

## MECHANICAL LITERACY IN THE SPORT OF RINGETTE: Skill Acquisition versus Transference to Performance

***Dr. Kelly Lockwood and Ringette Ontario are pleased to announce that funding was received for the following study to be conducted during the 2010-2011 season.***

***Overview of Research:*** In sport, coaches attempt to target important aspects of a sport or particular skills in order to plan practices and create training programs to prepare the athletes for the specific requirements of their sport performance and/or competition. This can be a difficult task when working with team sport athletes, as the physical demands and technical skills may not be clearly evident by knowing the rules or watching isolated games. Skill acquisition analysis and time-motion analysis (TMA) are methodologies widely used in sport to quantify the physiological demands, movement patterns and distribution of technical skills performed by players. Skill acquisition analyses will address whether skills are being introduced, trained and performed at select levels of play. TMA will address whether the skills are being transferred to competitive performance and the frequency of use. Outcome measures of these methodologies are extremely useful in providing coaches and practitioners valuable information that may provide a template for coaching skill and training. Results of the project may be used by the Ontario Ringette Association to generate material to enhance both player coaching development.

Dr. Kelly Lockwood with the permission and support of Ringette Ontario applied for a research grant to a study entitled “MECHANICAL LITERACY IN THE SPORT OF RINGETTE: Skill Acquisition versus Transference to Performance. The study will be conducted by Dr. Kelly Lockwood and her graduate students in collaboration with Ringette Ontario. Dr. Lockwood will be in contact with the coaches of the Ringette Ontario teams to access athletes for participation in the study.

***Participants:*** The proposed project will assess mechanical literacy in the sport of Ringette or more specifically, quantify skill acquisition and the transference of skill acquisition to performance in a sample of athletes/teams throughout the stages of Long Term Athlete Development (ages 6-22). The project will be conducted in three phases. Part I will assess individual skill acquisition; Part II will quantify the transfer of skill acquisition to execution in competitive performance through a time motion analysis (TMA); and Part III will investigate the effectiveness of supplementing skill acquisition with mechanical training during a regular season of play as a means of enhancing competitive performance.

The proposed will be examined through a three part study as defined below:

### **Part I: Individual Skill Acquisition**

- The primary purpose of PART I of the study, is to assess mechanical literacy or skill acquisition over a season of play in athletes of different stages of LTAD in the sport of Ringette. A battery of on ice skill assessments will be conducted on a select number of teams (athletes) at each of the stages of LTAD pre and post a regular season of play for comparison. The assessment will take approximately 15 minutes per team and scheduled during a regular team event. Each skater will be asked to perform a series of ringette specific fundamental skills (ie., forward skating, backward skating, skating through an agility course). All assessments will be videotaped for further analysis. The question of whether a regular season of practices and games significantly enhances individual mechanical literacy and skill acquisition in Ringette players will be addressed.

### **Part II: Skill Execution or Transference to Performance**

- The primary purpose of PART II of the study is to investigate the transfer of mechanical literacy and skill acquisition to performance. A Time Motion Analysis (TMA) will be conducted to on a select number of teams at each of the stages of LTAD to identify and categorize the incidence and frequency of fundamental skills performed by competitive Ringette players during standard competition. All players on the team will be videotaped during regular game performance. Raw video footage will be imported into a software program that will tabulate incidence and frequency of all skills performed. The question of whether the skill acquisition as assessed above transfers to game performance as a result of a regular season of practices and games will be addressed.

### **Part III: Mechanical Skill Training Intervention (PROVINCIAL TEAM ONLY)**

- The primary purpose of PART III is to assess the effectiveness of a sport specific training intervention on both skill acquisition and the transfer of skill acquisition to performance. Due to funding limitations, Part III of the study will **ONLY** be conducted on one team (Provincial team athletes); however with the intent of developing a framework to enhance excellence at all levels if deemed successful. Provincial team members will be exposed four - 1 hour sport specific mechanical training sessions. These sessions will be scheduled during provincial team training camps. The question of whether sport specific mechanical skill training enhances performance beyond regular practices and games will be addressed.

NOTE: Part III of the study has already been initiated. With the assistance of Robin Mahy, preliminary data was collected in May, 2010 with for dates established throughout the season for training and follow up analysis.

**Benefits of the Study:** Participation in this study may potentially enhance the coaches and athlete's understanding of ringette skills and how these skills are used in competitive performance. This project has been reviewed by the Brock University Research Ethics Board and received ethics clearance Upon completion of the study, the Ontario Ringette Association will receive a final report from which the outcomes will be used for development of player and coaching related manuals. Furthermore, it is the intent of the researcher to disseminate research results and practical findings through both academic and practitioner-based journal publications.

If you have any questions with regard to this study, please do not hesitate to contact Dr. Kelly Lockwood via at email: [kelly.lockwood@brocku.ca](mailto:kelly.lockwood@brocku.ca) or via telephone at 905 688 5550 x3092.