same time. Vitamin K2 is every bit as important as vitamin D for protecting your heart and bone health; it's essential for activating enzymes involved in transporting calcium from your arterial walls to your bones. A recent study found statins may increase calcification in arteries; another found statins deplete your body of vitamin K2, suggesting this may be a mechanism by which statins harm your heart. The quartet of calcium, vitamin D, K2, and magnesium all work together synergistically, and should ideally be taken in combination. Vitamin K2 is an important fat-soluble vitamin that plays critical roles in protecting your heart and brain, and building strong bones. It also plays an important role in cancer protection. The biological role of vitamin K2 is to help move calcium into the proper areas in your body, such as your bones and teeth. It also helps remove calcium from areas where it shouldn't be, such as in your arteries and soft tissues.

At least one study investigated the association of intake of phylloquinone and menaquinone with coronary calcification. The intake of both forms of the vitamin was estimated using a food-frequency questionnaire. It was found that K2 had an effect on coronary calcification, but K1 did not.

A specific type of vitamin K2 (MK-7) may help prevent inflammation, according to new research

Vitamin K2, particularly menaquinone-7 (MK-7), has been the subject of extensive research because it stays active in your body longer enabling your body to benefit from much lower levels.

Vitamin K2 works synergistically with a number of other nutrients, including calcium and vitamin D; one of its biological roles is to help move calcium into the proper areas in your body, such as your bones and teeth.

If you take oral vitamin D, you also need to take vitamin K2. Vitamin K2 deficiency is actually what produces the symptoms of vitamin D toxicity, which includes inappropriate calcification that can lead to hardening of your arteries.

If you take a calcium supplement, it's important to maintain the proper balance between calcium, vitamin K2, vitamin D, and magnesium. Lack of balance between these nutrients is why calcium supplements have become associated with increased risk of heart attack and stroke. This little-known vitamin may be one of the keys to fighting the signs of aging. Plus, it's a stronger antioxidant than vitamin E or coenzyme Q10.

Plus, it's a stronger antioxidant than vitamin E or coenzyme Q10.

You'll not find this amazing product anywhere else on the Internet.

Vitamin K2 is necessary to prevent arterial calcification.

If you fail to consume adequate amounts of vitamin K1 and K2, you will radically increase your risk of heart disease and stroke.

People who consume the greatest amounts of K2 have the lowest risk of cardiovascular disease, cardiovascular calcification, and the lowest chance of dying from cardiovascular disease.

Helping to build strong bones isn't all that vitamin K2 does for you. Vitamin K2 helps you maintain your youthfulness in other ways, too. It supports your healthy heart and vascular system, helps enhance your memory, and aids in fighting premature aging.

Vitamin K2 is found in foods that many people don't eat - foods like curd cheese and natto or fermented soybeans. And with today's popular eating trends limiting fats - even healthy fats - you can end up with lower levels of vitamin K2 simply because it needs dietary fat to be absorbed.

With estimates as high as 99% of the population being deficient, most people can benefit from a quality

vitamin K2 supplement.

The Blood Clotting Functions of Vitamins K

Vitamin K1 is well known for being crucial for proper blood clotting, but Dr. Schurgers clarifies this by saying that both vitamins K1 and K2 activate certain coagulation factors and there's no risk of over coagulating if you take enough vitamin Ks.

Elderly people with atrial fibrillation (AF) or venous or deep-vein thrombosis are often put on oral anticoagulants, which are vitamin K antagonists, meaning they block the recycling of vitamin K1 and K2. so you do need to be cautious. Check with your health specialist.

Helps blood clotting.

Women's blood should have 90 mcg and men 120 mcg.

Also incorporate natural lycopene foods such as:

- Cooked tomatoes for lycopene.
- Raspberries
- Watermelon
- Cabbage family foods, such as broccoli, help control excess estrogens, the real enemy of the prostate.
- Take a high quality krill oil with Vitamin E, to rebuild omega 3 fat levels, which are deficient in most people and a major cause of inflammation and disease.
- Get full body sun exposure whenever possible to increase vitamin D levels, which need to be tested regularly.
- Avoid biopsies (examination of tissue from a living body), which permanently damage the prostate and can spread or cause cancer. Have a far more reliable, non invasive, Power Colour Doppler Sonogram of your prostate done by Robert Bard, MD in New York City, www.cancerscan.com or other qualified Radiologists. PCD is the first line of diagnosis in other countries, but is not sanctioned by American Urologists so it is difficult to find.

Excesses

A chemist said that the synthetic form of Vit K can have bad side effects, so the natural form is better such as clinicians Pregavit, a multi vitamin with Vit K in it.

MK-7 is found in high levels in the fermented soybean-based food called natto, certain cheeses such as Edam and Brie, and can also be taken in supplement form.

Dr. Mercola's Comments

Vitamin K is an extremely important vitamin to have in your diet; it may very well be the next vitamin D in terms of the numerous health benefits it may provide. But, according to Dr. Cees Vermeer, one of the world's top researchers in the field of vitamin K, nearly everyone is deficient in vitamin K -- just like most are deficient in vitamin D.

Most people get enough vitamin K from their diets to maintain adequate blood clotting, but NOT enough to offer protection against health problems like arterial calcification and cardiovascular disease. Yet, as the study above showed, adequate amounts of the right type of vitamin K may offer immense benefits to your heart health, including reducing coronary calcification and thereby decreasing your risk of heart disease.

Which Type of Vitamin K May be Best for Your Heart?

Vitamin K comes in two forms -- K1 or K2 -- and it is important to understand the differences between them.

Vitamin K1 (phylloquinone): Found in green vegetables, K1 goes directly to your liver and helps you maintain a healthy blood clotting system. (This is the kind of vitamin K that infants are often given at birth to help prevent a serious bleeding disorder.) It is also vitamin K1 that keeps your own blood vessels from calcifying, and helps your bones retain calcium and develop the right crystalline structure.

Vitamin K2 (menaquinone, MK): Bacteria produce this type of vitamin K. It is present in high quantities in your gut, but unfortunately is not absorbed from there and passes out in your stool. K2 goes straight to vessel walls, bones, and tissues other than your liver. It is present in fermented foods, particularly cheese and the Japanese food natto, which is by far the richest source of K2.

Vitamin K3, or menadione, is a third form that is synthetic and manmade, which I do not recommend. Each type of vitamin K has different roles in your body, and emerging research is showing that vitamin K2, not K1, may be especially important. For instance, research published in *Atherosclerosis* found that high dietary intake of vitamin K2 is associated with reduced coronary calcification (hardening of the arteries), a result that should also lessen your risk of heart disease.

What made this study unique was that it compared dietary intakes of both vitamin K1 and K2, and only K2 showed a benefit. Vitamin K1 was NOT associated with reduced coronary calcification. This is consistent with separate research also showing superior health benefits from vitamin K2, including:

The Rotterdam Study, the first study demonstrating the beneficial effect of vitamin K2, showed that people who consume 45 mcg of K2 daily live seven years longer than people getting 12 mcg per day.

The Prospect Study, in which 16,000 people were followed for 10 years. Researchers found that each additional 10 mcg of K2 in the diet results in 9 percent fewer cardiac events, whereas vitamin K1 did not offer a significant heart benefit.

Why Might Vitamin K2 be so Beneficial for Your Heart?

Vitamin K engages in a delicate dance with vitamin D; whereas vitamin D provides improved bone development by helping you absorb calcium, there is new evidence that vitamin K2 directs the calcium to your skeleton, while preventing it from being deposited where you don't want it -- i.e., your organs, joint spaces, and arteries. A large part of arterial plaque consists of calcium deposits (atherosclerosis), hence the term "hardening of the arteries."

Vitamin K2 activates a protein hormone called osteocalcin, produced by osteoblasts, which is needed to bind calcium into the matrix of your bone. Osteocalcin also appears to help prevent calcium from depositing into your arteries. In other words, without the help of vitamin K2, the calcium that your vitamin D so effectively lets in might be working AGAINST you -- by building up your coronary arteries rather than your bones.

This is why if you take calcium and vitamin D but are deficient in vitamin K, you could be worse off than if you were not taking those supplements at all, as demonstrated by a recent meta-analysis linking calcium supplements to heart attacks.

This meta-analysis looked at studies involving people taking calcium in isolation, without complementary nutrients like magnesium, vitamin D and vitamin K, which help keep your body in balance. In the absence of those other important cofactors, calcium CAN have adverse effects, such as building up in coronary arteries and causing heart attacks, which is really what this analysis detected. So if you are going to take calcium, you need to be sure you have balanced it out with vitamin D and vitamin K.

Vitamin K2 Helps Produce Heart-Protective Protein MGP

Another route by which vitamin K offers heart-protective benefits is through the Matrix GLA Protein (or MGP), the protein responsible for protecting your blood vessels from calcification. When your body's soft tissues are damaged, they respond with an inflammatory process that can result in the deposition of calcium into the damaged tissue. When this occurs in your blood vessels, you have the underlying mechanism of coronary artery disease -- the buildup of plaque -- that can lead you down the path to a heart attack.

Vitamin K and vitamin D again work together to increase MGP, which, in healthy arteries, congregates around the elastic fibres of your tunica media (arterial lining), guarding them against calcium crystal formation.

According to Professor Cees Vermeer:

"The only mechanism for arteries to protect themselves from calcification is via the vitamin K-dependent protein MGP. MGP is the most powerful inhibitor of soft tissue calcification presently known, but non-supplemented healthy adults are insufficient in vitamin K to a level that 30 percent of their MGP is synthesized in an inactive form. So, protection against cardiovascular calcification is only 70 percent in the young, healthy population, and this figure decreases at increasing age."

Four More Reasons to Make Sure Your Diet Includes Vitamin K2

Vitamin K not only helps to prevent hardening of your arteries, which is a common factor in coronary artery disease and heart failure, it also offers several other important benefits to your health.

Fight Cancer ...

Vitamin K has been found beneficial in the fight against non-Hodgkin lymphoma, liver, colon, stomach, prostate, nasopharynx, and oral cancers, and some studies have even suggested vitamin K may be used

therapeutically in the treatment of patients with lung cancer, liver cancer, and leukemia.

Improve Bone Density

Vitamin K is one of the most important nutritional interventions for improving bone density. It serves as the biological "glue" that helps plug the calcium into your bone matrix.

Studies have shown vitamin K to be equivalent to Fosamax-type osteoporosis drugs, with far fewer side effects.

Stave off Varicose Veins with inadequate levels of vitamin K may reduce the activity of the matrix GLA protein (MGP), which in turn has been identified as a key player in the development of varicosis, or varicose veins.

Reduce Your Risk of Diabetes

People with the highest intakes of vitamin K from their diet had a 20 percent lower risk of diabetes compared with those with the lowest intakes, according to the latest research from University Medical Centre Utrecht in the Netherlands. Past studies have also shown vitamin K to help reduce the progression of insulin resistance.

How Much Vitamin K2 do You Need?

How many people have adequate vitamin K2? Just about zero, according to Dr. Vermeer and other experts in the field. But at this time there is really no commercial test that can give you an accurate measure of your levels. Vitamin K measurements in blood plasma can be done accurately, but the results are really not helpful because they mainly reflect "what you ate yesterday," according to Dr. Vermeer.

Dr. Vermeer and his team have developed and patented a very promising laboratory test to assess vitamin K levels indirectly by measuring circulating MGP. Their studies have indicated this to be a very reliable method to assess the risk for arterial calcification -- hence cardiac risk. They are hoping to have this test available to the public within one to two years for a reasonable price, and several labs are already interested. They are also working on developing a home test that would be available at your neighborhood drug store.

In the meantime, since nearly 100 percent of people don't get sufficient amounts of vitamin K2 from their diet to reap its health benefits, you can assume you need to bump up your vitamin K2 levels by modifying your diet or taking a high-quality supplement.

As for dietary sources, eating lots of green vegetables, especially kale, spinach, collard greens, broccoli, and Brussels sprouts, will increase your vitamin K1 levels naturally. For vitamin K2, cheese and especially cheese curd is an excellent source. The starter ferment for both regular cheese and curd cheese contains bacteria -- lactococci and propionic acids bacteria -- which both produce K2.

You can also obtain all the K2 you'll need (about 200 micrograms) by eating 15 grams of natto daily, which is half an ounce. It's a small amount and very inexpensive, but many Westerners do not enjoy the taste and texture.

If you don't care for the taste of natto, the next best thing is a high-quality K2 supplement. Remember you must always take your vitamin K supplement with fat since it is fat-soluble and won't be absorbed without it.

Although the exact dosing is yet to be determined, Dr. Vermeer recommends between 45 mcg and 185 mcg daily for adults. You must use caution on the higher doses if you take anticoagulants, but if you are generally healthy and not on these types of medications, I suggest 150 mcg daily.

A specific type of vitamin K2 (MK-7) may help prevent inflammation, according to new research

Vitamin K2, particularly menaquinone-7 (MK-7), has been the subject of extensive research because it stays active in your body longer enabling your body to benefit from much lower levels.

Vitamin K2 works synergistically with a number of other nutrients, including calcium and vitamin D; one of its biological roles is to help move calcium into the proper areas in your body, such as your bones and teeth

MK-7 is found in high levels in the fermented soybean-based food called natto, certain cheeses such as Edam and Brie, and can also be taken in supplement form.

A specific type of vitamin K2 (MK-7) may help prevent inflammation, according to new research

Vitamin K2, particularly menaquinone-7 (MK-7), has been the subject of extensive research because it stays active in your body longer enabling your body to benefit from much lower levels.

Vitamin K2 works synergistically with a number of other nutrients, including calcium and vitamin D; one of its biological roles is to help move calcium into the proper areas in your body, such as your bones and teeth.

MK-7 is found in high levels in the fermented soybean-based food called natto, certain cheeses such as Edam and Brie, and can also be taken in supplement form.

Vaughan Jones, ONZM Queen's honour, for services to the farming industry.

Dairying 99% Honours 1948. Waikato Most Improved Dairy Farm Award 1959. M.Mkt.I.

International Agricultural Consultant, Journalist & Author of GrazingInfo eBook of 260 chapters.

Managing director of GrazingInfo Ltd.