

## CORRELATIONS BETWEEN BIOMECHANICAL VARIABLES AND SPRINT TIME OF 30M

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**Introduction:** Sprinting contributes to successful performance in the wide range of sporting activities. It's known that sprinting speed is defined with the frequency and the length of strides (Čoh, Tomažin & Rausavljević, 2007). According Bezodias et al. (2008) the frequency of stride (FS) was a more important contributor to the velocity increase in sprint performance, however for Mackala (2007) the length of stride (LS) was a more significant variable. The aim of this study is to determine if different types of heating can interfere with the frequency and length variability of the stride. **Methods:** 22 young men participated in this study (age: 19.32±1.43 years; height: 176±67cm; weight: 68.48±9.91kg). The study followed a randomized protocol and the subjects were submitted to three warm-up protocols: without warm-up, typical warm-up and warm-up with post-activation potentiation (PAP). **Results:** The results reveal a strong correlations between the sprint time of 30m and the frequency of stride and length of stride. **Discussion:** Regardless of the type of warm-up, we can observe that the frequency and length stride are relevant factors that contribute to sprint time performance. The results corroborated with other studies indicating that maximum speed results from an optimal ratio between stride frequency and stride length. **Conclusion:** The frequency and length of stride were shown to be two influential factors in the sprint time of 30m. We suggest that future studies include exercises on warm-up that stimulate the frequency and amplitude of stride, in order to verify which of the variables has the greatest impact on sprint performance.

**Key-Words:** frequency of stride, length of stride, sprint time.

**Table 1** - Correlations between 30m sprint performance and biomechanical variables

	Sprint time (s)	Frequency of Stride (Hz)	r	Length of Stride (m)	r
Without Warm-up	4,67	4,27	<b>-0,699**</b>	1,51	<b>-0,529*</b>
Typical Warm-up	4,58	4,31	<b>-0,598**</b>	1,52	-0,352
Warm-up with PAP	4,62	4,68	<b>-0,702**</b>	1,50	<b>-0,551**</b>

Significance: \*p<0,05; \*\*p<0.01

**Acknowledgments:** This work was supported by a research grant funded by the Foundation for Science and Technology (UID / DTP / 04045/2013; POCI-01-0145-FEDER-006969).

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