

**Canadian Society
for Biomechanics**



**Société Canadienne
de Biomécanique**

The 21st Biennial Meeting of the Canadian Society for Biomechanics/

**La 21^{ème} biennale du congrès de la Société Canadienne de
Biomécanique**

May 25-27th, 2021- Montreal

Virtual Platform: csb-scb2020.exordo.com

FULL PROGRAM

TUESDAY, MAY 25th, 2021

Location & Time /Emplacement & l'heure	Description	Presenter/ Présentateur
Live on stage 1: 10:00-10:30	Welcome Address/Mot de Bienvenue	
Pre-recorded released at: 10h25 Live on stage 1 (Q/A): 11h10- 11h30	CSB Keynote/ SCB Keynote My journey from patient-specific biomechanical modeling to improve scoliosis treatment to the TransMedTech Institute Chair/ Président: Mark Driscoll	Carl-Éric Aubin
Pre-recorded released at: 11h30 Live Spatial Chat: 11h30- 13h30	Sponsor Hall Learn about the products from our sponsors. There will be two ways to interact with our sponsors: 1. Visit our sponsors videos on our virtual platform (https://event.csb-scb2020.exordo.com/session/6/sponsor-hall-recorded). This can be done anytime during the meeting. Ask them questions in the questions box.	

Oral Presentations: Tuesday, May 25, 2021

<p>2. For video interactions, visit them on our SpatialChat website (https://csb-scb.spatial.chat/). Sponsors will be in their SpatialChat rooms on Tuesday (11:30-13:30) and Wednesday (12:30-14:30).</p> <p style="text-align: center;">Salle des commanditaires</p> <p style="text-align: center;">Découvrez les produits de nos commanditaires. Il y aura deux façons d'interagir avec ces derniers :</p> <p>1. Visitez les vidéos de nos commanditaires sur notre plateforme virtuelle (https://event.csb-scb2020.exordo.com/session/6/sponsor-hall-recorded). Vous pouvez le faire à tout moment pendant la rencontre.</p> <p>2. Pour les interactions vidéo, visitez-les sur notre site SpatialChat (https://csb-scb.spatial.chat/). Les commanditaires seront dans leur salle SpatialChat le mardi (11h30-13h30) et le mercredi (12h30-14h30).</p>			
<p>Scientific Session: Methodology/Méthodologie</p> <p>Chairs/Président: Michael Hunt</p>			
Location & Time /Emplacement & l'heure	Abstract ID	Title/Titre	Presenting Author/Conférencier
Pre-recorded released at: 13h30	317	A new semi-automatic method to assess flat and normal-arched feet in 3D	Anne-Laure Ménard
	167	Validation of IMU-based lower extremity kinematic estimates in high knee flexion motions under loaded and unloaded conditions	Annemarie Laudanski
Live on stage 1 (Q/A): 14h40-15h	322	Concurrent assessment of gait kinematics using marker-based and marker less motion capture	Robert Kanko
	269	Wrist tendon tracking using a neural network	Amanda Farias Zuniga
	358	Characterizing the performance of human leg force control	Pawel Kudzia
<p>Scientific Session: Spine /Colonne vertébrale</p> <p>Sponsored by/commandité par : McGill Faculty of Medicine and Health Sciences</p> <p>Chairs/Président: Janessa Drake</p>			
Pre-recorded released at: 13h30	130	Relationships between injury, degeneration and facet joint transverse plane angle in a rodent model	Olena Klahsen
	88	Influence of muscle fatigue on the relationship between dynamic lumbar spine stability and movement coordination: a participant specific analysis	Dennis Larson
Live on stage 2 (Q/A):14h40-15h	202	Initial trunk and foot position can be adapted to allow lifters to reach lower-lying objects without rounding their back	Danielle Carnegie
	397	Modeling of human intervertebral disc annulus fibrosus with complex fiber networks	Farshid Ghezelbash

Oral Presentations: Tuesday, May 25, 2021

	469	The effect of whole-body vibration exposure on peak angular head kinematics under load	Aaron Derouin
Scientific Session: Balance and Posture/Équilibre et posture Sponsored by/commandité par : Bertec Chairs/Président: Phil Dixon			
Pre-recorded released at: 13h30	53	Postural control during quiet standing and voluntary stepping response tasks in stroke survivors	Gabriel Moisan
	394	The effect of fatigue on individual-limb temporal and spatial center of pressure modulations during quiet standing	Alix Bellemare
Live on stage 3 (Q/A): 14h40-15h	321	Sex-related differences during fall simulations in healthy older adults	Justin Pifko
	258	Developing a prognostic model based on gait mechanical stability and fall history to predict short-term falls in older adults with dementia	Sina Mehdizadeh
	351	The effect of head and eye position on balance reactions	Brye McMorran
Scientific Session: Quebec Research/ Recherche du Québec Chairs/Président: Mickeal Begon			
Pre-recorded released at: 13h30	285	Pression intra-capsulaire de la hanche : mouvements articulaires, compartiments capsulaires, à quoi s'en tenir lors de l'évaluation clinique ?	Marc-Olivier St-Pierre
	359	Analyse des forces des membres supérieurs développées par des patients hémiparétiques lors d'un entraînement sur un exerciceur robotisé bimanuel	Gwendal Cariou
Live on stage 4 (Q/A): 14h40-15h	636	Conception, fabrication et validation d'un exerciceur pour la réadaptation du tendon d'Achille.	Philippe Boutin
	300	Développement d'un modèle de prédiction des forces de réaction au sol lors de la marche avec des capteurs inertiels	Sarra Belaid
Scientific Session: South Africa Society of Biomechanics Symposium Chairs/Président: Janie Astephen Wilson			
Pre-recorded released at: 13h30 Live on stage 5 (Q/A): 14h40-15h	Running Before You Can Walk: How Studying the Cheetah Benefits Human Biomechanics		Amir Patel
Location & Time /Emplacement & l'heure	Description		Presenter/ Présentateur

Oral Presentations: Tuesday, May 25, 2021

Live on stage 1: 15h-15h30	David Winter Young Investigator Award/Bourse David Winter pour jeune chercheur (live) Sponsored by/commandité par : Theia Markerless Title : Energy Optimization in Human Locomotion Chair: Andrew Laing	Jessica Selinger
Live on stage 1: 15h30-16h	CSB Career Award/Bourse de carrière de la SCB (live) Sponsored by/commandité par : Theia Markerless Title : Pushing back on gravity: Insights through biomechanics on the cause and prevention of falls and injuries in older adults Chair : Andrew Laing	Steve Robinovitch
Live on stage 1: 16h-17h	CSB General Meeting: A general meeting for all members of the Canadian Society for Biomechanics.	Janie Astephen Wilson
SpatialChat: 17h	<p align="center">Virtual Happy Hour (https://csb-scb.spatial.chat)</p> <p align="center">Come socialize, network, and feel as close to being back in-person at CSB as your computer will allow! SpatialChat lounges make it possible for attendees to “walk” around the room and join in conversations by “standing” closer to individuals or groups you are interested in joining.</p> <p align="center">Venez socialiser et faire des rencontres comme si nous étions de retour en personne tout en restant derrière votre ordinateur! Les salons SpatialChat permettent aux participants de " se promener " dans une salle et de participer aux conversations en se rapprochant des personnes ou des groupes que vous souhaitez rejoindre.</p>	

Asynchronous Social Events

CSB-SCB Virtual 5K Run/Walk/Locomote

Visit the CSB 2020-2021 social media pages. Run, walk, or locomote in any way you choose for 5K any time during the conference (Tuesday, May 25th-Thursday, May 27th) then reply to the 5K post on the conference Facebook page (www.facebook.com/csb.scb2020) or Twitter (@csb_scb2020). Include your name, type of race (e.g. urban run, walking the dog, etc.), your location, and finish time. Add a photo and any other commentary you would like to include!

CSB-SCB Course/Marche Virtuelle de 5km

Visitez les pages de médias sociaux de la conférence CSB 2020-2021. Courez, marchez ou déplacez-vous de la manière de votre choix sur un parcours de 5 km à n'importe quel moment de la conférence (du mardi 25 mai au jeudi 27 mai), puis répondez à la publication du parcours de 5 km sur la page Facebook (www.facebook.com/csb.scb2020) de la conférence ou sur Twitter (@csb_scb2020). Indiquez votre nom, le type de course (par exemple, course urbaine, promenade du chien, etc.), votre lieu et votre heure d'arrivée. Ajoutez une photo et tout autre commentaire que vous souhaitez inclure !

SpatialChat Lounges (<https://csb-scb.spatial.chat/>)

All SpatialChat lounges (<https://csb-scb.spatial.chat/>) will be open and available Tuesday, May 25th and Wednesday, May 26th for attendees to meet with others in the CSB community.

Salon SpatialChat

Tous les salons SpatialChat (<https://csb-scb.spatial.chat/>) seront ouverts et disponibles mardi 25 mai et mercredi 26 mai pour que les participants puissent rencontrer d'autres membres de la communauté CSB.

Oral Presentations: Tuesday, May 25, 2021

WEDNESDAY, MAY 26th, 2021

Location & Time /Emplacement & l'heure	Description		Presenter/ Présentateur
Live on stage 1: 9h45-10h	Wednesday Morning Address/ Mot de Bienvenue du Mercredi		
Location & Time /Emplacement & l'heure	Abstract ID	Title/Titre	Presenting Author/ Conférencier
Scientific Session: Modeling/Modélisation Chair/Président: Allison Clouthier			
Pre-recorded released at: 10h Live on stage 1 (Q/A): 11h10-11h30	433	Sex-specific hip fracture risk predictors: differential importance of soft and skeletal body parameters between males and females	Steven Pretty
	123	An insight into the capsule role in the accommodation of the aging human lens	Reza Kakavand
	353	Développement d'une méthode d'étude de la fatigue musculaire via la simulation musculosquelettique par commande optimale	Benjamin Michaud
	496	Predicting the effect of hip protectors on hip fracture risk: a novel multiscale probabilistic modeling approach	Ingmar Fleps
	627	Quantifying euler-bernoulli and timoshenko beam theory accuracy for estimating flexural rigidity of a bone surrogate in four-point bending with finite element analysis	Mahsa Zojaji
Scientific Session: Rehabilitation/Réhabilitation Sponsored by/commandité par : de recherche interdisciplinaire en réadaptation du Montreal métropolitain (CRIR) Chairs/Président: Monica Maly			
Pre-recorded released at: 10h	160	Association between fall characteristics and risk for head impact and injury in older adults in long-term care	Vicki Komisar
	197	Evaluation of different interval of six minutes walking test in individuals with lower limb amputation using inertial measurement units	Hananeh Younesian

Live on stage 2 (Q/A): 11h10-11h30	313	Are psychological factors associated with reduced spinal mobility in people with low back pain? a meta-analysis	Patrick Ippersiel
	497	Form dictates function and the knee joint angle matters: hamstring muscle morphology is associated with knee flexor strength deficits in athletes with acl injury	Nathaniel Morris
	645	Machine learning algorithm for evaluating limb symmetry index cut-off thresholds in acl injured paediatric patients	Nicholas Romanchuk
Scientific Session: Running/ Courir Sponsored by/commandité par : National Biomechanics Day Chairs/Président: David Pearsall			
Pre-recorded released at: 10h	533	Accuracy of speed prediction by smart insoles	Matt Jordan
	195	Running in the wild: energetics explain ecological running speeds	Jessica Selinger
Live on stage 3 (Q/A): 11h10-11h30	229	The effects of shoe upper construction on mechanical ankle joint work during lateral shuffle movements	Ashna Subramaniam
	494	Sport specific anxiety in runners reveals changes in movement mechanics	Aïda Valevicius
Scientific Session: Tissue Biomechanics/ Biomécanique des Tissus Chairs/Président: Rosaire Mongrain			
Pre-recorded released at: 10h	467	The effect of loading rate on the micro-damage process zone formed during fracture of human cortical bone	Daniel Dapaah
	138	The relationship between cortical bone fracture toughness and femoral neck bone strength	Daniel Martel
Live on stage 4 (Q/A): 11h10-11h30	65	Whey protein supplementation as an ergogenic aid for cardiac adaptation to aerobic exercise training in rats	Kevin Boldt
	276	Texture analysis and machine learning can identify subtle loading responses of intervertebral discs	Vahid Abdollah
	472	Exploring the influence of impact severity on vertebral joint mechanics	Kayla Fewster
Scientific Session: Ergonomics/ Egonomie Chairs/Président: Diana De Carvalho			
	477	Median nerve deformation in a chuck grip while simultaneously applying push and pull forces	Connor Lacelle

Pre-recorded released at: 10h	189	Carpal tunnel tissue mechanics and median nerve function predict 6-month follow-up outcomes in carpal tunnel syndrome patients	Amanda Farias Zuniga
	422	Pushing tasks: the impact of handle design on trunk muscles	Jackie Toner
Live on stage 5 (Q/A): 11h10-11h30	244	Force contribution and emg increase with unanticipated release in team lifting	Andrew Wong
	325	Load dimension alters lifter demands before and after sudden release in team lifting	Riley Craig
Location & Time /Emplacement & l'heure	Description		Presenter/ Présentateur
Pre-recorded released at: 11h30	Wheelchair Symposium/Symposium Fauteuil Roulant Chair/Président: Rachid Aissaoui		
	Wheelchair simulators		Félix Chénier
Live on stage 1 (Q/A): 12h25-12h45	Virtual reality and skill in wheelchair locomotion		Archambault Philippe
	Recreational and sport biomechanics		Riemer Vegter
Live on stage 2: 11h30-12h45	Canadian Orthopaedic Research Society Symposium Chairs: Dr. Stacey Acker and Mario Lamontagne		
	Can wearable sensors and machine learning predict functional recovery following total knee arthroplasty?		Matthew Teeter
	Machine learning prediction of shoulder patient at-home physiotherapy with inertial sensors		Philip Boyer
	Validation of a reverse shoulder arthroplasty finite element model that accounts for screw type and preload		Joshua Giles
	Link n suppresses periostin expression in human osteoarthritic cartilage		Sunny Shih
	Redefining hip instability mechanics using biomechanical metric		Geoffrey K.C. Ng
Pre-recorded released at: 11h30	Statistical Shape Modelling for Musculoskeletal Applications Symposium/ Symposium sur la Modélisation Statistique pour les Applications Musculo-Squelettiques Chairs/Président: Samer Adeb and Dr. Lindsey Westover		
	Modelling geometric differences associated with lumbar spine pathology using partial least squares statistical shape modelling		Allison Clouthier

Live on stage 3 (Q/A): 12h25-12h45	Bone shape and knee joint reaction forces predict cartilage deformation in vivo: data from the osteoarthritis initiative	Anthony Gatti
	Using gaussian process morphable models and surface crest lines for statistical shape modeling of human talus	Behzad Vafaeian
	The design of a universal talus implant using ssm	Tao Liu
Live on SpatialChat: 11h30-12h45	<p>Student Symposium #1/Symposium Étudiant #1: Social Media Session for Trainees Chair: Patrick Ippersiel</p> <p>This session will take place on our SpatialChat website: https://csb-scb.spatial.chat/. Enter the “Student Symposiums” room.</p>	Laura Healey Max Paquette
Live Spatial Chat: 12h30-14h30	<p style="text-align: center;">Sponsor Hall</p> <p style="text-align: center;">Learn about the products from our sponsors. There will be two ways to interact with our sponsors:</p> <ol style="list-style-type: none"> 1. Visit our sponsors videos on our virtual platform (https://event.csb-scb2020.exordo.com/session/6/sponsor-hall-recorded). This can be done anytime during the meeting. Ask them questions in the questions box. 2. For video interactions, visit them on our SpatialChat website (https://csb-scb.spatial.chat/). Sponsors will be in their SpatialChat rooms on Tuesday (11:30-13:30) and Wednesday (12:30-14:30). <p style="text-align: center;">Salle des commanditaires</p> <p style="text-align: center;">Découvrez les produits de nos commanditaires. Il y aura deux façons d'interagir avec ces derniers :</p> <ol style="list-style-type: none"> 1. Visitez les vidéos de nos commanditaires sur notre plateforme virtuelle (https://event.csb-scb2020.exordo.com/session/6/sponsor-hall-recorded). Vous pouvez le faire à tout moment pendant la rencontre. 2. Pour les interactions vidéo, visitez-les sur notre site SpatialChat (https://csb-scb.spatial.chat/). Les commanditaires seront dans leur salle SpatialChat le mardi (11h30-13h30) et le mercredi (12h30-14h30). 	
Pre-recorded released at: 9h Tuesday Q/A by chat: 13h30-14h45	<p style="text-align: center;">Explore Poster Session 1-4</p> <ul style="list-style-type: none"> • Modeling and Methods/ Modélisation et Méthodologie • Sports • Tissue Biomechanics/Biomécanique des tissus • Spine/ Colonne vertébrale 	
Location & Time /Emplacement & l'heure	Description	Presenter/ Présentateur
	<p>Hockey Symposium Sponsored by/commandité par : McGill Department of Kinesiology and Physical Education and Bauer Ltd.</p>	

Oral Presentations: Wednesday, May 26, 2021

Pre-recorded released at: 14h45	Chair/Président: David Pearsall	
	How to quantify hockey helmet fit and its relation to impact safety standards	David Pearsall
	How a dynamist thinks about hockey sticks	Alexis Lussier Desbiens
Live on stage 1: 15h40-16h	From lab to ice: translating biomechanics knowledge to practice in hockey	Caitlin Mazurek
Live on stage 2: 14h45-16h	Injury Biomechanics Symposium/Symposium sur la biomécanique des blessures	
	Chair/Président: Christopher Dennison	
	Physical surrogate models of the head and neck	Christopher Dennison
	Injury biomechanics in the defense sector: requirements challenges	Simon Ouellet
	Injury tolerance of the extremities under impact	Cheryl Quenneville
	Human body models to assess protection and mitigate injury	Duane Cronin
	Wearable sensors to investigate concussions and subconcussive head impacts	Lyndia Wu
	Addressing priorities in helmet test methods	Peter Cripton
Live on SpatialChat: 14h45-16h	Student Symposium #2/Symposium Étudiant #2: Virtual Speed Networking: “Ask me anything”	
	Chair: Patrick Ippersiel	
	This session will take place on our SpatialChat website: https://csb-scb.spatial.chat/ . Enter the “Student Symposiums” room. Learn from newish and experienced professors including: Jessica Selinger, Phil Dixon, Stephen Brown, Mike Holmes, Monica Maly, and Peter Keir.	
Live on stage 4: 14h45-17h	Capstone Project Symposium- Sponsored by Medtec Design	
	Chair/Président: Mark Driscoll and Rosaire Mongrain	
	Freehand Orthopedic Targeting System Jenny Li, Fiona Hamilton, Ethan Everly, Colton Ryan	
	Universal Airplane Seating Apparatus for People with Disabilities Soufiane Boukhabrine, Lynn Fadel, Laurence Peinturier, Oiting (Oiphis) Chan	
	AccuTrack: Guidewire Position Tracking Device Attached to Catheter Léo Fortier, Thomas Woodfine-MacPherson, Alex Karaliuk, Benjamin Shao	
	Oscillating Appliance for Postural Correction of TMJ Disorders and Obstructive Sleep Apnea Yasemin Bicer, Sarah Ford, Esmee Smit-Anseeuw, and Bashrat Chowdhury	
Live on stage 1: 16h15-17h15	Video-based Markerless Tracking and Dynamic Stereo X-ray; Two Ends of the Spectrum for Human Pose Estimation Sponsored by/commandité par : Theia Markerless Chair: Shawn Robbins	Presenter/Présentateur: Scott Selbie

<p>Zoom: 20h-21h45</p>	<p style="text-align: center;">Student Social – Trivia Night!</p> <p>20h-21h45 — Student Social – Trivia Night! (Zoom) Grab a beverage of your choosing and join us for virtual night out with Quiz Masters No & Jo! Come with your own team (must register in advance) or make some new friends as we play through 3 rounds of pub trivia. Advance registration, available at https://forms.gle/zVRmwJ1wqDfbYgXN8, is appreciated but not required unless you have a specific team or group request (6-8 people per team). Additionally, we are looking for volunteers to be team captains (details listed in form). Can't wait to see you there!</p> <p>Zoom link for event: https://us02web.zoom.us/j/2538942171?pwd=MVIHNGkrKzdVSlpuVU1MSjNkWFg1UT09</p> <p style="text-align: center;">Soirée Trivia !</p> <p>20h-21h45 - Soirée des étudiants - Trivia Night ! (Zoom) Prenez une boisson de votre choix et rejoignez-nous pour une soirée virtuelle avec les Quiz Masters No & Jo ! Venez avec votre propre équipe (vous devez vous inscrire à l'avance) ou faites-vous de nouveaux amis pendant que nous jouons 3 tours de quiz. Vous pouvez vous inscrire à l'avance sur : https://forms.gle/zVRmwJ1wqDfbYgXN8. Si vous avez une équipe ou un grand groupe (6-8 personnes), il est fortement encourager de vous enregistrer avant le début de la conférence. De plus, nous recherchons des volontaires pour être capitaines d'équipe (détails dans le formulaire). Nous avons très hâte de vous voir !</p> <p>Lien Zoom pour l'événement: https://us02web.zoom.us/j/2538942171?pwd=MVIHNGkrKzdVSlpuVU1MSjNkWFg1UT09</p>
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THURSDAY, MAY 27th, 2021

Location & Time /Emplacement & l'heure	Description		Presenter/ Présentateur
Live on stage 1: 9h45-10h	Thursday Morning Address/Mot de Bienvenue du Jeudi		
Pre-recorded released at: 9h55 Live on stage 1 (Q/A): 10h45-11h	ISB Keynote: The paradox of physical activity as cause and cure for musculoskeletal health Chair/ Président: Julie Côté		Karen Søgaard
Live on SpatialChat: 11h15-12h30	Women in Biomechanics Symposium: Tips and Tricks for the CSB Community/ Femmes en biomécanique: trucs et astuces pour la communauté de la SCB This session will take place on our SpatialChat website: https://csb-scb.spatial.chat/ . Enter the “Women in Biomechanics” room.		Julie Côté, Janie Astephen-Wilson, Karen Søgaard
Location & Time /Emplacement & l'heure	Abstract ID	Title/Titre	Presenting Author/ Conférencier
Scientific Session: Locomotion Sponsored by/commandité par : Novel Inc. Chairs/Président: Amy Wu			
Pre-recorded released at: 11h15 Live on stage 5 (Q/A): 12h25- 12h45	217	Energy optimization during walking can be a primarily implicit process	Megan McAllister
	385	Markerless motion capture equivalent to gaitrite® for quantifying spatiotemporal parameters of gait	Elise Laende
	387	Young adults incorporate cognitive processes to complete a sudden obstacle crossing adjustment	Jenna Pitman
	357	The effect of sustained kneeling on gait characteristics	Terri Weeks
	94	Double-pose calibration of inertial motion capture for rapid knee evaluation	Xavier Robert- Lachaine
Scientific Session: Muscle Sponsored by/commandité par : Delsys Inc. Chairs/Président: Sam Veres			
	249	Regional pectoralis major activation is dependent on the task and effort level in healthy males	Tea Lulic

Pre-recorded released at: 11h15	260	Effect of dynamic elbow flexion fatigue on muscle activation, oxygenation, and thickness in young adult males and females	Chris Bailey
Live on stage 2 (Q/A): 12h25-12h45	442	Evolution of forearm muscle fatigue in pianists	Etienne Goubault
	490	Sarcomere length non-uniformity decrease during isometric contractions in intact muscle-tendon units	Eng Kuan Moo
Scientific Session: Orthopaedics/Orthopédie Chairs/Président: Mark Driscoll			
Pre-recorded released at: 11h15 Live on stage 3 (Q/A): 12h25-12h45	56	Mapping knee osteoarthritis biomechanical severity prior to total knee arthroplasty using an unsupervised learning framework	Kathryn Young
	543	Kinetic effect of three different foot orthoses on a posterior tibialis tendon dysfunction population	Dominic Chicoine
	661	Lower extremity biomechanics of healthy infants, infants with hip instability, and infants treated for developmental dysplasia of the hip with the pavlik harness	Safeer Siddicky
	456	Using a musculoskeletal model to quantify voluntary knee strength deficits and muscular contribution to torque in an acl-injured paediatric population	Teresa Flaxman
	629	Quantification of regional strains within the hip capsular ligaments using a novel ct-based strain measurement system	Pardis Baha
Scientific Session: Sports Sponsored by/commandité par : Qualisys Chairs/Président: Peter Keir			
Pre-recorded released at: 11h15 Live on stage 4 (Q/A): 12h25-12h45	583	Classifying elite from novice athletes using simulated wearable sensor data	Gwyneth Ross
	319	Landing asymmetry in back tucked saltos and the effect of takeoff asymmetry	Nicolas Hallgrimson
	268	Effective stiffness & damping of shoulder checks in ice hockey	Olga Radivojevic
	534	The use of impact monitoring mouthguards to quantify head impact biomechanics in youth football players	Christian Clermont

	20	The career head impact exposure profile of a canadian varsity football player	Jeff Brooks
Location & Time /Emplacement & l'heure	Description		Presenter/ Présentateur
Live on stage 1: 13h45-15h15	Master's and Doctoral New Investigator Awards Session: Sponsored by C-Motion Bourses de maitrise et de doctorat pour nouveau chercheur : commandité par C-Motion Chair: Salvatore Federico		
	Master's Award		
	Does scaphoid morphology influence wrist range of motion?	Zoe Mack	
	Intersegmental coordination differences in vertical jumps of varying heights	Robert Mackowiak	
	Experimental neck pain decreases thoracic but not lumbar spine dynamic stability	Brendan Pinto	
	Doctoral Award		
	Daily cumulative knee load and body mass index alter knee cartilage response to running in asymptomatic women	Elora Brenneman Wilson	
	Predicting the range of motion of the glenohumeral joint from skeletal morphology	Erin CS Lee	
Patellofemoral joint contact pressures and patellar tracking for activation of individual quadriceps muscles	Seong-won Han		
Pre-recorded released at: 9h Tuesday Q/A by chat: 15h45-17h	Explore Poster Session 5-9 <ul style="list-style-type: none"> • Rehabilitation/ Réhabilitation • Muscle • Locomotion, Balance, and Posture/Locomotion, Équilibre et Posture • Orthopaedics/ Orthopédie • Ergonomics/ Ergonomie 		
Live on stage 1: 17h-17h45	Closing Remarks/ Remarques de clôture		

FRIDAY, MAY 28th, 2021

Location & Time /Emplacement & l'heure	Description	Presenter/ Présentateur
Will be held on Zoom 13h-16h	Post-Conference: Simulation and Movement Modeling/Après la conference: Simulation et Modélisation du Mouvement Register at: https://www.eventbrite.ca/e/csb-workshop-on-biomechzoo-and-bioptim-tickets-148280690537	Philippe Dixon and Mickaël Begon

POSTER SESSION 1-4

1. Poster Session : Methods and Modeling / Méthodologie et Modélisation

Time/Heure: Pre-recorded released at: Tuesday, May 25th at 9h; Q/A by chat: Wednesday, May 26th at 13h30-14h45

Poster ID/ N° affiche	Title/Titre	Presenter/Présentateur
657	Finite element analysis of human trabecular bone relaxation response	Brian Kunath
607	Detection of heel-strike and toe-off events using portable, low-cost sensors	Valerie Bauman
545	The development of 3d printed and customized smart-insole for real time measurement of plantar pressure, temperature and humidity	Diego Alonso Quevedo Moreno
538	An in-vivo squat and meniscus strain replicated on a pre-existing finite element model	Mayank Kalra
537	Contrasting performance stability of dynamic knee-valgus across four metrics and two tasks	Steven Hirsch
523	Calculating moments using the instantaneous rotation axis of the arch of the foot increases positive work in propulsion	Lauren Welte
517	Reliability of knee flexion joint angle measurements with an inertial measurement unit system	Drew Lawson
491	An EMG-driven cervical spine model in opensim	Jeff Barrett
476	Predictive simulation of human sit-to-stand motion using direct collocation optimal control	Behzad Danaei
443	Modèles personnalisables du fessier et du tronc à partir de mesures simples pour la gestion du contact	Florian Vidal
431	Contrasting prediction accuracy of regression-based shoulder rhythms	Paula He
403	A framework to create morphable models of military-based movements	Matthew Mavor
388	Patellar tendon moment arm variations relate to mechanical function	Mitchell Wheatley
372	Predicting knee joint angle during gait using inertial measurement units and deep convolutional neural networks	Calvin Young
370	Influence of the acromion length on forces distribution around the shoulder- a musculoskeletal modelling study	Marta Strzelczak
329	Inter- and intra-rater reliability and validity of real-time 3D foot scanner in non-weight bearing and weight bearing conditions	Nayeli Marcial
320	Development and validation of a representative finite element spine model for accurate biomechanical simulations	Ibrahim El Bojairami
245	Mechanical joint power analysis to identify the different glenohumeral degrees of freedom functions	Najoua Assila

181	A non-invasive assessment of thigh soft tissue artifact in squatting and kneeling	Jessa Buchman-Pearle
158	Evaluation of a novel shoulder joint position sense measurement device	Matthew Russell
43	The effect of crystalline lens nucleus stiffness on visual function: a finite element study	Reza Kakavand
656	Comparison of IMU-based joint kinematic estimation approaches	Annemarie Laudanski
651	Validating an inertial measurement unit system to quantify simple and complex upper-limb movements	Joshua Goreham
624	Spring back: a musculoskeletal modeling investigation of contact loading and kinematics during bilateral knee bracing	Alexa Boyer
622	Sensitivity of discrete symmetry metrics: implications for study design	Allen Hill
617	In vivo soft tissue elasticity - measurement reliability and validity via novel suction methodology	Natasha Jacobson
595	Human temporomandibular joint motion: a synthesis approach for designing a six-bar kinematic simulator	Michel Demuynck
283	Removal of movement artifact during surface translations to improve lower limb kinetics	Taylor Winberg
634	Familiarization of a hand tracking task with a haptic wrist robot	Daniel Cousins

2. Poster Session: Sports

Time/Heure: Pre-recorded released at: Tuesday, May 25th at 9h; Q/A by chat: Wednesday, May 26th at 13h30-14h45

Poster ID/ N° affiche	Title/Titre	Presenter/Présentateur
647	A mathematical model of head-to-shielding impacts in ice hockey	Omid Vakili
663	2D kinematics of a complete skating stride on a slide board at two different intensities: a preliminary study	Tatiane Piucco
586	Classification of ice hockey skating task using cog data	Matthew Kelly
556	The capability of wearable sensors to detect continuous natural context performance in ice hockey	Alicia Gal
602	Predicting perceptions of ice hockey sticks using kinematic data	Taylor Leger
658	Sprint kayaker's lower limb kinetic asymmetry at increasing stroke rates	Kayla Buegya Miller
654	Static and dynamic validation of the one giant leap wireless sprint kayak force paddle	Joshua Goreham
609	Effect of soft sleeve knee braces on landing kinematics	Jeremy Noble
608	Shoulder tendon adaptations following repetitive activity in wheelchair rugby athletes	Fransiska Bossuyt

Poster Session 1-4: Q/A by chat: Wednesday, May 26th 13h30-14h45

581	Analysis of force-time curve and spatiotemporal parameters of block jump skill in junior volleyball players	Ali Fatahi
568	Stride length impacts sagittal knee biomechanics in flat ground baseball pitching	Dan Ramsey
532	Accuracy of the reactive strength index assessed with an instrumented insole	Drew Lawson
522	Trunk rotation predicts puck and blade speed during ice hockey wrist shots	Shawn Robbins
516	Influence of lead leg selection on bilateral drop landing characteristics	Drew Lawson
489	Validation and comparison of video-based motion capture to 3D motion capture during baseball pitching	Ryan Bench
459	Neuromuscular components in stabilization of the head during an indirect impact resulting from a fall	Thomas B. Hoshizaki
457	Classification of in-phase bibrachial gait cycles from IMU derived natural context para skating	Alicia Gal
444	Conception, fabrication et validation d'une luge de ski de fond optimisée pour une athlète paralympique	Philippe Bergeron
441	Sex differences in lower-limb peak angles during an unanticipated cutting task in soccer players	Harry Brown
440	Vertical jump height estimation using reconstructed pelvis method in countermovement jump	Ramin Fathian
436	Development of a rugby cleat to reduce biomechanical injury risk in rugby athletes	Bill Wannop
432	Differences in lower-limb kinematics between female athletes and non-athletes during bilateral landing tasks.	Tamara Tompkins
428	Limb shaking to relax thigh muscles can mitigate fatigue and improve counter-movement jump performance	Brendan Pinto
421	Pilot study of the effect of knee riser stiffness on ice hockey goaltender lower body kinematics	Taylor Leger
419	High-calibre male and female inter-segment coordination during ice hockey skating starts	Caitlin Mazurek
414	A prototype bat using a dynamic moment of inertia can increase bat swing speed in university baseball players.	Tristan Castonguay
408	A comparison of sagittal and frontal plane intralimb coordination amplitude and variability between male and female soccer players during an unanticipated cutting task.	Harry Brown
395	Evaluating the use of IMU technology during an ice hockey shooting task	David Pearsall
377	Optimal control to innovate in aerial twisting on trampoline	Eve Charbonneau
361	Full-body dynamic optimization of complex aerial movements, with gravitational parameter identification	Eve Charbonneau
324	Helmet testing approaches involving high-speed cineradiography	Sheng Xu
284	A study of lower body kinematic adaptations to bank curves. does running kinematic patterns on a bank and flat indoor track differ?	David Pearsall
223	Video analysis of in-game helmet impact mechanisms in youth football players 13-14 years old	Danielle Gyemi

213	Describing the relationship between three ice hockey helmet impact tests and reconstructions of concussive injuries in professional ice hockey	Luc Champoux
204	Static biomechanical measurements do not correlate with high-speed running kinematics	Shahab Alizadeh
66	Hip and ankle kinematics are the most important predictors of knee joint loading during bicycling	Anthony A. Gatti
48	Differences in biomechanics between head impact helmet locations in youth football players	Christian Clermont
146	Comparison of the single leg squat and softball pitch kinematics	Kenzie Friesen
655	Biomechanical predictors of throwing velocity in collegiate and professional baseball pitchers using pitchai	Tyler Dobos

3. Poster Session: Tissue Biomechanics/Biomécanique des tissus

Time/Heure: Pre-recorded released at: Tuesday, May 25th at 9h; Q/A by chat: Wednesday, May 26th at 13h30-14h45

Poster ID/ N° affiche	Title/Titre	Presenter/Présentateur
592	Development of a novel testing protocol to quantify the mechanical properties of the annulus fibrosus	Sabrina Sinopoli
572	Investigating the effects of axial loading on lumbar vertebrae using texture parameters from t2 weighted mr images and machine learning	Vahid Abdollah
505	The effects of rotational speed and feed-rate of drilling on the stability of dental implants	Tahereh Mirzaie
398	Supraspinatus tendon responses to exposures emulative of physiological levels in an animal model	Alan Cudlip
334	Mechanical consequence of endplate fracture on the intervertebral disc	John McMorran
288	The effects of body position on trochanteric soft tissue thickness and predictions of femur impact forces	Alyssa Tondat
241	The effect of strain rate on the interlamellar matrix peel strength of the annulus fibrosus	K. Josh Briar
239	Mechanical consequence of induced intervertebral disc degeneration in the sparc-null mouse	Mitch Whittal
198	Early hysteresis energy and fatigue lifetime in ligament at high stress	Gail M. Thornton
135	Investigation of the crack morphology in a fiber-reinforced articular cartilage model	Abhay Patel
120	Chondrocyte deformation during cyclic loading	Baaba Otoo
631	A cellular investigation into the effect of inflammation on mechanics of intervertebral discs	Sara Molladavoodi
665	The influence of surrogate scalp modulus and thickness on the acceleration and intracranial pressure responses of a physical head-brain model	Yizhao Li

149	Mechanical response of human vertebral arteries to ex-vivo failure testing	Walter Herzog
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4. Poster Session: Spine/ Colonne vertébrale

Time/Heure: Pre-recorded released at: Tuesday, May 25th at 9h; Q/A by chat: Wednesday, May 26th at 13h30-14h45

Poster ID/ N° affiche	Title/Titre	Presenter/Présentateur
493	Differences in the cervical disc loads due to segmental mass. a sensitivity study.	Rizwan Arshad
492	Comparison of lumbar spine sagittal motion between external measures and quantitative fluoroscopy – preliminary results	Mona Frey
488	Can a helicopter helmet counterweight relieve elevated neck loads from night vision goggles?	Jeff Barrett
460	Characterizing the segmental muscle activity of deep multifidus during static and dynamic activities in a healthy population: a pilot study	John Charles Snow
426	Lumbar extensor spinae muscle fibre obliquity decreases after prolonged flexion	Brendan Pinto
412	Novel subject-specific equations to estimate spinal loads in asymmetric tasks: comparison between four lifting analysis tools	Farshid Ghezelbash
401	Novel adaptive augmented backstepping control of uncertain haptic robot for surgical training systems	Mark Driscoll
392	The effects of a one-hour sitting exposure and transient low back pain on the flexion-relaxation phenomenon in the lumbar erector spinae and lumbar multifidus muscles in adults with and without a history of low back pain	Sarah Mackey
366	Augmented inertial sensor signal-processing and fusion for clinical assessment of spine movement	Kristen Beange
363	Statistical considerations in uncovering underlying relationships between planar shoulder and spine range of motion measures	Heather Johnston
344	Backpack-induced changes in lumbo-pelvic coordination during trunk bending and return tasks	Babak Bazrgari
336	Detecting fatigue-related changes in spine motion using subject-specific composite indices and wearable sensors	Victor Chan
327	Force characterization of surgical puncturing probe within back muscles	Mark Driscoll
309	Mechanics of lumbar discectomy tool insertion for application in a surgical simulator	Trevor Cotter
293	What can recurrence quantification entropy tell us about movement variability?	Devon Frayne
278	Finite element analysis of guide probe insertion in a spine surgery to train deep neural network towards real-time surgical simulation	Amir Hamedzadeh

267	A novel analogue spine model used to test the impact of intra-abdominal pressure on spinal stability	Brittany Stott
251	Investigate the compromise between the computational complexity and visual feedback in a novel spine simulator	Tianqi Wang
219	Potential for low back injury as a function of loading history: passive tissue response to perturbation	Mamiko Noguchi
129	Non-invasive assessment of the impact of abdominal bracing on sacroiliac joint position during spine flexion and axial twisting	Olena Klahsen
119	Non-invasive assessment of sacroiliac joint mobility during functional unilateral sitting postures	Olena Klahsen
97	Delayed local mechanical desensitization following two trunk flexion creep protocols	Daniel Viggiani
93	Impact force profiles applied during interbody cage insertion - towards the development of a novel spinal fusion surgical simulator	Sneha Patel
82	The effect of vertebral body tethering on spine range of motion in adolescent idiopathic scoliosis	Mina Maksimovic
79	Brace yourself: how abdominal bracing affects intersegmental lumbar spine kinematics in response to sudden loading	Jarrett Norrie
42	Joint rotation and translation influence the strain response in the facet joint capsule ligament: a porcine in vitro model	Jackie Zehr
16	A comparison of passive lumbar stiffness evaluated using a prediction equation and lumbar tissue stiffness measured via myotonometry	Liana M. Tennant

POSTER SESSION 5-9

5. Poster Session: Rehabilitation/ Réhabilitation

Time/Heure: Pre-recorded released at: Tuesday, May 25th at 9h; Q/A by chat: Thursday, May 27th at 15h45-17h

Poster ID/ N° affiche	Title/Titre	Presenter/Présentateur
637	An adaptive robotic training program of the upper limb for persons with multiple sclerosis	Kailynn Mannella
596	Using a decision tree learning algorithm to classify injury status in adolescent males following return-to-activity criteria	Claire Warren
546	A low-cost approach to estimate crucial bio-mechanical parameters of manual wheelchair propulsion technique	Rabail Khowaja
453	Augmented feedback on manual wheelchair propulsion technique in a virtual reality simulator	Hui (Harriet) Yan
449	Emotion and its modulatory role on collision avoidance behaviour during a walking task for adults with and without moderate to severe traumatic brain injury	Sean Lynch
396	Quantifying the effect of sitting, stretching, and physical activity on passive hip extensibility	Graham Mayberry
386	Adding dual vector elastic resistance alters muscular demands in theraband™ rehabilitation exercises	Ryan Bench
331	Questionnaire utaut2 : traduction en français canadien et adaptation transculturelle	Isabelle Pagé
302	Force applied to a grab bar during bathtub transfers	Cecile Smeesters
232	Compensatory movement simulation and deep learning classification of rehabilitative shoulder exercises	Daniel Fournier
201	Development and validation of the control loop of the haptic interfaces for a manual wheelchair propulsion simulator	Ary Pizarro-Chong
112	Measuring task-specific upper limb push and pull static and dynamic force generating capabilities using an instrumented dynamometer in long-term manual wheelchair users: development of a protocol and pilot testing	Alec Bass
660	Doorway induces unique skating locomotion response for people living with parkinson disease	Jon Doan
612	Improvement in gait pattern following physical therapy and rhythmic auditory stimulation in individuals with parkinson's disease	Elise MacDonald
650	Upper and lower body inter-segmental coordination during unsupervised gait of older adults with dementia	Lina Musa
628	Arm elevation strategy ineffective in recovering dynamic stability in parkinson's disease after slips	Tarique Siragy
574	Analysis of lower limb's biomechanical compensations during stair descent in individuals with unilateral transtibial amputation	Raphael Ouellet

569	Lower-limb coordination of children with cerebral palsy during turning gait tasks	Cloé Dussault-Picard
498	Movement related increases in arterial blood pressure during arm crank exercise	Savrina Goldenberg
478	Examining the relationship between head impact biomechanics and symptom burden in a pediatric concussion population	Klara Doelle
281	Influence of intermittent pneumatic compression on foot sensation and balance control in peripheral neuropathy patients	Taylor B. Winberg
188	Assessment of gait quality and efficiency after undergoing a single event multilevel surgery in children with cerebral palsy presenting an intoeing gait pattern	Gabriel Moisan
184	Kinematics immediately following treatment during activities of daily living in breast cancer survivors	Jacquelyn Maciukiewicz
316	Stature and mass do not differ across objectively determined movement phenotypes for the deep squat and hurdle step	Sarah Remedios
262	Proof of concept of a method for estimating the instantaneous center of pressure of manual wheelchair users	Félix Chénier
643	A four component model to evaluate the contribution of movement related increases in arterial blood pressure during arm crank exercise	Savrina Goldenberg

6. Poster Session: Muscle

Time/Heure: Pre-recorded released at: Tuesday, May 25th at 9h; Q/A by chat: Thursday, May 27th at 15h45-17h

Poster ID/ N° affiche	Title/Titre	Presenter/Présentateur
447	The influence of contraction type, prior performance of a maximal voluntary contraction and measurement duration on the consistency of fine-wire emg	Joanna Reeves
410	The mechanisms underlying sarcomere length non-uniformities in skeletal muscles	Meng Li
406	Relationship between quadriceps muscle quality and physical capacity	Emma Tung
291	The relaxation shoulder is delayed by active stretch at long but not short muscle lengths in rat soleus muscle assessed in situ	Ian C. Smith
264	Are changes in muscle activation variability related to muscle deoxygenation and swelling during elbow flexion fatigue in young adult males and females?	Chris Bailey
216	Anthropometrics and electromyography as predictors for maximal voluntary isometric wrist strength	Nicole Chimera
652	Training induced changes to skeletal muscle passive properties are evident in both single fibres and fibre bundles in the rat hindlimb	Alex Noonan

Poster Session 5-9: Q/A by chat: Thursday, May 27th 15h45-17h

601	Real-time and dynamically consistent estimation of muscle force using a moving horizon EMG-marker tracking algorithm	Amedeo Ceglia
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7. Poster Session: Locomotion, Balance and Posture /Locomotion, Équilibre et Posture

Time/Heure: Pre-recorded released at: Tuesday, May 25th at 9h; Q/A by chat: Thursday, May 27th at 15h45-17h

Poster ID/ N° affiche	Title/Titre	Presenter/Présentateur
621	The impact of outdoor walking surfaces on lower-limb coordination and variability during gait in healthy adults	Patrick Ippersiel
542	Gaze behavior associated with dual-task walking in a virtual community environment	Trineta Bhojwani
529	Why does the arch of the foot recoil in propulsion?	Lauren Welte
515	Gait coordination strategies in adults with and without prader-willi syndrome	Derek Pamukoff
481	Inter-session repeatability of markerless motion capture gait kinematics	Robert Kanko
470	Estimating metabolic energy expenditure during locomotion using wearable sensors	Mohammad Mohammad
465	Understanding the impact of functional adaptations on the lower limb joints using a visual feedback approach: research protocol	Thomas Legrand
450	Can IMU-measured angular velocities detect changes in running gait?	Michael Rainbow
352	Effect of walking on peri-personal space boundary extension.	Meaghan Walsh
311	Validation of a smartphone accelerometer system compared to a gold standard motion capture system	Vincenzo Di Bacco
214	Walking stability decreases during very slow walking, compensated by ankle and upper body strategies	Aaron Best
168	Instrumented socks for gait spatiotemporal parameters calculation in free-living conditions: a validation study	Roua Walha
162	Period to attain stable minimum toe clearance during treadmill walking cannot be generalized	Megan Saftich
157	Impact of the walking speed control modality on the walk ratio	Thomas Legrand
78	Validation of vertical ground reaction force estimates generated using hip accelerometry during walking and running	Marie-Eve Berube
44	Spatiotemporal gait parameter measurement using a deep learning markerless motion capture system	Robert Kanko
590	Age and sex-related differences in normative gait patterns	Erynne Rowe

Poster Session 5-9: Q/A by chat: Thursday, May 27th 15h45-17h

646	The effects of body movements of another pedestrian during circumvention: comparing older to younger healthy adults.	Félix Fiset
39	Influence of dual-tasking on the performance of sudden transient shifts in obstacle circumvention strategies	Jenna Pitman
544	Frontal and sagittal support moments in a compensatory step in younger and older adults	Asher H. Mendelsohn
539	Commonalities in the control of volitional and perturbation-evoked stepping	Laine Dux
330	Biomechanical analysis of bilateral pushing movements of the upper limbs in seated and standing positions in healthy subjects	Haifa Akremi
96	Assessing centre of pressure control and muscle fatigue through non-linear measures of chaotic systems	Daniel Viggiani
666	How well do different tasks, methods of measurement, & analyses reveal a person's balance control ability?	Gary Mangan
639	Surface variations in regularity, consistency, and smoothness during outdoor walking using trunk accelerometry	Phil Dixon
246	Lower body movement strategies differ between older and young adults during forward reactive stepping	Steven Pretty
240	Postural control of healthy older adults: make sure you pay attention	Brontë Vollebregt
230	Predictive simulations of a whole-body reaching task using multi-objective nonlinear model predictive control	Keaton Inkol
603	Timed-up-and-go phase separation using a torso based event detection algorithm	Megan Saftich
642	Seven days of real-world walking. a preliminary assessment of non-laboratory walking in healthy and osteoarthritic populations.	Jesse Charlton
231	A virtual reality input to study vision contributions to human postural control	Abolfazl Mohebbi

8. Poster Session: Orthopaedics/ Orthopédie

Time/Heure: Pre-recorded released at: Tuesday, May 25th at 9h; Q/A by chat: Thursday, May 27th at 15h45-17h

Poster ID/ N° affiche	Title/Titre	Presenter/Présentateur
594	Evaluation of combined knee braces and foot orthoses treatment modalities on medial knee osteoarthritis	Xavier Robert-Lachaine
485	Comparing dash and worc survey results to range of motion, maximum reach envelope and principal component results	Colleen Dewis
418	Post-operative varus alignment does not increase tibial component migration in total knee replacement	Elise Laende
378	Dynamic force osteoarthritis knee brace	Olivia Roud
318	Effect of radial and ulnar deviation on carpal tunnel volume	Drew Anderson

Poster Session 5-9: Q/A by chat: Thursday, May 27th 15h45-17h

279	The relationship between foot orthosis deformation and foot function in normal-arched feet	Maryam Hajizadeh
270	Effect of 3D printed foot orthoses stiffness on plantar pressures and cop in flatfeet	Gauthier Desmyttere
196	A comparison of inter-joint coordination during gait between patients with knee osteoarthritis and healthy adults	Anthony Teoli
141	Effect of collagen fiber distribution on the cartilage strains in a 3d knee joint model	Reza Kakavand
116	Three braces each worn three months in a crossover trial for the treatment of knee osteoarthritis	Xavier Robert-Lachaine
59	Is lower limb loading symmetrical during bilateral hopping among individuals with unilateral achilles tendinopathy?	Mathieu Lalumière
31	Junction: an electromyography app for total knee arthroplasty surgery rehabilitation	Dylan Kobsar
648	Accuracy assessment of baseplate micromotion measurements in reverse shoulder arthroplasty	Lawrence Torkan
644	Simulating the opening cut in a finite element model for a medial opening wedge high tibial osteotomy	Victor Carranza
620	Comparison of native ACL and patella tendon graft strains and knee joint kinematics between rectangular and cylindrical femoral bone tunnels for ACL reconstruction	Timothy Burkhart
616	The role of tibia and femur bone geometry on knee joint kinematics in intact and ACL deficient cadaveric knees	Timothy Burkhart
182	Muscle strength gains after strengthening exercise explained by reductions in serum inflammation in women with knee osteoarthritis	Kendal Marriott
105	Optimizing running style to restore knee contact location post ACL rupture	Jessica Oreskovic
530	The influence of release or tightening deep fibres of the medial collateral ligament on knee kinematics: a simulation investigation	Behzad Danaei
133	Frontal plane knee joint laxity measurement system repeatability	Michelle Loo

9. Poster Session: Ergonomics/ Ergonomie

Time/Heure: Pre-recorded released at: Tuesday, May 25th at 9h; Q/A by chat: Thursday, May 27th at 15h45-17h

Poster ID/ N° affiche	Title/Titre	Presenter/Présentateur
25	Effects of sex and fatigue location on upper body kinematics in a repetitive pointing task	Chen Yang
484	Heart rate variability during office work with regular periodic sit-stand changes	Nancy Black
479	Musculoskeletal risk associated with upper arm deviation varies alternating regularly between sitting and standing postures during office work	Nancy Black

Poster Session 5-9: Q/A by chat: Thursday, May 27th 15h45-17h

473	Dynamic wrist flexor and extensor fatigue equally impacts hand tracking performance	Garrick Forman
471	The effect of a counterweight system and whole-body vibration exposure on performance	Aaron Derouin
463	Footstep strategies among novice and expert manual material handlers and their effects on low back loadings	Jasmin Vallée Marcotte
452	Examining trial-dependant changes in median nerve displacement during a gripping task	Kaylyn Turcotte
427	Effects of 30-minutes sub-diastolic occlusion on carpal tunnel tissues	Amanda Farias Zuniga
424	Relative rotational joint work during a simulated waste collection task	Christopher Moore
420	Assessing violinists' motor adaptation to dynamic assistive support makes passive assistance a promising tool towards musicians' injury prevention	Clara Ziane
417	An examination of different footrest heights during standing computer work	Ryan Foley
404	Movement strategies in unloaded and loaded childcare related squatting tasks	Madalyn Tworzyanski
390	Validating the upper limb localized muscle fatigue physical exposure limits	Ryan Foley
383	Deflection of anti-fatigue flooring surfaces in response to simulated standing exposures: implications for falls risk in the workplace	Jackie Zehr
367	Kinematics and muscle activity of the upper extremity while performing cleaning tasks	Zach Pipher
290	Influence of working conditions on feet positioning during manual material handling	Jasmin Vallée Marcotte
289	A framework of the manual materials handling principles to evaluate the physical exposure	Xavier Robert-Lachaine
259	Sex-specific effects of localized muscle fatigue on muscle activation during a multijoint repetitive task	Erika Renda
221	Quantifying the magnitude of sex differences in kinematic characteristics of an upper-limb repetitive pointing task	Matthew Slopecki
180	Redistribution of joint demands during fatiguing upper extremity work	Daanish Mulla
147	Relative knee to hip strength as a determinant of lifting strategy	Daniel Armstrong
117	Body orientation and points of contact during laboratory based machinery egress: investigating adherence to safety guidelines	David Kingston
630	Sex-specific effects of anti-fatigue lenses on musculoskeletal characteristics during a computer task in university students	Samuel Lamanuzzi
613	Subtle changes in upper extremity kinematics produce significant tradeoffs in upper extremity and trunk moments	Kevin Kos
402	Development of an analytical technique based on EMG to assess muscle fatigue during manual lifting in a simulated laboratory environment	Faezeh Sehati

263	Changes in muscle activation, morphology, and oxygenation following a fatiguing forward repetitive pointing task in young adult males and females	SangHoon Yoon
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