

APES/KIN RESEARCH DAY 2021

ABSTRACTS

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Holland SM, Cadle SA, Lattimer LJ: School of Kinesiology, Acadia University, Wolfville Nova Scotia

TITLE: The effect of hip muscle fatigue on hip joint kinematics in females during dynamic unanticipated cutting and jump landing tasks

INTRODUCTION: Neuromuscular control creates joint stability, and inadequate control can cause altered kinematics, increasing the injury risk of extremities. Hip abductors and external rotators function to stabilize the joint and prevent movement into hip adduction and internal rotation during dynamic tasks. Decreased torque producing capabilities of the hip musculature in a fatigued state may potentially compromise pelvic stability, increasing lower extremity injury risk.

METHODS: 3D motion capture was used to observe lower extremity kinematics of sixteen university-aged females during dynamic jump landings and unanticipated cutting tasks. Tasks were analyzed before and after completing a hip abductor and external rotator fatigue protocol.

RESULTS: Participants demonstrated significant differences during post-testing, with decreased hip flexion angle during dynamic jump landings, and increased hip adduction angle during unanticipated cuts.

DISCUSSION: Females compensated for the hip stabilizer fatigue by altering their hip kinematics during tasks, placing them in high-risk positions for sustaining lower extremity injuries

Snow, Kayla, Acadia University

TITLE: Understanding the Relationship of Participation in Organized Sport and Self-Efficacy in Paediatric Cancer Survivors

Organized sport plays an important role in fostering confidence and self-efficacy in children. For childhood cancer patients, the opportunity to engage in sport is often delayed due to treatment. Research has shown that involvement in physical activity can increase overall feelings of self-efficacy; however, few studies have focused on sport participation in childhood cancer survivors and its effects on physical and psychological health. Thus, the purpose of this study was to explore the relationship between sport participation and self-efficacy in a childhood cancer survivor. One 13-year-old male

youth and his mother completed a demographic questionnaire and took part in three semi-structured interviews ($M = 30$ minutes) which included questions related to confidence and self-efficacy in sport. Interviews were transcribed and analyzed using thematic analysis. Major themes reflected the adolescent's ambivalence and lack of competence in sport post-cancer. This study will enhance our understanding of how self-efficacy can be fostered in sport among childhood cancer survivors.

Kortland Clifford, Said Mekary, René J.L. Murphy, School of Kinesiology, Acadia University

TITLE: Induced Fluid Shifts by Simulated Microgravity on Cognition and Executive Functioning

Scientific and research methods for simulating microgravity on Earth have remained relatively unchanged since humans first began preparing for spaceflight. One of the most commonly used protocol is the Head-Down Bedrest model, and consists of a subject lying on their back horizontally in a slight head-down tilt position with their face-up and arms kept to their side. This protocol ultimately makes the subject's body fluids flow toward their head, which mimics body fluid redistribution in microgravity. However, our research looked to alter the subject's body position to determine if there would be any effect on the redistribution of body fluids and blood flow to the frontal cortex to assess impacts on cognition. This pilot study, impacted by COVID-19 restrictions, resulted in a successful first probe into determining some of the changes occurring between the well established face-up protocol versus our novel face-down protocol. Our results suggest future work on this modified microgravity simulation is warranted.

Cadle SA, Holland SM, Lattimer LJ: School of Kinesiology, Acadia University, Wolfville Nova Scotia

TITLE: Neuromuscular fatigue of hip stabilizers and its influence on female knee kinetics and kinematics during dynamic tasks

Introduction: Females are more predisposed to anterior cruciate ligament (ACL) injuries compared to males due to various intrinsic and extrinsic factors. It has been suggested that hip musculature can influence dynamic knee position, especially across the sagittal and transverse planes.

Methods: Sixteen university-aged females participated in three dynamic single leg tasks that replicated common mechanisms of ACL injury. The subjects were required to complete a fatigue protocol targeting the abductors and external rotators of the hip.

The tasks were then repeated post fatigue and analyzed for differences in knee joint kinetics and kinematics using 3D motion capture and force plate data.

Results: Participants displayed significant differences after hip fatigue, with a decrease in knee flexion during dynamic jumping tasks, reduced task performance and decreased abduction and external rotation hip force after fatigue condition.

Discussion: Females decreased knee flexion as compensation for hip stabilizer fatigue which during dynamic movement can increase ACL injury risk.

MacDonald ML, Thompson BJ, MacLeod J, Lattimer LJ: School of Kinesiology, Acadia University, Wolfville Nova Scotia

TITLE: A comparison of clinical craniocervical measures, postural balance, and cognitive tests between healthy male and female varsity athletes.

Introduction: Control of head and neck during an unexpected, applied force can be altered through neuromuscular control of the cervical musculature in correlation to sport-related concussions (SRC). Evidence suggests, females have decreased neuromuscular control and increased posture assessments compared to males; therefore, increasing their risk of SRC, experienced symptoms, and overall recovery period. **Methods:** Sixteen varsity athletes participated in one session of baseline SRC assessment. The purpose of this study was to examine differences in male and female athletes' risk of SRC through clinical craniocervical measures, postural balance, and cognitive testing. **Results:** Significant differences were observed between sexes. Males had increased anthropometrics, cervical muscular performance, and second Digit-Symbol score. **Importance:** Strength and symmetry of cervical musculature is a preventative measure to reducing SRCs in athletics; however, presented in this study, females are found to be deficient in comparison to males.

Thompson BJ, Lattimer LJ, MacDonald ML: School of Kinesiology, Acadia University, Wolfville Nova Scotia

TITLE: The Examination of a Novel Neuromuscular Training Intervention on Clinical Risk Factors for Sports Related Concussions in Female Varsity Athletes

Introduction: Sport related concussions are a concerning health issue due to the associated acute and chronic symptoms. Female athletes present a greater risk of concussion due to anatomical and biomechanical differences compared to men. Neck musculature strength and neuromuscular control have been reported as possible factors in preventing concussion by reducing head and neck acceleration.

Methods: Seventeen female varsity athletes attended two data collection sessions involving assessments in anthropometrics, cognition, isometric and dynamic strength, range of motion, posture, balance, proprioception and vestibular-ocular function. The intervention group participated in a seven-week dynamic neuromuscular training program for the cervical musculature

Results: The intervention group significantly increased neck-girth, flexion-extension strength ratio, isometric and dynamic strength.

Discussion: Results obtained suggest that dynamic neuromuscular training of the cervical muscles is effective in improving the stability and function of the cervical spine. Improved stability may reduce head motion following a concussive load, consequently reducing concussion risk.

Ciera Disipio, Catalina Belalcazar and Bettina Callary, Cape Breton University

TITLE: Testing the practical validity of the Adult Oriented Sport Coaching Survey (AOSCS) as a tool for professional development for Masters Coaches

Improving coaching for Masters athletes (MAs; adults engaged in competitive sport) is an important endeavor considering that coaches influence MAs' enjoyment, commitment, social belongingness, and competence (Motz, et al., 2019). The Adult Oriented Sport Coaching Survey (AOSCS) is a 22-item self-assessment tool that measures five psychosocial coaching approaches when working with MAs (Rathwell, et. al., 2020). For this project, 15 coaches will complete the AOSCS, listen to a one-hour webinar on the research of coached Masters sport, and then receive their personalized scores from the AOSCS. They will then be interviewed regarding their perspectives of the utility of the tool and how they have reflected on and might use the scores to improve their coaching. The data will be thematically analyzed to examine the practical utility of the AOSCS as a coach development tool that is specific to the Masters context.

Key Words: Masters Coaching, Professional Development, Andragogy, Masters Athletes

References:

Motz, D., Rathwell, S., Young, B. W., Callary, B., Hoffman, M., & Currie (2019). Preliminary criterion validity for the adult-oriented sport coaching survey: Associations with key psychosocial variables. *Journal of Exercise, Movement, and Sport (Psychomotor Learning Abstracts)*, 51, 93.

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Baribault, Julie, Cape Breton University

TITLE: Navigating sexual violence and survivorship: A Survivor's perspective sharing through TIKTOK

Sexual violence is experienced by many individuals around the world. In Canada, 1 in 4 females and 1 in 6 males will experience sexual violence during their lifetime (Conroy &

Cotter, 2017). In this presentation, I will interrogate the complexity of sharing my experiences from years of sexual violence on the social media platform *TIKTOK*. Using an autoethnographic methodology, I will discuss my experiences with documenting my journey through posting videos and engaging in reflexive journaling. Little research has explored why survivors share their story through social media, including *TIKTOK*, a newer social media platform. Far too often a survivor is not given the opportunity to share their story in a way that allows them to feel empowered. This research has allowed me to explore the complexities I as a survivor have faced surrounding my traumatic experiences and how sharing these experiences have affected myself and others.

Kimberley Eagles & Bettina Callary, Cape Breton University

Title: Goal Setting in Masters sport: An autoethnography

Masters sport is for people typically over 35 years of age, who are registered in formal leagues and events, and who train to prepare for competition. Scant research has investigated sport psychology skills used by Masters athletes. The purpose of this presentation is to explore the nuances of a widely-used skill in sport psychology: goal setting, from the perspective of the first author as a coach and athlete in Masters sport. Using an autoethnographic approach, data was collected through a series of guided reflexive journal entries, with follow up questions from the second author that enabled an elaboration on personal experiences in Masters sport in order to create narrative visibility. The journal entries were then analyzed and categorized into what, when, where, how and why for goal setting. The results outline that it is important that goals originate from the athletes and are negotiated with coaches through shared decision making to account for the varied individual motives that Masters athletes have, and that communication is interdependent and adult-oriented.

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TITLE: Criterion validation of the Physical Activity Vital Sign questionnaire estimation of habitual moderate-vigorous physical activity in younger and older adults

Pilot work in older adults (OA) determined that the Physical Activity Vital Sign (PAVS) is a valid estimate of moderate-to-vigorous physical activity (MVPA) levels. However, it is unknown if the PAVS accurately estimates MVPA in younger adults (YA). We investigated criterion validity of the PAVS for estimating habitual MVPA in 56 OA (66 ± 28 years) and 174 YA (23 ± 7 years). Participants completed the PAVS and wore a PiezoRx waist-worn accelerometer for 7-days. Bland-Altman analyses determined agreement between methods. In OA, MVPA was similar ($p=0.389$) between PAVS (176 ± 127 mins•week⁻¹) and PiezoRx (201 ± 108 mins•week⁻¹) with neither a fixed (mean difference: 24 mins•week⁻¹) nor proportional bias observed. In contrast, the PAVS underestimated MVPA (243 ± 280 mins•week⁻¹) versus PiezoRx (365 ± 159 mins•week⁻¹) and demonstrated both fixed (mean difference: 135 mins•week⁻¹) and proportional biases in YA. The PAVS is a valid estimate of habitual MVPA in physically active OA but not YA.

Haoxuan Liu, Myles W. O'Brien, Jarrett A. Johns, Amara Al-Hinnawi and Derek S. Kimmerly

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TITLE: Does higher aerobic fitness impact prolonged sitting-induced popliteal artery endothelial dysfunction in younger healthy adults?

Acute bouts of prolonged sitting (PS) impair popliteal flow-mediated dilation (FMD) responses. Higher aerobic fitness has been linked with enhanced popliteal health. However, it is unclear whether greater aerobic fitness favourably attenuates PS-mediated reductions in popliteal FMD. We tested the hypothesis that more aerobically fit younger adults would have smaller reductions in popliteal FMD following a 3-hour bout of PS. Relative peak oxygen consumption (VO_{2peak}) was assessed via a cycling-based incremental, maximal test in 16 younger adults (10 females; 23.6 ± 2.4 years;

26.5-60.7ml/kg/min). Relative popliteal FMD (% baseline diameter) was assessed via duplex ultrasonography before and after PS. Relative FMD decreased ($P < 0.001$) following PS ($4.5 \pm 1.4\%$ to $2.0 \pm 0.7\%$). Relative VO_2peak was moderately correlated ($r = 0.47$) to baseline FMD and inversely correlated ($r = -0.57$, $P = 0.022$) to PS-induced impairments in popliteal FMD ($-2.5 \pm 1.6\%$). These relationships suggests that more aerobically fit adults have enhanced popliteal endothelial-dependent vasodilatory function but experience greater decrements in popliteal health following PS.

Madeline Shivgulam, Myles W. O'Brien, Jarrett A. Johns, Jennifer L. Petterson, and Derek S. Kimmerly

Division of Kinesiology, School of Health and Human Performance, Dalhousie University

TITLE: Impact of habitual sedentary patterns on popliteal artery endothelial-dependent vasodilation in healthy adults

Acute bouts of prolonged sedentary time decrease lower-limb artery endothelial function, which is an antecedent to cardiovascular disease. However, the impact of habitual sedentary time on popliteal flow-mediated dilation (FMD) is unknown. We tested the hypotheses that: 1) more sedentary time, and/or 2) fewer breaks in prolonged sedentary bouts were negatively associated with popliteal FMD. Habitual physical and sedentary activities (activPAL) were monitored for ~7-days from 98 adults ($n = 51$, 19-77years). Relative popliteal FMD (% baseline diameter) was determined via duplex ultrasonography. Bivariate correlation revealed 12 variables, including number of daily sedentary breaks, related to FMD (all, $p < 0.049$). These were entered into a multiple regression analysis ($R^2 = 0.44$), which indicated that moderate physical activity (MPA, $\text{minutes} \cdot \text{week}^{-1}$) and the number of weekly sedentary bouts ≥ 1 -hour were independent determinants of popliteal FMD (both, $p < 0.042$). These findings suggest that decreasing prolonged sedentary bouts and increasing weekly MPA are linked to better popliteal artery health.

Relationship between habitual sedentary patterns and autonomic heart rate control in younger adults

Yanlin Wu, Myles W. O'Brien, Jarrett A. Johns, Jennifer L. Petterson and Derek S. Kimmerly

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Excessive sedentary behavior is independently associated with increased cardiovascular disease (CVD) risk. Heart rate variability (HRV) provides important

information about autonomic control of the heart. Reduced HRV indicates sympatho-vagal imbalance and is related to higher CVD risk. However, the relationship between these CVD risk factors is currently unknown. We hypothesized that greater sedentary time and more frequent prolonged sedentary bouts will be associated with greater sympathetic and lower vagal cardiac innervation. In 40 adults (25 ± 6 years, 24 females), habitual physical and sedentary activity were objectively measured over ~ 7 days (activPAL). Beat-by-beat cardiac intervals were extracted from 5-min resting supine electrocardiographic recordings. Frequency-based HRV provided an index of vagal cardiac innervation (normalized high-frequency power, HFnu) and sympatho-vagal balance (normalized low-frequency/HFnu, LFnu/HFnu). Multiple linear regression analyses will be conducted to determine if there is a relationship between HFnu or LFnu/HFnu versus sedentary-related outcomes while controlling for habitual physical activity parameters.

Jennifer L. Petterson, Myles W. O'Brien and Derek S. Kimmerly
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TITLE: Impact of aerobic fitness on sympathetic neurohemodynamic transduction in older males

In younger males, we reported that greater aerobic fitness attenuated mean arterial pressure (MAP) responses to spontaneous bursts of muscle sympathetic nerve activity (MSNA). The current study tested the hypothesis that sympathetic neurohemodynamic transduction would also be inversely related to aerobic fitness in older males. Relative VO_2 peak was determined in twelve older adults (61-76yrs) via a maximal cycling-based exercise test. Resting beat-by-beat MAP (via Portapres) and fibular nerve MSNA (via microneurography) recordings were collected on a separate day. Peak increases in MAP following MSNA bursts were calculated to quantify sympathetic transduction. Aerobic fitness (21.1-53.8ml/kg/min) was inversely related ($p=0.045$, $r=-0.587$) to peak MAP responses following spontaneous bursts of MSNA. Multiple regression demonstrated that both resting MSNA burst frequency (14-47 bursts/min, $r=-0.547$, $p=0.034$) and aerobic fitness ($r=-.410$, $p=0.094$) were moderate predictors of peak MAP responses. These findings provide support for the potential protective effects of aerobic fitness on arterial health with ageing.

Beverly Schwartz, Myles O'Brien, Alex Peddle, Ryan Frayne
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TITLE: Validation of activPAL Determined Knee Angles

Introduction: The activPAL is commonly used to measure habitual sedentary time. It may also be capable of quantifying joint angles during bouts of prolonged sitting, which decreases leg blood flow and impairs lower-limb artery function. The purpose of this study is to determine the accuracy of knee joint angle estimates from a three activPAL monitor setup (thigh, torso, shin) compared to optical motion capture.

Methods: Optical motion capture (OptiTrack Inc.) and tri-monitor activPAL data recorded 3 subjects (2 ♀) completing 8 bouts of sitting at predetermined knee angles for one minute each. Data was processed through a customized LabVIEW program.

Results: The ICC and SEM were 0.95 and 2.26, respectively. The Bland-Altman analysis revealed a bias of 7.11° with upper and lower limits of agreement -12.14° and 26.36°, respectively.

Conclusion: This study may introduce a methodological strategy in characterizing habitual laying from sitting, and the specific knee-angles during sitting.

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TITLE: Marker-less motion capture pilot: A validation of 3D kinematic output

Background: Increased availability of marker-less motion capture programs, such as DeepLabCut, has potential for addressing the limitations imposed by traditional data collection methods; however, there is a need to evaluate their ability to quantify 3D human kinematics. The purpose of this research was to validate marker-less motion capture's capabilities compared to a traditional optical motion capture system.

Methods: Four repeated body weight squats were simultaneously recorded using optical motion capture (OptiTrack Inc. USA) and two standard video cameras, then processed with Motive 2.0 and DeepLabCut, respectively.

Results: The interclass correlation (ICC) between the knee flexion results was 0.88. The Bland-Altman analysis revealed a bias of 8.8° with the upper and lower limits of agreement 44.2° and -26.4°, respectively.

Discussion/Conclusions: DeepLabCut was able to reproduce flexion/extension angles consistent with the retroreflective motion capture system; however, further evaluation of the 3D kinematic angles for ab/adduction and internal/external rotation are required.

Hedges, Shyanne, Department of Human Kinetics, St. Francis Xavier University

TITLE: The Corner Kick Towards Equity: A Case Study Analysis of Elite Women's Soccer and COVID-19

In sport, there are prevalent inequities that exist between women and men. Women in comparison to their male counterparts continue to be undermined and are viewed as the other, for men and men's sport are often held as the superior standard. The recent COVID-19 pandemic has caused almost total shutdown of many elite and professional sport opportunities and women's sport has suffered in particular. I focus on the case of elite women's soccer in North America, in this thesis, and argue from a feminist philosophical perspective that women's soccer has struggled during the pandemic. Prior to COVID-19, there was solid momentum in the women's game like the fight for equal pay, and Christine Sinclair scoring more goals than anyone in the history of international soccer. Due to the pandemic, the 2020 Summer Olympics were postponed, and the CONCACAF women's U-17 championship was cancelled. Although there was still the Challenge Cup (June 2020) and the SheBelieves Cup (February 2021), I argue that elite women's soccer in North America has experienced barriers.

Goucher, Olivia, Department of Human Kinetics , St. Francis Xavier University, Antigonish, Nova Scotia

TITLE: What do kids say? Children's physical activity and screen time before and during COVID-19 restrictions

This study examined children's physical activity and recreational screen time during the COVID-19 pandemic. Fifteen children in grades 3 and 4, from the Fit 4 Life program responded to close- and open-ended questions in person and online. Descriptive statistics were calculated and organized to reflect the 'lockdown' and 'back to school with restrictions' periods of the pandemic. Most children (13/15) reported more recreational screen time by themselves and/or with their families during the lockdown and similar recreational screen time when back to school. More than half (10/15) reported more physical activity outdoors and walking, biking, scootering and/or skateboarding during the lockdown. The children also reported more physical activity outside (12/15) and inside (11/15) when back at school. In comparison to the 24-hour movement guidelines, these results are conflicting in that much higher rates of

recreational screen time were reported as well as more physical activity, particularly outside.

Graham, Amy, St. Francis Xavier University

TITLE: The Effect of a Physical Activity Monitoring Intervention in Conjunction with an Exercise Specialist on 24-Hour Movement Guidelines

This study evaluated the effectiveness of an activity monitor intervention on the lifestyle movement behaviours of men aged 40-70. Eleven participants were equipped with a Fitbit Charge 4 activity monitor. For 12-weeks, these men received weekly feedback from an exercise specialist using their individual Fitbit data. This feedback made connections to Canada's 24-Hour Movement Guidelines (Sedentary time <8 hours/day; Sleep 7-8 hours/day; Moderate-to-vigorous physical activity (MVPA) ≥ 150 minutes/week). No statistical differences were found between pre- and post-intervention for sedentary time [Pre: 13.6 ± 2.0 hrs/day vs. Post: 13.0 ± 4.1 hrs/day, $t(9) = 0.535$, $p = 0.605$], sleep [Pre: 6.4 ± 0.9 hrs/day vs. Post: 7.1 ± 1.2 hrs/day, $t(7) = -1.6$, $p = 0.160$], or MVPA [Pre: 47.0 ± 29.8 min/day vs. Post: 51.4 ± 43.0 min/day, $t(9) = -0.487$, $p = 0.638$]. On average, participants met MVPA guidelines pre- and post-intervention, but only met sleep guidelines post-intervention. This modest increase of 42 min/night of sleep may signify some effectiveness of the intervention. Novel approaches are required to decrease sedentary time during this COVID-19 pandemic.

Analysis for Thesis / Paper

(**SHOULD be looking at sums and not averages for weekly PA)

Should evaluate frequency of ppl meeting guidelines with chi-square (Pre vs Post)

- MVPA
 - SLEEP
 - SED
-

Carey, Danielle, St. Francis Xavier University

TITLE: Two Shots: Postponement of the 2020 Olympic Games

Amid rising concerns regarding the Tokyo 2020 Olympics taking place in 2021, there has been increased controversy surrounding the Games going ahead. With recent polls indicating the majority of Japanese respondents wish the Games to be cancelled, second and third waves of COVID-19 transpiring, and highly contagious variants of the coronavirus circulating through many countries, there are many debates about whether the event should be postponed again or cancelled altogether. The Tokyo Olympics are only a few months away and plans for how they should unfold have yet to be finalized.

Apart from the superficial details in the unfinished pandemic Playbook by the International Olympic Committee (IOC), questions about accommodations, vaccinations, spectators, and testing efforts remain. In this thesis, I analyze the postponement of the Tokyo 2020 Olympics due to COVID-19 and, using a sport philosophical perspective, I argue that the Games should not take place in 2021.

Tooth, Rachel, St Francis Xavier University

TITLE: Touchdown for Women in Coaching, Intercepting the Hegemonic Patriarchal Sport Structure: A Case Study of Katie Sowers

Women have been underrepresented in sport, not only as athletes but even more so as leaders, role models, and coaches. Katie Sowers is a prominent force in dethroning the hegemonic patriarchal sport structure for women in coaching. In this thesis, I argue that Coach Katie Sowers became successful in breaking down barriers of male dominance in coaching, specifically in American football. I apply a feminist sport philosophical perspective to develop a case study on Coach Katie Sowers. Drawing through my analysis themes: oppression, battles and barriers, and uprising, I conclude that Katie Sowers was successful in dethroning the hegemonic patriarchal sport structure in women in coaching, specifically in the National Football League (NFL).

Darian Demchuk, St. Francis Xavier University

Title: The Effect of Putter Shaft Stiffness on Putting Performance

The purpose of this study was to quantify the deflection of a putter shaft and determine its influence on clubhead kinematics and performance. Two putter shafts with disparate levels of stiffness, but otherwise similar properties, were tested by 15 left-handed golfers. Shaft deflection data as well as grip and clubhead kinematics were collected from 20 putts, with each shaft, for each golfer using an optical motion capture system. At impact, the flexible shaft was associated with greater lag deflection relative to the stiff shaft ($p = 0.016$), but this did not have a meaningful influence on performance. Although the number of successful putts was significantly greater with the stiff shaft condition (56%) relative to the flexible shaft (47%) ($p = 0.023$), it was logically deduced, using the collected data, that these outcomes were the result of the flexible shaft putter being manufactured with approximately 1° more static loft than the stiff shaft putter.

Belliveau, Xavier, St. Francis Xavier University

TITLE: The relationship between positional competition and teamwork in student-athletes

Positional competition, defined as the competition for playing-time between athletes in the same position, is an omni-present process in high-level sport teams (e.g., intercollegiate). Harenberg and colleagues (2019) proposed a framework that associated positional competition with various affective, behavioral, and cognitive outcomes. One of these outcomes is teamwork (i.e., collaborative efforts by team-members). However, the link between positional competition and teamwork has yet to be tested empirically. Hence, the purpose of the present study is to examine whether positional competition can predict teamwork in intercollegiate sport teams. Eighty-one intercollegiate student-athletes from Canada and the United States participated in this survey-design study. Multiple regressions revealed that positional competition predicted between 38 and 51% of the dimensions of teamwork. Most important predictors were selection, push by teammates, social awareness, and comparison. The findings indicate a strong association between positional competition and teamwork, further supporting the importance of positional competition for team functioning.

Savoury, Nikita, Department of Human Kinetics, St. Francis Xavier University

TITLE: Concussions: How Do They Affect Depression Scores in Varsity Athletes

U SPORTS, the national sport governing body of university sport in Canada, recommended athletic departments administer the Baron Depression Screener for Athletes (BDSA), to evaluate depression symptoms in varsity athletes. Concussions are prevalent in athletes and previous research indicates that depression symptoms increase post-concussion. However, there is limited research investigating the relationship between depression scores and concussions. In this study, varsity athletes completed BDSAs before their sport season. Eleven athletes from StFX participated in this study after sustaining concussions. Participants completed BDSAs on days two, seven, 14, and 28 post-concussion. A one-way repeated measures ANOVA was conducted using time as the independent variable and BDSA scores as the dependent variable. The results indicated there was a non-significant relationship between the variables ($p = 0.187$, $n^2 = 0.158$). Depression scores were high initially following concussions while decreasing throughout concussion recovery. Future studies should explore this relationship in a normal AUS season.

Keywords: athletes, concussion, depression, U SPORTS, BDSA

Oliver, Maggie, Department of Human Kinetics, St. Francis Xavier University

TITLE: Connecting Men through Fitness: An Analysis of Comradery, Cohesion and Quality of Life

This study examined the relationship of comradery and cohesion to quality of life in older men participating in a physical activity program. A mixed methods approach gathered

data using questionnaires and one-on-one semi-structured interviews. The Physical Activity Enjoyment Scale-8, Physical Activity Group Environment Questionnaire and the Medical Outcomes Study Short Form Health Survey were completed by 13 participants pre- and post-program. Telephone interviews (30-45 min) were conducted post-program with four men purposively chosen. No statistical differences were found in the questionnaire data pre- and post-program. Contrary to the quantitative data, interview data confirmed the importance of comradery and cohesion connected to the physical activity program and its connection to the participant's quality of life. Thematic analyses emphasized independence, similar goals and lifestyle changes. This study demonstrated the importance of learning from the men and their 'lived experiences,' allowing researchers to better understand how this program shaped their attitudes and wellbeing.

MacDonald, Margaret A., Department of Human Kinetics, St. Francis Xavier University

TITLE: Exploring the Barriers, Facilitators and Motivators of Using Activity Monitors in Primary Care: A Patient's Perspective

Moderate-to-vigorous physical activity, sleep and sedentary behaviours are associated with chronic disease risk. Activity monitors objectively track these movement behaviours, providing useful data for health practitioners. This study qualitatively explored the barriers, facilitators and motivators of using an activity monitor as well as men's perspective of incorporating activity monitors in healthcare. Nine men provided their lived experiences with activity monitors in virtual one-on-one semi-structured interviews, ranging from 22-63 minutes. Following verbatim transcription and participants' transcript confirmation, thematic analyses identified three overarching themes: the motivational aspect of activity monitors for health and well-being, the benefits of activity monitors in primary care, and barriers of activity monitors for promoting healthier behaviours and integration into healthcare. Overall the men enjoyed wearing activity monitors, found them motivational, and would not object to using them in a healthcare setting. As such, implementing activity monitors into healthcare might be feasible and acceptable for middle-aged men.

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TITLE : Postural Perturbations: The Habituation Process

Introduction : Falls are the principal cause of injury in seniors. There is interest to design falls prevention training methods. One such method uses reactive balance training. Most research investigates the average responses to perturbations, whereas the first trial response may be completely different from the following trials. The aim of the study was to better understand how people adjust spatiotemporal step characteristics to adapt to a gait perturbation task, and if these anticipatory adjustments are affected by the nature of the perturbation task.

Methodology: Participants were randomly assigned to one of four groups. All groups did nine walking trials on the treadmill. Walking speed was the independent variable and the perturbation was a “sudden stop”. The dependent variables were muscle activation and whole-body kinematics.

Results: The data analysis is ongoing. Preliminary data will be presented at the conference.

Conclusion: This project has implications for understanding the habituation process of gait perturbations.

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TITLE : UNE ÉTUDE DE FAISABILITÉ D’UN ESSAI CONTRÔLÉ RANDOMISÉ ET UN PROTOCOLE DE RECHERCHE DANS L’ÉVALUATION D’UNE INTERVENTION DE PHYSIOTHÉRAPIE PRÉOPÉRATOIRE ET POSTOPÉRATOIRE CHEZ DES PATIENTS BARIATRIQUES DU CENTRE HOSPITALIER UNIVERSITAIRE DR. GEORGE-L.-DUMONT (CHUDGLD).

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INTRODUCTION : Il eut récemment émergence de nouvelles lignes directrices en matière de soins de physiothérapie chez une population de patients bariatriques. On souligne notamment l'importance d'inclure un certain régime de soins de physiothérapie lors d'un suivi préopératoire et postopératoire en contexte bariatrique. Cependant, la recherche à ce sujet est limitée, et donc il y a un intérêt à poursuivre des études évaluant les services de physiothérapie chez une population de patients bariatriques et leur faisabilité, afin d'enrichir la littérature et améliorer la prestation de soins cliniques à ce niveau. L'étude présente évaluera ainsi l'ajout d'une intervention de physiothérapie renouvelée et ses effets sur le bien-être des patients recevant une chirurgie bariatrique.

MÉTHODOLOGIE : L'étude de faisabilité présente s'agit d'un essai contrôlé randomisé et sera menée au département de bariatrie du Centre Hospitalier Universitaire Dr. George-L.-Dumont (CHUDGLD) du Réseau de Santé Vitalité. Les participants seront répartis en deux groupes (« SOINS_HABITUELS+PHYSIO » et « SOINS_HABITUELS ») et seront tous soumis à trois périodes d'évaluations (2 préopératoire + 1 postopératoire) à des fins de comparaison.

RÉSULTATS : Cette étude est actuellement en cours au stade de la cueillette de données. Le résultat principal est le test de marche de 6 minutes.

CONCLUSION : La recherche présente a le potentiel de démontrer davantage l'importance de l'inclusion de soins de physiothérapie en contexte de suivi bariatrique et leur faisabilité en milieu clinique.

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TITLE : A Feasibility Study Of A Randomized Controlled Trial And A Research Protocol In The Evaluation Of A Pre- And Post-Operative Physiotherapy Intervention In Bariatric Patients At The Dr. George-L.-Dumont University Hospital Centre

INTRODUCTION: New guidelines for physiotherapy care in a bariatric patient population have recently emerged. In particular, the importance of including a certain

regime of physiotherapy care during preoperative and postoperative follow-up in the bariatric setting is emphasized. However, research on this topic is limited, and therefore there is an interest in pursuing studies evaluating physiotherapy services in a bariatric patient population and their feasibility. The present study will thus evaluate the addition of a renewed physiotherapy intervention and its effects on the well-being of patients receiving bariatric surgery.

METHODOLOGY: The present feasibility study is a randomized controlled trial and will be conducted in the bariatric department at the Dr. George-L.-Dumont University Hospital Centre of Vitalité Health Network. Participants will be divided into two groups (usual_care+physio and usual_care) and will all undergo three evaluation periods (2 pre-operative + 1 post-operative) for comparison purposes.

RESULTS: The secondary outcome measures will pain indicators and medication usage for pain. This study is currently at the data collection stage.

CONCLUSION: The current research has the potential to evaluate the effect of including physiotherapy care in the context of bariatric follow-up and its feasibility in the clinical setting. Similarly, since the literature is limited on this topic, this research may further explore whether physical activity such as physiotherapy would be a valid alternative method of pain management in a bariatric population.

Noémie St-Onge, Roger LeBlanc¹, School of Kinesiology and Recreation, Faculty of Health Sciences and Community Services, Université de Moncton, Moncton (NB), Canada.

TITLE : Franc Jeu : Une Analyse Médiatique De La Sortie Du Placard D'un Jeune Hockeyeur Gai.

Résumé

Bien qu'aujourd'hui, affirmer son identité sexuelle peut être un sujet tabou dans le monde du hockey sur glace, Yanic Duplessis, un jeune hockeyeur élite de 17 ans a su prouver le contraire. Lors de sa sortie du placard en septembre 2020, Yanic a été en mesure de s'affirmer au sein de sa communauté acadienne. Cet article permettra de poser un œil critique et d'analyser la couverture médiatique des différentes publications à ce sujet afin de mieux comprendre les enjeux dans le monde du hockey pour les athlètes gais.

Pour ce motif, vingt-quatre articles médiatisés parus entre le 07 septembre 2020 et le 29 septembre 2020, portant sur la sortie du placard du jeune hockeyeur ont été recueillis. Une analyse thématique basée sur la compréhension, la pertinence, l'émotion et l'action furent effectuées. Les résultats démontrent de l'engagement positif de la part des

médias. Grâce au soutien et l'ouverture de ses parents, de ses amis, de ses coéquipiers, de sa communauté acadienne et ainsi que des médias, Yanic a su franchir des étapes que bien d'autres hockeyeurs n'ont pas réussi à franchir durant leur carrière sportive. L'acte de Yanic représente mieux la société moderne d'aujourd'hui et démontre l'évolution positives des attitudes envers les communautés LGBTQ2+ dans le monde du sport en général et au hockey en particulier.

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TITLE : Analyse Biomécanique : L'ergonomie Des Bureaux Actifs

Contexte : Au Canada, les travailleurs de bureau passent en moyenne 77 à 80% de leurs temps au travail en position assise. Pourtant, être assis sur une longue période augmente le risque de problème musculo-squelettique, comme les lombalgies.

Objectif : Afin de diminuer le temps de sédentarité au travail, tout en continuant à exécuter sa profession, plusieurs mesures d'adaptation sont proposées, toutefois peu ont été validés scientifiquement. L'objectif de notre étude était de faire une analyse (biomécanique) sur quatre différentes stations de travail.

Méthodes : Pour cette étude, 12 femmes en santé et 12 hommes en santé ont été recrutés. L'étude consistait à évaluer la posture, à l'aide d'un système de capture de mouvement, de 4 différents postes de travail : 1- une chaise active (prototype) qui a comme fonction de pédaler les jambes et de glisser l'assise vers l'avant, 2- une deuxième chaise active (chaise active multiaxiale) qui permet au tronc de faire des mouvements sur une surface instable de 360° (similaire à un ballon d'exercice), 3- une chaise contrôle et 4- une station debout.

Résultats et Conclusion : À suivre

Gaudet Julie & Handrigan, Grant

École de kinésiologie et de loisirs, Faculté des sciences de la santé et des services communautaires, Université de Moncton, Moncton, Canada

TITLE : Évaluation De La Validité Et De La Fiabilité D'un Amplificateur À Base De Microcontrôleur À Faible Coût Pour Mesurer La Force Musculaire Des Membres Inférieurs Et Supérieurs

Introduction : Plusieurs méthodes permettent de mesurer la force musculaire, allant des tests manuels aux instruments sophistiqués. Récemment, une prolifération d'outils peu coûteux pouvant mesurer la force musculaire a été observée. Cette étude vise à évaluer la validité et la fiabilité inter- et intra-session d'un amplificateur de cellule de charge à base de microcontrôleur à faible coût pour mesurer la force musculaire isométrique maximale des membres inférieurs et supérieurs

Méthodes : L'amplificateur à base de microcontrôleur à faible coût fut comparé à un conditionneur de signal de grade commerciale et à un dynamomètre portatif.

Résultats : L'appareil à base de microcontrôleur présente une corrélation quasi-parfaite avec les autres instruments, ainsi qu'une bonne à excellente association d'ICC pour la fiabilité inter- et intra-session.

Conclusion : L'amplificateur à base de microcontrôleur économiques est comparable au conditionneur de signal commercial et au dynamomètre portatif pour la mesure de la force musculaire isométrique maximale.

Julien Léger, Grant Handrigan

École de kinésiologie et de loisirs, Faculté des sciences de la santé et des services communautaires, Université de Moncton, Moncton, Canada

TITLE : L'élaboration D'une Batterie De Tests Physiques Visant L'évaluation Des Capacités Physiques Des Joueurs De Soccer En Lien Avec La Performance Sur Le Terrain

Introduction : Dans une formation de soccer, les entraîneurs ont différentes raisons pour faire les tests physiques. Souvent, les entraîneur de soccer sont des spécialistes du sport de soccer, mais ils ne sont pas des experts en évaluation de la condition physique. Peu importe leurs raisons de procéder à un tel évaluation, un défi commun est de sélectionner les tests qui vont évaluer les systèmes voulu selon le temps, l'expertise et les ressources disponible.

Ce travail vise à fournir un document accessible aux entraîneurs de soccer qui va servir de guide général de comment procéder à une évaluation de la condition physique par rapport aux tests classiques de laboratoire et de terrain qui ont été étudiés dans la littérature. Dans ce guide, il y a un modèle général qui sera fourni et expliqué selon différentes contraintes possible. Ces contraintes inclus le temps, l'expertise des évaluateurs, les ressources disponible parmi d'autres facteurs qui vont influencer la décision de la sélection des tests de la condition physique.

Ce qui sera à considérer pour ce projet est que ce document va tout simplement servir d'un modèle qui les entraîneurs peuvent suivre afin de pouvoir offrir le meilleur testing possible. En d'autres mots, selon l'expérience des entraîneurs, ce modèle va donner la chance de personnaliser leur batterie d'évaluation de la condition physique à leurs besoins.

Méthodologie : Une recherche exhaustive a été effectuée dans la littérature pour trouver des articles décrivant des tests physiques liés au sport du soccer.

Résultat et conclusion : Ce projet est en cours. Les résultats et la conclusion seront bientôt abordés.

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TITLE: The Practice of Physical Activity In New-Brunswick's School

Introduction: Only 32% of New Brunswick (NB) students, aged 5 to 17, accumulate at least 60 minutes of moderate to high intensity physical activity (PA) per day. The school environment is suitable to promote PA but is rarely a priority.

Methodology: Thirty-five (N=35) francophone physical education teachers agreed to voluntarily complete an online survey on ideas to promote PA in NB schools in the short, medium and long term.

Results and discussion: In the short term, promotion at different levels seems to be an interesting and inexpensive avenue. In the medium term, the establishment of committees could prove to be an effective initiative, as assistance is needed. In the long term, policies promoting PA in daily school life should be put in place.

Conclusion: In the short, medium, and long term, addressing PA in the NB's school system is urgent to ensure that NB students meet national standards.

Ouellette Dominique, Handrigan Grant

École de kinésiologie et de loisirs, Faculté des sciences de la santé et des services communautaires, Université de Moncton, Moncton, Canada

TITLE : Effets De La Participation À Un Programme D'activité Physique Pour Les Personnes Ayant Reçu Un Diagnostic De Cancer Du Sein

Introduction : L'activité physique est reconnue comme faisant partie d'un plan de traitement efficace du cancer du sein. Cependant, la dose optimale d'exercice nécessite une enquête plus approfondie.

Méthodologie : Pour chaque participante une évaluation pré-étude a été réalisée avec des tests fonctionnels (ex. 30STS, 2MST et équilibre) et des questionnaires avant de commencer le programme d'exercices hebdomadaire de 12 semaines. Après le programme, chaque participante doit faire une évaluation post-étude avec les mêmes test fonctionnels et questionnaires que ceux qu'ils avaient remplis dans la pré-étude.

Résultats : Au total, 3 femmes ont participé au groupe d'automne 2020 (1 participante retirée). Dans l'évaluation pré-étude, la moyenne pour l'essai 30STS1 est de 12 ± 2.45 et l'essai2 est de 12.75 ± 2.75 . Dans l'évaluation post-étude, la moyenne pour l'essai 30STS1 est de 13.33 ± 3.21 et l'essai2 est de 14.33 ± 3.21 .

Conclusion : Avec ce groupe, pour le 30STS on peut remarquer qu'il y a une augmentation du nombre de répétitions.

^{1,2}COOLING Kendra, ¹BOUCHARD Danielle, ¹GALLIBOIS Molly, ¹SÉNÉCHAL Martin, ¹READ Emily, ¹HEBERT Jeff, ³JARRETT Pam, ¹MCGIBBON Chris, ²HANDRIGAN Grant

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TITLE: Exercise Adherence of Older Adults Living In Long Term Care Facilities Participating In A Randomized Controlled Trial

INTRODUCTION: Among older adults, physical function in daily living is necessary for independence. Exercise is proven to maintain and improve physical function, however, may be challenging among cognitive and physical impairments. The objective of this study was to explore gait speed outcomes of participants in a multisite RCT.

METHODS: Intervention groups were encouraged to stand for 20 minutes daily, five days/ week for 22 weeks. Standing sessions consisted of small groups encouraged to stand with two research assistants. Participants had five attempts per session, to complete the standing time. Data was recorded for each session.

RESULTS: There was no statistical significance between groups, $P=0.516$. When considering clinical importance, 15 % (8/52) of the intervention group were able to improve their gait speed score by the MCID of 0.1 m/s.

IMPLICATIONS: Evaluating the efficacy of exercise interventions is necessary when exploring interventions to improve physical function outcomes in older adults.

ACKNOWLEDGEMENTS: We would like to thank all of the participants and their caregivers for accepting to participate in this research study, and the nursing homes for allowing us access to their facilities in order to perform this research study. We would also like to acknowledge the New Brunswick Health Research Foundation and the New Brunswick Provincial Government (SEED Program) for providing financial support for this project.

This research is also funded by the Canadian Frailty Network (Technology Evaluation in the Elderly Network), which is supported by the Government of Canada through the Networks of Centres of Excellence (NCE) program.

Laura Burge, Mike MacLellan, & Dany J. MacDonald, University of Prince Edward Island

TITLE: The effect of the COVID-19 pandemic on the well-being of student-athletes

Extensive research has been conducted investigating the university experiences of student-athletes. However, given the unique occurrence of a global pandemic, its impact on their experiences has yet to be explored. As such, the purpose of this study was to determine how the COVID-19 pandemic has impacted the well-being of student-athletes. To do so, 18 student-athletes (9 male, 9 female) participated in the research, with representation from 2nd-, 3rd-, and 4th-year student-athletes from soccer, basketball, and hockey. Semi-structured interviews were conducted and transcribed verbatim. A thematic analysis was then used to identify key themes from the data. Themes emerged across four dimensions: personal impact, psychological/academic impact, physical impact, and social impact. Discussion of the results examined how these factors influenced the physical and mental well-being of the student-athletes and provided recommendations for student-athletes, coaches, and universities to improve the well-being of student-athletes moving forward.

Phillip Stewart, Mike MacLellan, & Rebecca Reed-Jones, University of Prince Edward Island

TITLE: Assessment of the effectiveness of a laundry cart modification on lifting biomechanics

Laundry carts are used within health care settings to collect soiled fabrics. Repetitive lifting of full laundry bags from the carts is physically demanding and increases risk of injury and/or work-related musculoskeletal disorders in the upper arms and lower back. To address the demands of lifting laundry bags within health care settings, a laundry cart attachment was designed by the Faculty of Sustainable Design Engineering at UPEI with the intention of reducing the capacity of the laundry carts. The purpose of this study was to test the effectiveness of this attachment on reducing muscular demand when lifting laundry bags from the laundry cart. Ten participants were equipped with surface EMG (Trigno EMG, Delsys, MA, USA) on the biceps brachii, deltoid, trapezius and erector spinae muscles bilaterally. Kinematics of the wrist, elbow, shoulder and hip were recorded with a single marker over each joint on the right side

only using the Optotrak 3D Investigator system (NDI Inc, ON, Canada). Participants lifted bags of laundry during two cart conditions (with modification and without) and with two bag weights 7.6 kg and 9.8 kg (representing the average and max weights) recorded in a health care setting for a total of 4 conditions. Conditions were counterbalanced between participants and five trials were recorded for each lift condition. Analysis of lift demands will focus on muscular activity differences between the conditions. It is hypothesized that if the modification reduces lifting demands a reduction in muscular activity should be observed with its use.

Alana Worth, Rebecca Reed-Jones, & Mike MacLellan, University of Prince Edward Island

TITLE: Temporal Progression of Static vs. Dynamic Stretching Protocols on Vertical Jump Performance in Female Soccer Players

Stretching is a common component of a warmup routine prior to physical activity. However, research has demonstrated inconsistent findings in the specific type (static vs dynamic) and temporal effects of a stretching protocol. The purpose of this study was to determine the temporal progressions of static vs dynamic stretching protocols on vertical jump performance in competitive female soccer players. Each participant performed three maximal jumps immediately, and at 2, 4-, 6-, 8- and 10-minutes following completion of their designated static or dynamic stretching protocol. Ground reaction forces and vertical pelvis motion were recorded. From these data, peak force, jump height, peak pelvis centre of mass velocity, peak instantaneous rate of force development, peak power output and vertical jump impulse were calculated and compared to pre-stretch performance. Analysis is ongoing; however, it is expected that a dynamic stretching protocol will increase vertical jump performance as compared to a static stretching protocol, due to enhanced neuromuscular stimulation.

Elizabeth McQuaid, Rebecca Reed-Jones, & Mike MacLellan, University of Prince Edward Island

TITLE: The Effects of Eccentric Contractions on Muscle Fatigue and Recovery Between Males and Females

Evidence suggests that force output and muscle activity levels do not change after repeated eccentric exercise. There is also a poor understanding of whether rates of recovery following eccentric exercise differ between females and males. The purpose

of this study was to examine eccentric quadricep muscle fatigue and rates of recovery in males and females. Six male and female collegiate athletes performed eccentric fatiguing exercise following baseline maximal isometric quadricep extensions. Rates of recovery were then measured using maximal isometric quadricep extensions immediately after and at 2, 4, 6, 10, 15, 20, 30 minutes following the fatigue protocol. During each isometric contraction, maximal force output, peak rate of force development, and characteristics of muscle activity (root mean square amplitude, mean and median power frequency) were determined. Expected findings from this study may indicate a lower resistance to fatigue and a lowered rate of recovery in males when compared to females.

Donovan A. Wyand, Blanca Esparzade-Nino, Laurie A. McDuffee, & William J. Montelpare, University of Prince Edward Island

TITLE: Does Equine-Facilitated Psychotherapy Improve the Wellbeing of Veterans Diagnosed with PTSD?

Post-traumatic stress disorder (PTSD) is a common ailment within the retired Canadian veteran community, and alternative interventions are urgently needed to support veterans throughout their battle with PTSD. In hopes of satisfying this need, the purpose of the present study was to investigate the effects that equine facilitated psychotherapy (EFP) may have on improving the wellbeing of veterans diagnosed with PTSD through non-invasive heart rate variability (HRV), and salivary samples of cortisol and oxytocin. A prospective cohort research design was used to monitor HRV and cortisol/oxytocin changes across an 8-week EFP program. Four healthy veterans diagnosed with PTSD with an average age of 60.5 years completed the EFP program. Data collection sessions occurred across three conditions; 5 minutes of baseline (sitting on a chair within the Serene View Arena), 5 minutes of grooming, and 5 minutes immediately after walking with their horse. HRV data were collected using Polar® HR monitors, and salivary samples were collected pre and post intervention using Salimetrics® collection tubes. Data were analyzed using general linear model analysis of variance for all means.

William E. Morrison & Adam P. Johnston, University of Prince Edward Island

TITLE: The D2-MDX Mouse Model: A Senescent Cell Perspective

Duchenne Muscular Dystrophy (DMD) is an X-linked neuromuscular disorder that is characterized by muscle loss, weakness, chronic inflammation, and extracellular matrix remodelling from the loss of the structural protein dystrophin. Continuous cycles of

attempted repair are blunted due to poorly defined mechanisms. Recent work suggests that senescent cells (cells normally capable of division but are prematurely arrested) may contribute to the DMD pathology but evidence is lacking. The Purpose of this study was to investigate which cell types become senescent in a DMD mice model. The D2-MDX mice model (dystrophin mutation) was used for experimentation. Immunohistochemistry staining was paired with SA- β -Gal (a biomarker of senescence) staining for the identification of senescent cells. Senescent cells were largely present in areas of grouped degeneration and inflammation and expressed markers consistent with macrophages and endothelial cells. These findings reveal potential areas of interest to target cellular senescence in dystrophic skeletal muscle.

Hannah Hardy, Sarah L. Finch, Kristen MacDonald, Matthew Gallant, & William J. Montelpare, University of Prince Edward Island

TITLE: Exploring self-efficacy of exercise in individuals with intellectual and developmental disabilities through an internet-based delivery platform.

The current gap in service provisions between physical activity offerings and evidence-based health and wellness programs for Individuals with Intellectual and Developmental Disabilities (IDD), makes it challenging for these individuals to improve their health and independence in a community-based setting. The purpose of this pilot project was to assess the feasibility of implementing a virtual support platform to encourage independence in healthy behaviors in individuals with IDD living on Prince Edward Island (PEI). Main objectives of the project included the evaluation of participation in individualized exercise programming using an internet-based delivery platform to determine if there was a relationship between self-efficacy scores and the intervention. As well as to identify perceived facilitators and barriers to maintaining health behaviors in persons with IDD in PEI. The implemented program followed six participants over a four-week period with a three-week follow-up. The preliminary results from this study will be presented and discussed.

Brittney MacCormac, Dany J. MacDonald, & Travis J. Saunders, University of Prince Edward Island

TITLE: The Effects of a 12-Week Community Based Exercise Program on the Mental Well-Being of Breast Cancer Patients

Effects of a twelve-week community-based exercise program on breast cancer patients of various

ages between 30-83 were examined. The main objective of this study is to compare the mental

well-being of the participants at the start and finish of the 12-week exercise program. Outcomes

examined include the participants' emotional and functional well-being, their stress and anxiety levels, along with their sleep quality and levels of fatigue. 124 female participants located from

the four Atlantic provinces were recruited for this study. All participants either previously had, or

were currently undergoing breast cancer treatment. By using paired sample T-tests, values were

compared for pre and post testing for the combined participant group, along with each individual province. Correlation scores were also computed for the change in physical capabilities with the

change in various outcomes examined to allow for comparison.

Madelyn Delodder, Travis J. Saunders, & Dany J. MacDonald, University of Prince Edward Island

TITLE: The Effects of COVID-19 on the Wellness of University Students

The COVID-19 pandemic has altered the lives of students attending the University during the 2020-2021 academic year. The purpose of this study was to discover how certain factors altered by the pandemic affected the overall wellness of university students. Fifteen female full-time university students, who were not in their first or last year of their undergraduate program, participated in the study. Four faculties were represented including Science, Art, Business, and Nursing. The qualitative study utilized a 12-question interview guide that focused on a variety of variables that affect wellness. The interviews were transcribed and analyzed through the use of thematic analysis. The results indicated four main themes and ten subthemes. Discussions of the results will focus on how these individual factors affect overall wellness, while providing recommendations for students, professors, and UPEI on how to best aid full-time female students get through challenging events.

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¹Cardiometabolic Exercise and Lifestyle Laboratory, ²Faculty of Kinesiology, University of New Brunswick, ³School of Physiotherapy, Dalhousie University

TITLE: Association of Physical Activity & Sedentary Behaviour Patterns on Frailty Status in Older Adults Living with Diabetes Mellitus: A Cross-Sectional Analysis

Background: Physical activity (PA) is as a cornerstone for the prevention and the treatment of diabetes mellitus (DM) and frailty. However, no universal consensus exists on which specific patterns of resistance training (RT), PA, and sedentary behaviour are associated with frailty status in individuals living with DM.

Objective: To investigate the association between different patterns of RT, PA and sedentary behaviour on frailty status in men and women living with DM.

Methods: A cross-sectional analysis of 711 participants living with DM was performed. Frailty status was measured by a 43-item modified frailty index. RT was self-reported using a questionnaire, while PA and sedentary behaviour patterns were measured by accelerometer.

Results: RT was not significantly associated with frailty status. Light and moderate-to-vigorous PA were negatively associated with frailty status ($p < 0.05$). Sedentary behaviour was significantly associated with frailty status with increasing effect size as bout lengths increased.

Conclusions: Our results suggest that RT is not associated with a better frailty status in individuals living with DM. However, PA is associated with a lower frailty status in individuals living with DM regardless of the patterns of PA. Our results support inclusion of PA to enhance management and treatment of frailty especially in individuals living with DM.

Keywords: Frailty, Diabetes, Resistance Training, Physical Activity, Sedentary Behaviour.

Rose, Jordan, Faculty of Kinesiology, University of New Brunswick

TITLE: Examining dietary self-talk for unhealthy snacking behaviour: A qualitative interview study using think-aloud methods

Background: This study examined dietary-self-talk before consuming unhealthy snacks.

Methods: Qualitative semi-structured interviews using think-aloud methods were conducted remotely with adults free from eating disorder. Interviews included open-ended questions, a list of 37 dietary self-talk items based on previous research, and were analyzed thematically.

Results: Participant (n=19, age: 19-54 years, 9 men, 9 women) interviews gave rise to five key themes: reward, social, convenience, automaticity, hunger. The most frequent self-talk items were: *'It is a special occasion'*; *'I did physical activity/exercise today'*; and *'I am hungry'*. Most self-talk use displayed features of automaticity. The self-talk item list was extended to 40, with 7 refinements.

Conclusions: This study uncovered 40 reasons people use to allow themselves to consume unhealthy snacks. Most individuals use dietary self-talk, with variation in content, frequency and degree of automaticity. Recognising and changing dietary self-talk is a promising intervention target for changing snacking behaviour.

Key words: Dietary Self-Talk, Unhealthy Snack, Eating Behaviour, Think-Aloud Methods

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TITLE: Protective Effect of Adherence to the Canadian 24-Hour Movement Guidelines on Premature Mortality in Individuals Living With Different Levels of Frailty

Background: Canada was the first country in the world to release a 24-Hour Movement Guidelines. However, the association between adherence to the guidelines and premature mortality in individuals living with different levels of frailty has not been investigated. **Objectives:** The objective of this study was to investigate the association between adherence to the new Canadian 24-Hour Movement Guidelines and premature all-cause mortality in a sample of adults with different frailty statuses. **Methods:** A sample of individuals from the 2005-2006 NHANES database cycles were used. The primary outcome was all-cause mortality and the primary exposure variables were adherence to the 24-Hour Movement Guideline Criteria. **Results:** Adherence to the 24-Hour Movement Guidelines was associated with a reduced risk of premature mortality in mildly, and moderately-severely frail individuals ($p < 0.05$), but not in non-frail or pre-frail individuals ($p > 0.05$). **Conclusion:** Based on our data, the 24-Hour Movement Guidelines are associated with better survival in mildly and moderately to severely frail individuals. Therefore, emphasis of the 24-Hour Movement Guidelines to this population should be used to reduce premature mortality.

Crossman, Brandon, Stephan U. Dombrowski, Faculty of Kinesiology, University of New Brunswick

TITLE: How effective are habit-theory based interventions in changing health behaviours: Systematic review with meta-analysis.

Introduction: Developing healthy habits might be the key to long-term behaviour change. This systematic review examined the effectiveness of: habit-theory based interventions on changing health behaviours-

Methods: Four electronic databases were searched. Inclusion criteria were: RCT design, ≥ 12 weeks intervention, and outcomes at ≥ 24 weeks and testing a habit-theory based interventions that target health behaviours in adults, compared to a control groups.

Results: Out of 1828 references, 12 studies with a total of 6433 participants. Intervention periods range from 3 – 24 months, and follow-ups range from 6 – 24 months were focused on adopting healthy habits or abandoning unhealthy habits. Overall, X/12 interventions reported a significant difference between intervention and control group.

Conclusions: Habits are a novel and emerging target for behaviour change habit-theory may be a promising basis for behaviour change interventions aimed at initiating and abandoning health.

Isaac Cull, Stephan U. Dombrowski, Faculty of Kinesiology, University of New Brunswick

TITLE: The COVID Binge: A Cross Sectional Survey Examining Binge-Watching Behaviour during the COVID-19 pandemic.

Background: Binge-watching television series' is a sedentary behaviour that may have health implications. This study examines possible changes in binge-watching behaviour before, during and after the COVID-19 pandemic.

Methods: An international cross-sectional survey was conducted online measuring self-reported binge- watching, sleep, physical activity, and overall sedentary behaviour across three time periods: one month before the COVID-19 pandemic; during the first month of the COVID-19 pandemic; and currently. Of the initial 707 responders, 385 participants provided complete responses that were included in the analysis.

Results: Participants were 28.0 (SD=11.5) years old; 76% were female. Before the pandemic, participants binge watched an average of 1.87 (SD=1.86) days per week for

259.05 (SD=344.33) minutes which significantly increased to 3.58 (SD=2.19) days per week for 781.97 (SD=746.20) minutes during the first month of the pandemic ($p < 0.05$). Currently, participants reported binge-watching an average of 3.26 (SD=2.17) days per week for 625.75 (SD=654.15).

Conclusion: Binge-watching increased during the COVID-19 pandemic, with time spent binge-watching more than doubling during the height of the pandemic. Since the height of the COVID-19 pandemic, binge-watching has decreased, but currently remains more than double the time spent binge-watching before the start of the pandemic.

MacDonald, Andrew, Faculty of Kinesiology, University of New Brunswick

Title: Influence of Speed and Method of Estimation on Spatial Features Using High-Density Electromyography During Isokinetic Knee Extension

High-density electromyography (HDEMG) can be used to develop muscle activation maps and features of these maps can be used to examine spatial activity of muscle. Centre of gravity (COG) is estimated as a single point; however, estimating COG over an entire contraction may provide more information. The purpose of this study was to examine differences in COG in knee extensions due to speed and to compare two methods of estimating COG. 18 participants (mean age = 22.6 ± 2.45 years old) completed isometric and isokinetic knee extension at four speeds (30, 60, 90, 120/sec) using a dynamometer (Cybex, CSMI Ltd.). HDEMG was collected (Sessantaquattro, OT Bioelectronica, Turin, Italy) with a 64-channel grid placed over the rectus femoris. COG was compared across speeds and between methods. The preliminary results indicate no significant difference across speed when using either method. However, there was a significant difference in COG (x-direction) between methods ($p = 0.026$). Further investigation is being conducted to understand these differences.

Carroll, Michael, Courtni Soucy, Saunders T, Keats M, McGowan E, Grandy S, Danielle R. Bouchard

TITLE: How is Baseline Physical Activity Level Impacting Outcomes After an Organized Exercise Program offered to Breast Cancer Survivors?

Introduction: Participation in organized exercise programs targeting cancer survivors is voluntary, perhaps attracting participants who were active prior to diagnostic.

Methods: A total of 99 women, aged 57.16 ± 9.87 with a diagnostic of breast cancer in the past two years completed a 12-week exercise program with two, 60-minute-long sessions per week. Physical activity levels, anthropometrics, physical functions, lifestyle, psychosocial, sleep, and fatigue were determined using objective tests or validated questionnaires at baseline and upon program completion.

Results: Significant improvements were observed after completion of the program in anthropometrics, balance, endurance, depression, and fatigue level ($p < 0.05$). However, baseline PA level was not associated with any changes observed in the tested outcomes. **Conclusion:** This study suggests that women participating in such exercise program would see benefits regardless of their baseline PA level.

Waugh, Dylan, Faculty of Kinesiology, University of New Brunswick

Title: **The Human Factors and Ergonomics Implications of Working from Home During a Global Pandemic**

Abstract: Working from home (WFH) due to the COVID-19 pandemic has created a unique experience. The purpose of this study was to examine the nature of WFH during COVID-19. Over 100 participants ($N=132$) were recruited through social media to complete a custom-built questionnaire regarding work schedules, autonomy, social support, work conditions, perceived stress, musculoskeletal discomfort, and overall job satisfaction. Data was analyzed by categorizing participants on a scale from very low-very high based on their score for each subsection and McNemar's test was used for comparative data. Most participants reported high autonomy (44%), moderate social support (38%), moderate stress (39%), moderate musculoskeletal discomfort (41%), high satisfaction in WFH (48%) with 71% preferring to continue or return to WFH. It was noted that ergonomic equipment use was significantly reduced during COVID-19 ($p < .05$). The most reported benefit of working from home was the lack of commute and the most reported challenge was communication issues. The COVID-19 pandemic has changed how we work, therefore understanding the implications of WFH will help to improve future work protocols.

Meghan Curran, Faculty of Kinesiology, University of New Brunswick

TITLE: **Look, over there! A streaker! – Qualitative study examining streaking as a behaviour change technique for habit formation in recreational runners**

Background: Running as a form of physical activity is beneficial to overall health and wellbeing. The aim of the study is to examine 'run streaking' (i.e. running on consecutive days, for a minimum period of time or distance, typically at least one mile) as a technique for habit formation and behavior change.

Methods: Qualitative semi-structured interviews with 21 international recreational adult runners (11 female and 10 male). Transcripts were analysed thematically.

Results: Through these interviews, themes of habit, motivation, monitoring, and beliefs about capabilities were observed. Streakers reported a cognitive switch from

deciding whether to run to when to run which required ongoing conscious planning. Streaking is not a habit per se, but was supported by several habits to facilitate daily accomplishment.

Conclusion: Results demonstrate potential for streaking to be used as a behaviour change technique, which demonstrates an interplay between self-regulation and facets of automaticity and habit formation.

Perreault, Brittany Perreault, Faculty of Kinesiology, University of New Brunswick

TITLE: The Efficacy of Interventions to Improve Dynamic Balance in Individuals with Chronic Ankle Instability: Systematic Review

Ankle sprains are common injuries often leading to chronic ankle instability (CAI). A systematic review was conducted, assessing the effectiveness of exercise and kinesiotape (KT) interventions to improve balance for individuals with CAI. The review was conducted by assessing relevant literature in SPORTDiscus for the measures of the star excursion and Y- balance tests. For the anterior direction, KT tape demonstrated a small effect, while exercise demonstrated a moderate effect. In the posteromedial direction the KT group showed a small effect and the exercise group a moderate effect. For the posterolateral direction the KT tape showed a small effect while exercise demonstrated a large effect. Exercise appears to be effective while KT tape is ineffective as a treatment for CAI.

Campbell, Danika, Faculty of Kinesiology, University of New Brunswick

TITLE: Mindfulness and meditation training during the Covid-19 pandemic

Mindfulness and meditation are practices which may support university students as well as others, particularly during challenging times such as the current Covid-19 pandemic. The pandemic has necessarily required significant changes in the experiences of university students, resulting in reports of students feeling overwhelming anxiety and high rates of mental health issues. While most training in mindfulness and meditation such as Mindfulness-based Stress Reduction (MBSR) courses is traditionally in-person, the current global pandemic has led to the development of online training.

The presentation will provide insight into my immersive experience in a virtual mindfulness-based stress reduction (MBSR) programme, in comparison with published literature of the experiences of university and college students with MBSR and other mindfulness and meditation training. The session will provide a review of the research on mindfulness and meditation and the reported experiences of university students during Covid-19. It will share insights from my experience with MBSR training, and the implementation of mindfulness and meditation into my own life as a university student

managing during the Covid-19 pandemic.

McMullin, Bradley, Faculty of Kinesiology, University of New Brunswick

TITLE: Have weight loss interventions improved over time: A Systematic review and meta-analysis examining behavioral interventions for weight loss over the last four decades

Background: This systematic review examines the effectiveness of behavioural weight change interventions targeting diet and physical activity over the last four decades.

Methods: Electronic databases were searched for randomized controlled trials (RCTs) comparing behavioural weight change interventions to a control groups at 12 months, published in the years 1990, 2000, 2010, and 2020.

Results: Out of 4677 potentially relevant references, nine studies met inclusion criteria, one study from 2000, three studies from 2010, and five studies from 2020. All of the studies from 2000 and 2010 reported significant differences in weight change at 12 months between the intervention and control groups. Of the five studies from 2020 four reported significant differences in weight change between the intervention and control groups. Total effect will be analyzed using meta-analysis.

Conclusion: Weight management interventions have shown effectiveness over time to support significant small to medium weight changes.

MacKenzie, Emma, Faculty of Kinesiology, University of New Brunswick

TITLE: Study Title: Validation of Online Dual Task Gait (DTG) Testing to In-Person Testing

The COVID-19 pandemic has created challenges on how cognitive and physical fitness tests can be done in-person. The Dual-Task Gait (DTG) test is an assessment that compares performance of a cognitive task and walking task, both separately and concurrently. It is well established that any detriments in gait while completing a DTG test is associated with progression to dementia, especially among those with mild cognitive impairment. This study aims to validate an online version of the DTG test relative to the 'gold standard' in-person test in a clinic or laboratory setting.

Participants perform the DTG test at home via video conference and in-person in a controlled lab environment. Gait speeds for both conditions are calculated using an activity monitor and stopwatch, and compared using an intraclass correlation test. Data collection and analysis is ongoing. Results of this study will be used to support further research aiming to validate online assessments.

Dhanie, Priyanka, Know, Mallory, Faculty of Kinesiology, University of New Brunswick

TITLE: The Relationship Between Mental Health and High-Performance Sports – Positive or Negative?

Sporting activities are generally associated with numerous health benefits, including both physical and mental health. However, high-performance (elite) sporting activities, which represents the highest level of sporting competition, are also associated with high pressure situations, which can have a negative impact on mental health. This study will investigate the impact of said high-performance sports on their athletes' mental health. The study will survey a sample of elite athletes and non-athletes in order to determine mental health perceptions between the two groups and the factors that affect their mental health. Data analysis will include thematic content analysis of interviews and questionnaires. Through this study, a better understanding of the levels of anxiety and stress, and their impact on the mental health of elite athletes, will be determined.

Dhanie, Priyanka, Faculty of Kinesiology, University of New Brunswick

TITLE: The Effect of COVID-19 on the Mental Health of High-Performance Athletes

Many individuals have not been able to actively participate in their regular individual or group sporting or physical activities due to the coronavirus pandemic. High-performance athletes in some sports have been able to compete with the condition of spending time in isolation after traveling. The purpose of this study is to investigate the effect of these periods of isolation on the mental health of high-performance athletes during the COVID-19 pandemic. The study will conduct surveys across three groups of participants: athletes who are engaged in competitive sports during the pandemic, athletes in suspended sports, and non-athletes. Participants will be asked to complete a variety of open-ended questionnaires and participate in unstructured interviews to determine if and how their mental health was affected during the pandemic, as well as how they managed these challenges while spending prolonged time in isolation.

Nowell, Sarah, Faculty of Kinesiology, University of New Brunswick

TITLE: Patients who Undergo Lumbar Disc Surgery Experience Variable Clinical Outcomes

Patients who undergo lumbar disc surgery experience variable clinical outcomes. This study investigated the associations between preoperative therapies and surgical outcomes following lumbar discectomy. We included patients ≥ 18 years, with lumbar radiculopathy who underwent lumbar discectomy. Clinical outcomes were categorized by perioperative trajectories of leg pain, back pain, and disability. Associations were

investigated with robust Poisson models controlling for baseline pain or disability. Data from 524 patients (48.9% female) with mean(SD) age = 47.5(14.3) years were included. Receiving two or more preoperative spinal injections without x-ray guidance [RR=1.6(1.0-2.7)], as well as intermittent [RR=1.7(1.1-2.6)] or daily [RR=1.6(1.0- 2.4)] narcotic use increased the risk of poor outcome for leg pain. Preoperative chiropractic treatment [RR=.67(.49-.92)] decreased the risk of poor outcome for back pain. Preoperative spinal injections with x-ray, exercise, physiotherapy, and anti-seizure medications were not associated with surgical outcomes. Select preoperative therapies may impact the outcomes of patients who undergo lumbar discectomy.

Jamie McCain (University of New Brunswick), Dr. Linda Caissie (St. Thomas University), and Dr. Danielle Bouchard (University of New Brunswick)

TITLE: The Experience of Long-Term Care Residents Participating In A Standing Intervention: Mixed-Study Design

Introduction: Older adults living in long-term care facilities spend about 90% of the time sedentary. Sedentary behaviour has been linked to health issues. However, few studies have examined if standing could be an activity that leads to interest, enjoyment, and health and functional outcomes.

Purpose: To cross-validate the results measured and perceived by participants after participating in a standing intervention using a mixed study design.

Methods: Out of the 44 residents aiming to stand 100 minutes per week for 5 months in long-term care, 10 participants were individually interviewed. The changes in physical (e.g., walking speed) and psychological (e.g., depression) outcomes along with attendance will be cross-validated with the perceived benefit

Results: Participants were 60% female with a mean age of 85 ± 9.39 years. Participants spent a mean time of 3.9 ± 3.75 years in the long-term care facility. Only 3 participants showed signs of dementia.

Molly Gallibois, Faculty of Kinesiology, University of New Brunswick

TITLE: Sedentary Behaviour and Fall-related Injuries in Middle and Older Aged Adults: Results from the Canadian Longitudinal Study on Aging

Background: Falls are the second leading cause of injury related deaths. They contribute to adverse health outcomes and high health care costs. Many lifestyle behaviours can increase the risk of fall-related injuries (FRIs). However, little research has explored the relationship between sedentary behaviour and FRIs.

Purpose: The purpose of this study was to investigate the associations of sedentary time and changes in sedentary time with FRIs.

Results: Data was collected from 43,558 participants of Canadian Longitudinal Study on Aging at baseline and 18-month follow-up. Sedentary behaviour and FRIs were self-reported via questionnaires. A total of 14,662 (33.7%) participants increased their sedentary time between baseline and follow-up. Cross sectionally, sedentary time was positively associated with FRIs ($p < 0.01$). Changes in sedentary time between timepoints was not associated with FRIs ($p = 0.721$).

Conclusion: Participants who reported greater sedentary behaviour were more likely to experience a FRI. Changes in sedentary behaviour did not impact the risk of FRIs.

Travis J. Hrubeniuk^{1,2}, Danielle R. Bouchard^{2,3}, Martin Sénéchal^{2,3}

TITLE: Inconsistency among individual response related to physical function following 12-weeks of exercise training in adults aged 50 years and above

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Background: Analyzing the ability of exercise to improve physical function typically uses a group-based approach. However, the consistency of individual responses across several tests related to physical function is unknown.

Aim: To explore the consistency of individual response categorizations across eight tests related to physical function following 12 weeks of exercise.

Methods: Participants aged 50 years and above were randomly assigned to a control ($n=30$) or intervention group ($n=31$) for 12 weeks. Participants engaged in two 60-minute exercise sessions weekly. Every participant was categorized as an exercise responder or non-responder based on the individuals' change for each functional test.

Results: No participant was categorized as an exercise responder across all eight tests and no single test resulted in all participants being categorized as responders.

Conclusion: Response categorizations following an exercise program are inconsistent. Interpreting an exercise program as able to improve physical function depends on which functional tests are considered.

Vanessa Pitre, Martin Sénéchal, Danielle Bouchard

TITLE: Zoom Online

Introduction: Many communities develop exercise programs to help older adults to reduce risk of falls. However, rural communities are often having restricted access. By offering an exercise program online it improves accessibility.

Methods: The Zoomers on the Go program is offered for 12 weeks, two times per week, to adults age 50+ by a peer leader. The measured outcomes are: endurance (2-minute step test), lower body strength (30-second chair stand), balance (single leg stance) as well as questionnaires related to lifestyle (Fantastic lifestyle checklist questionnaire), technology use (FACETS), psychological health (DASS 21) and demographics.

Aim: The primary goal of this project is to compare the benefits of the program delivered online versus a control group and when delivered in person.

Implications: This project is important to test the benefits of this delivery method before proposing it as a sustainable model.

Chawla, Kanishka, Faculty of Kinesiology, University of New Brunswick

TITLE: Association between mindfulness and anxiety, intrinsic motivation, and sports performance

Objective: Athletes spend much of their time preparing and practicing for competition. However, when it comes to the actual performance many athletes often underperform or perform inconsistently as a result of anxiety and varying levels of motivation. The purpose of this study is to introduce the concept of mindfulness and examine its relationship to anxiety, intrinsic motivation, and sports performance.

Methods: The participants will be elite collegiate female long-distance runners, who will complete the Mindful Attention Awareness Scale (MAAS), the Sport Competition Anxiety Test (SCAT), and the Sport Motivation Scale (SMS-28). The study will be conducted in a pre-post-test design with an intervention group and a control group. The intervention group will complete a 12-session mindfulness programme. Mindfulness, motivation, and anxiety will be assessed prior to and after the mindfulness intervention. The runners' performance (average time per four races) will also be recorded.