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Is testosterone responsible for athletic success in female athletes?

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Abstract

© 2020 ediZioNi MiNerVa Medica BacKGrouNd: The aim of this study was to determine the interrelationship between the resting serum testosterone (T) levels of female athletes from different types of sporting events and their athletic success. MeThodS: The study involved 599 russian international-level female athletes (95 highly elite, 190 elite, and 314 sub-elite; age: 16-35 years) and 298 age-matched female controls. The athlete cohort was stratified into four groups according to event duration, distance, and type of activity: 1) endurance athletes; 2) athletes with mixed activity; 3) speed/strength athletes; 4) sprinters. athletic success was measured by determining the level of achievement of each athlete. reSulTS: The mean T levels of athletes and controls were 1.65±0.87 and 1.76±0.6 nmol/l (p=0.057 for difference between groups) with ranges of 0.08-5.82 and 0.38-2.83 nmol/l in athletes and controls, respectively. T levels were positively associated with athletic success in sprinters (p=0.0002 adjusted for age) only. Moreover, none of the sub-elite sprinters had T>1.9 nmol/l, while 50% of elite and highly elite sprinters had T>1.9 nmol/l (or=47.0; p<0.0001). CONCLUSIONS: Our data suggest that the measurement of the serum T levels significantly correlates with athletic success in sprinters but not other types of athletes and in the future may be useful in the prediction of sprinting ability.

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Keywords

Athletic performance, Hyperandrogenism, Testosterone, Women

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