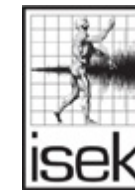


Workshops Overview

Friday, 29th June



International Society of
Electrophysiology and Kinesiology
UNIVERSITY COLLEGE DUBLIN
JUNE 29th – JULY 2nd 2018

Morning Workshops

Workshop 1: Methods for estimating synaptic potentials in human muscular system

Organisers: Kemal S. Türker, Gizem Yilmaz, Gorkem Ozyurt, Betilay Topkara and B.Selen Senocak, Koç University School of Medicine, İstanbul, Turkey

9:30 - 12:30

Workshop 2: Extraction of information from high-density EMG: recent developments and perspectives

Organisers: Dario Farina Imperial College London Ales Holobar University of Maribor

Workshop 3: Wearable Technologies – Challenges & Advances

Organisers: Brian Caulfield University College Dublin

12:30 - 14:00

Lunch

Afternoon Workshops

Workshop 4: How good is my robot? The increasing importance of benchmarking in wearable robotics research

Organisers: Diego Torricelli, Jan Veneman, Jose Luis Pons Cajal Institute Spanish National Research Council

14:00 - 17:00

Workshop 5: Surface EMG alive – an update of the current lines of application in real life settings

Organisers: Catherine Disselhorst Klug, Aachan University and Karen Sogaard University of Southern Denmark

Workshop 6: Developing a subject-specific tri-dimensional model of human muscles, from experimental anatomical and physiological data

Organisers: Leonardo Gizzi, Oliver Röhrle, Ekin Altan, Okan Avci, Filiz Ates University of Stuttgart, Germany

18:30 - 20:00

Welcoming & Opening Reception

Preliminary Programme

Saturday, 30th June



International Society of
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8.30 - 9.30

Keynote lecture

Prof. Roger Enoka

Basmajian Award, University of Colorado Boulder

9.30 - 11.00

Parallel Sessions

O1 Reflexes & Neural Pathways I

Functionally relevant changes in interlimb and intralimb cutaneous reflex excitability from the hand during standing with stable versus unstable light touch

John E Misiaszek, Heather Hackett, Sydney Chodan, John Misiaszek

University of Alberta

Impact of a sensory perturbation on somatosensory evoked potentials and motor learning for the non-dominant hand

Paul C Yields, Ryan Gilley, Bernadette Murphy, Paul Yields

University of Ontario Institute of Technology, Deakin University

Body position changes the amplitude of the H-reflex

Kemal Turker, Serpil Cecen, Imran Khan Niazi, Rasmus W Nedergaard, Heidi Haavik, Kemal S Turker

Koc University

Static stretching of plantar flexors decreases mechanical reflex excitability as revealed by the Achilles tendon tap

Eugen Gallasch, Rafolt Dietmar, Monica Christova, Markus Tilp, Francesco Budini

Medical University of Graz

Multiple descending pathways may contribute to the response of the gastrocnemius to transcranial magnetic stimulation

Jonathan Shemmell, James W Stinear, Colum D MacKinnon, Daniel C Ribeiro, Carrie Falling

University of Wollongong

Reticulospinal pathways contribute to cross-education in non-human primates

Isabel S Glover, Stuart N Baker

Newcastle University

Preliminary Programme

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S1 Symposium: High Density Surface EMG: A Non-Invasive Research Tool at the Transition to Clinical Applications

Chairs(s): Ales Holobar, University of Maribor; Bernd Lapatki, University of Ulm; Hans van Dijk, University of Ulm

On coherence between cumulative motor unit spike trains and NMF components of high-density electromyograms

Ales Holobar, Martin Savc, Vojko Glaser, Imre Cikaljo, Zlatko Matjacic, Ales Holobar

University of Maribor

Aging, lifestyle-related disease, exercise, nutrition, and motor unit firing pattern in humans - Challenges to resolve Japanese social issue using HDsEMG

Kohei Watanabe

Chukyo University

The role of HD-EMG in Cerebral Palsy: Implications for research and clinical practice

Lukas G Wiedemann, Ales Holobar, Amy Hogan, Sarah H Ward, Andrew J McDaid

University of Auckland

High-density EMG: from the first ideas to a routine method in muscle electrophysiology

Dick Stegeman

Radboud University Medical Centre

Motor unit territory assessment: high-density and scanning EMG

Johannes P van Dijk, Bernd G Lapatki

University of Ulm

Physiology and anatomy of the complete facial musculature assessed from high-density surface EMG

Bernd G Lapatki, Alisa Barth, Johanna Radeke, Ales Holobar, Johannes P van Dijk

University of Ulm

S2 Symposium: Muscle Stiffness and Extensibility: How Do They Affect Muscle Function?,

Chair: Massimiliano Ditroilo, University College Dublin

Overview of stiffness measurement

Massimiliano Ditroilo, Mark Watsford, Hiroaki Hobar, Aurélio Faria

University College Dublin

Preliminary Programme

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Leg stiffness during hopping with and without biological legs

Hiroaki Hobara

National Institute of Advanced Industrial Science and Technology

Effects of age, sex and fatigue on musculoskeletal stiffness

Aurélio Faria

University of Beira Interior

Muscle stiffness relates to athletic performance and injury risk status

Mark Watsford

University of Technology Sydney

O2 Rehabilitation Therapies and Technologies

Chairs:

Lower limb EMG activity of chronic stroke patients when using a novel gait-retraining device

Sarah Ward, Lukas Wiedemann, Cathy Stinear, James Stinear, Andrew McDaid

University of Auckland

Multisite stimulation to reduce fatigue associated with functional electrical stimulation

Andrew J Fuglevand, Alie J Buckmire

University of Arizona, College of Medicine

Long-term effects of providing ankle-foot orthoses after stroke on tibialis anterior muscle activation patterns

Corien Nikamp, Jaap H Buurke, Leendert Schaake, Johan S Rietman, Hermie J Hermens

Roessingh Research & Development

The effect of long-term treatment with transcranial pulsed electromagnetic fields on sit-to-stand performance in persons with Parkinson's disease.

Anne Sofie B Malling, Bo M Morberg, Lene Wermuth, Ole Gredal, Per Bech, Bente R Jensen

Odense University Hospital, University of Southern Denmark

Preliminary Programme

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Effects of transcutaneous electrical spinal cord stimulation on spinal excitability in individuals with incomplete spinal cord injury

Christian Meyer, Ursula Hofstötter, Michèle Hubli, Björn Zörner, Armin Curt, Marc Bolliger

University Hospital Balgrist

Time course of the effects of botulinum toxin on voluntary activation and on reflex responses of spastic motoneurons in biceps brachii muscles based on surface EMG recordings

Babak Afsharipour, Sourav Chandra, William Z Rymer, Nina L Suresh

Northwestern University; Shirley Ryan Ability Lab

O3 Motor Control I - Muscle Synergies

Chair(s):

Muscle synergy extraction using principal activations only: is this information more useful in clinics and robotic control with respect to a classical muscle synergy analysis?

Marco Knaflitz, Valentina Agostini, Daniele Rimini, Marco Ghislieri, Cristina Castagneri, Samanta Rosati, Gabriella Balestra

Politecnico Di Torino

Changes in the timing but not the structure of muscle synergies are associated with changes in gait after treatment in cerebral palsy.

Benjamin R Shuman, Marije Goudriaan, Kaat Desloovere, Michael H Schwartz, Katherine M Steele

University of Washington

Divergence in temporal coordination of kinematic synergies during non-preferred stride time-length combinations

Benio Kibushi, Motoki Kouzaki

Kyoto university

The generalization of Motor Adaptation is explained through the recruitment of previously adapted muscle synergies

Cristiano De Marchis, Jacopo Di Somma, Magdalena Zych, Silvia Conforto, Giacomo Severini

University Roma TRE

Lower-extremities motor adaptations during asymmetric cycling

Magdalena Zych, Ian Rankin, Donal Holland, Giacomo Severini

University College Dublin

Preliminary Programme

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11.00 - 12.00 Coffee, Poster Session I & Exhibitors

12.00 - 13.00 Parallel Sessions

O4 Knee Biomechanics and Rehabilitation I

Chairs(s):

Shape analysis of inter-joint motion coupling patterns in a stair-descent task following ACL reconstruction captures asymmetries in coordination up to two years post-surgery relative to non-injured controls

Dario G Liebermann, Jonas L Markström, Jonas Selling, Charlotte Häger
Tel Aviv University

Regional activation of the vastus medialis and lateralis in a dynamic task differs between females with and without patellofemoral pain and is associated with knee extension strength

Alessio Gallina, James Wakeling, Paul Hodges, Michael Hunt, Jayne Garland
University of British Columbia

Participants with patellofemoral pain show reduced torque steadiness and higher motor unit discharge rate variability of their knee extensors during open and closed kinetic chain exercises

Eduardo Martinez-Valdes, Gennaro Boccia, Maryam Nawaz, Francesco Negro, Alberto Rainoldi, Deborah Falla
University of Birmingham

Reflex changes in ACL deficient knees during normal and surprise landings

Peter J McNair, Yu Konishi, David A Rice
Auckland University of Technology

S3 Symposium: Why Are Muscles Weak After Stroke?

Chairs(s): William Z Rymer

Why Are Muscles Weak After Stroke?

William Z Rymer, Nina L Suresh, Jongsang Son, xiaogang Hu
Shirley Ryan AbilityLab

Preliminary Programme

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Altered fascicle behavior of medical gastrocnemius in chronic stroke survivors

Jongsang Son, Sabrina S.M. Lee, William Z Rymer
Shirley Ryan AbilityLab

Relative Contribution of Different Altered Motor Unit Control to Muscle Weakness in Stroke

Xiaogang Hu, William Z Rymer; Nina L Suresh
University of North Carolina-Chapel Hill

2. Contributions from altered motoneuron regulation after hemispheric stroke

Nina L Suresh, Xiaogang Hu, William Z Rymer
Shirley Ryan AbilityLab

O5 Back, Neck and Shoulder Pain I

Chairs(s): Birgit Juul-Kristensen and Deborah Falla, University Of Birmingham

Relation between the degree of specific low back pain and activation of the erector spinae muscles during tasks of daily life

Sebastian Becker, Ferdinand Bergamo, Klaus J Schnake, Ingo V Rembitzki, Catherine Disselhorst-Klug
Institute of Applied Medical Engineering, RWTH Aachen University

People with chronic low back pain show differences in the spatial distribution of erector spinae activity during an endurance task

Andrew Sanderson, Eduardo Martinez-Valdes, Carlos Murillo, Nicola Heneghan, Alison Rushton, Deborah Falla
University of Birmingham

Accuracy of Trunk Muscle Activation Patterns to Predict Low Back Reinjury

D-Adam Quirk, Cheryl L Hubley-Kozey
Dalhousie University

The effects of lumbar posture on back extensor torque and trunk muscle activation in patients with chronic low back pain during maximal lifting.

Grant A Mawston, Mark G Boocock, Laura Holder
Auckland University of Technology

Preliminary Programme

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O6 Motor Control II

Chair(s) Dick Stegeman, University of Nijmegen and Gabriella Balestra, Politecnico di Torino

Distinct neural control of intrinsic and extrinsic muscles of the hand during isometric single finger presses

Sigrid S Dupan, Dick F Stegeman, Huub Maas

Donders Institute for Brain, Cognition, and Behaviour

Physical interaction with a circular constraint

James R Hermus, Jams Hermus, Joseph Doeringer, Dagmar Sternad, Neville Hogan

Massachusetts Institute of Technology

Elbow joint angle and biceps brachii muscle-length separately influence spinal, but not corticospinal, excitability to the biceps brachii

Mike Holmes, Davis A Forman, Daniel Abdel-Malek, Christopher M Bunce, Michael W Holmes

Brock University

Low-frequency fluctuations in motor output are distinctively associated with beta-band and gamma-band neural oscillations during steady cocontraction

Minoru Shinohara, Ellenor Brown

Georgia Institute of Technology

O7 Gait & Posture I

Chair(s) Claudio Orizio, University Of Brescia and Bente Jensen, University of Southern Denmark

Tri-axial changes in postural sway predictability in people with Parkinson's disease over 36 months

Annette L Pantall, Silvia Del Din, Lynn Rochester

Newcastle University

Small, movement-dependent postural perturbations substantially alter postural control in healthy young adults

Zrinka Potocanac, Dasa Gorjan, Jan Babic

Jozef Stefan Institute

Long-term retention of split-belt walking reveals differences in spatiotemporal gait adaptation and dynamic balance control

Tom J.W. Buurke, Tom Buurke, Claudine Lamothe, Danique Vervoort, Lucas van der Woude, Rob den Otter

University of Groningen, University Medical Center Groningen

Preliminary Programme

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Structure of surface EMGs from intrinsic foot muscle is affected by postural task demand

Elisabetta Ferrari, Neil D Reeves, Glen Cooper, Emma Hodson-Tole
Manchester Metropolitan University

13.00 - 14.00 **Lunch, Poster Session I & Exhibitors**

Keynote lecture

14.00 - 15.00 **Prof. Todd A. Kuiken**
Rehabilitation Institute of Chicago

15.00 - 16.30 **Parallel Sessions**

S4 Symposium: Multimodal Biomarkers of Motor Performance, Impairment and Recovery Derived from Physiological Measurements

Chairs: Vincent C.K. Cheung, Chinese University of Hong Kong; Giacomo Severini, University College Dublin

Clinical applications of synergy analyses to evaluate pediatric movement disorders in cerebral palsy and muscular dystrophy.

Benjamin R Shuman, Marije Goudriaan, Kaat Desloovere, Michael H Schwartz, Katherine M Steelet
University of Washington

Biomarkers of proportional recovery from upper and lower limb impairment after stroke

Winston D Byblow
University of Auckland

Neurophysiological Biomarkers extracted from high-density EMG

Margherita Castronovo, Dario Farina
Imperial College London

Neuroimaging-derived biomarkers of chronic pelvic pain in the motor system

Jason Kutch
University of Southern California

EMG-derived muscle-synergy patterns as recovery biomarkers in stroke survivors: Results from a Multi-Center Collaboration

Vincent Chi Kwan Cheung
The Chinese University of Hong Kong

Preliminary Programme

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S5 Symposium: Biomechanical and Clinical Challenges in the Shoulder from the Applied Perspective

Chair: Birgit Juul-Kristensen, University of Southern Denmark

Scapula kinematics and gleno-humeral dynamic control in handball players with and without pain

Jesper Bencke

Copenhagen University Hospital

Ultrasound measurements of the Subacromial space and its usefulness in treatment of shoulder tendinopathy

Karen McCreesh, Karen M McCreesh

University of Limerick

Surface EMG activity of the upper trapezius before and after a single dry needling session in female office workers with trapezius myalgia

Barbara Cagnie, Kayleigh De Meuelemeester

Ghent University

Marker-based scapula movement in clinical tests - methodological considerations and guidelines for practical application

Uwe G Kersting, Gunhild Hansen

Aalborg University

Assessment of hand-held and isokinetic measures of shoulder rotator strength

Camilla M Larsen, Claus Bech, Morten K Brødsted, Behnam Liaghat, Ann Cools, Karen Søgaard, Birgit Juul-Kristensen

University of Southern Denmark

O8 Knee Biomechanics and Rehabilitation II

Chair(s)

Kinematic analysis of the talocrural and subtalar joint after lateral compartment's ligaments resection: can motion changes be detected by 4D-CT acquisition?

Luca Buzzatti, Benyameen Keelson, Jildert Apperloo, Nico Buls, Gert Van Gompel, Thierry Scheerlinck, Jef Vandemeulebroucke, Michel De Maeseneer, Jean-Pierre Baeyens, Johan De Mey, Erik

Cattrysse

Vrije Universiteit Brussel

Preliminary Programme

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Differential quadriceps muscle activation after a femoral nerve blockade prior an anterior cruciate ligament reconstrucion

Rony A Silvestre, Iver Cristi-Sánchez, Julian Aliste, Daniela Bravo, Vicente Cristi, Rony Silvestre

Clinica MEDS

Lower limb kinematics and kinetics of a novel one-leg double-hop test involving unanticipated/anticipated diagonal hops in individuals with unilateral anterior cruciate ligament reconstruction

Ashokan Arumugam, Jonas L Markström, Charlotte K Häger

Umeå University

Does the Loss of Vastus Medialis Alter Patellofemoral Joint Contact Pressures In Vivo?

Seong-won Han, Andrew Sawatsky, Azim Jinha, Walter Herzog

The University of Calgary

3D Hip and knee kinematics during single and triple hop tests after ACL reconstruction as measured with inertial measurement units

Jasper Reenalda, Erik Maartens, Roy Hoogeslag, Rianne Huis in't Veld, Brian W Noehren, Jaap Buurke

Roessingh Research and Development, University of Twente

Thirty minutes of treadmill walking significantly alters knee muscle activation and joint biomechanics in asymptomatic individuals and people with moderate knee osteoarthritis

Derek J Rutherford, Matthew Baker, William Stanish

Dalhousie University

O9 EMG Modeling & Processing I - Modeling

Chair(s)

Mathematical Analysis of a Model of Intracellular Action Potential Generation

Eike Petersen, Philipp Rostalski

University of Lübeck

Influence of index flexion and abduction on the EMG signals recorded from the first dorsal interosseous muscle: an electrophysiological model based on diffusion tensor imaging

Diego Pereira Botelho, Niall Colgan, Kathleen Curran, Madeleine M Lowery

University College Dublin

Preliminary Programme

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Influence of the conduction properties of muscle tissue on surface motor unit action potentials

Alessio Puleo, Paola Contessa, Marco Knaflitz

Politecnico di Torino

The specific impedance of the intra-fascicle environment obtained via nerve fibre models

James Hope, Frederique Vanholsbeeck, Andrew McDaid

University of Auckland

Modeling the synaptic input to motor neurons in spastic muscles

Catherine Disselhorst-Klug, Kathrin Koch

Institute for Applied Medical Engineering, RWTH Aachen University

Modelling voluntary contraction of knee extensors using a motor unit recruitment model

Ekin Altan, Leonardo Gizzi, Oliver Röhrle

University of Stuttgart

O10 Motor Units

Chair(s)

A novel insertion technique for intramuscular measurement of EMG activity of the deep intrinsic foot muscles during walking

Natalie J Collins, Sauro E Salomoni, Edith L Elgueta-Cancino, Kylie Tucker, Paul W Hodges

The University of Queensland

Influence of muscle length on motor unit discharge rates in the tibialis anterior muscle

Claudio Orizio, Marta Cogliati, Alessandro Cudicio, Francesco Negro

University of Brescia

Decomposition of surface EMG Signals from Activities of Daily Living

Joshua C Kline, Bhawna Shiwani, Serge H Roy, John P Chiodini, Gianluca De Luca

Delsys, Inc and Altec, Inc

Preliminary Programme

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Estimation of the neural drive during vibration exercise by high-density surface-electromyography decomposition

Lin Xu, Yu Xu, Francesco Negro, Dario Farina, Massimo Mischi
Eindhoven University of Technology

Sex-related differences in motor unit behaviour at 20, 40, 60, 80 and 100 percent of maximal isometric voluntary contraction.

J. Greig Inglis, J Greig Inglis, Justin Parro, David A Gabriel
Brock University

Relationship between motor unit coherence and nonlinear surface emg features during isometric contraction

Lara McManus, Matthew Flood, Madeleine M Lowery
University College Dublin

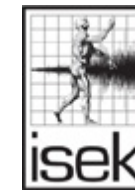
16.30 - 17.30 Coffee, Poster Session I & Exhibitors

Keynote lecture

17.30 - 18.30 **Apostolos P. Georgopoulos**
University of Minnesota

Preliminary Programme

Sunday, 1st July



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8.30 - 9.30

Keynote lecture

Prof. Cathy Stinear

University of Auckland

9.30 - 11.00

Parallel Sessions

S6 Symposium: EMG Signal Decomposition: Validation and Impact In Our Physiological Understanding of Neural Control of Movement

Chairs(s): Dario Farina, Imperial College London and Ales Holobar, University of Maribor

Identification of motor unit firings at different speeds of dynamic muscle contractions

Ales Holobar, Vojko Glaser

University of Maribor

Motor unit firing properties in the biceps brachii of hemiparetic stroke survivors studied using template-based recognition algorithms: contributions to muscle weakness

William Z Rymer

Shirley Ryan AbilityLab

Associations between motor unit activity during steady isometric contractions with lower leg muscles and mobility in older adults and persons with multiple sclerosis

Roger Enoka, AM Almklass, E Mani, T Vieira, T Botter

University of Colorado

Identifying the organization of synaptic input to motoneurons in humans

CJ Heckman

Northwestern University

O11 Reflexes & Neural Pathways II

Chairs(s):

Wrist stretch reflex responses are modulated by expectancy

Karen Rodriguez, Winfred Mugge, Alfred C Schouten

TU Delft

Preliminary Programme

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Cold-water immersion of a single limb reduces inhibition and enhances facilitation in the motor cortex of the opposite limb

Justin Kavanagh, Eden Delahunty, Daniel Mckeown, Jacob Thorstensen

Griffith University

THE INTERFERENCE OF TONIC FRONTALIS MUSCLE ACTIVITY ON THE EEG SIGNAL

Gizem YILMAZ, Abdullah Salih Budan, Kemal S.Türker

Koc University

Effect of aerobic exercise on electroencephalogram parameters and cognitive functions in patients with mild cognitive impairment

Imran Khan Niazi, Imran Amjad, Hamza Ghazanfar, Mehmood Toor, Hina Afzal, Mads Jochumsen, Muhammad Shafiq, Kathryn Allen, Heidi Haavik, Touqeer Ahmed

New Zealand College Of Chiropractic

A single session using a novel music-motor therapy app increases corticomotor excitability in healthy young adults

Katherine Hankinson, Alex Shaykevich, Jennifer Rodger, Christopher Etherton-Bear, Michael Rosenberg, Ann-Maree Vallence

University of Western Australia

Reliability of corticomotor excitability analyses using transcranial magnetic stimulation on two lower extremity muscles

Yo Shih, Christopher M Powers, Beth E Fisher

University of Southern California

S7 Symposium: Ultrasound Elastography – What Are We Measuring in Muscle?

Chairs(s): Sabrina Lee, Northwestern University; Eric Perreault, Northwestern University & Tom Sandercock, Northwestern University

Shear-wave elastography in various muscles and conditions in humans

Minoru Shinohara, Yasuhide Yoshitake

Georgia Institute of Technology

Physiologic and Technical Considerations for Implementing Shear Wave Elastography in Musculoskeletal Applications

Sarah Eby, Sarah F Eby, Zaiyang Long, Donald Tradup, Shigao Chen, Hugo Giambini, Katrina Glazebrook, Nicholas Hangiandreou, Kristin D Zhao

University of Utah

Preliminary Programme

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Shear Wave Velocity Varies in Human Muscles with Different Architectures Even When Activated to the Same Percent of Maximal Force

Michel Bernabei, Thomas G Sandercock, Eric J Perreault, Sabrina SM Lee

Northwestern University

Temperature Decouples the Effects of Stiffness and Tension on Ultrasound Shear Wave Velocity

Thomas G Sandercock, Thomas Sandercock, Michel Bernabei, Sabrina S. M. Lee, Eric J. Perreault

Northwestern University

O12 Sports Biomechanics

Chairs(s):

Influence of ankle taping and drop landing height on time of muscular pre-activation

Eric Jenkins, Daniel Russell, Cortney Armitano

Old Dominion University

Ankle Stability - Which muscles are essential for stabilization

Michael Asmussen, Michael J Asmussen, Ryan Peters, Tyler Cluff, Benno M Nigg

University of Calgary

Reactive Agility Responses in Collegiate Tennis Players after 8-Weeks Whole Body Vibration Training

İsmail Bayram, İsmail Bayram, Ali Onur Cerrah, Abdullah Ruhi Soylu, Hayri Ertan

Anadolu University

Torque sharing between hamstring muscle heads is individual-specific and is related to motor performance

Simon Avrillon, Gaël Guilhem, François Hug

French Institute of Sport (INSEP)

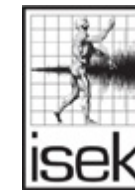
Sub-Optimal Hydration Impairs Muscle Contraction Speed in Forearm Muscles.

Lewis J Macgregor, Angus M Hunter

University of Stirling

Preliminary Programme

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Location of innervation zone on pectoralis major muscle and its shift during the bench press exercise

Hélio V Cabral, Leonardo M de Souza, Felipe D Mancebo, Lilliam F Oliveira, Taian M Vieira

Federal University of Rio de Janeiro

O13 Clinical Neuromechanics

Chairs(s):

The effects of forearm rotation on forearm muscle recruitment patterns during dynamic wrist flexion and extension contractions using a haptic wrist robot

Mike Holmes, Garrick N Forman, Davis A Forman, Edwin J Avila-Mireles, Jacopo Zenzeri, Michael W Holmes

Brock University

What are the immediate effects of foot orthosis geometry on lower limb EMG activity and foot biomechanics?

Joanna Reeves, Richard Jones, Anmin Liu, Leah Bent, Chris Nester

University of Salford

Integrating Neurocognition into Clinical Single-Leg Hop Tests

Janet E Simon, Nathan Millikan, Dustin R Grooms

Ohio University

Increased time-pressure results in a less cautious obstacle crossing strategy in subjects with and without simulated visual impairment

Tjerk Zult, Jonathan Allsop, Matthew Timmis, Shahina Pardhan

School of Medicine, Anglia Ruskin University, Cambridge, United Kingdom

Spread of Botulinum Toxin Type-A into Non-injected Antagonistic Muscles Affects Their Mechanics against Treatment Aims

Filiz Ates, Can Ayucesoy

Mayo Clinic

Lumbar posture and muscle recruitment during repetitive manual handling in young and older males.

Grant A Mawston, Grant Mawston, Mark G Boocock, Steve Taylor

Auckland University of Technology

Preliminary Programme

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11.00 - 12.00 Coffee, Poster Session II & Exhibitors

12.00 - 13.00 Parallel Sessions

S8 Symposium: Novel Approaches to Enhance Recovery After Central Nervous System Injury

Chairs(s): Monica Perez, University of Miami; Jose Pons, Cajal Institute Spanish National Research Council

TBC

Antonio Oliviero

TBC

Guillermo Garcia-Alias

TBC

Jose Pons

TBC

Monica Perez

O14 Back, Neck & Shoulder Pain II

Chairs(s):

Altered lumbar biomechanics in pregnant women during trunk flexion-extension

Daniel Sánchez-Zuriaga, Gemma Biviá-Roig, Juan Francisco Lisón

Universitat de València

Lumbar kinematics and fear-avoidance beliefs in relation to disability and workability in patients with low back pain. A longitudinal study.

Anne L Nordstoga, Ottar Vasseljen, Tom Ivar L Nilsen, Ingebrigt Meisingset, Monica Unsgaard-Tøndel

Norwegian University of Science and technology

Shear wave elastography reveals differences in lumbar erector spinae muscle stiffness in individuals with low back pain

Carlos Murillo, Deborah Falla, Alison Rushton, Andrew Sanderson, Nicola Heneghan

Centre of precision rehabilitation for spinal pain, University of Birmingham

Preliminary Programme

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Eight weeks of training with EMG-biofeedback and the effect on pain and function in patients with subacromial impingement - a randomised controlled trial

Birgit Juul-Kristensen, Camilla Marie Larsen, Henrik Eshøj, Trine Holt Clemmensen, Anders Hansen, Peter Bo Jensen, Eleanor Boyle, Karen Søgaard

University of Southern Denmark

O15 Motor Control III

Chairs(s):

Each individual has unique muscle activation signatures

Francois Hug, Marion Crouzier, Thibault Deschamps, Sylvain Dorel, Kylie Tucker, Lilian Lacourpaille

University of Nantes

Simultaneous and proportional control of combined finger movements

Sigrid S Dupan, Martyna Stachaczyk, Ivan Vujaklija, Janne M Hahne, Dick F Stegeman, Strahinja Dosen, Dario Farina

Donders Institute for Brain, Cognition, and Behaviour

Violinists' muscular load during violin performance

Stephanie Reesen Mann, Mads Panduro, Ruben Wendelboe Hansen, Helene M Paarup, Lars Brandt, Karen Søgaard

University of Southern Denmark

sEMG-based Speech Recognition for People with Laryngectomy

Serge H Roy, Geoffrey S Meltzner, James T Heaton, Deng Yunbin, Gianluca De Luca, Bhawna Shiwani, Matthew Carroll, Joshua C Kline

Delsys Inc

O16 Gait & Posture II

Chairs(s):

Postural performance after bilateral or unilateral total hip arthroplasty

Roberto Gatti, Federico Temporiti, Roberta Furone, Mattia Loppini, Cecilia Gandolfi, Guido Grappiolo

Humanitas Clinical and Research Center ; Humanitas University

Kinematic gait variability of individuals with a transfemoral amputation.

Erik Prinsen, Jaap Buurke, Bart Koopman, Hans Rietman

Roessingh Research and Development

Preliminary Programme

Sunday, 1st July



International Society of
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Trunk and neck movements are reduced in people with chronic neck pain walking along a curved trajectory

Alessandro M De Nunzio, Alessandro Marco De Nunzio, Feras Alsultan, Ross Whalley, Syed Ahmad, Deborah Falla

School of Sport, Exercise and Rehabilitation Sciences, University of Birmingham

Electromyographic analysis of the up and down step: comparative dry and water

Manuel González Sánchez, Jaime Martín-Martín, Manuel González-Sánchez, David Pérez-Cruzado, Antonio I Cuesta-Vargas

Universidad de Málaga

O17 EMG Modeling & Processing II - Signal Analysis

Chairs(s):

A Signal Quality Index for Electrode Location using Single-channel surface EMG features

Yiyang Shi, Dawn MacIsaac, Philip Parker

University of New Brunswick

Multi-channel analysis of the electrohysterogram by Entropy-based features to predict preterm birth and detect labor

Chiara Rabotti, Massimo Mischi, Beijing Ding, Hinke de Lau, Beatrijs van der Hout, Guid S Oei

Eindhoven University of Technology

LONG-TERM RELIABILITY OF MOTOR UNIT DISCHARGE RATES IN THE FLEXOR CARPI RADIALIS OBTAINED BY DECOMPOSITION OF THE SURFACE ELECTROMYOGRAPHIC SIGNAL

Thomas B Hoshizaki, Thomas Hoshizaki, Robert Kumar, J. Greig Inglis, Lara A Green, David A Gabriel

Brock University

Amplitude cancellation impairs the ability of the rectified EMG to reflect the neural drive to muscles

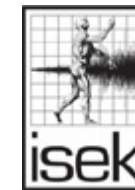
Jakob L Dideriksen, Dario Farina

Aalborg University

13.00 - 14.00 Lunch, Poster Session II & Exhibitors

Preliminary Programme

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Keynote lecture

14.00 - 15.00

Prof. Walter Herzog

Carlo de Luca Memorial Lecture, University of Calgary

15.00 - 16.30

Parallel Sessions

O18 Fatigue I

Chairs:

Is the control scheme of motor unit behavior altered during muscle fatigue?

Paola Contessa, John Letizi, Gianluca De Luca, Joshua C Kline

Delsys and Altec Inc

Neck muscle fatigue affects somatosensory evoked potentials and impacts motor skill acquisition and retention of a hand tracking task

Bernadette A Murphy, Mahboobeh Zabihhosseinian, Paul Yelder, Rufeida Cosgun, Ushani Ambalavanar, Bernadette Murphy

University of Ontario Institute of Technology

Exploring the physiological mechanisms of caffeine in a non-fatigued state and during fatiguing exercise - responders versus non-responders

Ricardo Mesquita, Heikki Kyröläinen, Neil J Cronin, Jukka E Hintikka, Janne Avela

Edith Cowan University

Muscle membrane excitability during repeated intermittent maximal voluntary contractions by a separate analysis of the first and second M-wave phases

Javier Rodriguez-Falces

Public University of Navarra

A motor unit-based model of muscle fatigue and recovery

Jim R Potvin, Andrew J Fuglevand

McMaster University

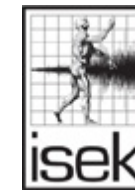
CAN SUBJECTIVE MAXIMAL VOLUNTARY CONTRACTION BE MEASURED OBJECTIVELY?

Kemal Turker, Betilay Topkara Arslan, Ilhan Karacan, Nurdan Paker, Evrim Coskun Celik, Beatrice Selen Senocak, Mustafa Gorkem Ozyurt

Koc University

Preliminary Programme

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S9 Symposium: An Increased Reliance on Contralateral Cortico-reticulospinal Motor Pathways and Sensorimotor Impairments following a unilateral brain injury: Good or Bad?

Chairs: Julius P.A. Dewald, Northwestern University

The monoaminergic component of the reticulospinal system

CJ Heckman

Northwestern

The reticulospinal tract and recovery of hand function: second best is better than nothing

Stuart N Baker

Newcastle University

Rate Modulation and further evidence for changes in persistent inward currents during isometric dynamic torque tasks in chronic hemiparetic stroke.

Altamash S Hassan, Mark Q Cummings, C.J. Heckman, Laura M McPherson, Julius P Dewald

Northwestern University

Evidence for an increased dependence on contralateral corticoreticulospinal pathways as a form of maladaptive plasticity post hemiparetic stroke

Julius Dewald

Northwestern University Feinberg School of Medicine

S10 Symposium: Neuromechanics of Joint Stability After Anterior Cruciate Ligament Reconstruction

Chairs: Luca Laudani, Cardiff Metropolitan University; Andrea Macaluso, University of Rome Foro Italico

Longitudinal assessment of anticipatory and compensatory strategies following anterior cruciate reconstruction

Luca Laudani, Luciana Labanca, Jacopo E Rocchi, Pier Paolo Mariani, Andrea Macaluso

Cardiff Metropolitan University

A novel early exercise intervention following ACL reconstruction: neuromuscular electrical stimulation superimposed on movement

Andrea Macaluso, Luciana Labanca, Jacopo Emanuele Rocchi, Luca Laudani, Pier Paolo Mariani

University of Rome Foro Italico; Villa Stuart Sport Clinic, FIFA Medical Centre of Excellence

Novel rehabilitation principles to target deficits after ACL reconstruction

Alli Gokeler

University Medical Center Groningen, University of Groningen

Preliminary Programme

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Neuromuscular requirements for joint stability during sports with high risk of acute knee injuries

Jesper Bencke, Per Aagaard, Mette K Zebis

Hvidovre Hospital

Tibiofemoral joint contact forces following ACL reconstruction and the association with cartilage and subchondral bone pathologies

Adam L Bryant

The University of Melbourne

O19 Muscle and Force

Chairs

Why do muscles lose force potential when activated within their agonistic group?

Daiani de Campos, Heiliane de Brito Fontana, Andrew Sawatsky, Seong-won Han, Walter Herzog

Universidade Federal de Santa Catarina

Is explosive strength affected by fascicle tendon interactions?

Robin Hager, Dorel Sylvain, Nordez Antoine, Thomas Poulard, Gaël Guilhem

INSEP

Measuring In Vivo Muscle Architecture Parameters to Determine Changes in Optimal Fascicle Length and Physiological Cross Sectional Area Following Hemiparetic Stroke: Preliminary Findings

Amy N Adkins, Lindsay Garmirian, Christa M Nelson, Julius P Dewald, Wendy M Murray

Northwestern University

Muscle belly gearing differs between gastrocnemius medialis and lateralis during submaximal isometric contractions

Susann Wolfram, Emma F Hodson-Tole

University of Bath

Does the shear wave propagation velocity behave in accordance with the uneven myoelectric activity of rectus femoris during hip flexion contractions?

Lilium F Oliveira, Thomas Bonis, Hélio V Cabral, Leonardo M de Souza, Remi Rouffaud

Federal University of Rio de Janeiro

Preliminary Programme

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Identification of time-varying joint impedance using single trial data

Mark L van de Ruit, Gaia Cavallo, John Lataire, Winfred Mugge, Frans C van der Helm, Jan-Willem van Wingerden, Alfred C Schouten
Delft University of Technology

16.30 - 17.30 Coffee, Poster Session II & Exhibitors

20:00 - Late Conference Dinner in Guinness Storehouse (pick up at 19.30 for 20.00 start)

Preliminary Programme

Monday, 2nd July



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8.30 - 9.30 **Keynote lecture**
Prof. Peter Brown
University of Oxford

9.30 - 11.00 **Parallel Sessions**

S12 Symposium: Neuromechanical Adaptations After Training and Exercise

Chairs(s): Francesco Negro, University of Brescia; Claudio Orizio, University of Brescia

The motor unit plasticity under the influence of a strength training, endurance training and functional muscle overload

Jan Celichowski

University School of Physical Education in Poznan

Training-Related Changes In Motor Coordination: Balance Exercises And Sports Medicine

Anderson Oliveira

Aalborg University

Changes in the behavior of longitudinally-tracked motor units following four weeks of isometric strength training

Alessandro Del Vecchio, Andrea Casolo, Francesco Negro, Ilenia Bazzucchi, Francesco Felici, Dario Farina

Imperial College London

Differential changes in motor unit properties following either endurance or high-intensity interval training: New insights with high-density surface EMG decomposition techniques

Eduardo Martinez-Valdes, Deborah Falla, Francesco Negro, Dario Farina

University of Birmingham

Adaptations in the common synaptic input to populations of motor neurons after motor learning

Francesco Negro, Alessandro Del Vecchio, Farina Dario, Claudio Orizio

Universita' degli Studi di Brescia

S13 Symposium: New Insights into Trunk Control in Back Pain Through Novel Approaches

Chairs(s): Paul Hodges, University of Queensland

Preliminary Programme

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New ways to probe and measure spine movement quality and motor control.

Ryan Graham

University of Ottawa

Understanding the biology of muscle changes in low back pain and injury: Time dependent mechanisms that modify the capacity of muscle to move and control the spine

Paul W Hodges

The University of Queensland

New insights into trunk muscle control in low back pain revealed with high-density surface electromyography

Deborah Falla

Birmingham University

Mapping the nervous system organization and function of trunk muscles in low back pain: insights from brain stimulation and withdrawal reflexes

Hugo Massé Alarie

Laval University

Linear and non-linear analysis of individual adaptations during gait in low back pain

Wolbert van den Hoorn

The University of Queensland

O20 Fatigue II

Chairs(s):

Muscle electrical activity changes over time during stair ascending until exhaustion

Amitava Halder, Johan Swärd, Kaley Kuklane, Andreas Jakobsson, Michael Miller, Jeannette Unge, Siyeon Kim, Chuansi Gao

Lund University

Effect of Dynamic Muscle Fatigue on Knee Extensors Maximal Strength and Torque Steadiness in Young and Older Individuals

Rui Wu, Eamonn Delahunt, Massimiliano Ditroilo, Madeleine M Lowery, Carlo Ferri Marini, Giuseppe De Vito

University College Dublin

Preliminary Programme

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Postural position sequences correlate to perceived pain and fatigue

Andrew Hamilton-Wright, Nancy L Black, Josh Lange, Clément Bouet, Mariah Martin Shein, Marthe Samson, Maxime Lecanelier

University of Guelph

Central and peripheral fatigue affects maximal, but not submaximal, rate of force development in runners

Gennaro Boccia, Davide Dardanella, Paolo Brustio, Cantor Tarperi, Luca Festa, Barbara Pellegrini, Antonio La Torre, Federico Schena, Alberto Rainoldi

University of Turin

Additional Insight Into Biarticular Muscle Function: The Influence Of Hip Flexor Fatigue On Rectus Femoris Activity At The Knee

Matt S Stock, Jennah M Hernandez, Jesus R Ortegon, Jacob A Mota, Joshua C Carr

University of Central Florida

The central nervous system adapts toward a more balanced force distribution between synergist muscles during a fatiguing task

Lilian Lacourpaille, Marion Crouzier, François Hug

University of Nantes

O21 Gait & Posture III

Chairs(s):

Extraction of the principal EMG-activations in 100 children during gait: analysis of rectus femoris and vastus medialis

Marco Knaflitz, Valentina Agostini, Cristina Castagneri, Samanta Rosati, Gabriella Balestra

Politecnico Di Torino

Are older adults able to modify anticipatory postural adjustments following balance perturbations in gait initiation?

Lorenzo Rum, Giuseppe Vannozzi, Emanuele Giartosio, Andrea Macaluso, Luca Laudani

University of Rome "Foro Italico"

Walking with visual perturbations but not an attention-dividing task modulates muscle coactivation patterns in old adults

Samuel A Acuña, Carrie A Francis, Jason R Franz, Darryl G Thelen

University of Wisconsin-Madison

Preliminary Programme

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A Strong Medial-Lateral and Anterior-Posterior Coupling During Single-Leg Stance is Related to Muscle Activity Modulation in Seniors

Eduard Kurz, Lars Donath, Ralf Roth

Martin-Luther-University

Exploring SEMG-based biomarkers to detect early signs of sarcopenia: age-specific differences in the time-frequency representation of SEMG data recorded during a submaximal cyclic back extension exercise

Gerold Ebenbichler, Richard Habenicht, Paolo Bonato, Josef Kollmitzer, Sara Riegler, Lena Unterlerchner, Patrick Mair, Thomas Kienbacher

Vienna Medical University

Muscular activation in vibration perturbed human walking

Francesco Felici, Ilenia Bazzucchi, Enrico Marchetti, Luigi Fattorini, Cristian Ieno, Marco Tarabini, Angelo Tirabasso

Rome University "Foro Italico"

O22 Myoelectric Control

Chairs(s):

Improving two-channel myoelectric control performance through spatial information enhancement

Jiayuan He, Xinjun Sheng, Xiangyang Zhu, Ning Jiang

University of Waterloo

Myo-ART: A surface EMG augmented reality tool

Marco Gazzoni, Luigi Cerone

Politecnico di Torino

Motor Unit Drive (MU Drive) Improves Over Myoelectric Signals for Upper-limb Prosthetic Control

Joshua C Kline, Michael D Twardowski, Serge H Roy, Zhi Li, Gianluca De Luca

Delsys, Inc and Altec, Inc

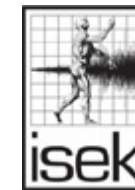
Adapting Myoelectric Pattern Recognition in a Virtual Environment

Richard B Woodward, Levi J Hargrove

Shirley Ryan AbilityLab

Preliminary Programme

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Reachy, a 3D-printed human-like robotic arm as a test bed for prosthesis control strategies

Sébastien Mick, Matthieu Lapeyre, Christophe Halgand, Florent Palet, Daniel Cattaert, Pierre-Yves Oudeyer, Aymar de Rugy
INCIA - UMR 5287 - CNRS

Sensory and motor parameter estimation for elbow myoelectric control with vibrotactile feedback

Matthieu Guemann, Matthieu Guemann, Sandra Bouvier, Christophe Halgand, Léo Borrini, Florent Palet, Eric Lapeyre, Damien Ricard, Daniel Cattaert, Aymar de Rugy
INCIA CNRS

11.00 - 12.00 Coffee, Poster Session III & Exhibitors

12.00 - 13.00 Parallel Sessions

O23 Motor Control IV

Chairs(s):

Do neural modulations contribute to force enhancement during and after the stretch-shortening cycle?

Frank Schulz, Brent Raiteri, Daniel Hahn
Ruhr-Universität Bochum

Agonist and antagonist activation during dynamic functional tasks in a synergistic muscle pair

Paola Contessa, Serge Roy, Gianluca De Luca, Joshua C. Kline
Delsys and Altec Inc

The Neuromuscular Mechanisms and Motor Learning Adaptations Contributing to Cross Education in the Upper and Lower Limbs

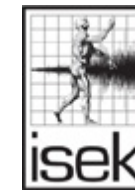
Lara A Green, David A Gabriel
Brock University

Neuromechanical coupling within the triceps surae muscle group and its consequence on force sharing

Marion Crouzier, Lilian Lacourpaille, Antoine Nordez, Kylie Tucker, François Hug
Université de Nantes

Preliminary Programme

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S14 Symposium: Insights into Cognitive Processes from Motor System Measurements

Chairs(s): Simon Kelly, University College Dublin; Mathieu Servant, Vanderbilt University

Using covert response activation to test latent assumptions of formal decision-making models in humans

Mathieu Servant, Corey White, Anna Montagnini, Boris Burle

Western University

Active braking of whole-arm reaching movements provides single-trial neuromuscular measures of movement cancellation

Brian D Corneil, Jeroen Atsma, Femke Majj, Chao Gu, Pieter Medendorp

Columbia University

Intensified motor activity makes for faster responses when deciding under speed pressure

Natalie A Steinemann, Redmond G O'Connell, Simon P Kelly

Aix-Marseille Université, CNRS

Reaction time fractioning with EMG: what can muscles tell us about mental processes

Boris Burle

Cardiff Metropolitan University

O24 EMG Modeling & Processing III - Signal Analysis

Chairs(s):

Application of a genetic algorithm to establish baseline data for an SEMG noise detection algorithm

Yiyang Shi, Shriram Tallam Puranam Raghu, Dawn MacIsaac, Philip Parker

University of New Brunswick

Numerical Identification of Motor Units using an Optimal Control Approach

Tobias Sproll, Anton Schiela, Madeleine Lowery

University Bayreuth

Relationship Between Indwelling Motor Unit Activity And Surface Electromyographic Variables Between 20 And 100 Percent Of Maximal Voluntary Contraction

J. Greig Inglis, Justin Parro, David A Gabriel

Brock University

Preliminary Programme

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An algorithm to identify and quantify intermittent (burst-like) muscular patterns of activity in HD-sEMG signals

Alejandra Aranceta-Garza, Roberto Merletti

University of Strathclyde

O25 Wearable Sensors & Accelerometry

Chairs(s):

Estimating dynamic loading during walking using low-cost ankle accelerometers in postmenopausal women

Emma Fortune, Stefan I Madansingh, Dennis H Murphree, Kenton R Kaufman

Mayo Clinic

Quantification of movement performance in the upper extremities of children with obstetrical brachial plexus palsy (OBPP) using accelerometers

Sybele E Williams, Ligia C Santos Fonseca, Jörg Bahm, Catherine Disselhorst-Klug

Institute of Applied Medical Engineering / AME

Comparison of features extracted from data simultaneously recorded using different commercially available wearable accelerometers and a force plate.

Emer P Doheny, Emma Fortune, Ben O'Callaghan, Madeleine M Lowery

University College Dublin

A comparative analysis of different sensor fusion algorithms for orientation estimation using magnetic and inertial sensing

Marco Caruso, Andrea Cereatti, Marco Knäflitz

Politecnico di Torino

O26 Knee Biomechanics and Rehabilitation III

Chairs(s):

Motor Unit Characteristics of Vastus Medialis Muscle in ACL Reconstructed Knees After Second ACL Tear

Eduard Kurz, René Schwesig, Lars Reinhardt, Stefan Pröger, Kay Brehme, Martin Pyschik, Stephan Schulze, Karl-Stefan Delank, Wolfgang Laube, Thomas Bartels

Martin-Luther-University

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Hip Muscle Activation In Persons With PFP During The Side-Step Exercise: Is Resistance Important?

David M Selkowitz, George J Beneck, Carrie Robinson, Christopher M Powers

MGH Institute of Health Professions

An Investigation Into The MVIC And Surface EMG Median Frequency Of The Knee Extensor Muscles Measured In T2D Patients And Healthy Sedentary Individuals

Hugh Byrne, Martin O'Reilly, Brian Caulfield, Chris Thompson, Diarmuid Smith, Margaret Griffin, Giuseppe De Vito

Insight Centre at University College Dublin

Spatial dependencies of knee vibroarthrograms during knee flexion-extension movement

Pascal Madeleine, Rasmus E Andersen, Lars Arendt-Nielsen

Aalborg University

13.00 - 14.00 Lunch, Poster Session III & Exhibitors

13.00 - 14.00 ISEK General Assembly

Keynote lecture

14.00 - 15.00 **Prof. Taija Finni**

International Society of Biomechanics (ISB) Lecture, University of Jyväskylä

15.00 - 16.30 Parallel Sessions

O27 Movement Disorders

Chair(s):

Myotonometry in spastic Cerebral Palsy: A pilot study on the effects of isometric contractions on biomechanical muscle parameters of the upper limb

Andrew J McDaid, Lukas G Wiedemann, Amy Hogan, Sarah Ward

The University of Auckland

Saccade Behaviour in Cervical Dystonia

Rebecca B Beck, Simone Kneafsey, Shruti Narasimham, Mariam Al Hussona, Sean O'Riordan, Michael Hutchinson, Richard B Reilly

Trinity College Dublin

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Monitoring Movement Disorders in Parkinson's Disease

Serge H Roy, Bhawna Shiwani, Joshua C Kline, Maria H Saint-Hilaire, Cathi A Thomas, Gianluca De Luca

Delsys Inc

Muscle activation in most versus least affected side in patients with Parkinson's disease.

Bente Rona Jensen, Anne Sofie Bøgh Malling, Meaghan Spedden, Bo M Morberg, Ole Gredal, Per Bech, Lene Wermuth

OUH/University of Southern Denmark

Dynamic Movement in Parkinson's Disease Quantified Using Nonlinear EMG Features

Matthew W Flood, Paul Diamond, Ben O'Callaghan, Madeleine M Lowery

University College Dublin

Effect of rhythmic auditory cueing on muscle synergies in people with Parkinson's disease: A pilot study

Annette L Pantall, Aisha Islam, Cuili Chen, Lynn Rochester, Lisa Alcock, Annette Pantall

Newcastle University

S15 Symposium: Moving Beyond the Physical: Addressing Musculoskeletal Injury Induced Neuroplasticity and Motor Control to Improve Patient-function

Chairs: Dustin R. Grooms, Ohio University

Clinically Targeting Neuroplasticity in Rehabilitation

Alli Gokeler

University Medical Center Groningen. Univeristy of Groningen

Neuroplasticity after Musculoskeletal Injury

Dustin R Grooms

Ohio University

Patient-Outcomes to ensure Optimized Patient-Function

Janet E Simon

Ohio University

Preliminary Programme

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Motor Performance changes after Musculoskeletal injury

Jae Yom

Ohio University

Translating Neuroplasticity to Motor Performance

Jochen Baumeister

Paderborn University

S16 Symposium: Neuromechanics of LowerLimb Amputation and Prosthetic Gait

Chairs: Silvia Conforto, Roma Tre University

Muscle synergies of the contralateral lower limb in trans-femoral amputees gait

Cristiano De Marchis, Simone Ranaldi, Silvia Conforto

University Roma TRE

Kinetic and kinematic patterns for prosthetic gait analysis

Silvia Conforto, Mariano Serrao, Tiwana Varrecchia, Martina Rinaldi

University Roma TRE

Quantitative indexes for assessing lower limb muscle co-activation in amputated subjects.

Silvia Conforto, Alberto Ranavolo, Francesco Draicchio

University Roma TRE

Indexes for the Functional Evaluation of Dynamic Stability in Amputees Gait

Simone Ranaldi, Cristiano De Marchis, Michelangelo Guaitolini, Silvia Conforto

University Roma TRE

Neuro-Mechanical Indicators Of Amputees Rehabilitation

Silvia Conforto

University Roma TRE

Preliminary Programme

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O28 Sensors

Chairs:

Development And Testing Of Hydrogel-Based EMG Electrodes Transparent To Ultrasounds

Alberto Botter, Marialaura Beltrandi, Matteo Mistretta, Marco Gazzoni, Taian Vieira

Politecnico di Torino - LISIN

Design and validation of a modular and wearable High-Density sEMG acquisition system

Giacinto Luigi Cerone, Alberto Botter, Marco Gazzoni

Politecnico di Torino

Fabrication & Evaluation of 3D Printed Microneedle Electrodes for Use in Surface EMG

Kevin J Krieger

University College Dublin

High-Density Electrodes For Intramuscular Electromyographic Recordings

Silvia Muceli, Wigand Poppendieck, Klaus-Peter Hoffmann, Ken Yoshida, David Liebetanz, Dario Farina

Imperial College London

Single-needle multiscanning-EMG

Javier Navallas, Adrian Eciolaza, Oliver Rubio, Iñigo Corera, Javier Rodriguez, Armando Malanda

Public University of Navarra

Experimental setup for objective evaluation of ultrasound speckle tracking in the human uterus

Federica Sammali, Celine Blank, Lin Xu, Yizhou Huang, Nienke Petronella Maria Kuijsters, Benedictus Christiaan Schoot, Massimo Mischi

Eindhoven University of Technology

O29 Back, Neck & Shoulder Pain III - Shoulder & Neck

Chairs:

Fatigue-induced changes in cervical extensors muscles on sensorimotor performance: manifestations in subclinical neck pain group

Sharon MHTsang, Sharon Tsang, Chi-Wun Au, Cherry Chan, Kimmy Chow, Alvin Luk, Alvin Wong, Jay Dai, Grace Szeto

The Hong Kong Polytechnic University

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Reorganisation OfThe Motor Cortex In Individuals With Neck Pain

Edith Elgueta Cancino, Welber Marinovic, Gwendolen Jull, Paul Hodges

University of Queensland

Muscle stiffness is objectively not increased in chronic neck pain

Angela V Dieterich, Utku Yavuz, Antoine Nordez, Deborah Falla, Frank Petzke

University Medical Center Goettingen

The consistency in locating nociceptive stimuli applied to the lumbar region

Marco Barbero, Davide Trenta, Alberto Gallace, Deborah Falla, Corrado Cescon, Davide Corbetta

University of Applied Sciences and Arts of Southern Switzerland

The initial effects on shoulder muscle activity of shoulder mobilization with movement during shoulder abduction: a repeated-measures study on patients with pain-limited shoulder elevation

Daniel Cury Ribeiro, Daniel C Ribeiro, Gisela Sole, Jonathan Shemmell, Bill Vicenzino

University of Otago

Is grip strength a reliable indicator of recovery following upper limb fatigue?

Omid Khaiyat, David Hawkes, Michael Grant, Jessica McMahon, Ian Horsley

Liverpool Hope University

16.30 - 17.30 Coffee, Poster Session III & Exhibitors

17.30 - 18.00 Award Ceremony