

# Abstract

**Project Title:** Keep Your Head In The Game

**Project ID:**

## Abstract

A brief explanation of your project. Enables judges to receive a base understanding of your project and work.

My project was testing to see if a padded soccer headband would help prevent concussions while heading the ball which was the problem. This project interested me because I have played soccer for most of my life and I always wondered if there was anything to prevent concussions when heading the ball. I thought that the padded soccer headband would work and protect your head which turned out to be right. Then I thought about how much it would really work. The headband would slow down the acceleration and prevent concussions. I used the Vernier low-g-accelerometer to test the acceleration with the headband off and on the head and dropping the ball from four and eight feet. I used a 10 pound medicine ball which is the average weight of a human head. I found that when I created a pendulum and swung the ball from eight feet it made a bigger impact than four feet on the medicine ball. The acceleration was higher without the headband then with the headband which shows that it does work for both heights. Some important data points were the acceleration for four feet with the headband was  $0.72 \text{ m/s}^2$  and without the headband it was  $0.73 \text{ m/s}^2$ . Lastly, the acceleration for eight feet with the headband was  $0.36 \text{ m/s}^2$  and without the headband was  $2 \text{ m/s}^2$ . Overall, this turned out to be true and the headband did work.