Ability to sprint is a key parameter (Faude *et al*., *J Sports Sci*, 2012, *30*:625–31) and is the most frequent action in goal situations. Previously, other authors have established linear relationship between countermovement jump, leg power and percentage body fat, and team success (Arnason *et al*. *MSSE*, 2014, 36(2), 278–85). The body composition, as seen through a large content of muscle and low content of fat tissue, could be a particularly strong predictor of rapid movement performance, as jumping performance or sprint (Copic *et al*., JSCR, 2014). Thus, our principal aim is to explore potential relationships between anthropometric measures and athletic performance, focusing on strength related variables. Twelve young soccer player (age 22 ± 2 y, body mass 69.5 ± 7.1 kg, height 179 ± 8 cm; body fat 7.6 ± 2.2%) performed a CMJ, CMJ-BW loaded, 40 m sprint (analysing partial times at 15 and 30 m) and one Repetition Maximum (RM) in back squat test. Main interesting findings from this study were the strong associations between anthropometric measures and relevant strength variables related to physical condition performance in soccer. CMJ and CMJ-BW Loaded was strongly correlated with 1 RM, 40 m sprint performance and shuttle sprint at 15 and 30 m (r from 0.64 to 0.89; $p < 0.05$ to <0.001). Likewise BF was surprisingly highly correlated to CMJ, 1RM and different sprint times (r from 0.54 to 0.86; $p < 0.05$ to <0.001). In accordance to (Comfort *et al*., *JSCR*, 2013, *28(1)*, 173–7; Brocherie *et al*. (2014) *J Sports Sci 17*: 1–12), the results of this study illustrates the importance of developing high levels of strength in order to enhance sprint and jump performance in youth soccer players. Besides, Nikolaidis (CEJM, 2012, 7(6), 783–9) evidenced that a threshold exists in BF, above which muscular power output is affected to a great extent. Therefore, BF was negatively associated with physical fitness parameters.

OC8 EXPECTATIONS, CAFFEINE AND PACING STRATEGY: HOW POSITIVE AND NEGATIVE EXPECTATIONS CAN INFLUENCE RUNNING PERFORMANCE

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Pacing is the goal-directed distribution of effort across an event to cover a set-distance in the shortest time. Athletes' pre-race expectations may influence performance and this study investigated the effect of positive and negative expectations on running time-trial pacing. Male athletes (n = 11) 200 m split times were recorded over seven 1000 m self-paced time-trials (three baseline, four experimental). The experiment consisted of four conditions: informed caffeine/given caffeine (CC 3.5 mg/kg); informed caffeine/given placebo (CP); informed placebo/given caffeine (PC); informed placebo/given placebo (PP). Conditions CC and CP were positive expectations of receiving caffeine to improve performance and PC and PP were negative expectations of receiving a placebo to not affect performance. Average 1000 m speeds were: CC = 5.80 ± 0.26 m/s; CP = 5.81 ± 0.27 m/s; PC = 5.75 ± 0.26 m/s; PP = 5.67 ± 0.29 m/s; Baseline = 5.70 ± 0.24 m/s, with CC and CP faster than each other trial (Effect size (ES)=0.2–0.3). Initial 0–200 m speed was greater on CC (0.1–0.2 m/s faster; ES = 0.2–0.3) and CP (0.2 m/s faster; ES = 0.3–0.4) compared to PC and PP, respectively. A non-trivial increase in speed from 800–1000 m was solely observed on CC (5.78 ± 0.35 m/s), relative to speeds between 600–800 m on CC (5.69 ± 0.33 m/s; ES = 0.3), Baseline speed from 800–1000 m (5.59 ± 0.36 m/s; ES = 0.4) and speeds on each other trial from 800–1000 m (5.62–5.70 m/s; ES=0.2–0.3). A clear expectancy effect from caffeine ingestion was observed on pacing over the initial 200 m of a 1000 m time trial, both positive (CC and CP) and negative (PC and PP). In contrast, an 'end-spurt' was only observed when both positive expectancy and potential physiological effects were present (CC trial), despite similar overall performance on CC and CP. These results indicate that caffeine ingestion and expectancy can influence pacing strategy in running. Developing negative pre-race expectations may harm middle-distance athletes' performance by beginning at a sub-optimal speed.

OC9 A SIMPLE METHOD TO MEASURE FORCE-VELOCITY PROFILE IN COUNTER MOVEMENT JUMP

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A simple method for evaluating force (F), velocity (V) and power (P) output during a squat jump (SJ) was validated by Samozino *et al*. (2008, *J Biomech*, *41*: 2940–5), who also showed the existence of an optimal force-velocity profile during SJ (2012, MSSE, 44(2):313–22). Counter Movement Jump (CMJ) is a very common test in sports training and testing (Markström and Olsson 2013, *JSCR*, *27*:944–53). The aims of this study was to test the validity of this simple calculation method to evaluate muscle mechanical characteristics of lower limb extension (F, V and P) during a CMJ from three simple parameters: body mass, CMJ height and height of push off (Hpo). Sixteen high-level sprinters performed maximal CMJ against five additional loads (from 17 to 87 kg). Vertical ground reaction force was recorded and synchronised with vertical displacement (1000 Hz). For each condition and from both force plate measurements and the proposed simple computation method (Samozino *et al*. 2008), mean F, V, and P were determined over the entire push-off phase, and used to determine individual linear F-V relationships and associated maximal force (F0), velocity (V0) and power (Pmax) values. The absolute bias was calculated for each parameter: Bias = (Simple Method-Reference Method)/Reference Method ·100. Mean absolute bias were 1.47% (±0.01), 4.73% (±0.04), 3.19% (±0.03), and 5.84% (±0.04) for F0, V0 and Pmax, respectively. Correlations between the two methods were significant for all parameters (r from 0.97 to 0.99, $p < 0.001$). These results, and Bland and Altman analyses, support the validity of this simple method in CMJ. Consequently, the proposed method, based on three simple parameters only (body mass, jump height and Hpo), allows to accurately evaluate lower limbs force, velocity and power properties during loaded CMJ in field conditions. Coaches could use this method to quantify individual athlete Pmax and FV profile, and individualise their training regimens accordingly.

OC9 A simple method to measure force-velocity profile in counter movement jump

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Notes