



Advanced Nanosphere Technology™

# Solray-D

Vitamin D3 with vital complement Vitamin K2 (MK-7)  
2 oz. Liposome Spray 110-130nm



## Matrix Nutritional Series



## Immune, Bone, Cardiac Support

### Traditional Keynotes:

Vitamin D deficiency has been shown to play a role in almost every major concern including:

- Osteoporosis / Osteopenia
- Breast, Prostate and Colon
- Cardiovascular
- High Blood Pressure
- Metabolic Syndrome and Diabetes
- Immune / Autoimmune
- Multiple Sclerosis
- Arthritis
- Hormonal Imbalances
- Depression and Seasonal Affective Disorder
- Alzheimer's / Parkinson's
- Prenatal
- CFS / Fibromyalgia
- Dental
- Psoriasis

### Complementary Remedies:

- CataZyme-7 / CataZyme-U
- Flora Syntropy
- GALT Fortifier
- Borage Intrinsic
- HepataGest
- Mycelia Intrinsic
- MetaChlor
- Phyto Cal-Mag w/Boron

### Dosage:

1 spray sublingually, or as directed by a Health Care Practitioner  
*Contraindications: Blood thinners, e.g.*

### Ordering Information

#### Aperture Energetics LLC

9069 SE Jannsen Road  
Clackamas, Oregon  
97015 USA

Phone: 503.908.1041 / 503.908.1043

Toll Free: 877.691.5442

Fax: 503.908.1045

Email:  
ordersusa@physicaenergetics.com

Orders received before 2pm PST will be shipped the same day.

www.physicaenergetics.com

#### Customer Service Hours:

8:30 am—5:30 pm PST  
Monday—Friday

**Matrix Nutritionals Series** was designed as an eclectic offering for the Physica Energetics line of remedies primarily to assist in the "reactivation of the mesenchyme" (Dr. Reinhold Voll), via the nutritional complement pathways. These pathways are present in every system throughout the body and require balanced attention. In keeping with the principles of BioEnergetic Medicine, the remedies nourish and support these systems without punishing them with overstimulation or imbalancing factors, which, ultimately, is counterproductive. This approach has been carefully and respectfully designed to provide the necessary natural (organic where available), synergistic factors in proper energetic and biochemical ratios, to ensure assistance towards yielding a deep and lasting result. They are not to be confused with replacement therapy nutraceuticals that may seem to help for the moment, until the patient stops taking them or the condition is driven deeper. These remedies honour The Legacy of BioEnergetic Medicine, and are known by both patient and practitioner to be exceptionally effective.

**Why are so many Canadians plagued** by a lack of calcium in the bones (osteoporosis) along with an excess of calcium in the arteries (atherosclerosis)? Researchers have finally uncovered the connection between these two serious health conditions: Vitamin K2 (MK-7) and Vitamin D3!

**Vitamin D3 and Vitamin K2 (MK-7)** deficiency is a world-wide epidemic. Over 1 billion people are at risk for its associated conditions beyond just this winter's viral concerns. Almost daily, references to vitamin D dominates the headlines. Paradoxically, very little is being said about Vitamin K2.

**However, there is overwhelming evidence confirming that the safety of vitamin D is dependent on adequate vitamin K2 (MK-7).**

**Vitamin K is the name of a group of compounds that are all related to one another.** The first one discovered was Phyloquinone or K1. K1 is the form in which vitamin K produces clotting factors. Produced by plants and algae, K1 is found in green leafy vegetables such as broccoli, kale and Swiss chard, and in plant oils, such as canola and soybean oil.

**In the last decade most of the research has turned to the more effective Menaquinones, or vitamin K2.** Supplemental vitamin K2 exists in several forms. The most common ones are the synthetic menaquinone-4 (MK-4) and the natural menaquinone-7 (MK-7).

**Recent studies have shown the more expensive vitamin MK-7 to be more complete and have additional heart condition benefits including the inhibition of calcium deposits**

in the arteries. MK-4 has to be applied in very high pharmacological doses (milligrams) to demonstrate benefits for bone and heart health. In case of MK-7, doses in micrograms – 1000x less - are sufficient for significant bioactive effect.

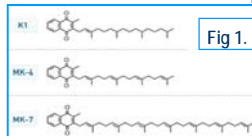
**The longer half-life of MK-7** results in significantly better accumulation compared to MK-4. Research shows that in only 8 days MK-7 has 6 times better absorption.

**All K vitamins are similar in structure, but differ in the length of the "side chain".** The longer the side chain, the better effect and efficiency. Consequently, the long-chain menaquinones (especially MK-7) are the

most desirable as they are nearly completely absorbed (body requires smaller doses) and stay in the blood for the longest time. (Fig. 1) Meaning, vitamin K2 is also available for tissues outside the liver, namely bones, arteries and soft tissues.

**K2 has been reported to decrease serum cholesterol** and cholesterol deposits in the aorta, contributing to the suppression of atherosclerosis.

**Vitamin K2 (MK-7) has been linked to a reduction in coronary heart disease.** In fact one very large and significant study conducted in the Netherlands in 2004 followed 4800 healthy men and women for ten years. It found vitamin K2 reduced the risk of coronary heart disease mortality by 50% aortic calcification was also reduced by 30-40% in the famous Rotterdam study.



### Economy, Efficiency, Sustainability

Since the clinical studies on Vitamin D3 are in their formative stages, we made a 1000 IU per serving nanosphere liposome spray with K2 MK-7 to provide for those who may require smaller amounts.

However, current literature is indicating that between 4000 - 6000 IU of D3 are required daily to maintain good health. Higher dosages have been suggested as being necessary for specific conditions. Vitamin K2 MK-7 and Vitamin D3 in Solray-D are in proper ratios to mutually support their synergistic balance requirements.

Nanosphere liposomes ensure that the highest concentrations reach the binding sites.

**Solray-D  
Nanosphere  
Liposome  
Spray**

**2 oz.**

**1 spray daily lasts 375 days**

Vitamin D3 1,000 IU  
Vitamin K2 120 mcg

**5 sprays daily lasts 75 days**

Vitamin D3 5,000 IU  
Vitamin K2 600 mcg

**10 sprays daily lasts 37 days**

Vitamin D3 10,000 IU  
Vitamin K2 1,200 mcg

# Solray-D

A 3-year study of 325 postmenopausal women receiving either K2 or placebo found that supplementation with K2 can prevent bone loss associated with estrogen decline. In the women given K2, bone mineral content increased, and hip and bone strength remained unchanged, whereas in the placebo group, bone mineral content and bone strength decreased significantly.

**The Calcium Paradox:** Vitamin D3 is required for the absorption of minerals such as calcium, whereas vitamin K2 is needed to direct the minerals to the right place, preventing an inappropriate calcification of soft tissues. Likewise, cells only produce osteocalcin and the matrix Gla-protein (MGP) in the presence of vitamin D, but vitamin K2 (MK-7) is necessary to activate those proteins to fulfill their purpose.

Vitamin D increases both the demand for vitamin K and the potential for benefit from K-dependent proteins, such as matrix Gla-protein in blood vessels and osteocalcin in bone.

A number of trials have shown that the combination of K2 and vitamin D3 is more effective in preventing bone loss than either nutrient alone.

Canadian Cancer Society recommends that "Adults at higher risks of having lower levels of Vitamin D should consider taking a Vitamin D supplement of 1000 IU/day all year round." The best form of Vitamin D3 (cholecalciferol) is derived from the lanolin in sheep's wool and should be free of Vitamin A.

Fat-soluble Vitamin D3 is converted by the kidneys into the hormone calcitriol, the activated form of Vitamin D3 which affects a variety of target tissues including bone, intestine, muscle, brain, skin and immune system cells.

Calcitriol enhances calcium and phosphorous absorption and stimulates the synthesis of osteocalcin, an important structural protein in bone. Calcitriol is also involved in proper cell differentiation (changing of cell function), including prostate, breast and colon cells.

## Different Forms of Vitamin D

To understand vitamin D pharmacology, one needs to be familiar with the different forms of vitamin D, namely cholecalciferol, calcidiol, and calcitriol.

### Cholecalciferol (vitamin D3)

*Cholecalciferol is the naturally occurring form of vitamin D. It is the substance made in large quantities in the skin when sunlight strikes bare skin. It can also be taken as a supplement. Cholecalciferol is vitamin D; all other compounds are either metabolic products or chemical modifications, (eg. ergocalciferol D2)*

### Calcidiol (25(OH)D3 or 25D3)

*Calcidiol (25-hydroxyvitamin D) is a pre-hormone in the blood that is directly made from cholecalciferol. When being tested for vitamin D deficiency, calcidiol is the only blood test that should be drawn. When someone refers to vitamin D blood levels, they are usually referring to calcidiol levels.*

### Calcitriol (1,25(OH)2D3 or 1,25D3)

*Calcitriol (1,25-dihydroxyvitamin D) is made from calcidiol in the kidneys and in tissues and is the most potent steroid hormone derived from cholecalciferol. In fact, it is the most potent steroid hormone in the human body. Calcitriol may have significant anti-cancer activity. It is sometimes referred to as the active form of vitamin D. Calcitriol levels should never be used to determine vitamin D deficiency.*

After the liver turns cholecalciferol into calcidiol, calcidiol follows one of two pathways. The first priority for calcidiol is to go to the kidney where it makes enough calcitriol to regulate serum and cellular calcium. However, if the reserve is low, or if the liver phases of detoxification are compromised due to faulty conversion processes, most calcidiol takes the first pathway as survival always comes first in the physical hierarchy.

Calcitriol is a potent steroid hormone; in fact, it is the most potent steroid hormone in the human body.

So, the first pathway takes priority—as our lives literally depend on it—but it is the second pathway that's causing all the excitement.

The second vitamin D pathway leads to the tissues and that is where all the action is. All of the amazing health benefits of vitamin D discovered in the last 10 years are from vitamin D going down the second pathway.

If any calcidiol is left over—that is, if the reserve is full and the kidneys are getting all the calcidiol they need to maintain serum calcium—then calcidiol is able to take another pathway, one that leads directly to the cells.

This path is only now being fully understood and is causing excitement all around the world, especially concerning serious conditions. These are the autocrine (inside cell) and paracrine (around the cell) functions of the vitamin D system.

These functions are crucial to understanding why we should keep vitamin D reserves full. If there is only have a small amount of calcidiol in the blood, virtually all of it goes to the kidney, which then makes extra calcitriol to keep serum calcium levels from falling, however almost no calcidiol gets to your tissues to make tissue calcitriol.

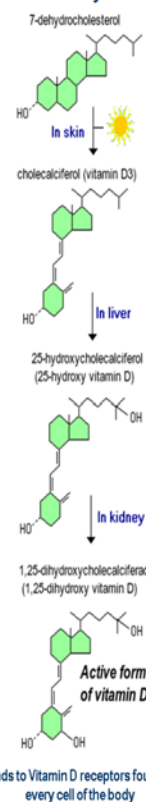
When the reserve is full, however, the leftover calcidiol goes to the many cells in the body that are able to make their own calcitriol to fight various conditions (degenerative and otherwise) - and they do so with gusto! In fact, they appear to make as much calcitriol as they can. The more calcidiol they get, the more calcitriol they make. The step is not rate-limited by its product (calcitriol) and is thus uncontrolled. No other steroid hormone system in the body works this way; the manufacture of calcitriol in the tissues is unique. In other words there is no negative feedback loop mechanism in place relative to calcidiol and calcitriol.

This is one of the most important facts about vitamin D.

Calcitriol is arguably the most potent steroid hormone in the human body. It turns genes on and off at a dizzying rate. These are genes that are either making proteins that are essential to fighting cancer, or genes that are making proteins that are promoting diseases like cancer.

However, without the presence of correctly ratioed Vitamin K2 in the form of MK-7, the mechanism is thwarted. This is equally true with respect to D3. As you have discovered, these two wonderful, natural vitamins are so much more effective together than alone.

## Vitamin D Synthesis



## Further research:

Schurgers LJ, Dissel PE, et al. Z Kardiol 2001; Jono S, Ikari Y, et al. Thromb Haemost 2004)

Masterjohn, C. "On the trail of the elusive X-factor."

Wise Ikeda, Y. et al 2006: Intake of fermented soybeans, Natto, is associated with reduced bone loss in post menopausal women: Japanese population based osteoporosis study. J Nutri Vol 136, page 1323-1328

19. Geleijnse, J.M. et al 2004: Dietary intake of menquinone (Vitamin K2) is associated with a reduced risk of coronary heart disease: The Rotterdam Study. Am Soc Nutr Science. May 2004. Nutritional Epidemiology Traditions, 2007; 8:14-32.

Booth SL, Broe KE, J Clin Endocrinol Metab; Knapen MH, Schurgers LJ, Osteoporos Int. 2007