

Laser Focused? Influence of a Laser-Guided Training Aid on Putting Strategy in Novice Golfers

Nicholas A. Johnson¹, Max R. Paquette¹, Shelby A. Peel¹

¹College of Health Sciences, The University of Memphis, Memphis, TN

Email: njhnsn36@memphis.edu

Summary

This study examines how the use of a laser training aid influences the putting strategies of novice golfers. While statistical significance was not achieved, likely due to the small sample size, trends suggest that practice itself was the primary driver of changes in putting strategy, rather than the laser training aid. Over time, participants exhibited similar putting mechanics, regardless of training condition, suggesting learning occurred independently of external visual guidance.

Introduction

Golf putting is a complex motor skill requiring perceptual and cognitive strategies for accuracy and consistency. Research has identified multiple putting strategies, each influencing performance differently [1,2]. Experienced golfers rely on refined techniques and internalized routines, whereas novice golfers often struggle to adopt a consistent strategy, leading to variable performance [3].

Training aids, such as laser alignment tools, provide external visual feedback to improve accuracy, but their impact on putting strategy development remains unclear. This study evaluates whether a laser training aid influences strategy development in novice golfers.

Methods

At the time of abstract submission, our data contained pilot data from five novice golfers (3M, 2F; 23.8 ± 2.9 yrs; 74.5 ± 7.9 kg; 1.7 ± 0.1 m). We plan to have 10 participants by the conference data. Each participant completed two randomized putting training conditions: two weeks of practice using a ACHIX putting laser and two weeks of practice without it. Each condition included three weekly practice sessions, with six sets of 10 putts per session. A one-week washout period separated the training conditions. An 8-camera motion capture system (200 Hz, Qualisys) and force platforms (2000 Hz, AMTI) synchronously collected marker coordinates and GRF data.

Putter head path was measured in the medial-lateral (ML) and anterior-posterior (AP) directions from the start of the backswing to the end of the follow-through (% Putt Phase). The force distribution ratio was calculated between the lead and the back leg. 2×2 SPM analyses (time: pre vs. post \times condition: no laser vs. with laser) were conducted. A paired t-test was used to determine any difference in the pre-

training to post-training change in putter head path between the laser and no laser conditions in the AP and ML directions. Significance level was set at $p < 0.05$.

Results and Discussion

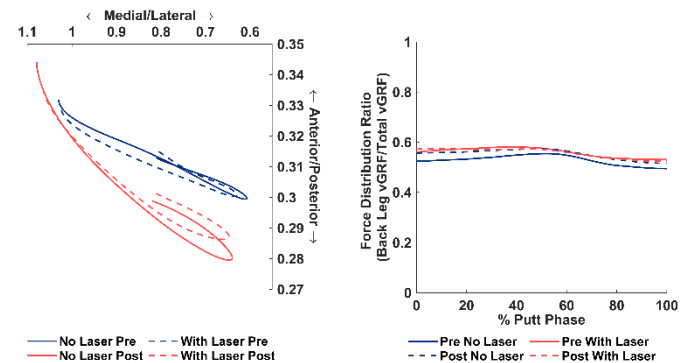


Figure 1: Mean composite putter head path displacement, as well as force distribution ratio, across four conditions: Pre-Training: blue line; Post-Training: orange line; No laser condition: solid line; With laser condition: dashed line.

No significant effects were found for any statistical test, likely due to the small sample size ($n = 5$). However, we did find a moderate effect size in the AP direction between conditions effect ($d=0.44$). Qualitatively, when examining the composite putter path (X-Y displacement), the data trends suggest that practice, rather than the laser aid, may influence putter head path, transitioning to a more arched stroke from a straight-back-and-forth stroke.

Similarly, the force distribution ratio suggests that before training, novice golfers distributed their weight more evenly across their feet. As training progressed, they made a 5% shift backwards to put more weight on their back leg.

Conclusions

Our data suggest that novice golfers adopted a similar putting strategy regardless of the training condition, indicating that the laser training aid did not influence strategic adjustments. Increasing sample size will likely provide greater insight into the specific influence of laser aids and practice on putting mechanics.

References

- [1] Brooks RJ (2002) *Science and Golf IV*. Routledge.
- [2] Pelz D (2000) Knopf Doubleday Publishing Group.
- [3] Shim J et al. (2019) *J of Sports Sci*, 37:364–69.