

Grip Pressure Application variances between Low and High Handicappers

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Introduction

Technology advancements over the years have allowed both researchers and golf coaches to characterize various aspects of the golf stroke, club delivery, and ball flight. The accurate characterizations of these elements have allowed golf instruction and club fitting to advance at a very rapid pace when compared to the technical and equipment analysis in other sports. One of the biggest gaps in information accessible to golf instructions relates to the connection between the golfer and club. The ability to characterize the how, where, and when the golfer applies force to the club has the opportunity to significantly advance the golf instruction world. A relevant example of this would be the advancement in pitch design in baseball. By applying the knowledge gained from Launch Monitors to varying grip types for the baseball pitchers have been able to strategically alter the magnitude and direction of applied forces to create a new arsenal of pitch types. Here is an article from Driveline as a reference:

<https://www.drivelinebaseball.com/2017/11/pitch-grips-changing-fastball-spin-rate/>

Methods

In this exploratory study of Low vs High handicaps we used Gears full body motion capture for body movements, Foresight GCQuad Camera based tracking system for club delivery and ball flight, and a prototype SensorEdge instrumented grip to quantify lead and trail hand pressure application in a total of 20 golfers. There were ten golfers with Handicaps below 10, and 10 golfers with Handicaps above 15. All golfers went through a standard intake process where they signed off on their anonymous data being part of the study, had their index from Golf Canada recorded at the time, and grip strength tested using a dynamometer. From there each golfer would proceed to take 10 shots with a 3 wood where all devices would simultaneously capture their respective data sets. A 3 wood was used as it is the lowest lofted and longest shafted club to be used primarily off the ground, our reasoning is that this would create a greater performance gap between the low and high handicappers therefore providing a more meaningful data set.

Results and Discussion

The results of this study yielded two main conclusions:

- High handicap players exhibited showed nearly 40% more variability in their pressure application swing after swing than did the low handicap group
- High handicappers were up to three times more likely to have greater pressure with the trail hand at impact than low handicap golfers

While examination of Group Data yielded significant difference, it became more interesting as we looked at individual golfers and a combination of their body position at impact, club delivery, and pressure application patterns. The High Handicap group displayed significantly less ability to control both the Loft at Impact and Face Angle. Examining the data from the multiple technology sets made it very clear from a coaching perspective if better results would be achieved through a modification of Body Position in 3D space, or changing applied pressure to the grip.

Significance

The significance of this study is that it has immediate impact on the option a golf instructor has to change club delivery. This information opens up a whole new world of constraint-based training that revolves around the physical attachment to the club. To now have guided direction about how to increase or decrease the amount of pressure, or alter the timing of pressure application will give greater specificity to the learner as to what they actually need to do differently in order to achieve their desired result.

Acknowledgements

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