

Abstract

Title: Muscle imbalances in pole vault athletes measured by TMG.

Goal: The goal of this work was to choose endangered muscle groups and identify possible imbalances by using Tensiomyography machine (TMG 100) and define hypothesis about training pressure of pole vault on growth of muscle imbalances in selected muscle groups.

Methods: This work is based on qualitative research. Specifically, six case studies were conducted, during which the importance was placed on discovering characteristic muscle imbalances, which could appear based on training pressure in pole vault. Tensiomyography machine (TMG 100) was used to measure muscle imbalances.

Results: Six pole vaulters participated in this study. We found that training and competitive load of pole vault could create muscle asymmetry in muscles deltoideus anterior and trapezius superior. The training may influence also slows down contractions of biceps brachii muscle and another asymmetry on deltoideus anterior between both muscles. We found very low functional symmetry in elbow joint.

Key Words: pole vault, athletics, muscle imbalances, TMG