Abstract

This diploma thesis deals with the biomechanics of running and the kinematic analysis of running in children aged 6 – 8 years.

The paper consists of two parts. The first part deals with the biomechanics of running and its development, running injuries and describes the kinematic analysis of running. The PubMed, the ScienceDirect Database and sources of the National Medical Library and of the Charles University were searched for creating this theoretical part.

The second part describes the experiment - methods and its results. 70 children were recorded during overground running at spontaneous speed. The obtained video recording was measured using the Kinovea 0.8.12. program. The video was scrolled through frames and three moments of the stance phase (initial contact, midstance and moment toe-off) were detected. At these moments selected angles in the sagittal plane were analyzed. These angles were described in the terms of descriptive statistics. Certain characteristics subdivided the cohort into two groups. These were compared in kinematic parameters to determine statistically significant differences.

The obtained values from the experiment are discussed and compared with the the values from the recent literature dealing with kinematics of running. At last the suggestions for further research are offered.