CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY

Name(s)

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Project Number

35420

Project Title

Can You See Me Now? Does Peripheral Vision Change in Adolescence?

Abstract

Objectives/Goals

The objective of this project is to determine if peripheral vision changes in adolescence. I hypothesize that around the age of ten, due to growth of the lens, a change will occur in the peripheral field.

Methods/Materials

I constructed an apparatus for testing the peripheral field using protractors to measure the angle between the forward-looking vision of the subject and an object at the end of rotating arms of the device. Approximately 50 subjects were tested (additional testing in progress), both male and female, ranging in age from 7 to 14 years. Each subject was tested twice for both eyes and the measurements gathered were used to find the peripheral field for each subject.

Results

In the subjects I tested, there appeared to be a slight negative change in the peripheral field starting at the ages of 9 and 10, as I had hypothesized. The field seemed to grow as the subjects aged from 7 to 10, where it reached its peak, then seemed to get smaller as the subjects ages grew from 10 to 14.

Conclusions/Discussion

Beginning at the ages of 9 or 10 years, the lens grows and thins while the other components of the eye, such as the cornea, do not grow. This causes the eye to decrease in power for a short time while the lens is growing. In the subjects ageing from 7 to 9, their lenses had not started growing yet, allowing there peripheral to be better. In the subjects aged 10 to 14, their lenses were growing causing their peripheral to be slightly worse. Based on growth patterns of the eye, the peripheral field should start to come back to where it was at the ages of 9 or 10 at a later time, but this did not show in the age group tested.

Summary Statement

Measuring and determining the change in peripheral vision in a population of subjects between 7 and 14 years old.

Help Received

My father helped me to use the Excel spreadsheet program to graph my data and to help copy the graphs for my project board and report.

Preliminary