

Abstract

Title: Upper body muscles activity in V2 skating technique, double poling and on a skiing machine Concept 2

Objectives: Comparison of involvement upper body muscles during V2 skating technique, double poling and on a skiing machine Concept 2.

Methods: Comparative analysis: the data were measured by surface electromyography and 2-D video-analysis.

Results: We found statistically significant coordination similarity by comparisons muscle preactivation and activation during V2 skating technique and double poling. Trunk flexors musculus obliquus abdominis externus and musculus rectus abdominis showed unlike the main propulsion muscles, musculus pectoralis major, musculus triceps brachii and musculus latissimus dorsi, significantly higher preactivation during V2 skating technique and double poling in comparison to skiing machine Concept 2. Activation of the main propulsion muscles on a skiing machine Concept 2 is significantly higher than during V2 skating technique and double poling. Skiing machine Concept 2 cannot be considered as a specific training method for cross-country skiing. Long-term application may cause disruption of double poling technique.

Key words: Cross country skiing, V2 skating technique, double poling, skiing machine Concept 2 (SkiErg), kinesiology, surface electromyography