



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

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Project Title Remember to Relax and Relax to Remember: Examining the Effects of Meditative Techniques on Cognitive Ability	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals This study will attempt to prove that meditative techniques have observable effects on cognitive functioning, such as cued recall, a certain type of memory.</p> <p>Methods/Materials A total of 42 subjects, were tested: 14 different subjects per condition (each subject participated in only one condition). There were 3 conditions: Condition 1 and 3 tested two types of meditation, (Silent meditation, also known as Transcendental Meditation, and meditation with music), and Condition 2, the control had no meditative techniques. The subjects were assigned randomly. After being exposed to the condition for 2 minutes, the subject look at a packet, which had six different pictures of people's faces, with names under each. After looking at each page for 6 seconds each, the subject was asked to complete a distraction maze to make sure we were testing long-term memory, instead of short-term memory. The same images were shown to the subject and they were asked to recall as many names as possible.</p> <p>Results Overall meditative techniques (the average of condition 1 and 3) resulted in a 7% improvement of recall when compared to condition 2, the control. Condition 1, silent meditation, had a 10% improvement over control, while condition 3 had a 5% improvement over control.</p> <p>Conclusions/Discussion My hypothesis was found to be correct by the results of the study. This improvement could decrease the effects of stress on mood and cognition. In the future, we would like to have individual studies done, and, if time allows, do statistical analysis on the results to prove the findings were significant. We believe the difference in the scores of condition 1 and 3, despite the fact that they show improvement, resulted from the New Age, low-tempo music that was played in condition 3. The low-tempo music might have been different than the music the subject usually listens to, and this could've caused a distraction. The purpose of the low-tempo music was to create a quiet, relaxed environment to help the subject focus on meditating.</p>	
Summary Statement Meditation has been recently getting attention as a possible way to reduce stress so this study wanted to test if meditation could also have an effect on cognitive ability, which could then help us deal with stress.	
Help Received My instructor guided me throughout the project, and I used my knowledge from an AP Psychology course I had taken.	