Hereditary Factors in the Development of Myopia: Work in Progress

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INTRODUCTION

Myopia, or near-sightedness, is a common problem in the United States, and is caused not only by environmental factors, such as reading and lighting issues, but also by hereditary factors. Scientists have been researching this hereditary susceptibility for several years, attempting to identify the locus of the myopia gene. The purpose of my research is to identify a connection between environmental factors, leading to the support of hereditary factors in the development of myopia in a small sample of myopic children. In order to obtain data, I will administer a four-question survey for a parent to fill out about the myopic child, asking two questions about possible environmental factors and two questions about possible hereditary factors. From this data, I will graph the causes of myopia of those children and support the hereditary factors that likely caused the myopia.

THE MYOPIC EYE

![Diagram of the myopic eye]

MATERIALS AND METHODS

Once all IRB forms are submitted and accepted, I will conduct a survey through the help of an optometrist. Ten parents will volunteer to fill out the following survey, resulting in data for ten myopic children. This data will then be analyzed to find the causes for myopia in those cases.

- Did the child have a night-light through early childhood?
  1) Yes  2) No
- Did the child start reading at an early age?
  1) Yes, 3-5  2) No, 6-8
- Do the parents have myopia?
  1) Yes, both parents
  2) Yes, one parent
  3) No, neither parent
- Do the grandparents have myopia?
  1) Yes, four or three grandparents
  2) Yes, two or one grandparent
  3) No, none

LITERATURE


PROBABLE CAUSES OF MYOPIA IN DATA

- Environmental Factors
- Hereditary Factors