Title: "Analysis of selected factors influencing return to play football after anterior cruciate ligament reconstruction".

Epidemiological data shows a significant increase in Anterior Cruciate Ligament (ACL) injuries and ruptures. This mainly refers to football players. Searching for ways to both optimize treatment and improve prevention of the following injuries is considered interesting and relevant to orthopaedic surgeons, physiotherapists and coaches.

The main mechanisms of ACL injuries are as follows: landing with hyperextension or internal rotation with valgus knee. The ACL rupture leads to anterior and rotational instability; therefore, it is associated with other damage related to menisci or cartilage. Moreover, untreated ACL injuries may lead to the knee osteoarthritis.

Material for this study was based on 67 football players who sustained ACL injury and were treated with reconstruction of this ligament.

The patients were evaluated using the following tools: MRI, sleep quality scale, period of time between the injury and surgery, type of surgery (lateral tenodesis).

The consequences of injury were visible in MRI scans in the structure of cartilage, menisci, other ligaments and especially in the area of the subchondral bone.

Arthrometry, as an objective tool for measuring knee instability, was set at Newtons, performing the tibia anterior translation with reference to the femur was taken into consideration only for the type of surgery.

Lateral tenodesis is an additional type of surgery done for stability of the lateral part of the injured knee.

Modified Sleep Quality Scale results were obtained during the physicians's interview. They were treated as a subjective questionnaire completed by patients describing their sleep in the period of time before the injury.

The purpose of the thesis was to observe and control factors having an impact on the recovery time for these players after ACL reconstruction (ACLR).

Hypothesis was based on the assumption that the following four factors: lateral tenodesis, damage of menisci, extended time between the injury and ACL reconstruction surgery, and sleep disturbances, may influence the Return To Play (RTP). Based on the bibliography and my experience, it was claimed that the average time of full recovery (RTP) was equal to approx. 6 months after ACLR.

Scientific examination should answer whether the impact of ever of these four factors delay RTP.

After conducting the statistical analysis, it was confirmed that lateral tenodesis significantly delays RTP. Application of lateral tenodesis multiplies a probability of a RTP over 6 months by three times. ACL reconstruction performed after the time of the acute and subacute phases after injury increases likehood of a delayed RTP by 6 % every 10 days. Meniscal tear is connected with the tendency to delay RTP.
The others factor related to RTP and it being significantly delayed was torn menisci.

Not statistically important with respect to RTP was the quality of sleep.

In the end three conclusions emerged: lateral tenodesis as a additional part of the ACLR significantly delays RTP.
The others factors which elongated RTP were time between the injury and surgery and torn menisci.
The quality of sleep analyzed by the applied type of observation did not confirm the negative impact on RTP.

Keywords: knee, reconstruction, anterior cruciate ligament, lateral tenodesis, RTP, meniscus, football