



University  
of Victoria

Graduate Studies

Notice of the Final Oral Examination  
for the Degree of Master of Science

of

**KRISTYN VICTORIA LARGE**

BSc (Bethel University, 2013)

**“Effects of a neuromuscular warm-up program on specific  
components of athletic performance in youth soccer players”**

School of Exercise Science, Physical and Health Education

Friday, September 14<sup>th</sup>, 2018

2:30 p.m.

McKinnon Building

Room 179

Supervisory Committee:

Dr. Kathy Gaul, School of Exercise Science, Physical and Health Education, University of Victoria  
(Supervisor)

Dr. Lynne Stuart-Hill, School of Exercise Science, Physical and Health Education, UVic (Member)

External Examiner:

Dr. Patrick Neary, Department of Kinesiology and Health Studies, University of Regina

Chair of Oral Examination:

Dr. James McDavid, School of Public Administration, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies

## Abstract

This study aimed to compare the acute effects of two independent warm-up (WU) protocols, neuromuscular warm-up (NMWU) and standardized soccer warm-up (STWU), on three soccer-specific performance tests in adolescent male and female soccer players. Substantial evidence exists of NMWU programs reducing Anterior Cruciate Ligament (ACL) injuries, particularly in soccer. Regardless of this reduced risk of injury, NMWU program adherence is low. Enhanced athletic performance has been reported to encourage consistent WU adherence more effectively than injury risk, especially in youth athletes. Therefore this study compared the effects of a NMWU and a STWU on physical performance in youth soccer players to encourage adherence and implementation. Following familiarization with a locally developed NMWU, 35 (11 female, 24 male) student-athletes (mean age: 14.7 yrs) from two high school-based soccer academies completed four sessions over a two week period evaluating the effects of WU on three soccer specific performance tests. Performance tests included T-test (agility), vertical jump (Peak Power Output), and 20-m sprint (acceleration and speed). The first week of testing consisted of NMWU familiarization, Yo-Yo Intermittent Recovery Test Level 1, and the collection of physical characteristics. The second week of testing consisted of two testing sessions, WU protocols were randomly assigned to the testing sessions ahead of time (session 1: STWU; session 2: NMWU) and were completed at the beginning of the session prior to testing. A series of five repeated measures ANOVA were conducted to determine significant differences in WU means. The overall group demonstrated a significant increase in Peak Power Output ( $p=0.001$ ) and agility ( $p=0.016$ ) following the STWU compared to the NMWU. Neither WU demonstrated a measurable effect on 5m, 10m, and 20m times. The findings of this research may have been influenced by the single use of the NMWU which may have limited the NMWU potential to enhance the three soccer-related performance tests. In order to explore the effectiveness of NMWU on performance enhancement as a means of improving its adherence in youth players, further research implementing NMWU over an extended period of weeks or months should be carried out, consistent with studies demonstrating NMWU impact on ACL injury risk in youth and adults.