

Vitamin K2

... an essential nutrient for women, moms, and kids

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While women have a longer life expectancy than men in almost all countries, that doesn't necessarily mean that they will enjoy healthier lives. That is, unless they make Vitamin K2 part of their daily regimen.

Take bone health for example: The No. 1 risk factor that can raise one's chances of developing weak, brittle bones is simply being female. No. 2 and 3 risk factors are ageing and menopause.¹

And though many of us think of cardiovascular disease as a men's issue, it is actually the No. 1 cause of death for women around the globe.²

According to the World Health Organization (WHO), "helping girls and women to adopt a healthy lifestyle early is key to a long and healthy life."³ Maintaining the best possible cardiovascular and bone health are two of the most critical areas allowing women to age in a healthy way, supporting their vitality.

Vitamin K2 as MK-7 (menaquinone-7) has been clinically shown to support both bone and cardiovascular health by activating proteins that help the body to properly utilize calcium. Unfortunately, most Western populations are deficient in Vitamin K2 as MK-7.⁴ Human clinical trials have shown that K2 deficiencies lead to less active proteins responsible for calcium utilization in the body, which can increase the risk of cardiovascular events, as well as lead to weak, porous bones, that increase the risk of potential fractures.

vulnerable since they have less bone mass than men in general, and since their annual loss of bone mass accelerates after menopause.

With menopause, women experience rapid decline in bone loss. This loss eventually slows, but it continues throughout post-menopausal years. Consequently, post-menopausal women are a group at risk for age-related bone loss and subsequently at risk to develop osteoporosis.

However, the probability of developing a bone disease later in life is closely related to the amount of bone mass one accumulates before age 30, so it is essential to adopt good bone-building habits early. Up to 90 percent of the peak bone mass is acquired by age 18 in girls and by age 20 in boys. The 100 percent peak bone density is reached between 30 and 35 years of age. Once the bone density peak is reached, it begins the inevitable decline.

Clinical studies show that just a 10 percent increase in bone mass - compared to your age - will reduce the risk to get an osteoporotic fracture in adult life by 50 percent.⁵ It is in this context Vitamin K2 enters the picture.

Bone is comprised of a hard outer shell and a spongy inner tissue matrix, which is a living substance. The entire skeleton is replaced and rebuilt every seven years. This process is regulated by osteoblasts, cells that build up the skeleton, and osteoclasts, cells that break down the skeleton. As long as the bone-forming activity (absorption) is greater than the bone-breakdown (resorption), the process of maintaining healthy bones will be kept under control.

Osteoblasts produce a vitamin K-dependent protein called osteocalcin. This protein helps to bind calcium to the bone matrix, leading to increased bone mineral content. Consequently, the skeleton becomes more resistant and less susceptible to fractures. Osteocalcin needs Vitamin K2 to function optimally.

Risks of Not Protecting One's Heart

Once thought of as a "man's disease", more women than men are now afflicted with cardiovascular disease in the US:

- 60-79-year olds with CVD: 70% of men; 71% of women
- 80+ year olds: 83% of men; 87% of women

Poor cardiovascular health usually develops over decades, signified by calcium accumulation in the arterial walls and hardening from plaque deposits in which calcium is the main mineral component. Calcification contributes to vascular disease by increasing vessels' stiffness and fragility, impeding healthy blood flow to and from the heart, thus also increasing the workload on the heart.⁶ Scientific studies have confirmed that the amount of calcium stored in the arteries is an indicator of one's cardiovascular health.⁷

In recent years, there has been a strong focus on the role of arterial stiffness impacting cardiovascular health, as well as the discovery of the vitamin K-dependent protein Matrix Gla Protein (MGP).⁸⁻¹¹ But for MGP to bind calcium—and thus keep it away from your blood vessels and arteries—it needs to be activated by Vitamin K2.

Clinically Proven Benefits of MenaQ7® Vitamin K2 for Heart & Bone Health

NattoPharma has funded a large clinical study to explore and document bone and cardiovascular effects of daily intake

Is something MISSING from your child's diet?

If a nutrient could help your child grow big and strong, wouldn't you make sure they have it? Unfortunately, today's diets are deficient of an essential nutrient that does that and more: Vitamin K2 helps the body direct calcium to the bones while also keeping calcium out of arteries and blood vessels, promoting flexibility.

MenaQ7 is THE clinically validated, patented Vitamin K2 on the market today. Ask your healthcare provider about Vitamin K2, and look for supplements with MenaQ7.

LOOK FOR MENAQ7 IN BEGINNER'S DHA FOR KIDS! FROM WILEY'S FINEST.



Vitamin K2: a must for strong bones

Dangers of Poor Bone Health

Poor bone metabolism is a condition characterized by loss of bone-mineral density, which leads to weaker, less dense bone. WHO states that this condition globally affects around 200 million people. Worldwide, one of three men are expected to incur bone fractures in the future, whereas lifetime risk of fracture for women is nearly one in two. Women are more

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MenaQ7®
Vitamin K2 as MK-7

MENAQ7® IS A REGISTERED TRADEMARK OF NATTOPHARMA ASA. WILEY'S FINEST™ FISH OILS IS A TRADEMARK OF WILEY'S FINEST.

MenaQ7®. The double-blinded, randomized trial had 244 healthy postmenopausal participants and was performed by scientist at the University of Maastricht. The results were published in prestigious peer reviewed journals – the bone data in *Osteoporosis International* (2013)¹², and the cardiovascular data in *Thrombosis and Haemostasis* (2015)¹³.

The data published in *Osteoporosis International* demonstrated the first clinically statistically significant protection of the vertebrae and the hip (femoral neck) against bone loss. This was achieved with a daily nutritional dose of 180 mcg

MenaQ7®. The MenaQ7® supplementation group significantly increased the circulating active osteocalcin (cOC), a well-established biomarker for bone and vitamin K status. The inactive osteocalcin (ucOC) in the MenaQ7® group, decreased with 51% +/- 21%, as compared to the placebo group where the comparable data were +4% +/- 49%. After three years of supplementation, maintenance in both bone mineral content and bone mineral density were statistically significant better in the MenaQ7® group. Moreover, bone strength was statistically improved, demonstrating therapeutic benefits for the MenaQ7® group as compared to the placebo group.¹²

The breakthrough study published in May 2015's *Thrombosis and Haemostasis* monitored 244 healthy postmenopausal women for three years using pulse wave velocity and ultrasound techniques. The participants were randomly assigned to take 180 mcg of Vitamin K2 as MK-7 (as MenaQ7®) daily, or placebo capsules. After three years of treatment, the Stiffness Index β in the MK-7 group with the highest initial arterial stiffness had decreased significantly compared to the similar subpopulation in the placebo group (0.67 ± 2.78 vs $+0.15 \pm 2.51$, respectively, $p=0.018$). The results confirmed that Vitamin K2 as MK-7 not only inhibited age-related stiffening of the artery walls, but also made a statistically significant improvement of vascular elasticity.¹³

Further, NattoPharma has completed two additional studies confirming that MenaQ7® is successfully delivered through yogurt products, increasing Vitamin K status and, in turn, improving cardiovascular health.^{14, 15}

Conclusion

Maintaining the best possible cardiovascular and bone health represents two of the most critical areas allowing women to age in a healthy way. Laying the foundation for healthy ageing must begin early in life. MenaQ7® is the only clinically documented Vitamin K2 as MK-7 that is shown to work and delivers on the promise of helping the population to keep their bones and arteries healthy as women age.

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