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KINEMATIC AND HEART RATE DEMANDS IN 4X4 VS 7X7 SMALL SIDED GAMES IN PROFESSIONAL SOCCER PLAYERS

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Introduction The small sided games (SSG) are one of the most common drills used by coaches for soccer training. In the past, SSG were mainly used for developing technical and tactical abilities. In recent years, there is a growing interest to investigate the effects of the SSG to improve the physical condition of the football player [1-5]. Therefore, the aim of this study was to compare the physiological load, indicated by the response of heart rate (HR) and kinematic variables during exercise SSG 4x4 and 7x7 in professional football players from the Spanish La Liga. Material and methods During the season 2011/2012, twenty professional players performed two types of SSG, 4x4 and 7x7, both on the same dimensions (40x25 m.). The response of kinematic variables and HR measured with global positioning system was analyzed using T test for two related samples. Results Players performed higher distances in the 4x4 vs 7x7 ($p < 0.01$) but higher values of maximum speed in 7x7 vs 4x4 ($p < 0.01$). On the other hand, the lower the number of players the higher the intensity when it is measured with HR. 7x7 SSG obtained heart rate values upper 85% of maximum HR ($p < 0.01$), while performing 4x4 SSG the predominant intensity measured was 65 -85% of maximum HR ($p < 0.01$). Conclusion SSG has shown that the presence of the ball increases the motivation of the players, and allows technical and tactical work simultaneously [6]. Previous studies have shown that this type of training may have a physiological load equal or similar to traditional intervallic aerobic workouts [1, 7, 8]. The results of this study show that kinematic variables and heart rate obtained significant differences in two small sided games exercises designed as 4x4 vs. 7x7. This is an important issue to consider when planning in terms of training objectives. References: 1. Hill-Haas, S. V., Dawson, B., Impellizzeri, F. M., & Coutts, A. J. (2011). *Sports Medicine*, 41(3): p. 199-220. 2. Abrantes, C. I., Nunes, M. I., Maçãs, V. M., Leite, N. M., & Sampaio, J. E. (2012). *The Journal of Strength & Conditioning Research*, 26(4), 976. 3. Aguiar, M., et al. (2012). *Human Kinetics*, 33, 103-113. 4. Brandes, M., A. Heitmann, and L. Mäller. (2012). *The Journal of Strength & Conditioning Research*, 26(5), 1353. 5. Casamichana, D., J. Castellano, A. Dellal. (2012). *The Journal of Strength & Conditioning Research*. 6. Flanagan, T. and E. Merrick. (2002). *Science and football IV*, 341. 7. Dellal, A., Chamari, K., Pintus, A., Girard, O., Cotte, T., & Keller, D. (2008). *The Journal of Strength & Conditioning Research*, 22(5), 1449-1457. 8. Owen, A., C. Twist, and P. Ford. (2004). *Insight*, 7, 50-53.