



# CKRS

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## College of Kinesiology Research Showcase

March 20 - 27, 2026



UNIVERSITY OF SASKATCHEWAN  
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# Acknowledgements

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As we gather for the College of Kinesiology Research Showcase (CKRS) & Don Bailey Lecture Series, we recognize that this event takes place on Treaty 6 Territory and Homeland of the Métis. We acknowledge the First Nations and Métis peoples whose relationships with this land have shaped knowledge, community, and well-being for generations. As a College dedicated to advancing research in movement, education, health, wellness, and human performance, we are reminded that learning and discovery are strengthened when we honour diverse ways of knowing and continue building respectful relationships with Indigenous peoples and communities.

The CKRS is the result of the dedication and collaboration of many individuals in the College of Kinesiology. We extend our sincere thanks to the CKRS Planning Group: Dean, Dr. Dani Brittain, Amanda Davenport, Keira Dyck, Dr. Nancy Gyurcsik, Alyssa Wiebe, Stephanie Wong, and Barb Yanciw. We also thank our graduate student organizing committee for their behind-the-scenes efforts and leadership: Keira Dyck, Karissa Johnson, Sterling Kerr, Rafique Khan, Jeremy Pynn, and Jessamy Sundby.

We are grateful to our graduate/PDF presentation adjudicators of Dr. Phil Chilibeck, Dr. Marta Erlandson, Dr. Heather Foulds, Dr. Nancy Gyurcsik, Dr. Kevin Spink, and Dr. Natalie Houser. Natalie founded the CKRS during her time as a College of Kinesiology graduate student, and what we celebrate today began because of her vision and leadership.

We gratefully acknowledge CKRS supporters including the Saskatchewan Health Research Foundation (SHRF), Bob and Rita Mirwald Leadership Fund, USask College of Graduate and Postdoctoral Studies, and USask Graduate Student Association, whose generous support helped to make this event possible.

We are honoured to host Dr. Mary Jung (University of British Columbia, Okanagan Campus) for the Don Bailey Lecture Series. Through the generosity of Don and Donna Bailey, this series commemorates the legacy of Dr. Don Bailey, an internationally acclaimed visionary leader, faculty member, and researcher in the College of Kinesiology, who worked at the cutting edge of science and technology in the field of health sciences.

We extend our appreciation to the College of Kinesiology Graduate Society (CKGS) members, postdoctoral fellows, and Honours students for their enthusiasm, creativity, and willingness to share their innovative ideas and research. Alongside the mentorship of their supervisors, their curiosity and dedication are what truly brings the CKRS to life and helps to advance research in the field of kinesiology.

# Week Overview

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## Friday, March 20<sup>th</sup>

1:30pm-4:10pm – Honours presentations

📍 PAC 232 & 246

## Monday, March 23<sup>rd</sup>

10:30am-12:00pm – Graduate Student and PDF oral presentations

📍 PAC 232

## Tuesday, March 24<sup>th</sup>

10:00am-11:15am – Don Bailey Lecture Series, Dr. Mary Jung

11:15am-11:45am – Graduate Student and PDF poster presentations

12:15pm-1:00pm – RSAW Awardee Presentation

📍 Holiday Inn Express & Suites Saskatoon East - University by IHG

## Wednesday, March 25<sup>th</sup>

12:00pm-1:25pm – Graduate Student and PDF oral presentations

📍 PAC 232

## Friday, March 27<sup>th</sup>

1:15pm-3:45pm – Honours presentations

📍 PAC 232 & 246

# Friday, March 20<sup>th</sup>

## Honours Student Presentations

Time	Name	Supervisor
1:30	Land Acknowledgement & Opening Remarks (PAC 232)	
1:35	Jumanah Bahig	Bart Arnold
1:48	Ben Wourms-Rowe	Heather Foulds
1:55	Aidan Doleman	Marta Erlandson
2:08	Jessica McBride	Kent Kowalski
2:21	Break & Room Switch (PAC 246)	
2:35	Kendra Melanson	Joel Lanovaz
2:48	Katie Milbrandt	Louise Humbert
3:01	Kaden Solomon	Lee Schaefer
3:14	Drew Lundquist	Corey Tomczak
3:24	Autumn Carr	Saija Kontulainen
3:31	Jada Stevenson	Kent Kowalski & Carly Priebe
3:41	Aditya Galanda	Alison Oates
3:51	Research Mixer	

# Comparative effects of pre- and post-exercise whole-body vibration training on delayed-onset muscle soreness and strength recovery

**Presenter:** Jumanah Bahig

**Supervisor:** Bart Arnold

## **Abstract:**

**Introduction:** Delayed onset muscle soreness (DOMS) occurs 24–96 hours following high-intensity exercise and is associated with temporary reductions in strength and performance. Whole-body vibration training (WBVT) has been proposed as a recovery strategy due to enhancing neuromuscular activation and circulation. This study compared the effects of WBVT performed before or after eccentric exercise on DOMS and recovery of maximal voluntary contraction (MVC). **Methods:** Healthy, physically active adults aged 18–30 years ( $n=21$ ) were randomly assigned to WBVT-before, WBVT-after, or control. Participants completed a standardized eccentric knee extension protocol of six sets of ten maximal contractions at  $60^\circ/s$  on an isokinetic dynamometer to induce soreness. WBVT was performed at 40 Hz for three two-minute bouts in a semi-squat position. Outcomes included visual analogue scale (VAS), 6kg algometer pain rating, quadriceps muscle thickness via ultrasound, and MVC. Measurements were collected at baseline, immediately post-intervention, and at 24, 48, and 72 hours, with MVC reassessed at 96 hours. Data was analyzed using linear mixed models and ANOVA on IBM SPSS. **Results:** VAS soreness increased significantly following the exercise protocol ( $p<0.001$ ). Trends showed lowest soreness in WBVT-after, intermediate in control, and highest in WBVT-before. WBVT-before demonstrated greater soreness WBVT-after ( $p=0.001$ ), primarily immediately post-intervention ( $p=0.007$ ). Algometer pain ratings were higher after WBVT-before compared to WBVT-after ( $p=0.004$ ). No differences were observed between groups for MVC recovery or quadriceps thickness. **Conclusion:** WBVT-after demonstrated lower DOMS than WBVT-before, with no differences in MVC recovery or quadriceps thickness. Future studies should optimize WBVT timing and parameters for recovery.

# Gendered roles and responsibilities within the household as a determinant of physical activity

**Presenter:** Benjamin Wourms-Rowe

**Supervisor:** Heather Foulds

## Abstract:

**Introduction:** Gender, a social construct, may influence why males engage in more physical activity than females. This difference may be attributed to gendered household roles and responsibilities (GHRR). Traditionally, males assume masculine household roles characterized as non-repetitive, while females assume feminine roles characterized as repetitive. While sex differences are known, effects of GHRR on physical activity remain unclear. **Purpose:** Explore if GHRR and childcare responsibilities impact physical activity levels in Canadian adults. **Methods:** Data was obtained from an online anonymous survey of Canadian adults ( $\geq 18$  years). 1522 participants reported their participation in GHRR and were classified into masculine, feminine, or both role categories. Participants reported mins/week of moderate to vigorous physical activity (MVPA) during work, travel, leisure time, and childcare responsibilities for children aged  $\leq 18$ . A 2x3 factorial ANOVA was used to examine the effects of GHRR and childcare status on MVPA across activity domains. MVPA in each group was compared with the 24-hour movement guidelines for adults  $\geq 18$  years of age ( $\geq 150$  min/week). **Results:** A greater proportion of individuals performing masculine roles met the guidelines (45%) compared to those performing feminine roles (36%) and both roles (37%) ( $p < .05$ ). Further, differences between gender role groups depended on whether participants had children  $\leq 18$  residing in the household. **Conclusions:** GHRR and childcare status were associated with MVPA levels; however, further research is needed to better understand the nature of this relationship.

# Sex specific differences in bone health in pediatric congenital heart disease: An HRpQCT study

**Presenter:** Aidan Doleman

**Supervisor:** Marta Erlandson

## **Abstract:**

**Introduction:** Congenital Heart Disease (CHD) is one of the most common birth defects globally, affecting approximately 1 in 50 children. In recent decades there has been a notable increase in life expectancy which is accompanied by a higher prevalence of comorbidities later in life. To date no studies have examined bone health or osteoporosis risk in children with CHD using high-resolution peripheral quantitative computed tomography (HRpQCT). Therefore, the purpose of this study was to measure bone parameters in children with CHD. **Methods:** Fourteen males and 10 females with CHD, between the ages of 10-17 were recruited from the Department of Pediatric Cardiology at the Jim Pattison Children's Hospital. HRpQCT scans were obtained at the non-dominant distal radius and tibia to assess bone microarchitecture and volumetric bone mineral density. Participants with CHD were split by CHD lesion severity (simple vs complex) and HRpQCT bone parameters were compared to age, sex, and ethnicity specific reference curves (Gabel et al., 2018). **Results:** It was found that females with CHD follow a normal distribution at both the radius and tibia for bone parameters. Males with CHD were found to have impaired cortical and trabecular thickness at the radius and tibia. Other measured bone parameters for males followed normal distribution. **Discussion:** Deficits in bone development in children with CHD may be sex, site, and bone compartment specific. Low bone parameter measures in males with CHD may put them at an increased risk for future fractures. Further investigation is warranted to find a definitive conclusion.

# Co-designing a self-compassion imagery resource for competitive athletes

**Presenter:** Jessica McBride

**Supervisor:** Kent Kowalski

## **Abstract:**

Athletes often face failure and setbacks in their sport (Mosewich et al., 2013). However, increasing athletes' levels of self-compassion has been shown to enhance psychological well-being and improve responses to setbacks (Cormier et al., 2025). The purpose of our study was to co-design a self-compassion imagery resource for competitive athletes. We purposefully sampled three men athletes from one Canadian university team. Our study utilized a co-design strategy of inquiry, based on the framework of Jorgensen et al. (2024), comprising an initial focus group, creation of a prototype resource, follow-up focus group, and creation of a final resource. Both focus groups employed semi-structured questions, and the data was analyzed using Elo and Kyngäs' (2008) qualitative content analysis process. The themes generated from the initial focus group were the need for individuality, simplicity, and a hesitance to embrace self-compassion. The three general themes generated from the follow-up focus group were titled—"it should stay," "that's a nay," and "change it this way," in addition to an overarching theme of simplicity. We applied these themes to create three cue card decks tailored to different times of the sport season. Each cue card contained a compassionate imagery script followed by reflection questions to be completed asynchronously and individually. Our study provides an example of how to implement men athletes' self-compassion imagery preferences into a practical resource, and highlights simplicity as a critical preference to be considered in the resource development process.

# Biomechanics of breaking power moves: Kinematic & kinetics

**Presenter:** Kendra Melanson

**Supervisor:** Joel Lanovaz

## **Abstract:**

**Introduction:** Since first appearing in the 1970's, Breaking (popularly known as Breakdance) has continually gained visibility. Breaking power moves are challenging to perform and have significant upper body demands with single arm or airborne phases and high rotational velocity and force. This study aims to characterize the understudied biomechanics of Breaking power moves. **Methods:** Five experienced male Breakers performed five repetitions of three Breaking power moves: swipe, flare, airflare. Whole body kinematics were collected using inertial sensors (Xsens Awinda, Movella, Henderson, NV). Four force platforms (60 cm x 40 cm each, AMTI, Watertown, MA) embedded in the floor recorded the reaction forces under each hand synchronized with the kinematics. Movement timing, ground reaction force profiles, and joint kinematics were extracted for analysis. **Results & Discussion:** Participants spent most time in single arm support in the flare ( $79.3 \pm 6.7\%$ ) with a single support leftwards asymmetry in swipe and airflare. Shoulder flexion range of motion (ROM) was highest in flare ( $\sim 105$  deg) while hip flexion ROM was highest in airflare ( $\sim 69$  deg). Peak vertical ground reaction forces were greatest in the airflare ( $1.73 \times BW$  RH,  $1.85 \times BW$  LH) and both vertical and horizontal forces were higher under the left hand across all movements. Left/right asymmetries were seen in a number of variables and are likely associated with asymmetric actions needed to maintain rotation. **Conclusion:** This study is one of the first to use biomechanical measures to characterize Breaking power moves. These techniques have potential to be used to explore factors affecting performance and injury risk.

# Exploring the experiences of grade one students and their teachers Involved in a Mindful Movement Program

**Presenter:** Katie Milbrandt

**Supervisor:** Louise Humbert

## **Abstract:**

**Introduction.** Mindfulness research involving children is still emerging, yet available evidence shows benefits in school settings. Mindfulness practices have been linked to positive emotions, increased learning engagement, and improved social interactions. When mindfulness is practiced through movement, it provides an inclusive approach that can support children in developing self-awareness, enjoyment of movement, and new skills. **Purpose.** The purpose of this research study was to understand the experiences of grade one students and their teachers involved in a mindful movement program. **Methods.** Six mindful movement sessions were delivered to a class of grade one students during their physical education classes. A descriptive single case study design and four methods of data collection were used: semi-structured interviews, the write, draw, show, and tell (WDST) method, informal conversation, and a reflexive journal. Data was analyzed using Braun and Clarke's (2022) reflexive thematic analysis process. **Results.** Three themes were identified: (i) Mindfulness is valuable at school: "A great 10-minute little body break", (ii) Accessibility and inclusivity of mindfulness practices: "Moving their bodies in a different way", and (iii) Children's enjoyment of the mindful movement program: "I loved everything". These findings highlight the relevance of mindfulness in schools, the adaptability of mindful movement, and the joy children experience through such practices. **Conclusion.** The mindful movement program provided students opportunities to engage in unfamiliar movement experiences, develop mindfulness skills, and positive relationships while supporting physical education curriculum goals. Elementary educators should consider incorporating mindful movement activities as a strategy to support students well-being and learning experiences.

# Is it actually “crazy hockey parents”, or is it a crazy system?

**Presenter:** Kaden Solomon

**Supervisor:** Lee Schaefer

## **Abstract:**

Youth sport has evolved from its grassroots origins to a multibillion-dollar industry focused on creating the next professionals through early sport specialization (Mercier, 2018). These changes have arisen from many aspects that include a growth in commercialization, influence from Eastern models, and changes in funding (Malina, 2010; Mercier, 2018; SPKN - SPN, 2024). Using a qualitative framework, data was collected through semi-structured interviews with parents whose kids previously passed through the high-level youth hockey specialization system. The data was then analyzed from a constructivist viewpoint, utilizing the 6 steps of Braun and Clarke's Reflexive Thematic Analysis (2006). Our findings exposed a “manufactured urgency” that shaped parents' performative identity to be the “good parent.” Although the initial obligations, stemmed from a desire to provide more opportunity for their child(ren), established norms and culture within the youth hockey system, exaggerated and manipulated these innocent intentions to fit a ProOlympic or early sport specialization model. The expectations and idea that “this is what hockey players do” can lead to putting personal values and beliefs aside to “fit in” and avoid “rocking the boat” and to try to gain social capital within the system. The belief is that this will better situate their child(ren) for success in their pursuit of “the golden ticket.” While participants' kids succeeded in many ways from a sport perspective, the scars of success also became an important part of the conversation.

# Effect of sympathoexcitation on the control of heart rate at exercise onset

**Presenter:** Drew M. Lundquist

**Supervisor:** Corey R. Tomczak

**Funding:** Heart and Stroke Foundation of Canada

## Abstract:

**Background and hypothesis:** Heart rate increase at exercise onset leads to greater sympathetic activity; whether greater sympathetic activity alters the heart rate kinetics remains unknown. **Methods:** Healthy volunteers (1F/3M; 21(2) yrs; 178 (4) cm; 77(3) kg; 24(2) kg/m<sup>2</sup>) performed cycle ergometry at 105 W. Control (CTL) trials consisted of rest to exercise for 5 min. Sympathoexcitation trials comprised of 2-min bilateral isometric handgrip at 40% MVC, followed by 6 min of post-exercise circulatory occlusion (PECO), which overlapped with cycle ergometry. Each trial was repeated in triplicate. Heart rate (ECG) data was averaged to yield a single profile and binned into 5-s averages and fitted using a mono-exponential model. Data were compared using two-tailed paired t-tests and Cohen's d effect size analysis. **Results:** There was a large effect of PECO (82(7) bpm) on the pre-exercise heart rate compared to CTL (76(6) bpm,  $P = 0.1688$ , Cohen's  $d = 0.9$ ). There was a medium effect of PECO (37(11) bpm) on heart rate amplitude compared to CTL (43(3) beats/min,  $P = 0.189$ , Cohen's  $d = 0.7$ ). There was a large effect of PECO (28(5) s) on heart rate tau compared to CTL (23(4) s,  $P = 0.362$ , Cohen's  $d = 1.1$ ). **Conclusion:** Sympathoexcitation during the exercise transient may modulate the heart rate kinetics within the moderate intensity exercise domain.

**Acknowledgements:** Rafique Khan, Kayla B. Harder, Austin J. Gallant, Thomas J. Jurrissen, Adam M. S. Luchkanych, T. Dylan Olver.

# Developing a pilot questionnaire with patient partners to explore behavioral determinants of exercise supporting bone health in children with Type 1 diabetes using a COM-B Framework

**Presenter:** Autumn Carr

**Supervisor:** Saija Kontulainen

## **Abstract:**

**Introduction:** Impaired bone development in children with type 1 diabetes (T1D) may contribute to elevated lifelong fracture risk. Tailored exercise interventions may help optimize bone strength development. Understanding parent and child preferences for exercise participation is essential for co-designing a feasible bone exercise intervention.

**Objective:** To co-develop a pilot questionnaire with patient partners to identify behavioral determinants of exercise related to bone health in children with T1D.

**Methods:** Parents from the BSDS and CanBSDS cohorts who consented to recontact were invited to complete an initial online questionnaire assessing perceptions of their child's exercise-related capability, opportunity, and motivation using the COMB model. Parents also provided structured feedback on questionnaire items. Responses were summarized descriptively, and the questionnaire was revised based on feedback.

**Results:** Four parents (out of 16 contacted) responded, and two consented and completed the questionnaire. Parents reported generally positive perceptions of their children's exercise participation and did not identify major concerns or opportunity related barriers such as program access or family support. Motivation for physical activity was described as primarily driven by enjoyment and general health benefits rather than diabetes specific goals. Based on feedback, refinements included clarifying exercise examples, adding bone health specific wording, and simplifying response options to improve clarity. **Discussion:** These preliminary findings supported refinement of the questionnaire for broader distribution. Addressing the low response and consent rate is warranted. Early responses will assist ongoing co-development of a bone exercise intervention aimed at improving bone strength development and reducing fracture risk in children with T1D.

# Co-designing a self-compassion resource for a group of adult walkers with acquired brain injury (ABI)

**Presenter:** Jada Stevenson

**Supervisors:** Carly Priebe & Kent Kowalski

## **Abstract:**

Self-compassion (SC) plays a positive role in physical activity, mental health, and quality of life, and the importance of individualization of SC interventions has been identified as an important goal. Therefore, the study purpose was to co-design a self-compassion resource for a group of adult walkers with acquired brain injury (ABI). A 4-phase co-design method was used in which I worked with a specific, longstanding group of individuals with lived ABI experience. In the first phase, short questionnaires were administered to help identify themes representing ways individuals have and would like to experience SC and SC tool preferences. The following three phases were focus groups aimed at the creation and refinement of the SC resource. The data was analyzed using qualitative content analysis (Elo & Kyngäs, 2008). Two main themes were generated: Compassion from others and equanimity. Compassion from others was identified through the clear need to see SC in others, while equanimity represented common components of various mental and physical mindfulness exercises that participants described using to be self-compassionate. The final resource was a board game that integrated the group's most preferred SC tools, which were a SC card game and a reset tool for moments of self-criticism. The pragmatic nature of the resource, my close relationship with the participants, and the four phases of collaboration reflect a cogent co-design. Allowing historically marginalized groups to advocate for their need's aids in the development of pragmatic SC resources that can be used by the groups for which they were designed.

# Investigating the role of interpersonal light touch positioning in balance control

**Presenter:** Aditya Galanda

**Supervisor:** Alison Oates

## **Abstract:**

**Introduction:** Balance can be improved through added sensory feedback. Interpersonal Light Touch (IPLT) may enhance balance; however, the impact of inter-person position is not known. This research examined the effects of IPLT and inter-person position on standing balance. **Methods:** Seventeen participants (9 females, 8 males;  $23.11 \pm 3.97$  years) stood close to each other on foam in various positions: beside, facing each other, and facing the same direction. Average (RMS), peak (Peak), and variability (SD) of trunk acceleration quantified sway recorded by inertial measurement units on the participant's sternum. The Comfort with Interpersonal Touch (CIT) scale recorded participant's comfort with touch. The influence of IPLT, inter-person position, and participant sex were examined using a RMANCOVA with standing alone values as a covariate. Spearman's correlations examined the relationship between the difference between IPLT and no-IPLT conditions and total CIT score. **Results:** For RMS acceleration, there was a significant touch x position interaction with greater acceleration in the IPLT condition compared to the no touch condition in the beside position only ( $p=0.023$ ). For peak acceleration, males had higher peak acceleration than females ( $p=0.046$ ) and main effects of touch showed the alone condition values were related to the IPLT condition values ( $p=0.012$ ). There were no main effects or interactions found for SD. The CIT score was not related to the change with IPLT for any acceleration measures. **Conclusion:** IPLT did not reduce trunk acceleration; however, it might improve balance for people with impairments. Standing beside someone might impact the use of IPLT for balance.

# Monday, March 23<sup>rd</sup>

## Graduate Student and PDF Presentations

Time	Presenter	Title
10:30	Opening Remarks & Land Acknowledgement	
10:35	Reece Scott	The effect of exercise during bed rest on bone and muscle in older adults: A pQCT analysis from a proof-of-concept randomized controlled trial
10:48	Karissa Johnson	“... if you don’t have a coach that’s supporting it, um it’s gunna go nowhere”: Exploring coaches’ capacity to support a sport-integrated self-compassion program for competitive women athletes
11:01	Omar Tohamy	Association of HR-pQCT-derived soft-tissue parameters at the forearm and lower leg with DXA body composition measures in children
11:12	Ali Rezaei	Altered one-year changes in bone microarchitecture and estimated strength in children and youth with type 1 diabetes: An HR-pQCT study
11:25	Sean-Eoin Rafferty-O’Byrne	Do fingertip vibrotactile feedback and light touch have similar stabilizing effects on standing balance?
11:38	Closing Remarks	

# The effect of exercise during bed rest on bone and muscle in older adults: A pQCT analysis from a proof-of-concept randomized controlled trial

**Presenter:** Reece J. Scott

**Authors:** Scott, Reece J; Johnston, James D; Kontulainen, Saija

**Funding:** Canadian Space Agency, the Canadian Institutes of Health Research, and the Canadian Frailty Network

## Abstract:

Disuse accelerates musculoskeletal deterioration, particularly in older adults. While exercise countermeasures can mitigate disuse-induced losses in younger populations, the short-term musculoskeletal responses in older adults remain poorly characterized. We examined the effects of 14 days of head-down tilt bed rest (HDBR), with and without exercise, on bone, muscle, and marrow characteristics in older adults, and explored relationships among these changes. Twenty-two healthy older adults (11 male, 11 female; mean age 59 SD 3y) were randomized to a control group or an exercise group performing daily aerobic or resistance training. Peripheral quantitative computed tomography (pQCT) scans of the lower leg and forearm shafts were acquired pre- and post-HDBR to assess muscle density, muscle area, fat density and fat area. Tibial and radial cortical density, cortical area, marrow density and marrow area were also assessed. There was a group x time interaction for lower leg lean muscle density ( $F=4.5$ ,  $p=0.047$ ). Muscle density decreased in controls ( $-1.0 \text{ mg/cm}^3$ ,  $p=0.03$ ) but was maintained in the exercise group ( $-0.2 \text{ mg/cm}^3$ ,  $p=0.29$ ). Both groups exhibited reductions in lower leg muscle area and increases in fat density and cortical density after 14 days ( $p<0.048$ ). Change in marrow density predicted 50% of variance in muscle density change in the control group ( $p=0.01$ ). These findings indicate that short-term daily exercise preserves skeletal muscle during HDBR in older adults. Collectively, the results highlight the adaptation of soft tissue to inactivity and the importance of using an exercise countermeasure to preserve muscle health during 14 days of HDBR.

# “... if you don’t have a coach that’s supporting it, um it’s gunna go nowhere”: Exploring coaches’ capacity to support a sport-integrated self-compassion program for competitive women athletes

**Presenter:** Karissa L. Johnson

**Authors:** Johnson, Karissa L.; Adam, Margo E.; Kowalski, Kent C.; Mosewich, Amber D.; Schaefer, Lee; Schellenberg, Ben; Rothlin, Philipp; Storey, Kate E.; & Ferguson, Leah J.

**Funding:** Social Sciences & Humanities Research Council, Sport Participation Research Initiative

## **Abstract:**

To support women athletes’ thriving, where they can be well and perform well, it is critical to provide them with resources to navigate sport-related challenges. Self-compassion, introduced through structured self-compassion programming, represents one such promising resource. Self-compassion is a kind and understanding way of relating to the self, particularly during challenges. For women athletes to become more self-compassionate, coach support during self-compassion programming is valuable. However, little is known about how coaches might be involved in such programming. Therefore, the purpose of our qualitative case study was to explore coaches’ capacity to support a sport-integrated self-compassion program for competitive women athletes. A total of 16 coaches, from a variety of sport backgrounds and competition levels, took part in semi-structured interviews to discuss their capacity to support self-compassion programming, which were transcribed verbatim. Data were analyzed through reflexive thematic analysis. Ten coaches returned to participate in focus groups to discuss initial findings and refine final themes. Four themes were generated: (1) coaches are spread thin; (2) coaches support could be limited by Safe Sport guidelines; (3) tensions between self-compassion and traditional sport culture; and (4) successful integration needs to be simple and easy, and supported by educational resources. Overall, coaches were eager to support self-compassion programming; however, they have limited resources and expanding job descriptions. With that, there is some hesitation regarding overall feasibility of sport-integrated self-compassion programming, particularly the logistics of time and money. Future research may explore the feasibility of a sport-integrated self-compassion program that includes coach support.

# Association of HR-pQCT-derived soft-tissue parameters at the forearm and lower leg with DXA body composition measures in children

**Presenter:** Omar Tohamy

**Authors:** Tohamy Omar, Rezaei Ali, Nour Munier, Johnston James, Kontulainen Saija

**Funding:** Canadian Space Agency, the Canadian Institutes of Health Research, and the Canadian Frailty Network

## Abstract:

**Introduction:** High resolution peripheral quantitative CT (HR pQCT) provides detailed assessments of bone microarchitecture, density, and strength, and can also quantify muscle size and composition in children. It is unknown whether these HR pQCT soft tissue measures reflect body composition assessed by DXA, which could reduce additional radiation exposure and assessment time in pediatric studies. We examined the association between HR pQCT and DXA-derived soft tissue outcomes to evaluate HR pQCT as a potential tool for pediatric body composition assessment. **Methods:** We obtained forearm and lower leg muscle area, muscle density, fat density and intermuscular fat percentage (IMF%) from HR pQCT scans, and appendicular lean mass index (ALMI) and total body fat percentage (TBF%) from DXA scans in 40 children (mean age  $10.9 \pm 0.93$  years). We assessed associations using Spearman correlation ( $p < .05$  considered significant). **Results:** At the forearm, muscle area ( $\rho = .81, p < .001$ ) and muscle density ( $\rho = .32, p = .041$ ) were associated with ALMI. IMF% ( $\rho = .87, p < .001$ ) and fat density ( $\rho = -.74, p < .001$ ) were associated with TBF%. At the lower leg, muscle area ( $\rho = .68, p < .001$ ) was associated with ALMI. IMF% ( $\rho = .54, p < .001$ ) and fat density ( $\rho = -.58, p < .001$ ) were associated with TBF%. **Conclusion:** HR-pQCT-derived muscle and fat parameters were associated with DXA-derived body composition measures, with stronger associations at the forearm than the lower leg. These findings support HR-pQCT as a potential complementary tool for pediatric body composition assessment.

# Altered one-year changes in bone microarchitecture and estimated strength in children and youth with type 1 diabetes: An HR-pQCT study

**Presenter:** Ali Rezaei

**Authors:** Rezaei, Ali; Nour, Munier A.; Johnston, James D.; Kontulainen, Saija A

## **Abstract:**

Children and adolescents with type 1 diabetes (T1D) have a higher fracture risk and bone deficits. We compared one-year changes in bone and muscle outcomes between children with T1D and typically developing peers (TDP) and examined whether muscle and physical activity measures contribute to bone changes. We studied children with T1D (N=20, mean age 12.3, SD 2.7) and TDP (N=30, mean age 10.8, 1.7). One-year changes were annualized for HR-pQCT bone microarchitecture, density, and strength at the distal radius and tibia, and pQCT muscle area. Physical activity, grip strength, and long jump were assessed. Hierarchical regression tested whether T1D status contributed to bone changes after adjusting for sex, maturity offset, and body mass. Associations of baseline muscle and physical activity measures with bone changes were examined. At the distal radius, T1D was associated with smaller gains in trabecular thickness ( $\beta=-3.35$ , 95% CI  $-6.69$  to  $-0.01$ ), greater gains in trabecular number (0.12, 0.02 to 0.22), and smaller reductions in load-to-strength ratio (0.08, 0.01 to 0.14). At the tibia, T1D was associated with smaller gains in cortical density ( $-0.34$ ,  $-64.69$  to  $-6.71$ ), failure load ( $-0.55$ ,  $-1.04$  to  $-0.05$ ), and stiffness ( $-11.33$ ,  $-21.20$  to  $-1.46$ ). Muscle area (0.76, 0.22 to 1.31) and grip strength (0.38, 0.03 to 0.73) were positively associated with trabecular thickness change. Children with T1D showed smaller gains in trabecular thickness, cortical density, and bone strength. Greater baseline muscle area and grip strength were associated with greater trabecular thickness gains. Longer follow-up is needed to clarify muscle–bone interactions.

# Do fingertip vibrotactile feedback and light touch have similar stabilizing effects on standing balance?

**Presenter:** Sean-Eoin Rafferty-O'Byrne

**Authors:** Rafferty-O'Byrne, Sean-Eoin; Lanovaz, Joel; Oates, Alison.

## **Abstract:**

Standing balance is critical for daily activities and is related to fall risk. While aids like canes or walkers can improve balance control through mechanical assistance, it has been shown that even lightly touching a fixed object in the environment can stabilize postural sway, despite offering negligible physical support. In such cases, improvements in balance control are attributed to enhanced somatosensory input and may be related to detection of small changes in touch force, although the precise mechanisms are unclear. Vibrotactile feedback can simulate touch without the mechanical support of a ground-fixed surface and may provide a novel balance training modality. This proposed study will assess whether fingertip vibrotactile feedback is functionally similar to light touch with respect to the effect on standing balance. We will recruit two groups of healthy adults stratified by age (young/older). Participants will stand on a force platform for 120 seconds to obtain standardized centre of pressure sway measures. Experimental conditions will include baseline, light touch, and trials using a vibrotactile device attached to the index fingertip. The device will be tracked using motion capture, enabling simulations of virtual surfaces to investigate the role of fingertip force feedback. Conditions that challenge balance such as no vision and tandem stance will also be considered. Age will be included as a factor as balance control is known to decrease in older adults. This study will explore if vibrotactile feedback can be used as a surrogate for light touch with possible applications as a balance training tool.

# Tuesday, March 24<sup>th</sup>

## The Don Bailey Lecture Series – Dr. Mary Jung



Time	Event
10:00 AM	Opening Remarks & Land Acknowledgement
10:15 AM	Don Bailey Lecture Series – Dr. Mary Jung
11:15 AM	Graduate Student Poster Presentations
11:30 AM	Lunch
12:00 PM	SHRF Sponsor & RSAW Awardee Presentation
1:00 PM	Closing Remarks

# The Don Bailey Lecture Series

The Don Bailey Lecture Series honours and commemorates the work of Dr. Don Bailey, an internationally acclaimed visionary. As a University of Saskatchewan faculty member and researcher, Don worked at the cutting edge of science and technology in the area of health sciences.

Amongst many of Don's achievements, four groundbreaking projects stand out as having a major impact on health: The Saskatchewan Growth and Development Study, ParticipACTION, the Lifestyle Inventory Fitness Evaluation and the Bone Mineral Accrual Study.

Described by colleagues as a self-effacing, humble man, with a great sense of fun and determination, Don continues to inspire the next generation of bone and health development research.

The Don Bailey Lecture series will feature engaging and innovative guest lecturers from across the globe, presenting a broad range of kinesiology-related topics that advance health and wellness, and promote the importance of maintaining a healthy, active lifestyle.

## **2026 Presenter: Dr. Mary Jung**

Dr. Mary Jung is a Professor in the School of Health and Exercise Sciences at the University of British Columbia, Okanagan. Her research focuses on developing evidence-based, community-implemented diabetes prevention interventions, with an emphasis on equity, diversity, and inclusivity.

She has secured over \$10 million in competitive funding as principal investigator on exercise adherence studies. Dr. Jung leads the Diabetes Prevention Research Group, founded the "Small Steps for Big Changes" program, and directs UBC's Centre for Health Behaviour Change.

Her current research examines the implementation and impact of Small Steps for Big Changes as it expands to 50 cities across Canada and Queensland, Australia. The project explores sustainable program delivery, inclusive access, effectiveness in reducing type 2 diabetes risk, and cost-effectiveness for healthcare.

# Tuesday, March 24<sup>th</sup>

## Graduate Student Poster Presentations

Presenter	Title
Evan Boechler	kiskinwahamâtowin: Collaborative learning and cultural exchange in a northern Saskatchewan land-based program
Ryan Bilanski	Writing rapid qualitative inquiry: A rapid reflexive narrative of constructing a methods chapter
Jaxon Funk	Sex differences in fatigue and muscle activation during sustained unilateral leg contractions
Bailey Gitzel	Employees on the move: Using social norms to move more and sit less in the office
Anya Jackson	SENSE-ational schools: Physical literacy enriched movement opportunities for students with neurodiversity
Mohsen Keramati	Intra- and inter-operator precision of second-generation high-resolution peripheral quantitative computed tomography at distal and shaft sites of the radius and tibia
Sterling Kerr	Investigating footballer trait perfectionism, perfectionistic cognitions and burnout
Jeremy Pynn	In-season changes in countermovement rebound jump braking metrics following match exposure in university volleyball athletes

# kiskinwahamâtowin: Collaborative learning and cultural exchange in a northern Saskatchewan land-based program

**Presenter:** Evan Boechler

**Authors:** Boechler, Evan; Schaefer, Lee; Nelson, J.; Cook, J.

**Funding:** Social Sciences and Humanities Research Council

## **Abstract:**

Land-based programming is increasingly understood not only as a way of strengthening identity, well-being, and cultural continuity among Indigenous youth and adults, but also as a meaningful setting for educator learning and cultural exchange (Gaudet, 2021; McDonald, 2023). This poster shares insights from a collaborative ethnography of a week-long land-based knowledge exchange program in Northern Saskatchewan that brought together Indigenous and Metis educators from across Western Canada. Participants engaged in a range of land-based practices such as trapping, netting fish, skinning, fire making, beading, and language sharing. Field observations were interpreted collaboratively with two Knowledge Keepers who supported the research team in making sense of program activities, relational dynamics, and cultural contexts. Together, we explored how the program functioned as a site of educator learning and inter-Nation cultural exchange. Across the week, a consistent observation was the sense that the program offered something that has been long missing: a place where like-minded people committed to cultural revitalization could gather, learn, and support one another across cultural lines. Familiar teachings from their own Nations blended with the Woodland Cree practices in which the program was grounded in, creating rich opportunities for mutual learning. This mix of familiarity and difference fostered culturally grounded spaces where educators and Knowledge Keepers learned together and carried revitalized practices back to their communities. In a time when colonial disruptions have made cultural knowledge and land-based programming increasingly scarce, this work underscores the need to create and sustain spaces where land-based teachings can continue to be lived, shared, and strengthened for future generations.

# Writing rapid qualitative inquiry: A rapid reflexive narrative of constructing a methods chapter

**Presenter:** Ryan Bilanski

**Authors:** Bilanski, Ryan

## **Abstract:**

Qualitative research grounded in a specific paradigm requires rigor and reflexivity throughout the inquiry process. Consequently, writing about qualitative methods can become a source of stress for established researchers who must navigate competing philosophical, structural, and practical demands. For doctoral students, this pressure is even more pronounced because developing confidence in writing and research is inseparable from the emotional labour of becoming scholars. Although there is a shared, unspoken understanding of these pressures among graduate students, it remains under-documented. This project offers a narrative reflexive account of writing a qualitative methods chapter on Rapid Qualitative Inquiry for a textbook, demonstrating the value of reflexivity for doctoral and graduate students navigating the practical and philosophical demands of methodological writing. The textbook editors provide clear chapter guidelines, yet the task requires engaging with the Rapid Qualitative Inquiry literature and making a clear distinction from adjacent rapid approaches. It also requires attention to ontological and epistemological assumptions that shape how the method is represented, applied, and translated into practice. Undertaking this work within a significant time constraint, a four-week period from invitation to submission, heightens the pressure for accuracy. Reflexivity functions as a deliberate tool for monitoring decision-making, pacing, boundary-setting, and methodological representation throughout the writing process. This reflexive work highlights how a doctoral student navigates time pressure, editorial expectations, supervisory feedback, and the development of confidence in their research while producing methodological scholarship. The anticipated outcome is to present the completed chapter at the 2027 College of Kinesiology Research Showcase.

# Sex differences in fatigue and muscle activation during sustained unilateral leg contractions

**Presenter:** Jaxon Funk

**Authors:** Funk, Jaxon; Ko, Ryan; Chaya, Thandiwe; Pynn, Jeremy; Lanovaz, Joel; Chilibeck, Philip; Farthing, Jonathan

## **Abstract:**

**Introduction:** Unintended activity in contralateral (CON) muscles during unilateral contractions (termed “associated activity” (AA)) often increase with fatigue and may contribute to cross-education. Females are generally less fatigable than males, but sex differences in AA are unclear. We examined sex differences in fatigue and AA during a sustained unilateral knee extension (KE) maximum voluntary contraction (MVC) until time to task failure (TTF). **Methods:** Thirty healthy participants ( $25 \pm 3$  yrs) completed brief (3-5s) unilateral isometric KE and flexion (KF) MVCs to determine peak torque and max EMG activity, followed by a sustained unilateral KE MVC until failure ( $< 40\%$  MVC for 5s continuously). Torque and EMG were normalized to %MVC and analyzed across percentage of contraction duration (%DUR). **Results:** TTF was greater in females (F:  $98.4 \pm 26.7$  vs M:  $81.4 \pm 12.3$  s;  $p = .038$ ). Active limb (ACT) showed significant decreases from start-of-contraction to 80-100% DUR for torque (F:  $89.3 \pm 5.5$  vs  $39.1 \pm 3.0$ ; M:  $88.3 \pm 5.5$  vs  $40.7 \pm 3.5\%$  MVC), KE EMG (F:  $100.5 \pm 25.2$  vs  $67.6 \pm 30.10$ ; M:  $79.9 \pm 12.0$  vs  $53.5 \pm 16.9\%$  MVC) and KF EMG (F:  $13.5 \pm 8.6$  vs  $8.4 \pm 5.3$ ; M:  $11.0 \pm 8.5$  vs  $7.5 \pm 5.2\%$  MVC; all  $p < .001$ ). Only ACT KE EMG showed a main effect of sex ( $p = .013$ ) where females had higher activity. CON KE EMG was greater overall in females (F:  $8.2 \pm 3.0$  vs M:  $4.4 \pm 3.1\%$  MVC;  $p = .004$ ). For CON KF EMG, a sex\*time interaction ( $p = .002$ ) revealed increases only in females (F:  $7.6 \pm 6.1$  vs  $20.2 \pm 16.2$ ;  $p = .002$ ) and no change in males (M:  $6.5 \pm 7.2$  vs  $4.5 \pm 3.4\%$  MVC;  $p = .569$ ). **Conclusion:** Although females showed less fatigue, the fatigue profile was similar for both sexes when normalized to %DUR. Females exhibited greater CON activation, suggesting possible sex differences in lower body AA.

# Employees on the move: Using social norms to move more and sit less in the office

**Presenter:** Bailey Gitzel

**Authors:** Gitzel, Bailey; Spink, Kevin S.

**Funding:** Social Sciences and Humanities Research Council

## **Abstract:**

Given the current levels of physical inactivity, examining physical activity (PA) and sedentary behaviour (SB) is necessary, particularly in low-PA norm environments. Office settings are relevant, as employees spend greater proportions of their workdays sitting (72.5%) than other professions (49.7%) (Prince et al., 2019). PA messaging strategies represent a promising intervention approach. While the 24-hour movement guidelines offer numerical anchors ( $\geq 150$  minutes MVPA/week and  $< 8$  hours sitting/day Ross et al., 2020), emerging research promotes simpler “Everything Counts” messaging (EC), which legitimizes PA of any duration/intensity (Segar, 2020). The purpose was to explore the effects of two trending norm messages – a high-anchor 150MVPA or a low-anchor EC versus an attention control (AC) message on office employees’ intentions to increase PA and reduce SB. In an online survey, office employees ( $N = 147$ ) were randomly assigned to receive either a 150MVPA ( $n = 53$ ), EC ( $n = 52$ ), or AC ( $n = 42$ ) message. Following message receipt, participants completed future in-office PA and SB intentions. Controlling for prior PA, a significant MANCOVA main effect ( $p = 0.016$ ) revealed that the messages affected both PA and SB intentions with the 150MVPA ( $p = 0.002$ ) and EC ( $p = 0.042$ ) messages increasing PA intentions versus AC. For SB intentions, only 150MVPA differed from AC ( $p = 0.024$ ). These results support norms messaging as an effective strategy to change in-office activity behaviour (Priebe & Spink, 2015). Further research is required to explore the differential effects of the norm messages for PA and SB.

# SENSE-ational schools: Physical literacy enriched movement opportunities for students with neurodiversity

**Presenter:** Anya Jackson

**Authors:** Jackson, Anya

## **Abstract:**

**Introduction.** Children with different sensory capacities due to neurodevelopmental disorders often do not have the same experiences and opportunities for being successful in school and movement. Within physical education contexts, physical activity offers many benefits for students, including the development of physical literacy. However, aspects of physical education can sometimes be overstimulating for students with neurodiversity, often resulting in these students being excluded from meaningful movement experiences. This exclusion limits students' opportunity to experience the physical, psychological, and social benefits that physical education and physical literacy provide. **Purpose.** The purpose of this study is to explore how changes in instructional strategies and equipment influence school staff roles in supporting inclusive movement opportunities for students with neurodiversity. **Methods.** A Participatory Action Research (PAR) design will be used to examine physical education practices from a collective and self-reflective inquiry approach. Participants will include 8-10 school staff (physical education teachers, educational assistants, resource teachers) from two elementary schools who interact directly and frequently with students with neurodiverse needs. The impact of the SENSE-ational schools program will be explored over the course of one school year, through participant observation, semi-structured interviews, and reflective journaling occurring at baseline, midpoint, and endpoint. Analysis will be guided by using Braun and Clarke's (2022) reflexive thematic analysis. **Significance.** The SENSE-ational schools study will provide the opportunity to explore the optimal strategies and equipment needed to create an inclusive movement experience for students with neurodiversity. Enhancing inclusion has potential to empower all students to fully participate and thrive in movement.

# Intra- and inter-operator precision of second-generation high-resolution peripheral quantitative computed tomography at distal and shaft sites of the radius and tibia

**Presenter:** Mohsen Keramati

**Authors:** Keramati, Mohsen; Rezaei, Ali; Kontulainen, Saija

**Funding:** Natural Sciences and Engineering Research Council of Canada Discovery Grant; CAN-TAP-TALENT Doctoral Award; University of Saskatchewan Dean's Scholarship; Saskatchewan Centre for Patient-Oriented Research Traineeship Funding.

## **Abstract:**

**Introduction:** Evidence regarding the precision of second-generation high-resolution peripheral quantitative computed tomography (HR-pQCT) remains scarce, especially across operators and at shaft sites of the peripheral skeleton. We examined intra- and inter-operator precision of this imaging modality at distal and shaft sites of the radius and tibia. **Methods:** Thirty healthy adults (mean age 26.6 years; 15 females, 15 males), recruited in 2024 from Saskatoon, SK, Canada, participated in this single-centre study. Operator A performed baseline scans and repeated them at follow-up (minimum 1 day, mean 6 days apart) to determine intra-operator precision. For inter-operator precision, Operator B independently acquired an additional set of scans at the follow-up visit, which were compared with Operator A's baseline scans. Scans were obtained at the distal radius (4% of bone length), distal tibia (6% of bone length), and shaft sites of both bones (30% of bone length). We calculated precision error as the root-mean-squared percent coefficient of variation (CV%RMS). **Results:** Except for cortical porosity, intra- and inter-operator CV%RMS values were  $\leq 0.9\%$  for density,  $\leq 0.7\%$  for geometry,  $\leq 2.8\%$  for strength, and  $\leq 4.5\%$  for microarchitectural outcomes at each site, with excellent inter-operator agreement. CV%RMS values for cortical porosity were substantially higher (9.8-57.6%), with moderate to excellent inter-operator agreement. **Conclusion:** Findings indicated that intra- and inter-operator precision of second-generation HR-pQCT was comparable and within expected ranges for density, geometry, strength, and most microarchitectural outcomes, excluding cortical porosity. Additional studies are needed to confirm these findings, particularly for inter-operator precision, and to extend them to other populations and settings.

# Investigating footballer trait perfectionism, perfectionistic cognitions and burnout

**Presenter:** Sterling Kerr

**Authors:** Kerr, Sterling; Donachie, Tracy

## **Abstract:**

Athlete burnout, a multidimensional syndrome characterised by exhaustion, reduced sense of accomplishment, and sport devaluation, is a documented concern for athlete well-being and performance. Perfectionism, especially its self-oriented and socially prescribed forms, has been identified as a contributing factor, though the exact pathways remain unclear. Perfectionistic cognitions, state-like thoughts centred on the need to be perfect, may mediate the perfectionism–burnout relationship. To date, this proximal mechanism has received limited attention, particularly in football contexts. This study investigated relationships between trait perfectionism, perfectionistic cognitions, and athlete burnout in footballers spanning genders, statuses, and competitive phases. Participants were 89 footballers (M age = 21.0 years, SD = 3.87; 85.4% male) who completed validated self-report measures of self-oriented and socially prescribed perfectionism, perfectionistic cognitions, and athlete burnout. Hierarchical regression analyses examined whether perfectionistic cognitions predicted burnout beyond trait perfectionism, and mediation models further assessed indirect effects. Findings indicated that self-oriented and socially prescribed perfectionism were positively related to perfectionistic cognitions, and that perfectionistic cognitions predicted unique variance in all burnout subdimensions beyond trait perfectionism. While no significant indirect effects were found for socially prescribed perfectionism, mediation analyses revealed perfectionistic cognitions fully mediated the relationship between self-oriented perfectionism and all burnout subdimensions. These results support perfectionistic cognitions as a key mechanism linking perfectionism to burnout. They underline the importance of targeting not only trait perfectionism but also cognitive processes in interventions to reduce burnout risk and in research aimed at understanding maladaptive outcomes for athletes.

# In-season changes in countermovement rebound jump braking metrics following match exposure in university volleyball athletes

**Presenter:** Jeremy Pynn

**Authors:** Pynn, Jeremy; Weber, Jason; Hayward, Shayne; Lanovaz, Joel; Farthing, Jonathan

## **Abstract:**

**INTRODUCTION:** Jump testing is widely used to monitor neuromuscular fatigue. The countermovement rebound jump (CMRJ) - a countermovement jump immediately followed by a rebound jump - may be particularly sensitive when examining eccentric “braking” metrics. Limited research has examined CMRJ braking responses across a university season. This study evaluated pre- to post-competition changes, sex differences, and match exposure effects on CMRJ braking metrics. **METHODS:** Thirty-two university volleyball athletes (15 male, 17 female) were tested across four competition weekends (two matches/weekend). Athletes performed three CMRJs 24h pre-competition (Day 1) and 48h post-competition (Day 2). Dual force plates captured force-time data. Braking metrics included CMJ and RJ average relative braking force (rABF), average relative braking power (rABP), and RJ relative braking net impulse (rBNI). Match exposure was classified as high ( $\geq 5$  sets) or low ( $< 5$ ). Linear mixed-effects models assessed day, sex, and exposure effects (including interactions), with participant as a random effect. **RESULTS:** Day $\times$ exposure interactions were observed for CMJ-rABF, CMJ-rABP, RJ-rABP, and RJ-rBNI (all  $p < .05$ ), with greater reductions following high exposure. CMJ-rABF demonstrated a day $\times$ sex $\times$ exposure interaction ( $p < .05$ ); males decreased after high exposure ( $\Delta = -12.1\% BW$ ,  $p < .001$ ), whereas females decreased after high ( $\Delta = -6.1\% BW$ ,  $p = .003$ ) and low exposure ( $\Delta = -5.1\% BW$ ,  $p = .006$ ). CMJ-rABP decreased more in males vs. females ( $\Delta = -1.19$  vs.  $-0.53 W \cdot kg^{-1}$ ) and after high vs. low exposure ( $\Delta = -1.31$  vs.  $-0.41 W \cdot kg^{-1}$ ). **CONCLUSION:** CMRJ braking metrics were sensitive to competition exposure and sex differences. Greater reductions following high match exposure suggest altered eccentric neuromuscular function. Monitoring braking-phase metrics may better inform in-season recovery and load management.

# Wednesday, March 25<sup>th</sup>

## Graduate Student and PDF Presentations

Time	Presenter	Title
12:00	Opening Remarks & Land Acknowledgement	
12:05	Keira Dyck	Reimagining the Canadian youth sport system: Organizational insights from coast to coast to coast
12:16	Kiley Grona	Cultural connectedness on cardiovascular health determinants for Métis people
12:29	Zahra Ghafouri	Agreement between predicted and longitudinally observed maturity offsets in children and youth with Type 1 diabetes
12:40	Ste Traxler	Drink your peas for better bones: An exploration of yellow pea-based protein beverage's potential to improve bone health in older adults
12:48	Shara Johnson	Engaging Métis community in health research: From partnership to practice
1:01	Mohsen Keramati	Pole walking intervention in retirement homes: A pilot cluster-randomized controlled trial
1:14	Stacey Woods	Are there sex differences in the effect of PA on lean mass development during childhood and adolescence and adult lean mass?
1:25	Closing Remarks	

# Reimagining the Canadian youth sport system: Organizational insights from coast to coast to coast

**Presenter:** Keira Dyck

**Authors:** Dyck, Keira; McEwan, Mikayla; Mohanachandran, Theepiga; Sutton, Megan; O'Rourke, Roxy; Bean, Corliss; Sabiston, Catherine M; Golish, Sasha

**Funding:** Social Sciences & Humanities Research Council, Sport4All Partnership

## **Abstract:**

Community sport plays a key role in fostering positive physical, social, and developmental components for youth in Canada. Though the Canadian sport system has recorded several wins, structural and systemic issues continue to lead to under-representation of equity-deserving groups. This study sought to explore how community sport leaders view and understand the current Canadian youth sport system and how this shapes youth experiences in sport. Forty-five semi-structured one-on-one interviews (M = 36.0 minutes, SD = 6.5) were conducted with youth sport organization leaders from across Canada, transcribed verbatim, and analyzed by a team of five researchers through reflexive thematic analysis. A set of five interdependent themes and subthemes were identified: (a) Diversity, Access, Equity, and Inclusion (sub-themes: Structural access; Systemic exclusion, bias, and discrimination; Financial barriers and economic exclusion); (b) Youth-Centered Approaches (sub-themes: Listening to and centering youth voice; Belonging, safety, and feeling welcome; Enjoyment as the foundation for retention); (c) Leadership Capacity and Relational Practice (sub-themes: Quality coaching; Mentorship and role modelling; Collaborative culture); (d) Program Delivery and Quality (sub-themes: Intentional program design; Program sustainability and continuity); (e) System Structure and Alignment (sub-themes: System fragmentation and silos; Performance prioritization and pathway realignment; Funding structures and resource allocation; Transparency, accountability, and evidence use). These findings illustrate the key components that shape youth experiences in sport, offering insights into critical areas for policymakers, researchers, and organizational leaders to attend to and invest into to strengthen the Canadian youth community sport system.

# Cultural connectedness on cardiovascular health determinants for Métis people

**Presenter:** Kylie Grona

**Authors:** Grona, Kiley; Foulds, Heather

## **Abstract:**

**Introduction:** Cardiovascular disease (CVD) disproportionately affects Indigenous Peoples in Canada, with significantly higher prevalence observed compared to non-Indigenous populations. Despite this disparity, research focusing on Métis-specific populations remains limited. In particular, the role of cultural factors in shaping cardiovascular health among Métis People is unexplored. This study aims to evaluate the role of cultural connectedness as a potential mediator of physical and mental determinants of CVD health among Métis adults. **Methodology:** This community-based study will be conducted in partnership with Saskatoon Métis Local 126. A total of 200 Métis adults will be recruited. Participants will complete self-administered questionnaires assessing demographic characteristics, health behaviours, mental well-being, and cultural connectedness. Physical determinants of CVD health including cardiovascular and metabolic health, body composition, and physical fitness will be evaluated through comprehensive assessments. **Results:** We anticipate that higher levels of cultural connectedness will be associated with more favourable cardiovascular outcomes for Métis adults. Relationships between cultural factor scores and CVD determinants will be evaluated using Chi-squared correlations and ANOVA comparisons, allowing for the identification of significant associations and potential mediating effects. All analyses will account for sex and gender. **Conclusion:** This study will provide the first evidence regarding culturally specific determinants of cardiovascular health among Métis adults. Findings will inform the development of culturally appropriate strategies for CVD screening, prevention, and management, supporting health equity and community-driven approaches to cardiovascular care.

# Agreement between predicted and longitudinally observed maturity offsets in children and youth with Type 1 diabetes

**Presenter:** Zahra Ghafouri

**Authors:** Ghafouri, Zahra; Johnston, James J.D.; Munier, Nour; and Kontulainen, Saija

## **Abstract:**

Objective accurate assessment of pubertal and skeletal maturation is fundamental to pediatric research and clinical care, particularly in chronic conditions affecting growth, such as Type 1 diabetes (T1D). As sex-specific maturity offset prediction equations offer a practical, non-invasive approach for estimating somatic maturity, this study aimed to assess their prediction accuracy for the first time in youth with T1D. **Study Design** We used clinical records of 31 participants with T1D (17 males), 5-18 years (283 total observations). We compared predicted maturity offsets, derived from sex-specific Moore equations, against maturity offsets calculated from longitudinal height velocity curves generated using cubic splines. We restricted comparisons within  $\pm 4$  years of age at peak height velocity (APHV) and evaluated agreement using linear regression, Bland-Altman analysis, and subgroup comparisons relative to APHV. **Results** Predicted maturity offsets were aligned with observed data in females ( $R^2 = 0.79$ ) and males ( $R^2 = 0.82$ ). In males, proportional bias was evident, with the Moore equation underestimating maturity offsets (mean difference: -0.42 years; 95% CI: -0.57 to -0.27). Subgroup analyses indicated closer agreement near APHV with larger discrepancies ( $>0.5$  years) further from APHV in both sexes, especially in males. **Conclusions** The sex-specific Moore maturity offset predictions provide a practical approximation of maturational timing in youth with T1D using routinely collected clinical data. However, estimates should be interpreted cautiously the farther they are from APHV, particularly in males. When precise estimation of somatic maturity is required and sufficient longitudinal growth data are available, growth-based methods remain preferable.

# Drink your peas for better bones: An exploration of yellow pea-based protein beverage's potential to improve bone health in older adults

**Presenter:** Ste K. Traxler

**Authors:** Traxler, Ste K.; Ko, Jongbum; Strate, Shannon; Zello, Gordon A.; Warkentin, Tom; Chilibeck, Philip D.

**Funding:** Saskatchewan Pulse Growers, Agriculture Development Fund, and MITACS

## Abstract:

**INTRODUCTION:** Osteoporosis is a persistent challenge in an aging population and lifestyle interventions to improve bone health and strength, including dietary changes, are increasingly popular. Pulses, like yellow peas, are frequently recommended for their benefits to cardiovascular health, but also include a micronutrient profile (including increased potassium and phosphorus vs dairy milk) that may be beneficial for bone health. Here, we aim to explore those potential benefits in older adults. **METHODS:** 150 healthy adults,  $\geq 50$  years of age (men) and  $\geq 2$  years post menopause (women), are being recruited from the local Saskatoon area. Participants are randomized into one of three intervention groups to receive either a yellow pea-based protein drink, a milk-based protein drink, or a low-protein almond drink to be consumed post exercise. Drinks are isocaloric and pea and dairy drinks are matched for macronutrients (protein, carbohydrates, and fat). All participants are participating in supervised resistance training 3x per week for 12 months. Changes in bone geometric properties at the hip and bone mineral density at the hip and spine (primary outcomes), as well as changes in body composition and muscular strength (secondary outcomes) are being assessed via dual energy X-ray absorptiometry (DEXA) and leg extension and bench press, respectively. **HYPOTHESIZED RESULTS:** Our group has previously shown that a yellow pea-based protein beverage induced superior changes in hip geometric properties in adolescents than a dairy-based protein beverage. We anticipate these results will be replicated in our older study population.

# Engaging Métis community in health research: From partnership to practice

**Presenter:** Shara Johnson

**Authors:** Johnson, Shara; Moore, Samantha; Ferguson, Leah; Foulds, Heather

**Funding:** Heart and Stroke, Canadian Institutes of Health Research Early Career Indigenous Women's Heart and Brain Health chair awarded to last author

## **Abstract:**

Métis People, one of the three Indigenous groups in Canada, have unique histories, identities, cultures, and health experiences. However, Métis health research has frequently relied on pan-Indigenous or Western research approaches that obscure Métis-specific realities and have not consistently benefited Métis communities. Meaningful community engagement is essential to ensuring that research authentically reflects Métis perspectives and priorities. This presentation describes how community was engaged across the lifecycle of a Métis health research project exploring social and cultural determinants of health among Métis People living in Saskatchewan. Grounded in Métis-specific frameworks, including the Métis infinity symbol that integrates Métis and Western research approaches the project was guided by principles of respect, reciprocity, and authenticity to ensure that the study design, interpretation of findings, and knowledge mobilization activities reflected Métis perspectives and priorities. Key community-engagement steps included: (1) Collaborative partnership - formally partnering with Saskatoon Métis Local 126 and actively involving community across all phases of the research; (2) Capacity building and co-learning - integration of a community member on the research team; (3) Grounding community strengths and perspectives - using participatory research methods including storytelling and symbol reflections; (4) Researcher reflexivity - ongoing self-reflection of positionalities such as journaling; (5) Research flexibility - being open and responsive to community-defined changes; and (6) Community-first knowledge mobilization - co-developing community-appropriate strategies to share research findings. Together, these approaches fostered relational accountability and generated knowledge that reflects Métis ways of knowing, strengthens community capacity, and contributed culturally grounded understandings of Métis health and well-being in Saskatchewan.

# Pole walking intervention in retirement homes: A pilot cluster-randomized controlled trial

**Presenter:** Mohsen Keramati

**Authors:** Keramati, Mohsen; Kontulainen, Saija

**Funding:** Patient-Oriented Leadership Grant jointly funded by SHRF and the CIHR, CAN-TAP-TALENT Doctoral Award, University of Saskatchewan Dean's Scholarship

## Abstract:

**Introduction:** We examined the efficacy and safety of a pole walking (PW) intervention on fall- and fracture-related risk factors in retirement home residents. **Methods:** Fifty-three ambulatory residents participated in this patient-oriented, parallel-group, superiority, pilot cluster-randomized controlled trial in Saskatoon, SK, Canada during 2023-2025 (mean age 81.7 years; 72% female; intervention n=30; control n=23). Using blocked randomization, retirement homes (clusters; n=14; median size 5.0) were allocated to PW intervention or waitlist control groups (1:1). The intervention was delivered three times/week for 12 weeks as supervised group sessions (20-60 min) including posture and balance warm-ups, PW, muscle strengthening, and stretching exercises tailored to participants. We assessed functional balance/mobility (timed "up & go"), lower-body strength (30-s chair stand), and quality of life (36-item short form survey) as primary outcomes, and functional capacity (6-min walk), upper-body strength (grip strength), physical activity and sedentary time (accelerometers), and fear of falling (falls efficacy scale) as secondary outcomes at baseline and follow-up. Multiple imputation was applied for missing data, and intention-to-treat analyses were conducted using 2-level linear mixed models adjusted for baseline values, with cluster ID included as a random intercept, to examine between-group differences at follow-up. Safety was evaluated as a tertiary outcome using recorded adverse events. **Results:** The PW group showed greater 6-min walk distance (mean adjusted difference at follow-up 38.5 m; 95% CI 6.1-70.9; p=0.020) and grip strength (4.7 kg; 1.1-8.3; p=0.011). There were no intervention-related serious adverse events. **Conclusion:** The PW intervention safely improved functional capacity and upper-body strength in retirement home residents.

# Are there sex differences in the effect of PA on lean mass development during childhood and adolescence and adult lean mass ?

**Presenter:** Stacey Woods

**Authors:** Woods, Stacey; Erlandson, Marta C; Vatanparast, Hassan; Baxter-Jones, Adam DG

## **Abstract:**

Background: The lifelong effects of skeletal tissue development are well documented, with greater adolescent bone mineral accrual resulting in stronger bones as adults. However, less is known with regard to lean tissue development. The present study used longitudinal data to examine the legacy effect of childhood and adolescent appendicular lean mass (ApLM) accrual on adult lean tissue mass (LM). Methods: Fifty-five participants (27 males, 28 females) underwent serial dual-energy X-ray absorptiometry assessments between 8 and 40 years. ApLM index as limb (upper and lower), divided by height (m)<sup>2</sup>. Childhood (-3 to 0 years from PHV) and adolescence (0 to +3 years from PHV) accrual was calculated as the slope between the ApLM index and years from PHV. The adult ApLM index was calculated as the mean ApLM from +5 to +10 years from PHV. Multiple regression models were used to assess the effect of ApLM development on adult ApLM for males and females, separately. Results: Adolescent ApLM development was the only statistically significant predictor of adult ApLM index in females ( $p=0.004$ ). Physical activity also positively influences adolescent ApLM development in females ( $p=0.006$ ). In males, neither lifestyle factors nor adolescent ApLM development statistically predicted adult ApLM index ( $p>0.05$ ). Conclusions: These results suggest a potential legacy effect of adolescent ApLM development in females, whereas adult lean mass in males may be more strongly influenced by other factors (e.g., genetics, sedentary time). Overall, the data highlight sex-specific patterns in lean tissue development and its long-term consequences for preserving lean mass with age.

# Friday, March 27<sup>th</sup>

## Honours Student Presentations

Time	Name	Supervisor
1:15	Opening Remarks and Land Acknowledgement (PAC 232)	
1:20	Hamzeh Al-Barqawi	Phil Chilibeck
1:33	Kate Jarotski	Kevin Spink
1:46	Ava Radics	Kevin Spink
1:59	Ryan Ko	Jon Farthing
2:09	Eryn Kielo	Jon Farthing
2:19	Break & Room Switch (PAC 246)	
2:35	Kyra Zorbas	Natalie Houser
2:45	Jaskirat Bola	Dani Brittain & Nancy Gyurcsik
2:52	Breshna Daud Shah	Shannon Forrester
3:05	Jake Siwak	Carly Priebe
3:15	Martin Ugwu	Phil Chilibeck
3:28	Research Mixer	

# Effect of saskatoon berry juice for muscle recovery following intense exercise

**Presenter:** Hamzeh Al-Barqawi

**Supervisor:** Phil Chilibeck

## **Abstract:**

Saskatoon berries are rich in polyphenols that may support recovery following intense exercise. Our purpose was to determine whether saskatoon berry juice supplementation improves recovery following a muscle-damaging exercise bout. Twenty healthy adults (10 males, 10 females) aged 18–35y were randomized to consumed juice containing 100 g saskatoon berries or a calorie-matched placebo twice daily for seven days prior to a muscle-damaging exercise session and during 3 days recovery. The muscle-damaging exercise session involved elbow flexion (3 sets of 8-10 reps concentric overload, 70% 1RM, and 3 sets of 4-6 repetitions eccentric overload, 100% 1RM). Outcome measures included peak torque (Biodex dynamometer), muscle thickness (i.e., swelling; ultrasound), and muscle soreness (visual analog scale), assessed before exercise, immediately post-exercise, and at 24, 48, and 72h post-exercise. There was a group x sex x time interaction for torque and muscle swelling ( $p < 0.01$ ). Females consuming saskatoon berries recovered torque the fastest (by 24h), followed by males consuming saskatoon berries (by 48h). Participants in the placebo groups had not recovered by 72h. Muscle swelling recovered by 48h in both males and females consuming saskatoon berries, faster than females on placebo (72h) and males on placebo, who had not recovered by 72h. There was a group x time interaction for muscle soreness ( $p < 0.05$ ) where soreness resolved faster in the saskatoon berry group (48h) compared with placebo (72h). These findings suggest that short-term saskatoon berry juice supplementation accelerates recovery of muscle function and reduces swelling and soreness following intense exercise. Acknowledgements: Ste Traxler, Anze Svava, Gordon Zello.

# An experimental study examining the effects of self-efficacy enhancing messaging on increasing physical activity and decreasing sitting intention in university students

**Presenter:** Kate Jarotski

**Supervisor:** Kevin Spink

## **Abstract:**

**Introduction.** To improve physical activity (PA) messages, targeting theoretical determinants of behaviour change such as self-efficacy (SE) (Bandura, 1977) has been suggested (Latimer et al., 2010). Bringing attention to previously successful on-campus behaviours, such as increasing PA and decreasing sitting (SB), may act as a SE source through mastery experience (Bandura, 1977). Adding social norms (SN) (Cialdini et al., 1990) may enhance SE further, serving as a vicarious experience for SE (Bandura, 1977). **Purpose.** The primary purpose was to examine if a SE-enhancing message would increase university students' intention to increase PA and decrease SB on campus. The secondary purpose was to determine if the addition of a norm to the SE-message would produce a greater effect. **Methods.** University students (N=113) completed an online survey completing demographics, MVPA, and on-campus LPA and SB and were randomly assigned to one of three message conditions (SE, SESN, or attention control) and then completed intentions to increase PA and decrease SB on campus. **Results.** Results from a MANCOVA revealed that messages significantly increased intentions,  $F = 5.434$ ,  $p = <.001$ . Follow up ANCOVAs revealed that both PA ( $p = .004$ ) and SB ( $p < .001$ ) contributed. Those who received the SE and SESN message both reported greater intentions to increase PA ( $p < .05$ ) and decrease SB ( $p < .05$ ) than control, with no difference between the two SE conditions. **Conclusions.** These findings provide preliminary evidence that novel SE-enhancing messages may increase university students' on-campus intentions to increase PA and decrease SB.

# Exploring the indirect effects of self-efficacy messaging on physical activity and sedentary behaviour while on campus: Focusing on what you can control

**Presenter:** Ava Radics

**Supervisor:** Kevin Spink

## **Abstract:**

**Introduction.** While physical activity (PA) interventions often use messaging, it has been suggested that examining mediators may provide information on why they work (Williamson et al., 2020). In terms of mediators, message content that influences beliefs about one's perceived behavioural control (PBC) over PA may increase messaging success (Latimer et al., 2010). Control beliefs could be influenced by information about the ease of doing a behaviour (i.e., increasing self-efficacy (SE)). Purpose. The purpose of this study was to examine whether PBC mediates the relationship between a SE message and on-campus PA and sitting (SB) intentions in university students. **Methods.** University students (N=84) completed an online survey assessing demographics and PBC for PA and SB. Following random assignment to one of two messages (SE or attention control), PBC for PA and SB was assessed again as well as intentions to increase PA and decrease SB. **Results.** To examine mediation, two regression analyses were performed for each of the behaviours. For SB, a significant relationship emerged between SE messaging and post-message PBC (beta = 0.155,  $p= 0.033$ ). Also, a significant relationship emerged between post-message PBC and intentions to reduce SB (beta= 0.398,  $p= 0.016$ ), while controlling for pre-message PBC for SB. For PA, while a significant relationship emerged between SE messaging and post-message PBC (beta= 0.127,  $p= 0.046$ ), the relationship between post-message PBC and PA intentions was not significant ( $p= 0.158$ ). **Conclusion.** The results provide initial insight as to how SE messages may function to reduce sedentary behaviour in university students.

# Examining hypertrophy, strength, and fatigue resistance effects of sustained vs intermittent isometric training of the knee extensors

**Presenter:** Ryan Ko

**Supervisor:** Jonathan Farthing

**Funding:** National Sciences and Engineering Research Council of Canada

## **Abstract:**

**Introduction:** Resistance training (RT) with dynamic contractions increases muscle volume, strength, and fatigue resistance, but less is known about RT with isometric contractions. This study compared five-weeks of RT using maximal effort sustained (SUS) vs. intermittent (INT) isometric contractions matched for volume and rest.

**Methods:** Eight participants (4 Female, 4 Male;  $21.5 \pm 1$  yrs) completed 5 weeks of SUS or INT unilateral training of the knee extensors. SUS trained with two 1-minute maximal voluntary contractions (MVCs), while INT trained with five sets of 8 reps (3-sec MVC, 3-sec rest). Pre- and post-testing included concentric (CON), eccentric (ECC), and isometric (ISO) strength, voluntary activation (via nerve stimulation) and muscle thickness (via ultrasound) of vastus lateralis (VL) and medialis (VM). Fatigue resistance was measured using time-to-task failure (TTF) contractions (i.e. determined when torque dropped to  $<40\%$  MVC for 5s). EMG captured activity of the biceps femoris and VL of both legs during testing sessions. **Results:** Changes in muscle thickness for VL and VM were  $5.2\%$  ( $p=0.073$ ) and  $4.9\%$  ( $p=0.055$ ), with no significant differences between groups. Strength increased for all contraction types where both groups improved on average ( $p<0.05$ ), with no differences between groups (SUS: CON= $7.1\%$ , ECC= $15.9\%$ , ISO= $8.9\%$ ; INT: CON= $15.6\%$ , ECC= $10.1\%$ , ISO= $14.1\%$ ). TTF increased in SUS ( $7.7\%$ ) and decreased in INT ( $-4.8\%$ ), with no differences between groups. EMG and voluntary activation data analyses are pending. **Conclusion:** These results suggest that both isometric training protocols lead to similar gains in muscle thickness and strength of the knee extensors, while the effects on fatigue resistance are inconclusive.

# Maximal unilateral isometric sustained versus intermittent contractions: Implications for the cross-education of strength and endurance

**Presenter:** Eryn Kielo

**Supervisor:** Jonathan Farthing

**Funding:** National Sciences and Engineering Research Council of Canada

## Abstract:

**Introduction:** Maximal sustained contractions can elicit a high degree of associated muscle activity in the inactive homologous limb which may lead to greater cross-education of strength. The aim of this study was to determine the effects of training with volume matched sustained or intermittent isometric contractions on cross education of muscle strength and endurance. **Methods:** 8 individuals (age  $21.5 \pm 1$  yrs) with limited resistance training experience were randomly assigned to intermittent (INT) or sustained (SUS) training of the knee extensors. Participants completed on average 15 training sessions across 5 weeks. INT performed 5 sets of 8, 3-second maximal voluntary contractions (MVCs) and SUS performed two 60-second long MVCs (matched for volume and rest). Before and after training, concentric (CON), eccentric (ECC) and isometric (ISO) strength, and time to task failure (TTF; failure defined as torque  $< 40\%$  MVC for 5s) were measured on both trained and untrained legs. **Results:** Both groups improved in trained limb KE strength across all contraction types (SUS  $10.7 \pm 14.5\%$ ; INT  $13.3 \pm 9.3\%$ ;  $p < 0.05$ ). Untrained CON and ISO KE strength increased in both groups (CON  $8.4 \pm 9.2\%$ ,  $p = 0.026$ ; ISO  $10.8 \pm 10.9$ ,  $p = 0.007$ ) but only ISO %change was different between groups (SUS  $18.1 \pm 9.9\%$ ; INT  $3.5 \pm 6.2\%$ ;  $p = 0.047$ ). No significant differences between groups were detected for trained TTF (SUS:  $7.7 \pm 18.7\%$ ; INT:  $-4.8 \pm 20.6\%$ ) or untrained TTF (SUS:  $-2.4 \pm 12.4\%$ ; INT:  $-9.1 \pm 7.3\%$ ). EMG and voluntary activation data analyses are pending. **Conclusion:** While both training protocols elicited cross-education of strength, prescribing a sustained protocol may enhance the potential for generating greater transfer of isometric strength.

# Setting the stage: Exploring children’s movement experiences in recreational dance

**Presenter:** Kyra Zorbas

**Supervisor:** Natalie Houser

## **Abstract:**

**Introduction.** In recent years, there has been a growing interest in understanding physical literacy within a performing arts context. Participation in recreational dance has been shown to contribute to physical activity participation and positively influence individual components of physical literacy, but there is little research investigating specific relationships between recreational dance and physical literacy development.

**Purpose.** To explore how the movement experiences of young recreational dancers influences their physical literacy development. **Methods.** This research was conducted as an intrinsic case study and employed two forms of data collection; semi-structured interviews and the write, draw, show, tell (WDST) method. Six semi-structured interviews and WDST worksheets were completed with female dancers between the ages of 9 and 11. Data were analyzed using Braun and Clarke’s (2022) reflexive thematic analysis.

**Results.** Four themes were identified as part of this study: (1) “Happy, energized, pumped up, and active”: physical competence and the importance of physical activity, (2) “It’s like climbing up stairs”: overcoming positive challenge with resilience, (3) “I have lots of fun and lots of friends”: the interrelatedness of learning, motivation, confidence, and friendship, and (4) “I use my imagination and I dance, and I dance, and I dance”: how dance became the medium of creativity and self-expression through movement.

**Conclusion.** These findings highlight that recreational dance supports the four main components of physical literacy and interrelated concepts including resilience and creativity. This study emphasized the importance of understanding youth recreational dancer experiences from their perspective.

# **Movement that Matters: Examining the effects of a 6-week Movement that Matters intervention on pain intensity, pain interference, pain anxiety, and pain acceptance**

**Presenter:** Jaskirat Bola

**Supervisor:** Danielle Brittain & Nancy Gyurcsik

**Funding:** Saskatchewan Health Research Foundation

## **Abstract:**

Chronic pain persists for 3 or more months. Of the 20% of Canadians experiencing chronic pain, two thirds report moderate to severe intensity, interfering with daily activities. Physical activity (PA) is a non-pharmacological strategy for improved chronic pain management. Nonetheless, adults living with chronic pain report low participation. Pain factors of intensity, interference, anxiety, and acceptance are related to PA participation. Yet no programs have been designed to target these factors and promote regular PA. The Active Living for Pain (ALP) researchers and patient partners co-developed a 6-week Movement That Matters (MTM) program. MTM components included chronic pain and PA education, guided PA experiences, practiced use of self-regulatory PA skills (e.g., goal setting), and mindfulness. The first study purpose was to investigate whether pain factors changed from baseline to end-program. The second purpose was to examine whether MTM attendance was associated with baseline to end-program change scores. Saskatchewan adults living with self-reported moderate to severe chronic pain participated in the in-person MTM ( $N = 7$ ,  $M_{\text{age}} = 64.35 \pm 9.14$  years). Participants completed baseline and end-program online survey measures of pain factors. Pain intensity, interference, and acceptance improvements trended. But within-participant (baseline to end-program) t-tests for all outcomes were non-significant ( $p > .05$ ). Attendance trended to be negatively correlated with pain intensity and positively related to the other pain factors. However, associations were not significant ( $p > .05$ ). The small size may have contributed to non-significant findings. Ongoing research is investigating MTM acceptability to participants, including areas for improvement.

# Kinesiology student responses to an instructor disclosure of mental illness

**Presenter:** Breshna Daud Shah

**Supervisor:** Shannon Forrester

## **Abstract:**

Despite considerable numbers of both post-secondary instructors and students experiencing mental illness, research on instructor self-disclosure and subsequent student experiences remains sparse, particularly research that considers social identity factors. Using qualitative content analysis, this study evaluated open-ended survey responses from post-secondary students in the College of Kinesiology ( $n = 162$ ) to examine how kinesiology students respond to an instructor's disclosure of mental illness, including the influence of social identity factors such as gender, culture, and year of study, as well as thoughts on future disclosures. Responses were segmented and coded into meta-themes of positive, neutral, and negative, with further themes and subthemes identified. The study found that students overwhelmingly reported positive responses, most often citing themes of positive emotional affect and a sense of inclusivity and relatedness. Interestingly, these same students, despite reporting positive experiences and responses that instructors should disclose, continued to express caution when asked about future instructor disclosures. Themes related to context and instructor performance emerged. This study also observed that social identity played a role in student responses. Men were not only less likely to participate in the study but were also more likely to leave responses blank and to provide neutral comments compared to women and non-binary participants. Variation in themes based on culture and year of study was less evident. Although responses indicate that instructor self-disclosure is generally a positive experience, gender does play a role in perceptions and students have preferred parameters for instructors considering future self-disclosure in the classroom.

# Walking together: Exploring walker identity, belonging, cohesion, and activity in an adapted physical activity group for adults with acquired brain injury

**Presenter:** Jake Siwak

**Supervisor:** Carly Priebe

## **Abstract:**

Acquired brain injury (ABI) is associated with reduced physical activity participation despite well-documented physical and psychosocial benefits of exercise. Group-based adapted activity programs may provide a meaningful context for fostering engagement by shaping identity and social experiences. Drawing on social identity theory and exercise identity research, this study explored how group processes—specifically belonging, perceived similarity, group norms, and cohesion—related to walker identity and physical activity behavior among adults with ABI. Adult participants (N=19) were recruited from a community-based program for individuals living with ABI. This program included an adapted walking group. A concurrent mixed-methods design was employed. Quantitative questionnaires assessed walker identity, physical activity, walking behavior, self-efficacy, perceived norms, group belonging, similarity, and cohesion. Semi-structured interviews further explored participants' experiences of identity, belonging and perceptions of group environment. Positive correlations ( $p$ 's < .05) were observed between belonging and multiple dimensions of cohesion, indicating that participants who felt greater belonging also perceived stronger social and task unity within the walking group. Qualitative findings aligned with these results with participants expressing the importance of belonging. While walker identity demonstrated weaker quantitative associations than anticipated, interesting qualitative interview findings emerged around disability identity. Finally, those who belonged to the walking group reported higher moderate activity and self-efficacy to walk 60-minutes compared to those not in the walking group. Although further research with larger samples is needed, findings highlight the importance of belonging and cohesion and the role adapted walking programs may play in supporting physical activity among individuals with ABI.

# Neuromuscular activation differences between flywheel and hex bar squats in trained individuals

**Presenter:** Martin Ugwu

**Supervisor:** Phil Chilibeck

## **Abstract:**

Flywheel resistance training, originally developed for astronauts, has gained attention for providing enhanced eccentric loading compared to traditional free weights. However, despite its growing use in performance settings, limited research has examined muscle activation using the flywheel. The purpose was to compare muscle activation patterns between the flywheel squat and the hex bar squat (using free weights) in trained individuals. Understanding these differences may provide insight into how different resistance modalities influence muscle recruitment to inform strength training and rehabilitation strategies. Six trained individuals (3 males, 3 females,  $20 \pm 2$ [PC1] y) participated in three laboratory sessions. Session one determined participants' eight-repetition maximum (8RM) for both squat modalities to standardize exercise intensity. Using a randomized cross-over design, participants then attended two testing sessions, where they performed three sets of eight repetitions of each modality at their predetermined 8RM. Surface electromyography recorded activation of the vastus medialis (VM), rectus femoris (RF), vastus lateralis (VL), bicep femoris (BF), tibialis anterior (TA), gluteus maximus (GM), erector spinae (ES), and rectus abdominis (RA). The hex bar squat resulted in higher activation of the ES, GM, and BF while the flywheel squat was better for activating the VL and RF ( $p < 0.05$  for all). No other significant differences between modalities were found. Despite similar biomechanics, hex bar squats were better for posterior leg activation while the flywheel squats were better for anterior leg activation. This highlights the need for incorporating a variety of different squat exercises into training programs to optimally activate all leg and stabilizer muscle groups. Acknowledgement: Angelica Lang.

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