

Institutionen för kost- och idrottsvetenskap

# Overuse injuries in Swedish elite athletics

Incidence, occurrence, athlete  
availability, and risk factors

av

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AKADEMISK AVHANDLING

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# Abstract

Title: Overuse injuries in Swedish elite athletics – Incidence, occurrence, athlete availability, and risk factors

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The overall aim of this thesis was to explore three aspects of overuse injuries in elite Swedish athletics. The thesis is compiled of four papers, of which the first one is a study protocol. Paper II (n=58) aimed to gain knowledge about overuse injury characteristics, and Paper III (n=59) aimed to estimate the seasonal distribution of overuse injuries and the consequences for athletes. Paper IV (n=96) evaluated potential risk factors and their relation to overuse injury.

Athletes were followed prospectively during one Swedish athletics season. Injuries were diagnosed and recorded with the help of medical professionals. At enrollment, all athletes conducted a baseline screening consisting of a clinical examination, running analysis and strength tests. Male and female Swedish elite athletics athletes were recruited in Gothenburg from four event groups: middle/long distance runners, sprinters, jumpers, and throwers. All athletes were asked to fill out and submit training documentation on a monthly basis during the season.

Paper II aimed to describe the incidence proportion, injury onset, injury location, and injury severity of overuse injuries during a Swedish athletics season. The overall incidence proportion for the cohort was 72.4%, with 64.8% of all injuries being categorized as injuries with a gradual onset caused by overuse and 35.2% of all injuries with a sudden onset caused by overuse. Ninety percent of recorded injuries during the study period were located at the lower extremities. The majority of injuries were located at the thigh/hip, followed by the foot/shank. Most injuries sustained by the cohort were severe, with 53.5% of injuries leading to a total or partial time-loss from training and competition of at least 28 days.

In paper III, the results showed that the majority of injuries occurred in October followed by December and April. The overall incidence rate per 1000 hours of athletics training was 1.81 for the cohort, and a moderate athlete availability of 78% for the season with a large individual variability. In paper IV certain risk factors were identified. More specifically, athletes with an injury at the thigh/hip show a slower knee flexion velocity compared with athletes not injured at the thigh/hip.

In conclusion, Swedish elite athletics athletes suffer from a high incidence of overuse injuries that most likely affect their potential to perform at a high level during the season. The majority of injuries are sustained at the beginning of the season during the first conditioning phase. Thus, to decrease the number of injuries, future research should focus on further investigating the athletes' training volume and training intensity and the possible association to overuse injury.