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## **EXTENDED ABSTRACT**

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# THE ACUTE EFFECTS OF BLOOD FLOW RESTRICTION TRAINING ON PERCEIVED EXERTION AND SPRINT PERFORMANCE IN FUTSAL ATHLETES

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## I. INTRODUCTION

Blood Flow Restriction (BFR) training offers a low-load alternative to high-intensity exercises, potentially enhancing athletic performance while minimizing overuse injuries [1,2]. Despite its growing popularity, its impact on speed and rated perceived exertion (RPE) in high-intensity sports like futsal remains underexplored [3]. This study investigates the acute effects of BFR on RPE and sprint performance, addressing gaps in understanding its efficacy for intermittent sports [4].

## II. METHODS

Twenty healthy male futsal athletes participated, free of injuries or chronic diseases. Two trials were conducted: one with BFR applied during Yo-Yo IR1 training and the other as a control without BFR. After training, athletes performed repeated sprint tests. Speed was measured using Smartspeed timing gates, and RPE was assessed with the Borg scale [5]. Results were statistically analyzed.

## III. RESULTS AND DISCUSSION

### A. Rated Perceived Exertion

RPE was significantly higher during BFR training ( $13.4 \pm 2.21$ ) compared to non-BFR training ( $8.45 \pm 1.05$ ). This indicates that participants perceived greater exertion under BFR conditions, highlighting the physiological strain imposed by BFR during high-intensity activities (Table 1)..

### B. Speed

Sprint speeds were significantly in the BFR condition ( $4.39 \pm 0.30$ ) compared to the non-BFR condition ( $4.93 \pm 0.51$ ), as demonstrated by an independent sample t-test. This finding indicates that BFR training is more effective for enhancing sprint performance, with non-BFR potentially impairing speed during high-intensity intermittent activities (Table 1).

TABLE I  
INDEPENDENT SAMPLES T-TEST OF RPE AND AVERAGE SPEED OF BFR AND NON-BFR GROUP

Variables	Group	N	Mean (SD)	t-value	df	p-value
RPE	BFR	20	13.4 (2.21)	9.05	38.0	0.001
	Non-BFR	20	8.45 (1.05)			
Average speed (m)	BFR	20	4.39 (0.302)	-4.06	38.0	0.001
	Non-BFR	20	4.93 (0.511)			

## IV. CONCLUSIONS

This study highlights that BFR training effectively enhances sprint performance while increasing perceived exertion during high-intensity activities. BFR offers a promising alternative to traditional training methods, optimizing speed performance for futsal athletes. These findings support the utility of BFR in improving performance metrics in intermittent, high-intensity sports like futsal.

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