Running aerobic sprint test values compared under different footwear and surface conditions #30

Carlos Augusto Kalva Filho[1]; João Paulo Loures[1]; Vanessa Holtz Franco[1]; Diego Andre Bittencourt[1]; Edson Itaru Kaminagakura[1], Marcelo Papoti[1,2].

[1]*Laboratory of Physical Evaluation, Health and Sports - Ponta Grossa State University – UEPG, Ponta Grossa, Paraná, Brazil;* [2]*Laboratory of Physiology Applied to Sport- São Paulo State University–UNESP, Rio Claro, São Paulo, Brazil.*
E-mail: mpapoti@yahoo.com.br

Running aerobic sprint test **(**RAST) consists of six 35m maximum sprint efforts with 10s intervals to determine peak (PP), mean (PM), absolute (Pab), and relative (Pre) power and fatigue index (IF). This study compares PPab, PMab, PPre, PMre, IF and peak lactate concentration ($[la^-]_P$) under different conditions. Nine category sub-17 football players performed two RAST tests separated by 48h. The first was with trainers on cement (T+Ci) and the second with football boots on grass (C+Gr). Blood samples were taken after the tests to determine $[la^-]_P$. PPab, PMab, PPre, PMre, IF, and $[la^-]_P$ values in both situations. The values were compared by the Student *t* test for independent samples and possible associations verified by the Pearson correlation test ($p<0.05$). All parameters were found to be significant different (Table 1).

Table 1. Values of PPabs, PMabs, PPre, PMre, IF and $[la^-]_P$ in different footwear and surface conditions.

n = 9	T+Ci	C+Gr
PPabs (w)	1286.25±164.85	1098.12 ± 127.49*
PMabs (w)	1012.15±121.88	889.52 ± 137.02*
PPre (w.kg⁻¹)	19.88±2.38	17.01 ± 2.27*
PMre (w.kg⁻¹)	15.63±1.57	13.78 ± 2.22*
$[la^-]_P$ (mM)	7.32±1,84	9.96±3.16*
IF (%)	36.87±9.05	38.4±7.16*

*Significant differences ($p<0.05$). Peak (PP), mean (PM), absolute (Pab), and relative (Pre) power, peak lactate concentration ($[la^-]_P$), fatigue index (IF).

Significant correlations were observed in PMab (r=0.82), PPre (r=0.63), PMre (r=0.90) and $[la^-]_P$ (r=0.72), but not between PPabs and IF. We

concluded that potentials under C+Gr conditions were inferior to T+Ci, with C+Gr demanding more from the glycolytic pathway.

Key words: RAST; anaerobic; lactate; football.