

Abstract

Title: Systematic review of the influence of lower limbs and trunk strength on aerobic performance during loaded marching

Goals: On the basis of a literature review, find out what is the relationship between the lower limbs and trunk strength and between the aerobic performance during loaded marching. Alternatively, to determine the effect of the development of strength skills of the lower limbs and trunk on aerobic performance during loaded marching.

Method: The presented study is processed in the form of a systematic search with correlation elements. The Web of Science database was selected to search for articles. The search was performed using a search script that had four parts. The last part of the search script generated 44 articles. These articles were then analyzed and studies were selected according to predetermined criteria. From the 44 generated studies, two were selected that met all criteria. Another six selected studies were then sought in an unsystematic way. Thus, a total of eight studies were included in the search.

Conclusion: The results of the correlation coefficients between the lower limbs and trunk strength and between the aerobic performance during load marching indicated in most cases a positive relationship, although the values were not completely significant. The increase the level of strength abilities of the lower limbs and trunk in most studies had a positive effect on better performance with the load carried in the form of time to manage the march, or also in the physiological response. The development of strength also has a positive effect on the prevention of injuries that could significantly negatively affect the performance of the load carried. Thus, the importance of lower limbs and trunk strength for aerobic performance during loaded marching relatively high and may result in a better physiological response, a higher travel speed, a better subject perception of the load and also a higher resistance to injury. To more accurately evaluate the importance of individual types of strength capabilities of certain muscle groups for aerobic performance during loaded march, it would be appropriate to do further research with a better overall design.

Key words: load carriage, army, muscle strength, strength training, lower limbs, core