



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

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Project Title Exercise Your Brain	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this study was to test the theory that exercise does improve the ability for the brain to function. The hypothesis was that exercise before a memory test should improve focus, and result in higher memory scores.</p> <p>Methods/Materials Twenty subjects were selected. The age range of the subjects was 8 to 50 years old. Ten of the subjects were tested before and after exercise. The exercise group walked on a treadmill for ten minutes, at a moderate pace. Moderated pace was a brisk walk, without shortness of breath. The other ten subjects were tested two times, without exercise. The non-exercise group had at least a ten minute break between tests. This was our control group. All the subjects were tested with the memory game called, "Distraction." The memory game involved subjects remembering a sequence of numbers, while answering a series of non-related questions.</p> <p>Results The average improvement of memory scores for the exercise group was 4.2 points. The average improvement in the scores of the non-exercise group was 0.8. The exercise group not only had higher scores than the control group, it was also noted that the exercise subjects answered the questions quicker and easier.</p> <p>Conclusions/Discussion In conclusion, this study supports the hypothesis that exercise does improve memory and concentration. The results clearly demonstrate that exercise can have a positive effect on memory and alertness. All of the subjects that exercised had improved memory scores, as compared to the control group with minimal improvement. The variables that could have influenced outcomes include, subject's age, maturity, level of focus, pre-existing conditions or level of fitness. The results of this study demonstrate the connection between exercise and brain function. It is important to further understand the benefits of exercise, and educate people to incorporate exercise into their daily lives. This study proved that even a small amount of exercise can improve a person's memory and ability to focus.</p>	
Summary Statement This study examined and tested the relationship between exercise and brain function.	
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