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BOOK OF ABSTRACTS

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with a shorter work-to-recovery ratio during the rule change session. Discussion The use of modified constraints-led cricket training was able to influence the physical demands of amateur cricket players to varying degrees, depending on the session and playing position. Specifically, modification of the playing rules had the greatest influence on the movement patterns of the players, particularly for batsmen and wicketkeepers. The different constraints presents coaches with methods of providing sufficient training stimulus to maintain or improve the physical capacity of players, without compromising the amount of time spent in game-specific skill sessions. References Gobbett, T., Jenkins, D., Abernethy, B. (2009). Int J Sports Sci Coach, 4 (2), 273–283.

ACUTE EFFECTS OF TWO DIFFERENT RESISTANCE CIRCUIT TRAINING PROTOCOLS ON PERFORMANCE AND PERCEIVED EXERTION IN BASKETBALL PLAYERS

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Introduction In basketball, shooting is the most important technical skill and vertical jump, agility and repeated sprint ability are amongst the main determinants of high performance. Resistance training, for strength/power development, is a common practice in this sport but little is known about the effects of different strength/power protocols on performance and post-resistance training fatigue. Hence, this study aimed to investigate the acute effects of two different resistance circuit training protocols on basketball players’ physical and technical performance and rate of perceived exertion. Methods An intra-individual, crossover experimental design was used. Nine basketball players performed, on consecutive weeks, a Power Circuit Training (PCT; 45% 1RM) and a High Resistance Circuit Training (HRC; 6RM) (I). Vertical and horizontal jumps performance, 3-points shooting accuracy, repeated sprint ability (RSA), agility and upper body power output were measured the week before the first training session and following both circuit protocols. RPE was assessed 20 min post-resistance training. Results One-way rmANOVA showed performance decrements in vertical jump height and peak power, horizontal jump distance, 3-points shooting percentage, bench press power output, RSA total and ideal time and agility T-Test total time, following HRC but not PCT (p≤0.05). RPE was higher in HRC compared with PCT (p≤0.05). Discussion Results indicate that high intensity resistance training protocols are perceived as harder and result in higher levels of fatigue, which is in accordance with Linnamo’s [2] findings. Moreover, HRC leads to acute physical and technical performance declines [3]. Low-to-moderate intensity loads, however, don’t affect negatively performance. Hence, PCT may be an appropriate option prior to a practice/game as it avoids acute resistance training-induced performance decrements but HRC may be a suitable alternative to develop/perfect technical skills under fatiguing conditions similar to that of competition. Nonetheless, strength and conditioning coaches should carefully plan strength sessions as augmented fatigue levels may lead to an increased risk of injury [4]. References 1. Alcaraz PE, Pérez-Gómez J, Chavarrias M, Blazevich AJ. Similarity in adaptations to high-resistance circuit vs. traditional strength training in resistance-trained men. J Strength Cond Res. 2011 Sep 23;25(9):2519-27. 2. Linnamo V, Hakkinen K, Kami PV. Neuromuscular fatigue and recovery in maximal compared to explosive strength loading. Eur J Appl Physiol Occup Physiol. 1998;77(1-2):176-81. 3. Knicker AJ, Renshaw I, Oldham AR, Cairns SP. Interactive processes link the multiple symptoms of fatigue in sport competition. Sports Med. 2011 Apr 1;41(4):307-28. 4. Delextrat A, Trochym E, Calleja-Gonzalez J. Effect of a typical in-season week on strength jump and sprint performances in national-level female basketball players. J Sports Med Phys Fitness. 2012 Apr;52(2):128-36.

PROPRIOCEPTION TRAINING: BEFORE OR AFTER REGULAR BASKETBALL TRAINING SESSION?

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Introduction It is a common practice among strength and conditioning coaches to conduct proprioception training before a regular training session when athletes are in a rested state, but it is known that the majority of injuries occurred at the end of the training session, or competition, when athletes are fatigued [Hawkins and Fuller, 1999]. Therefore, the aim of this study was to investigate the effects of basketball training on single-leg balance ability in rested and fatigued state and assess whether the efficiency of a proprioception program is affected by its performance before or after a regular basketball training. Methods Thirty-three female basketball players were randomly divided into three subgroups (n=11 each). Experimental groups E1 and E2 performed the same proprioception program (8 weeks, 3 times per week, 15-20 minutes per session), but E1 performed before, and E2 after regular basketball training session. A control group performed only the regular basketball training. The Biodex Balance System was used to assess single-leg balance ability, overall stability index (OSI) prior to the utilization of the program (in rested and fatigued state), as well as after the program. General fatigue was induced by the beep test protocol. Two separate 3-way repeated measures ANOVA (time x group x condition) and multiple pairwise comparisons were used to test the differences in the single-leg balance ability between and within the groups pre- and post-proprioception program, and to determine if the timing of the proprioception training (pre-training vs. post-training) affected the balance ability in rested and fatigued state. Results The enhancement in single-leg balance ability for both dominant and non-dominant leg was higher in the experimental groups than in the control group (> 15%). Greater improvement was in a dominant leg’s OSI in the fatigued and non-fatigued state in E2 group. E1 group showed similar improvement in the rested state for non-dominant leg compared to E2 group. Discussion We found that a basketball training improved single-leg ability, but greater enhancement was observed when the proprioception training was added. Additionally, we found that the post-training proprioception program positively affected balance ability in rested and fatigued state. These findings are in accordance with Groifthsidou et al. (2006). It seems that training in the fatigued state (post-training) has a positive transfer on single-leg ability in the fatigued state, so it is recommended to conduct it after training session or after exhausting exercises. References Hawkins RD, Fuller CW. [1999]. Br J Sports Med, 33, 196–203. Groifthsidou A, Malliou P, Pafs G, Beneka A, Godillas G, Maganaris CN. [2006]. Eur J Appl Physiol, 96(6), 659-64. Contact haris.pojskic@untz.ba