

RELIABILITY AND VALIDITY OF A NEW INTERMITTENT ENDURANCE FIELD-TEST FOR SOCCER ASSISTANT REFEREES

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Introduction

Elite-level assistant referees (AR) physical performance was reported to be positively affected by aerobic fitness (1). In a competitive match ARs cover 20% of the total distance (6-8 km) with sideways running mainly to control the off-side line (1). As a result ARs endurance should preferably be evaluated with field tests that consider high-intensity forward and sideway running. The aim of the present study was to determine reliability, sensitivity and validity of a sideways-forwards Yo-Yo Intermittent Endurance level 2 test (Yo-Yo SFIE2; also called AR Intermittent Endurance Test, ARIET), which is a new test developed to determine intermittent exercise performance of elite soccer assistant referees.

Methods

204 elite ARs performed the ARIET (157 from Italian Serie A, B, Pro and National level, and 47 of Danish First and Second league). Treadmill test for VO_{2max} and the Yo-Yo Intermittent Recovery test (Yo-Yo IR1) were performed by 18 ARs.

Results & Discussion

Reliability assessed over four occasions as Intra-class correlation coefficient (n=41) ranged between 0.96 and 0.98%. ARIET was able to discriminate between ARs competitive levels with 23 and 25% higher performances for Serie A and B ARs compared to Serie Pro (1431 ± 193 and 1460 ± 152 m vs 1168 ± 231 m, $P < 0.05$) and a cut-off value of 1300 m. The ARIET ($r = 0.78$, $p = 0.0007$, $n = 18$) performance showed very large association with VO_{2max} . A nearly perfect relationship was observed between the ARIET and the Yo-Yo IR1 test ($r = 0.95$, $p < 0.0001$, $n = 18$).

Conclusion

The results of this study show that ARIET is a highly reliable field test that can distinguish between competitive levels.

References

1. KRUSTRUP, P., et al (2002) *J Sports Sci.* 20:861-871.