

Food supplement

DUOLIFE SHAPE CODE® Protein Shake

DUOLIFE SHAPE CODE® Protein Shake is a food supplement in the form of a protein powder shake containing three types of whey protein: whey protein concentrate (WPC), whey protein isolate (WPI) and whey protein hydrolysate (WPH), as well as clinically documented ingredients – Palatinose™* and WATTS'UP®**.



When?

Protein is a valuable building material for nervous and glandular tissue, included in body fluids and secretions such as blood, enzymes, hormones, and participates in important regulatory and transport processes¹.

Protein is also one of the basic elements of the diet – especially for people who play sports. In people who regularly train at the gym, the demand for protein increases. In people who are primarily concerned with developing more muscle mass, protein is the building block from which the body can synthesise proteins and build muscle. In people who are thinking about weight loss, protein helps prevent excessive muscle tissue loss and promotes the reduction of hunger^{2,3}.

When and whether to supplement protein at all depends largely on what our diet is like. A well-calculated energy balance is the basis for shaping our figure. However, we are well aware that this is not always possible. This is where protein supplements come to the rescue to supplement caloric needs.

How can you do it?

DUOLIFE SHAPE CODE® Protein Shake food supplement has the form of a protein shake powder with vanilla and cream flavour. It is intended to be used as a supportive preparation for those who:

- ▶ for various reasons, do not have the required amount of protein in their daily diet (with meals);
- ▶ practice strength, figure, endurance, and speed sports;
- ▶ wish to maintain correct body weight;
- ▶ want to keep normal blood cholesterol level;
- ▶ have digestive problems (e.g. meat and egg intolerance);
- ▶ have suffered muscle and bone injuries;
- ▶ are overweight.

DUOLIFE Protein Shake supports:

- ▶ the process of building lean muscle mass;
- ▶ body weight control;
- ▶ body fat burning;
- ▶ metabolic processes;
- ▶ post-workout recovery;
- ▶ maintenance of normal blood cholesterol level;
- ▶ recovery after muscle and bone injuries;
- ▶ maintaining optimal efficiency of exercises;

* Isomaltulose (Palatinose™) is a source of glucose and fructose.

** WATTS'UP® is a trademark of BioActor B.V.

- ▶ the reduction of muscle protein catabolism;
- ▶ weight loss (helps to provide satiety).

i DUOLIFE Protein Shake – how to use:

Add two flat scoops of the powder (35 g in total) to 200 ml of **cool water or your favourite plant-based drink** and shake vigorously to prevent the contents from settling to the bottom. Drink your shake with vanilla and cream flavour 1 to 2 times a day. It is recommended to use immediately after workout. Do not exceed the recommended daily intake. The product cannot be a substitute for a varied diet. Use the shake as part of a balanced and varied diet combined with an active lifestyle.

i Note:

DUOLIFE Protein Shake is prepared with WATER or PLANT-BASED DRINK.

i DUOLIFE Protein Shake can be combined with the following products:

ProStik®, DUOLIFE Collagen, DUOLIFE Collagen Powder, ProSlimer®, DUOLIFE My Blood, DUOLIFE Ashwagandha, DUOLIFE Spirulina, FIZZY EASY® L-arginine Complex and other FIZZY EASY® products.

i Ingredients: Whey protein mix: WPC – whey protein concentrate (from **milk**), WPI – whey protein isolate (from **milk**), WPH – whey protein hydrolysate (from **milk**), sweetener: isomaltulose (Palatinose™)*, cream flavour, vanilla flavour, salt, WATTS'UP®** – a proprietary sweet orange fruit (*Citrus sinensis*) formula standardised for hesperidin content, sweetener: steviol glycosides from Stevia.

Might contain cereal derivatives containing gluten, derivatives of sesame, eggs, soya, nuts, crustaceans.

NUTRITIONAL VALUE

Number of portions in a package: 20

| | For 35 g of powder (1 portion) | Per 70 g of powder (2 portions) | Per 100 g of powder |
|--------------------------|---------------------------------------|--|----------------------------|
| Energy | 142 kcal/594 kJ | 284 kcal/ 1198 kJ | 406 kcal / 1699 kJ |
| Fat, including: | 2 g | 4 g | 5.8 g |
| saturated fatty acids | 1.4 g | 2.8 g | 3.9 g |
| Carbohydrate, including: | 6.9 g | 13.8 g | 19.6 g |
| sugars | 6 g | 12 g | 17.2 g |
| Protein | 24.2 g | 48.3 g | 69 g |
| Salt | 0.21 g | 0.42 g | 0.6 g |

ADDITIONAL INFORMATION

| | For 35 g of powder (1 portion) | Per 70 g of powder (2 portions) | Per 100 g of powder |
|---|---------------------------------------|--|----------------------------|
| WATTS'UP®** – a proprietary sweet orange fruit (<i>Citrus sinensis</i>) formula | 200 mg | 400 mg | 571 mg |
| Including hesperidin | 180 mg | 360 mg | 514 mg |
| isomaltulose (Palatinose™)* | 4.2 g | 8.4 g | 12 g |
| Branched-chain amino acids, BCAAs | 5.6 g | 11.2 g | 16 g |

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What is WATTS'UP®**?

WATTS'UP®** is a proprietary formula of all-natural Citrus sinensis sweet orange fruit extract standardised for hesperidin in its most active conformation. It is produced from sweet orange fruit in a proprietary gentle extraction process without any auxiliary substances. The formula has **clinically proven effects** on exercise performance in moderately trained individuals^{4,5}. The proprietary formula was clinically tested to the gold standard of randomised, double-blind, placebo-controlled studies.

The daily dose of WATTS'UP® formula used in clinical trials (400 mg) is contained in 2 portions (70 g) of DUOLIFE Protein Shake.**

The primary objective of the clinical trial, the results of which were published in 2021 (ClinicalTrials.gov: NCT03044444) **was to evaluate the effect of a 400 mg dose of WATTS'UP®** at peak power output during the Wingate cycle test*** conducted in moderately physically active individuals.** Ninety-two subjects (men and women) participated in the study: 30 subjects took 400 mg of WATTS'UP®** per day orally, 31 subjects took 500 mg of WATTS'UP®**, and 31 subjects took 500 mg of maltodextrin per day (as placebo). The study lasted for 8 weeks. At baseline, Wingate's anaerobic test*** was performed. The test was repeated after 4 and after 8 weeks⁴.

*****Wingate's anaerobic test** is widely used to measure anaerobic power output. It was conducted using Wattbike Pro (Wattbike Ltd, Nottingham, UK). The Wattbike resistance system was equipped with an air resistance flywheel with a shift lever adjustable from 1 (low) to 10 (high).

The tests were performed at the High-Performance Center at TopSport Limburg in Sittard.

Wingate's anaerobic test*** showed increased mean anaerobic power in the group taking 400 mg of WATTS'UP®**, which was significantly different (**p<0.001) compared to the placebo group (Figure 1).

Furthermore, peak strength during the first 5 seconds of exercise was shown to significantly increase after 4 weeks of supplementation with 400 mg of WATTS'UP®** compared to placebo (p*=0.020), corresponding to a 7.5% increase (Figure 2)⁴.

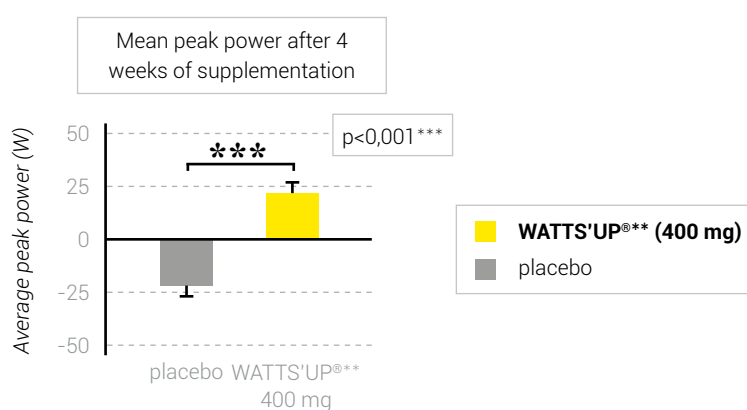


Figure 1: Effect of a 4-week WATTS'UP®** supplementation on mean peak power. Based on ¹

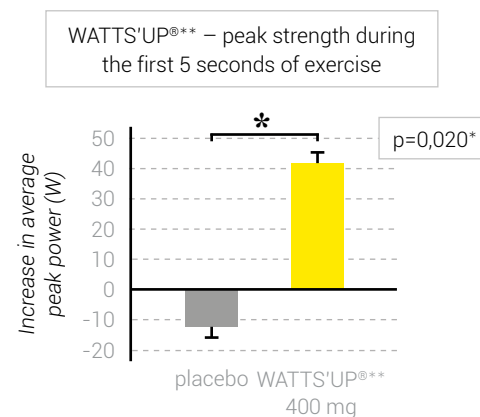


Figure 2: Peak power increase during the first five seconds of activity. Based on ¹.

Why is protein important in our diet?

Protein is one of the three primary macronutrients in the diet (along with fat and carbohydrates)¹.

Proteins that provide an adequate supply of all essential amino acids are called **complete proteins**. This group includes proteins contained in animal products, such as eggs, meat of slaughter animals, poultry, fish and dairy products⁶.

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It is considered safe to consume even twice as much protein as is recommended at the RDA standard level (**0.9 grams of protein per kilogram of body weight**). This means that 15% to 25% of daily energy intake may come from protein. However, protein intake can also be above or below this range as it depends on age, gender and level of physical activity¹.

Whey protein is a complete, high-quality protein that contains all the essential amino acids. Moreover, it is very easily digestible and rapidly absorbed from the intestines compared to other types of protein⁷. This makes it one of the best sources of protein.

A number of clinical studies confirm the beneficial effects of whey protein for people who regularly exercise⁸⁻¹¹. Strength training combined with the consumption of high-protein foods or protein supplements has been shown to promote the building of muscle mass¹². High-quality protein sources, such as whey rich in **branched-chain amino acids (BCAAs)**, including valine, leucine, and isoleucine, are particularly effective. These amino acids are used by the body for muscle protein synthesis. Additionally, due to its properties, leucine controls the synthesis processes, promoting lean muscle growth. BCAAs are also involved in glycaemic control and carbohydrate metabolism, reducing post-workout muscle fatigue.

In terms of lean muscle mass building, whey protein has been shown to be a slightly better choice compared to other types of protein, such as casein or soya¹³⁻¹⁵. A study published in the *International Journal of Sport Nutrition and Exercise Metabolism* found that "whey protein supplementation during resistance training provides some benefits over resistance training alone." Furthermore, men who supplemented with whey protein demonstrated greater relative gains in lean tissue².

Moreover, increased protein intake is a well-known strategy to support weight loss¹⁶⁻¹⁸.

Increased protein intake can promote fat loss by:

- ▶ suppression of appetite, leading to reduced calorie intake³;
- ▶ increasing metabolism, helping you burn more calories^{19,20};
- ▶ support in maintaining muscle mass during weight loss²¹.

Whey protein has been shown to be particularly effective and may have a better effect on fat burning and the feeling of satiety compared to other types of protein²²⁻²⁶.

DUOLIFE SHAPE CODE® Protein Shake contains 3 types of whey protein: concentrate (WPC), isolate (WPI) and hydrolysate (WPH).

What is the difference between WPC, WPH and WPI proteins?

There are three main types of whey protein powders: **concentrate (WPC), isolate (WPI) and hydrolysate (WPH)**.

WPC (whey protein concentrate):

- ▶ The absorption of WPC begins **APPROXIMATELY ONE HOUR** after consumption and **LASTS ROUGHLY ANOTHER TWO HOURS**.
- ▶ It contains up to 80% protein by weight. The remaining 20% of the whey concentrate powder contains carbohydrates and fats.
- ▶ Concentrates work best for those who do amateur training or just begin their adventure with protein supplements.
- ▶ It contains large amounts of essential amino acids necessary for muscle growth⁷.
- ▶ It can be used as a daily protein supplement.
- ▶ It is recommended to consume it between meals, after training, or before bed.

WPI (whey protein isolate):

- ▶ WPI digestion begins **APPROXIMATELY WITHIN AN HOUR after ingestion, but absorption time is about half that of WPC**.
- ▶ Its production is based on even more thorough filtration (ultrafiltration and microfiltration) than in WPC, and thus the amount of protein in it reaches up to 95%. Thanks to the high protein concentration, the isolate contains even more essential amino acids than the concentrate.

- ▶ As WPI is absorbed quickly, it is not recommended for use at night.
- ▶ WPI has a high BV (biological value) and is therefore efficiently digested.

WPH (whey protein hydrolysate):

- ▶ Its effective digestion starts virtually **IMMEDIATELY AFTER CONSUMPTION** and lasts **FOR JUST ONE HOUR**. During this time, muscles receive a dose of nutrients which can significantly improve their regeneration after training.
- ▶ It is considered a „pre-digested“ form of whey protein because it has already undergone partial hydrolysis, a process necessary for the body to absorb protein. WPH does not have to be as intensively digested as the other two forms of whey protein.
- ▶ Whey protein contained in WPH is best absorbed and its content in the pure product is 100%.
- ▶ WPH is best for stimulating muscle growth and has a very fast absorption.
- ▶ It is a type of protein especially recommended for people building muscle mass and reducing fat to a very low level.

Similarly to WPC and WPI, it should be a supplement and a way to replenish protein deficiency.

Comprehensive supplementation of WPC, WPH and WPI proteins is valuable for the body.

The combination of three types of whey protein in **DUOLIFE SHAPE CODE® Protein Shake** supplement creates many interesting possibilities for physically active people. Thanks to various protein fractions, the product can be used virtually at any time of day, **ALTHOUGH THE BEST OPTION IS POST-WORKOUT INTAKE**. After intake of the protein mixture contained in **DUOLIFE SHAPE CODE® Protein Shake**, the body can remain in the anabolic state even for several hours. This is due to different kinetics of digestion and absorption of particular protein fractions. The continuous flow of amino acids obtained with the mixture also means faster regeneration, prevention of muscle tissue breakdown, and support for immune functions. With the synergistic effect of 3 types of proteins, **DUOLIFE SHAPE CODE® Protein Shake** works perfectly for both professionals and those who exercise for recreational purposes (Figure 3).

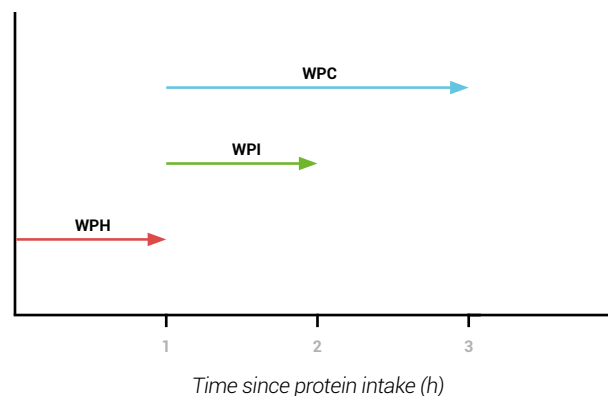


Figure 3: Beneficial synergistic effects of a mixture of 3 types of whey protein – optimal supply up to 3 h after training.

Palatinose™* (isomaltulose) is a sweetener that is especially valuable for people who practice sports.

Palatinose™* is a naturally-derived carbohydrate often referred to as a „smart“ carbohydrate that delivers energy in a more sustainable way compared to other sweeteners due to its extremely low glycaemic index. An interesting feature is that it is the first carbohydrate that does not cause tooth decay²⁷.

Palatinose™* occurs naturally in honey and cane sugar and has a slower energy release compared to sucrose. Palatinose™* is digested much more slowly (than sucrose or maltose) by small intestinal enzymes, and due to its slow but complete release in the intestine, it fully provides carbohydrate energy (4 kcal/g) in a more balanced

* Isomaltulose (Palatinose™) is a source of glucose and fructose.

way and for a longer period of time. At the same time, it provides the same amount of carbohydrate energy as sucrose (Figure 4).

This property translates into the fact that **the body will be supported energetically during exercise in a slower, steady and prolonged manner.**

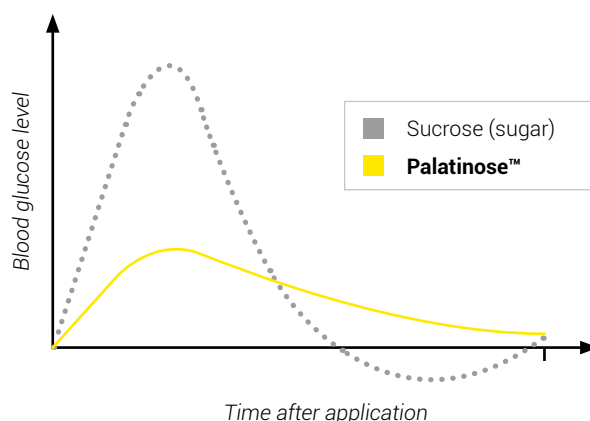


Figure 4: Comparison of carbohydrate energy release rates for sucrose (sugar) and Palatinose™.

Clinical studies²⁸ suggest that Palatinose™* also promotes optimal fat release from tissues, may support exercise performance and also supports optimal blood glucose levels.

Stevia is another valuable sweetener used in DUOLIFE Protein Shake.

Steviol glycosides are a completely natural sweetener, **have zero calorific value** and are not absorbed in the human digestive tract²⁹. Stevia **shows many health-promoting properties**, such as lowering blood pressure³⁰. Scientific research has shown that stevia can be safely used in everyday diet. There is no doubt that introducing stevia in the Polish food market is **the first step towards changing bad dietary habits** associated with sugar abuse in everyday diet³¹.

What makes DUOLIFE Protein Shake stand out?

- ▶ **Ingredients with clinical studies – Palatinose™* and WATTS'UP®**** clinically proven to promote increased power and performance during physical activity.
- ▶ **It contains as many as three types of whey protein: WPC, WPI and WPH.**
- ▶ **The raw materials don't contain gluten and soya** – the raw materials used in the product don't contain gluten and soya. However, due to the fact that they are present in the production line, the product might contain them.
- ▶ **The product DOES NOT CONTAIN preservatives, artificial colourants, artificial sweeteners, artificial fillers and IS GMO-FREE** – the raw materials used to develop the supplement ARE NOT DERIVED from genetically modified plants or animals fed with genetically modified feed.
- ▶ It can be consumed **by vegetarians.**

DUOLIFE Protein Shake is available in:

- ▶ **700 g PACKS** containing **20 PORTIONS** in **ONE PACK – DUOLIFE Protein Shake 700 g.**

i The references for DUOLIFE Protein Shake are available on a separate binder sheet.

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