

REFERENCE:

<https://www.rainforestherbs.com/blogs/news/mct-oil-and-supporting-brain-function>

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## Can MCT Oil boost our brains?

### What is MCT Oil?

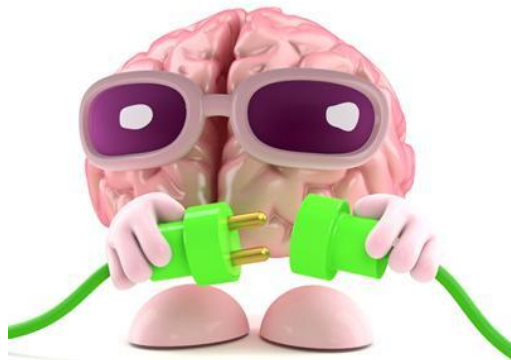
MCT Oil refers to Medium Chain Triglycerides, a form of naturally occurring fats found in a selection of plants and foods including coconut oil, palm kernel oil and high-fat dairy products like butter and cheese. The difference between MCT Oils and regular supermarket vegetable oils (categorised as long chain triglycerides or LCT's) is the number of carbon atoms in each fatty acid molecule. MCT's are the smallest dietary fatty acids and are rapidly metabolized and utilized by the brain, and this makes them a good source of fuel for improved focus and cognition. MCTs are also essential for the development of babies' brains and are found in abundance in breast milk and are added often to baby milk formulas for this purpose.



### Why was MCT Oil first developed?

MCT oil is a food supplement that has been popular since the 1970's as part of the MCT Diet for childhood epilepsy to reduce seizures. Medical research discovered that children suffering from epilepsy benefited by adding between 30 to 60% of the calories in their diet from MCT's. This is effective because when MCT's are metabolized for energy they produce ketones that are a superior form of brain fuel compared to glucose and have been found to stabilize certain neurological functions. Today the MCT Diet is still used for drug-resistant epilepsy for those children and adults who do not respond to the arsenal of new anti-epileptic drugs. The MCT Diet has today evolved into the modern Ketogenic Diet that can be used by one and all to support physical health, increased energy, weight loss and metabolic health.

## Why is Caprylic Acid (C8) the most important MCT to support brain function?



Of all the Medium Chain Triglycerides, Caprylic acid is metabolized the fastest into ketones that the **brain** can use for instant energy without the need for glucose from carbohydrates or sugar. Our body needs just three steps to transform Caprylic Acid into energy for the brain whereas sugar requires a complex 26 metabolic steps. The ketones produced from Caprylic Acid metabolism have been shown to specifically target the central nervous system and cross the blood-brain barrier to be then metabolized by brain neurons and astrocytes (cells that support neurons) into acetyl-CoA to be used in the Krebs's cycle for cellular energy, assisting also in learning and memory. In contrast, a high sugar intake slows the activity of synapses and thus in certain conditions has negative effects on learning, mood and memory. Ketones have a higher energy density than glucose and because they do not affect insulin levels, allows for sustained energy for a longer period.

## What is the research on MCT Oil for brain and neurological function?

In normal circumstances, glucose supplies much of the energy for our brains requirement. With ageing and in the presence of certain diseases, however, the brain becomes less effective in using glucose just as our body may do with insulin resistance and diabetes. Research is finding that there are several ways in which MCT Oil supports brain function and provides an alternative source of clean energy for brain neurons. The main focus of research has been on how ketones produced from MCT Oil metabolism provide neuroprotection, alternative energy and potential therapeutic effects for many neurological conditions. Positive results have been seen in studies in Alzheimers, Parkinsons, Cognitive Impairment, Dementia, ALS, Traumatic Brain Injury and Epilepsy (see select references below). As ketones are highly effective energy sources to mitochondria and less harmful than glucose metabolism to neurons then many conditions that involve less than optimal brain chemistry, including certain psychological conditions, anxiety and sensitivity to stress are the new targets for research on the effects of MCT Oil on brain function.

## What are the other uses for Caprylic Acid (C8)?

Caprylic acid is actually more potent even than Lauric Acid (C12) for its antimicrobial and antifungal properties and as such it will also help our intestinal health to remove fungal infections such as

Candida albicans that can become aggressive after frequent antibiotics or in certain immune compromised individuals. It may be used externally for this same purpose.

## What about Tocotrienols, what research is there to show they support brain function when incorporated in the diet?

Tocotrienols are a rare member of the Vitamin E family being scarcely found in plants with the exception of red palm fruit (*Elaeis guineensis*) and Annatto (*Bixa Orellana* seeds). Tocotrienols have fascinated researchers for their more potent antioxidant and physiological activity than their Tocopherol partners in the Vitamin E group. Vitamin E in red palm oil contains nearly 70% tocotrienols, the highest of all plants. The unique structure of tocotrienols allows these molecules to penetrate easily into saturated fatty layers around the brain. Ageing effects various cognitive and nervous system motor functions due to increased oxidative stress, reduced cellular communication and inflammation. Tocotrienols have been found to exert neuroprotection and may be of benefit to delay age-related changes in the brain and improve learning capacity and memory.

## MCT Oil Notes

### Are there any side effects from taking MCT Oil?

Any side effect from taking MCT Oil is the same as from taking too much coconut oil and occur mainly when taken on an empty stomach, mainly a mild gastrointestinal upset or loose motion. These MCT Oil side effects may be reduced by taking MCTs with food and when adding to coffee then also add 1 tablespoon of Organic Coconut Butter, Grass Fed Butter. Aside from these temporary reactions, one thing is for sure, MCT's are perfectly safe for daily use as they have been consumed in the form of coconut oil (with 65% MCT's) since humans first arrived on tropical shores. Some MCT Oil users remark that it does give a lot of energy and prefer taking only in the morning with breakfast but if you are consuming as a dietary intervention for a neurological condition then it's best to add to food every 4-5 hours to ensure optimum ketone production.

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