

Dietary supplement

Fiber

DuoLife Fiber is a dietary supplement in liquid form, containing a complex of soluble dietary fiber from as many as 4 sources as well as proprietary, branded formulas of plant extracts: ASTRAGIN® – supporting the absorption of nutrients from the digestive tract and BOSWELLIN® – promoting the reduction of inflammatory processes in the gut. The formula is composed of the highest-quality natural raw materials and is a rich source of dietary fiber. The health-promoting effects of the ingredients contained in the dietary supplement have been documented by clinical studies.



When?

Dietary fiber has a very important nutritional function, although it is not digested in the digestive tract and is not absorbed into the bloodstream. However, it has a very positive effect on many metabolic and physiological processes in the human body and is a PREBIOTIC¹⁻⁵.

DuoLife Fiber dietary supplement is intended for people who want to:

- ▶ improve the functioning of their digestive tract;
- ▶ improve the proper absorption of nutrients from the digestive tract;
- ▶ alleviate digestive problems related to disorders of the natural intestinal microflora or inflammatory problems;
- ▶ alleviate constipation;
- ▶ maintain a normal weight with a product that facilitates weight loss, helping to reduce appetite and ensure a prolonged feeling of fullness;
- ▶ follow the so-called LOW FODMAP diet;
- ▶ maintain normal blood glucose and cholesterol levels;
- ▶ support optimal blood vessel health and normal blood pressure;
- ▶ help cleanse the body of accumulated toxins and support antioxidant processes.

How?

DuoLife Fiber contains 100% natural ingredients, based on a high content of soluble, branded dietary fiber and additional components such as ASTRAGIN® – a proprietary formula of plant extracts with notoginseng (*Panax notoginseng*) and Mongolian milkvetch (*Astragalus membranaceus*) as well as BOSWELLIN® – a proprietary formula of Indian frankincense extract (*Boswellia serrata*).

**DuoLife Fiber – directions for use:**

Adults over the age of 18: 50 ml a day with a meal. It is recommended to drink an additional glass of water or another beverage. Do not exceed the recommended maximum daily serving.

The product should always be taken with the proper amount of fluids, as insufficient fluid intake may cause constipation.

Leave **a gap between taking medications and taking a serving of fiber**, as fiber-rich food may reduce the absorption of medications from the gastrointestinal tract.

It is recommended to use medications 1 hr before or at least 2 hrs after consuming fiber.



Ingredients: apple juice, apple puree, lemon juice from concentrate, SUNFIBER®* – proprietary formula of soluble fiber made from Indian guar beans (*Cyamopsis tetragonolobus*) (galactomannan fiber), FIBREGUM™** – proprietary formula of soluble acacia fiber, yuzu fruit juice (*Citrus junos*), citrus pectin, BOSWELLIN®*** – proprietary formula of Indian frankincense extract (*Boswellia serrata*) 10:1 standardized for 30% boswellic acid content, konjac root extract (*Amorphophallus konjac*) standardized for 95% glucomannan content, ASTRAGIN® – proprietary formula of notoginseng extract (*Panax notoginseng*) and Mongolian milkvetch (*Astragalus membranaceus*).

* SUNFIBER® is a registered trademark of Taiyo Kagaku Co., Ltd.

** FIBREGUM™ is a trademark of Nexira.

*** BOSWELLIN® is a trademark of Sabinsa Europe GmbH.

Ingredient contents in a daily serving of the product	50 ml
SUNFIBER®*	3.6 g
FIBREGUM™**	1 g
Citrus pectin	150 mg
BOSWELLIN®***	100 mg
Konjac root extract	50 mg
ASTRAGIN®	35 mg
Total content of dietary fiber	4.3 g

Two DuoLife products containing fiber are available: DuoLife Fiber and DuoLife Fiber Powder – what is the difference between them?

DuoLife Fiber supports the proper functioning of the digestive tract and the absorption of other nutrients from the diet. It also helps to fight inflammation in the gut. It is prepared in liquid form for immediate consumption.

DuoLife Fiber Powder supports the optimal functioning of the digestive tract, immune and nervous system. It is based on ingredients with significant prebiotic effects. It can be added to liquids or meals. It facilitates a LOW FODMAP diet.

The herbal extract contained in the formula has a **ratio of 10:1 next to its name. This is the so-called DER – what does it mean?**

The DER (*drug extract ratio*) specifies the number of milligrams of the plant material used to obtain one milligram of the extract.

How much fiber do we consume, and how much should we consume?

According to the World Health Organization (WHO), the recommended daily intake of dietary fiber for adults should be 20–40 g⁶. The Food and Nutrition Institute in Poland suggests that adults should consume 30–35 g of fiber per day. Another daily intake recommendation is the consumption of 14 g of fiber per 1000 kcal per day¹. Meanwhile, the average daily fiber consumption in Poland in 2016 was only 15.4 g per person⁷.

Scientific observations show that societies which consume more dietary fiber (up to 30–40 g/d) have a lower rate of digestive, circulatory and immune problems along with related health problems^{1,7}.

DuoLife Fiber is a rich source of soluble dietary fiber. What is the difference between soluble and insoluble fiber?

There are two groups of dietary fiber: soluble and insoluble, with slightly different physiological functions¹. Soluble fiber consists mainly of pectins, gums, plant mucilages, some hemicelluloses, beta-glucans and other water-soluble compounds.

Soluble fiber:

- ▶ swells in the gut when exposed to water and increases the density of the chyme;
- ▶ prolongs intestinal transit time;
- ▶ is a nutrient for beneficial gut bacteria, stimulating the development of the bacterial microflora of the large intestine (prebiotic effect);
- ▶ increases the feeling of fullness, helping to maintain a healthy weight and promoting weight loss;
- ▶ helps to maintain normal levels of cholesterol and triglycerides in the blood, supporting blood vessel function and optimal blood pressure; The effect of promoting the optimal functioning of the circulatory system is mainly shown by the soluble fiber group;
- ▶ assists in delaying the process of glucose absorption in the small intestine and reducing insulin secretion, which helps to normalize blood sugar levels;
- ▶ loosens the stool, which helps to prevent constipation;
- ▶ promotes the absorption of minerals from the gut;
- ▶ has a positive effect on the body's immunity.

Insoluble fiber mainly consists of cellulose and lignins. Its primary function is to support peristalsis of the digestive tract and increase stool mass.

What is the LOW FODMAP diet? Why do the ingredients of DuoLife Fiber support the LOW FODMAP diet?

It is a diet with a beneficial low content of poorly absorbed and quickly fermenting short-chain carbohydrates with high osmotic pressure (such as lactose, fructose and polyols). As a result, it helps to maintain optimal digestive tract health, contributing to the minimization of ailments such as flatulence, bloating and intestinal discomfort, especially in people with irritable bowel syndrome or lactose intolerance.

The fiber-based formulas contained in the product, particularly SUNFIBER®, support the LOW FODMAP diet because they are **slowly fermented** and gentle on the gut. The products of fiber fermentation are slowly released over time, so using SUNFIBER® helps to minimize the flatulence and bloating associated with intestinal fermentation that is too fast (*Figure 1*).

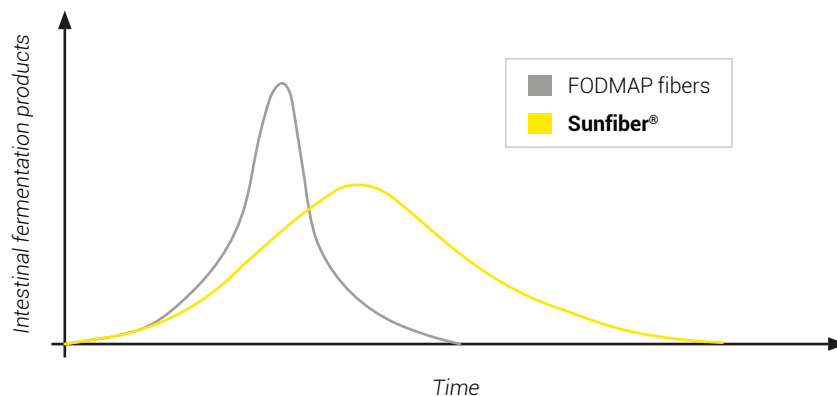


Figure 1: SUNFIBER® as a beneficial fiber in the LOW FODMAP diet.

The proprietary formulas BOSWELLIN®*** and ASTRAGIN® support the functioning of the gut and the beneficial properties of the fibers SUNFIBER®* and FIBREGUM™**.

The fiber contained in **SUNFIBER®** and **FIBREGUM™** promotes optimal functioning of the digestive tract, supports intestinal peristalsis, regulates the bowel movements, and helps to prevent flatulence, bloating and chronic constipation⁸. It supports the multiplication of beneficial gut bacteria *Bifidobacterium* and *Lactobacillus* and the production of short-chain fatty acids in the large intestine (so-called postbiotics)⁹.

SUNFIBER® is an organic, partially hydrolysed gum made from Indian guar beans, based on galactomannan. **However, it is not identical to the widely used guar gum.** In contrast to “classic” guar gum, it has a lower molecular weight (20–50 kDa versus 300–8000 kDa for unhydrolyzed gum); therefore, it is characterized by a much lower viscosity (2000 times lower), which facilitates the preparation of a formula that is easy to consume and safe even in large servings. Moreover, unlike guar gum, it is obtained using a gentle enzymatic hydrolysis process at a low temperature (37°C) from only the endosperm of the seeds. **SUNFIBER® has clinically and preclinically documented beneficial PREBIOTIC health-promoting effects;** it is characterized by **total slow fermentation and is gentle on the gut.**

FIBREGUM™ is a proprietary formula of soluble **acacia fiber, obtained from acacias growing in Africa.**

Boswellic acids from the proprietary formula of Indian frankincense extract (*Boswellia serrata*) – **BOSWELLIN®** – help to fight inflammation in the bowel, helping to alleviate the symptoms associated with inflammatory bowel ailments^{10,11}.

ASTRAGIN® is a patented formula (Patent US8197860 B2, Patents pending US 13/444765, US 13/444770, US 12/424193 US 12/345218) **with biological effects documented by 16 in-vitro studies and 8 in-vivo studies**^{12–14}. **According to the results of these studies,** the synergistic formula:

- ▶ **promotes the absorption of peptides, amino acids, fatty acids, vitamins and phytonutrients from the gastrointestinal tract;** therefore, it is beneficial to take DuoLife Fiber with a meal and other DuoLife dietary supplements, as well as with shakes from the Shape Code® range;
- ▶ supports the regeneration of damaged intestinal epithelium;
- ▶ helps to fight inflammation in the gut;
- ▶ assists the function and multiplication of gut microflora;
- ▶ supports the immune functions of the intestinal epithelium.

The glucomannans from the konjac root extract and citrus pectins are also included in the soluble fiber group and demonstrate valuable health-promoting properties.

The glucomannans contained in the product have been obtained from the root of the *Amorphophallus konjac*¹⁵ (known as konjac) and demonstrate all the health-promoting properties characteristic of soluble dietary fiber. Glucomannans bind water in the digestive system, promoting a prolonged feeling of fullness, making them especially useful for weight control and weight loss^{16,17}.

The pectins obtained from citrus fruits help to lower the levels of cholesterol and lipids in the blood and reduce the absorption of glucose and the concentration of insulin in the plasma. Moreover, pectins bind heavy metals and form a protective barrier for the intestines against pathogenic microflora. It has also been confirmed that they help the body to fight inflammation¹⁸.

What distinguishes DuoLife Fiber?

- ▶ **100% natural ingredients** with a very high content of soluble fiber;
- ▶ Composition **based on branded ingredients with clinically documented health-promoting effects**;
- ▶ As **many as 4 sources of soluble dietary fiber**;
- ▶ **Additional components** based on plant extracts, **supporting the absorption of nutrients from the digestive tract and the fight against inflammatory processes in the gut**;
- ▶ The product is **suitable for the LOW FODMAP diet**;
- ▶ **Synergistic** action of components;
- ▶ **Convenient form of use** – liquid ready for immediate consumption;
- ▶ The formula **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 as well as preservation of the natural nutritional and sensory values, compared to products preserved using conventional methods. The technological process employed is conducted at a low temperature (to protect the active ingredients) and is based on the principle of synergising natural processes of preservation, allowing for the highest product quality to be maintained without adding preservatives.
- ▶ The product **CONTAINS NO** artificial **fillers and is GMO free**;
- ▶ The formula **contains no added artificial flavours and fragrances**;
- ▶ The product is **GLUTEN-FREE** – it is suitable for people with gluten intolerance;
- ▶ The product is **suitable for vegans and vegetarians**;
- ▶ A special **bottle made from pharmaceutical-grade glass** – the dark glass protects against light and temperature fluctuations, and is resistant to the release of soluble minerals into the formula from the inner surface of the bottle.



When you buy DuoLife Fiber and/or DuoLife Fiber Powder products, you support and contribute to the development of the World Healthy Living Foundation.

The WHLF implements diverse educational solutions with the help of experts to deliver publications, lectures and one-day practical workshops aimed at promoting health as a process that depends on our lifestyle and state of mind. The WHLF proves that we have complete control over our own health and that our everyday choices play a key role.

Use the Experts' knowledge and experience! You can find more info at: <http://www.whlf.eu>



WORLD HEALTHY LIVING
FOUNDATION

The Fiber references can be found on a separate binder sheet.

References

1. Anderson, J. W., Baird, P., Davis, R. H., Ferreri, S., Knudtson, M., Koraym, A., ... & Williams, C. L. (2009). Health benefits of dietary fiber. *Nutrition reviews*, 67(4), 188-205.
2. Lasota, B. (2014). Żywieniowe i funkcjonalne właściwości błonnika pokarmowego. *Journal of NutriLife*, 7.
3. Kaczmarczyk-Sedlak I., Ciołkowski A. (2017) Zioła w medycynie. Choroby układu pokarmowego. PZWL Wydawnictwo Lekarskie.
4. Kaczmarczyk-Sedlak I., Ciołkowski A. (2019) Zioła w medycynie. Choroby układu krążenia. PZWL Wydawnictwo Lekarskie.
5. Slavin, J. L. (2005). Dietary fiber and body weight. *Nutrition*, 21(3), 411-418.
6. Bojarowicz, H., & Dźwigulska, P. (2012). Suplementy diety. Część II. Wybrane składniki suplementów diety oraz ich przeznaczenie. *Hygeia Public Health*, 47(4), 433-441.
7. Kołodziejczyk, P., & Michniewicz, J. (2018). Ziarno zbóż i produkty zbożowe jako źródła błonnika pokarmowego. *Żywność: nauka-technologia-jakość*, (3 (116)), 5-22.
8. Min, Y. W., Park, S. U., Jang, Y. S., Kim, Y. H., Rhee, P. L., Ko, S. H., ... & Chang, D. K. (2012). Effect of composite yogurt enriched with acacia fiber and Bifidobacterium lactis. *World Journal of Gastroenterology: WJG*, 18(33), 4563.
9. Pylkas, A. M., Juneja, L. R., & Slavin, J. L. (2005). Comparison of different fibers for in vitro production of short chain fatty acids by intestinal microflora. *Journal of medicinal food*, 8(1), 113-116.
10. Siddiqui, M. Z. (2011). Boswellia serrata, a potential antiinflammatory agent: an overview. *Indian journal of pharmaceutical sciences*, 73(3), 255.
11. Anthoni, C., Laukoetter, M. G., Rijcken, E., Vowinkel, T., Mennigen, R., Muller, S., ... & Krieglstein, C. F. (2006). Mechanisms underlying the anti-inflammatory actions of boswellic acid derivatives in experimental colitis. *American Journal of Physiology-Gastrointestinal and Liver Physiology*, 290(6), G1131-G1137.
12. Chang, T. C., Huang, S. F., Yang, T. C., Chan, F. N., Lin, H. C., & Chang, W. L. (2007). Effect of ginsenosides on glucose uptake in human Caco-2 cells is mediated through altered Na⁺/glucose cotransporter 1 expression. *Journal of agricultural and food chemistry*, 55(5), 1993-1998.
13. Wang, C. W., Huang, Y. C., Chan, F. N., Su, S. C., Kuo, Y. H., Huang, S. F., ... & Chang, T. C. (2015). A gut microbial metabolite of ginsenosides, compound K, induces intestinal glucose absorption and Na⁺/glucose cotransporter 1 gene expression through activation of cAMP response element binding protein. *Molecular nutrition & food research*, 59(4), 670-684.
14. Lee, S. Y., Tsai, W. C., Lin, J. C., Ahmetaj-Shala, B., Huang, S. F., Chang, W. L., & Chang, T. C. (2017). Astragaloside II promotes intestinal epithelial repair by enhancing L-arginine uptake and activating the mTOR pathway. *Scientific reports*, 7(1), 1-11.
15. Nishinari, K. (2000). Konjac glucomannan. *In Developments in food science* (Vol. 41, pp. 309-330). Elsevier.
16. Onakpoya, I., Posadzki, P., & Ernst, E. (2014). The efficacy of glucomannan supplementation in overweight and obesity: a systematic review and meta-analysis of randomized clinical trials. *Journal of the American College of Nutrition*, 33(1), 70-78.
17. Keithley, J. K., Swanson, B., Mikolaitis, S. L., DeMeo, M., Zeller, J. M., Fogg, L., & Adamji, J. (2013). Safety and efficacy of glucomannan for weight loss in overweight and moderately obese adults. *Journal of obesity*, 2013.
18. Wikiera, A., Irla, M., & Mika, M. (2014). Prozdrowotne właściwości pektyn. *Advances in Hygiene & Experimental Medicine/Postępy Higieny i Medycyny Doswiadczalnej*, 68.