

Title: Pelvis malposition is related to knee dysfunction by loading of long duration (presentation in the case of endurance runners)

Purpose: During endurance run knee problems often appear. This study wants to show the connection between a one- sided malposition of the pelvis and pain of the knee during an endurance run.

Hypothesis: Based on a literature research we expect: that there is a relation between a pelvis malposition and a knee joint dysfunction and that there is no specific relation between the localisation of pain in the knee region and the type of pelvis malposition.

Method: We tested endurance runners which had pelvis malposition and knee dysfunction. Therefore 100 athletes were tested, 50 with knee pain and 50 without knee pain. Manual examination and clinical instruments (measure tape and goniometer) were used for examination of sacro-iliac joints, for measurement of vertical distance between spinae iliacaе anteriores superiores and anatomical leg length and for measurement of hip and knee movement ranges. Collected data were analysed by appropriate statistical methods.

Results: The results show that there is a connection between a one- sided pelvic malposition and pain of the knee of endurance athletes. But localization of the knee pain can not be related to the type of os coxae malposition. These relations are probably realized by changes in lower extremity kinematics as a result of pathological muscle chains. But we can not say where the primary cause of them is.

Conclusion: On the base of our results we can accept both hypothesis which we wanted to test. But the study couldn't work out if the pain was caused by the knee itself and could not clarify whether knee complaints or an os coxae dysfunction or another cause activated the pain in the first place. This is part of further scientific research.

Main importance of our work can be seen in application of anatomical, biomechanical and clinical knowledge to such specific movement like long distance running where many different factors can negatively influence physiological movement.

Keywords: Pelvic malposition, os coxae, sacroiliac joint, cause- and- effect chain.