



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Joe Kummerfeld; Brian Spain	Project Number S1109
Project Title In the Blink of an Eye	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals In the continuation of our former project, In the Blink of an Eye, we are investigating the question: After working on the computer does the vision of adult subjects worsen more than teenage subjects? Last year we tested just teenage subjects and found many did not have changes in vision after working on the computer even when they wore contact lenses. We thought it would be interesting to research if older eyes were more prone to dry eye syndrome and worsening of vision than younger, teenage eyes. Our hypothesis is that the vision will be worse in adults compared to teenagers. We believe that older eyes will be more prone to Dry Eye Syndrome, and performing an activity such as working on the computer will cause the eyes to dry out even more.</p> <p>Methods/Materials The procedures we followed involved testing our subjects vision using the Rosenbaum Pocket Vision Screener. This vision test was done at the start of the study and after working on the computer for ten minutes. We performed 5 trials on 12 control subjects, all between the ages of 13-18, and 12 experimental subjects all between the ages of 36-53. Each of the subjects was tested at the same time of day and played the same game of solitaire on the computer. Because of last years study showing that contact lenses can influence the development of dry eye syndrome, we decided to test subjects with and without contact lenses. Six of our teenage subjects and six of our adult subjects wore contact lenses and equal numbers did not.</p> <p>Results In the 12 adult experimental subjects, we found all but 2 had changes in their vision. The same number of adult contact lens wearers had changes in vision as non-contact lens wearers. In our control teenage subjects only 4 had diminished vision, 3 of these wore contact lenses.</p> <p>Conclusions/Discussion The results of the experiment supported our hypotheis that vision decreases after working on the computer in the majority of adults, whether or not they wore contacts. This information is important since many people work on computers and should know that prolonged work can lead to diminished vision due to drying of the eyes when they do not blink enough. There is a variety of things that can be done to prevent vision deterioration such as using artificial tears, consciously blinking, looking away from the screen, and lowering the computer screen.</p>	
Summary Statement Our project investigates the effect on vision of working on the computer, especially in causing dry eye syndrome and diminished vision in adults.	
Help Received We worked as a team equally on this project. We received guidance from our science teacher, Mrs. Hamilton. We interviewed three eye doctors for information on dry eye syndrome.	