CONSECUTIVE DAYS OF PUSH START TESTING MAY MASK THE EFFECT OF STARTING STYLE IN SKELETON – A PILOT STUDY

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INTRODUCTION

A fast start has been shown to be a prerequisite for success in skeleton (Zanoletti *et al.*, 2006). However, there is a clear lack of knowledge regarding the optimum start technique. This is reflected in the wide range of starting styles adopted by athletes. Pre-season training, typically on dry-land push tracks, provides an opportunity to investigate different starting styles. In reality this often involves consecutive testing days, and thus fatigue may influence the results. The aim of this study was to investigate whether the effect of starting style on skeleton start performance could be detected over consecutive testing days.

METHODS

Ten talent squad skeleton athletes completed four consecutive days of maximal dry-land push testing. Three starting styles were investigated: conventional style (CONV) whereby athletes adopted a split stance with one foot on the wooden starting block; swinging style (SW) whereby rear leg was raised behind the athlete and swung through; and double-handed style (DH) whereby athletes pushed with two hands. The athletes were split into two groups (G1 and G2; N = 5 and 5, respectively, although two athletes dropped out from G1). Each group used CONV on the first (CONV1) and fourth (CONV4) days. On day two, G1 used DH and G2 used SW which were alternated on the third day. Each session involved two warm up, and two maximal, pushes on each side of the sled. Average sled velocity (V_{15}; in $m \cdot s^{-1}$) was calculated based on photocells (Brower Timing System; 0.001 s accuracy), placed 14.5 and 15.5 m from the block. One-way ANOVA with repeated measures were used to test for significant differences ($p \leq 0.05$) in V_{15} between different starting styles and days.

RESULTS

Sled velocity was significantly lower during the SW trials compared to the CONV1 (Fig. 1). V_{15} on CONV4 trials was also significantly lower than that of the CONV1, SW, and DH trials. Athletes were significantly slower on day three and four, compared to day one and two (Fig. 2). No significant differences in V_{15} were found between days one and two or between days three and four.

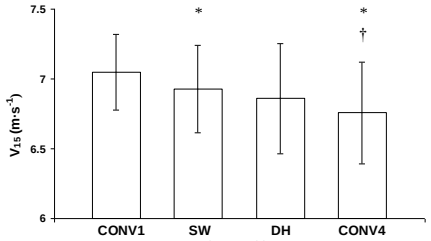

Fig. 1. V_{15} (mean ± SD) for different starting styles. *significantly slower than CONV1 ($p \leq 0.05$). †significantly slower than SW and DH ($p \leq 0.05$).

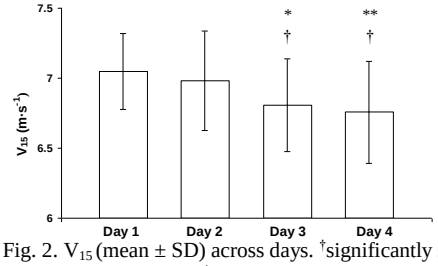

Fig. 2. V_{15} (mean ± SD) across days. †significantly slower than day 1 ($p \leq 0.001$). *significantly slower than day 2 ($p \leq 0.05$). ** significantly slower than day 2 ($p \leq 0.01$).

DISCUSSION

There were differences in V_{15} between the starting styles. However, this seems to be related to consecutive testing days rather than starting style. Starts on day two were similar to CONV1 pushes. However, the third and fourth days were slower regardless of the starting style. Thus, three consecutive testing days may induce fatigue sufficient to negate any potential differences associated with starting style. These results provide information regarding the effect of previous sessions on performance and thus have implications for the scheduling of testing. An adequate recovery period is required in order to accurately assess skeleton start performance.

CONCLUSION

Consecutive testing days cause reduced performance and may mask the effect of starting style on skeleton start performance.

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