

**Summary of dissertation for final review**

## **Overuse injuries in Swedish elite athletics**

### **– Incidence, Occurrence, Athlete availability and Risk factors**

In Sweden there are approximately 400 active athletics clubs. Athletics is characterized by a high training volume in combination with other risk factors that contribute to a high number of injuries. Previous research shows that in addition to acute injuries it is mainly overuse injuries that lead to time-loss from training and competition for elite athletics athletes. The overall aim of this thesis was to explore three aspects of overuse injuries among elite Swedish athletics. The first aspect was to gain knowledge about overuse injury characteristics. The second aspect was to examine the seasonal distribution of injuries, and the consequences for athletes. The third aspect explored was potential risk factors and their association to overuse injury.

Athletes were recruited with help from Gothenburg's Athletics Association between 2016 and 2018 and consisted of male and female elite athletes that competed in either middle/long distance running, sprinting, jumping or throwing events. At enrollment the athletes performed a baseline screening consisting of a clinical examination, running analysis and strength tests, and were then followed prospectively for one complete Swedish athletics season. The athletes were asked to document their training in event group specific training documentation during a complete Swedish athletics season. If an athlete suffered any pain or sustained an injury that restricted them to perform their normal training a physical examination was scheduled with a medical professional who established a clear diagnosis.

Paper II (n=58) focused on the overall incidence proportion, injury onset, injury location, and injury severity. A high incidence proportion (72.4%) was recorded for the cohort with a majority of injuries located at the lower extremities with

thigh/hip and foot/shank injuries the most common. Over half of all recorded injuries led to a total or partial time-loss for the athletes from athletics training or competition of at least 28 days. In Paper III (n=59) it was found that most injuries occurred in October, December and August. A relative low athlete availability was seen for the overall cohort (78%) with a large variation on an individual level. It was also found that the cohort had a relative low incidence rate (1.81) per 1000 hours of athletics. Paper IV (n=96) aimed to evaluate how biomechanical factors and clinical factors relate to the occurrence of overuse injuries in a cohort of elite Swedish athletics athletes, and to research whether risk factors become clearer if injuries are grouped by location. It was found that athletes with an overuse injury at the thigh/hip showed a slower knee flexion velocity compared with athletes not injured at the thigh/hip.