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CONSTRUCT VALIDITY OF A NEW DECREASING RECOVERY INTERMITTENT RUNNING TEST IN SOCCER

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INTRODUCTION:

In recent years a new protocol of an intermittent running test with decreasing recovery called MAP (MANari Protocol from the surname of his inventor) has been used to assess professional soccer players. However its validity is yet to be established. The main aim of the study was to explore MAP construct validity by examining the correlation between the peak of oxygen consumption (VO₂peak) and other variables measured by MAP and various parameters of match physical performance. A secondary aim was to validate the Mognoni Test (MT) (1).

METHODS:

Ten Serie A players were tested with MAP and MT. The selected parameters of match physical performance (raw and normalized by min played) were: metabolic power, very high power, high power distance, high and very high speed running distance, maximum acceleration and maximum deceleration distance, total distance (2). After warm-up, players performed to volitional exhaustion sets of 3 to 7 50m intermittent runs at 18 km/h with recovery between each run decreasing after each set (from 17s in the first set to 2s in the final set). VO₂peak, ventilatory parameters like the respiratory compensation point (RCP), lactate, and MAP distances were recorded. 48 hours later players were also tested with MT to estimate the speed at the onset of blood lactate accumulation (OBLA). Parameters of match physical performance were obtained from the average of two video-tracked matches played for at least 45 min within 2 weeks from the date of the MAP and MT.

RESULTS:

VO₂peak was positively correlated with power variables, high speed distances, distance maximum accelerations and decelerations per min, total distance per min during the match. MAP distance was positively correlated with power variables (metabolic power, high distance power) and match-related distance variables (total distance, total distance per min). Lactate at the end of MAP was positively correlated only with average metabolic power per min. The difference between the MAP distance and distance at RCP, was positively correlated with power variables (metabolic power, very high distance power) high speed distance, distance maximum acceleration and decelerations per min, total distance per min and maximum speed. Speed at OBLA estimated with the MT was negatively correlated with distance run at very high speed and with distance run at very high power, and their respective values per min.

CONCLUSION:

This study provides empirical support to the construct validity of both the MAP and the MT as indicators of between-subject differences in match physical performance in professional soccer players. With the exception of distance at OBLA, all MAP variables correlate significantly with various parameters of match physical performance. MAP variables requiring the use of a portable metabolimeter do not show superior construct validity compared to MAP distance.

1. Impellizzeri F.M. et al., In Science and Football V, Routledge, 2005;
2. Scott M.T.U. et al., J Strength Cond Res, 2016;

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