ABITEC
AN ABF INGREDIENTS COMPANY

CAPTEX®

FOOD FOR THOUGHT

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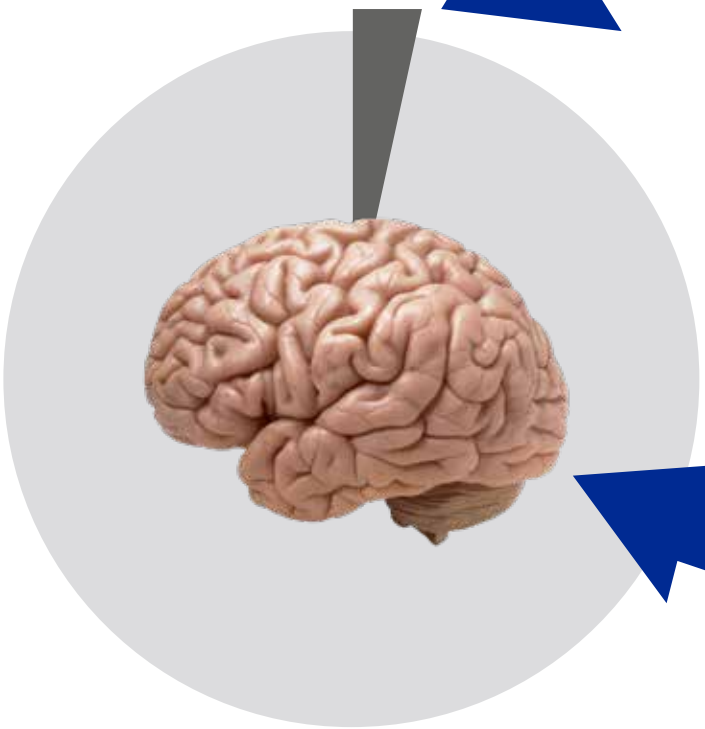
ABFI

Are you getting better with age? Maybe! But what about your mind?

The brain needs fuel in order to continue supplying us all the knowledge and memories we have stored there. Over time, just as our bodies slow down, so does the fuel supply to our brain, sometimes significantly.

Where Does the Fuel Come From?

The Brain's Energy



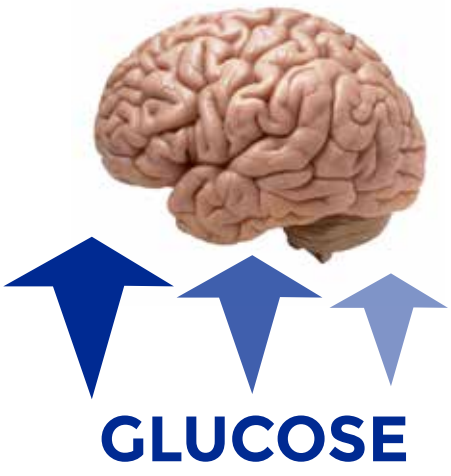
3% [1,2]
ketones

Glucose provides the majority of the energy for a healthy brain to function

97% [1,2]
glucose

Aging causes a reduction in cerebral metabolic rate for glucose [3], which is estimated to decline by 6% per decade globally with most cerebral regions affected [4]...

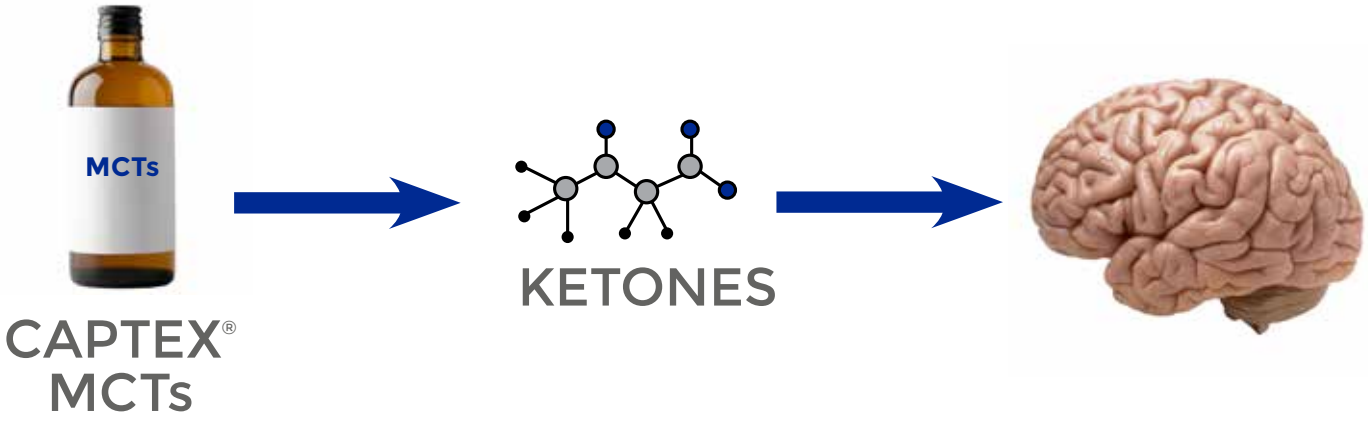
This reduction could result in memory loss and a decline in cognitive thinking.



Captex® MCTs for Energy Supply

Remember that 3% Ketones? The brain can accept up to 66% of its energy from Ketones [3-6]. But how do we increase the level of ketones that our body produces? CAPTEX® Medium Chain Triglycerides! [7]

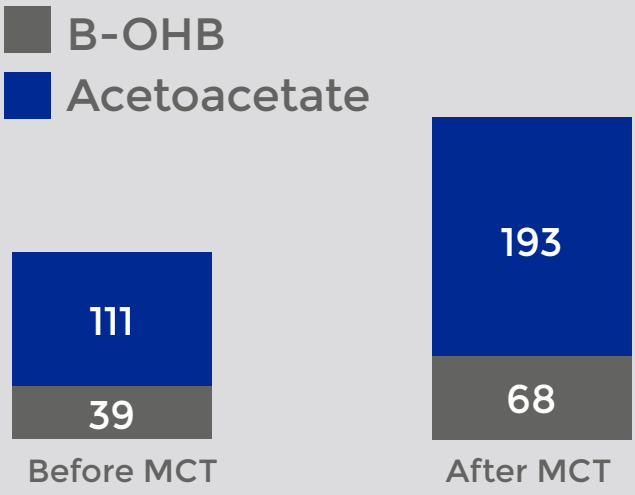
Feed your BRAIN!



As a matter a fact, studies show [7] that elevated ketones can be maintained with relatively low doses of MCT repeated several times a day.

In this study [7] MCTs were given to eight healthy adults for four weeks time. The dosage was gradually increased from 5g given three times per day during meals, to 7.5g given three times per day. As you can see, over this short four week period, mean plasma ketones increased significantly and it is estimated that the additional ketone development could contribute to up to 9% of whole-brain metabolism. That's a quick energy supply!

4 weeks, 8 Adults, up to 30g MCT/day

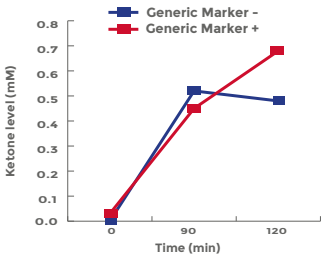


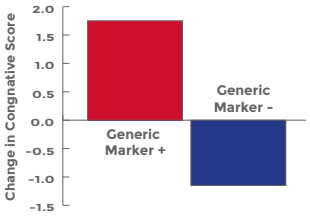
CAPTEX® MCT's for Cognitive Improvement

The use of a ketone promoting diet has shown promise for weight management, performance, and cognition. Several studies have been performed to describe the efficacy of MCTs for increasing ketones

Increased Ketone Levels in Humans Consuming MCTs [10]

- Consumption of MCTs increased circulating ketones.
- Higher ketone values were associated with greater improvement in paragraph recall.
- MCT treatment improved performance on cognitive testing for subjects without the genetic marker for Alzheimer's disease.

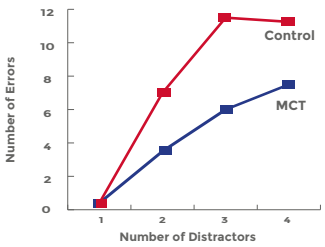


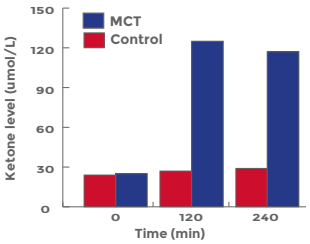


The oral supplementation of MCTs succeeded in raising ketone levels almost 8 times baseline level 90 minutes after consumption in both groups. Patients with Alzheimer's disease without the genetic marker show cognitive improvements in response to the increase in ketones. These elevations were associated with better cognitive scores (indicated by a negative score) as a measure of mental status change and paragraph recall. Adapted from data in [10].

More Efficient Learning Effects in Aged Dogs [9]

- The dogs supplemented with MCT showed significantly better performance in most of the test protocols (landmark discrimination learning ability, egocentric visual spatial function and attention) than the control group.
- The more difficult tasks showed greater effects of MCT supplementation compared with easier tasks.
- Those dogs supplemented with MCTs showed significantl elevated levels of ketones.

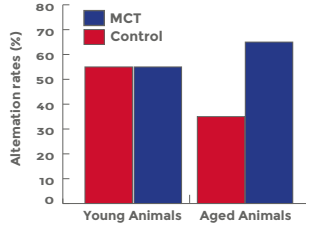




Aged Beagle dogs supplemented with MCTs have significantly higher levels of circulating ketones. Additionally, MCT supplemented dogs performed better on an attention task. As the number of distractions increased, aged dogs receiving MCTs in the diet performed the tasks with significantly fewer errors compared with aged Beagle dogs without supplementation (control). Adapted from data in [9].

Improvement of Cognitive Function in Rats [8]

- Feeding MCTs for six weeks resulted in an increase in circulating ketones in both young and old animals.
- Cognitive function was improved in aged rats fed MCTs both under normal conditions and when challenged by reduced oxygen.



The T-maze test, used for general cognitive function, is based on the innate preference of animals to explore an area (an arm) that has not been previously explored (called alternations). The MCT supplementation in aged rats resulted in a higher alternation rate compared with aged control rats. Adapted from data in [8].

Product Portfolio

	Chemical Name(s)	Caprylic (C8) fatty acid content (%)	Capric (C10) fatty acide content (%)	Appearance/ Form (25° C)	Saponification Value (mg KOH/g)	Specific Gravity (25° C)	Viscosity (Brookfield, 25° C)
Liquid Products							
CAPTEX 300	Caprylic/capric triglyceride	≈ 70	≥ 20	Colorless to light yellow, clear liquid	335-360	0.92-0.96	20-25
CAPTEX 355	Caprylic/capric triglyceride	55	≥ 35	Colorless to light yellow, clear liquid	325-340	0.92-0.96**	25-33
CAPTEX 1000	Glyceryl tricaprate; Tricaprin	≤ 1	98	White to pale yellow solid	295-315		
CAPTEX 8000	Glyceryl tricaprylate; Tricaprylin	≈ 98	≤ 1	Clear liquid	335-360		

	Substrate Base	Oil Type	Load
Powdered Products			
NUTRI SPERSE MCT 70	Dairy	MCT	70%
NUTRI SPERSE MCT 50	Non-dairy	MCT	50%
NUTRI SPERSE MCT C8	Dairy	MCT	70%

Listed properties are not specifications and are for formulation information only.

Certifications, Registrations, Compliance

- GFSI-BRC Global Standard for Food
- ISO 9001
- Kosher and Halal
- ISO 14001 and OHSAS 18001
- Batch processes, quality practices, product recall and traceability drills
- Registered with FDA as required by the Food Safety Modernization Act

CAPTEX® Medium Chain Triglycerides
NUTRI SPERSE® MCT Powdered Lipids

References

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10. Reger, M.A., et al., Effects of beta-hydroxybutyrate on cognition in memory- impaired adults. Neurobiol Aging, 2004. 25(3): p. 311-4.

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