



**Whole-istic Solutions Calcium Plus**  
 – now with Vitamins K2 and D3!

Whole-istic Solutions Calcium Plus is a special blend of ingredients designed to maintain healthy bones and prevent or slow osteoporosis. Calcium and magnesium supplementation may also help to relieve back pain, prevent colon cancer, reduce heartburn, fight insomnia, ease the symptoms of PMS and endometriosis, prevent migraines and treat high blood pressure, depression and anxiety.

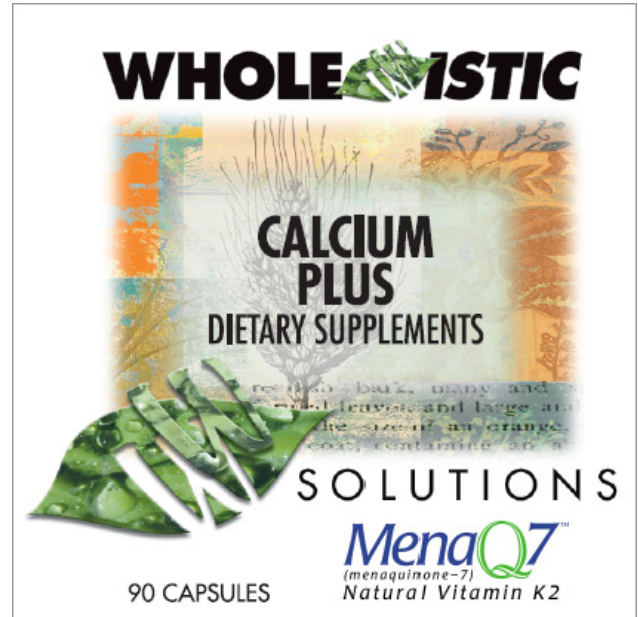
One of the most important aspects of calcium supplementation relates to the form of calcium we take. Perhaps more important than how many milligrams we take, is how bioavailable the calcium is at the cellular level. Calcium comes in many different forms, but it is well known that the softer ones we use in Whole-istic Solutions Calcium Plus are the most bioavailable forms. In addition, numerous additional ingredients further enhance delivery and utilization for overall health. This makes our calcium far more "potent" than other versions, even if the milligram levels are lower than another product. Read on to find out why Whole-istic Solutions Calcium Plus is the superior calcium supplement.

**The Vitamins:**

**Vitamin D3**

**Why do we need it for health?**

Vitamin D is really less of a vitamin and more of a hormone precursor. Its actions are more global and hormonal in nature than other vitamins. The major biological functions of Vitamin D are to maintain normal blood levels of calcium and phosphorus.



**Supplement Facts**

Serving Size: 3 Capsules  
 Servings Per Container: 30

Amount Per Serving		% DV
Vitamin D3	96 IU	24%
Vitamin K2 (MenaQ7™)	100 mcg	125%
Calcium (as citrate and lactate)	240 mg	24%
Magnesium (as citrate and amino acid chelate)	180 mg	45%
<b>Whole-istic Solutions Proprietary Blend</b>		
Amylase	1950 DU	*
Lipase AN	240 FCCLU	*
Protease 6,0 (conc.)	2250 HUT	*
Lactase	300 ALU	*
Cellulase	225 CU	*
Invertase	240 SU	*
Bromelain	60000 FCCPU	*
Flaxseed	90 mg	*
Wheat Germ	90 mg	*
Parathyroid gland substance	1.5 mg	*

\*Daily Value not established

Other Ingredients: Rice flour, magnesium stearate, silicon dioxide, gelatin,





Vitamin D aids in the absorption of calcium, helping to form and maintain strong bones, providing protection from osteoporosis and fracture. For this reason, severe Vitamin D deficiency causes rickets in children and osteomalacia in adults.

Vitamin D is associated with immune function and provides protection from several autoimmune diseases. It is well established that proper Vitamin D levels offer protection from cancers. Activated Vitamin D in the adrenal gland regulates tyrosine hydroxylase, necessary for the production of dopamine, epinephrine and norepinephrine. These neurotransmitters affect mood, drive, ambition, and an overall feeling of well being which may explain why people in the northern climates get S.A.D. (Seasonal Affective Disorder). Vitamin D intake affects improvements in energy and mood. Healthy Vitamin D levels also control leptin secretion by fat cells, which helps maintain normal weight and fat storage. Recently, research also suggests vitamin D may provide protection from high blood pressure.

#### **How can we get it in the diet?**

Vitamin D is found in many dietary sources such as fish, eggs, fortified milk, and cod liver oil. Exposure to the sun causes Vitamin D to be produced in the skin. It is then further activated in the liver and kidneys.

#### **Why would we be deficient?**

Current recommendations to avoid all sun exposure are causing a substantial decrease of Vitamin D synthesis in the skin. The application of sunscreen with an SPF factor of 8 reduces production of vitamin D by 95%. Without this critical sun exposure, we cannot form the Vitamin D required to keep us healthy. Foods such as milk, which are fortified with Vitamin D usually contain Vitamin D<sub>2</sub> which is much less effective than D<sub>3</sub>. People with even higher risk

for Vitamin D Deficiency include the elderly, the obese, people with dark skin and individuals who have fat malabsorption syndromes (e.g., cystic fibrosis and cholestatic liver disease) or inflammatory bowel disease (e.g., Crohn's disease). Many of us are chronically low and require supplementation.

#### **What about supplementing with it?**

The term "Vitamin D" refers to several different forms of this vitamin: ergocalciferol (vitamin D<sub>2</sub>) and cholecalciferol (vitamin D<sub>3</sub>). Vitamin D<sub>3</sub> is always be the preferred choice. The inefficiency of vitamin D<sub>2</sub> compared with vitamin D<sub>3</sub>, is now well documented, and no successful clinical trials to date have shown that vitamin D<sub>2</sub> prevents fractures.

Vitamin D<sub>3</sub> should be considered for anyone requiring calcium supplementation for bone health as the two together are much more effective than either alone. We have simplified this equation with our own Calcium Plus, and recommend it freely for bone health, mood stabilization, immune health, and muscle function and recovery.

#### **Vitamin K**

##### **Why do we need it for health?**

- Helps keep calcium in your bones and out of your arteries.
- Very important in blood clotting (Blood type O individuals lack several clotting factors in their blood, so adequate intake of vitamin K is especially important for them.)
- Inhibits kidney stone formation
- Reduces inflammation
- Many other benefits including antioxidant qualities

Vitamin K has been linked to two of the most important health issues, osteoporosis and cardiovascular disease. Inadequate metabolism of calcium can result in concurrent arterial calcification and loss of bone. It is





important to get calcium into the bone structures and out of the arterial vessel walls.

### **The body uses Vitamin K to build up bone in two ways**

Vitamin K is involved in the synthesis of a protein, osteocalcin, which is found in high amounts in bone. It allows calcium ions to bind, resulting in the calcification of bone. Calcium is needed to build strong bones, but without Vitamin K, our bodies cannot utilize calcium. First, consider the role of osteoclasts. Osteoclasts are the cells that break down bone. If osteoclast activity is too high, the result is osteoporosis. In this case, Vitamin K2 can be taken up by osteoclasts and function to stop the resorption of bone.

Second, consider the role of osteoblasts. Osteoblasts are responsible for building up bone with calcium. With the help of Vitamin K2, osteocalcin is changed into its active form which is then transported to the bone matrix. There, osteoblasts lay down osteocalcin on top of the existing bone matrix. Osteocalcin then attracts calcium from the environment and binds it to the bone. In case of osteoporosis, osteocalcin, via Vitamin K will repair the bone. It will fill the holes in the bone with calcium. Therefore, Vitamin K2 acts both on the inhibition of bone loss and on bone formation.

### **Vitamin K supports cardiovascular health**

New research has shown that Natural Vitamin K2 is essential for our arteries, veins and heart. Natural Vitamin K2 activates a special protein (matrix GLA) that is necessary for the vascular tissues to make use of and then remove excess calcium. Vitamin K is involved in the synthesis of a kidney protein that functions in the inhibition of calcium oxalate stone formation via its ability to bind onto calcium in the kidneys. Vitamin K is involved in the synthesis of proteins C and S. These two proteins, formed in the liver, promote

fibrinolysis and anti-coagulation. Thus, they are involved with reducing inflammation.

### **How can we get it in the diet?**

Vitamin K can be found in kale, collards, spinach, lettuces, broccoli, cauliflower, cabbage, kelp, alfalfa, egg yolks, soybean oil, liver and fish. Leafy green vegetables are the single best dietary source of vitamin K because of their high chlorophyll content. A specific form of Vitamin K, Vitamin K2, is manufactured by the beneficial flora in your gut. Your body does not store vitamin K, except for a minimal amount in the liver, so without regular dietary intake, you can become deficient.

### **Why would we be deficient?**

A diet, low in foods containing Vitamin K, and improper digestion can lead to a deficiency in Vitamin K. Many drugs, especially antibiotics, cephalosporins and anticonvulsants, interfere with Vitamin K synthesis and metabolism. Steroidal anti-inflammatory drugs cause increased loss of vitamin K through the urine. Decreased probiotics (beneficial floras) in the gut can also lead to a deficiency of Vitamin K. A healthy GI system is thriving with beneficial floras that live in your intestines and keep your immunity strong. When your GI system is out of balance, pathogenic bacteria can overpower the good bacteria in your intestines, setting the stage for illness and disease. Antibiotics destroy all or most of the beneficial flora in the gut which synthesize a high proportion of the body's vitamin K. Therefore, many antibiotics can cause a depletion of vitamin K. Because destruction of probiotics causes reduced levels of Vitamin K, other factors that destroy probiotics can also result in lower Vitamin K levels such as excess alcohol, carbonated beverages, stress, lack of sleep, laxatives. After the use of antibiotics, restoration of the healthy bacterial flora and Vitamin K supplementation may be necessary.





### What about supplementing with it?

**Not all Vitamin K is the same.** Natural Vitamin K2 has demonstrated benefits in calcium utilization for bone health and cardiovascular health that have not been shown with Vitamin K1.

Laboratory experiments, population based studies and clinical trials have demonstrated that vitamin K2 is much more effective than K1 in preventing bone loss, and only K2 has been linked to arterial health, including the inhibition and regression of vascular calcification. For example, in a study published in The Journal of Nutrition with over 4,000 participants, those with the highest natural vitamin K2 consumption had a 50% reduction in risk of cardiovascular events. This was not found for vitamin K1.

MenaQ7 provides Natural Vitamin K2 as Menaquinone-7 (MenaQ7), which is the most bioavailable form of K2 available. MenaQ7 is the only clinically proven Natural Vitamin K2. Natural K2 stays in the body 9 times longer and provides optimal vitamin K status with a recommended daily dose of just 45-90 mcg. And MenaQ7™ is the natural, not synthetic, source of Vitamin K2. (Synthetic K2 is called menatetrenone or Mk-4.)

### The Minerals:

Minerals are nutrients that exist in the body and in food in organic and inorganic combinations. They are important in strengthening bones and maintaining proper function of the heart, brain, muscles and nerves. Minerals act as catalysts for many biological reactions including muscle response, inflammation, digestion, nerve transmission and metabolism of nutrients from foods. They are also important in the production of hormones. Minerals help to maintain water balance which is essential to mental and physical processes. They maintain pH balance

of blood and tissue fluids and permit nutrients to pass into the bloodstream, preventing excess inflammation. They also help draw chemicals into and out of cells and aid in the creation of antibodies.

**Calcium** is the most abundant mineral in the body. **Calcium Citrate** is the form of calcium most frequently recommended by doctors, primarily because it has been shown to be the most easily absorbed. Additionally, clinical studies have shown **Calcium Lactate** to be similar to calcium citrate in terms of absorbability and in lack of side effects. Both are included in this formula due to research which suggests supplementation with more than one form of calcium is optimal, since individuals vary slightly in the form that they absorb most readily.

Calcium is vital to the formation of strong bones and teeth and is important for a regular heartbeat and the transmission of nerve impulses. It is needed for muscle growth and contraction and for the prevention of muscle cramps. This important mineral is also essential in blood clotting and helps prevent colon cancer. It may lower blood pressure and prevent bone loss associated with osteoporosis as well. In addition, calcium has many more important functions, like aiding in the utilization of silica and it helps regulate the passage of nutrients into and out of the cells. Calcium provides energy and participates in the protein structuring of RNA and DNA. It is involved in the activation of several enzymes, including lipase for fat digestion and has been associated with weight loss. A study conducted at Purdue University found that women who consumed higher levels of calcium lost more body fat than women with calcium deficient diets. Researchers in Tennessee discovered that women who consumed more calcium in their diets (about 1,300 milligrams per day) were





much less likely to be obese than women who consumed little calcium.

**Magnesium** benefits the body in numerous ways. Among its many uses, magnesium activates enzymes necessary for the metabolism of carbohydrates and amino acids. It also promotes the absorption and metabolism of other minerals, such as calcium, phosphorus, sodium and potassium. It is critical for energy production and proper nerve function, promotes muscle relaxation and helps the body produce and use insulin. Supplementing the diet with magnesium combined with calcium helps prevent depression, dizziness, anxiety and panic, muscle weakness, twitching, heart disease, high blood pressure, migraine headaches and also aids in maintaining proper pH balance. Because of proven absorbability and lack of side effects, **Magnesium Citrate** and **Magnesium amino acid chelate** were chosen for this formula. As with calcium, research suggests taking a magnesium supplement that includes more than one highly absorbable form of magnesium is most effective.

#### **Botanicals:**

**Flaxseed** contains alpha-linolenic acid, an omega-3 fatty acid. Certain studies have shown that supplementation with flaxseed oil greatly enhances the absorption of calcium and magnesium. This is one reason for its inclusion in this formula. Additional benefits include its anti-inflammatory qualities and positive cardiovascular effects due to its ability to decrease platelet aggregation. In addition, epidemiological studies suggest that omega-3 fatty acids are associated with a low incidence of colorectal cancer and adenoma. It has been postulated that the mechanism by which omega-3 fatty

acids exert anticarcinogenic effects on colorectal carcinogenesis is related to the reduction in the synthesis of prostaglandins and leukotrienes from arachidonic acid. There are also some preliminary indications that certain compounds, (lignans, produced in mammals from precursors present in flaxseed oil), may reduce the risk of mammary and colon cancer, even at a low level of supplementation.

**Wheat Germ** is the vitamin and mineral-rich embryo of the wheat berry that is removed when flour is refined from whole wheat. Wheat germ has very high oil content, which, like flaxseed, aids in the absorption of calcium and magnesium. In addition, wheat germ is a good source of several vital nutrients including folate, vitamin E, thiamin (B1) and zinc.

**Parathyroid Gland Substance** contains nucleic acids from the parathyroid gland. These nucleic acids act to "lubricate" and nutritionally support the parathyroid gland, which regulates calcium levels in the body. Parathyroid hormone has a potent effect on enhancing absorption of calcium from the small intestine and suppressing calcium loss in the urine. A component of parathyroid hormone substance has proven useful in increasing bone mineral density in people with osteoporosis.

The **Enzymes** (amylase, lipase, protease, lactase, cellulase, invertase and bromelain) are added to Calcium Plus to aid in the breakdown and delivery of nutrients from the other ingredients, as well as to promote the general health of the body.





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