Abstract

Objectives: The aim of the study was to evaluate how lower limbs injuries are related to footstrike pattern in 800 m women runners aged 16 – 22 in the Czech Republic and around the world.

Methods: Due to the current epidemiological situation, the original field investigation of 48 runners was not possible to complete. Literature research on the topic and the series of ten case studies were performed instead. The research was performed in following databases: Medline, ScienceDirect, SPORTDiscus and Bibliographia medica Čechoslovaca. Results showed seven studies that met inclusion criteria. After that footstrike pattern was evaluated and compared with injury history in 10 women runners in 800 meters, who took part in the Czech Republic championship.

Results: Two studies out of seven confirmed a higher incidence of injuries in RFS than in FFS, 4/7 did not show a significant difference, 1/7 did not evaluate the higher incidence in one or the other type of the footstrike. Three studies out of seven confirmed the relationship between RFS and knee injuries. Furthermore, two of them showed relationship between RFS and hip pain. 2/7 did not confirm any relationship between footstrike pattern and specific injury and 2/7 did not evaluated this relationship at all. Based on the series of ten case studies, it was not possible to answer questions about the relationship between the footstrike pattern and the incidence of running injuries, because forefoot strike was present in all of the runners.

Conclusion: The results are ambiguous, but it seems that knee and hip problems are more related to RFS. To verify these relationships, further prospective design studies with the same large cohort of runners with RFS and FFS are needed.

Key words: footstrike pattern, forefoot strike, rearfoot strike, running, injuries, incidence