



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Sae H. Ackerstein	Project Number J1301
Project Title The Seals of Elkhorn Slough: How Close Is too Close?	
Abstract Objectives/Goals This year for science fair I studied the effect of human/boat disturbance on harbor seal behavior in Elkhorn Slough. Methods/Materials I observed 5 seal behaviors; rest, comfort movement, alert, locomotion, and snort. I observed from a cliff above the seal haul-out area. I chose 5 seals and observed each seal for 10 seconds sequentially for 10 minutes, then chose 5 new seals and repeated. I recorded the behavior, the number of boats present if any, and what distance they were from the seals. Results I found that there was no correlation between the number of boats and the amount of disturbance. The data shows that seals became alert from the boats in zone 3(150-100 meters), calmed down in zone 2(99-50 meters), and became substantially more alert when vessels entered zone 1(49-0 meters). Conclusions/Discussion Based on my data, I would recommend that when visiting Elkhorn Slough, it is fine to go by the seals but to move quickly when in the 150 to 101 meter zone and the 50 and under area. The 100 to 51 meter area is a good zone for observation.	
Summary Statement When I asked how seal behavior changed in response to human disruption, I found that seals were more disturbed when kayaks were 150 to 100 meters and 50-0 meters away from the seal haul-out area.	
Help Received I designed the project and analyzed the data but my mom helped create the graphs on the computer.	



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Madison L. Bigham	Project Number J1302
Project Title Does Saddle Pad Material Affect a Horse's Core Temperature?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this project was to discover which saddle pad material kept my horse's core temperature the lowest during work to minimize cooling time.</p> <p>Methods/Materials Horse, Riding Tack, Wool Saddle Pad, Cotton Saddle Pad, Polyester Saddle Pad, Timer and Digital Thermometer; I rode my horse for thirty minutes using different saddle pads to determine which had the greatest effect on the horse's core temperature. Each test ride occurred on separate days.</p> <p>Results After testing my project, I found the cotton saddle pad resulted in the lowest temperature with an average of 100.4 degrees. Wool was the highest with an average of 101.4 degrees, and polyester fell in the middle with an average of 100.9 degrees.</p> <p>Conclusions/Discussion As I hypothesized, the cotton saddle pad resulted in the lowest average core temperature. By using the cotton saddle pad during my training, I hope to minimize my cooling time. As further investigation, I would like to time the amount of cooling necessary to return the horse's core temperature back to the baseline temperature.</p>	
Summary Statement My project explores how a horse's core temperature is effected by saddle pad material.	
Help Received My parents trailered the horse to an outdoor arena, where I performed all testing independently. Prior to testing, I discussed the project with my veterinarian Dr. Gayle O'Banion.	



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Olivia J. Cevasco	Project Number J1303
Project Title Diabetes, A Bloody Mess: Non-Invasive Glucose Testing	
Abstract	
Objectives/Goals The objective of this study is to determine the most effective, non-invasive method to measure glucose for diabetics by comparing the concentration of glucose in saliva and tears to blood. Most diabetics measure their glucose levels 2-6 times daily using a glucometer, lancing device, and test strips, but this method is painful and irritating. A non-invasive glucose testing method is needed to make it more convenient for diabetics to measure their glucose levels.	
Methods/Materials To measure the glucose concentration in the participant's blood, a glucometer, a drop of blood produced by a lancing device, and test strips were used. However, the glucometer could not measure the glucose concentrations in tears and saliva because the meter said the levels were too low to read. Benedict's Solution, a blue reagent that changes color based on the presence of reducing sugars, was used to determine the concentration of glucose in the control solutions, tears, and saliva. When combined in a 5:1 ratio of Benedict's solution to the controls, saliva, or tears and placed in a boiling water bath, the Benedict's solution reacts and changes color from blue to red based on the concentration of sugar. As a result, a copper oxide precipitate forms, and is filtered out of the solution. Controls of 0 (negative control), 50, 100, 250, 500, 750, and 1000 mg/dl (positive control) of glucose and 1ml of saliva and tears were used. A colorimeter measured the intensity of the solutions' color by calculating how much of a red wavelength was absorbed by the blue solutions. (A lower absorbance indicates a higher glucose concentration because more of the copper oxide was filtered out and vice versa for solutions with a lower glucose concentration.)	
Results Three replicate trials were conducted, and a linear equation was used to calculate the glucose concentrations in tears and saliva. The data shows that blood had an average of 102mg/dl, tears had 132mg/dl of glucose, and saliva did not have any glucose.	
Conclusions/Discussion Tears proved to be an effective alternative method for glucose testing, while saliva did not. However, more precise methods are required to find a definitive correlation between the glucose concentrations in tears, saliva, or blood. Laboratories across the U.S. are currently creating innovative, non-invasive methods and devices to measure glucose using tears and saliva.	
Summary Statement Tears proved to be an effective alternative method for diabetes glucose testing while saliva did not contain any glucose and proved ineffective.	
Help Received I did not receive any help for this experiment and researched and conducted it independently.	



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Aathith Chandrasekaran; Ian Kim	Project Number J1304
Project Title Correlation between Preference of Monosodium Glutamate on Body Mass Index	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Monosodium glutamate (MSG) is glutamic acid is naturally present in our bodies, and in many foods like tomatoes, cheese, seaweed and other foods. MSG is used in the food industry as a flavor enhancer and frequently used in Chinese food. Some people are concerned that MSG can cause obesity, depression, visual and even brain damage. We decided to put one of these concerns to test, mainly the effect of MSG on obesity using Body Mass Index (BMI).</p> <p>Methods/Materials After obtaining informed consent. Subjects were given vegetable broth along with different concentration of MSG desolved in vegetable broth Subjects were asked to taste each samples and asked to fill out a survey asking for their age, gender, height, diabetic status, which sample(s) they felt that had a flavor enhancer and which sample they preferred. Subjects weight was measured and recorded to determine the BMI.</p> <p>Results : Most subjects (42 out of 51 or 82.4%) could tell which sample contained added MSG. Among them, 35 out of 42 or 83.3% of them prefer the flavor of sample containing MSG. Seven subjects who could tell which sample contain(s) contain MSG, but prefer the flavor of sample with no added MSG. When you compare percentage of people who have normal BMI versus BMI greater then 25, there was no statistical difference among people who prefer the flavor of MSG versus who did not. However, when you compare percentage of people with BMI greater than 30, increased preference for MSG seem to be associated with increased BMI of the subjects</p> <p>Conclusions/Discussion People who preferred the flavor of Monosodium glutamate (MSG) was not associated with increased Body Mass Index (BMI) between 25 to 29.9 (overweight range). However, people who preferred the flavor of MSG was associated with increased BMI greater than 30 (obese range).</p>	
Summary Statement We wanted to find out whether monosodium glutamate caused people to become obese.	
Help Received Doctor Jim C. Kim oversaw the the safety of the project to human subjects.	



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Ella Cundiff; Kaya Spencer	Project Number J1305
Project Title The Effects of Foods on the Blood Glucose of a Type 1 Diabetic and a Non-Type 1 Diabetic	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this experiment was to determine how different types of foods affect blood sugars. In addition, we were looking at how different types of foods affected a type 1 diabetic's blood sugar versus a non-diabetic's blood sugar.</p> <p>Methods/Materials Type 1 Diabetic, Non Diabetic, 2 blood sugar meters, 2 lancets, Blood sugar test strips, Timer, bread (carbohydrate), meat (protein), Cheese (fat), Juice(fast-acting sugar).</p> <p>Wash Hands. Take & Record a starting blood sugar level for both the Type 1 Diabetic and Non-Diabetic. Eat the specific food at same time. Every 15 minutes, wash hands and record blood sugar levels for a total of 2 hours. Repeat for all food types.</p> <p>Results Overall, juice (fast-acting sugar) had the most effect on both the type 1 and non-type 1 diabetic's blood sugar. Carbohydrates had a very small effect on the non-diabetic while it greatly increased the type 1's blood sugar level over the 2 hour period. Fats and proteins had very little effect on the blood sugar levels of both type 1 and non-type 1 diabetic.</p> <p>Conclusions/Discussion We saw a bigger difference in both the effect on blood sugars and the difference in effect between a type 1 and a non-type 1 with fast-acting sugar and carbohydrates and not a big difference when eating protein and fats.</p> <p>This experiment showed us how food affects blood sugars in people with and without type 1 diabetes. We also learned more about how our bodies turn different types of food into energy. This information could be used to teach people a better understanding about how to control their blood sugar levels so that they can stay healthier.</p>	
Summary Statement We tested the effects of different types of foods (carbohydrate, fat, protein, sugar) on the blood sugar levels of a type 1 and a non-type 1 diabetic to see which ones had the greatest impact over a 2 hour period.	
Help Received We researched and designed the experiment on our own. We consulted with a biology major for help in answering questions and reviewing our results.	



CALIFORNIA STATE SCIENCE FAIR 2017 PROJECT SUMMARY

Name(s) Ryann O. Flach	Project Number J1306
Project Title Do Meat Goats See and Prefer Color? The Effect of Various Feed Color Containers on Meat Goat Consumption	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this study is to determine if meat goats are able to see color or if they are color blind. If they do see color I wanted to know whether there is a specific color or colors they prefer.</p> <p>Methods/Materials I used 2 similar age and size meat (Boer) goats separated in barn stalls and over a 2 week period fed them daily the same amount of feed in 4 colored containers and 1 non colored container. 1 hour after each feeding period, I weighed remaining goat feed in each container using a gram scale to measure consumption data. In the third week of the study I used only two non colored containers for the control portion of the experiment.</p> <p>Results Initial experiment results indicate that meat goats DO see color and MAY prefer to eat from specific colored containers. Goat 1 preferred to eat food from the colored containers in both the first and second weeks and preferred the red colored bucket. Goat 2 preferred the colored buckets in the first week and had a slight preference for the black, by just 1%, non colored bucket in the second week. My results conclude that this experiment would require further study in order to truly verify these results but the data concludes that there is an indication that goats do see and prefer color.</p> <p>Conclusions/Discussion I am very involved in raising and breeding meat goats on our family farm. Good nutrition is essential to the health and future of our livestock and I think this research will benefit goat farmers like us to ensure proper food consumption without any added and unnecessary stress on the animals. When we take our goats away from their daily farm environment to offsite locations, such as fairs for show purposes, their feeding patterns often change and sometimes they stop eating and drinking water in this new environment. If keeping their preferred feed container color used at home the same as when the animals are offsite ensures that feeding patterns are not changed I think this naturally ensures proper feed consumption which results in good overall health for meat goats. It is also a big expense to make sure the right type of goat feed is fed to our herd and because of this investment it is important to make sure feed is consumed and not wasted. If proper nutrition and consumption can easily be supported by making sure the right feed container is used every time I think this experiment will be helpful for our family farm as well as others.</p>	
Summary Statement By testing the effect of various feed color containers on meat goat consumption I found that meat goats are not color blind and not only do they see color but there may be specific colors they prefer over others.	
Help Received I worked with the two meat (Boer) goats on my own during the experiment that are part of the herd raised on our family farm. I initially consulted our large animal veterinarian who approved my project idea.	



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Heather L. Halog	Project Number J1307
Project Title Can You Hear Me Now?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this study is to determine whether people can localize sound better with one ear or two.</p> <p>Methods/Materials Each test subject was placed in the center of a room while blindfolded. I would make a sound within the room and I would time and log how long it took the test subject to locate the sound. This test was done with the right ear plugged, then the left ear plugged and finally with the use of both ears. This process was repeated on 50 test subjects. Materials used were blindfold, a timer, duct tape to mark measured spaces in the room 3 1/2 yards apart from the center of a marked circle, measuring tape and ear plugs. I conducted this test on 50 different people.</p> <p>Results After repeated tests, the results of this study showed that people can localize sound better with the use of both ears as opposed to one ear.</p> <p>Conclusions/Discussion Repeated trials with multiple subjects revealed that people can localize sound better with both ears as opposed to one ear. It was further revealed, when plugging one ear, that people could localize sound better with the right ear open as opposed to the left ear being open. It is concluded that the use of both ears is more effective in sound localization than it is with only one ear.</p>	
Summary Statement As measured by the time it took people to localize sound with one ear versus two ears, I found that people hear better with the use of both ears as opposed to only one ear.	
Help Received I came up with the test I conducted with the help of my science teacher, Mr. Scott and through research online. My test subjects were friends and classmates at school. Most of my research on hearing was done on the internet .	



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Kirsten E. Killian	Project Number J1308
Project Title Pawsitively Predominant! Do Dogs Have a Dominant Paw?	
Abstract Objectives/Goals My objectives and goals for this experiment were to find if dogs have a dominant paw or prefer a paw. Methods/Materials I used: 30 dogs, paper, pencil, dog treats, sticky tape, and a stopwatch. I went to the owner's house held a treat tightly in my hand, and set a timer for 2 minutes. Next, I put a piece of tape on top of the dog's snout, and set a 2 minute timer. Finally, I had the dog sit and stand to see what paw they lead with. Results I found that dogs do have a dominant paw. I also learned that 60% of males were right pawed and that females tied in right and ambidextrous with 35.5% Conclusions/Discussion Since dogs do have a dominant paw, if training your dog to shake, or high five you can focus on the paw for that gender. If I could reconstruct this experiment I would get a bigger sample size and test all of the dogs in a bland room so that there are no distraction to the dogs and they are focused only on the tests.	
Summary Statement I showed that all dogs, both male and female, have a dominant paw and this can make successful dog training easier.	
Help Received I conducted the experiment on my own and received help from Korea Nydick a scientist at Sequoia National Park. She steered me in the right direction in where to find information about dog handedness.	



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Atulya D. Mandyam	Project Number J1309
Project Title Wheel Running During Adolescence Reduces Weight Gain and Increases Exercise Output During Adulthood	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To determine whether physical exercise during adolescence will have beneficial effects in adulthood such as decreased body weight and greater exercise output.</p> <p>Methods/Materials Adolescent (43-day-old, n=5 males) and adult rats (70-day-old, n=6 males, n=6 females) were single housed in rat cages equipped with running wheels (Nalgene activity wheels) for 6-10 weeks and their activity (number of revolutions of wheel per day) was recorded with VitalView Software (MiniMitter/Resperonics Inc). Rats were weighed once a week to monitor body weight. All procedures were approved by the Institutional Animal Care Committee at The Scripps Research Institute. Age matched male (n=13) and female (n=6) non running control rats were single housed in the Vivarium. A total of 36 Long Evans rats were used in my study. Data was analyzed by a statistical software called GraphPad Prism.</p> <p>Results Two-way analysis of variance followed by Fishers LSD posthoc tests were performed to determine group differences at each timepoint. Adult female rats weigh less than adult male rats ($p < 0.05$). Adult male rats that performed wheel running during adolescence weigh less than adult male rats that did not exercise during adolescence or did not exercise at all ($p < 0.05$). Wheel running during adulthood reduced body weight in adult male rats ($p < 0.05$) and did not alter body weight in female rats. Adult female rats run more distance than adult male rats ($p < 0.05$). Adult male rats perform equally to adult female rats only when they start wheel running during adolescence ($p > 0.05$).</p> <p>Conclusions/Discussion My results supported my hypothesis because there was a lower body weight and greater exercise output in rats in adulthood when they started wheel running during adolescence. My findings, in addition to benefits of exercise, reveal gender differences in physical activity in rodents. The gender difference in physical activity is abolished when activity was initiated early on during adolescence in the lower performing gender. This effect is attributable to the lower gain in body weight in adulthood in male rats due to wheel running performed during adolescence. Based on these observations in animal studies, we can speculate that people who exercise during adolescence will have a superior physical exercise output in adulthood compared to adults who did not exercise during adolescence.</p>	
Summary Statement My project is about the beneficial effects of voluntary physical exercise during adolescence on body weight and exercise output during adulthood.	
Help Received My work was performed under the supervision of McKenzie Fannon and Dr. Chitra Mandyam at The Scripps Research Institute. I would like to acknowledge that I used the Vivarium at the Scripps Research Institute to perform my research.	



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Joelle A. Mundo	Project Number J1310
Project Title The Affect of Age on Hearing High Pitches	
Abstract Objectives/Goals The objective of this study is the determine how age affects the ability to hear high pitches. Methods/Materials A quiet environment for testing, 24 8th grade subjects and 30 adult subjects ranging from 20 - 72 who used earbuds and headphones, a computer program with variable pitch of a single note. I was able to see the frequency of the note at all times while subject was not. The subject signaled when they could not longer hear the note,the frequency was recorded at that point. Results Summary of data shows the average highest to lowest pitch heard is as follows; the highest pitch 8th graders heard was 12.8 kHz, in adults (ages 20 -50)the highest pitch was 12 kHz, in adults (ages 50-60) the highest pitch was 9.15 kHz, in adults (ages 60 - 70) the highest pitch was 8.4 kHz. Conclusions/Discussion My hypothesis seems to be correct. I believe this, because when I averaged all of the different data together you could see there was a decline as the subjects got older. The main reason why the older subjects did not hear the high pitches is because as we get older hair cells in our ears die and start to get damaged, in addition as we get older our ear drums tend to be less flexible.	
Summary Statement My experiment is important because it demonstrates that hearing high pitches will probably decrease with age, which helps prepare people for the aging process.	
Help Received None, I performed the experiments myself.	



**CALIFORNIA STATE SCIENCE FAIR
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Name(s) Jaclyn N. Rawnsley	Project Number J1311
Project Title Color through a Dog's Eyes	
Abstract Objectives/Goals My objective was to find if dogs can distinguish the difference between three primary colors. Methods/Materials Blue, Red & Yellow Felt (all the same size), various food & praise rewards, dog. I used the reward system when my dog gave the appropriate trick/response to each of the different colored felts when voice commands were used. I repeated the process above without the use of voice commands until I received the desired result when each of the colored felts were presented in a random order. Results At the end of my experiment, I proved that dogs can see color. I trained my dog to successfully determine the difference in color and respond with the appropriate trick without the use/need of voice commands. Conclusions/Discussion During this experiment, my goal was to successfully train my dog to differentiate color. To recap, I used the three colors, red, yellow, and blue to symbolize as commands to determine if dogs are colorblind. My hypothesis was that dogs could be trained to see and react to specific colors. My data proved I was correct. Dogs can see the difference in color and respond appropriately. The background research showed that dogs can see color but not all the colors we can see. They can see a variety of blues, yellows, and violets.	
Summary Statement After the proper training, my dog was able to help me prove that dogs can see color by responding to colored felt in the desired fashion.	
Help Received I designed, trained and performed the experiments myself.	



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Varun Salwan	Project Number J1312
Project Title How Does Weight Affect Blood Pressure?	
Abstract Objectives/Goals Objectives/ Goals: My project was to determine how weight affects blood pressure in adults. I believe that as our weight or BMI (body mass index) increases, our blood pressure will go up as well. Methods/Materials Methods and Materials: I measured the BMI (derived from the weight and height of the individual) and checked the average blood pressures of 30 people (15 men, 15 women) with a blood pressure cuff. I checked the blood pressure on 3 separate occasions over 3 weeks. I excluded people who had a preexisting condition of high blood pressure or on any medications that would lower blood pressure. Results Results: The experimental results supported my hypothesis by showing that as the BMI increased, so did both systolic and diastolic pressures. In people who are underweight (BMI <18.5) the average blood pressure was 110/68, 118/74 in people with a normal BMI (18.5-24.9), 132/82 in overweight individuals (BMI 25-29.9) and 138/88 in the obese (BMI>30). Conclusions/Discussion Conclusions: My conclusion is that as our weight (BMI) increases, so does our blood pressure.	
Summary Statement My project is about how our blood pressure changes in regards to changes in our weight.	
Help Received n/a	



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Evelyn Tran	Project Number J1314
Project Title Push-Pull Dynamics: The Effect of Pushing Muscles to Failure on Successive Exercises	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Will performing one set of pushups to failure prior to performing one set of pull ups to failure effect the number of repetitions completed in the one set of pull ups to failure?</p> <p>Methods/Materials Control group routine (one set of pull ups to failure), experimental group #1 routine (one set of pushups to failure followed by 30 seconds of rest before one set of pull ups to failure), and experimental group #3 routine (no rest between sets) repeated three times during the course of nine days - every routine performed with 24 hour difference. No physical interactions to cause a warm up, no ingestion or anything to enhance performance. Subjects may hydrate (100% mountain spring water: zero calories, no sweeteners, no artificial colors or flavors). Maintain facial expression, mood, and tone of voice, and routines over the course of nine days.</p> <p>Results Results show performing one set of pushups prior to one set of pull ups to failure with a thirty second rest period in between increases the number of pull ups. In perspective, the number of pull up repetitions completed in the control group is invariably equal or greater than the number of pull up repetitions completed in the corresponding trial in the experimental group. Individual trials in the control group consistently increase from previous results.</p> <p>Conclusions/Discussion I predicted one set of pushups before one set of pull ups to failure can increase the pullup repetitions. I hypothesize thirty seconds of rest between will give time for blood flow to increase to primary muscles targeted in both the pushups and pullups (the abdominal muscles used to stabilize in both exercises). A graph shows performing pushups prior to pull ups with a thirty second rest period between has the most significant effect in increasing pull up repetitions. The answer to my question then, is performing one set of pull ups to failure prior to performing one set of pull ups to failure does increase the number of pull up repetitions. Experimental group 1 was the most successful experimental group, showing significant increases in pull up repetitions completed, implying that the cardiac system impacted and played a significant role in this experiment due to the failed performance in the experimental group 2.</p>	
Summary Statement Will performing one set of pushups to failure prior to performing one set of pull ups to failure effect the number of repetitions completed in the one set of pull ups to failure?	
Help Received While I received guidance on design from my parents and teacher, I researched and conducted the experiment myself.	



CALIFORNIA STATE SCIENCE FAIR 2017 PROJECT SUMMARY

Name(s) Vaishnavi Ventrapragada	Project Number J1315
Project Title Hypertension in Children Based off of Ethnicity: Prevalence, Causes, and Prevention	
<p style="text-align: center;">Abstract</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	
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.	