



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

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<b>Project Title</b> <b>Off Balance: Year II</b>	
<b>Objectives/Goals</b> The purpose of this project is to evaluate how severely music affects a human's ability to perform spatial tasks that require coordination accuracy and quick reaction time.	
<b>Abstract</b>	
<b>Methods/Materials</b> Participants were instructed to perform a series of physical tasks through a series of different tests while listening to synthesized music. Test results were recorded and participants were instructed to perform the same series of tasks without the music. Test results were again recorded. Tests were repeated several times with the participants.	
<b>Results</b> In the Finger/Nose and the Heel/Knee Tests, most subjects were able to hit their target 67% of the time when they were not listening to music. When the subjects were listening to music, they were only able to hit their target 33% of the time. In the Ruler Test, 13 cm was the average for subjects when not listening to music. When not listening to music, subjects averaged 17 cm. In the Nystagmus Test, almost none of the subjects showed nystagmus for even 10 seconds. When music was added to the test, subjects showed nystagmus for 10 seconds or longer.	
<b>Conclusions/Discussion</b> Through these results, the hypothesis was proven correct as it appears music does have a negative effect on the vestibular system and in turn, can negatively affect a human's ability to perform spatial tasks. This could be due to an overload of information trying to be transferred through the eighth cranial nerve as it tries to reach the cerebellum or temporal lobe.	
<b>Summary Statement</b> This project is to see how synthesized music affects human vestibular system.	
<b>Help Received</b> none	