



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Sarah J. O'Keefe	Project Number J1018
Project Title Does Blood Pressure Affect Heart Rate?	
Abstract Objectives/Goals The objective of my project was to see if there will be a relationship between blood pressure and heart rate. Methods/Materials I measured blood pressure and heart rate in eight subjects (two adult male, two adult female, two teen female, and two male children) sitting, laying down, raised to a 45 degree angle, 90 degree angle and laying down. There was a five minute period between each change in position. I used a tilt table, blood pressure cuff and stethoscope and watch to take my readings. Results I was able to change systolic pressure in 6 of 8 subjects and change diastolic pressure in all 8 subjects based on their position on my tilt table. The pulse rates of all subjects changed in each position of the tilt table. The greatest change in the blood pressure and heart rate occurred for 6 of 8 subjects when they were moved from 90 degrees to lying down. Conclusions/Discussion Six of my eight subjects had similar results. I was able to trigger a drop in blood pressure at the end of the subject's time on the tilt table. When a subject was moved from the 90-degree position to lying down there was a drop in blood pressure and an increase in heart rate. I was able to prove my hypothesis that blood pressure and heart rate are related. When there is a drop in blood pressure the heart increases blood flow by beating faster to compensate.	
Summary Statement For my project I wanted to see if there was a relationship between blood pressure and heart rate.	
Help Received Father helped me build the tilt table. Mother helped with the display board. Neighbor taught me how to take blood pressure and pulse readings. Neighbors and family were subjects.	