THE EFFECTIVENESS OF AN UNSTABLE SHOE ON GOLF PERFORMANCE AND A REDUCTION OF LOW BACK PAIN

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INTRODUCTION

Improvements in golf performance can be accomplished through improved technique, better equipment, enhanced physiological capabilities or a combination of these factors (Doan et al., 2006). One of the limiting factors is injury, which in the case of golf is often related to low back pain (McCarroll, 1996). Reducing such pain would likely result in enhanced performance. There is anecdotal evidence that using an unstable shoe reduces low back pain (personal communication). However, the effects of unstable shoes on performance, balance and low back pain are not known.

Therefore, the objectives of this study were to assess the effects of unstable sandals on (a) golf performance, (b) static and dynamic balance and (c) reduction of pain in golfers with undiagnosed low back pain.

METHODS AND PROCEDURES

The six week repeated measures randomized controlled trial study was performed with 37 male golfers (20 in the control and 17 in the intervention group) with moderate low back pain (minimum rating of 3 on a 10 point scale). Their golf performance, balance and low back pain, were assessed at baseline and at six weeks. Motion analysis of their swing, timed balance scores and visual analog scales (VAS) for pain were used to assess the effect of the unstable shoes. Results within group and between groups were compared through a group mean comparison test.

Figure 1. Picture of the unstable MBT-Sandal used as shoe intervention in this study.

RESULTS

(1) There was no significant change in performance between the intervention and control group in any of the ten variables measuring golf performance.
(2) There was no significant change between groups in the static or dynamic balance times.
(3) There was a significant difference between groups in perceived low back pain scores for the in lab measurement on a VAS (t = -2.02, P = 0.0515) and a trend of a between group difference in the last recorded pain score immediately after playing golf (t = -1.95, P = 0.0609).
DISCUSSION

Performance: It was speculated that the initial impact of introducing an unstable shoe to a golf swing would have a negative effect on golf performance. However, a reduction of performance between the stable and unstable shoe condition was not seen at baseline for power (club head speed, ball speed, and ball carry) or consistency (path and impact variability) variables. There was no change in golf performance due to playing golf for six weeks for the control group and for the unstable shoe group. This suggests that the golf related mechanics do not change when using an unstable shoe condition in this population of golfers (handicap < 15). It may be that the swing is more controlled in an unstable condition, which would compensate for the instability. In addition, not only the performance variables but also their standard deviations were not influenced by the unstable shoe condition.

Low back pain: There were two separate reports of perceived low back pain during this experiment. The first was a baseline and final indication of perceived low back pain filled out in the laboratory prior to the completion of the last motion analysis protocol. From this measurement there was a significant reduction in self-reported low back pain in the intervention group where the average pain score decreased by almost half (17.5 mm on a 100mm continuous scale), and no change in the control group (a reduction in the group average of 3.6 mm). The second measure of low back pain was filled out after every round of 18 holes of golf in a log book. The comparison was made by looking at the first and last recorded entries of perceived pain in the log book. These differences were not significant, but showed a trend in the same direction as the lab assessments with the final assessment lower than the initial one.

SUMMARY

The results of this study suggest that the unstable shoe has the potential to reduce perceived lower back pain in golfers. The reduction of lower back pain is expected to start relatively soon after starting to use the shoes. They may even be more pronounced if the unstable shoes would be used during the actual golf games. Adding an element of instability did not negatively affect golf performance. However, the potentially positive effects of an unstable shoe as a training device need further study.

REFERENCES
