

Collagen

DuoLife COLLAGEN - 100% natural dietary supplement, intended for people wishing to be "forever young". A unique composition of active ingredients supporting the skin, bones and joints. Furthermore, plant extracts rich in silica and antioxidants, for strong hair and beautiful nails.



When?

The elasticity and resilience of the skin is the basis for a young appearance. Unfortunately, with age, the condition of the skin deteriorates along with the first signs of its aging, such as wrinkles or dryness, associated, among others, with a decrease in the amount of collagen fibres. Collagen and other connective tissue components such as hyaluronic acid, glucosamine and chondroitin are essential for the proper functioning not only of the skin, but also of cartilage and joint smear, and also have a positive effect on the well-being of hair and nails.

It is worth to reach for a supplement containing collagen, hyaluronic acid and glucosamine and chondroitin if you notice the first signs of skin aging and problems with the condition of hair and nails. Such supplementation is also recommended during the period of convalescence, after bone fractures or injuries to the joints, as well as to support the proper functioning of articular cartilage, ligaments and tendons.

How?

DuoLife COLLAGEN contains not only collagen, glucosamine, chondroitin and hyaluronic acid, but also valuable plant extracts, rich in silica (extracts from horsetail, nettle and bamboo shoots) and vitamin C (extract from acerola fruit). Furthermore, all plant extracts and mango fruits present in the product are natural sources of antioxidants.

DuoLife COLLAGEN – usage:
25-50 ml/day, before meal.

Ingredients: mango fruit puree, collagen extracted from fish skin (2500 mg/50 ml), glucosamine sulphate from crustaceans (1000 mg/50 ml), standardized acerola extract (including vitamin C), chondroitin sulphate extracted from sharks (300mg/50 ml), nettle extract (250 mg/50 ml), bamboo shoots extract standardized for silica content, horsetail extract standardized for silica content (150 mg/50 ml), hyaluronic acid (50 mg/50 ml).

Do not exceed the recommended daily dose. The product should not be used as a substitute for a varied diet. Balanced diet and a healthy lifestyle are the basis for proper functioning of human body.

Ingredients	25 ml	50 ml	100 ml
Vitamin C	101,0 mg (126%*)	202,0 mg (252%*)	404,0 mg (504%*)
Silica	75 mg	150 mg	300 mg

*NRV – reference daily intake for an average adult (8400 kJ/2000 kcal)

Why use collagen and hyaluronic acid?

- ▶ Both compounds support the proper functioning of joints^{1,2}.
- ▶ They are essential for maintaining the physiological role of articular cartilage and its regeneration^{1,2}.
- ▶ Collagen supports the barrier function of the skin, increases its density, prevents dehydration and reduces signs of ageing³.
- ▶ Hyaluronic acid has an advantageous effect on skin smoothness and appearance, supporting its moistening⁴.
- ▶ Both collagen and hyaluronic acid support the functions of sight, contributing to maintaining it in good condition⁵.

What does a combination of chondroitin sulphate and glucosamine sulphate give?

- ▶ Glucosamine plays an important role in the formation of cell membranes, bones, tendons and blood vessels and has a beneficial effect on the appearance of the skin⁶.
- ▶ Glucosamine is essential for building natural cartilage components such as chondroitin sulphate and hyaluronic acid⁶.
- ▶ The combined use of glucosamine and chondroitin brings the best results, providing support for normal bone and joint functions⁷⁻⁹.

What is the effect of silicon contained in nettle, bamboo shoots and common horsetail?

- ▶ Silicon participates in the collagen biosynthesis, so it protects nails against cracking, contributes to skin well-being, by increasing its elasticity and elimination of fine wrinkles¹⁰.
- ▶ Its level in the body decreases with age, which causes graying and weakening of hair and brittleness and fragility of nails¹¹.

What makes DuoLife COLLAGEN different?

- ▶ **The liquid form of the preparation with the preserved biological background of the components**, facilitating the release of active compounds and their absorption into the bloodstream, as well as increased absorption, translate into more efficient distribution to the place of action (beneficial effect on LADME processes*).
- ▶ **The product is preserved using IHHP™ by DuoLife** – (Innovation High Hydrostatic Process™ by DuoLife), a method based on the concept of „minimal processing“. The advantage of the method is high health quality and durability and preservation of the natural nutritional and sensory qualities, compared to products preserved by classical methods. The technological process employed is conducted at a low temperature (to protect active ingredients) and is based on the principle of synergy of multiple fixatives, allowing to maintain the highest quality of the product without using preservatives.
- ▶ **100% natural ingredients**, also standardised for the content of active substances; the collagen contained in the preparation is in the form of a water-soluble low molecular weight polypeptide hydrolysate (average 2000 Da). It is a source of amino acids, including exogenous, and their di- and tripeptides, which are well absorbed from the gastrointestinal tract. After penetrating into the bloodstream, amino acids and peptides are distributed to the skin, cartilages and other connective tissue structures, where they are a substrate for the synthesis of the natural collagen type 1 and 2, induce the synthesis of hyaluronic acid, and stimulate growth and migration of fibroblasts. The synergy of action of collagen and vitamin C components contained in the product is also valuable - vitamin C is essential for collagen synthesis in the organism⁵, hence the combined supplementation of these compounds is beneficial.
- ▶ **Formulation prepared in consideration of the principles of synergy and antagonism.**
- ▶ **The product DOES NOT CONTAIN preservatives and is GMO FREE** - the raw materials used to develop the supplement ARE NOT DERIVED from genetically modified organisms.

- ▶ **The product is GLUTEN-FREE** - can be used by people with gluten intolerance.
- ▶ **Special bottle from pharmaceutical-grade glass** - the coloured glass protects against light and temperature fluctuations, and is resistant to release of mineral substances from its inner surface.
- ▶ **Umbrella brand** - the effect of liquid form is complemented by a high naturalness index cosmetic from the DuoLife Beauty Care line - BODY BUTTER - moisturizing, smoothing, regenerating and improving skin condition.

i The references for DuoLife Liquid Form Collagen can be found on a separate binder sheet.

*LADME – is an English abbreviation describing processes to which an active substance is subjected in the body: release from the preparation form -> absorption into a bloodstream -> distribution in the body -> metabolism -> excretion

Collagen

References

1. Kumar, S., Sugihara, F., Suzuki, K., Inoue, N., & Venkateswarathirukumara, S. (2015). A double blind, placebo controlled, randomised, clinical study on the effectiveness of collagen peptide on osteoarthritis. *Journal of the Science of Food and Agriculture*, 95(4), 702-707.
2. Chojnacki, M., Kwapisz, A., Synder, M., & Szemraj, J. (2014). Osteoartroza: etiologia, czynniki ryzyka, mechanizmy molekularne. *Advances in Hygiene & Experimental Medicine/Postepy Higieny i Medycyny Doswiadczalnej*, 68.
3. Asserin, J., Lati, E., Shioya, T., & Prawitt, J. (2015). The effect of oral collagen peptide supplementation on skin moisture and the dermal collagen network: evidence from an ex vivo model and randomized, placebo controlled clinical trials. *Journal of cosmetic dermatology*, 14(4), 291-301.
4. Sato, T., Sakamoto, W., Odanaka, W., Yoshida, K., & Urishibata, O. (2002). Clinical effects of dietary hyaluronic acid on dry, rough skin. *Aesthetic Dermatology*, 12, 109-120.
5. Janda, K., Kasprzak, M., & Wolska, J. (2015). Witamina C – budowa, właściwości, funkcje i występowanie.
6. Jędrzejczyk, T., & Nowicki, T. (2008). Otrzymywanie chlorowodoru D-glukozaminy i D-glukozaminy z chitozanu.
7. Clegg: "Glucosamine, Chondroitin Sulfate and the Two in Combination for Painful Knee Osteoarthritis" D. Clegg; *The New England Journal of Medicine*, 2006, 354, 795-811
8. McAlidon T.E i wsp.: "Glucosamine and chondroitin for treatment of osteoarthritis: a systematic quality assessment and meta-analysis". *JAMA*. 2000 Mar 15;283(11):1469-75. Review
9. F. Richey i wsp.: „Structural and symptomatic efficacy of glucosamine and chondroitin in knee osteoarthritis”, *Ach. Int. Med.*; 2003,163: 1514-22
10. Prokop, P., & Astel, A. (2017). Rola suplementacji w zbilansowanym żywieniu człowieka. Cz. 1. *LAB Laboratoria, Aparatura, Badania*, 22.
11. Bojarowicz H., Dźwigulska P., *Suplementy diety. Część II. Wybrane składniki suplementów diety oraz ich przeznaczenie*, *Hygeia Public Health*, 47(4), 433-441, 2012