YO-YO IR PERFORMANCE IN AN ELITE SOCCER LEAGUE DURING A COMPETITIVE SEASON

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Introduction

Numerous studies have investigated seasonal fitness changes in elite soccer players using fitness testing. The Yo-Yo intermittent recovery tests, level 1 and 2 (Yo-Yo IR1 and IR2) are soccer-specific tests, since test scores are correlated to match performance (Bangsbo et al., 2008). Most studies of seasonal changes are performed on a single team in a league. Therefore, possible performance changes are dictated by fitness fluctuation within this specific team, which may differ markedly from other teams in the league. Thus, the present study sought to examine variations in soccer-specific fitness within an entire European league, in relation to seasonal period and competitive standard.

Method

219 elite male soccer players took part in the study. The players represented all teams in a European top-league and performed a 6-min submaximal Yo-Yo IR1 test with heart rate recordings and the Yo-Yo IR2 test at the start of the pre-season period (PS), start of the season (SS), mid-season (MS) and at the end of the season (ES). Additionally, a full Yo-Yo IR1-test was completed at PS, where the maximal heart rate was also determined.

Results and discussion

Yo-Yo IR1 performace at PS was 1842±28 m. At PS submaximal Yo-Yo IR1 performance was 91.5±03% of the maximal heart rate, which was higher ($P<0.05$) than at SS, MS and ES (87.8±0.3, 86.7±0.3 and 87.2±0.2%, respectively). Yo-Yo IR2 performance was 822±16 m at PS, which rose ($P<0.05$) to 961±15 m at SS. At MS Yo-Yo IR2 performance was 1075±15 m, which was higher ($P<0.05$) than at PS and SS, but not ES (991±13 m). When the top-three teams (TT) were compared to the mid-four (MT) and the bottom-three teams (BT), Yo-Yo IR1 performance at PS was higher ($P<0.05$) in TT (1913±46 m) than BT. No differences were in submaximal Yo-Yo IR1 performance between TT, MT and BT. Yo-Yo IR2 performance was higher ($P<0.05$) in TT at MS and ES (1103±21 and 1081±24 m, respectively) in comparsion to BT (914±26 and 883±24 m, respectively). Thus, Yo-Yo IR2 performance is increased from start of the season to mid-season. Moreover, the top-teams have higher Yo-Yo IR1 test scores in pre-season and better Yo-Yo IR2 performance in the last part of the competitive season.

Conclusion

The study demonstrates that submaximal Yo-Yo IR1 and IR2 performance increase during the pre-season period. The submaximal Yo-Yo IR1 level is maintained throughout the season. However, Yo-Yo IR2 performance appears to peak in mid-season. Physical capacity was associated with league ranking showing that top-teams were superior to bottom-teams in the Yo-Yo IR1 test in pre-season and in Yo-Yo IR2 performance in the latter part of the season.

References:

1. Bangsbo et al. (2008). *Sports Med*, 38(1): 37-51.