Journal of Food and Nutritional Disorders
ISSN 2324-9323
2020
Vol.9 No.5

Therapeutic ketosis and the broad field of applications for the ketogenic diet: Ketone ester applications & clinical updates

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Abstract

It has been recently shown that nutritional ketosis is effective against seizure disorders and various acute/chronic neurological disorders. Physiologically, glucose is the primary metabolic fuel for cells. However, many neurodegenerative disorders have been associated with impaired glucose transport/metabolism and with mitochondrial dysfunction, such as Alzheimer's/Parkinson's disease, general seizure disorders, and traumatic brain injury. Ketone bodies and tricarboxylic acid cycle intermediates represent alternative fuels for the brain and can bypass the ratelimiting steps associated with impaired neuronal glucose metabolism. Therefore, therapeutic ketosis can be considered as a metabolic therapy by providing alternative energy substrates. It has been estimated that the brain derives over 60% of its total energy from ketones when glucose availability is limited. In fact, after prolonged periods of fasting or ketogenic diet (KD), the body utilizes energy obtained from free fatty acids (FFAs) released from adipose tissue. Because the brain is unable to derive significant energy from FFAs, hepatic ketogenesis converts FFAs into ketone bodies-hydroxybutyrate (BHB) and acetoacetate (AcAc)-while a percentage of AcAc spontaneously decarboxylates to acetone. Large quantities

Biography:

Raffaele Pilla, Pharm.D., Ph.D., Doctor Europaeus, received his Master's degree in Pharmacy at G. d'Annunzio University in Chieti-Pescara, Italy in 2005, where he also served internships at the Cell Physiology Laboratory and Molecular Biology Laboratory. Prior, he was an Erasmus Student at Faculté de Pharmacie de Reims in Reims, France. He received his Doctor Europaeus in 2010 from Pitié-Salpétrière Institute in Paris, France. Also in 2010, he received his Ph.D. in Biochemistry, Physiology, and Pathology of Muscle at G. d'Annunzio University in Chieti-Pescara, Italy.

Speaker Publications:

1.A proposal for distinguishing between bacterial and viral meningitis using genetic programming and decision trees
Jan 2019DOI: 10.1007/s00500-018-03729-yISBN: 1432-7643

19th World Congress on Nutrition and Food Chemistry
September 23-24, 2020 Webinar

Abstract Citation:

Raffaele Pilla,s Therapeutic ketosis and the broad field of applications for the ketogenic diet: Ketone ester applications & clinical updates, Nutri-food chemistry 2020, 19th World Congress on Nutrition and Food Chemistry September 23-24, 2020 Webinar

(https://nutrition-foodchemistry.insightconferences.com/abstract/2020/therapeutic-ketosis-and-the-broad-field-of-applications-for-the-ketogenic-diet-ketone-ester-applications-clinical-updates)