



**CALIFORNIA STATE SCIENCE FAIR  
2005 PROJECT SUMMARY**

<b>Name(s)</b> <b>Susan J. Stahlman</b>	<b>Project Number</b> <b>S0324</b>
<b>Project Title</b> <b>The Effects of Video Game Play on Blood Pressure and Heart Rate</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of this project was to see if playing video games causes a significant change in blood pressure, which theoretically could lead to future health problems. If students get excited about playing video games, then their blood pressure and heart rate could rise.</p> <p><b>Methods/Materials</b> 51 subjects, ages 11 to 18, participated in the project. Resting blood pressure and pulse readings were recorded before playing a car racing video game. While racing, blood pressure readings were recorded every two minutes for a minimum of three readings. After the race was over, the subjects' blood pressure and pulse was recorded one more time. A racing average was computed using the last three systolic, diastolic, and pulse readings. Differences were charted between the resting blood pressure and the average racing blood pressure. A control group consisted of 17 subjects whose blood pressure and heart rate was monitored during a non-related, 15-minute rest period.</p> <p><b>Results</b> The average systolic blood pressure dropped 1.3 points from resting to when the participants were playing video games and the diastolic blood pressure dropped 0.1 points, but the average pulse rose 3.0 beats per minute. The control systolic blood pressures dropped 2.6 points, the diastolic pressures dropped 2.4 points, and the heart rates dropped 3.8 points. The increase in heart rate while playing the video game was statistically significant, but there was no significant change in blood pressures between the video game players and the controls.</p> <p><b>Conclusions/Discussion</b> The hypothesis was partially supported. Unexpectedly, both the blood pressures and the heart rate dropped in the control group. In the racing groups, the systolic and diastolic blood pressures also dropped, but not as drastically as they did in the control group; this difference was not statistically significant. However, the heart rates in the racing group rose significantly. Although there was a physiological response to playing the game (heart rate increase), there was not a significant effect on blood pressure. Although there may be other health consequences to long term or very intense video game play, this project did not show that casual playing has a significant cardiovascular effect on adolescents.</p>	
<b>Summary Statement</b> The blood pressure of students, ages 11-18, was tested before, during, and after video game use.	
<b>Help Received</b> Borrowed automatic blood pressure machine from the Edwards Air Force Base Clinic.	