

The effects of sprint and bounds training on 0-30 m running speed in elite adolescent rugby league players

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Statement of Originality

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Signature:..... **Date:**.....

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Rebekah, it's finished. Lets move on to the next chapter. Love Cale.

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Abstract

Introduction

Forty-six elite adolescent male rugby league players (12-17 years) participated in a nine-week study to determine the effects of three exercise training programs on 0-30 metres sprint running time and bounds performance (10 bounds). Subjects were randomly assigned to a rugby league fitness group (F) n=12, a sprint group (S) n= 14 and a sprint-bounds group (SB) n= 20. Forty-two subjects completed the study.

Methods

Separate sessions for fitness, speed, and bounds were conducted once a week for nine weeks. To determine the effect of training a two-way analysis of variance was performed, followed by post-hoc paired t-tests to allow pairwise comparisons when significant interactions were found. Significance was set at $p < 0.05$. Statistical analysis was performed using SPSS for Mac (version 13.1). Effect sizes were calculated to evaluate the meaningfulness of observed changes.

Results

Moderate improvements ($p < 0.05$; 5%) were observed in both the F and SB groups over 10 m. Speed changes over 30 m differed more among the groups. The F group recorded moderate ($p < 0.01$; 4%) improvements, small improvements ($p < 0.01$; 3%) in the SB group and trivial difference ($p < 0.05$) in the S group. The F and S groups improved by approximately 7% ($p < 0.01$) in bounds performance over 10 bounds whereas the SB group improved by approximately 10% ($p < 0.01$) in bounds performance over 10 bounds. Group S had faster sprint times ($p < 0.05$) prior to training compared to groups F and SB.

Discussion

All three programs led to improvements in sprint speed and bounds distance, but the extent of the improvements varied with the specificity of the training program and pre-training performance level. Groups F and SB had 4-5% improvements in sprint speed over 30 m whereas group S showed relatively trivial changes. In all groups, the improvements were greater over 10 m and least over 30 m. Bounds distance improved more than sprint speed, and the greatest improvement was achieved in the SB group compared to the F and S groups.

Conclusion

Rugby league training (game specific drills and extended efforts) coupled with the various components of physical activity can improve speed and power as effectively as specific speed and power training in adolescent boys. Training for acceleration can selectively improve 0-10 m speed more than 0-30 m speed. Sprint and bounds training have been shown to be safe and effective methods to increase speed and power in this group of adolescents.