

MCTs

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In the last few years, there has been quite a buzz created about using medium chain triglycerides (MCTs) as a dietary supplement for extra energy, extra calories, and to burn more fat. Some companies add MCTs to their most popular performance and bodybuilding products, including the #1 selling protein, Muscle Milk. So, what are they, what is all the buzz about and what does the research show?

I'm glad you asked.

MCTs are fats comprised of three medium chain fatty acids (MCFAs), and a glycerol backbone. Because they are only 6-12 carbons long, their smaller size (smaller than long chain triglycerides or LCTs) changes the way they are digested, transported and utilized for energy inside the body (Manore and Thompson 2000). Typically, fat digestion is slower than that of carbohydrates (CHO) since fat stays in the gastrointestinal tract longer before circulating within the body. As a result, fat has a decreased availability as an immediate energy source for exercise. However, due to the size of MCTs, they rapidly exit the stomach into the small intestine, and are ultimately digested as MCFAs—which are absorbed almost as rapidly as glucose. MCFAs are even transported to the liver as rapidly as glucose.

That's great, but what does that mean.

Well, since glucose is a very fast absorbing CHO, and since the body uses glucose from the liver and muscles during exercise, comparing the rate (at which MCTs will become MCFAs and consequently be used by the body for energy) to the rate of glucose is significant. Because the MCFAs are quickly absorbed, many researchers have hypothesized that MCTs could be a viable source of energy for carb conscious dieters, diabetics, and anyone who would potentially benefit from reducing the daily CHO intake in their diet. Researchers have also hypothesized that MCTs may be able to be used as energy to spare the glycogen stored in the muscles, allowing for longer exercise and theoretically faster recovery—with potentially more fat being used.

What?

MCTs have long been researched as a possible energy alternative to carbohydrates (CHO), specifically when consumed pre-exercise and during exercise. Much research has been done comparing consumption of CHO only, MCTs only, and a combination of MCTs and CHOs. To date, all research that has been done using pre-exercise or during exercise consumption has not shown positive results related to performance. In fact, many studies have shown that subjects that used MCTs only had decreases in performance following consumption. Please note, however, that all the research I was able to find was performed where subjects did bouts of endurance exercise lasting 60 min or longer. Studies have not been done exclusively testing any benefits when used for weight training or exercise recovery.

What about the claims?

Many nutritional supplement companies claim that MCTs have a thermogenic effect and assist in weight loss. Again, I was unable to find any good, thorough studies that could be applied to this speculation (remember, it is important to take a closer look at who is paying for most studies). Furthermore, any research that I did find recommended really high daily doses in order to see any type of positive effect—high doses that were said to have caused severe gastrointestinal discomfort, diarrhea, and even vomiting—that doesn't sound too inviting to me!

So, what now?

More research is being conducted as to whether or not MCTs are effective at assisting with recovery/regeneration post workout, at assisting with weight loss, or if MCTs have any positive affect on athletic performance. Most supplements on the market that use MCTs in their 'magical' formula seem to be basing their inclusion on speculation. Due to the fact that the amounts of MCTs in these nutritional supplements are low (very low), most consumers should not see any of the negative side affects (such as the gastrointestinal discomfort). I personally think (based on research, and not personal experience with any of the products), that a consumer should base the decision about a product on the other ingredients included, and the potential advantage of taking/using the product. If you have questions regarding a product or an ingredient in a product, please feel free to contact me.

(Also, a great resource about sports nutrition—that I used for this article—is “Sport Nutrition for Health and Performance by Melinda Manore and Janice Thompson, published by Human Kinetics, 2000, and can be found at www.humankinetics.com)