

The background of the entire cover is an abstract, high-energy image. It features a blurred figure of a person, likely a runner, in motion. The figure is overlaid with vibrant, streaky light trails in shades of teal, blue, and orange, creating a sense of speed and dynamic movement. The overall composition is energetic and modern.

INTERNATIONAL GRADUATE COLLOQUIUM

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## **EXTENDED ABSTRACT**

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# THE ACUTE BLOOD FLOW RESTRICTION AND ITS IMPACT ON RATE OF PERCEIVED EXERTION AMONG UITM SEREMBAN 3 STUDENTS

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## I. INTRODUCTION

This study explores the effects of acute blood flow restriction (BFR) training on the rate of perceived exertion (RPE) during the Yo-Yo Intermittent Recovery Test. It focuses on evaluating and comparing RPE outcomes among UiTM Seremban 3 students, with and without BFR application, to enhance understanding of BFR's impact on physical performance and exertion perception.

## II. METHODS

This experimental study assessed the acute effects of BFR on the RPE during the Yo-Yo Intermittent Recovery Test Level 1. Participants performed 20 m shuttle runs with progressively increasing speeds under BFR and non-BFR conditions. BFR was applied using blood pressure cuffs on the upper thighs, and RPE was recorded during and after the test.

## III. RESULTS AND DISCUSSION

### A. Rate of Perceived Exertion (RPE)

RPE immediately after the test was significantly higher with BFR ( $M = 14.00$ ) than without ( $M = 9.82$ ), supported by statistical analysis ( $t(22) = 5.48$ ,  $p < 0.001$ ). Participants consistently reported increased difficulty during BFR, affirming its impact on perceived exertion and performance (Table 1).

### B. Endurance Performance

Participants reported significantly higher RPE under BFR conditions ( $14.00 \pm 2.22$ ) compared to non-BFR ( $9.82 \pm 1.39$ ). Endurance performance was reduced with BFR ( $1175.0 \pm 17.8$ ) versus non-BFR ( $1406.7 \pm 17.2$ ). Statistical analysis confirmed significant differences ( $p < 0.001$ ), with consistent trends indicating that BFR increased exertion and reduced performance (Table 1).

TABLE I  
INDEPENDENT SAMPLES T-TEST OF RPE AND DISTANCE COVERED BETWEEN BFR AND NON-BFR GROUPS

	Group	N	Mean	SD	t	p
RPE	With BFR	12	14.00	2.22	5.48	< 0.001
	Without BFR	12	9.82	1.39		
Distance Covered (m)	With BFR	12	1175.0	17.84	-32.36	< 0.001
	Without BFR	12	1406.67	17.23		

## IV. CONCLUSIONS

This study demonstrates that BFR significantly increases perceived exertion while reducing endurance performance during the Yo-Yo Intermittent Recovery Test. The findings highlight BFR's impact on physical effort and suggest its potential utility for targeted training adaptations. Further research should explore strategies to balance its benefits and limitations for athletes.

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