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*Project: Aerobic exercise for treatment of chronic symptoms following mild traumatic brain injury (ACTBI) trial*



### **Background**

Annually, approximately 250,000 people in Canada sustain a concussion. While symptoms following concussion generally improve within 3 months, up to 30% of people continue to have symptoms beyond this time. Symptoms may include headaches, fatigue, trouble sleeping, anxiety, depression, dizziness, and mental fog. There is no cure for those who suffer from chronic symptoms and treatment options are desperately needed. Research shows that exercise can improve mood, mental function, sleep, fatigue, and headaches. In the past, long periods of rest have been

recommended for recovery from concussion. New findings in teenagers have shown that exercise programs can improve concussion recovery; however, similar exercise programs have not been studied in adults. Improvement of symptoms following concussion can be measured using questionnaires and by analyzing markers in blood. This study will evaluate an aerobic exercise program in adults with chronic symptoms following concussion. Participants will be randomly assigned to an aerobic exercise program or a stretching program, completing either exercise or stretching 5x/week for

30 minutes. Individuals in the exercise group will be provided a target heart rate (monitored with heart rate monitor) to maintain during exercise, based on a treadmill test used to assess worsening of symptoms with exertion. After 6 weeks of exercise or stretching, concussion symptoms will be evaluated and compared to symptoms before the program began. Individuals who started with 6 weeks of exercise will continue for an additional 6 weeks (12 weeks total) and individuals who started with the stretching program will start the 12-week exercise program. After 12 weeks of exercise, we will compare symptoms as well as other measures such as heart rate, blood pressure and markers in the blood. This study has the potential to inform treatment of individuals with chronic concussion symptoms and understand the mechanisms by which exercise improves symptoms.