



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

<b>Name(s)</b> <b>Megan K. Marsh</b>	<b>Project Number</b> <b>J1010</b>
<b>Project Title</b> <b>How Quick Is Your Heart Rate Recovery?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> My project was to determine if cardiovascular fitness has a direct effect on heart rate recovery times. I believe that athletes, with a strong cardiovascular system, will have quicker heart rate recovery times in comparison to non-athletes, with poor cardiovascular systems. <b>Methods/Materials</b> I obtained the consent of 30 students, 15 athletes and 15 non-athletes ranging in age from 12 to 14 years. I asked that each student participant jog .4 km to increase their heart rates. Once the heart rates were elevated, the heart rates were recorded in 1 minute increments until the heart rate returned to the resting heart rate time. Finally, heart rates were charted to clearly show which students heart rates returned to the resting rate time in a shorter period of time. <b>Results</b> The heart rate recovery time for athletes ranged from 300 seconds down to 60 seconds and averaged 92 seconds. In comparison, for non-athletes the heart rate recovery times ranged from 360 seconds down to 60 seconds but took an average of 208 seconds to return to their resting heart rate time. <b>Conclusions/Discussion</b> My conclusion is that athletes have a significantly stronger cardiovascular system which had a direct impact on their heart rate recovery time after physical exertion. Athletes have much quicker heart rate recovery times in comparison to non-athletes. By completing this project, I have shown that physical fitness has a direct impact on cardiovascular fitness.	
<b>Summary Statement</b> How does cardiovascular fitness impact heart rate recovery times in a person?	
<b>Help Received</b> School advisor helped in identifying student sample groups.	