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MADAMAR  
for health & beauty

Food Supplements  
Catalog 2019

by MADAMAR



Vitamin A 10000 IU	<b>4</b>
Vitamin B12 500 µg	<b>6</b>
Vitamin D3 5000 UI	<b>8</b>
Vitamin D3 10000 UI	<b>8</b>
Vitamin D3 25000 IU	<b>8</b>
Chromium 200 µg	<b>10</b>
Potassium 320 mg	<b>12</b>
Zinc 25 mg	<b>14</b>
Biotin Plus	<b>16</b>
Melatonin + VIT B6	<b>18</b>
Lutein 40 mg PLUS	<b>20</b>
Mada-Joint PLUS	<b>22</b>
Mada-Nerve COMPLETE	<b>24</b>
Mada-Osteopo COMPLEX	<b>26</b>
Mada-Colon MAX	<b>28</b>
Literature	<b>30</b>



Vitamin A 10000 IU



Vitamin B12 500 µg



Vitamin D3 5000 UI



Vitamin D3 10000 UI



Vitamin D3 25000 IU



Chromium 200 µg



Potassium 320 mg



Zinc 25 mg



Biotin Plus



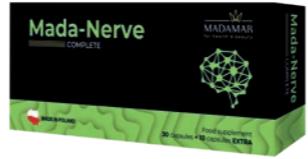
Melatonin + VIT B6



Lutein 40 mg PLUS



Mada-Joint PLUS



Mada-Nerve COMPLETE



Mada-Osteopo COMPLEX



Mada-Colon MAX

# Vitamin A

10000 IU

## VITAMIN A 10000 IU Food supplement

Vitamin A contributes to the maintenance of normal skin and mucous membranes. Vitamin A has a role in the normal functioning of the immune system. It also affects the maintenance of normal vision.

### RECOMMENDED DAILY PORTION:

1 capsule.



### NUTRITION FACTS:

Daily portion (1 capsule)
Vitamin A 3000 µg (10000 IU) (375%*)

\*-% of nutrient reference value

### INGREDIENTS:

bulking agents: vitamin A (retinyl acetate), microcrystalline cellulose and maltodextrin, anti-caking agent - magnesium salts of fatty acids, capsule (gelatin, colours: titanium dioxide and iron oxides). May contain derivatives of: cereals containing gluten, soybeans, milk.

### WARNINGS:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health.

**Vitamin A is a fat-soluble compound. It is responsible for the proper functioning of the immune system, the generation of reproductive cells and fetal development, as well as maintaining the optimal condition of the epidermis as a result of the regulation of the exfoliation process and the exchange of external cell layers. It also has antioxidant properties, and thus protects the body against the harmful effects of reactive oxygen species and participates in the proper course of growth processes, protein synthesis and fat metabolism. Adequate supply of vitamin A is also necessary in the early development of the lungs and the formation of alveoli and for the regeneration of the body's tissues.** In addition, it participates in the synthesis and release of adrenal cortex and thyroid hormones, as well as participates in the proper differentiation and development of cells and tissues.

Clinical studies have shown that the intestinal absorption of vitamin A is significantly reduced during infection, as well as a significant loss of this compound in the urine. Vitamin A deficiency increases the risk of mortality in early childhood due to more frequent infections. Moreover, the deficit or insufficient supply of vitamin A contributes to a higher level of susceptibility to immune-mediated inflammatory diseases, which is associated with abnormal immune response to infection and intestinal barrier dysfunction and immunodeficiency. It has also been proved that **vitamin A is characterized by anti-inflammatory and immunostimulatory properties, thanks to which it has therapeutic effect in supporting the treatment of various infectious diseases.**

### References:

1. Gilbert C.: What is vitamin A and why do we need it? Community Eye Health. 2013;26(84):65.
2. EFSA NDA Panel (EFSA Panel on Dietetic Products, Nutrition and Allergies), Scientific Opinion on Dietary Reference Values for Vitamin A. EFSA Journal 2015, 13, 3, 4028, 1-84.
3. Rubin L.P., Ross A.C., Stephensen C.B., et al.: Metabolic Effects of Inflammation on Vitamin A and Carotenoids in Humans and Animal Models. Adv Nutr. 2017 Mar 15;8(2):197-212.
4. Huang Z., Liu Y., Qi G., et al.: Role of Vitamin A in the Immune System. J Clin Med. 2018 Sep 6;(9). pii: E258.
5. Timoneda J., Rodríguez-Fernández L., Zaragozá R., et al.: Vitamin A Deficiency and the Lung. Nutrients. 2018 Aug 21;10(9). pii: E1132.

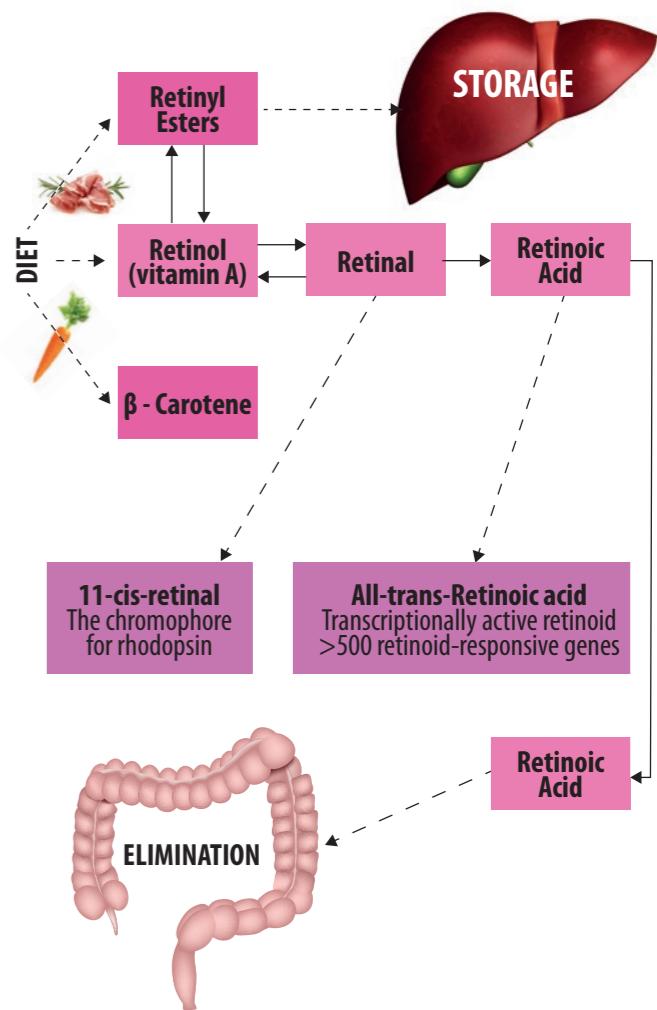


Figure 1.: Generalized scheme for vitamin A metabolism. Libien J., Kupersmith M.J., Blaner W., et al.: Role of vitamin A metabolism in IIH: Results from the idiopathic intracranial hypertension treatment trial. J Neurol Sci. 2017 Jan 15;372:78-84.

# Vitamin B12

## VITAMIN B12 500 µg Food supplement

Vitamin B12 contributes to normal functioning of the nervous system and psychological function. Vitamin B12 affects reduction of tiredness and fatigue. It has a role with normal red blood cell formation.

### RECOMMENDED DAILY PORTION:

1 capsule.



### NUTRITION FACTS:

Daily portion (1 capsule)
Vitamin B12 500 µg (20 000%*)

\*-% of nutrient reference value

500 µg

### INGREDIENTS:

bulking agents: vitamin B12 (cyanocobalamin), microcrystalline cellulose and maltodextrin, anti-caking agent - magnesium salts of fatty acids, capsule (gelatin, colours: titanium dioxide, iron oxides). May contain derivatives of: cereals containing gluten, soybeans, milk.

### WARNINGS:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health.

Vitamin B12 is a water-soluble compound that plays an important role in the formation of blood-forming elements in the human body. It also takes part in the metabolism of proteins, fats and carbohydrates, as well as the synthesis of serotonin and regulating the functioning of the digestive tract. Adequate supply of vitamin B12 is especially required in women of childbearing age and in children and the elderly, because the deficiency of this compound is common, mainly due to the limited consumption of animal foods or impaired absorption from the gastrointestinal tract.

The source of vitamin B12 in the diet are almost exclusively products of animal origin, therefore, vegetarians are highly recommended supplementation with cobalamin, because a significant deficiency of this compound may be associated with the growth of markers of oxidative stress and the development of megaloblastic anemia and various neurophysiological disorders. Relatively heavy vitamin B12 deficiency impairs the synthesis of red blood cells and neurological functions and is associated with bone loss, inflammation, as well as an increased risk of neural tube defects and long-term developmental disorders in the child. In addition, the use of drugs such as proton pump inhibitors, metformin, colchicine or H2-receptor antagonists in patients contributes to the malabsorption and metabolism of vitamin B12. Clinical trials have shown that people with type 2 diabetes who took metformin for a long time were significantly lower in vitamin B12 than in the control group.

### References:

1. O'Leary F, Samman S.: Vitamin B12 in health and disease. *Nutrients*. 2010 Mar;2(3):299-316.
2. Allen L.H.: Vitamin B-12. *Adv Nutr*. 2012 Jan;3(1):54-5.
3. Rizzo G, Laganà A.S., Rapisarda A.M.: Vitamin B12 among Vegetarians: Status, Assessment and Supplementation. *Nutrients*. 2016 Nov 29;8(12). pii: E767.
4. Langan R.C, Goodbred A.J.: Vitamin B12 Deficiency: Recognition and Management. *Am Fam Physician*. 2017 Sep 15;96(6):384-389.
5. Chapman L.E., Darling A.L., Brown J.E.: Association between metformin and vitamin B12 deficiency in patients with type 2 diabetes: A systematic review and meta-analysis. *Diabetes Metab*. 2016 Nov;42(5):316-327.
6. Alharbi T.J., Tourkmani A.M., Abdelhay O., et al.: The association of metformin use with vitamin B12 deficiency and peripheral neuropathy in Saudi individuals with type 2 diabetes mellitus. *PLoS One*. 2018 Oct 15;13(10):e0204420.

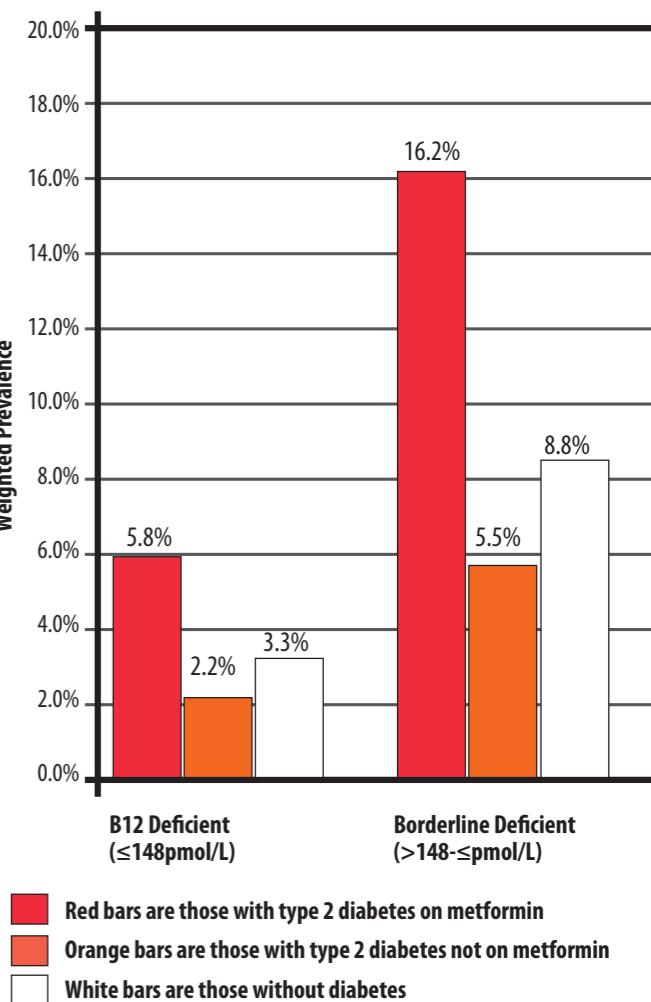


Figure 1.: Weighted prevalence of biochemical B12 deficiency and borderline deficiency adjusted for age, race, and sex in U.S. adults  $\geq$  50 years of age: NHANES 1999–2006. Reinstatler L., Qi Y.P., Williamson R.S., et al.: Association of biochemical B<sub>12</sub> deficiency with metformin therapy and vitamin B<sub>12</sub> supplements: the National Health and Nutrition Examination Survey, 1999–2006. *Diabetes Care*. 2012 Feb;35(2):327-33.

# Vitamin D3

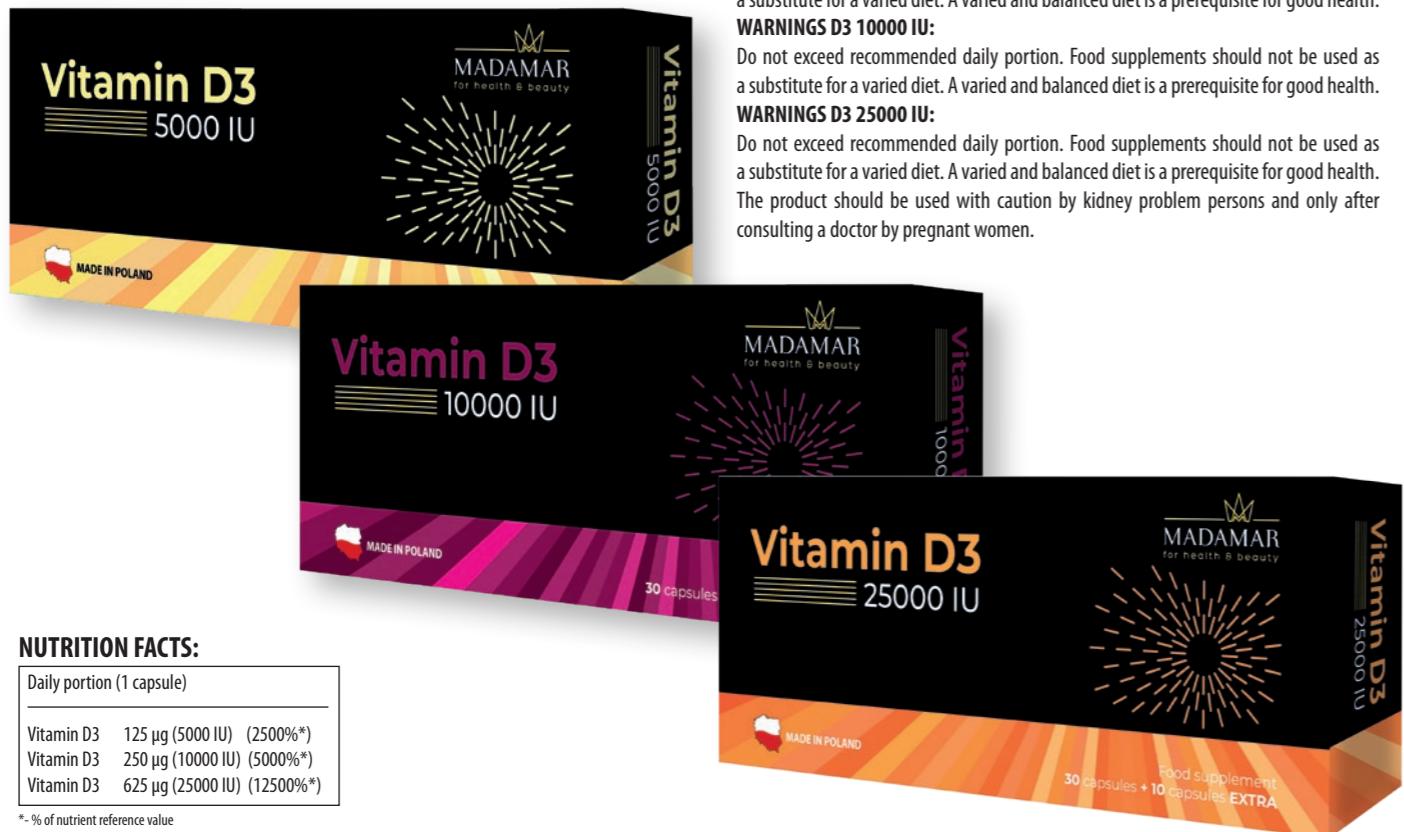
5000 IU / 1000 IU  
25000 IU

## VITAMIN D3 Food supplement

Vitamin D3 contributes to the maintenance of normal bones and teeth.  
Vitamin D3 affects normal functioning of muscle and immune system.

## RECOMMENDED DAILY PORTION:

1 capsule.



## NUTRITION FACTS:

Daily portion (1 capsule)
Vitamin D3 125 µg (5000 IU) (2500%*)
Vitamin D3 250 µg (10000 IU) (5000%*)
Vitamin D3 625 µg (25000 IU) (12500%*)

\* % of nutrient reference value

## INGREDIENTS:

bulking agents: vitamin D3 (cholecalciferol), microcrystalline cellulose and maltodextrin, anti-caking agent - magnesium salts of fatty acids, capsule (gelatin, colours: titanium dioxide, iron oxides). May contain derivatives of: cereals containing gluten, soybeans, milk.

## WARNINGS D3 5000 IU:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health.

## WARNINGS D3 10000 IU:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health.

## WARNINGS D3 25000 IU:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health. The product should be used with caution by kidney problem persons and only after consulting a doctor by pregnant women.

Vitamin D is a fat-soluble compound that due to its pleiotropic activity belongs to a wide group of hormones, which are transcription factors affecting the expression of many genes. It performs two essential functions in the human body, **supports the intestinal absorption of calcium and phosphates, and also regulates the secretion of parathyroid hormone, which positively affects the health of the skeletal system.**

Vitamin D has a strong immunomodulatory effect, which emphasizes its important role in increasing the anti-infective immunity of the body, in the course of acute and chronic inflammatory processes, as well as in autoimmune diseases.

Vitamin D deficiency is a global health problem affecting over one billion children and adults worldwide. In many scientific studies carried out so far, it has been proven that the proper supply of the body with vitamin D protects the body against the development of diabetes, infertility, mental, musculoskeletal, neurocognitive disorders, as well as infectious, autoimmune, cardiovascular and cancer diseases.

The proper concentration of vitamin D in the blood serum is also associated with the improvement of neuromuscular function, a reduction in the number of injuries, inflammation and a reduction in the risk of upper respiratory tract infection.

## References:

1. Holick M.F.: The vitamin D deficiency pandemic: Approaches for diagnosis, treatment and prevention. Rev Endocr Metab Disord. 2017 Jun;18(2):153-165.
2. Pludowski P., Holick M.F., Pilz S., et al.: Vitamin D effects on musculoskeletal health, immunity, autoimmunity, cardiovascular disease, cancer, fertility, pregnancy, dementia and mortality-a review of recent evidence. Autoimmun Rev. 2013 Aug;12(10):976-89.
3. Reid I.R.: Vitamin D Effect on Bone Mineral Density and Fractures. Endocrinol Metab Clin North Am. 2017 Dec;46(4):935-945.
4. Moran D.S., McClung J.P., Kohen T., et al.: Vitamin d and physical performance. Sports Med. 2013 Jul;43(7):601-11.
5. Grimaldi A.S., Parker B.A., Capizzi J.A., et al.: 25(OH) vitamin D is associated with greater muscle strength in healthy men and women. Med Sci Sports Exerc. 2013 Jan;45(1):157-62.
6. Abrams G.D., Feldman D., Safran M.R.: Effects of Vitamin D on Skeletal Muscle and Athletic Performance. J Am Acad Orthop Surg. 2018 Apr 15;26(8):278-285.

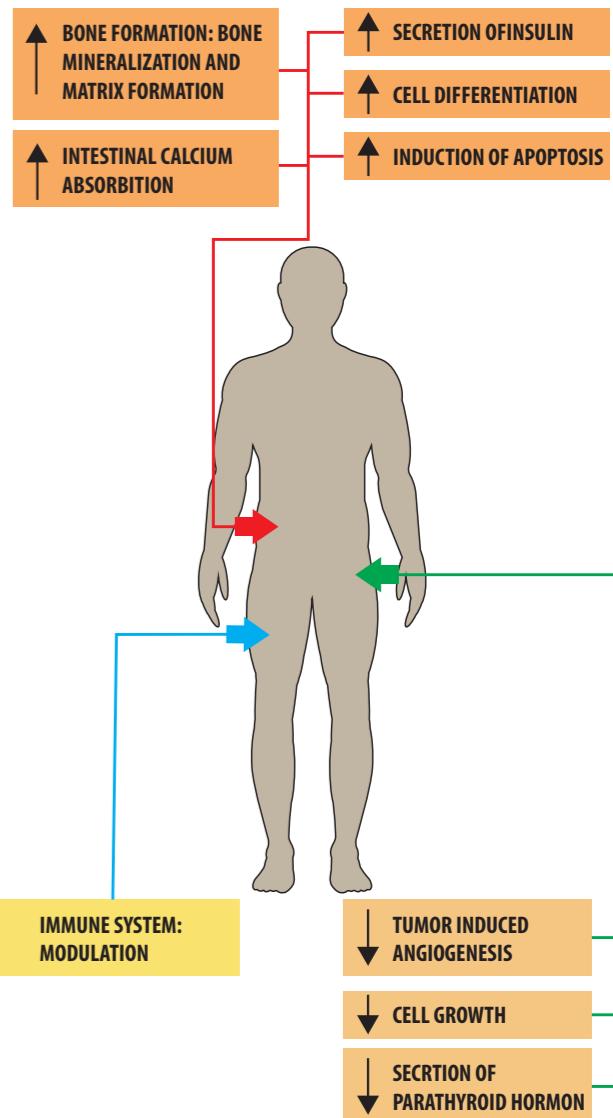


Figure 1.: Overview of biological functions of vitamin D.

# Chromium

## CHROMIUM 200 µg Food supplement

This product complements the body's needs for this element.

Chromium contributes to normal macronutrient metabolism. Chromium also helps in maintaining the proper level of glucose in the blood. The product has been enriched with niacin, which contributes to normal energy-yielding metabolism and to the reduction of tiredness and fatigue.

Chromium supplementation is especially recommended for people who have a high appetite for sweets, are overweight and obese, as well as for those who are in the process of slimming.

**RECOMMENDED DAILY PORTION:**  
**1 capsule.**



### NUTRITION FACTS:

Daily portion (1 capsule)
Chromium 200 µg (500%*)
Niacin 16 mg (100%*)

\*-% of nutrient reference value

200 µg

### INGREDIENTS:

bulking agent: chromium picolinate, microcrystalline cellulose, anti-caking agent - magnesium salts of fatty acids, nicotinamide, capsule (gelatin, colour - titanium dioxide). May contain derivatives of: cereals containing gluten, soybeans, milk.

### WARNINGS:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health.

**Chromium is a chemical element belonging to the group of microelements that are necessary for the proper functioning of living organisms.** Trivalent chromium found in most foods, as well as in dietary supplements is a nutrient with very low toxicity, whose content in the blood plasma and hair structures and is gradually lost with age. Chromium is a component of metalloenzymes, as well as a coenzyme of numerous metabolic reactions taking place in the human body, especially an essential mineral component for the transformation of carbohydrates and fats.

**Chromium losses are generally noticeable in the situation of strong physiological stressors such as:** injury due to injury, short-term and very intense physical exertion, aging, breastfeeding or an improperly balanced diet. Symptoms of chromium deficiency in humans include: glucose intolerance, insulin resistance, the presence of glucose in the urine, growth disturbances, lipid metabolism disorders, reduction of lean body mass and disorders of the nervous system.

**It is believed that chromium supplementation may support the process of reducing body fat,** because in previous studies it has been shown that chromium picolinate supplementation in overweight and / or obese people contributed to greater weight loss compared to the control group. There are also scientific reports that indicate the potential benefits of additional chromium supplementation in diabetic patients when achieving blood sugar control, **lowering fasting blood glucose levels, lowering triglycerides in blood, and even slightly reducing total cholesterol levels and improving the fractional cholesterol levels. HDL.**

### References:

- Cefalu W.T., Hu F.B.: Role of chromium in human health and in diabetes. *Diabetes Care.* 2004 Nov;27(11):2741-51.
- Onakpoya I., Posadzki P., Ernst E.: Chromium supplementation in overweight and obesity: a systematic review and meta-analysis of randomized clinical trials. *Obes Rev.* 2013 Jun;14(6):496-507.
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- Heshmati J., Omani-Samani R., Vesali S., et al.: The Effects of Supplementation with Chromium on Insulin Resistance Indices in Women with Polycystic Ovarian Syndrome: A Systematic Review and Meta-Analysis of Randomized Clinical Trials. *Horm Metab Res.* 2018 Mar;50(3):193-200.
- San Mauro-Martin I., Ruiz-León A.M., Camina-Martín M.A., et al.: Chromium supplementation in patients with type 2 diabetes and high risk of type 2 diabetes: a meta-analysis of randomized controlled trials. *Nutr Hosp.* 2016 Feb 16;33(1):27.

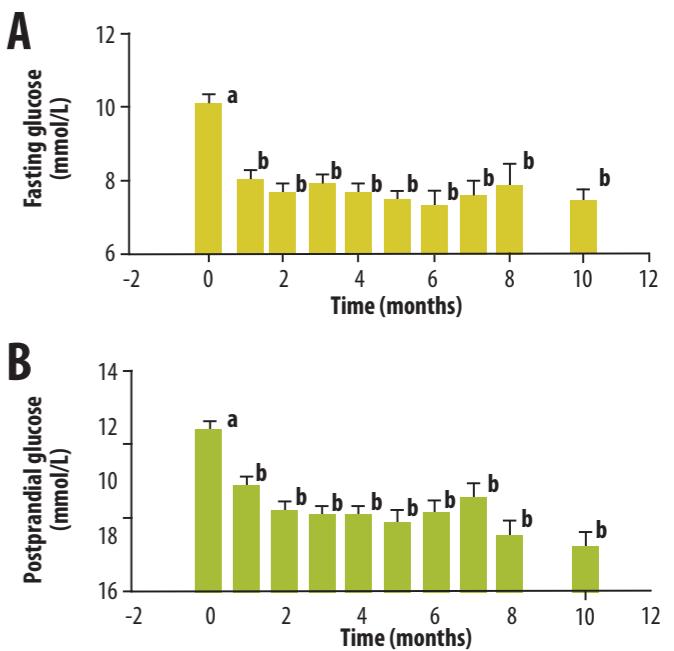


Figure 1.: Fasting (A) and postprandial (B) glucose decline over time in patients with type 2 diabetes treated for 10 months with 500 µg/day chromium picolinate. Cheng N., Zhu X., Shi H., et al.: Follow-up survey of people in China with type 2 diabetes mellitus consuming supplemental chromium. *J Trace Elem Exp Med* 12:55–60, 1999.

# Potassium

320 mg

## POTASSIUM 320 mg Food supplement

This product is intended to complement the body's demand for potassium, which is an essential mineral component of the body. Potassium contributes to the maintenance of normal blood pressure and affects normal muscle function.

### RECOMMENDED DAILY PORTION:

**1 capsule 2-3 times daily.** The product should be taken during or just after a meal, washed down with water.



### NUTRITION FACTS:

Daily portion	2 capsules	3 capsules
Potassium chloride	1220 mg	1830 mg
of which potassium	640 mg (32%*)	960 mg (48%)

\* - % of nutrient reference value

### INGREDIENTS:

potassium chloride, anti-caking agent - magnesium salts of fatty acids, capsule (gelatin, colour - titanium dioxide). May contain derivatives of: cereals containing gluten, soybeans, milk.

### WARNINGS:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health.

**Potassium** belongs to the essential minerals in the human diet. This macro-element is **important for health is involved in the regulation of water and electrolyte management of the body, acid-base balance and osmotic pressure of cells. In addition, potassium activates numerous enzymes and plays an important role in the metabolism of proteins and carbohydrates.** Potassium also supports the proper functioning of the nervous and muscular system, because it is responsible for proper muscle contraction and conduction of nerve impulses, as well as participates in the secretion of hormones and regulates blood pressure and heart rate.

Decreased concentration of potassium (hypokalemia) may result in various negative health consequences, such as an increased risk of hypertension, ischemic heart disease, stroke, myocardial infarction, type 2 diabetes or nephrolithiasis.

Published research's results in recent years indicate that the increased intake of potassium, both from diet and dietary supplements, is associated with a decrease in blood pressure, the effect being more significant in people with hypertension. In turn, studies evaluating the relationship between potassium consumption and the risk of stroke have shown that there is a negative correlation between these factors when the potassium content does not exceed 3500 mg per day, because it is associated with the lowest risk of developing a stroke.

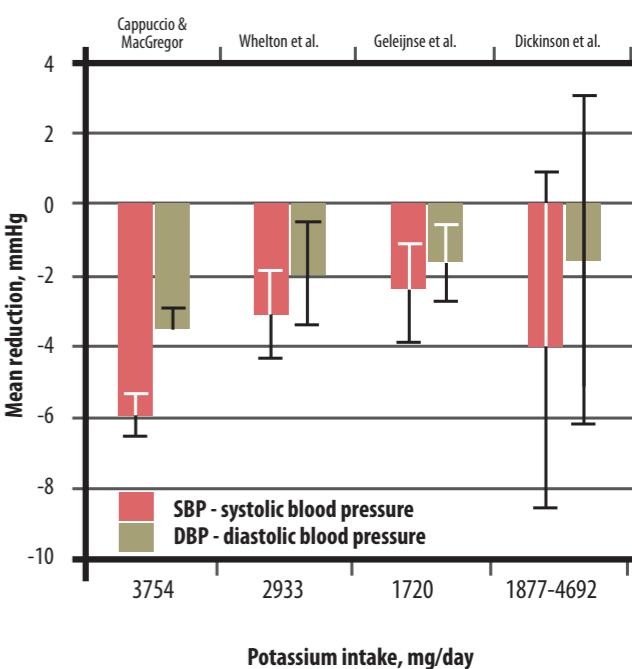


Figure 1.: Overview of meta-analyses of studies investigating the mean blood pressure-lowering effects of potassium. Houston M.C.: The importance of potassium in managing hypertension. Curr Hypertens Rep. 2011;13:309–17.

### References:

1. Weaver C.M.: Potassium and health. Adv Nutr. 2013 May 1;4(3):368S-77S.
2. Aburto N.J., Hanson S., Gutierrez H., et al.: Effect of increased potassium intake on cardiovascular risk factors and disease: systematic review and meta-analyses. BMJ. 2013 Apr 3;346:f1378.
3. EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA): Scientific opinion on dietary reference values for potassium. EFSA Journal. 2016, 14, 10, 4592.
4. Stone M.S., Martyn L., Weaver C.M.: Potassium Intake, Bioavailability, Hypertension, and Glucose Control. Nutrients. 2016 Jul 22;8(7). pii: E444.
5. Vinceti M., Filippini T., Crippa A., et al.: Meta-Analysis of Potassium Intake and the Risk of Stroke. J Am Heart Assoc. 2016 Oct 6;5(10). pii: e004210.

# Zinc

## ZINC 25 mg Food supplement

The product is a source of zinc, in the form of a highly bioavailable amino acid chelate. Zinc contributes to normal fertility and reproduction, and normal DNA synthesis. This element also contributes to the maintenance of normal testosterone levels in the blood.

Zinc contributes to normal macronutrient metabolism, including fatty acids and carbohydrates. Zinc is crucial in normal protein synthesis, which contributes to the maintenance of normal bones, hair, nails and skin. Zinc contributes to normal metabolism of vitamin A, which is related to the maintenance of normal vision.

Zinc strengthens the immune system and protects cells against oxidative stress.

### RECOMMENDED DAILY PORTION:

1 capsule.



### NUTRITION FACTS:

Daily portion (1 capsule)
Zinc 25 mg (250%*)

\*-% of nutrient reference value

25 mg

### INGREDIENTS:

bulking agent: zinc bisglycinate, microcrystalline cellulose, anti-caking agent - magnesium salts of fatty acids, capsule (gelatin, colour - titanium dioxide). May contain derivatives of: cereals containing gluten, soybeans, milk.

### WARNINGS:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health.

**Zinc belongs to the group** of essential trace elements for all living organisms, which performs number of numerous metabolic functions. **It should be noted that the human body is not able to store zinc, that's why its systematic daily supply in sufficient quantities is necessary to ensure optimal health benefits.**

This element is indispensable for the proper functioning of the body's hormonal management, including: secretion of testosterone, insulin or thyroxine and maintaining the stability of cell membranes, sex gland functions, gene expression, alcohol metabolism, body immune defense, taste and smell sensation, as well as optimal operation of the central nervous system.

Zinc directly or indirectly also takes part in energy transformation and in the course of transformations of basic nutrients such as carbohydrates, proteins and fats.

Zinc is also successfully used to treat acute diarrhea in children, Wilson's disease, common cold and to prevent blindness in patients with dry age-related macular degeneration. In addition, it has been shown to be very effective in reducing the incidence of infection in older people. As it turns out, zinc not only modulates cellular immunity of the body, but it is also a compound with strong antioxidant and anti-inflammatory properties.

### References:

1. Sanna A., Firinu D., Zavattari P., et al.: Zinc Status and Autoimmunity: A Systematic Review and Meta-Analysis. *Nutrients*. 2018 Jan; 10(1): 68.
2. Roohani N., Hurrell R., Kelishadi R., et al.: Zinc and its importance for human health: An integrative review. *J Res Med Sci*. 2013 Feb; 18(2): 144-57.
3. Wessels I., Maywald M., Rink L.: Zinc as a Gatekeeper of Immune Function. *Nutrients*. 2017 Nov 25; 9(12). pii: E1286.
4. Scientific Opinion on Dietary Reference Values for zinc. EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA). *EFSA Journal* 2014;12(10):3844.
5. Prasad A.S.: Discovery of human zinc deficiency: its impact on human health and disease. *Adv Nutr*. 2013 Mar 1;4(2):176-90.

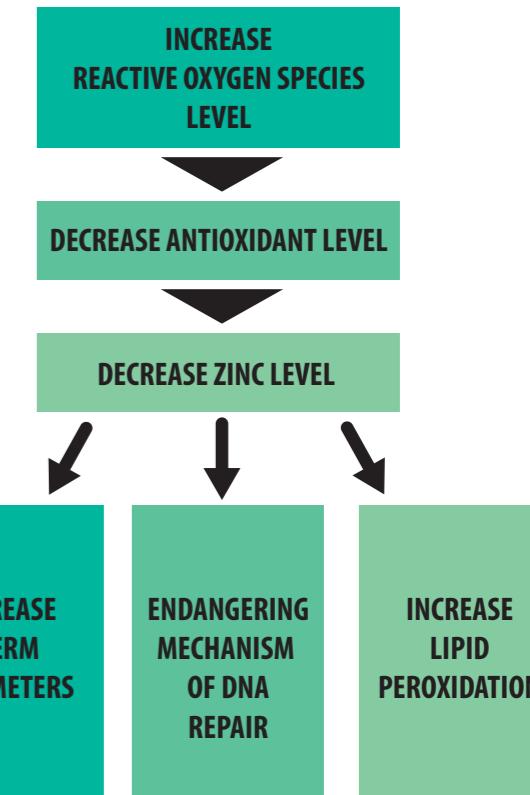


Figure 1.: Effects of increasing ROS level in seminal plasma. Fallah A., Mohammad-Hasani A., Colagar A.H.: Zinc is an Essential Element for Male Fertility: A Review of Zn Roles in Men's Health, Germination, Sperm Quality, and Fertilization. *J. Reprod Infertil*. 2018 Apr-Jun;19(2):69-81.

# Biotin PLUS

5 mg

## BIOTIN PLUS 5mg Food supplement

The product consists of a high dose of biotin, zinc and copper. It is recommended for persons with weak nails, hair and with gray face skin. Biotin contributes to the maintenance of normal skin and hair. Zinc affects the nails condition and copper helps with normal skin pigmentation.

### RECOMMENDED DAILY PORTION:

1 capsule.



### NUTRITION FACTS:

Daily portion (1 capsule)	
Biotin	5 mg (10000%*)
Copper	1 mg (100%)
Zinc	10 mg (100%)
Silicon	10 mg
*-% of nutrient reference value	

### INGREDIENTS:

zinc bisglycinate, copper bisglycinate, D-biotin, L-cysteine, methylsulfonylmethane (MSM), L-ascorbic acid (vitamin C), bulking agent - microcrystalline cellulose, anti-caking agents: magnesium salts of fatty acids and silicon dioxide, capsule (gelatin, colour - titanium dioxide). May contain derivatives of: cereals containing gluten, soybeans, milk.

### WARNINGS:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health.

**Biotin is a compound belonging to the B vitamins**, which participates in many enzymatic reactions in the cells of the human body. As a component of coenzymes, it is involved in the transformation of proteins, carbohydrates and fats. It participates in the synthesis of fatty acids, leucine metabolism and the process of gluconeogenesis. In addition, biotin affects the normal growth and development of the human body, determines the blood coagulation process and the proper functioning of the immune system, and ensures the proper skin condition. It has been observed so far that biotin deficiency mainly affects people with inherited lack of biotinidase, undernourished persons, people with digestive and absorption disorders, as well as pregnant women.

**It has been proved that biotin supplementation may be beneficial in the case of nail plate fragility, excessive hair loss**, as well as in the situation of genetic lack of biotinidase, the enzyme responsible for the distribution of biocytin to biotin in the small intestine. To date, clinical trials have shown improvement in hydration, hardness and thickness of brittle nails due to the oral use of the biotin preparation. In addition, it was found that the acquired **zinc deficiencies are deeply involved in the development of certain skin diseases**, and are associated with increased hair loss and delayed wound healing. It is worth noting that the poor supply of copper may also lead to inappropriate hair growth and are usually stiff and brittle, which is the result of incorrect collagen synthesis. As it turns out, **copper participates in maintaining the structure of keratin, ie the protein from which hair, skin and nails are built, and also takes part in the formation of cross-links in collagen and elastin, and the synthesis of melanin, hair and skin dye**.

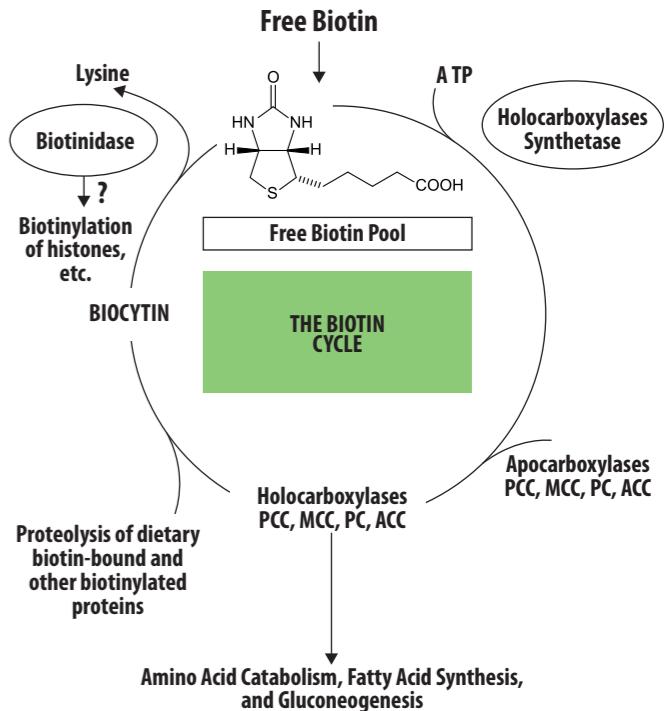


Figure 1.: The biotin cycle. Wolf B.: Biotinidase Deficiency. GeneReviews®. Seattle (WA): University of Washington, Seattle; 1993-2019.

### References:

1. EFSA NDA Panel (EFSA Panel on Dietetic Products, Nutrition And Allergies), Scientific Opinion on Dietary Reference Values for biotin. EFSA Journal, 2014;12, 2, 3580, 1-24.
2. Mock D.M.: Biotin: From Nutrition to Therapeutics. J Nutr. 2017 Aug;147(8):1487-1492.
3. Patel D.P., Swink S.M., Castelao-Soccio L.: A Review of the Use of Biotin for Hair Loss. Skin Appendage Disord. 2017 Aug;3(3):166-169.
4. Lipner S.R., Scher R.K.: Biotin for the treatment of nail disease: what is the evidence? J Dermatolog Treat. 2018 Jun;29(4):411-414.
5. Ogawa Y., Kinoshita M., Shimada S., et al.: Zinc and Skin Disorders. Nutrients. 2018 Feb 11;10(2). pii: E199.
6. Bost M., Houdart S., Oberli M., et al.: Dietary copper and human health: Current evidence and unresolved issues. J Trace Elem Med Biol. 2016 May;35:107-115.

# Melatonin + VIT B6

5 mg

**MELATONIN + VIT B6** Food supplement

The product is recommended for individuals who are experiencing difficulties with falling asleep, containing a unique composition of MELATONIN - 5 mg as well as magnesium and vitamin B6.

## RECOMMENDED DAILY PORTION:

1 capsule close to bedtime.

## INGREDIENTS:

bulking agent: melatonin, vitamin B6 (pyridoxine hydrochloride), microcrystalline cellulose, magnesium oxide, shell (gelatine, colours: titanium dioxide, indigotine), anti-caking agent: magnesium salts of fatty acids. May contain derivatives of: cereals containing gluten, soybeans, milk.

## WARNINGS:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health. Do not consume alcohol while using the product. Do not use for children, pregnant or breast-feeding women.



## NUTRITION FACTS:

Daily portion (1 capsule)
Melatonin 5 mg
Vitamin B6 1,4 mg (100%*)
Magnesium 75 mg (20%*)

\* - % of nutrient reference value

**Melatonin** is a hormone with a broad spectrum of activity in the human body, which is produced mainly by the pineal gland, as well as in certain amounts in the eye lens, blood cells and the epithelium of the gastrointestinal tract. It is commonly referred to as the **sleep hormone or the hormone of darkness**, because its most important role is the regulation and the coordination of the **human biological clock**. The daily level of this hormone in the body depends on the time of day, year and age. The highest concentration of melatonin is recorded between midnight and three o'clock at night, while taking into account age, its level increases up to 35-40 years of age, and then gradually decreases, until a significant reduction in the elderly.

The key function of melatonin is to regulate the rhythm of sleep and wakefulness depending on the exposure and adaptation of the organism to these changing environmental conditions. It has been proven that taking melatonin helps to reduce sleep latency, increase its time and improve overall quality of sleep. In addition, the results of numerous scientific studies carried out in recent years have also shown that melatonin is characterized by antioxidant activity, lowering blood pressure, regulating serum lipids, reducing blood glucose, supporting the immune system, and inhibiting the development of cancer and neurodegenerative diseases.

## References:

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2. Claustre B., Leston J.: Melatonin: Physiological effects in humans. Neurochirurgie. 2015 Apr-Jun;61(2-3):77-84.
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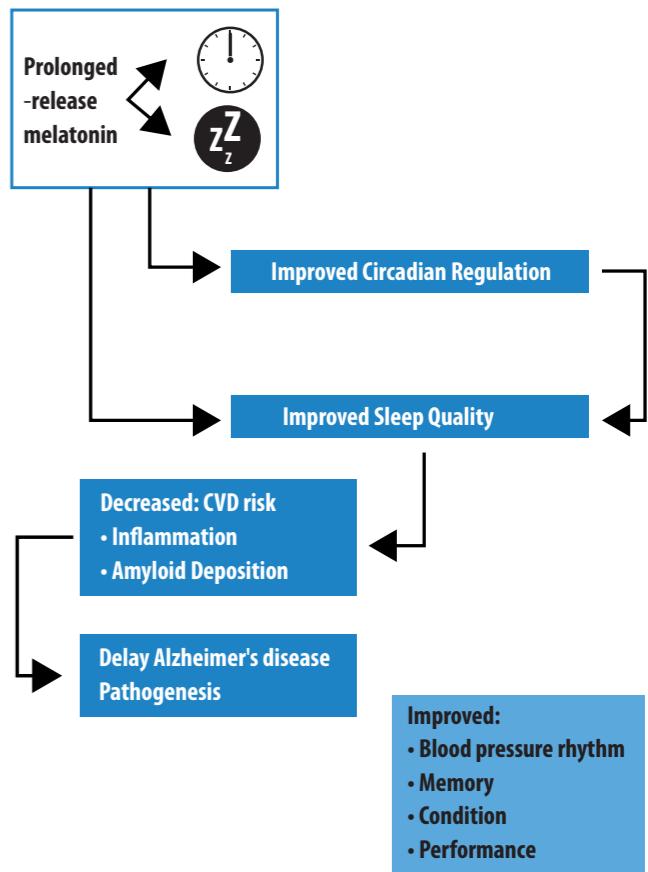


Figure 1.: Effects of melatonin on mechanisms linking circadian clocks, sleep and neurodegeneration. Zisapel N.: New perspectives on the role of melatonin in human sleep, circadian rhythms and their regulation. Br J Pharmacol. 2018 Aug;175(16):3190-3199.

# Lutein - Plus

40 mg

## LUTEIN 40mg Plus Food supplement

The product is in the form of easily swallowed SOFTGEL capsules containing natural crystalline lutein at the highest content available on the market – 40 mg. The product was additionally fortified with zeaxanthin. Product is recommended for every person whose eyes are tired, tearing or red and who:

- works in artificial light
- works with a computer
- drives a car for many hours
- is middle-aged or elderly and want to keep good vision.

### RECOMMENDED DAILY PORTION:

1 capsule.



### NUTRITION FACTS:

Daily portion (1 capsule)
Polyunsaturated fatty acids 200 mg
Lutein 40 mg
Zeaxanthin 2 mg

**Lutein and zeaxanthin are two fat-soluble antioxidants** belonging to the class of carotenoids called xanthophylls with reported anti-inflammatory properties. They are the major constituents of macular pigment, a compound concentrated in the macula region of the retina that is responsible for fine-feature vision. **Lutein and zeaxanthin have several beneficial effects, especially on eye health.**

**They protect against visual disorders such as age-related macular degeneration (AMD), age-related cataract (ARC), ischemic/hypoxia induced retinopathy, light damage of the retina, retinitis pigmentosa, retinal detachment, uveitis and diabetic retinopathy. There are increasing evidences that lutein and zeaxanthin may also improve normal ocular function by enhancing contrast sensitivity and by reducing glare disability.** The mechanism by which they are involved in the prevention of eye diseases may be due their physical blue light filtration properties and local antioxidant activity.

Current evidence suggests that higher dietary intakes of lutein and zeaxanthin are likely to play an important role in protecting against age-related macular degeneration. Daily supplementation with these carotenoids also resulted in significant increase in serum levels and macular pigment optical density and improvements in chromatic contrast and recovery from photostress. In general, sustained lutein and zeaxanthin consumption, either through diet or supplementation, may contribute to reducing the burden of several chronic diseases.

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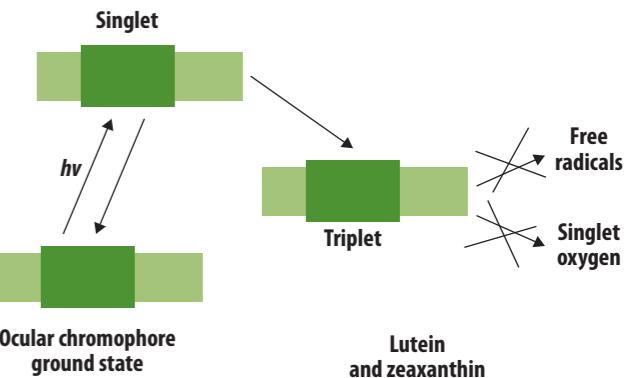


Figure 1.: Photochemical mechanism of protection by lutein and zeaxanthin. Roberts J.E., Dennison J.: The Photobiology of Lutein and Zeaxanthin in the Eye. J Ophthalmol. 2015;2015:687173.

# Mada-Joint

## PLUS

### JOINT PLUS Food supplement

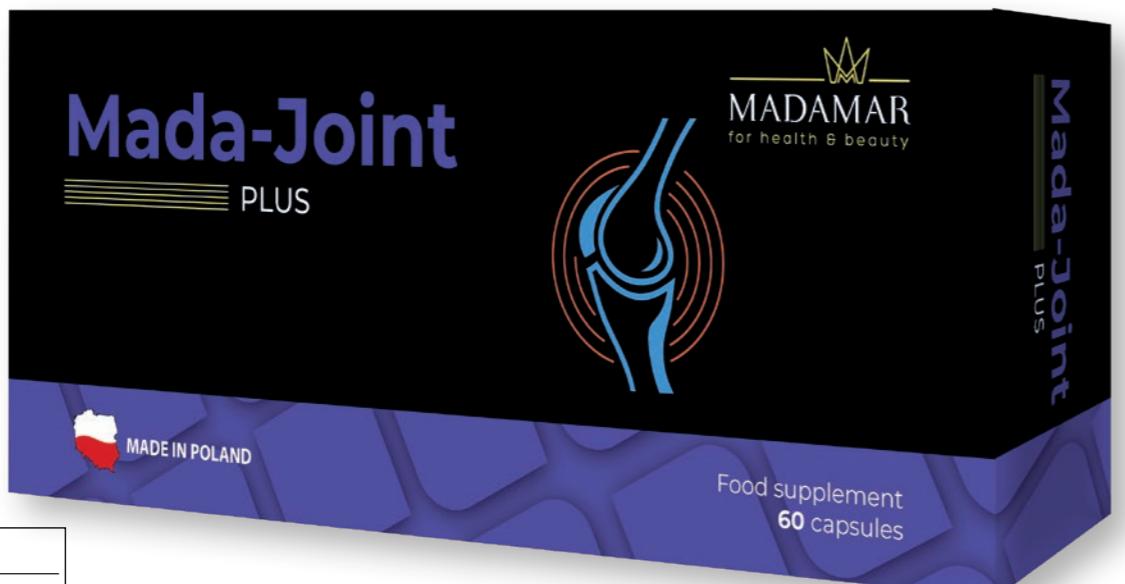
The product contains as many as 4 nutrients necessary for the proper functioning and regeneration of joints. Glucosamine and chondroitin are substrates in the biosynthesis of macromolecules that build joint cartilage. Chondroitin sulphate gives cartilage mechanical and elastic properties. Vitamin C contributes to normal collagen formation for the normal function of bones ad cartilage.

Supplementation with active ingredients of the product is recommended for people exposed to joint loads, especially for:

- elderly people
- obese
- competitive athletes.

**RECOMMENDED DAILY PORTION:**

2 capsules.



### NUTRITION FACTS:

Daily portion (2 capsules)	
Glucosamine sulphate	500 mg
Chondroitin sulphate	500 mg
Collagen hydrolysate	100 mg
Vitamin C	100 mg 125%**

\* - % of nutrient reference value

### INGREDIENTS:

glucosamine sulphate KCl (from crustaceans), chondroitin sulphate (from crustaceans, from fish)\*, collagen hydrolysate, L-ascorbic acid, anti-caking agent - magnesium salts of fatty acids, capsule (gelatin, colour: titanium dioxide). May contain derivatives of: cereals containing gluten, soybeans, milk.

\* chondroitin sulphate obtained by microbial fermentation and sulphation

### WARNINGS:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health.

**Glucosamine** is a natural constituent of glycosaminoglycans in the cartilage matrix and synovial fluid, which exerts pharmacological effects on osteoarthritic cartilage and chondrocytes. In addition, glucosamine inhibits the expression of collagen-degrading enzymes, matrix metalloproteinases and augments the synthesis of type II collagen in chondrocytes. Glucosamine may exert a chondroprotective action by preventing type II collagen degradation in athletes of various sports, including soccer players and bicycle racers.

**Chondroitin** is a glycosaminoglycan being also a major component of the extracellular matrix of articular cartilage. It provides cartilage with resistance and elasticity allowing it to resist tensile stresses during various loading conditions. A positive effect of glucosamine and chondroitin on both clinical and radiological findings has been shown. Glucosamine and chondroitin sulphate supplementation seem to be safe with no serious adverse events reported.

**Collagen hydrolysate** ingestion stimulates significant increase in synthesis of extracellular matrix macromolecules by chondrocytes and improve of joint pain and possibly reduce the risk of joint deterioration in a high-risk group.

Preclinical studies demonstrated that vitamin C has the potential to increase type I collagen synthesis, accelerate bone healing after fractures and reduce oxidative stress parameters.

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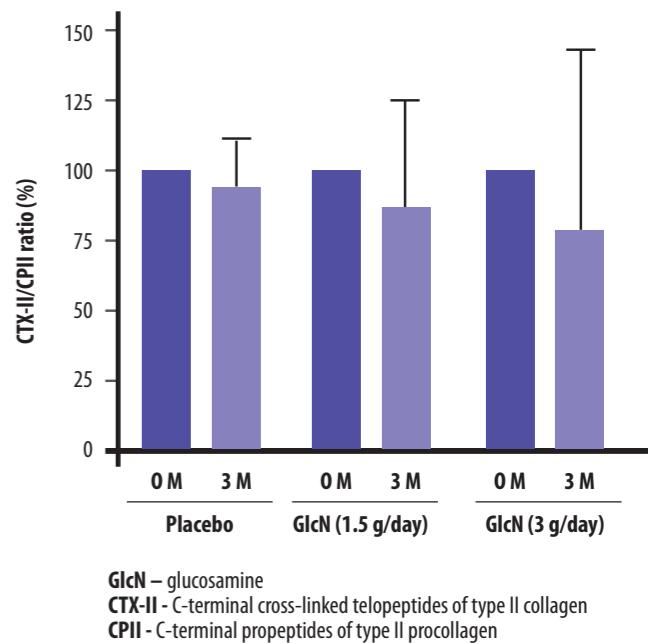


Figure 1.: Effect of glucosamine administration on the ratio of type II collagen degradation to synthesis [3].

# Mada-Nerve

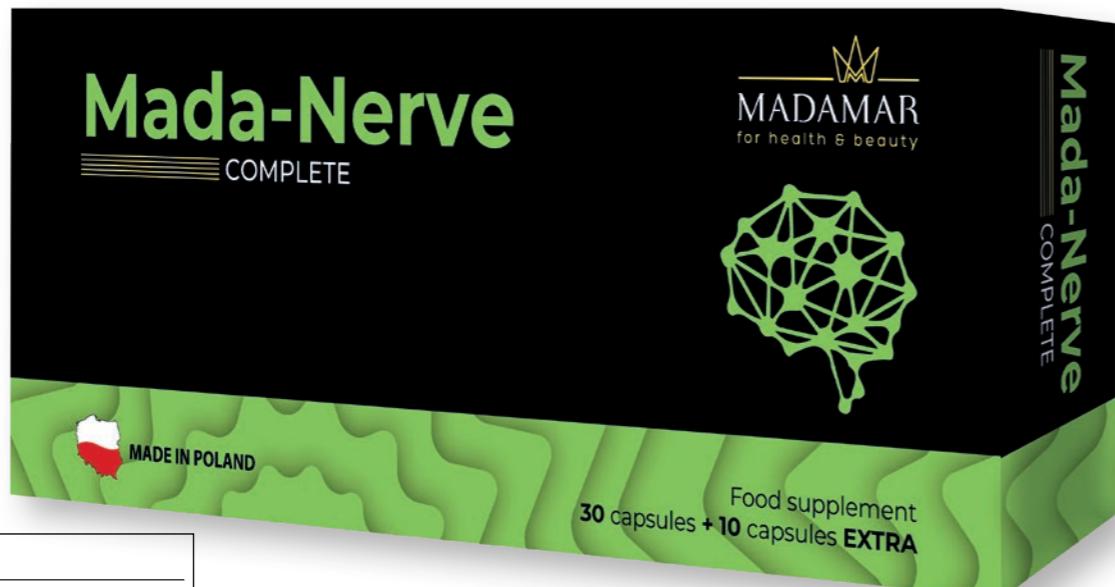
## COMPLETE

### MADA-NERVE COMPLETE Food supplement

The product is complementing the diet with three essential exogenous amino acids (phenylalanine, tyrosine, tryptophan) and B-group vitamins. Tyrosine is involved in the normal synthesis of catecholamines (dopamine, adrenaline, noradrenaline) and serotonin, whose low level may be the cause of a reduced mood. Vitamins B6 and B12 contribute to normal functioning of the nervous system and to normal psychological function. Folic acid reduces the feeling of tiredness and fatigue.

#### RECOMMENDED DAILY PORTION:

2 capsule.



#### NUTRITION FACTS:

Daily portion (2 capsule)	
Phenylalanine 375 mg (36%**)	Vitamin B6 5 mg (350%*)
Tyrosine 250 mg (36%**)	Folic acid (B9) 500 µg (250%*)
Tryptophan 100 mg (36%**)	Vitamin B12 10 µg (400%*)
Caffeine 100 mg	Vitamin D3 10 µg (200%*)

\*- % of nutrient reference value  
\*\*- % of the WHO reference intake value per person for a body mass of 70 kg

#### INGREDIENTS:

L-phenylalanine, L-tyrosine, L-tryptophan, bulking agent - maltodextrin, caffeine, anti-caking agent - magnesium salts of fatty acids, pyridoxine hydrochloride, folic acid, cyanocobalamin, cholecalciferol, capsule (gelatin, colour: titanium dioxide). May contain derivatives of: cereals containing gluten, soybeans, milk.

#### WARNINGS:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health. Contains caffeine; it is not recommended to children and pregnant women (50 mg / 2 capsules).

Tyrosine plays important function as precursor for the catecholamines: dopamine, norepinephrine and epinephrine. **Tyrosine stimulates catecholamine production, an effect exclusive to actively firing neurons.** Phenylalanine, like tyrosine is a substrate for tyrosine hydroxylase, the enzyme catalyzing the rate-limiting step in catecholamine synthesis.

**Tryptophan is the sole precursor of peripherally and centrally produced serotonin.** Low serotonin contributes to a lowered mood state, cognitive impairments, with reports including deficits in verbal reasoning, episodic, and working memory. It has been proven that tryptophan supplementation has positive effects on attention and memory. Moreover, tryptophan has been shown to have direct effects on sleep, producing an increase in rated subjective sleepiness, and decrease in total wakefulness. This improved quality of sleep/mood is associated with an improvement in hedonic and cognitive measures, improved morning alertness and brain measures of attention.

The B-vitamins perform essential, closely inter-related roles to numerous aspects of brain function, including energy production, DNA/RNA synthesis/repair, genomic and non-genomic methylation, and the synthesis of numerous neurochemicals and signaling molecules. A diet rich in B-group vitamins is essential for optimal body and brain function, and insufficient amounts of such vitamins have been associated with higher levels of neural inflammation and oxidative stress, as marked by increased blood plasma homocysteine. Low folate and vitamin B-12 status has been linked to both slow information processing and poor memory function. In addition, it has been shown that supplementation of high-dose B-group vitamins is efficacy in reducing oxidative stress and inflammation through increasing oxidative metabolism. It may also promote cellular metabolism, myelination and energy storage.

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6. Ford T.C., Downey L.A., Simpson T., et al.: The Effect of a High-Dose Vitamin B Multivitamin Supplement on the Relationship between Brain Metabolism and Blood Biomarkers of Oxidative Stress: A Randomized Control Trial. *Nutrients.* 2018 Dec 1;10(12). pii: E1860.

### SEROTONIN SYNTHESIS

tryptophan

5-hydroxytryptophan (5-HTP)

5-hydroxytryptamine (5-HT, serotonin)

### CATECHOLAMINE SYNTHESIS

phenylalanine

phenylalanine hydroxylase

tyrosine

tyrosine hydroxylase (TH)

dihydroxyphenylalanine (DOPA)

aromatic aminoacid decarboxylase (AADC)

dopamine

dopamine beta hydroxylase (DBH)

norepinephrine

phenylethanolamine -N-methyl transfere

epinephrine

Figure 1.: Metabolic pathways in serotonin and catecholamine synthesis. Meijer W.G., Copray S.C., Hollema H., et al.: Catecholamine-synthesizing enzymes in carcinoid tumors and pheochromocytomas. *Clin Chem.* 2003 Apr;49(4):586-93.

# Mada-Osteopo

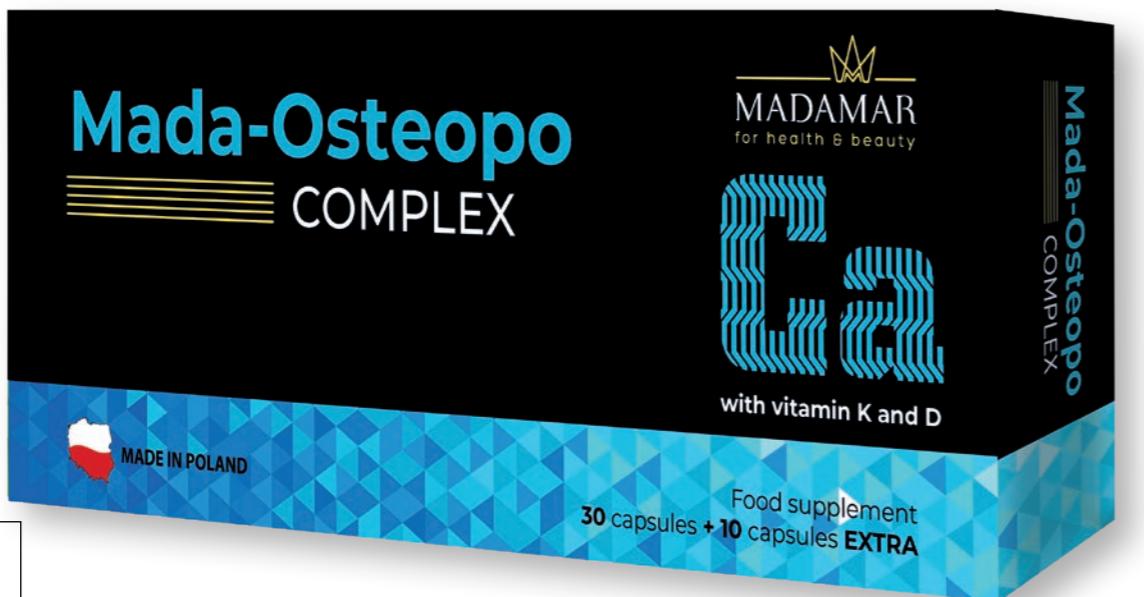
## COMPLEX

### MADA-OSTEOP COMPLEX Food supplement

This is a product with high content of calcium. Additionally it was enriched with vitamin D and vitamin K. Calcium is needed for the maintenance of strong bones and teeth. Vitamin D contributes to normal absorption of calcium and helps in maintaining strong bones and teeth. Vitamin K contributes to maintenance of normal bones.

#### RECOMMENDED DAILY PORTION:

3 capsule.



#### NUTRITION FACTS:

Daily portion (3 capsule)
Calcium 400 mg (50%*)
Vitamin K (K2) 75 µg (100%*)
Vitamin D (D3) 10 µg (400 IU) (200%*)

\* - % of nutrient reference value

#### INGREDIENTS:

calcium salts of citric acid, cholecalciferol (vitamin D), anti-caking agent - magnesium salts of fatty acids, bulking agent - maltodextrin, menaquinone (vitamin K), capsule (gelatin, colours: titanium dioxide, indigotine). May contain derivatives of: cereals containing gluten, soybeans, milk.

#### WARNINGS:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health.

Maintaining a calcium intake of at least 1000-1200 mg per day has long been recommended for older individuals to treat and prevent osteoporosis. The putative mechanism by which calcium intake affects bone health is by increasing bone mineral density. Mineralization of bone requires calcium, and dietary calcium absorption in the gut requires the presence of vitamin D. Adequate daily calcium and vitamin D is required to maximize bone mass and for the subsequent maintenance of bone health. It has been observed that dietary supplementation with calcium and vitamin D reduced bone loss and the rate of nonvertebral fractures in both 65-year-old men and women during a 3-year study. Calcium and vitamin D supplements could considerably reduce bone fractures and related costs in included individuals over 50 years of age.

Vitamin D supports bone growth and remodeling by osteoblasts and osteoclasts. There is convincing evidence of vitamin D deficiency in the older population of many countries, which contribute to increase risk to musculoskeletal health from osteomalacia and hyperparathyroidism with muscle weakness and osteoporosis. It has been shown that vitamin D supplementation decrease falls and bone fractures risk in older patients with greatest risk of osteoporotic fractures.

There is burden of evidence supporting the osteoprotective effects of vitamin K2 in bone metabolism. **Studies using vitamin K2 demonstrate improvement in bone quality and significantly reducing fractures and preventing vascular calcification.** Using a small dose of vitamin K2 may benefit the patient by reducing the risk of osteoporosis and osteoarthritis.

#### References:

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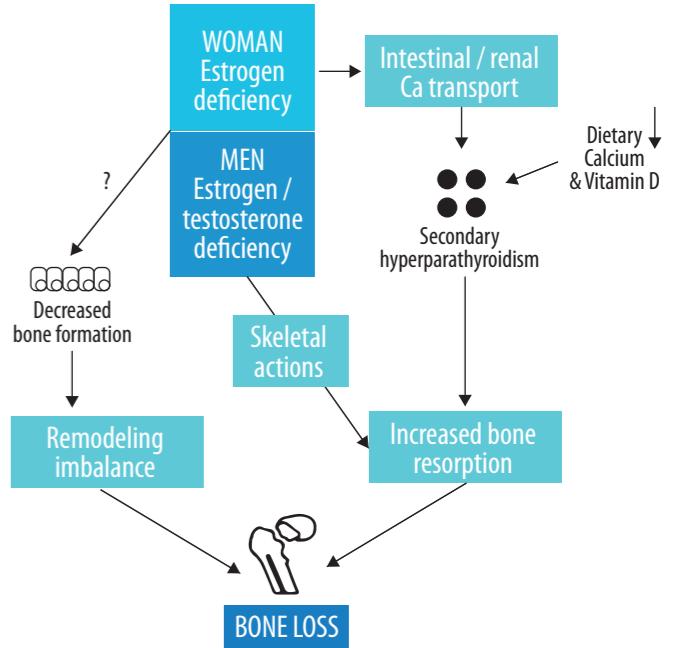


Figure 1.: Schematic Representation of Model for Bone Loss in Postmenopausal Women and Aging Men. Riggs B.L., Khosla S., Melton L.J. 3rd.: A unitary model for involutional osteoporosis: estrogen deficiency causes both type I and type II osteoporosis in postmenopausal women and contributes to bone loss in aging men. J Bone Miner Res. 1998 May;13(5):763-73.

# Mada-Colon

MAX

## MADA-COLON MAX Food supplement

It is a food supplement that contains blond psyllium seed husk (*Plantago ovata*), chicory inulin (*Cichorium intybus*) and *Lactobacillus acidophilus* and *Bifidobacterium lactis* probiotic bacteria. Blond psyllium and chicory inulin help in maintaining healthy intestines. Additionally Blond psyllium helps with constipation and chicory inulin supports weight loss.

### RECOMMENDED DAILY PORTION:

Dissolve 1 teaspoon (5 g) in ½ glass of water. Take an additional portion of water or other liquid. Use twice a day.

### INGREDIENTS:

*Lactobacillus acidophilus* and *Bifidobacterium lactis* bacteria, blond psyllium seed husk (*Plantago ovata*), chicory inulin (*Cichorium intybus*), flavourings, sweetener (sucralose). May contain derivatives of: cereals containing gluten, soybeans, milk.

### WARNINGS:

Do not exceed recommended daily portion. Food supplements should not be used as a substitute for a varied diet. A varied and balanced diet is a prerequisite for good health. The product is designed for adults and children over 6 years of age.



### NUTRITION FACTS:

Daily portion (10g)	
Blond psyllium seed husk ( <i>Plantago ovata</i> )	5,00 g
Chicory inulin ( <i>Cichorium intybus</i> )	4,75 g
<i>Lactobacillus acidophilus</i>	1 x 108 cfu
<i>Bifidobacterium lactis</i>	1 x 108 cfu

**Psyllium is a natural source of concentrated fibers derived from the husks of blonde psyllium seed.** The mechanisms of action of psyllium are including increased excretion of bile acids through stimulating 7α-hydroxylase, reduced absorption of intestinal cholesterol and a reduction of hepatic cholesterol synthesis via the short-chain fatty acid byproducts of fiber fermentation. In addition, nonfermented gel forming **psyllium softens hard stool in constipation, firms loose stool in diarrhea and normalizes stool form in patients with irritable bowel syndrome.** Psyllium supplementation might also have a positive effect on glucose metabolism related parameters. All available clinical trials and meta-analyses confirm the good safety profile of psyllium at doses up to 20 grams per day that is documented by the Food and Drug Administration, the Select Committee on Generally Recognized Safe Substances and the Expert Panel from the Life Sciences Research Office.

**Health benefits of chicory inulin, such as the positive modification of gut microbiota, the modulation of immune response, effects on satiety and body weight, mineral absorption and bone health have been confirmed in various human intervention studies. Chicory-derived inulin supplementation was effective in patients with chronic constipation,** because significantly increased stool frequency and improved bowel function. It has been proven that a daily dose of inulin promotes bifidobacteria growth and may improve gut function and is well tolerated by patients with gastrointestinal complaints.

Recent data also suggest a role for the intestinal microbiota in the pathogenesis of functional bowel disorders. In clinical trial it was demonstrated that supplementation *Lactobacillus acidophilus* NCFM and *Bifidobacterium lactis* Bi-07 twice a day improve symptoms of bloating in patients with functional bowel disorders.

### References:

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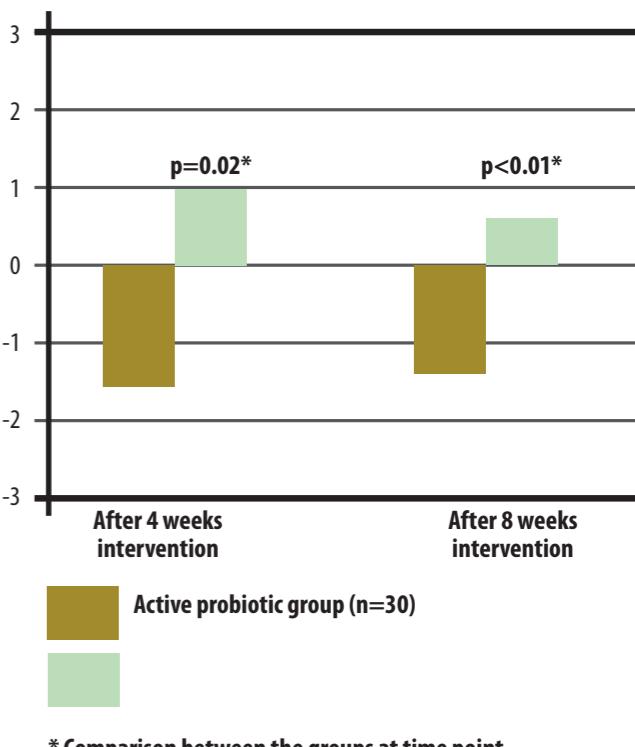


Figure 1.: Change in bloating severity from baseline to 4 weeks and from baseline to 8 weeks of probiotic intervention [6].

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