ABSTRACT

Title:

Longitudinal monitoring of anthropometric and physiologic characteristic of the elite sport climber.

Work objective:

The work objective is monitoring and analyzing of general and the specific physical fitness factors by the world knowing climbers from the longtime aspect.

Method:

In the process of the longtime monitoring was used the laboratory and the field measuring and testing to reach of the determined objectives. The particular factors of the physical fitness where determined according to aerobic fitness tests (step test to "vita maxima"), power condition tests (handgrip dynamometry, bent arm hang, etc), flexibility test and kinesiology study. To complement, understanding and interpretation of some results were used questionnaire with the opened questions.

Results:

The elite climber (body mass has been increased from 59,3 kg – age 16,8 years to 62,0 kg – age 19.0 years, body height has been increased from 181,9 cm to 183,4 cm., body fat from 5,3 % to 6,7 %). The climbing performance RP has been increased from climbing difficulty 11+ to 12 UIAA; the results reached at the testing of force abilities (bend arm hang has been increased from 100,0 to 122,0 s; finger hang on 2,5 cm ledge slightly has been decreased from 116,6 s to 111,6 s; relative force of the upper limb, reached at mass, tested by the handgrip dynamometry, has been increased at the dominant upper right limb from 0.83 to 0.90; at the upper left limb has been slightly decreased from 0,91 to 0,90. The characteristic of the aerobic fitness formulated by maximal oxygen uptake has been increased from VO_{2max} - 55,4 $ml.kg^{-1}.min^{-1}$na 62,1 $ml.kg^{-1}.min^{-1}$**.** At the most effective flexibility test of lifting lower limb and setting on it, was expressive drift, which was as the same as for the both lower limb from 182 cm to 210 cm. At kinesiology study has been found positive drift to better posture.

Conclusion:

The tested elite climber has reached better results in the most monitoring characteristics or has stayed at the same level as before. Regarding to this general improvement and the specific physical fitness his climbing performance has been increased. He is staying at as the same level as the top climbers. In the some of characteristics he exceeds the top world climbers.

Key words:

climber, sport climbing, physical fitness, metrical tests, longitudinal monitoring, case study