



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

<b>Name(s)</b> <b>Liam L. Young</b>	<b>Project Number</b> <b>J1327</b>
<b>Project Title</b> <b>The Human Eye: Adaptation to Darkness</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> To determine if age affects the human eyes ability to adapt to darkness</p> <p><b>Methods/Materials</b> The test subjects will stand 6.1 meters (20 ft.) from a covered eye chart in a well lit room. Lights will then be turned off, and the eye chart will be uncovered. Subjects will confirm when they can read the letter on the chart. The time between when the lights were turned off and when they confirmed the letter will be recorded. This experiment will be repeated three times per test subject. The same test will be conducted on all subjects.</p> <p><b>Results</b> Age does affect the eyes ability to adapt to darkness. Younger people have the fastest and most similar rod response time, whereas middle age people have longer and more varied times. The oldest people have the slowest times.</p> <p><b>Conclusions/Discussion</b> The older one gets, the longer it takes for their eyes to adapt to darkness. This is what was predicted based upon research regarding rod response time. Younger people have the shortest times because their eyes have not changed yet. Middle age people have longer and more varied times than the younger people because their eyes are changing and change happens at different rates. The elderly have the longest times due to pupil size reduction which becomes noticeable after middle age.</p>	
<b>Summary Statement</b> To determine if the eyes ability to adapt to darkness is age dependant.	
<b>Help Received</b> Dr. Ninh Tran, M.D. who helped fine-tuned my expermental design. My brother served as my lab assistant and controlled the light switch.	