

SUMMARY

Subject

The performance in sport is created by the amount of talent and also by experienced training, but the relation between the training and the performance has a likelihood character. Generally, a long-distance talent is determined genetically from 70%. Reaching the top level is conditioned by both factors on top level. Therefore, it is very important to choose the right suitable training strategy at teenage runners, which can lead to optimal performance growth, concerning the individual age unusualness and talent. The higher performance was proved at specific training more than at nonspecific training. Meaning of nonspecific training is especially at young runners and beginners. The training effect becomes evident after some time, it has a latent effect. One of the most important factors of the final performance is also the economy of movement.

Objectiv

The aim of the thesis is to evaluate training changes in comparison to training load at teenage talented runners with the help of longitudinal ex-post facto study.

Methods

The thesis deals with analysis of sports training at chosen athletes – runners at young age. It comes out of the need of long-term, systematic, perspective sports training, preferably corresponding with age. We deal with the influence of changes in volume and intensity during training on competitive performance. Training indicators and performance of nine probands were observed during the time of four years. The research group consists of four girls and five boys. At baseline, the average age of the boys 14.92 ± 0.64 years and girls 14.70 ± 0.43 years. Researched probands reached during monitoring performance levels Czech youth toe. Their personal best times at the end of the youth categories in 18-19 years, had this average value among boys: 800 m - 1: 56.69 ± 3.96 , 1500 m - 3: 59.30 ± 3.75 , 3000 m - 8: 50.61 ± 11.02 and girls: 800 m - 2: 12.59 ± 3.11 , 1500 m - 4: 32.62 ± 7.54 , 3000 m - 9: 51.79 ± 20.11 . The choice criterion is the performance of runners. The analysis of their training diaries and their results

was made. We also analysed some video recordings with the running technique of these probands at the beginning and at the end of monitored period. Detection of data normality was made by Shapiro – Wilk test of normality. The influence of individual indicators on performance was considered by factual and statistic significance and also by the methods of regress trees CART and PART. For correlative analysis Spearman's correlative coefficient was used.

Results and conclusions

We have found out that it is possible to influence the performance of teenage runners in adulthood by training load which respects current level of growth. We have also confirmed that sports performance of long and middle distance runners is significantly influenced by specific but also nonspecific means. Largest proven effect was observed in the training tempo speed, general endurance, total cumulative run kilometers and the number of kilometers a week. These factors were statistically significant at a significance level of 0.05. The influence of each training mean increases with the length of activity, which is caused by latency of effect of experienced training load. The greatest effect was proved in practice one year long. We weren't successful at proving the significant influence of lower limbs strength on the technique of running.

Key words

Training, run, an adolescent, the progress of performance, an early specialization.