

MCT AND THE ROLES NUTRITION

Nguyen Hoang Nhut Hoa

Department of Nutrition – Children's Hospital 2

MCTFVS

- Structure
- Absorption and metabolic
- Effects of MCT in the treatment of certain diseases
- Demand for recommendations
- Food sources

1. Structure

- MCT is a medium-chain triglycerides are from 6 to 10 carbon links.
- MCT is include caprylic and capric fatty acids
- Power Supply 8.3kcal/1g

2. Absorption and metabolic

- MCT easily absorbed through the intestinal tract, without the process of emulsification with bile salts and hydrolysis by pancreatic enzymes such as LCT.

➔ MCT is useful in cases of lower tract , fat, slow digestion, anorexia, liver disease, gastroduodenal disease, AIDS

3. The effect of MCT in the treatment of certain diseases

a. Beneficial effects Atherosclerosis, energy and aging (Nutrition Review)

- MCTs have a slight hypoglycemic (blood glucose-lowering) effect, and thus may be useful for diabetics, or anyone with a tendency for pre-diabetes (which includes just about everyone over 35).
- It may be the combination of the glucose and lipid-lowering effects of MCTs that resulted in Kaunitz' report that "the life span [of experimental animals] is longer when the diet is richer in MCTs than LCTs."

b. MCTs and Medicine

- Useful in treating a number of medical disorders that involve impaired or damaged lipid (fat) metabolism. These include: obstructive jaundice, biliary cirrhosis, pancreatitis, cystic fibrosis, celiac disease, Whipple's disease, Crohn's disease, regional enteritis, and malabsorption in neonates.
- Useful for feeding of newborn infants, to both assist their initial growth and to contribute to their physiological development.

- The absorption of calcium and magnesium appears to be enhanced when the diet contains MCTs, particularly in infants, and the absorption of amino acids also appears to be improved.

➔ MCTs can be a useful addition to the diet of those suffering from any form of malnutrition or tissue wasting. In this regard, MCTs are often added to parenteral formulas for intravenous feeding following surgery or during recovery from severe injuries, burns and infections.

c. MCTs, Energy and Exercise

- MCTs are more rapidly absorbed by the body and more quickly metabolized (burned) as fuel.
- The result of this accelerated metabolic conversion is that instead of being stored as fat, the calories contained in MCTs are very efficiently converted into fuel for immediate use by organs and muscles.

d. MCTs and Weight Control

- MCTs might be advantageous for the aging brain.
- In one study researchers fed six lean and six obese young males meals containing either long-chain triglycerides (LCTs) or MCTs plus LCTs. In both the lean and obese individuals, post-meal thermogenesis (fat burning) was enhanced after consuming meals containing MCTs.
- In another study involving a group of obese women on a restricted diet researchers noted that insulin profiles improved when MCTs comprised 24 percent of total consumed calories.

e. MCTs and Immune Enhancement

- To evaluate the immune-normalizing properties of MCTs, Kaunitz and colleagues injected rats with rabbit immune serum, known to cause severe autoimmune kidney disease in the rats. They then administered MCT in the diet, and noted that the pathological changes in the kidneys were much reduced in the MCT-treated group. Kaunitz speculated that MCTs could thus have a positive effect “on autoimmune reactions characteristic of the aging process.”

f. High versus low medium chain triglyceride content of formula for promoting short-term growth of preterm infants

(CENTRAL, The Cochrane Library, Issue 2, 2007)

- There is no evidence of difference between MCT and LCT on short-term growth, gastrointestinal intolerance, or necrotizing enterocolitis.

4. *Demand for recommendations* - EBSCO CAM

Up to date: 2010/08/01

- MCTs are quite safe when consumed at a level of up to 50% of total dietary fat. However, some people who consume MCTs, especially on an empty stomach, experience annoying (but not severe) abdominal cramps and bloating.
- The maximum safe dosage of MCTs in young children, pregnant or nursing women, or people with serious kidney or liver disease has not been established.

5. Food sources

Coconut oil, palm oil, and butter contain up to 15% MCTs (plus a lot of other fats). You can also buy MCTs as purified supplements.





Thanks for your attention!

