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Student Presentation
Abstracts

PHYSICAL LITERACY IN YOUTH: ASSESSMENT AND INTERVENTION

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Physical literacy (PL) is a concept that has mobilized educators, coaches and parents as a means to facilitate a physically active lifestyle in youth. Physical literacy definitions also assert the belief that physical literacy will enhance a person's health; *"Individuals who are physically literate move with competence and confidence in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person"* (PHE Canada). Baseline measures of physical literacy in youth have yet to be published and examined in relation to indicators of a healthy lifestyle. This study had two parts; first, the description of physical literacy and its relationship to body composition, fitness, running performance, leisure participation, physical activity, duration of sleep, physical self-concept and self-esteem, motivation to physical activity and self-assessed physical literacy in youth was examined and secondly, a physical literacy intervention program was assessed.

Methods: Cross-sectional examination of physical literacy of youth in grade 3, 4, 8 and 12 using the Physical Literacy Assessment of Youth-Fundamentals (PLAY-FUN) tool. Other measures included; grade, age, sex, hand dominance, height, mass, waist circumference, 20 meter shuttle run test, 10 meter sprint test, accelerometer measured physical activity, PLAY-Inventory, PLAY-Self, Pittsburg Sleep Quality Index, Physical Self-Description Questionnaire and the Motivation to Physical Activity Measure. Using a pre-test – post-test study design, the physical literacy intervention program was conducted with the grade 3/4 group only. To manage the Hawthorne Effect, the control group for the interventional study was tested only once.

Results: Total sample size was 299 youth which included 170 males and 129 females from grades 3, 4, 8 and 12. Mean age ranged from 8.85 in grade 3 to 17.22 in grade 12. Using Cole's BMI cut scores to determine obesity, 29.9% of the entire sample was classified as overweight or obese. Physical literacy increases with grade ($p < 0.01$); (PL grade 3= 39.35, sd 7.18; PL grade 4=45.68, sd 8.79; PL grade 8= 60.01, sd 7.24; PL grade 12= 68.28, sd=10.42). Males had greater PL than females in grades 8 and 12 (mean differences: grade 8= 5.84, grade 12= 9.39, $p < 0.01$). The following relationships to PL were found; sprint speed $r = -0.86$, $p < 0.001$; CV fitness $r = 0.56$, $p < 0.001$; physical self-concept $r = 0.60$, $p < 0.01$, total leisure activities $r = 0.17$, $p < 0.05$; and number of teams $r = 0.39$, $p < 0.01$. In grade 8 only, the following relationships to PL were found; BMI $r = -0.48$, $p < 0.001$; motivation to be fit $r = 0.32$, $p < 0.01$; and motivation to be competent $r = 0.41$, $p < 0.001$. The PL intervention significantly increased PL with a mean difference of 5.49 ($p < 0.001$) between pre and post-tests. The interventional group had a significantly greater post-test PL than the control group with a mean difference of 7.98 ($p < 0.001$).

Summary: Physical literacy approaches advocated by educators, coaches and parents shows promising linkages to indicators of a healthy lifestyle and should be examined further. The physical literacy intervention program was successful in increasing PL in youth. The differences between males and females may indicate that females need greater support in the development of PL.

PROBIOTICS FOR PRETERM INFANTS: FACTORS AFFECTING IMPLEMENTATION IN CANADIAN AND AMERICAN NEONATAL INTENSIVE CARE UNITS

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Purpose: Probiotics are live bacteria that provide health benefits. Evidence shows probiotics decrease the risk of necrotizing enterocolitis in preterm infants. Although probiotics are routinely administered to preterm infants in several European and Asian countries, they are not widely used in the U.S. and Canada. The purpose of this study was to describe factors that influence the implementation of probiotics in Canadian and U.S. Neonatal Intensive Care Units (NICUs).

Methods: We implemented a cross-sectional descriptive online survey that targeted Medical Directors (MDs) of NICUs in Canada and the U.S., using Dillman's survey methods.

Results: 197 MDs participated in the survey (18.8% response rate). Probiotics were administered in 47 (23.9%) NICUs surveyed. Key factors that influenced implementation of probiotics to a great extent were knowledge about the evidence (80%) and confidence about the benefits (82.1%). MDs whose NICU was not using probiotics agreed that more evidence is needed (81.6%), they have concerns about the safety of administering probiotics (77.3%), and they find it difficult to decide what specific probiotic products and doses to use (83.6%).

Summary: The results of this study will inform stakeholders about key factors affecting probiotic use, which will help in designing strategies to move this practice forward.

COMMUNICATION INTERACTIONS OF HEALTH CARE AIDES AND INDIVIDUALS WITH DEMENTIA

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Purpose: The purpose of the study is to develop a middle range theory to describe and explain how health care aides interpret and understand care recipients with dementia and how this impacts the way they interact with these residents.

Method: This research uses grounded theory methodology. Audio-recorded interviews were conducted with HCA's working with residents with dementia in long term care facilities in Winnipeg. Focus groups will be conducted with these same HCA's to verify and augment the information from the interviews. This presentation will be limited to the outcome of the initial data analysis of the texts of the interviews.

Preliminary Findings: HCA's view their interactions with residents with dementia as a critical part of their provision of care to these residents. They use verbal and nonverbal interactions to promote the cooperation of residents and to reduce episodes of resident agitation and violence. The HCAs' perceptions and understandings of residents with dementia appear to be influenced more by what they have experienced in their private lives and workplace culture than by their formal education or the effects of supervision by regulated nursing professionals.

Further Data Collection: Focus groups will be used to explore how HCAs' understanding and perception of residents with dementia is influenced by the HCAs' education, personal experience, and the nature of their communication with nursing supervisors.

Summary: HCAs provide up to 90% of the direct care to residents in personal care homes. The HCAs' perceptions these residents and their interactions with residents during the provision of care are mainly affected by their personal experiences rather than by their formal training or nursing supervision. Focus groups will be used to explore this preliminary finding.

NEW TOOLKIT FOR MEASURING SPASTICITY: A PILOT STUDY INVESTIGATING THE VALIDITY OF THE BIOTONE SYSTEM FOR PATIENTS POST-STROKE

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Purpose: This pilot study assessed the concurrent and construct validity of the BioTone system as a tool to quantify spasticity in patients following stroke.

Method: 15 adults post-stroke (65±11 years, 11 males) with spasticity in upper limb muscles participated. The BioTone system was used to measure spasticity elicited during fast (120-140 deg/sec) passive stretching of bilateral elbow flexors and elbow extensors. Modified Ashworth Scale (MAS) and Tardieu Scale (TS) were used to assess elbow flexors and extensors bilaterally. EMG and electrogoniometric data were collected at 1000 Hz. Spastic reaction onset time, angular velocity at onset (ΔV) and acceleration at onset (ΔA) were determined by analyzing departures of electrogoniometric data from a theoretical kinematic model based on a constant jerk profile. In addition, the root mean square departure for angular velocity (ϵV) and acceleration (ϵA) were calculated. EMG recordings were also analyzed to identify spastic reaction onset time, discrete change in EMG intensity and EMG amplitude density of the stretched muscle (ΔStr , ϵStr) and its antagonist ($\Delta NStr$, $\epsilon NStr$). Other variables from the theoretical curve, which were the maximum velocity and absolute maximum acceleration of the theoretical model (MAX-V and MAX-A) and the root mean square of the theoretical model angular velocity and acceleration (V and A), were derived to determine the construct validity by comparing them to the corresponding variables obtained from the movement curve of the non-hemiparetic side. Relationships between the biometric results and the MAS and TS were explored.

Results: Most participants displayed mild spasticity (1 and 1+ on the MAS – 2 on the TS). No significant differences were revealed between spastic onset time predicted from kinematic data and EMG data. Significant correlations were found between Elbow flexor MAS and ΔV and ϵV ($\rho=0.49$, $p=0.03$; $\rho=0.47$, $p=0.04$), and between TS of elbow extensors and $\Delta NStr$ ($\rho=0.46$, $p=0.04$). Significant correlations were found in MAX-A and V of elbow flexors calculated using the theoretical profile and the non-hemiparetic side as references ($\rho=0.66$, $p=0.003$; $\rho=0.56$, $p=0.015$).

Summary: These findings provide preliminary information of aspects of validity of the BioTone system. The results showed that the BioTone measures have low concurrent validity, and low to moderate construct validity, Further investigation of this device as a clinical tool to objectively measure spasticity in patients post-stroke is warranted.

USING GROUNDED THEORY TO INVESTIGATE THE EMOTIONAL ATTACHMENT OF SIBLINGS EXPOSED TO INTIMATE PARTNER VIOLENCE (IPV)

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Purpose: To date, very little attention has been given to the subjective experience of children and adolescents exposed to intimate partner violence (IPV), which is surprising given the fundamental underlying impact of exposure to IPV on a variety of adjustment problems including depression, anxiety, low self-esteem, and aggression. Even less is known about similarities and differences in how siblings process the experience of violence within the same family. Grounded on research findings that have frequently identified attachment as the primary protective factor in children exposed to multiple risk factors, the purpose of this study is twofold: (1) To investigate how IPV exposure affects the emotional attachment that children and adolescents exposed to IPV develop toward family members and extra-familial figures; and (2) To develop a substantive theory of the mechanisms that children and adolescents exposed to IPV adopt to process the experience of IPV and develop their adjustment within and between families.

Methods: A grounded theory study will be conducted. A theoretical sample of 30 to 50 sibling dyads with a history of IPV will be recruited from the community using newspaper ads, mail flyers, and posters placed in counseling agency. Families will be included if at least two siblings of school age (5-18 years) will be willing to participate and if they will be able to understand and communicate appropriately in English. Data will be collected using face-to-face semi-structured audiotaped interviews transcribed verbatim and drawing techniques with each sibling. As required for REB approval, non-violent parents and siblings will receive counseling concerning their IPV experiences and the informed consent will represent a continuing process.

Significance: To my knowledge, this is the first grounded theory study conducted with siblings exposed to IPV representing therefore a significant contribution by filling a gap in the literature. A qualitative study that listens to the voice of siblings exposed to IPV will provide a more holistic and deeper understanding of the role that different intra-familial and extra-familial relationships play in shaping the adjustment of these individuals. This unique insight will contribute to elucidate the specific combination of risk and protective factors involved in the development and adjustment of children and adolescents exposed to IPV, with the ultimate goal of informing the planning and implementation of prevention and intervention programs for IPV affected-families, in order to improve the effectiveness of such programs and promote the development of well-adjusted and asymptomatic personalities in all family members.

TEACHING INDIGENOUS HEALTH USING ANTI-RACIST PEDAGOGY: EXPLORING THE EXPERIENCES OF MEDICAL SCHOOL INSTRUCTORS WITH THE TWO-EYED SEEING FRAMEWORK

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Purpose: Anti-racist education seeks to identify, challenge, and transform systems that maintain race-based power and privilege. As part of its strategy to address the racism experienced by Indigenous patients, the University of Manitoba's medical school has adopted an anti-racist educational approach to teaching about Indigenous health. The purpose of this qualitative study is to explore the experiences of instructors involved in this educational intervention. Using Marshall's two-eyed seeing theoretical framework that bridges Western and Indigenous ways of knowing, the study will seek to answer following research questions:

1. How do medical educators describe the experience of using anti-racist pedagogy to teach Indigenous health?
2. What has challenged and/or supported their work?

Method: A mixed qualitative design based on Kovach's conversational method, a form of narrative inquiry, will be used. This approach will combine knowledge gathering and interpretation that is informed by Plains Cree oral traditions and the counter-narratives of critical race theory. Purposive sampling will be used to recruit up to five participants at the University of Manitoba's medical school who are instructors with at least one year of experience teaching about racism in the Indigenous health context. Consistent with local protocols, support from local Indigenous groups will be sought prior to applying for university ethics approval. Open-ended, semi-structured questions will be used to guide interviews. For the Indigenous analysis, stories will be condensed and a reflective narrative produced about the key teachings from the conversations. For the non-Indigenous analysis, the transcribed interviews will be analyzed for emerging narratives and counter-narratives. The findings will help to address a significant gap in knowledge base about what is needed to facilitate teaching the complex issues of racism in the medical school classroom.

EMERGENCY DEPARTMENT CLINICIANS PERCEPTIONS AND ACTIONS REGARDING NON-CARDIAC CHEST PAIN

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Purpose: Hospital emergency departments (ED) are challenged by patients presenting with cardiac symptoms yet diagnostic tests are normal. While patients are relieved there is no cardiac pathology, they are not provided with treatment alternatives for their persistent chest pain. The objectives of this study are to determine ED clinician perceptions regarding characteristics of non-cardiac chest pain patients (NCCP) and their management, and to explore clinician satisfaction toward the current care standard, and whether they would consider non-pharmacological/non-surgical referral options.

Method: A cross-sectional survey was delivered to ED clinicians (n = 40). Data was reduced descriptively and thematically summarized to assess the frequency, current perceptions and actions of ED clinicians who manage NCCP.

Results: Response rate to the survey was 67.5%. Respondents agreed that onsite/on call providers for NCCP referral would assist in patient management (63.0%). Further, clinicians would consider referring NCCP patients to a non-pharmacological, non-surgical, clinical research study (66.7%).

Summary: NCCP patients are a variable and heterogeneous population. ED clinicians want better access to on-site referrals and out-patient clinics for patients experiencing NCCP after discharge and would consider non-pharmacological/non-surgical referral. Future clinical trials with a NCCP population referred from ED clinicians are feasible to further understand non-pharmacological/non-surgical assessment and treatment options. Inter-professional collaboration will be paramount to improving the future research on, and clinical management with a NCCP population.

THE IMPACT OF KNOWLEDGE ON ATTITUDES OF EMERGENCY DEPARTMENT STAFF TOWARDS PATIENTS WITH SUBSTANCE RELATED PRESENTATIONS: A QUANTITATIVE SYSTEMATIC REVIEW

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Purpose: The overall objective of this systematic review is to synthesize the available evidence on the relationship between knowledge and health-care providers' attitudes toward their therapeutic role with substance using patients that present to the Emergency Department. The specific review question is: Among emergency department staff, does knowledge (educational interventions about substance use) impact attitudes in their therapeutic role towards patients with substance-related presentations?

Method: The review's search strategy aims to find both published and unpublished studies. A three-step search strategy will be utilized. Databases to be searched include: AMED, Medline, CINAHL, PsycINFO, Embase, Scopus, Web of Science, Academic Search, Complete, Google Scholar, ProQuest Dissertations & Theses A&I. Conference proceedings, dissertations, and relevant websites will be searched for unpublished studies. Quantitative papers selected for retrieval will be assessed by two independent reviewers for methodological validity prior to inclusion in the review using Joanna Briggs Institute's (JBI) standardized critical appraisal instruments. Quantitative data will be extracted from papers using JBI's standardized data extraction tool.

Results: Quantitative papers will be pooled in statistical meta-analysis using JBI's standardized instruments. Effect sizes expressed as odds ratio (for categorical data) and weighted mean differences (for continuous data) and their 95% confidence intervals will be calculated for analysis. Heterogeneity will be assessed statistically using the standard Chi-square and also explored using subgroup analyses based on the different quantitative study designs included in this review.

Summary: This systematic review is being undertaken under the auspices of Joanna Briggs Institute and is undergoing the standard JBI review process (work in progress). Results of this review will be shared with the clinical program team at WRHA and will be used to inform educational programs in WRHA Emergency Departments.

DEVELOPMENTAL ORIGINS OF DIABETIC CARDIOMYOPATHY IN YOUTH WITH TYPE 2 DIABETES

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Purpose: Cardiovascular disease is the major cause of mortality and morbidity in persons with type 2 diabetes. Diabetic cardiomyopathy is the earliest cardiac abnormality detected in these persons. Animal studies suggest that exposure to diabetes during gestation alters cardiac development *in utero* and programs the offspring's risk of diabetic cardiomyopathy. However, most human studies are restricted to older populations and thus contain important confounding related to age and duration of diabetes. The objectives of this project are to evaluate the independent impact of exposure to diabetes during gestation on the risk of developing diabetic cardiomyopathy in youth with type 2 diabetes, both at clinical and at population level, and to evaluate the potency of an exercise intervention on heart function.

Method: These hypotheses will be tested both in case-control analyses nested in the iCARE (Improving Renal Complications in Adolescents with Type 2 Diabetes through Research) cohort, and in data from the Manitoba Center for Health Policy registries, collected from 1981 to 2014. Cross-sectional analyses will be used to determine: 1) if youth with type 2 diabetes exposed to diabetes during gestation (differentiating between gestational diabetes and preexisting type 2 diabetes) exhibit different cardiovascular and biochemical parameters than youth that were not exposed; and 2) in what measure is the exposure causal, and independent of confounders. The registry-based cohort will be used to assess the importance of the exposure to diabetes during gestation (gestational or type 2 diabetes) on classical cardiovascular risk factors (including hypertension, myocardial infarction, etc.) at the population level. An intervention will then be designed to determine if endurance exercise, at a dose sufficient to enhance cardiorespiratory fitness, will improve heart function in youth exposed to diabetes throughout gestation. If conclusive, the effect size of the intervention will be used to determine the power needed for a larger randomized trial in youth with T2D.

Implications: It is expected that exposure to diabetes during gestation will increase the risk of developing diabetic cardiomyopathy in youth with type 2 diabetes, as shown by cross-sectional measures of heart function and epidemiological measures of cardiomyopathy risk factors. It is also expected that the exercise intervention will partially rescue the impaired heart function of the participants. These results would be the first to show that exposure to maternal diabetes during gestation is an independent risk factor for diabetic cardiomyopathy and cardiovascular diseases, in adolescents and at the population level. If conclusive, the intervention would also provide an interesting prevention and treatment option to those youth at increased risk of early cardiovascular diseases.

Summary: It is believed that gestational diabetes increases the risk of developing diabetic cardiomyopathy, but studies in patients without age- and duration of diabetes-related confounders are lacking. If our hypotheses are true, the results will highlight the need to provide targeted healthcare to this previously unrecognized category of youth at increased risk of developing early cardiovascular complications.

Heat Regulation in Paraplegic Individuals: An Integrated Thermal Signal (ITS) Model

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Purpose. Thermoregulation in spinal cord injury (SCI) is limited by the severity of neural dysfunction. This review focuses on identifying thermoregulation challenges in paraplegic individuals in the context of an Integrated Thermal Signal (ITS) model.

Method. A literature review was conducted to identify the neural network involved in temperature sensation and regulation in paraplegic individuals.

Result. In paraplegics, at lower capacity for work output and a reduced heat dissipating capacity may balance out heat transfer in thermoneutral environments. Exercise in paraplegic individuals in hot environments ($>30.0\text{ }^{\circ}\text{C} \sim 40\text{ \%Rh}$) may challenge heat loss capacity of paraplegics as a reduction in the thermal gradient from skin to environment will reduce radiant heat loss and favor heat gain. Higher level paraplegics ($T_1\text{-}T_6$) may be more vulnerable than lower level paraplegics to heat stress as the efferent output to vasomotor and sudomotor processes in addition to the inability to increase heart rate to maintain cardiac output during blood redistribution ultimately reduces the opportunity for heat loss.

Summary. The lack of reporting on autonomic completeness, which will profoundly alter the efferent response to thermal stress, is a limitation to interpreting thermoregulation responses to existing studies. Researchers should attempt to stratify their study populations on both neurological and autonomic dysfunction and if possible indicate level of both neural and autonomic completeness.

UNDERSTANDING THE MECHANISM(S) FOR COLD INDUCED ATTENUATION OF CENTRAL INHIBITION DURING SUSTAINED MAXIMAL FATIGUING CONTRACTIONS IN ELBOW FLEXORS PERFORMANCE

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Objective: The main objective of this study is to understand the mechanisms for cold induced attenuation of central inhibition during sustained maximal fatiguing contractions in elbow flexor performance.

Methods: By using a novel approach we will use electrical and single-pulse transcranial magnetic stimulation (TMS) to answer two main questions. First, does central nervous system cooling diminish the neural signals from brain to elbow flexor muscles? Secondly, if the neural signals are diminished, what are the mechanisms, and their relative contributions to the overall decrement of the performance? We hypothesize that local cooling of the hands and arms will attenuate inhibitory feedback from the central cooling itself and will also contribute to decrement in sustained maximal fatiguing contractions in elbow flexor muscles (e.g, by affecting either: efficacy of transmission between upper and lower motor neurons; or facilitation and/or inhibition). We will recruit 6 physically active young subjects (<40). The intervention will consist of sitting upright for 60 minutes in room temperature (warm-core/warm-arm) or 8°C water (coldcore/cold-arm; warm-core/cold-arm; and cold-core/warm-arm). Voluntary activation will be assessed during brief (3s) maximal voluntary contractions (MVCs) and then during a 2 min fatiguing sustained MVC. Single-pulse TMS, brachial plexus and biceps motor nerve stimulation will be performed during each contraction.

Importance: This research has the potential to answer the questions which were left unanswered in the past. The outcomes of the proposed study might help in greater understanding of mechanisms associated with maintenance and/or restoration of body temperature which will impact the development of strategies to enhance survival during a hypothermic challenge, potentially saving lives of people.

ESTABLISHING A RELATIONSHIP THROUGH THE ENGAGEMENT OF YOGA AND MEDITATION AS A PATH TOWARDS EMBODIMENT AT THE MOTHERING PROJECT/MANITO IKWE KAGIIKWE

Punam Mehta

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Purpose: There has been a long history of negative research experiences leading to understandable distrust between Indigenous communities and researchers. The purpose of this study was to engage in community based participatory research to establish a relationship between the Mothering Project/ Manito Ikwe Kagiikwe and the University of Manitoba. The Mothering Project/ Manito Ikwe Kagiikwe is a holistic spirit women's teaching program for pregnant Indigenous mothers abusing substances located in Mount Carmel Clinic.

Methods: In order to build trust and establish a relationship between the Mothering Project/Manito Ikwe Kagiikwe and the University of Manitoba, I have for the past three years, been teaching yoga and meditation and developed classes tailored for Indigenous pregnant women using substances. Furthermore, I have been participating in the Mothering Project/Manito Ikwe Kagiikwe weekly drop-in program for Indigenous mothers which includes engaging in various cultural and spiritual activities such as drumming and singing.

Results: Yoga and meditation classes have been a key tool in building and maintaining a relationship with the Mothering Project/ Manito Ikwe Kagiikwe. In particular the effectiveness of yoga and meditation integrated into a spirit women's teaching program for Indigenous mothers has been particularly significant and important to women's spiritual health and wellbeing.

Summary: Acknowledging the value of yoga and meditation classes in populations that often don't have access was important to building a relationship. Furthermore, contributions of yoga and meditation classes has led to improved physical, mental, emotional and spiritual health and well-being of Indigenous mothers at the Mothering Project/Manito Ikwe Kagiikwe.

THE EFFECT OF 15 MINUES OF PASSIVE REST ON SCAT3 SCORES FOLLOWING MAXIMAL AEROBIC EXERCISE

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Purpose: It is recommended that subjects rest for an arbitrary period of 10-15 minutes following injury in order to alleviate the effects of fatigue prior to Sport Concussion Assessment Tool – 3rd Edition (SCAT3) assessment. The purpose of this study was to determine whether a 15-minute rest period following maximal aerobic exercise is an adequate amount of time for SCAT3 scores to return to baseline.

Method: Twenty six healthy, active volunteers participated. Each participant was assessed using the SCAT3 to obtain baseline measures, followed by a graded exercise test (GXT) to determine participants' VO_{2max} and ensure maximal exhaustion. Participants were then given 15 minutes of passive rest and re-assessed using the SCAT3. Paired t-tests were used to detect differences in SCAT3 scores, using a significance level of $p < 0.05$.

Results: The mean age, height and mass of participants were 27.0 ± 4.0 yr, 176 ± 11 cm and 80.3 ± 14.0 kg, respectively. The number of symptoms increased from 1.7 ± 1.5 to 5.0 ± 3.6 during pre- and post- VO_{2max} SCAT3 assessment, respectively ($p < 0.05$). Symptom severity scores also increased from pre- to post- VO_{2max} SCAT3 assessment (2.2 ± 2.1 vs. 7.0 ± 5.2 , respectively; $p < 0.05$). The number of errors committed during tandem stance decreased from pre- (0.77 ± 1.18) to post-exercise (0.27 ± 0.45 ; $p < 0.05$), while time to complete tandem gait decreased from pre- to post- VO_{2max} assessment (14.9 ± 3.0 s vs. 13.5 ± 3.4 s, respectively; $p < 0.05$).

Summary: Our data suggests that 15 minutes of passive rest following maximal aerobic exercise may not be enough time to allow the number of symptoms and symptom severity scores to return to baseline in SCAT3 assessment. It remains possible that the observed differences may be due to the effects of exercise. Furthermore, the decrease in the number of errors during tandem stance and time to complete tandem gait post- VO_{2max} indicates that these parameters may be sensitive to a training effect. With findings that exercise may provoke signs and symptoms of concussion, our study provides novel evidence that a 15-minute rest period may not be adequate for SCAT3 parameters to return to baseline following maximal aerobic exercise.

Is reducing sedentary behaviour a more realistic starting point to modify activity behaviours among older adults with a mobility limitation?

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Purpose: Mounting evidence suggests that sedentary behaviour, or *too much sitting*, contributes to an increased risk for chronic diseases, irrespective of physical activity. Older adults with a mobility limitation are the most inactive segment of the population and it has been suggested that reducing sedentary behaviour may be more realistic starting point to initiate behaviour change in this population. However, little is known about older adults' self-efficacy (confidence) to reduce sedentary behaviour relative to self-efficacy to increase physical activity. The purpose of this study was to measure and compare self-efficacy for reducing sedentary behaviour and increasing physical activity in older adults before and after total knee replacement surgery.

Method: Pre-operative (n=28) and one-year post-operative (n=24) total knee replacement patients attended the Concordia Hip and Knee Institute and completed self-efficacy (task self-efficacy and self-regulatory self-efficacy) questionnaires for both sedentary behaviour and physical activity. T-tests and Mann-Whitney Rank Sum Tests were used for analyses.

Results: Within both pre- and post-operative groups, patients reported higher task self-efficacy for increasing physical activity compared to reducing sedentary behaviour ($p < .05$). No difference was found in patients' self-regulatory self-efficacy to manage their sedentary behaviour and physical activity ($p = .651$).

Summary: Pre- and post-operative patients were less confident to reduce their sedentary behaviour compared to increasing their physical activity but were equally confident in being able to regulate their sedentary behaviour and physical activity. These findings suggest that reducing sedentary may not be a more realistic starting point to initiate behaviour change compared to prescribing increased physical activity. However, these results must be interpreted with caution since evidence-based guidelines for reducing sedentary behaviour are lacking. More research is needed to explore perceptions and strategies related to reducing sedentary behavior and increasing physical activity in clinical populations.