PROTOCOL FOR LIFE BALANCE®

Dietary Supplement Information
for Physicians with Naturokinetics®
PRODUCT CODE: P2197
CATEGORY: BODY COMPOSITION

MCT Oil – 16 fl. oz (473 mL)

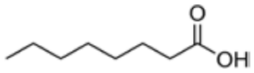
TECHNICAL SUMMARY

MCTs (Medium-Chain Triglycerides) are fats that are metabolized differently than most dietary fats.* Unlike longer chain triglycerides, MCTs require little or no enzymatic breakdown and are easily absorbed across the wall of the small intestine and delivered straight to the liver where they can be used directly for energy production (instead of being stored as fat).* In essence, they act similar to carbohydrates, but without the requirement of insulin and with no effect on blood sugar.* Studies have demonstrated that MCT Oil consumption along with a healthy diet can help to maintain a healthy body weight, while sparing lean tissue.*

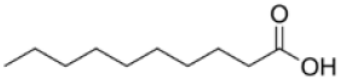
Structure formula:

Medium-chain triglycerides are a class of lipids in which three fatty acids are bound to a glycerol backbone.

The fatty acids found in this product are at least 50% caprylic acid and 30% capric acid.



Caprylic Acid, Octanoic Acid (C8:0)



Capric Acid, Decanoic Acid (C10:0)

The other fatty acids found in our MCT oil are no more than 0.5% caproic acid (C6:0), 0.5% myristic acid (C14:0) and 2% lauric acid (C12:0).

Chemical name:
Caprylic Acid, Octanoic Acid (C8:0)

Capric Acid, Decanoic Acid (C10:0)

Allergen and Additive Disclosure:
Not manufactured with yeast, wheat, gluten, soy, corn, milk, egg, fish, or shellfish ingredients. Produced in a GMP facility that processes other ingredients containing these allergens. Our MCT Oil is derived from coconut/palm kernel oil that is sustainably sourced to protect our planet and preserve native wildlife habitats.

Delivery Form: Liquid

ROLE AS NUTRIENT/FUNCTION

MCTs can be seen as functional fats, meaning that the unique way they are absorbed and metabolized in the body endow them with unique functional properties that can influence the body's energy balance. For more details see the absorption and metabolism sections below.

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Liberation: Not applicable, this product is available in a liquid form.

Absorption: After MCT oil ingestion, medium chain fatty acids (MCFAs) are rapidly absorbed into enterocytes. Most of them are then transported to the liver through the portal circulation, by-passing the lymphatic circulation, unlike other types of fatty acids that need to be incorporated into chylomicrons and transported into the lymph before reaching the general circulation and finally, the peripheral tissues.

Supplement Facts

Serving Size 1 Tablespoon (15 mL)
Servings Per Container about 32

	Amount Per Serving	% Daily Value
Calories	100	
Total Fat	14 g	18%*
Saturated Fat	14 g	70%*
MCT Oil (Medium-Chain Triglycerides) (from coconut/palm kernel oil) [50% Caprylic Acid (C8) and 30% Capric Acid (C10)]	14 g	†

* Percent Daily Values are based on a 2,000 calorie diet.
† Daily Value not established.

Other ingredients: None.

- **Weight Management***
- **Metabolic Support***

SUGGESTED USAGE: Take 1 tablespoon (15 mL) daily, or as directed by your healthcare practitioner.

Distribution: Laboratory experiments show that after injection of radiolabeled MCTs, low levels of radioactivity can be found throughout the body including the brain, indicating a widespread distribution of MCFAs. In the same experiments, it was shown that higher amounts of MCFAs reach the brain than LCFAs. This difference could be explained by the higher water solubility of MCFAs and the existence of free unbound MCFAs in the blood, which can therefore penetrate the blood-brain barrier easily. The same authors have shown that all traces of radiolabeled MCTs disappeared from all organs within 24 hours of injection, which was not the case for LCTs. These results suggesting that there is no accumulation of MCTs in the body.

Metabolism: Once transported to the liver, most MCFAs are catabolized following oxidation processes.

Notably, MCFAs are subject to mitochondrial β-oxidation, which results in the formation of acetyl-CoA that can be used in a number of different biochemical pathways including the formation of ketone bodies.*

MCFAs are also subjected to peroxisomal oxidation and microsomal omega-oxidation in the liver.

Laboratory experiments demonstrate that MCTs are oxidized more rapidly and completely than LCTs after injection of radiolabeled lipid emulsions.

Elimination: MCTs are mainly eliminated as CO_2 as a result of their oxidation by the liver. Laboratory experiments show that after injection of radiolabeled MCTs, 80 to 90% of the dose is recovered as exhaled CO_2 within 24 hours of the injection. Minute amounts are eliminated through urine and feces.

CLINICAL VALIDATION

- In a double-blind, controlled clinical trial with 100 healthy volunteers having an average body mass index (BMI) of 24.7 kg/m^2, MCT oil or LCT oil incorporation to the diet [10 g/d of test oil at breakfast for 12 weeks, as part of a calorie-controlled (2,200 kcal/d) and fat-controlled diet (60g/d)] resulted in significant body weight and subcutaneous fat reduction when comparing to the LCT group (in the subgroup of individuals with a BMI≥ 23 kg/m^2 at baseline) (Fig. 1).* In the same higher BMI subgroup, total ketone bodies measured in the blood was significantly higher in the MCT group than in the LCT group (week 8 and 12) and baseline (week 4, 8, 12)($p<0.05$).*

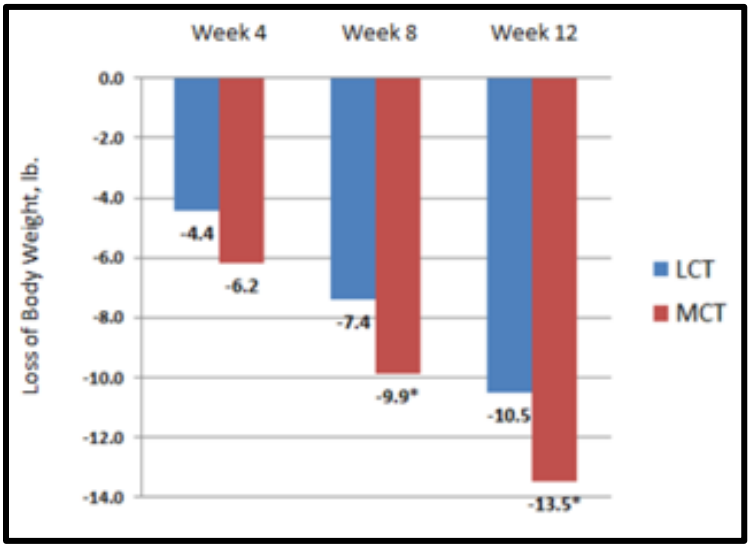

Fig. 1 Reduction in body mass in individuals with BMI ≥ 23 kg/m^2 placed on isocaloric diets with either MCT (10 g/d) or LCT (*P<0.05 vs. LCT, per protocol subgroup analysis n=26 in MCT group and n=30 in LCT group).

SAFETY INFORMATION

Tolerability: MCT oil can cause gastrointestinal discomfort when used at high doses; tolerability varies between individuals. Taking MCT oil with food can improve gastrointestinal tolerability.

Caution: Due to MCTs' ability to induce ketosis, caution should be exercised in patients with diabetes, liver disease, and certain forms of epilepsy.

INTERACTIONS

Drug Interactions: None known.

Supplement Interactions: None known.

Interaction with Lab Tests: Blood triglyceride levels might be altered by MCT supplementation.

STORAGE

Store in cool, dry, and dark place in a sealed container. Store at temperature not exceeding 90°F (32°C). Avoid overheating and exposure to direct sunlight.