

**Correlation between running anaerobic sprint test and anaerobic work capacity in soccer players #41**

João Paulo Loures<sup>1</sup>, Carlos Augusto Kalva Filho<sup>1</sup>, Vanessa Holtz Franco<sup>1</sup>, Diego André Bittencourt<sup>1</sup>, Edson Itaru Kaminagakura<sup>1</sup>, Marcelo Papoti<sup>1,2</sup>.

<sup>1</sup>Laboratory of Physical Evaluation, Health and Sports - Ponta Grossa State University - UEPG, Ponta Grossa, Paraná, Brazil; <sup>2</sup>Laboratory of Physiology Applied to Sport- São Paulo State University-UNESP, Rio Claro, São Paulo, Brazil.

E-mail: [mpapoti@yahoo.com.br](mailto:mpapoti@yahoo.com.br)

Running anaerobic sprint test (RAST) is theoretically an anaerobic measurement. Similarly, anaerobic work capacity (AWC), also evaluates anaerobic performance. However, their relationships as scientifically validated anaerobic tests are still controversial. This study evaluates associations between AWC and maximum velocity ( $V_{max}$ ), mean velocity ( $V_m$ ), peak (PP), mean (PMab), absolute (PPab), and relative (PPre) power, fatigue index (IF), and peak lactatemia concentration ( $[la^-]_p$ ). Nine sub-17 category soccer players from Ponta Grossa, PR, Brazil were submitted to six 35m efforts separated by 10s intervals to determine PPab, PMab, PPre, PMre, and IF (RAST). After three, five, and seven minutes blood samples were collected to determine  $[la^-]_p$ . Later, exhaustive tests were performed on a treadmill at 100%, 110%, and 120%  $VO_{2peak}$  (previously determined). Points obtained in relation to velocity versus  $1/t_{lim}$  were linearly adjusted so that the linear coefficient corresponded to AWC. Possible associations between AWC and the RAST parameters were evaluated by the Pearson correlation test ( $P < 0.05$ ). No significant correlations were seen between AWC and any of the powers, IF, and  $[la^-]_p$ . However, AWC significantly correlated with  $V_{max}$  ( $r=0.79$ ) and  $V_{med}$  ( $r=0.83$ ). We can therefore conclude that AWC did not correlate with traditional anaerobic parameters determined by RAST, but could predict  $V_{max}$  and  $V_{med}$  provided from this test.

**Key words:** RAST; football; anaerobic work capacity.