Vitamin **B1** Synergy

Cod. FE0917 – 90 vegetable capsules

Vitamin B1 Sinergy is a food supplement based on thiamine hydrochloride (vitamin B1) and cofactors that improve absorption.

HEALTH CLAIMS (EU Regulation 432/2012): *Thiamine, riboflavin, vitamin B6 and vitamin C contribute to normal energy metabolism and the normal functioning of the nervous system. Thiamine contributes to the normal functioning of the heart.*

Ingredients: Thiamin hydrochloride (vit. B1), bulking agent (microcrystalline cellulose), L-ascorbic acid (vit. C), choline citrate, inositol, dl-*alpha* Lipoic acid, anti-caking agents (silicon dioxide and magnesium salts of fatty acids), riboflavin 5'-phosphate sodium (vit. B2), inositol hexanicotinate (vit. B3) (1 mg/caps.), pyridoxal 5'-phosphate (vit. B6), calcium-l-methylfolate, vegetable capsule (glazing agent: hydroxypropylmethylcellulose, humectant: purified water).

Nutritional information	**1 capsule (281 mg)**
Thiamin (vit. B1) (from 100 mg thiamin hydrochloride)	89,2 mg (8 109%*)
Riboflavin (vit. B2) (from 1 mg riboflavin 5´-phosphate, sodium)	0,75 mg (54%*)
Vitamin B6 (from 1 mg pyridoxal 5´-phosphate)	0,68 mg (49%*)
Folate (calcium-L-methylfolate)	50 µg (25%*)
Vitamin C (L-ascorbic acid)	25 mg (31%*)
Choline	5 mg
Inositol	5 mg
DL-*alpha* Lipoic acid	5 mg

*NRV: Nutrient Reference Value in %

Size and format:

90 vegetable capsules

Recommended daily dose:

1 capsule daily with food.

Do not exceed the stated recommended daily dose.

Indications and uses:

- Supports normal energy metabolism
- Contributes to the normal functioning of the nervous system and the heart
- It helps in the development and maintenance of bones, cartilage, teeth and gums and in the formation of red blood cells.
- Diabetic nephropathy.
- Wernicke-Korsakoff syndrome (encephalopathy).
- Coadjuvant in anti-depressant treatments.
- Hypertension with hyperglycaemia.

Cautions:

Consult a health-care practitioner prior to use if you are pregnant or breast-feeding, if you are being treated with medication or if you have a special medical condition like diabetes. If you are receiving treatment with hypoglycaemic medication seek medical advice prior to use this product.

DETAILS:

Vitamin B1 Sinergy is an antioxidant food supplement for the maintenance of good health. It supports the body in metabolising carbohydrates, fats and proteins. It helps in the development and maintenance of bones, cartilage, teeth and gums and the formation of red blood cells.

The synergy of thiamine, riboflavin, vitamin B6 and vitamin C contributes to normal energy metabolism and normal functioning of the nervous system, as well as to cardiovascular and muscular function.

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INGREDIENTS:

THIAMINE (vit. B1): is a water-soluble vitamin. Thiamine improves circulation and helps with blood formation and carbohydrate metabolism. It is also essential to the health of the nervous system and is used in the biosynthesis of a number of cellular components, including the neurotransmitters acetylcholine and gamma-aminobutyric acid (GABA). It is used in the manufacture of hydrochloric acid and as such plays an important role in digestion. It also helps with brain function and depression, and with memory and learning. It has been shown to help arthritis and cataracts, as well as infertility [1-3].

A deficiency of this vitamin is usually only observed in people who drink large amounts of alcohol or have other health problems. A deficiency will result in beriberi, and minor deficiencies may be indicated by extreme fatigue, irritability, constipation, oedema, and an enlarged liver. Forgetfulness, gastrointestinal disorders, changes in the heart, irritability, difficulty breathing and loss of appetite may also be experienced. With too little thiamine available, a person may also experience nervousness, numbness of the hands and feet, pain and tenderness, poor coordination, tingling sensations, weak and aching muscles, general weakness and severe weight loss [1].

RIBOFLAVIN (VIT. B2): is a water-soluble vitamin. It helps the body convert carbohydrates into glucose, which is used to produce energy, and to neutralise free radicals that can damage cells and DNA. This neutralising antioxidant effect may reduce or help prevent some of the damage that contributes to the ageing process, as well as the development of a range of conditions such as heart disease and cancer. It is also able to convert vitamin B6 and vitamin B9 into active forms [4,5].

People with an inadequate diet are at risk of vitamin B2 deficiency, especially children from low socio-economic backgrounds, older people with a poor diet, people who are constantly dieting and those who exclude dairy products from their diet (vegans). The symptoms of riboflavin deficiency include fatigue, slow growth, digestive problems, cracks and sores in the corners of the mouth, a swollen and magenta-coloured tongue, tired eyes, swelling and irritation in the throat [1].

VITAMIN B6: is a water-soluble vitamin that helps the body convert food into glucose, which is used to produce energy; form neurotransmitters, which carry signals from one nerve cell to another; produce hormones, red blood cells and immune system cells; and control (along with vitamin B12 and vitamin B9) the level of homocysteine in the blood, an amino acid that may be associated with heart disease. Several studies have suggested that low vitamin B6 intake is associated with an increased risk of heart disease [6-8].

Vitamin B6 deficiency rarely occurs in isolation, usually occurring in combination with a deficiency in other B-complex vitamins (especially riboflavin). The population groups at risk of vitamin B deficiency are pregnant and lactating women (higher demand) and those taking contraceptives, the elderly (lower food intake), underweight people, chronic alcoholics and people with a high protein intake. Deficiency symptoms include nervous system disorders (irritability, depression and confusion), impaired immune system and inflammation of the skin and mucous membranes [7].

FOLATE: folate or vitamin B9 is one of the water-soluble B-complex vitamins. Sufficient folic acid intake is important because as a coenzyme it helps the body to utilise amino acids, produce nucleic acids and the body's genetic material, helps form blood cells in the bone marrow, helps ensure rapid cell growth in childhood, adolescence and pregnancy and helps control (together with vitamin B6 and vitamin B12) the level of the amino acid homocysteine in the blood, which is associated with certain chronic conditions such as heart disease [1,9].

Folate deficiency is one of the most common vitamin deficiencies. It may be due to inadequate intake, poor absorption, abnormal metabolism or increased need. Early symptoms of deficiency are non-specific and may include tiredness, irritability and loss of appetite. Severe folate deficiency causes megaloblastic anaemia, a condition in which the bone marrow produces immature red blood cells that are larger than normal [1,10].

VITAMIN C: also known as ascorbic acid, it is a water-soluble vitamin. It is vital as it helps the body to generate collagen, an important protein for skin, cartilage, tendons, ligaments and blood vessels. It helps to grow and repair tissues, heal wounds, repair and maintain bones and teeth, synthesise neurotransmitters and block some of the damage caused by free radicals by acting as an antioxidant. This damage can contribute to the ageing process and to the development of cancer, heart disease and arthritis [11-14].

Cigarette smoking reduces the amount of vitamin C in the body, so smokers are at increased risk of deficiency. Signs of vitamin C deficiency include dry and brittle hair, swollen gums, bleeding gums, rough, dry and scaly skin, slow wound healing, easy bruising, nosebleeds and a reduced ability to prevent infections [14].

CHOLINE: choline is an essential nutrient normally grouped under the B-complex vitamins. It plays an important role in many brain processes. In addition to being necessary for the structural integrity and signalling functions of cell membranes, it is also involved in the transmission of neuronal information [15]. Studies indicate that choline intake appears to be particularly important for pregnant women, as insufficient intake may increase the rate of neural tube defects in infants [16,17]. It also contributes to normal homocysteine metabolism, lipid metabolism and normal liver function [1,17].

INOSITOL: is considered a member of the B-complex vitamins. It is necessary for the good condition of nerve cells; together with choline, it is responsible for the creation of neurotransmitters. For lipid metabolism, together with choline, it prevents lipids from being deposited in the liver and promotes their transport and penetration into the cells. It supports blood circulation by lowering cholesterol. It is also necessary for healthy skin, hair and eyesight and for detoxifying the body of heavy metals such as cadmium and aluminium [17-19].

DL-*ALPHA* LIPOIC ACID: Alpha lipoic acid (ALA) is a powerful antioxidant that can control and limit the amount of free radicals, influencing the development of pathologies such as cancer or central sensitisation disorders. This compound is not only notable for its activity against free radicals and metal chelate formers; it can also recycle other antioxidants such as glutathione, coenzyme Q10 and vitamins C and E, which is why it is called the antioxidant of antioxidants. It should be noted that alpha lipoic acid protects the body against exercise-induced oxidative stress, which is of direct benefit to athletes, delaying the onset of fatigue. Numerous scientific studies have demonstrated the role of alpha lipoic acid in pathologies such as type II diabetes, as it improves insulin response and sensitivity. But in addition to the effects on blood glucose levels, these studies attest to alpha lipoic acid being a potent protector against common pathologies in these patients, such as neuropathy and kidney damage, among others [20-24].

CLINICAL TRIALS OF THIAMINE (VITAMIN B1):

- Diabetic nephropathy: randomised, placebo-controlled, double-blind study (40 patients) with high-dose thiamine (300 mg/day) decreased urinary albumin excretion in patients with type 2 diabetes [25].
- Wernicke-Korsakoff syndrome (encephalopathy): randomised, double-blind (107 patients) multi-dose study (5, 20, 50, 100 and 200 mg/day). The group with a higher dose of thiamine showed greater improvement in symptoms [26].
- Coadjuvant to antidepressant treatments: randomised, placebo-controlled, double-blind study (51 patients). After 6 months of coadjuvant thiamine treatment, symptoms of depression are relieved more quickly [27].
- Hypertension with hyperglycaemia: randomised, double-blind, placebo-controlled study (17 patients) with high-dose thiamine (300 mg/day) lowered blood pressure [28].

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