

Abstract

Title: Analysis of the motion of dominant upper extremity during offensive stroke in badminton performed by elite female players

Objectives: Objective of my master thesis is to analyse movement of a dominant upper extremity during offensive stroke in badminton and to point out possible risk factors for injuries and soft tissue overload problems in the region of the upper limb.

Methods: The theoretical part deals with anatomical and kinesiological description of upper extremities. Then there is a description of the motion on the court and upper strokes in badminton and movements of upper extremity during the strokes. The practical part deals with measuring of rotations in shoulder joints and with analysis of motion of upper extremity during offensive stroke in badminton. It is focused on measuring the range of motion, angular velocity and angular acceleration in joints of dominant upper extremity. The Xsens MVN was used to record motion.

Results: The results showed that the internal rotation in the shoulder joint on the dominant upper limb during active movement examination is reduced in elite female badminton players. When an offensive strike is played, the players come to the extreme inner rotation in the shoulder joint. Next we found out that the risky movement during the offensive stroke is elbow extension, which can lead to hyperextension in hypermobile individuals.

Keywords: badminton, kinematic analysis, upper extremity, smashing

