



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

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Project Title Hypertension in Children Based off of Ethnicity: Prevalence, Causes, and Prevention	
Abstract Objectives/Goals The objective of this experiment is to conclude whether hypertension is occurring in adolescents, if so specifically which ethnicity has the greater reported incidence cases. It is performed to detect premonitory unknown triggers for hypertension in order to determine prevention of this disease. Also, to come upon a possible cure for hypertension in adolescents. Methods/Materials Electric sphygmomanometer along with electric weighing machine, tape measure, and consent forms. Questionnaire of demographic data and genetic history for test subjects. 71 adolescents aging between 9-16 years from 6 different ethnicities. Measure blood pressure 3 consecutive times, weight, and height of each adolescent, also record questionnaire data and readings. Repeat procedures for 49 more students in order to expand project and present the questionnaire. Results The experiment resulted in 18.3% of the 71 children to be hypertensive which is equivalent to 13 of the 71 children being confirmed hypertensive. Out of the 13 hypertensive children, 9 were Indian which is equivalent to 69.23%. The other ethnicities consisting of hypertensive children are Vietnamese individuals, American individuals, and European basis individuals. Only 2 of the 13 hypertensive children are overweight. Both overweight children were of Indian descent. Further results will be present when the project is expanded and questionnaire is taken by all tested subjects. Conclusions/Discussion The data also showed at all ethnicities are at a risk of high prevalence rates despite Asians having a significant lead. Obesity may not necessarily be present whenever an individual is diagnosed with Hypertension although they are correlated. It can be concluded that hypertension is occurring in children, more so specifically in children brought up in India. This is a problematic situation and needs to be acted upon with concern as hypertension in children is antecedent to hypertension in adults which may generate other chronic and deadlier diseases if left untreated. If hypertension occurs in children, it will lead to a country suffering from twice as many deaths caused by heart disease. Previously, testing focusing on specific children in specific ethnicities had been performed widespread, although a test based on all ethnicities has not been performed yet.	
Summary Statement My project revealed there is a prevalence of hypertension in adolescents despite there being a greater amount of incidence cases reported in a specific ethnicity, every tested ethnicity had reported cases of hypertension in the adolescents.	
Help Received I physically tested the 71 individuals and will test the remaining 49 individuals for blood pressure, height, and weight and prepared the questionnaire. My mentor, a general medist aided in analyzing the blood pressure readings, diagnosing the children hypertensive in accordance to the 95th percentile.	