

KETONE SUPPORT FOR BRAIN AND BODY[‡]



DOUGLAS
LABORATORIES®

PUSHING POTENTIAL.

[‡]These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

FUEL FOR THOUGHT

Did you know that ketones offer important respiratory fuel for the brain and body? Created from fatty acids, ketones act as the main reserve fuel for the brain when glucose is low and in times of very high energy demand, such as prolonged exercise.

Ketones **cross the blood-brain barrier** and have been shown to:

- Serve as the **main reserve fuel for neuroprotection**[‡]
- **Promote oxidative defense** and NAD⁺/NADH ratio, and **support mitochondrial respiration**[‡]
- Act as an **energy source for the brain**[‡]
- Enhance **cerebral blood flow**[‡]

NUTRITIONAL KETOSIS

When ketones are abundant in the blood, such as during caloric restriction or a ketogenic diet, the brain can **obtain up to 60% of its energy** from their oxidation. This condition is called **nutritional ketosis**, and can be maintained for years.

Nutritional ketosis can be achieved through increasing plasma ketone levels by:

- Supporting **endogenous ketone** production with ketogenic diets and supplemental ketogenic fats, like medium-chain triglycerides (MCTs)[‡]
- Direct supplementation with **exogenous ketones**[‡]
- A combination of both strategies

Note: Nutritional ketosis is different from metabolic acidosis/pathological ketosis, which can arise in type 1 diabetes due to severe insulin deficiency.



FUEL FOR PERFORMANCE

Ketones not only provide **fuel for the brain**, but can also **support active adults**. Ketone levels may be increased either through stimulating their production within the body (**endogenous ketones**) or through direct oral delivery (**exogenous ketones**).

Research studies involving athletes indicate that ketones:¹

- **Increase fat oxidation** in the muscle during exercise[‡]
- **Act as an alternative fuel**, even in the presence of carbohydrates and insulin[‡]

MCTs are fatty acids that can produce high levels of β -hydroxybutyrate (BHB), a ketone body that is transported to other tissues and converted to acetyl-CoA to **produce energy for the brain and muscles**. The use of MCTs in weight management[†] has been shown to be an effective supplement during energy restriction and fat metabolism.[‡]

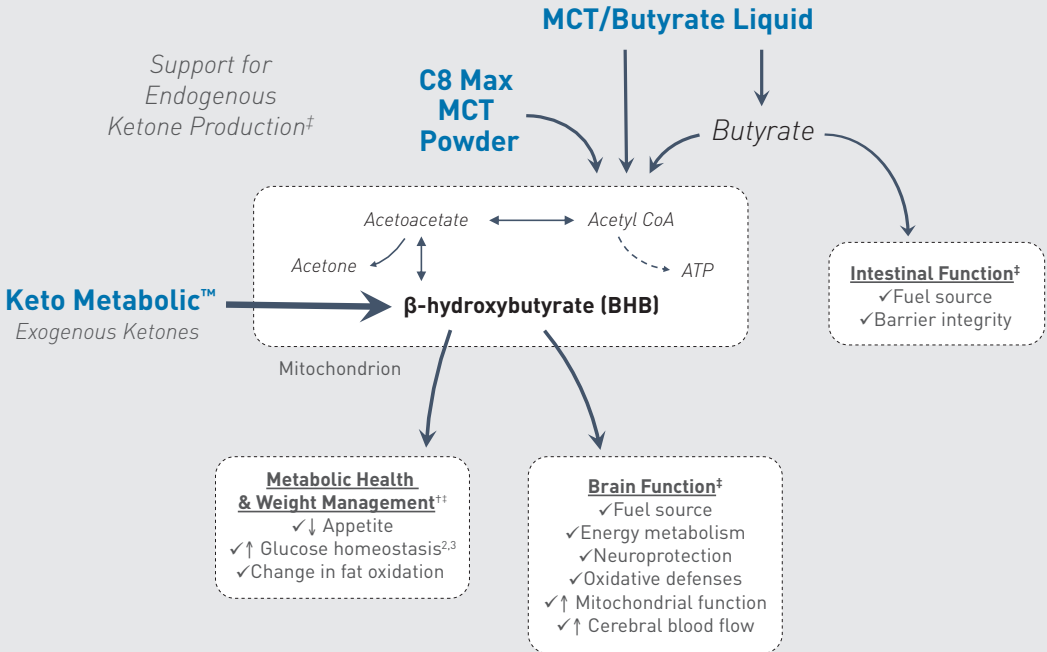


1. Evans et al. *J Physiol.*, 2017, 595(9):2857.

[†]Provides weight management support as part of a healthy lifestyle with a reduced-calorie diet and regular exercise.

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MECHANISMS OF KETOGENIC SUPPORT



Douglas Laboratories® provides evidence-based, complementary options for effective ketone augmentation and associated cognitive and metabolic health benefits.[‡]

- The MCTs in **C8 Max MCT Powder** and **MCT/Butyrate Liquid** increase **endogenous ketone** production by elevating acetyl CoA, the body's designated ketogenic precursor. In addition to promoting endogenous ketone production, butyrate serves as a fuel source for the intestinal tract and offers support for barrier function.[‡]
- In contrast to MCT and butyrate, **Keto Metabolic™** delivers **exogenous ketones** directly, in the form of β-hydroxybutyrate, the most abundant of the three ketones (which include acetoacetate and acetone) present during nutritional ketosis.[‡]

2. Occurs with endogenous ketones. More research is needed to determine whether exogenous ketones emulate this effect.

3. MCT supplementation moderates postprandial glucose when given before meals.

[†]Provides weight management support as part of a healthy lifestyle with a reduced-calorie diet and regular exercise.



Keto Metabolic™ Exogenous Ketones

FUEL FOR
MIND AND
MUSCLES

Clinically shown to support:



Weight
Management^{††}



Athletic
Endurance[‡]



Brain
Health[‡]

UNIQUE FEATURES

- Offers **10 g of BHB** per serving as a source of **exogenous ketones**
 - BHB is the predominant circulating ketone body and serves as an alternative **energy source for the brain and muscles**.
- A **direct source of dietary ketones** to support ketosis, satiety, athletic endurance, and brain and muscle function[‡]
- Suitable for patients on **low-carbohydrate, ketogenic diets**
- **Caffeine-free**, strawberry-lemonade drink mix
- Gluten-free and non-GMO

SUPPLEMENT FACTS PL

Serving Size: 1 Scoop

Suggested Usage: 1 daily

Amount Per Serving

Calories	5
Total Carbohydrate.....	1 g
Calcium (from calcium beta-hydroxybutyrate)	600 mg
Magnesium (from magnesium beta-hydroxybutyrate).....	350 mg
Sodium (from sodium beta-hydroxybutyrate)	900 mg
Beta-Hydroxybutyrate	10 g
(from a blend of calcium beta-hydroxybutyrate, magnesium beta-hydroxybutyrate, and sodium beta-hydroxybutyrate)	

Other ingredients: Citric acid, natural strawberry and lemonade flavors, malic acid and purified stevia leaf extract

Take 1 scoop daily dissolved in 8-10 oz of liquid before or between meals.

FORMULA	SIZE	S.R.P.	PHYS. PRICE
57739P	300 g	\$67.90	\$33.95

CLINICAL EVIDENCE

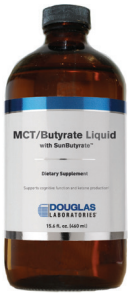
In a randomized, controlled crossover trial involving 15 healthy subjects:⁴

- Consumption of ketogenic esters after an overnight fast resulted in **significantly decreased ghrelin, glucagon-like peptide 1 (GLP-1), and peptide tyrosine (PYY)**, compared to a dextrose control[‡]
- **Decreased hunger and desire to eat** were reported[‡]

4. Stubbs et al. *Obesity*, 2017.

[†]Provides weight management support as part of a healthy lifestyle with a reduced-calorie diet and regular exercise.

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MCT/Butyrate Liquid with SunButyrate™

FUEL FOR
BRAIN AND
BODY

A DOUGLAS LABORATORIES® EXCLUSIVE*

Clinically shown to support:



Brain Energy[‡]



Satiety[‡]



GI Health[‡]

UNIQUE FEATURES

- Provides a novel combination of patent-pending SunButyrate™ and highly concentrated C8 MCT Oil
- Contains **butyric acid from SunButyrate™**, which complements MCT in **driving ketone production[‡]**
- May promote **healthy weight management[‡]** in conjunction with reduced-calorie intake
- Offers a **great-tasting formula** and features:
 - Natural lemon-vanilla flavor
 - Light consistency **derived from sunflower oil**
 - **Highly palatable, versatile liquid** that can be taken directly or mixed easily into food or hot/cold beverages.
- Gluten-free & non-GMO

SUPPLEMENT FACTS PL

Serving Size: 1 Tablespoon

Suggested Usage: 1–3 times daily

Amount Per Serving

Calories	130
Total Fat	14 g
Saturated Fat	10 g
Medium-Chain Triglycerides	8.6 g
Providing 8 g caprylic acid (C8)	
SunButyrate™ Butyrate Triglyceride	5 g
Providing 965 mg butyric acid	

Other ingredients: Natural vanilla flavor, lemon oil, mixed tocopherols (from sunflower) and rosemary extract

Take 1 tablespoon 1–3 times daily with meals.

FORMULA	SIZE	S.R.P.	PHYS. PRICE
57689	460 ml	\$39.90	\$19.95

CLINICAL EVIDENCE

Preliminary data suggest that combining **MCT with butyrate** may **raise plasma ketone levels** more effectively than MCT alone.

In a human intervention study involving 20 elderly subjects and young controls:⁵

- Administration of **30 grams of MCT** to increase ketone concentration resulted in a **3% increase in overall brain energy metabolism without altering brain glucose consumption[‡]**

Clinical trials indicate that butyrate supplementation promotes brain energy and supports intestinal function and healthy cytokine balance in the GI tract.^{6,7‡}

5. Courchesne-Loyer A, et al. *Nutrition*, 29(4), 635–640.

6. Thibault R, Blachier F, Darcy-Vrillon B, et al. *Inflamm Bowel Dis*. 2010 Apr;16(4):684–95.

7. Bach Knudsen KE, et al. *Nutrients*. 2018 Oct 13;10(10). pii: E1499.

*SunButyrate™ exclusively available to Atrium Innovations.

[‡]Provides weight management support as part of a healthy lifestyle with a reduced-calorie diet and regular exercise.



C8 Max MCT Powder

Clinically shown to support:



Cognitive
Function†



Ketone
Production‡



Weight
Management††

UNIQUE FEATURES

- Offers our **highest dose** of concentrated caprylic acid (C8) from patented **C8Vantage™ MCT**
 - C8 boosts ketone levels more effectively than coconut oil or standard MCT oils to support cognition and weight management††
- Provides 10 g of MCT with 95% caprylic acid (C8) triglycerides to support **endogenous ketone production†**
- **Neutral-tasting**, plant-based powder that can be mixed into liquids or shakes, or baked into foods up to 350 degrees
- Gluten-free and non-GMO

SUPPLEMENT FACTS PL

Serving Size: 1 Scoop
Suggested Usage: 1 daily

Amount Per Serving	
Calories	109
Total Fat.....	10 g
Saturated Fat.....	10 g
Total Carbohydrate	3 g
Dietary Fiber.....	1 g
Protein	1 g
Medium Chain Triglycerides (C8Vantage™)	10 g
(Supplying 95% caprylic acid triglycerides [C8])	

Other ingredients: Pea protein and tapioca fiber
Take 1 scoop daily blended into liquid or food of choice.
C8Vantage™ is a trademark of NNB Nutrition

FORMULA	SIZE	S.R.P.	PHYS. PRICE
57743P	290 g	\$39.00	\$19.50

CLINICAL EVIDENCE

A recent study compared the ketogenic effect of **C8Vantage™** to that of coconut oil, 3% tricaprylin, 5% tricaprin, regular MCT oil, and C10.⁸

- Plasma **ketone levels of C8 in C8Vantage™ were 400% higher** than the coconut oil value, **255% higher than pure C10**, and **21% higher than the regular MCT** value over an eight-hour, post-prandial period.

C8Vantage™ contains 95% of pure C8, while standard coconut oil contains only 3% caprylic acid, and general MCT contains only 55% caprylic acid.

8. Vandenberghe, C. et al. *Curr Dev Nutr*; 2017, 1(4), e000257.
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Free shipping on orders of \$100 or more.

Use Coupon Code **DL100** at checkout.**



For more information visit douglaslabs.com/keto

**Valid in USA and for online orders only. Cannot be combined with any other promotions.
Free standard shipping will apply to entire order and become available under Shipping Method.



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