

Epidemiology and Risk Factors of Injury and Stress Fractures in Male and Female Runners

Authors : Balazs Patczai, Katalin Gocze, Gabriella Kiss, Dorottya Szabo, Tibor Mintal

Abstract : Introduction: Running has become increasingly popular on a global scale in the past decades. Amateur athletes are taking their sport to a new level in an attempt to surpass their performance goals. The aim of our study was to assess the musculoskeletal condition of amateur runners and the prevalence of injuries with a special focus on stress fracture risk. Methods: The cross sectional analysis included ankle mobility, hamstring and lower back flexibility, the use of Renne's test for iliotibial band syndrome, functional tests for trunk and rotary stability, and measurements of bone density. Data was collected at 2 major half-marathon events in Hungary. Results: Participants (n=134) mean age was 41.76 ± 8.57 years (males: 40.67 ± 8.83 , females: 42.08 ± 8.56). Measures of hamstring and lower back flexibility fell into the category of good for both genders (males: 7.13 ± 6.83 cm, females: 10.17 ± 6.67 cm). No side asymmetry nor gender differences were characteristic in the case of ankle mobility. Trunk stability was significantly better for males than in females ($p=0.004$). Markers of bone health were in the low normal range for females and were significantly better for males (T-score: $p=0.003$, T-ratio: $p=0.014$, Z-score: $p=0.034$, Z-ratio: $p=0.011$). 5.2% of females had a previous stress fracture and 24.1% experienced irregular menstrual cycles during the past year. As for the knowledge on the possible association of energy deficiency, menstrual disturbances and their effect on bone health, Only 8.6% of females have heard of the female athlete triad either during their studies or from a health professional. Discussion: The overall musculoskeletal state was satisfactory for both genders both physically and functionally. More attention and effort should be placed on primary and secondary prevention of amateur runners. Very few active women are well informed about the effects of low energy availability and menstrual dysfunction and the negative impact these have on bone health.

Keywords : bone health, flexibility, running, stress fracture

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