

EFFECT OF SHORT BURST ACTIVITIES ON SPRINT AND AGILITY PERFORMANCE IN ELEVEN TO TWELVE YEAR OLD MALE SOCCER PLAYERS

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Keywords: acceleration, agility, training

Introduction

There are limited data on how sprint training regimens or sprint and agility drills affect young soccer player's sprint and agility performance. Buchheit et al. (1) found that ten week, one hour per week, repeated shuttle sprints and explosive strength training produced significant improvement in 30 m sprint, but no significant improvement in 10 m sprint in adolescent male elite soccer players. The main purpose of this study was to investigate the effect of competitive sprint activities, 1- hour per week for 6 weeks, on sprint and agility performance in eleven to twelve years old soccer players.

Methods

A training group (TG), 14 boys with a mean age of 11,5 years took part in a six week, one hour per week, training program consisting of short burst activities. 11 boys with a mean age of 11,4 years served as controls (CG). Both groups were evaluated through pre- and post testing of 20 m straight line sprint (10 m split time) and a 20 m agility course with two 90° and two 180° turns. Each 1- hour session of the 6 week training program consisted of ten minutes warm-up followed by different competitive sprinting activities.

Results and Discussion

At pre test there were no significant differences between the TG and the CG regarding height, weight, sprint performance or agility. The main finding was that both agility and sprint performance improved significantly in the TG after the training period ($p > 0.05$) but not in the CG (Table 1). No significant correlations between height and performance were found.

Table 1. Pre- and post-test results for sprint and agility in means (\pm SD) for the training and control groups.

Test	Training group (N=14)		Control group (N=11)	
	Pre	Post	Pre	Post
10 m sprint (sec)	2.29 (0.12)	2.24 (0.11)*	2.30 (0.12)	2.27 (0.12)
20 m sprint (sec)	3.96 (0.20)	3.89 (0.18)*#	3.95 (0.20)	3.97 (0.24)
Agility (sec)	8.50 (0.38)	8.21 (0.31)*#	8.56 (0.39)	8.61 (0.41)

* $p < 0.05$ for pre- post tests within group change in performance.

$p < 0.05$ for pre- post tests between groups change in performance.

The largest improvement in performance was found in agility (3.5%) compared to acceleration (2.1%) and speed (1.8%). This may result from the conditioning programme design consisting of short maximal acceleration and deceleration activities with change in direction followed by new accelerations. No running activities in the training period had longer straight line sprints than 10 meter implying that little or no maximum speed training were conducted during the training period which may partly explain why the smallest improvement (1.8%) occurred in 20 m straight line sprint.

Conclusion

This study highlights that 1 hour sprint competitions/activities per week reveal improvements in both sprint and agility beyond what could be explained by growth and maturation

1. Buchheit, M. et al. (2010). *J Strength Cond Res.* 24(10):2715-22.