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» Journal Abstract

Changes of muscle torque after sprint and endurance training performed on the cycle ergometer

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The aim of this work was the specification of the influence of the sprint and endurance training performed on the cycle ergometer on changes of muscle torque. Forty three students of the Academy of Physical Education in Warsaw took part in the study. They were divided into 4 groups and performing the cycle ergometer training consisting of 5 intermittent efforts (2 min break): S10 group- the sprint training (maximal efforts performed with the 10% body weight load); S5 group- the sprint training (maximal efforts conducted with 5% body weight load); W80 group – endurance training (the effort power equal 250 W, single – 3 min effort equal 45 kJ, the pedalling rate – 80 rpm, load 31,0 N appended on the cycle ergometer scale); W45 group – endurance training (the effort power equal 250 W, single – 3 min effort equal 45 kJ, the pedalling rate 45 rpm, load 55.0 N appended on the cycle ergometer scale). The four - week sprint training conducted on the cycle ergometer elicited the increase of the torque of the hip extensors and flexors in S10 and S5 group; extensors of the knee joint in S5 group and plantar flexors in S10 group. The four week endurance training carried out on the cycle ergometer caused the increase of the torque of hip extensors in groups W80 and W45, extensors of the knee joint and plantar flexors in group W45 as well the lowering of the torque of hip flexors in W80 and W45 group and the knee joint flexors in all groups. The significant increase of the sum of the 5 examined muscle groups torque was observed after the sprint training only. Some significant differences between the sprint and endurance training considered hip flexors and the sum of 5 examined muscle groups torque. The endurance training elicited the significant decrease of an hip flexors-to-extensors index value in groups W80 and W45 and of the knee joint in group W45.

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