

## Vocal Function Measures Before and After Hydration

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**Background:** The current study utilized a randomized control group design to examine the efficacy of a 3-hr. hydration protocol in improving vocal function. Forty healthy, adult participants between the ages of 18 and 30 were recruited from the general population of students at Fresno State and were randomly assigned to a control group (did not complete the hydration protocol) or an experimental group (completed the hydration protocol). Participants completed a series of vocal function measures (i.e., pitch range and Phonation Threshold Pressures) designed to evaluate laryngeal function two times: a baseline assessment and three hours later.

Those in the experimental group completed the hydration protocol during those 3 hours. Our preliminary data analysis revealed that within group measures showed a statistically significant difference between pre and post measures for both the experimental and control groups. However, the only condition in which a statistically significant difference was found between the experimental and control groups was the low frequency condition. These results do not appear consistent with previous studies and do not support our hypothesis that participants who undergo a 3 hour hydration protocol will demonstrate lower PTPs as compared to participants in the control group.

In addition to the vocal function measures, participants were required to undergo muscle flexibility testing for a concurrent study conducted by Dr. Ullucci from the Physical Therapy Department, examining the effects of hydration on overall muscle flexibility. Once data analysis is completed for each separate experiment, researchers from both studies will compare their results to identify any correlation that might exist between overall muscle flexibility and vocal function following a 3-hr. hydration protocol. Identifying a correlation between hydration and vocal function, as well as any correlation to overall muscle flexibility would contribute greatly to our understanding of how hydration impacts the voice. This is a critical issue for vocal performers or individuals who experience voice disorders.

The implications of our findings, as well as the strengths and limitations of the study, will be discussed and recommendations for further research will be made.