



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Alexandra Maloof	Project Number J0621
Project Title Are Ketone Bodies the Cure for Alzheimer's Disease?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this project was to determine if medium chain triglycerides found in coconut oil could become an alternative fuel in bringing glucose to the dormant regions of the brain of Alzheimer's disease patients; therefore contributing to finding the cure of this disease.</p> <p>Methods/Materials Informed consent was obtained from eight diagnosed Alzheimer's disease (AD) patients ranging in ages between 70-90. The experiment was designed to monitor AD patients' progressions and responses to coconut oil by using the Mini Mental Status Examination (MMSE). This test was administrated on the following dates: 10/9/09, 10/13/09 and 11/13/09. Through the course of this experiment, the dosages of coconut oil were increased and the results were noted and studied.</p> <p>Results In the variable group patient #1, #2, #5, and #6 had 20% or greater increase in the MMSE along with positive observations. Patient #3 was not compliant in taking the coconut oil, patient #4 had severe Alzheimer's disease, and patient #7 did not want to finish the experiment after the second test, yet their results showed an improvement. All the patients involved in this experiment improved except the control patient which was taking cream of wheat as a substitute for coconut oil, therefore his results showed a 10% decrease in the MMSE.</p> <p>Conclusions/Discussion The results of this experiment suggest that medium chain triglycerides which convert to ketone bodies by the liver mitochondria have a profound effect to the brain of AD patients and their cognitive function. Ketone bodies found in coconut oil have the ability to increase mitochondrial efficiency, promote a 39% increase of cerebral blood flow, and give energy to compromised neurons. This project is the stepping stone to the discovery of the cure of Alzheimer's disease.</p>	
Summary Statement Ketone bodies in coconut oil can be used as an alternative fuel to supplement the brain's normal reliance on glucose, thereby making this discovery the stepping stone for the cure to Alzheimer's disease.	
Help Received Experiment supervised by Dr. George John Jr.	