



# CALIFORNIA STATE SCIENCE FAIR 2014 PROJECT SUMMARY

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<b>Project Title</b> The Effect of Physical and Mental Exercise on Memory	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> I have always had a memory problem. During a conversation I am not always able to remember certain words. So I began to wonder, what can I do to help me remember these words? Additionally, my grandparents are losing their memory with age, so I wanted to help them improve their memory as well. My project is the effect of physical and mental exercise on memory.</p> <p><b>Methods/Materials</b> I tested 39 boys and girls, aged 11-13 years old. The groups included a control group, a group that exercised their brain and a group exercising their body. All groups took the first memory test. One group completed a crossword puzzle, another group jumped rope and a third group sat quietly for three minute period. Then they all took the second memory test. I tallied results from the three groups two memory tests by subtracting the number correct on the first test from the number correct on the second test. Then I determined which group had the highest increase in correct responses.</p> <p><b>Results</b> I observed that of the participants that exercised their brain, only one participant, 8%, remembered more during test two. I observed that of the participants that exercised their body, six contestants, 43%, remembered more during test two. I observed that of the participants in the control group who rested between tests, seven participants, 54%, remembered more during test two.</p> <p><b>Conclusions/Discussion</b> My results show memory is improved by resting. On average, working out the mind increased memory 8% of the time. When working out the body increased memory 43%. Resting increased a surprisingly 54% of the time. Doing nothing increased the most on average.</p> <p>Exercising the mind and body are still great things to do. However, my research shows that resting the brain as in getting a good night sleep might be the best for memory.</p>	
<b>Summary Statement</b> My project is the effect of physical and mental exercise on memory and whether either of these exercises can improve memory.	
<b>Help Received</b> My mother helped edit and format my report and helped with the display board layout. Ms. Hill, my science teacher, helped edit my project and assisted with graphing data. Mrs. Pasternak, my 6th grade teacher, allowed me to use her students as my participants.	