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Aerobic Fitness Relation to Match Performance of Japanese Soccer Referees

(日本人サッカーレフェリーの有酸素能力と試合中のパフォーマンスとの関連性)

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Abstract

The aim of this study was to investigate the relationship between aerobic fitness parameters and match activity profiles of Japanese soccer referees. Fourteen male referees (26 ± 3 year-old) completed a submaximal incremental treadmill test to determine the running speed at the onset of blood lactate accumulation (s-OBLA) and to estimate VO_{2max} from the heart rate. Match activity profiles (total distance, high intensity running (HIR: ≥ 15 km/h⁻¹) and distances from fouls) were calculated during competitive matches using data recorded from a GPS device and a video camera. Total distance covered during a match was 11.3 ± 0.6 km, 1.9 ± 0.4 km was covered at HIR, and the mean distance from fouls was 14.4 ± 1.0 m. The s-OBLA ranged between 12.6–16.3 (14.5 ± 1.0) km·h⁻¹, which was correlated positively with the distance covered at HIR ($r = 0.77$; $p < 0.05$) and negatively with the mean distance from fouls ($r = -0.62$; $p < 0.05$). However the estimated VO_{2max} was not related to these variables ($p > 0.05$). OBLA assessment may provide good indices of fit referees who can cover longer distances at high intensity speed and judge closer to a foul play.