



CALIFORNIA STATE SCIENCE FAIR

2015 PROJECT SUMMARY

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Project Title Nature vs. Nurture: Why Do I Have Glasses?	
<div><div>Objectives/Goals The number of people using visual aids is rapidly increasing. However, it is still not completely clear what is causing this. This epidemiological study uses a sample of the population to find out the probabilities of inheriting need for visual aids based upon family visual history. Environmental factors such as TV viewing time and computer usage time will also be examined.</div><div>Methods/Materials For this project, the main material was 400+ forms asking about visual history, family visual history, and environmental factors. Only 97 pieces of data were collected from optometrists as many optometrists refused to provide any data, or were not able to contribute much data. Optometrists that did help were two different Lens Crafters and the Mira Mesa Optometry. 326 pieces of data were collected from places such as outside of supermarkets, cultural gatherings, swim meets, and school.</div><div>Results The probabilities of inheriting a need for visual aids turned out to be much higher than expected. It was determined that the chance of a child needing glasses when both parents used them was 56.7%. The chance of needing glasses when only one parent wore glasses was 30.2%. When neither parent needed glasses, it was discovered that there was still a 19% chance of developing a need for glasses. These results were also compared to the opinions of three optometrists of San Diego. One optometrist thought that 50% of her patients acquired glasses from genetics. The other two optometrists thought that genetics was a much higher factor of poor eyesight and that 75% of their customers had poor eyesight caused by genetics.</div><div>Conclusions/Discussion For years, children have been urged not to watch too much TV or spend an excessive amount of time on the computer. However, from the data collected, it was found that genetics resulted in a higher amount of children requiring glasses than environmental factors causing this need. Environmental factors merely increase the chances by a little. In fact, TV viewing time was discovered to have little, to no affect. The chances of getting glasses, when both parents had them, were above 50%.</div></div>	
Summary Statement This epidemiological study concerns the role of genetic and environmental factors in the causation of poor eyesight disorders.	
Help Received Parents helped drive to survey locations; Three optometrists provided data and interviews; Two doctors of optometry provided guidance and suggestions	