Free Papers I: Ortho- Foot, Knee & Spine

8:20am – 8:27am
I1: EFFECTS OF CALCANEAL LENGTHENING OSTEOTOMY ON FOOT PROGRESSION ANGLE IN CHILDREN WITH CEREBRAL PALSY
Ryan Davenport, BS; Alesia Blanchard, BS; Claire Palmer, MS; Dennis Matthews, MD; Jason Rhodes, MD

8:28am – 8:35am
I2: GRADUAL SERIAL EXTENSION WEIGHT BEARING CASTING PROTOCOL IMPROVES KNEE RANGE OF MOTION AND SAGITTAL PLANE KINEMATICS IN CHILDREN WITH CEREBRAL PALSY, CROUCH GAIT AND KNEE FLEXION CONTRACTURES
Verena Schreiber, MD; Leah Cobb, MD; Jason Long, PhD; James McCarthy, MD

8:36am – 8:43am
I3: IS GUIDED HEMIEPIPHYSIODESIS WITH ‘8 PLATE’ EFFECTIVE FOR TREATMENT OF FIXED KNEE FLEXION CONTRACTURE IN PATIENTS WITH CEREBRAL PALSY?
Cemil Yildiz, Prof.; Serkan Akpancar, MD; Kenan Koca, MD

8:44am – 8:51am
I4: EFFECT OF MULTILEVEL SURGERY WITH HAMSTRING LENGTHENING IN AMBULATORY CHILDREN WITH CEREBRAL PALSY
Brian Po-Jung Chen, PT, MD; John Henley, PhD; Julieanne Sees, DO, FAOAO; Kenneth Rogers, PhD, ATC; Mutlu Cobanoglu, MD; Chris Church, MPT; Nancy Lennon, MS, PT; Freeman Miller, MD

8:52am – 8:59am
I5: LONG-TERM OUTCOMES AFTER DISTAL FEMORAL EXTENSION OSTEOTOMY AND PATELLAR TENDON ADVANCEMENT IN INDIVIDUALS WITH CEREBRAL PALSY
Elizabeth Boyer, PhD; Jean Stout, MS, PT; Jennifer Laine, MD; Sarah Gutknecht, DNP; Lucas Henrique Araujo de Olivera, MD; Meghan Munger, MPH, CCRC; Michael Schwartz, PhD; Tom Novacheck, MD

9:00am – 9:15am QUESTIONS AND ANSWERS

9:16am – 9:23am
I6: WHAT ARE ORTHOPEDIC SURGEONS DOING FOR CHILDREN WITH CEREBRAL PALSY? A UNITED STATES PERSPECTIVE.
Chun Wai Hung, MEng; Hiroko Matsumoto, MA, PhDc; Fay Callejo, MPH; Jodie Shea, BS; Brian Snyder, MD, PhD; Joshua Hyman, MD; Joseph Dutkowsky, MD; David Roye, MD

9:24am – 9:31am
I7: THE VALUE OF MOTION LAB TRAINING IN THE ORTHOPAEDIC RESIDENCY CURRICULUM
Jason Malone, DO; Jessica Burns, MD; Mohan Belthur, MD, FRCSC, FRCS (Tr & Orth); Judson Karlen, MD

9:32am – 9:39am
I8: THE VALIDITY OF PLUG-IN-GAIT MODEL IN MEASURING SEGMENTAL LENGTH
Barry Danino, MD; Sam Khamis, Msc.PT
I9: A NOVEL RISK SEVERITY SCORE TO PREDICT PEDIATRIC SPINE SURGICAL SITE INFECTION IN PATIENTS WITH CEREBRAL PALSY RANGES FROM 0.88% TO 23.3%
Hiroko Matsumoto, MA, PhDc; Chun Wai Hung, MEng; Jeanne Franzone, MD; Michael Troy, B.S.; Brendan Striano, BA; John Flynn, MD; David Skaggs, MD, MMM; Michael Glotzbecker, MD; Michael Vitale, MD, MPH; David Roye, MD

I10: THE EFFECT OF A CO-SURGEON ON OUTCOMES & COST IN CP SPINE SURGERY
Rachel Thompson, MD; Oussama Abousamra, MD; Meryl Ludwig, MD; Freeman Miller, MD; Kirk Dabney, MD; Julieanne Sees, DO, FAOAO

9:48am – 9:55am

QUESTIONS AND ANSWERS

Free Papers J: Early Intervention & Early Motor Assessment

8:20am – 8:27am
J1: FUNCTIONAL CONNECTIVITY OF NEONATAL SOMATOSENSORY EEG NETWORKS PREDICTS TACTILE REACTIVITY AND FINE MOTOR FUNCTION IN EARLY CHILDHOOD
Hemang Shrivastava, PhD; Olena Chorna, MM, MT-BC, CCRP; Nathalie Maitre, MD, PhD

8:28am – 8:35am
J2: ORAL SENSORIMOTOR INTERVENTION IMPROVES BREASTFEEDING ESTABLISHMENT IN PRETERM INFANTS
Sandra Fucile, PhD; Miona Milutinov, M.D.; Kimberly Dow, MD, FRCPC

8:36am – 8:43am
J3: EARLY AMPLITUDE-INTEGRATED ELECTROENCEPHALOGRAPHY IN INFANTS TREATED FOR HYPOXIC-ISCHEMIC ENCEPHALOPATHY IS ASSOCIATED WITH OUTCOME AT 18 TO 24 MONTHS OF AGE
Mohamed Elboraee, MBBCh, MSc (Ped), PhD (Ped); Mosarrat Qureshi, MBBS, FRCPC; Ernest Phillipos, MBBS, FRCPC; Dalal Abdelgadir, MD, FRCPC; Amber Reichert, MD, FRCPC; Matthew Hicks, MD, PhD, FRCPC

8:44am – 8:51am
J4: NEURO-SENSORY MOTOR DEVELOPMENTAL ASSESSMENT AT 18-24 MONTHS PREDICTS QUALITY OF LIFE AT 3-1/2 TO 5 YEARS
Lynn Boswell, PT, MS; Mary Weck, BS; Mary Kay Santella, BS ; Cheryl Patrick, PT, MBA; Annamarie Russow, M. Ed., CCRP; Raye-Ann deRegnier, MD

8:52am – 8:59am
J5: IMPROVEMENTS FOLLOWING A DAILY INTENSIVE MOTOR LEARNING PROGRAM FOR YOUNG CHILDREN WITH CEREBRAL PALSY
Sarah Hendershot, DPT; Rachel Ferrante, PT, DPT, PCS; Kathy Baranet, DPT; Helen Carey, PT, DHSc, PCS; Jill Heathcock, PhD

9:00am – 9:15am QUESTIONS AND ANSWERS
J6: THE UTILITY OF THE GENERAL MOVEMENTS ASSESSMENT IN PREDICTING OUTCOMES IN THE NEONATAL SURGICAL POPULATION AT 12 MONTHS OF AGE  
Cathryn Crowle, OT; Karen Walker, PhD; Iona Novak, B App Sc (Occupational Therapy), MSc (Hons), PhD; Claire Galea; Nadia Badawi, PhD, FRACP

J7: GENERAL MOVEMENTS ASSESSMENTS IN THE NEONATAL INTENSIVE CARE UNITIMPROVES TARGETED NEUROIMAGING AND FOLLOW-UP OF INFANTS AT HIGH-RISK FOR MOVEMENT DISORDERS  
Nathalie Maitre, MD, PhD; Mary Ann Nelin, MD; Garey Noritz, MD; Olena Chorna, MM, MT-BC, CCRP; Jennifer Williams, CCRP; Helen Carey, PT, DHSc, PCS; Rachel Petras, PT; Leah Lumbaca, PT; Andrea Guzzetta, PhD, MD

J8: EARLY GENERAL MOVEMENTS AND PREDICTING NEURODEVELOPMENTAL OUTCOME AT ONE YEAR CORRECTED AGE IN VERY PRETERM INFANTS  
Alicia Spittle, PhD, MPhysio, BPhysio; Joy Olsen, PhD; Leesa Allinson, PhD, MPhty (Paeds Phty), MPhty, BAppSci (HMS); Nisha Brown, PhD, OT; Abbey Eeles, BOccThy, PhD; Jeanie Cheong, MD; Lex Doyle, MD, BS, MSc, FRACP

J9: DETAILED SCORING OF GENERAL MOVEMENTS IN HIGH-RISK PRETERM INFANTS IS RELATED TO EARLY BRAIN STRUCTURE AND 2 YEAR OUTCOMES  
Colleen Peyton, DPT, PT, PCS; Michael Msall, MD; Michael Schreiber, MD; Christa Einspieler, PhD; Alexander Drobyshevsky, PhD

J10: THE SPECIFIC TEST OF EARLY INFANT MOTOR PERFORMANCE (STEP) PREDICTS BAYLEY OUTCOMES  
Patty Coker-Bolt, PhD; Laurel Gower, BS; Hunter Moss; Truman Brown, PhD; Viswanathan Ramakrishnan, PhD; Dorothea Jenkins, PhD

Questions and Answers

Free Papers K: Upper Extremity

K1: BRAIN ACTIVATION DURING UNI- AND BIMANUAL TASKS IN UNILATERAL CEREBRAL PALSY: AN FNIRS STUDY  
Ana Carolina de Campos, P.T, PhD; Theresa Moulton, Ph.D., DPT; Katharine E. Alter, BA, MD; Theodore Huppert, PhD; Diane Damiano, PhD
8:28am – 8:35am
K2: COMBINED TRANSCRANIAL DIRECT CURRENT STIMULATION AND CONSTRAINT-INDUCED MOVEMENT THERAPY INTERVENTION IN CHILDREN WITH UNILATERAL CEREBRAL PALSY: BEHAVIORAL AND NEUROPHYSIOLOGICAL FINDINGS FROM A RANDOMIZED CLINICAL TRIAL
Bernadette Gillick, PhD, MSPT, PT; Tonya Rich, PhDc, MA, OTR/L; Chao-Ying Chen, Phd; Samuel Nemanich, PhD; Kyle Rudser, PhD; Jeremiah Menk, M.S.; Marcia Ward, MD; Gregg Meekins, MD; Linda Krach, MD; Timothy Feyma, MD

8:36am – 8:43am
K3: CLINICAL FACTORS ASSOCIATED WITH RESPONSE TO CONSTRAINT AND/OR BRAIN STIMULATION IN CHILDREN WITH STROKE-INDUCED HEMIPARETIC CEREBRAL PALSY
Jennifer Litzenberger, MD; Hsing-Ching Kuo, PhD, Ms, PT; Alberto Nettel-Aguirre, PhD, PStat; Ephrem Zewdie, PhD; Adam Kirton, MD, MSc, FRCPC

8:44am – 8:51am
K4: SAFETY AND FEASIBILITY OF A SYNERGISTIC NON-INVASIVE BRAIN STIMULATION AND CONSTRAINT-INDUCED MOVEMENT THERAPY CLINICAL TRIAL IN CHILDREN WITH UNILATERAL CEREBRAL PALSY
Tonya Rich, Phdc, MA, OTR/L; Linda Krach, MD; Chao-Ying Chen, Phd; Samuel Nemanich, Phd; Gregg Meekins, MD; Marcie Ward, MD; Timothy Feyma, MD; Bernadette Gillick, PhD, MSPT, PT

8:52am – 8:59am
K5: PHYSIOLOGICAL PREDICTORS OF RESPONSE TO CONSTRAINT AND BRAIN STIMULATION IN CHILDREN WITH HEMIPARETIC CEREBRAL PALSY
Hsing-Ching Kuo, PhD, Ms, PT; Jennifer Litzenberger, MD; Alberto Nettel-Aguirre, PhD, PStat; Ephrem Zewdie, PhD; Adam Kirton, MD, MSc, FRCPC

9:00am – 9:15am QUESTIONS AND ANSWERS

9:16am – 9:23am
K6: UPPER LIMB FUNCTION IN CHILDREN WITH UNILATERAL CEREBRAL PALSY: A FIVE-YEAR FOLLOW-UP STUDY
Klingels Katrijn, PT, MSc, PhD; Sarah Meyer, PT, PhD; Elegast Monbaliu, PhD; Lisa Maillieux, PT, MSc; Cristina Simon-Martinez, PT, MSc ; Geert Verbeke, PhD; Guy Molenaers, MD, PhD; Hilde Feys, Full professor, PT, PhD

9:24am – 9:31am
K7: FULL-DAY ARM MOVEMENT ACTIVITY ACROSS EARLY INFANCY: UNILATERAL VS. BILATERAL ACTIVITY
Beth Smith, PT, DPT, PhD; Ivan Trujillo-Priego, MS; Christianne Lane, PhD

9:32am – 9:39am
K8: CAN INTENSIVE UNIMANUAL AND BIMANUAL MOTOR INTERVENTIONS IMPROVE VISUOSPATIAL PERFORMANCE IN CHILDREN WITH UNILATERAL SPASTIC CEREBRAL PALSY? A RANDOMIZED CONTROLLED TRIAL.
Yannick Bleyenheuft, PhD; Gaetan Ickx, PhD student; Daniela Ebner-Karestinos, PT, PhD student; Julie Paradis, OT, PhD student; Marina Brandao, PhD; Andrew Gordon, PhD; Samar M. Hatem, MD, PhD
9:40am – 9:47am
K9: DEVELOPMENT OF BIMANUAL PERFORMANCE IN A POPULATION OF YOUNG CHILDREN WITH UNILATERAL OR BILATERAL CEREBRAL PALSY
Gunvor Klevberg, OTR/L, MA; Ann-Kristin Elvrum, OTR/L, PhD; Manuela K. Zucknick, PhD; Sonja Elkjær, OTR/L, MA; Sigrid Østensjø, PhD; Lena Krumlinde-Sundholm, OTR/L, PhD; Ingvild Kjeken, OTR/L, PhD; Reidun Jahnsen, PT PhD

9:48am – 9:55am
K10: THE EFFECTS OF HAND-ARM BIMANUAL INTENSIVE TRAINING (HABIT) IN CHILDREN WITH BILATERAL CEREBRAL PALSY: PRELIMINARY RESULTS OF A RANDOMIZED CONTROLLED TRIAL
Priscilla Figueiredo, MSc; Aline Feitosa, OT, PT; Claudia Teixeira, MSc; Vanessa Guerzoni, OT; Maria Paula Emediato, OT; Marisa Mancini, PhD; Andrew Gordon, PhD; Marina Brandao, PhD

Free Papers L: Movement Disorder, Robotics, and Technology

8:20am – 8:27am
L1: A 30-YEAR FOLLOW-UP STUDY AFTER SELECTIVE DORSAL RHIZOTOMY: NEUROMUSCULAR AND FUNCTIONAL STATUS OF ADULTS WITH CEREBRAL PALSY AND BILATERAL LOWER LIMB SPASTICITY
Nelleke Langerak, MSc, PhD; Shane Brassell, BSc Physiotherapy; Berendina Egbertine (Nienke) Veerbeek, MSc; Christopher Vaughan, BSc (Hons), PhD, DSc (Med); Graham Fiegen, MD FCS; Warwick Peacock, M.D., FRCS.; Robert Lamberts, PhD FECSS

8:28am – 8:35am
L2: OUTCOME OF CAUDAL LUMBOSACRAL SELECTIVE POSTERIOR RHIZOTOMY IN THE MANAGEMENT OF SPASTIC DIPLEGIA DUE TO CEREBRAL PALSY (A PROSPECTIVE COHORT STUDY IN 35 CHILDREN)
Aniruddh Purohit, MD; Pavan Pelluru, Neurosurgery

8:36am – 8:43am
L3: AUGMENTING DEEP BRAIN STIMULATION (DBS) WITH A COGNITIVE APPROACH USING AN N=OF-1 TRIAL WITH REPLICATIONS ACROSS CHILDREN WITH HYPERKINETIC MOVEMENT DISORDERS (HMD)
Hortensia Gimeno, MSc, OT; Richard Brown, PhD; Jean-Pierre Lin, MB ChB, MRCP(UK), PhD; Victoria Cornelius, BSc, PhD; Helene Polatajko, BOT, MEd, PhD

8:44am – 8:51am
L4: SHORT-TERM EFFECTS OF HOME-BASED EARLY INTERVENTION WITH CARETOY SYSTEM: RCT IN PRETERM INFANTS
Giovanni Cioni, Prof.; Giuseppina Sgandurra, PhD; Emanuela Inguiaggiato, MD; Jakob Lorentzen, PT; Elena Beani, PT; Francesca Cecchi, Eng, PhD; Anna Herskind, MD; Matteo Giampietri, MD; Laura Bartalena, MD; Jens Bo Nielsen, Prof; Gorm Greisen, Prof; Paolo Dario, Prof; CareToy Consortium, - BS
8:52am – 8:59am
L5: INFORMING EVIDENCE-BASED CLINICAL PRACTICE GUIDELINES FOR MANAGING DYSTONIA IN INDIVIDUALS WITH CEREBRAL PALSY: A SYSTEMATIC REVIEW
Darcy Fehlings, MD, MSc, FRCP(C); Leah Brown, BSc.; Adrienne Harvey, PhD; Kate Himmelmann, MD, PhD; Jean-Pierre Lin, MB ChB, MRCP(UK), PhD; Alex MacIntosh, BSc., MSc.; Jonathan Mink, MD PhD, FAAN, FANA, FAAP; Elegast Monbaliu, PhD; James Rice, MD, FRACP; Jessica Silver, B.A., M.A.; Lauren Switzer, HBSc, MSc; Ilana Walters, B.A.&Sc., MSc.

9:00am – 9:15am QUESTIONS AND ANSWERS

9:16am – 9:23am
L6: NEUROPHYSIOLOGICAL CORRELATE OF MIRROR MOVEMENTS IN CHILDREN WITH UNILATERAL SPASTIC CEREBRAL PALSY
Hsing-Ching Kuo, PhD, Ms, PT; Michelle Marneweck, PhD; Claudio Ferre, PhD; Véronique Flamand, PhD, OT; Yannick Bleyenheuft, PhD; Andrew Gordon, PhD; Kathleen Friel, PhD

9:24am – 9:31am
L7: ROBOTIC REINFORCEMENT AND ERROR-BASED MOVEMENT LEARNING DURING SKILL ACQUISITION IN INFANTS WITH AND WITHOUT RISK FOR CEREBRAL PALSY
Thubi Kolobe, PhD; Andrew Fagg, PhD

9:32am – 9:39am
L8: KINEMATICS TO ASSESS LEARNING CHANGES DURING ROBOTIC REHABILITATION IN CHILDREN WITH HEMIPLEGIC CEREBRAL PALSY
Ryan Cardinal, DPT; Crystal Massie, Phd, OTR; Peter Altenburger, PhD

9:40am – 9:47am
L9: WALKING WITH MY ROBOT: RESULTS OF A RANDOMIZED CROSSOVER TRIAL EVALUATING THE IMPACT OF ROBOTIC-ASSISTED GAIT TRAINING ON THE WALKING-RELATED GROSS MOTOR SKILLS AND GOAL ACCOMPLISHMENT OF CHILDREN WITH CEREBRAL PALSY
Virginia Wright, BSc(PT), MSc, PhD; Darcy Fehlings, MD, MSc, FRCP(C); Lisa Avery, BSc(Eng), MSc; Gloria Lee, HBSc, CCRP; Emily Brewer, BS

9:48am – 9:55am
L10: RELIABILITY AND VALIDITY OF THE COMPUTER GAME BASED ASSESSMENT TOOL FOR HAND AND ARM IMPAIRMENTS IN CHILDREN WITH NEURODEVELOPMENTAL DISORDERS.
Anuprita Kanitkar, MSc; Tony Szturm, PT, Ph.D.; Gina Rempel, MD, FRCP; Sanjay Parmar, PT. Ph.D.; Nilashri Naik, BPT, MPT; Amitesh Narayan, PT, PhD

9:56am – 10:15am QUESTIONS AND ANSWERS