



CALIFORNIA STATE SCIENCE FAIR 2004 PROJECT SUMMARY

Name(s) Nicole M. Young	Project Number S1013
Project Title The Effect of Body Symmetry on Athletic Ability	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The main objective/goal in this project is to see if there is a correlation between body symmetry and athletic ability, and if so to what degree does body symmetry effect athletic ability.</p> <p>Methods/Materials In this project the main tool used was a digital measuring caliper. Using this device I was able to measure 40 high school students for body symmetry. Out of the 40 subjects, 20 were athletic, and 20 were non-athletic, and in each catagory, 10 were female and 10 were male. To determine body symmetry, 8 measurement were taken from each person: ear width and length, elbow width, wrist width, index and ring finger width, ankle width, and foot width. Each side of the body was measured twice to reduce measurement error. I also asked each subject their 1 mile run time, and the number of hours a week they participated in a physical activity. This information determined if the subhject was athletic or non-athletic. I then inputed all the collected data into a spread sheet and found out the asymmetry index for each person. The asymmetry index is the percent out of 100 the subject is symmetrical, 0 being perfectly symmetrical.</p> <p>Results In this experiment I found that the asymmetry index for the athletic subject was 19.7%, while the asymmetry index for a non-athletic person was 26.4%. There was a 6.7% difference between the atheltic subject, and non-athletic subject. The athletic subjects also ran a 50 second faster mile time compared to that of the non-athletic subjects.</p> <p>Conclusions/Discussion I conclude that there is a definent correlation between body symmetry and athletic ability, and my results support my hypothesis. One interesting thing I found while doing this experiment was that one individual, who participated in a physical activity the longest (in hours) also happened to be the most symmetrical (had the lowest asymmetry percent). This information can be used by coaches who want to help their athletes by giving them exercises to improve their symmetry. Not everyone is perfectly symmetrical and it would be interesting to see if certain exercises would improve asymmetries.</p>	
Summary Statement My experiment focuses on the effect of body symmetry on athletic ability, by measuring certain body parts of both athletic and non-athltic individuals, this correlation can be made.	
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