



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

<b>Name(s)</b> <b>Lily C. Goldman</b>	<b>Project Number</b> <b>S0307</b>
<b>Project Title</b> <b>The Effect of Chewing Gum on Concentration and Short Term Memory Ability</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> I craved to discover whether chewing gum actually had any effect on short-term memory or concentration ability.</p> <p><b>Methods/Materials</b> For my experiment subjects played a simple memory game on the computer that involved matching shapes and required the use of the short-term memory. The independent variable was whether or not the subject was chewing gum. The dependent variable was his/her resulting score on the simple computer memory game, which was calculated based on the amount of time it took him/her to complete the puzzle and how many attempts s/he made. I used the score the subject obtained without chewing gum as the control. Each subject was instructed to play the game once as a practice, to familiarize him/herself with the procedure; the data for the trial runs was not incorporated into the averages. Each subject played the game twice with gum and twice without, but not consecutively. After each game, scores were recorded. Before playing the games with gum, subjects were instructed to chew the sugar-free stick of Orbit Wintermint gum for 30 seconds. All subjects were seated at a desk in a quiet room with fluorescent lighting. They received uniform instructions and played the same memory game. Every test was conducted in the morning on a weekday between 9:00am and 11:30am. Although subjects were merely observed, with no physical contact involved in the tests, informed consent was obtained.</p> <p><b>Results</b> My data tables and graphs of girls and boys ages 14-18 show very similar patterns, leading me to a conclusion that gender has little to no effect on this activity and area of brain function. Within both groups, 70% of those tested used less time and fewer attempts, receiving better overall scores. Concordantly, there was only a minor fluctuation of the non-improving percentile.</p> <p><b>Conclusions/Discussion</b> The data supported my hypothesis, proving that the majority of subjects performed faster and needed less attempts to complete the memory game when they were chewing gum. The results also show that those subjects who did not improve merely scored around the same. Learning that chewing gum is effective is a helpful breakthrough in our community at school. I regard my discovery as a productive piece of advice and knowledge that could be published around the community to benefit schools.</p>	
<b>Summary Statement</b> My experiment is designed to test whether chewing gum can indeed improve short-term memory and concentration ability	
<b>Help Received</b>	