



CALIFORNIA STATE SCIENCE FAIR 2009 PROJECT SUMMARY

Name(s) Madeline A. Clark	Project Number J1306
Project Title How Do Age and Gender Affect Resting Heart Rate?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to determine if age or gender affects the speed of a human's resting heart rate. I thought age and gender would affect it and I thought younger children would have faster resting heart rates, because they are constantly moving. Also, the blood has less distance to travel, just like females to males. They are generally smaller than males so their blood will have less distance to travel.</p> <p>Methods/Materials My subjects consisted of fourteen subjects, seven females and seven males, from each of the four categories that I am tested: first grade, eighth grade, 25-35 years, and 45-55 years. I took each of the subject's pulses after they sat for five minutes, therefore I collected their resting heart rate. I compared and analyzed my data to see if age and gender affects resting heart rates.</p> <p>Results The 1st grade's data ranged from 58-112 beats per minute, the males' average resting heart rate was 92.2 beats per minute, and the females' average was 83.8 beats per minute. The 8th grade's data ranged from 56-104 beats per minute, the males' average resting heart rate was 82.6 beats per minute and the females' average was 72.4 beats per minute. The 25-35 age group's data ranged from 50-78 beats per minute, the males' average resting heart rate was 66.1 beats per minute and the females' average was 65.6 beats per minute. The 45-55 age group's data ranged from 52-68 beats per minute, the males' average resting heart rate was 58.7 beats per minute and the females' average was 62.9 beats per minute.</p> <p>Conclusions/Discussion My data seem to indicate that my hypothesis was partially incorrect and partially correct. I hypothesized that females would have a higher resting heart rate than males. According to my data 1st grade males had a higher average resting heart rate by 8.4 beats per minute, 8th grade's data showed that males had higher average resting heart rates than females by 10.2 beats per minute. The 25-35 age group showed males had a higher average resting heart rate, too, but only be half a beat. This may not be a significant difference, given possible error. The 45-55 age group was the only age group that seemed to agree with my hypothesis. It showed that females had 4.2 more beats per minute than males. Overall, according to my data, males generally have a higher average resting heart rate than females, not what I hypothesized. My experiment also showed older people have lower resting heart rates.</p>	
Summary Statement My project is how age and gender affect resting heart rate, to try to answer this I tested four groups: 8th grade, 1st grade, 25-35 years, and 45-55 years, and took their resting heart rates.	
Help Received I received no help while doing this project.	