



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

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| Name(s) Andrew L. Dorne | Project Number J0312 |
| Project Title How Does Physical Exercise Affect Short-Term Memory? | |
| Abstract | |
| Objectives/Goals The goal of this project was to determine what affect strenuous exercise had on short-term memory. | |
| Methods/Materials A computer program was constructed to test and record how subjects scored on a short-term memory test. Each day the computer allowed the subjects to take the test once before a high intensity swim workout and once after. The test consisted of 10 computer generated random two-digit numbers. Subjects were given 60 seconds to memorize the numbers, and then 60 seconds to recall them. The computer recorded the results in a database at the completion of each test. Volunteers were asked to perform the tests as often as possible during the study period. | |
| Results Five subjects participated in the memory study. There were 3 boys and 2 girls. They ranged in age from 11 to 13 years. They were all members of the Irvine Novaquatics gold level age group competitive swim team. The five subjects performed a total of 42 pairs of before exercise and after exercise memory tests. Tests scores ranged from 0 to 100%. The average pre-exercise test score was 74.3%. The average post-exercise test score was 63.6%. Four out of the five subjects more frequently scored worse on the post-exercise tests than on the pre-exercise tests. | |
| Conclusions/Discussion This study found that subjects scored higher on memory tests before vigorous exercise than they did after. | |
| Summary Statement This project showed that strenuous exercise had a negative affect on short-term memory. | |
| Help Received Father helped program computer. Mother helped decorate display board. | |