

## **Introduction**

Investigating the effect of measured rotational peak power to the exit velocity of a baseball being hit off a tee. High school athletes (n=20) performed a maximal rotational force in both directions(right and left) was determined by measuring the peak force achieved during 6 distinct rotational twist movements on a Keiser Performance Trainer machine set at constant load of 50 pounds per square inch (PSI). Following the rotational test each athlete performed 10 baseball swings hitting a baseball off of a tee and recording the MPH or the ball off of the tee using a Stalker Pro 2 radar gun.

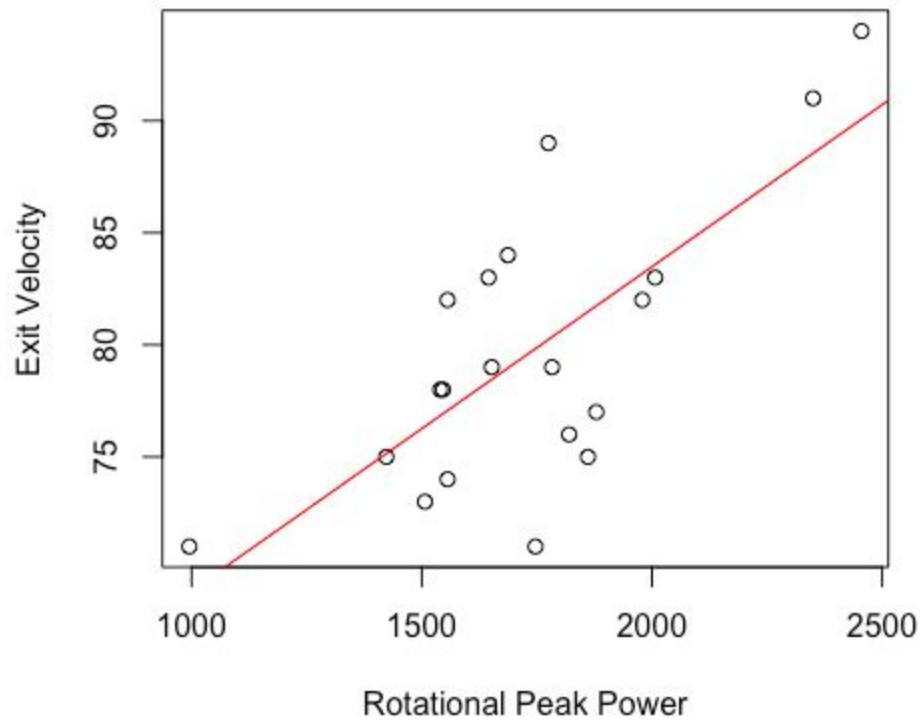
## **Results**

The Keiser Rotational test was determined to be a statistically significant method for predicting average exit velocity when the maximum power output was analyzed against throwing velocity ( $p < .005$ ). The linear regression model based on peak power output (see figure 1) produced a slope of 0.01, indicating that a 100 watt increase in the Keiser Skate test would result in a 1 mph increase in exit velocity. The model explained 76 percent of the variation in differences in exit velocity.

## **Conclusion**

The data collected for this study indicate that increases in maximal rotational force correlate with an athlete's ability to hit a baseball at a higher velocity. This can further suggest that coaching an athlete to focus their training on increasing rotational force (Force and Power in the transverse plane) presents the potential to see increased gains in exit velocity when hitting baseballs.

**Exit Velo vs Rotational Peak Power**



**Figure 1**