

Abstract

Title: Assessing Knee Stability in Adolescent Athletes with Osgood-Schlatter Disease

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Objectives: The aim of this diploma thesis is to find out if there is a connection between impaired stability and occurrence of Osgood Schlatter disease. It should be achieved with three different stability evaluation tests and 9 tested proband which are young athletes with Osgood Schlatter disease.

Methods: 9 young athletes between 13 and 17 years were participated in this research. The measurement was performed in three different tests: MFT S3 CHECK, Hurdle Step and Y Balance tests. Proband were tested three times in one year (2017 and 2018). Between every testing they got an individual plan with exercises to improve stability. First results were published in professional journal Acta Chir Orthop Traumatol Cech. 90, 2023, No. 2.

Results: In results of this diploma thesis we demonstrated the connection between impaired stability and the development of Osgood Schlatter disease thanks to three independent tests. Risk values were obtained for all three types of measurements – worse stability and higher risk of injury. The MFT S3 CHECK evaluation did not show a lateral preference of the healthy leg as we had originally hypothesized. During Y Balance test, the values of the risk of injury were worse in the front-back plane compared to the side load, by 1 degree on average. We also demonstrated the positive effect of exercise to testing results. Only the Hurdle Step test showed no changes. The theory why the change did not occur is given in the discussion of hypothesis No. 4. Here, we are considering changing the individual exercise plan in order to supplement the stretching of the dorsal line and more targeted stabilization of the legs.

Key words: Osgood Schlatter, stability, Hurdle step, Y balance test, MFT S3 CHECK