CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY

Name(s)
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Project Number
J1312

Project Title
Don't Drink and Sing

Abstract

Objectives/Goals
The objective of my project was to discover the effect of various liquids on the subjects' vocal ranges. I hypothesised that the drinks milk, iced water, root beer and coffee would have a negative effect on the range, while water, orange juice, and herbal tea would have a positive effect.

Methods/Materials
I tested the project by having the subjects drink one of the selected drinks, wait one minute for the drink to take effect, and then recording the subject's range from their lowest note to their highest note. I then compared the affected range to the subject's original vocal range. The subject was then given 24 hours to recover for the next test. Materials that were used for the project include 8 singers of constant age and vocal training, 8 ounces of 7 different drinks, a piano, a recording device, media to store the data, and cups.

Results
The results showed that the average unaffected range of the subjects was approximately 35.75 notes. Water increased the average range by 3.25 notes, Throat Coat Tea by 2.95 notes, Root Beer by 1.39 notes, and Orange Juice by 1.13 notes. Cold water decreased the average range by 1.11 notes, Coffee by 0.12 notes and Milk by 4.75 notes. My results show that drinks do have both a positive and negative effect on the vocal range.

Conclusions/Discussion
Water and Orange Juice increased the average vocal range because these drinks washed away phlegm in the throat that had previously prevented the vibrations of the vocal cords from escaping. Milk decreased the subjects' range because it created more phlegm which blocked the vocal vibrations. Tea and Root beer had a positive effect because these drinks relaxed the vocal cords, allowing for a wider range of vibrations to be made. Coffee had a negative effect on the vocal range because the stimulant, caffine, tightened up the vocal cords creating a smaller range of vibrations. The results show that water, juice, root beer and tea increase the average singers' vocal range while coffee, milk, and iced water decrease it. My results, with the exception of root beer, support my hypothesis.

Summary Statement
The project is about the effect of various drinks on the average vocal range.

Help Received
Dad helped prepared graphs, Expert provided information.