REDUCTION OF HIGH-SPEED RUNNING AT THE START OF THE SECOND HALF IN ELITE REFEREES AND PLAYERS

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The decreased high-speed running during the initial phase of the second half in soccer players and match officials has been attributed to the drop in muscle temperature that occurs during the half-time period (Mohr et al. 2005: *J Sports Sci, 23*, 593-599). However, prior to competitive matches the time interval between the end of the referees' warm up and kick off (pre-match) may well be similar to the duration of the half-time interval. Therefore, the aim of the present study was to investigate referees' high-speed running immediately post half-time, in relation to first half and players distances.

Referee and player high-speed running distances (speed >5.5 $m \cdot s^{-1}$, ProZone®, England) were collected on a total of 152 matches during the 2008-09 English Premier League soccer season. Referees' heart rate (Polar S400, Finland) recordings commenced from the start of the warm up until full-time. Pair-wise comparisons were performed on, 1) duration of the pre-match and half-time periods, 2) referees' average heart rates pre-match and at half-time, and 3) referees' and players' high-speed running distance during the initial 5-min period of the first half and the initial 5-min period of the second half.

Despite the referees adopting similar preparation routines for both the 1st and 2nd halves, as denoted by comparable rest periods (16:42 min ± 2:35 min *vs.* 16:27 min ± 1:00 min, P = 0.499) and average heart rate (107 ± 11 $b.min^{-1}$ *vs.* 106 ± 14 $b.min^{-1}$, P = 0.550), the referees' high-speed running was lower during the initial phase of the second half (42.3 ± 28.7m *vs.* 49.1 ± 31.6m, P = 0.023). A decrease was also observed for the players (53.5 ± 18.1m *vs.* 59.7 ± 19.6m, P = 0.002).

It maybe that the referees' reduced physical performances during the initial phase of the second half are a consequence of a slower tempo of play as opposed to a physiological impairment associated with the half-time rest period.