HONOURS

Brooke Thompson

Supervisor: Dr. Lauren Lattimer

Research Focus

Brooke's honours research focuses on neuromuscular training of the cervical spine and concussion prevention in female varsity athletes. Sports are highly dynamic, and present unique risks for concussive injuries. Specifically, whiplash mechanisms as a result of falling or receiving impact to the body or head are very common mechanisms for a concussion. The neck plays a significant role in mitigating the resultant head motion from these impacts. Thus, individuals with larger and stronger necks, with improved symmetry of the muscles have a greater ability to stiffen and control the movement of the head. However, females tend to have weaker and smaller necks and several anatomical features which ultimately limit their ability to control the movement of their head upon impact. Currently, very few interventions exist to dynamically train the cervical musculature. Therefore, the main objective of this study was to investigate how a novel dynamic neuromuscular training intervention influenced concussion risk factors including: neck girth, neck strength, flexion-extension strength ratio, cervical range of motion, balance, proprioception and vestibular-ocular function in female varsity athletes. By using clinical concussion baseline tests, we were able to test several athlete's performance on factors relating to concussion risk. We then guided 8 of 17 of the participants through an intense 7-week training program and then re-tested all the participants to compare the effectiveness of our dynamic training to the training done at Acadia. Findings from this study will provide insight on effective ways to train athletes in hopes of reducing concussion risk in the athletic population.

The Researcher

Brooke is a Kinesiology student from Collingwood, Ontario. During her time at Acadia, she has been involved in many volunteer experiences that have challenged her and helped her develop as a student. She is currently the President of the Acadia Kinesiology Society. She also volunteered with the SMILE program and the SIAM program as a Student Therapist with the Acadia Women's Basketball team. From her experiences at Acadia, she has fallen in love with injury prevention and research. She plans to continue her love of research during my Masters of Kinesiology which will focus on Biomechanics and concussion research at Wilfrid Laurier University in the Fall of 2021.