

# Study Shows Ketosis Fights Alzheimer's Disease

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[/EINPresswire.com/](http://EINPresswire.com/) -- Despite decades of attempts to develop a medication that cures or prevents Alzheimer's disease (AD), the most common form of dementia afflicting our aging population, there's presently no cure for this devastating illness. Emerging research indicates that such a miracle remedy might already exist, maybe not in the kind of a pill, but as a straightforward dietary modification. People can check for ketones by using ketosis strips. They are inexpensive and can be found at the local pharmacy or online at [KetoStrips.com](http://KetoStrips.com).



An increasing number of studies report that interventions to enhance metabolic health can alleviate symptoms and reduce brain pathology associated with AD. A favorite theory posits that AD has numerous causes, but their common thread can demand metabolic breakdown. Indeed, markers of poor metabolic health, like diabetes, inflammation and higher cholesterol, are significant risk factors for AD.

The same as our muscles, the brain requires energy to function properly. Both neurons and muscles have the unique capability to metabolize ketones as an alternative fuel source when sugar is in short supply, for example through fasting or on a low-carbohydrate diet. In the 1920s scientists discovered a high-fat diet boosting ketogenesis controlled epilepsy. Also ketosis is still one of the very best treatments for the condition. This increased the possibility that ketones may also be neuroprotective against other diseases that stem from aberrant neural metabolism, such as AD. Since then, research has confirmed that ketones do in fact alter brain metabolism in ways that decrease neuropathology and relieve behavioral signs. People can check for ketones by using ketosis strips. They are inexpensive and can be found at the local pharmacy or online at [KetoStrips.com](http://KetoStrips.com)

## Ketones relieve symptoms of Alzheimer's disease

Over the last ten years, several studies have affirmed the clinical value of ketosis in cognitively impaired patients. At a 2004 study, twenty people with AD or Mild Cognitive Impairment (MCI) were treated with placebo or medium chain triglycerides, a sort of saturated fat found in coconut and palm oils that boosts ketone production. The treatment increased ketone levels 90 minutes afterward, and these higher ketone levels corresponded with increased memory improvements. All these preliminary, short-term findings were followed up five years later in a bigger and longer-term study of 152 mild AD patients. After 45 days, individuals taking a ketogenic chemical showed cognitive enhancements relative to a placebo group. But, both these studies imply that the brain benefits of ketosis may depend on genetics. In the prior study, medium chain triglycerides improved cognitive functioning only in participants with no ApoE4 allele, a genetic risk factor for AD. Similarly, in the later study, cognitive improvements had been more powerful and persisted longer--outside to 90 days--in those without the ApoE4 allele. A new PLOS One analysis confirmed different answers to diet based on genetics in mice, reporting a high-fat diet lowered brain levels of ApoE only in mice with no ApoE4 gene.

These promising early findings of ketogenic compounds provided hope that dietary interventions might similarly benefit brain health. A 2012 study tested whether memory could be improved by simply adopting a low-carbohydrate diet, without the necessity of supplements used in the prior studies. Of 23 people with MCI, those after an extremely low-carbohydrate diet for six months showed improved memory in contrast to people on a high-carbohydrate diet. These memory enhancements correlated with ketone levels, but maybe not with carbs consumed, insulin levels or body fat, pointing to increased ketogenesis because the probable reason behind its low carb dieters' cognitive enhancement.

Although ketosis hasn't been rigorously tested in a proper clinical trial, a recent case study provides compelling proof that ketones might, in fact, hold up in acute clinical cases. A 63-yearold guy with advanced AD started consuming coconut oil and medium chain triglycerides, both proven to increase ketone levels. After just 2.5 months, his score on the Mini-Mental State Exam, a test of global cognitive functioning, improved from a very low 12 to 20 (from a maximum 30). After two years, his cognitive capacity and daily living functions both improved and his MRI revealed no additional brain atrophy. After adding a ketone ester supplement to his dietary regimen, the patient revealed even further improvements in his disposition, selfsufficiency, and memory. Notably, this man completed the ApoE4 gene; thus, ketosis does appear to be extremely beneficial for ApoE4 carriers, even if previous studies suggest it's even more helpful for those without this risk factor.

## How ketones protect the brain

Scientists have looked to animal models to better understand how ketosis may protect the human brain from neurodegeneration. In a mouse model of AD, amounts of beta-amyloid, a toxic protein that is elevated in AD, were decreased in the brains of mice fed a high-fat/lowcarb diet compared to those on a standard diet. Latest research helped to clarify the connection between the metabolic benefits of ketones, lower amyloid, and improved cognitive functioning. This study tested the effects ketones either in a mouse model of AD and neurons treated with amyloid. What's more, ketones decreased amyloid levels and obstructed the formation of pores in cell membranes induced by amyloid, showing that ketones can protect against cerebral damage linked to amyloid. At length, ketones revived normal synaptic plasticity and memory performance which were impaired by amyloid.

## A prescription for Ketosis

If ketosis would be to become confirmed as an effective treatment for AD, further study is needed to determine the appropriate method of administration, since high-fat diets, medium chain triglyceride supplements or ketogenic substances might be differentially effective. Patient compliance in following a strict diet or taking supplements may also pose potential challenges. Identifying the minimum effective dose will help establish guidelines for how rigorous a treatment regimen is necessary. Despite these remaining questions, the compelling support for the healing potential of ketosis provides hope that a powerful weapon in our struggle against AD may already exist--and can be as delicious as a spoonful of coconut oil.

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