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30-15 Intermittent Fitness Test *vs.* Yo-Yo IR2: Relationship and Ability to Discriminate Performance Levels

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INTRODUCTION

The Yo-Yo Intermittent Recovery Test Level 2 (Yo-Yo IR2) is one of the most popular tests in soccer and examines the ability to perform repeated high-intensity exercise. Previous studies showed that Yo-Yo IR2 in elite athletes is higher than in non-elite athletes, and the test performance of 16-17-yr-old players was 30% lower than older elite players in the same club (1). The 30-15 Intermittent Fitness Test ($30\text{-}15_{IFT}$) asses high-intensity intermittent running capacity, and the final speed reached at the end of the test (V_{IFT}) can be used for high-intensity interval training prescription (2). The aim of the present study was to examine the relationship and the ability for both tests to discriminate performance levels.

Methods

Sixty-nine soccer elite players and forty-three sub-elite players participate in the study. The protocols of Yo-Yo IR2 and $30\text{-}15_{IFT}$ test have been detailed previously (1,2). We reported the distance covered during the Yo-Yo IR2 and the maximal speed reached at the $30\text{-}15_{IFT}$. Heart rate (HR) was continuously measured to determine de HR_{max} at the end of the tests.

RESULTS

Significantly differences in the HR_{max} reached at exhaustion between $30\text{-}15_{IFT}$ and Yo-YoIR2 were found in elite and sub-elite U16 players, with higher values obtained during the $30\text{-}15_{IFT}$. There were no differences in the HR_{max} reached between teams in other age groups. The HR_{max} during both tests was significantly lower than the HR_{max} estimated (220-age). Elite U16 soccer players presented significantly higher V_{IFT} than sub-elite U16 players (20.4±0.6 *vs.* 18.9±1.3 $km.h^{-1}$, respectively), while there were no differences between teams in the Yo-Yo IR2 (627.7±135.2 *vs.* 674.7±164.8 m, respectively). There were small correlations between V_{IFT} and Yo-Yo IR2 (r = 0.26). Elite U19 soccer players reflected significantly higher V_{IFT} and Yo-Yo IR2 than sub-elite U19 players (20.9±1.4 *vs.* 18.7±1.4 $km.h^{-1}$ and 1264.6±343.9 *vs.* 522.2±80.3 m, respectively). There were very-large correlations between V_{IFT} and Yo-Yo IR2 (m) (r = 0.84). Also, Elite senior soccer players showed significantly higher V_{IFT} and Yo-Yo IR2 than sub-elite senior players (21.1±0.8 *vs.* 19.6±1.1 $km.h^{-1}$ and 1084.0±150.2 *vs.* 522.2±106.7 m, respectively). There were very-large correlations between V_{IFT} and Yo-Yo IR2 (m) (r = 0.77).

DISCUSSION

In Senior and U19 both tests were able to discriminate elite and sub-elite soccer players. In U16 players, only $30\text{-}15_{IFT}$ reflected differences between performance levels showing higher HR_{max} than Yo-Yo IR2, maybe due to the neuromuscular load caused at this age by executing continuous COD at high speed.

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REFERENCES

1. Bangsbo, J, Iaia, FM, and Krustrup, P. The Yo-Yo intermittent recovery test : a useful tool for evaluation of physical performance in intermittent sports. *Sports Med* 38: 37-51, 2008.
2. Buchheit, M. The 30-15 intermittent fitness test: accuracy for individualizing interval training of young intermittent sport players. *J Strength Cond Res* 22: 365-374, 2008.

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