

Make food  
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and medicine  
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IPPOCRATE



## LifeChocolate

**LifeChocolate** is an Italian line of **chocolate-based superfoods**. It has been developed from the ten-year experience of the **Biochemistry Laboratory of Oxidative Stress and Aging of the Polytechnic University of Marche** and of the **fine gourmet artisan chocolate of MIV**, a Marche company with a production site in Ostra (AN).

The **LifeChocolate line** was developed from the idea of associating the beneficial properties of dark chocolate with specific health properties of scientifically approved micronutrients and / or lipophilic cofactors.

Although the guidelines advise against excessive consumption of dark chocolate, due to the potential effects related to increases in blood sugar levels and weight gain, it is scientifically proven that **moderate consumption** provides great health benefits.

VITAMIN K



VITAMIN K

In this context we wanted to enhance the numerous beneficial properties of dark chocolate, exploiting its characteristics as a lipophilic carrier, by adding specific active compounds carefully selected by us and authorized by the European Food Safety Agency (EFSA), improving their health-enhancing effects. In fact, the ingredients contained in the LifeChocolate superfood line have been tested in clinical studies that have been recognized at the European level, and support the specific health claims (Health Claim).

The recommended daily dose of each product in the LifeChocolate line are the optimal ones to obtain the benefits, and is supported by scientific studies based on the claims authorized by the European Food Safety Agency.

**+K** is a chocolate-based superfood developed with the finest ingredients to support health. A daily intake of 10 grams of **+K** chocolate contains 45 mcg of vitamin MK-7 (60% of the recommended nutritional value), the most bioavailable and active form of vitamin K.

Recent epidemiological studies have shown that MK-7 consumption is associated with a decrease in the incidence of osteoporosis <sup>(1)</sup>. This evidence is supported by the European Food Safety Agency (EFSA) of the health claim that certifies the efficacy of vitamin MK-7 in contributing to the preservation of normal bone health.

**Vitamin K** is an ideal complement to vitamin D by maximizing the ability to deliver calcium to bones through the activation of osteocalcin, the main protein involved in the mineralization of this tissue <sup>(2)</sup>. Additionally, vitamin MK7 contributes to normal blood clotting <sup>(3)</sup>.

**Vitamin K** comprises a family of lipophilic molecules with different structures and chemical properties that can be summarized in two large groups of vitamins: K1, widely available in green leafy vegetables and vitamin K2 or menaquinones of fermentation origin, which are less common in the Western diet. Vitamin MK-7 represents the most active and bioavailable form of the K2 group of vitamins but, at the same time, the least widespread. In fact, to obtain the same amount of K2 present in 10 grams of **+K** chocolate, we would have to consume 8 eggs, at least 5 litres of whole milk or 4 kg of meat.

The food richest in vitamin MK-7 is a fermented soy called Natto, an unfamiliar food in Europe with a thousand-year history in Japan where, in ancient times, it was prepared by monks in the kitchen of Buddhist temples (Shojin Ryori). It was known to the nobility and the samurai for its healthy properties in invigorating the body. In recent times, nutritional studies have shown how the daily consumption of Natto helps to combat osteoporosis and limit fractures in the elderly <sup>(1)</sup>. Vitamin MK-7 present in **+K** is a natural product made by Gnosis-Lesaffre by fermentation from *Bacillus subtilis natto*.

Although no side effects have been found from excessive consumption of vitamin MK-7, it is advisable not to exceed the daily dose of 200 mcg contained in just over 40 g of **+K** chocolate, as it represents the defined maximum daily intake of Vitamin K from the "Directorate General for Hygiene, Food Safety and Nutrition" of the Ministry of Health.

**TO MAXIMIZE THE ABSORPTION OF ACTIVE INGREDIENTS, IT IS NOT RECOMMENDED TO CONSUME THE CHOCOLATE ON AN EMPTY STOMACH.**

For more information on the optimal method of intake and the recommended treatment times, visit the website [www.alimentofunzionale.it](http://www.alimentofunzionale.it)

<sup>(1)</sup> Villa JKD, et al. Effect of vitamin K in bone metabolism and vascular calcification: A review of mechanisms of action and evidences. Crit Rev Food Sci Nutr. 2017

<sup>(2)</sup> Neve A et al. Osteocalcin: skeletal and extra-skeletal effects. J Cell Physiol. 2013

<sup>(3)</sup> Nel caso di pazienti in terapia anticoagulante si consiglia di consultare il medico

<sup>(4)</sup> Ikeda Y et al. Intake of fermented soybeans, natto, is associated with reduced bone loss in postmenopausal women: Japanese Population-Based Osteoporosis (JPOS) Study. J Nutr. 2006