



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

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Project Title La La La: The Effects of Music on Muscle Strength	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Our objective was to learn if the presence of music will affect muscle strength and which type of music will have a more positive response: waltz or rock?</p> <p>Methods/Materials Twenty students (ten girls and ten boys ranging from 9th to 10th grade) were asked to be our human subjects. We had three trials testing the absence of music, waltz music, and rock music. During each trial, the subject was blindfolded and asked to hold their arm parallel to the ground while holding a 1.5 kilogram dumbbell. A string attached to two meter sticks were used for accuracy. The stopwatch was started when the subject hold their arm out and stopped when their arm falls below the string. The materials we used were: twenty human subjects, two 1.5 kilogram dumbbells, a stopwatch, rock and waltz music, a CD player, a log book, a blindfold, a digital camera, two meter sticks, and a 180 cm string.</p> <p>Results In this experiment the results were quite alike, but rock music had a slightly more positive response on the human subject#s muscle strength. Next was waltz music and then followed by the absence of music. During the rock music trial, the human subjects were able to hold on to the dumbbells on an average of sixty-five seconds. Waltz music came in second with an average of fifty-five seconds. Finally, coming in last, was the absence of music, with an average of fifty-four seconds.</p> <p>Conclusions/Discussion Our first assumption was that waltz music will have the most positive response towards human muscle strength while rock will have the least response, and the absence of music will come in between. After our experiment, we concluded that our hypothesis was incorrect. The actual results were rock, waltz, followed by the absence of music. Through our research, we learned that music can affect the rate of our heart beat. Although our research stated that rock music will weaken the muscle strength because of the emphasis on the last weak beat, our experiment proves this idea is wrong.</p>	
Summary Statement Our project is about the effects of different kinds of music on human muscle strength.	
Help Received Mother helped provide transportation to get materials.	