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## Relationship between maturity levels and neuromuscular capacity among youth soccer players and individuals not practicing soccer

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### ABSTRACT

The aim of this study was to compare maturational stage and neuromuscular skills among soccer players and non-athletes, as well as to investigate the relationship between maturation and neuromuscular performance. Twenty five adolescent males ( $14.3 \pm 0.45$  years) participated in the study and were divided into two groups: soccer players (SP –  $n = 13$ ,  $14.1 \pm 0.3$  years,  $58.9 \pm 6.90$  kg,  $1.72 \pm 0.04$  m,  $19.9 \pm 1.7$  kg·m<sup>2</sup>,  $13.3\% \pm 4.3\%$  fat) and non-athletes (NA –  $n = 12$ ,  $14.5 \pm 0.5$  years,  $57.3 \pm 6.9$  kg,  $1.67 \pm 0.06$  m,  $20.6 \pm 3.9$  kg·m<sup>2</sup>,  $14.0\% \pm 5.7\%$  fat). The square test and 20 m speed test were used to assess agility and speed, respectively. The Tanner self-assessment of pubic hair and genitalia development test was used to estimate maturational development. The Shapiro Wilk test was used to verify the normality of samples. For any data not normally distributed, the non-parametric Mann Whitney test, as well as Kendall's Tau correlation test, were used. The p-values determined for agility ( $p = 0.017$ ) and speed ( $p = 0.054$ ) indicated that agility was the only variable significantly different between SP and NA. The SP and NA groups showed no difference in the levels of maturation ( $p = 0.41$ ), and maturational status was not significantly correlated with agility ( $r = 0.013$ ) or speed ( $r = ?0.003$ ). Conclusion: Individuals who practiced football had better results for the agility test than non-athletes, even with no difference between the degree of maturation and speed. There is a low correlation between level of maturity and agility or speed.

### KEYWORDS

Training; Maturity; Physical Capabilities

### Cite this paper

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### References

- [1] Neto, O.B., Barbieri, F.A., Barbieri, R.A. and Gobbi, L.T.B. (2009) Performance of agility, speed and coordination of boys practicing and not playing football. *Fitness & Performance Journal*, 8, 110-114.
- [2] Bangsbo, J., Mohr, M. and Krstrup, P. (2006) Physical and metabolic demands of training and match play in the elite football player. *Journal of Sports Sciences*, 24, 665- 674. doi:10.1080/02640410500482529
- [3] Cometti, G., Maffiuletti, N.A., Pousson, M., Chatard, J.C. and Maffulli, N. (2001) Isokinetic strength and anaerobic power of elite, sub-elite and amateur French soccer players. *International Journal of Sports Medicine*, 22, 45-51. doi:10.1055/s-2001-11331
- [4] Hoff, J. (2005) Training and testing physical capacities for elite soccer players. *Journal of Sports Science*, 23, 573-582. doi:10.1080/02640410400021252
- [5] Stolen, T., Chamari, K., Castagna, C. and Wisloff, U. (2005) Physiology of soccer: An update. *Sports Medicine*, 35, 501-536.
- [6] Seabra, A., Maia, J.A. and Garganta, R. (2001) Growth, maturation, physical fitness, explosive power and specific motor skills. Study on young players and not male soccer players from 12 to 16 years

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- [7] Nedeljokovic, A., Mirkov, D.M., Kukulj, M., Ugarkovic, D. and Jaric, S. (2007) Effect of maturation on the relationship between physical performance and body size. *Journal of Strength & Conditioning Research*, 21, 245- 250. doi:10.1519/00124278-200702000-00044
- [8] Malina, R.M. (2000) Height, mass and skeletal maturity of elite Portuguese soccer players aged 11 - 16 years. *Journal of Sports Sciences*, 18, 685-693. doi: 10.1080/02640410050120069
- [9] Rebelo, A.N. and Oliveira, J. (2006) Relationship between speed, agility and muscle power of professional soccer players. *Revista Portuguesa de Ciências do Desporto*, 6, 342-348.
- [10] Mortatti, A.L. and Arruda, M. (2007) Analyze the effects of training and sexual maturation on the somatotype of young footballers. *Brazilian Journal of Kinanthropometry and Human Performance*, 9, 84-91.
- [11] Ré, A., Bojikian, L.P., Teixeira, C.P. and B?hme, M.T.S. (2005) Relationship between growth, motor performance, chronological age and biological maturation in young male. *Revista Brasileira de Educa??o Fisica e Esporte*, 19, 153-162.
- [12] Mascarenhas, L., Neto, A., Bozza, R., Cézar, C. and Campos, W. (2006) Behavior of maximum oxygen consumption and body composition during the maturation process in male adolescents participating in soccer training. *Brazilian Journal of Science and Movement*, 14, 49-56.
- [13] Lohman, T.G. (1986) Applicability of body composition techniques and constants for children and youths. *Exercise and Sport Sciences*, 14, 325-357.
- [14] Tanner, J.M. (1962) *Growth at adolescence*. 2nd Edition, Blackwell Scientific Publications, Oxford.
- [15] Sacchetti, R., Ceciliane, A., Garulli, A., Masoti, A., Polleti, G., Beltrami, P. and Leoni, E. (2012) Physical fitness of primary school children in relation to overweight prevalence and physical activity habits. *Journal of Sports Sciences*, 30, 633-640. doi:10.1080/02640414.2012.661070
- [16] Levandoski, G., Cieslak, F., Santos, T.K., Carvalho, F.K., Rocha A. and Ogg, F. (2009) Somatotype profile, antropometric variables, physical aptitude and motor behavior of juvenile athletes of female volleyball time from Ponta Grossa—PR. *Fitness & Performance Journal*, 8, 27-31.
- [17] Cyrino, E.S., Altinari, L.R., Okano, A.H. and Coelho, C.F. (2002) Effects of soccer training on body compo- sition and motor performance of young athletes. *Brazilian Journal of Science and Movement*, 10, 41-46.
- [18] Peeters, M.W., Thomis, M.A., Beunen, G.P. and Malina, R.M. (2009) Genetics and sports: An overview of the pre-molecular biology era. *Medicine and Sport Science*, 54, 28-42. doi:10.1159/000235695
- [19] Philippaerts, R.M., Vaeyens, R., Janssens, M., Renterghem, B.V. and Malina, R.M. (2006) The relationship between peak height velocity and physical performance in youth soccer players. *Journal of Sports Sciences*, 24, 221-230. doi: 10.1080/02640410500189371
- [20] Bar-Or, O. (1995) The young athlete: Some physiological considerations. *Journal of Sports Sciences*, 13, 31-33. doi:10.1080/02640419508732274