

# The interaction of acute physical fatigue with three traditional functional performance tests and the reactive balance test

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## Background

Physical fatigue is known to decrease an athlete's functional test performance (FPT), but less is known about the impact on the injury risk profile. Furthermore, adaptability and neurocognitive performance tests have been put forward as relevant concepts within injury prevention, but to date it is not known if acute physical fatigue affects functional and neurocognitive performance tests.

## Aim

✓ Assess the impact of acute physical fatigue (APF) on lower extremity classic functional performance tests and the reactive balance test.

## Methods

We included 20 participants in randomized counterbalanced cross-over design. APF was induced by a 30 second modified Wingate protocol.

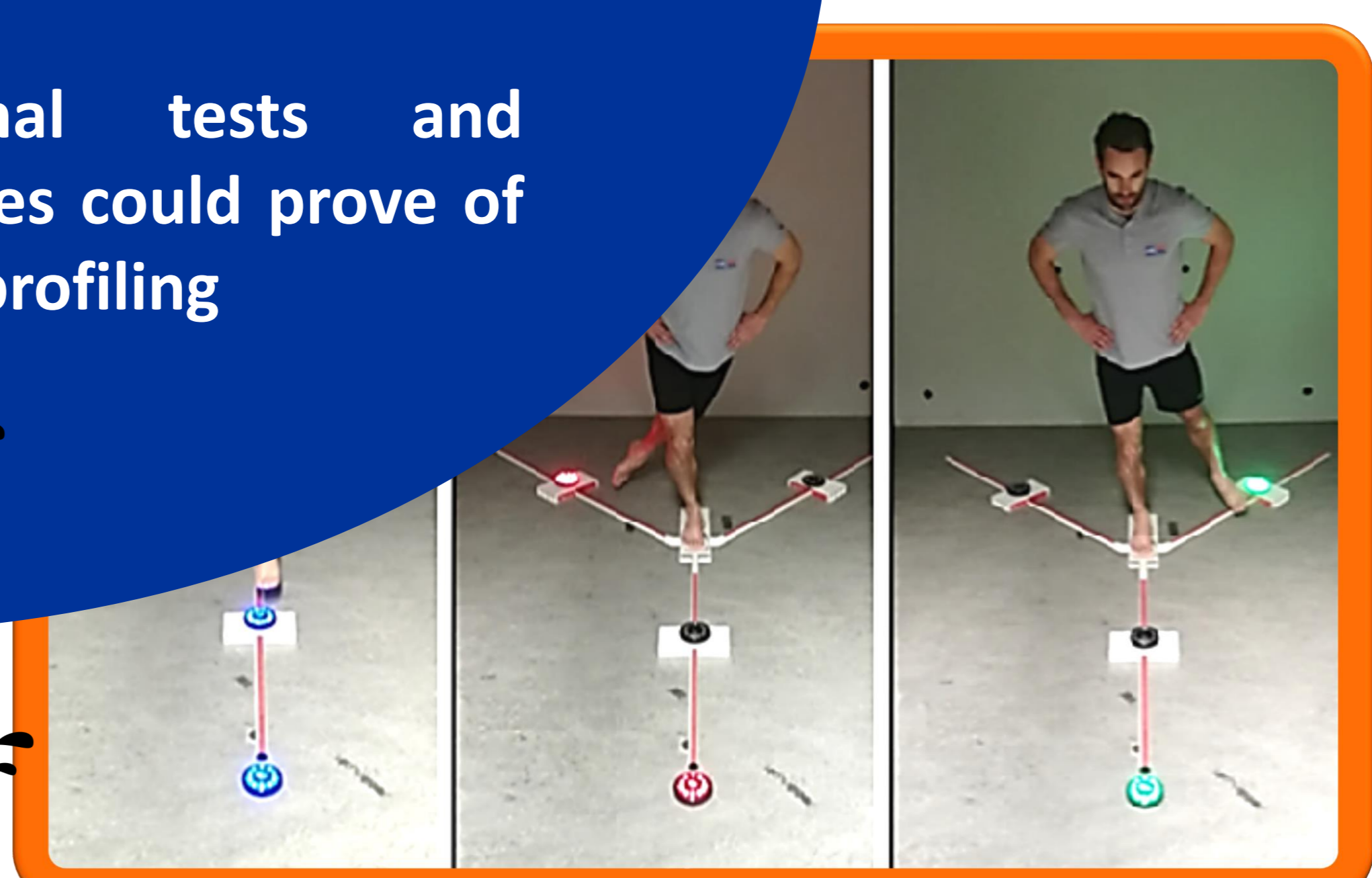
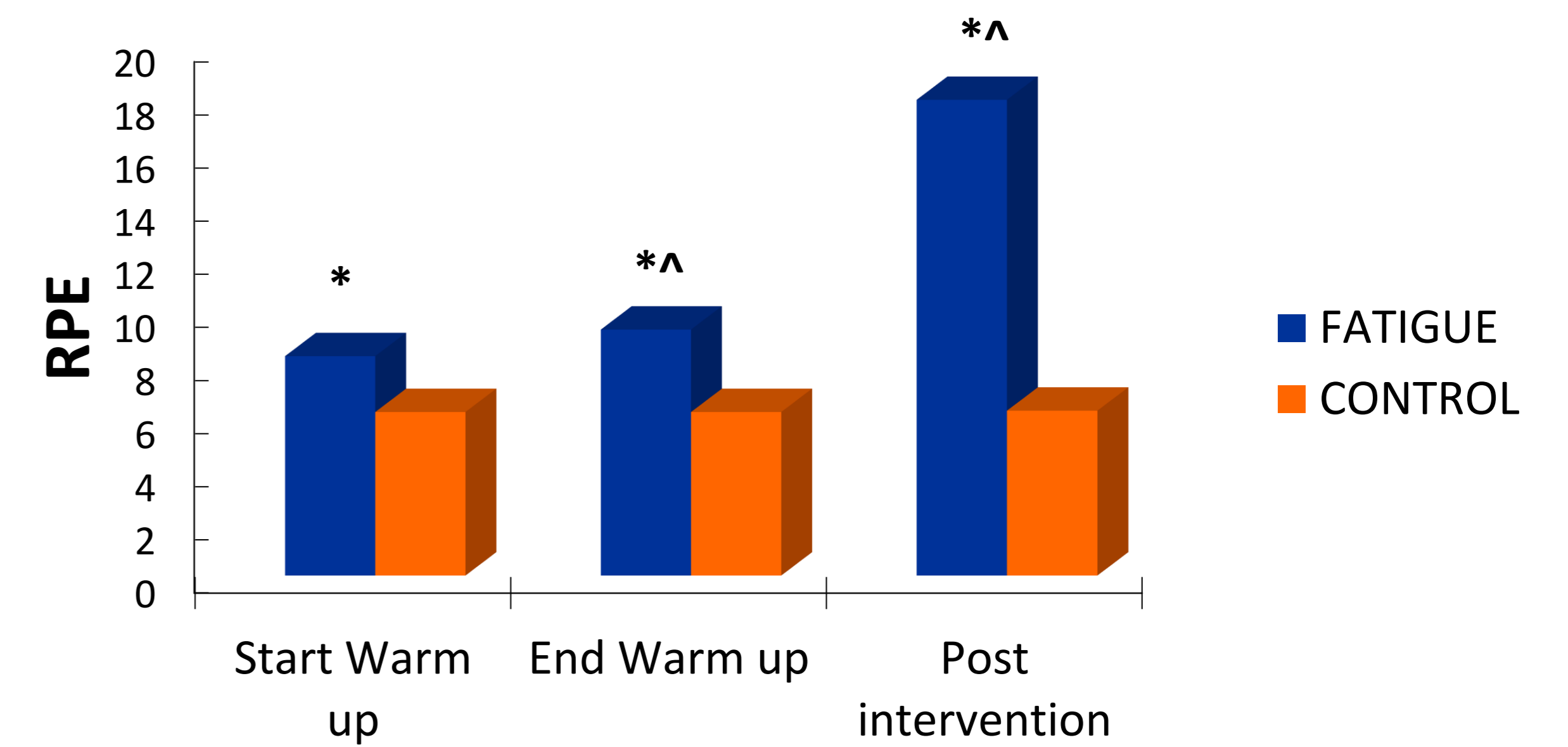
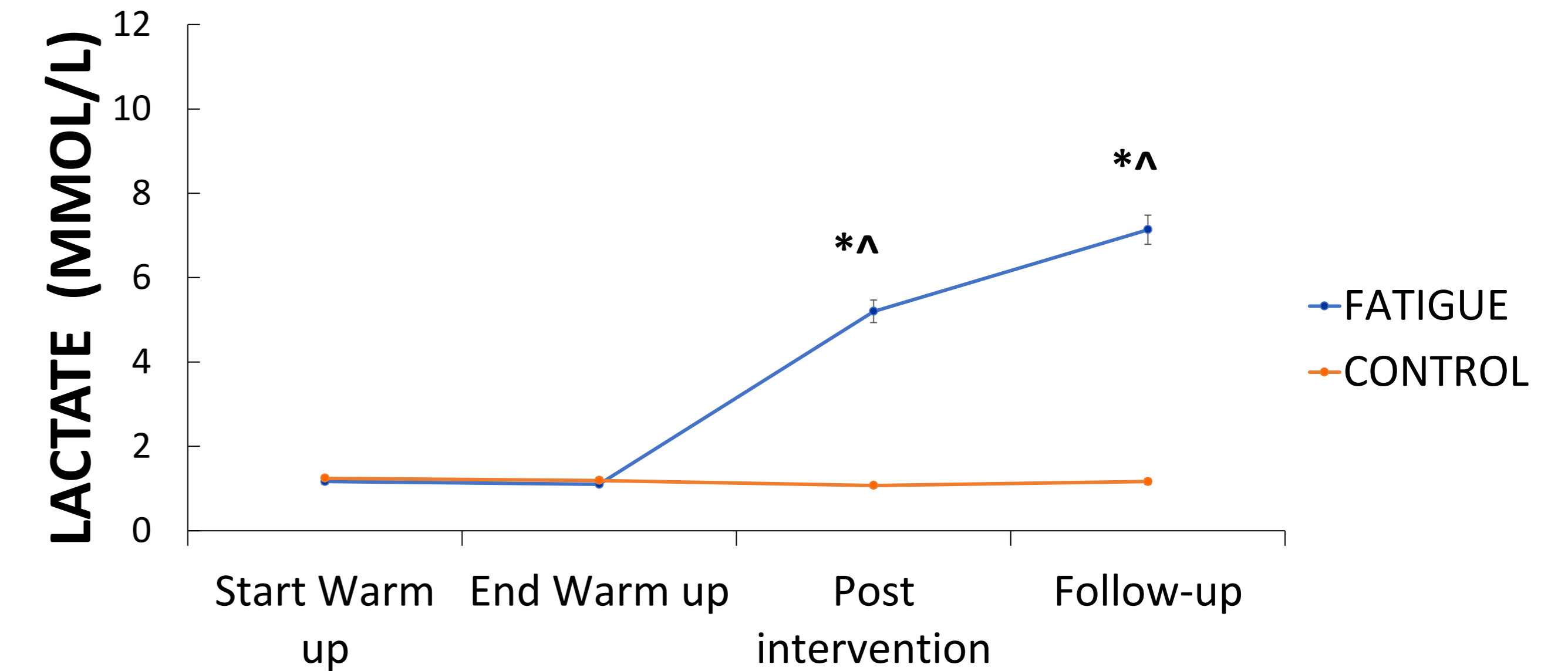
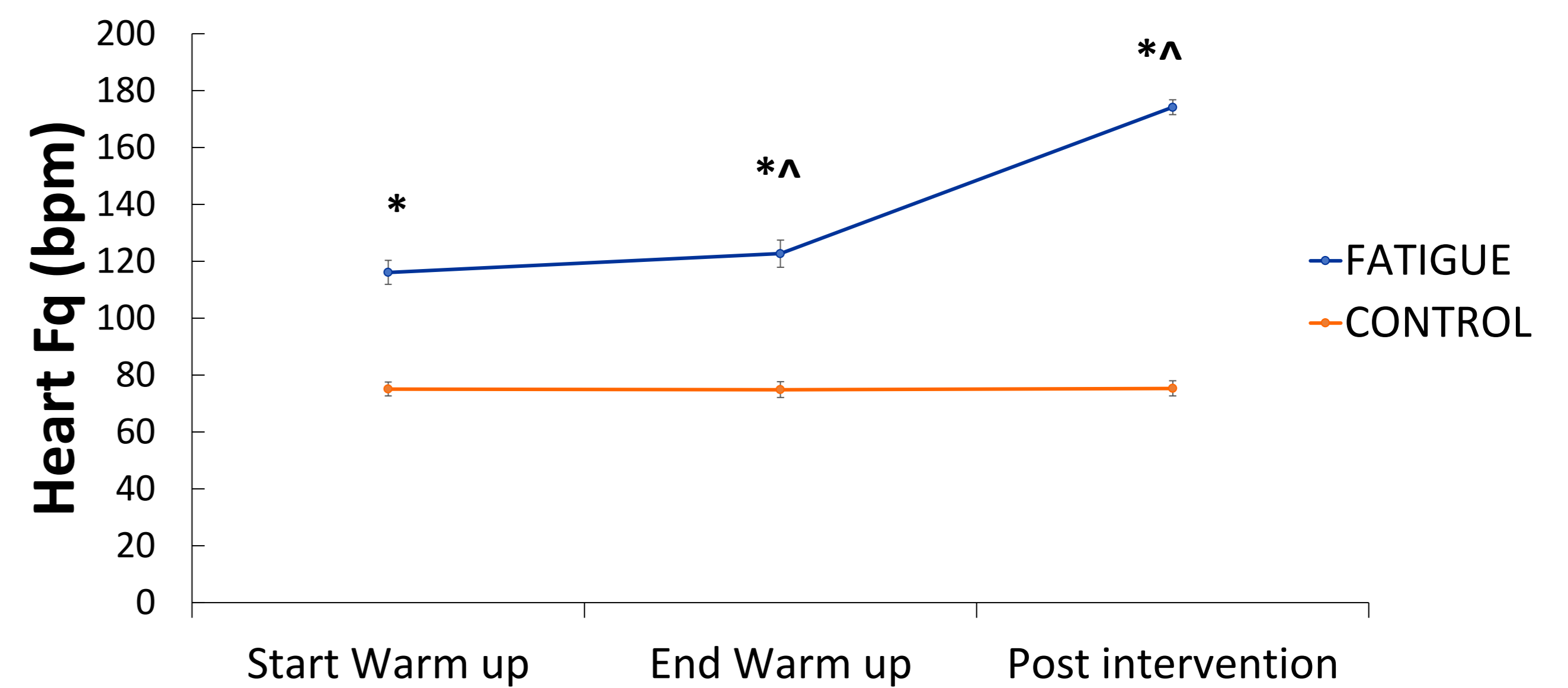
## Results

	FATIGUE		CONTROL	
	PRE	POST	PRE	POST
CMJ (cm)	36.63 ± 1.26	35.32 ± 1.03	36.34 ± 1.35	35.06 ± 1.35
SLH (cm)	154.13 ± 4.56	<b>145.70 ± 4.63*^</b>	151.43 ± 5.13	152.00 ± 5.31
YBT – ANT (cm)	57.99 ± 1.16	58.60 ± 0.99	58.46 ± 1.25	60.33 ± 1.06
YBT – PL (cm)	85.13 ± 2.17	87.39 ± 2.28	86.81 ± 2.36	89.16 ± 2.00
YBT – PM (cm)	90.95 ± 2.03	93.36 ± 1.85	91.33 ± 2.17	93.78 ± 1.86
RBT – VMRT (ms)	767.57 ± 54.81	762.82 ± 55.82	798.05 ± 62.57	758.50 ± 57.66
RBT – ACC (%)	87.56 ± 2.01	<b>81.22 ± 2.73*^</b>	90.22 ± 1.17	89.89 ± 1.38

\* Significant difference between FATIGUE and CONTROL (P < 0.05).

^ Significant difference with preceding outcome within intervention (P < 0.05)

Data are presented as means ± SE.



## Conclusions & Key Points

- ✓ Acute physical fatigue (APF) was successfully induced using a 30s modified Wingate
- ✓ SLH distance significantly decreased by APF
- ✓ RBT Accuracy significantly decreased by APF
- ✓ Neurocognitive functional tests and individual fatigue responses could prove of added value in injury risk profiling

Y-Balance Test - YBT

Reactive Balance Test – RBT