

Effect of Blood Flow Restriction Therapy on Strength and Sprint Ability among Footballers

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ABSTRACT

Introduction: Football is a high-intensity sport involving repeated sprinting, jumping, and rapid and frequent changes in direction. This leads to muscle fatigue, reduced performance, and slower recovery. Blood Flow Restriction Therapy (BFRT) enables low-load exercise to induce changes in the body similar to those of high-intensity training by inducing a low-oxygen environment. Sprint-specific plyometric drills further improve neuromuscular coordination and explosive performance. Limited evidence exists on the combined effect of BFRT and sprint-specific plyometric training on football players' performance.

Aim: To evaluate the effects of blood flow restriction therapy combined with sprint-specific plyometrics on lower limb explosive strength and agility in semi-professional football players through a 4-week study.

Materials and Methods: 80 healthy semi-professional footballers between the ages of 18 and 30 were randomly assigned to the Control Group (n=40) and to the Experimental Group (n=40). BFRT was administered to the experimental group, with

common sprint-specific plyometric training given to both groups, who trained three times a week for 4 weeks. The results included vertical jump height and the Illinois agility test. The data before and after intervention were analysed and presented as mean and SD.

Results: The baseline values were comparable between the groups. After four weeks of the training protocol, the experimental group demonstrated greater improvements across all outcome measures than the control group. Vertical Jump Height: Control: 51.17±4.02 to 55.53±3.88 cm; Experimental: 52.49±3.54 to 59.64±3.61 cm. Illinois agility test: Control: 18.62±0.58 to 17.82±0.69 s; Experimental: 18.42±0.69 to 16.93±0.70 s. No adverse events were reported during the intervention period.

Conclusion: The findings of the study suggest that combining blood flow restriction training with sprint-specific plyometric drills may be a safe and effective reduced-volume training strategy to improve lower-limb explosive strength and mild agility in semi-professional football players.

Keywords: Agility, Blood flow restriction training, Football, Semi-professional footballers, Sprint-specific plyometrics, Strength.

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