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» Journal Abstract

Maximal heart rate in athletes

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In the present study 1589 male and 1180 female athletes were examined. Depending on the sport they did maximal heart rates were estimated in the subjects during their exercising on the cycle, rowing, kayakers, ski, and treadmill ergometers. Linear regression for HRmax versus age (in years) was calculated for all the subjects exercising on all the ergometers combined (HRmax=208.5-0.8•age), for all the females (HRmax=208.3-0.74•age), and for all the males (HRmax=207.5-0.78•age). In addition, regression of HRmax versus age, separately for males and females, as well as mean HRmax values for the subjects aged 16-24 years exercising on each ergometer were calculated. The results demonstrate, bearing out the findings of other authors in young people of variable physical activities, that in highly trained athletes the widely employed formula HRmax=220–age significantly overestimates the age-predicted maximal heart rate. HRmax differs depending on the type of ergometer on which the exercise is performed: exercising on the rowing ergometer and on the treadmill results in higher HRmax than exercising on the kayakers, cycle, or ski ergometers. Compared to the males, females exercising on the rowing ergometer and on the treadmill exhibit higher HRmax values but no inter-sexual differences were noted when the subjects exercised on the remaining ergometers.

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