



**CALIFORNIA STATE SCIENCE FAIR  
2005 PROJECT SUMMARY**

<b>Name(s)</b> <b>Logan F. Stokols</b>	<b>Project Number</b> <b>J1026</b>
<b>Project Title</b> <b>The Effect of Pupil Dilation on Peripheral Vision</b>	
<b>Abstract</b> <b>Objectives/Goals</b> I tested to see whether pupil dilation would increase or decrease peripheral vision. I felt that when the pupil constricts due to light exposure, some of the photoreceptors in the retina would be blocked from light. I thought that peripheral vision would therefore decrease as more lights were turned on. <b>Methods/Materials</b> I built a light controlled apparatus with 4 red lightbulbs. The subject placed his head inside with 1 red light on. I measured peripheral vision, then repeated with 2 red lights on, etc. I used red lights because the rod photoreceptors cannot see red. In this way the photoreceptors were not variable but the iris was. The subjects were looking at an X in the back of the apparatus so that their heads would not move. <b>Results</b> There was little or no change, on average, from test to test. On the few subjects that did change in peripheral vision at different light levels, the change did not seem to correlate in any way to the light. <b>Conclusions/Discussion</b> Pupil size does not seem to affect peripheral vision. I now believe that the lens somehow bends light, either so that we can see around the iris or so that we never see that far out and only see through the center of our pupil. Another possibility is that the change is so slight that my experiment could not measure it.	
<b>Summary Statement</b> I tested to see if dilation of the pupil affects peripheral vision by testing vision at different levels of light.	
<b>Help Received</b> Father helped to build the apparatus	