Nutritional Therapy: Literature Review

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Nutritional Therapy

Nutrition is the cornerstone for achieving adequate health and preventing illness, but there needs to be more research on the multidimensional approach that nutrition can play in treatment. Nutritional therapies such as ketogenic diet transform how people think about food. Nutrigenetics studies the relationship between nutrition and gene expression, which are both influenced by the environment. This idea suggests that by adhering to a specific diet, diseases can be prevented and even reversed. Nutritional therapies are being utilized to acquire and sustain an optimal state of health (Panoff, 2020).

Inverse relationship between brain glucose and ketone metabolism in adults during short-term moderate dietary ketosis: A dual tracer quantitative positron emission tomography study

This article explores whether a ketogenic diet can be sustainable over a long period. The brain relies on glucose to function. Although following a ketogenic diet has been shown to affect those who have epilepsy significantly, it is uncertain how it will affect brain energy metabolism (Courchesne-Loyer et al., 2016).

Key Points

The key points that the author is addressing are if there are any changes in the brain from short-term ketoacidosis. The most critical information in the article is whether or not the brain can function the same way on plasma ketones as it can on plasma glucose. The research method used was statistical analysis. The participants ranged from ages 23 and 64 years old, generally

healthy and unmedicated. The tools utilized in this study include the ketogenic diet, magnetic resonance imaging (MRI), PET imaging, and plasma metabolites. The data did not significantly change regarding brain energy before and after implementing a ketogenic diet. The p-value was <0.0001. The author concluded that short-term ketoacidosis could meet the brain's needs. However, additional research is needed to determine metabolic changes in healthy older adults on a ketogenic diet are similar to those with Alzheimer's disease (Courchesne-Loyer et al., 2016).

Assumptions

Many utilize a ketogenic diet to achieve ketosis as a form of replacement for glucose metabolism. The brain relies on glucose to function, but how it uses the glucose remains unclear. The author has the assumption that ketones can be used as an alternative for glucose in supplying the brain with the fuel it needs. The author employs positron emission tomography (PET) to determine how ketones and glucose affect brain metabolism in healthy adults (Courchesne-Loyer et al., 2016).

Deficit/Conclusion

The author's line of reasoning is admissible. This article implies that ketones can circumvent brain glucose hypometabolism in older adults. If nursing fails to accept this line of reasoning, the implications would be that older adults may be more susceptible to Alzheimer's disease due to a decline in cerebral glucose metabolism (Courchesne-Loyer et al., 2016).