

Abstract

Title: Using TMG to diagnose muscle imbalances in Jumping

Objectives: The aim of this work was to define a hypothesis about the relation of training load in jumping and muscle imbalances in selected muscle groups using the tensiomyograph TMG and bioimpedance InBody 720.

Methods: The bachelor thesis has the character of qualitative research. In particular, five case studies have been carried out, emphasizing the detection of characteristic muscle imbalances that could arise from the training load in Jumping. The tensiomyograph TMG 100 and bioimpedance InBody 720 were used to measure muscle imbalances.

Results: Based on the measurement of five participants, muscle imbalances were found primarily in the gastrocnemicus lateralis, semitendinosus and tibialis anterior. In functional symmetry the most frequently imbalances were found in the ankle muscle groups where tibialis anterior was compared against gastrocnemicus lateralis and gastrocnemicus medialis, and subsequently the imbalances in the legs where gastrocnemicus lateralis and medialis were compared against vastus lateralis and medialis. We also found functional imbalances in the knee where the biceps femoris muscle acted against vastus lateralis, vastus medialis and rectus femoris.

Keywords: tensiomyograph, muscle asymmetry, trampolines, bioimpedance