



European Paediatric Orthopaedic Society



**FINAL
PROGRAM**

39th EPOS

Annual Meeting

European Paediatric Orthopaedic Society

April 14th – 16th, 2021

**VIRTUAL
EDITION**



EPoS

European Paediatric Orthopaedic Society

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VIRTUAL EPOS CONGRESS WILL BE HELD ON CET (CENTRAL EUROPEAN TIME)

VIRTUAL ROOM 1

PRE-MEETING COURSE

MALIGNANT BONE TUMORS IN CHILDREN: WHAT'S UP?

10.00 Live - Introduction
Cristina Alves (Portugal), **Inês Balacó** (Portugal), **Thomas Wirth** (Germany)

10.05 Introduction
Inês Balacó (Portugal)

10.10 THE BASICS

11.00 Chair: **Thomas Wirth** (Germany)
 Web Moderator: **Inês Balacó** (Portugal)

10.10 Overview of malignant bone tumors
Catharina Chiari (Austria)

10.20 Diagnosis and staging: what is due and what is new?
Marta Salom Taverner (Spain)

10.30 Medical therapy: new trends
Ana Maja Ferreira (Portugal)

10.40 Discussion

11.00 SURGICAL TREATMENT: WHAT TO DO AND NOT TO DO?

11.50 Chair: **Ilkka Helenius** (Finland)
 Web Moderator: **Marta Salom Taverner** (Spain)

11.00 Biology over technology
Mikel San Julian (Spain)

11.10 Technology over biology
German Farfalli (Argentina)

11.20 Reconstructions in the very young
Michiel Van de Sande (The Netherlands)

11.30 Discussion

11.50 SURGICAL TREATMENT: WHAT IS BEST FOR SPINE AND PELVIS?

12.30 Chair: **Catharina Chiari** (Austria)
 Web Moderator: **Michiel van de Sande** (The Netherlands)

11.50 Spine
Ilkka Helenius (Finland)

12.00 Pelvis
Andreas Krieg (Switzerland)

12.10 Discussion

12.30 *Break*

13.30

VIRTUAL ROOM 1

- 13.30** Summary of Part I and Introduction to Part II
Inês Balacó (Portugal)
- 13.40** **SURGICAL TREATMENT: WHAT IS BEST FOR LOWER LIMB?**
14.30 Chair: **Inês Balacó** (Portugal)
Web Moderator: **Andreas Krieg** (Switzerland)
- 13.40** Hip and femoral diaphysis
Eric Mascard (France)
- 13.50** Distal femur and proximal tibia
Marco Manfrini (Italy)
- 14.00** Distal tibia and foot
Thomas Wirth (Germany)
- 14.10** Discussion
- 14.30** **SURGICAL TREATMENT: WHAT IS BEST FOR UPPER LIMB?**
15.10 Chair: **Ignacio Sanpera** (Spain)
Web Moderator: **Bartu Sarisözen** (Turkey)
- 14.30** Shoulder and humerus
Sevan Hopyan (Canada)
- 14.40** Forearm
Bülent Erol (Turkey)
- 14.50** Discussion
- 15.10** **BUILDING THE FUTURE**
16.20 Chair: **José Casanova** (Portugal)
Web Moderator: **Ferran Torner** (Spain)
- 15.10** When surgical resection is not an option: what is left?
Stefanie Hecker-Nolting (Germany)
- 15.20** The road to rehabilitation
Sharon Eylon (Israel)
- 15.30** What outcomes can we expect?
Cristina Alves (Portugal)
- 15.40** Research novelties
Sevan Hopyan (Canada)
- 15.50** Discussion
- 16.10** Live - Closing remarks
Thomas Wirth (Germany)
- 16.20** **Break**
17.00
- 17.00** **GENERAL ASSEMBLY**
19.00

VIRTUAL ROOM 1

09.00 Live - Welcome

Cristina Alves (Portugal), **Thomas Wirth** (Germany)

09.10 SESSION 1: DDH

10.20 Chair: **Manuel Cassiano Neves** (Portugal)

Web Moderators: **Hakan Omeroglu** (Turkey), **Virginie Pollet** (United Kingdom)

09.10 Estimated effect of secondary screening for hip dislocation at child health care centres

OP-001 **Daniel Wenger, Henrik D ppe, Carl Johan Tiderius** (Sweden)

09.15 Investigating the radiation risk from repeated pelvic imaging in developmental dysplasia of the hip

OP-002 **Alexander Aarvold, Elizabeth Vogel, Tom Leaver, Mike Uglow, James Lampard, Ben Johnson** (United Kingdom)

09.20 Arthrogram in developmental dysplasia of the hip: interobserver variability and its effect on the results

OP-003 **Israel Rubio Saez, Luis Moraleda Novo, Joaqu n N nuez De Armas, Gaspar Gonzalez** (Spain)

09.25 Discussion

09.40 Duration of immobilization after closed reduction in DDH

OP-004 **Suzanne de Vos-Jakobs, Sakis Terzidis, Max Reijman** (The Netherlands)

09.45 The incidence of avascular necrosis following a cohort of treated developmental dysplasia of the hip (DDH) in a single tertiary centre

OP-005 **Rahim Hussain, Darius Rad, John Watkins, Eleanor Carpenter** (United Kingdom)

09.50 Limited prognostic value of radiographic classifications of severity in DDH

OP-006 **Terje Terjesen, Joachim Horn** (Norway)

09.55 Validity of the use of individual templates in triple pelvic osteotomy in children with hip dysplasia

OP-007 **Pavel Bortulev, Sergey Vissarionov, Vladimir Baskov** (Russia)

10.00 Reduced but dysplastic hip (Graf II) at 4-6 weeks of age: no radiographic differences between hips treated with a harness and those observed without treatment

OP-008 **Luis Moraleda Novo, Joaqu n N nuez De Armas, Gaspar Gonzalez, Mar P rez, Maria Salcedo, Juan Cabello** (Spain)

10.05 Discussion

10.20 *Break*

10.35

10.35 SESSION 2: CONGENITAL & MISCELLANEOUS

11.30 Chair: **Darko Anticevic** (Croatia)
Web Moderator: **Ralph Sakkers** (The Netherlands)

10.35 Extramedullary Implantable Limb Lengthening (EILL) for congenital limb length discrepancy (LLD) is a safe
OP-009 alternative to external fixation lengthening
Claire Shannon, Craig Robbins, Dror Paley (USA)

10.40 Mid-term follow-up results of "3-in-1 osteosynthesis" and combined surgical technique for congenital tibial
OP-010 pseudoarthrosis with complete fibula
Jiangyan Wu (China)

10.45 Combination of Ilizarov technique and intramedullary rodding in the treatment of CPT middle and long term
OP-011 follow up results
Ge Yang, Haibo Mei (China)

10.50 Discussion

Chair: **Melinda Witbreuk** (The Netherlands)
Web Moderators: **Joachim Horn** (Norway), **Vito Pavone** (Italy)

11.00 Virtual reality (VR) to reduce pain and anxiety in the pediatric orthopaedic outpatient setting: a randomized
OP-012 controlled trial
Bejaan Jivraj, Emily Schaeffer, Jeffrey Bone, Chelsea Stunden, Eva Habib, John Jacob, Kishore Mulpuri (Canada)

11.05 The relationship of olecranon apophyseal ossification and Sanders hand scores to the percentage of final
OP-013 height in adolescents
Janelle Greene, Don Li, Kristin Yu, Raymond Liu, Daniel Cooperman (USA)

11.10 Verbal numerical rating scale as a predictor of an underlying pathology in pediatric patients with back pain: a
OP-014 magnetic resonance image-based study
Norman Ramirez Lluch¹, Gerardo Olivella¹, Edwin Burgos², Natalia Torres², Daniela Ramirez¹, Krystle Pereira¹, Manuel Rodriguez¹, Ivan Iriarte¹ (¹Puerto Rico, ²USA)

11.15 Smart phone monitoring of guided growth
OP-015 **Peter Stevens** (USA)

11.20 Discussion

VIRTUAL ROOM 1

11.30 SESSION 3A: TUMOURS & INFECTIONS

12.20 Chair: **Dan Cosma** (Romania)

Web Moderator: **Inês Balacó** (Portugal)

11.30 Low rate of healing and high incidence of complications in benign pediatric bone tumors treated with synthetic calcium sulfate-calcium phosphate bone graft
OP-016 **Ali Siddiqui, Bensen Fan, James Bennett, Lindsay Andras, Edward Compton, Vernon Tolo, David Skaggs** (USA)

11.35 Vascularized fibular graft: a good reconstructive option after bone tumor resection in pediatric age
OP-017 **Giovanni Beltrami, Gabriele Ristori, Francesco Muratori, Guido Scoccianti, Domenico Campanacci, Rodolfo Capanna, Marco Innocenti** (Italy)

11.40 Heterogeneity of osteosarcoma microenvironment using digital histology
OP-018 **Anne Gomez-Brouchet, Antony Mancini, Pauline Assemat, Pascal Swider** (France)

11.45 Clinical and functional results of endoprosthesis after bone sarcoma resection of the lower extremity in children and adolescents
OP-019 **Bulent Erol, Omer Sofulu, Evrim Sirin, Fevzi Saglam, Said Erkam Baykan** (Turkey)

11.50 Stress shielding after reconstruction using cementless megaprosthesis in pediatric bone sarcoma patients, does it affect the outcome?
OP-020 **Ahmed Abdelaal, Ahmed Elghoneimy, Ahmed Morsy, Tarek Refaat, Ismail M. Rashad** (Egypt)

11.55 Discussion

Chair: **Martin Gottlieb** (Denmark)

Web Moderators: , **Marta Salom Taverner** (Spain), **Thomas Wirth** (Germany)

12.05 Open arthrotomy, arthroscopy or arthrocentesis for septic knee and ankle arthritis in children: a systematic review
OP-021 **Lilian Donders, A.J. Spaans, J.H.J.M. Bessems, Christiaan J.A. van Bergen** (The Netherlands)

12.10 Long term outcomes of paediatric hip septic arthritis
OP-022 **Nicole Williams, Alex-Marie Howard, Georgia Antoniou** (Australia)

12.15 Discussion

12.20 INDUSTRY SYMPOSIUM

13.20 (see page 28)

13.20 **SESSION 4A: SPORTS MEDICINE & KNEE**

14.30 Chair: **Jorge Knörr** (Spain)

Web Moderators: **Oliver Eberhardt** (Germany), **Pasquale Guida** (Italy)

13.20 Increased posterior tibial slope demonstrated in pediatric patients with Osgood Schlatter disease: is Osgood Schlatter truly a benign condition?
OP-023

Lindsay Schlichte, Sreetha Sidharthan, Alexandra Aitchison, Daniel Green (USA)

13.25 International consensus on juvenile osteochondral defects of the talus

OP-024 **Christiaan van Bergen¹, Eoghan Hurley², Christopher Murawski³, Daire Hurley², Martin Davey², John Kennedy³, Pieter d'Hooghe⁴, Yoshiharu Shimozono⁵, Raymond Walls³, James Calder⁶, Gino Kerkhoffs¹** (¹The Netherlands, ²Ireland, ³USA, ⁴Qatar, ⁵Japan, ⁶United Kingdom)

13.30 Avulsion fracture of the ATFL in severe inversion ankle injury in children and adolescents

OP-025 **Francesco Falciglia, Carlotta Giusti, Marco Giordano, Renato Maria Toniolo** (Italy)

13.35 Discussion

13.40 Intrarticular cytokines and resolvin after ACL and meniscal tear in skeletally immature patients

OP-026 **Marco Turati^{1,2}, Nicolò Zanchi¹, Giulio Leone¹, Massimo Gorla¹, Massimiliano Piatti¹, Diego Gaddi¹, Giovanni Zatti¹, Antonio Torsello¹, Marco Bigoni^{1,2}** (¹Italy, ²France)

13.45 Surgical treatment of articular cartilage injuries associated with patellar dislocation in the skeletally immature

OP-027 **Ioannes Melas, Dimitrios Metaxiotis, Michael Iosifidis** (Greece)

13.50 Foot and ankle compensations during gait in children with anterior cruciate ligament injury

OP-028 **Monica Ursei, Franck Accadbled, Gorka Knorr, Marino Scandella, Caroline Munzer, Jerome Briot** (France)

13.55 Discussion

Chair: **Javier Downey** (Spain)

Web Moderators: **Robert Elbaum** (Belgium), **Nicolas Nicolaou** (United Kingdom)

14.05 Efficacy of angular correction by guided growth. Correction per month vs. correction per growth

OP-029 **Youh Hua Lo, Chia Chang** (Taiwan)

14.10 Increased tibiofemoral rotation with increasing severity of patellar instability

OP-030 **Kenneth Lin, Evan James, Lindsay Schlichte, Grace Wang, Alexandra Aitchison, Daniel Green** (USA)

14.15 Incidence of 2nd surgery after medial patellofemoral ligament reconstruction and simultaneous osteochondral fracture fixation in pediatric patients treated for patellar dislocation

OP-031 **Lindsay Schlichte, Alexandra Aitchison, Daniel Green** (USA)

14.20 Discussion

14.30 **INDUSTRY SYMPOSIUM**

15.30 (see page 28)

15.30 **Break**

15.40

VIRTUAL ROOM 1

15.40 SESSION 5A: FOOT

16.50 Chair: **Stephanie Böhm** (Sweden)

Web Moderators: **Pasquale Farsetti** (Italy), **Bartu Sarizösen** (Turkey)

15.40 Incidence of relapse and reintervention need in non-idiopathic clubfeet. Monitored analysis of 300 patients
OP-032 between 12-22 years: retrospective, analytical and descriptive study
Anna Ey Batlle, Marta Vinyals Rodriguez, Dimosthenis Kiimetoglou, Jaime Brajones (Spain)

15.45 Successful Ponseti-treated clubfeet at age two years: what is the rate of surgical intervention after this?
OP-033 **Matthew Siebert, Chelsea M. Karacz, B. Stephens Richards, Anthony Riccio** (USA)

15.50 Atypical and complex clubfoot - What is the right management for these little angels?
OP-034 **Vineet Kumar Arora, Ankur Patel** (India)

15.55 New histological findings in the field concerned with clubfoot deformity tissue - Increase in the level of
OP-035 vascularity in the contracted side of the relapsed clubfoot
Tomas Novotny, Adam Eckhardt, Jarmila Knitlova, Martina Doubkova, Jana Musilkova, Martin Oštádal (Czech Republic)

16.00 Functional implications of the flat-topped talus following treatment of idiopathic clubfoot deformity
OP-036 **Matthew Siebert, Jacob Zide, Claire Shivers, Kirsten Tulchin-Francis, Wilshaw Stevens, Justine Borchard, Anthony Riccio** (USA)

16.05 Results of casting in recurrence of clubfoot deformity
OP-037 **Blazej Pruszczynski, Marek Synder** (Poland)

16.10 Discussion

Chair: **Mohammed El Sobky** (Egypt)

Web Moderator: **Dimitrios Metaxiotis** (Greece)

16.20 Segmental foot kinematics before and after resection of tarsal coalition
OP-038 **Haluk Altıok, Karen Kruger, Joseph Krzak, Corey Partenheimer** (USA)

16.25 Outcome of talocalcaneal coalition resection assisted with intraoperative navigation
OP-039 **Carlos Pargas¹, Adolfo Santana², Kenneth Rogers¹, Nichols L. Reid¹, Mihir M. Thacker¹** (¹USA, ²Venezuela)

16.30 Correction of hallux valgus by a MIS procedure in teenagers with flexible flatfoot: it is reliable?
OP-040 **Elena Manuela Samaila, Bruno Magnan** (Italy)

16.35 Talar-tarsal stabilization: rationale and preliminary results
OP-041 **Peter Stevens, Alex Lancaster, Anshab Khwaja** (USA)

16.40 Discussion

16.50 SESSION 6: TRAUMA

18.05 Chair: **Antonio Andreacchio** (Italy)

Web Moderators: **Federico Canavese** (France), **Vincenzo De Rosa** (Switzerland)

16.50 Surgical (K-Wires) vs conservative (Blount's Method) treatment for supracondylar humeral fractures

OP-042 **Dimosthenis Kiimetoglou, Sara Rivera Fierres, Laura Perez Lopez, Melisa Stitzman Wengrowicz, Pilar Rovira Martí, Cesar Garcia Fontecha** (Spain)

16.55 Prescription patterns in pediatric orthopedics following closed reduction and percutaneous pinning for supracondylar humerus fractures

OP-043 **Amy Kaplan, Olga Solovyova, Debra Sala, Pablo Castaneda** (USA)

17.00 Complication rates for Type 3 supracondylar humerus fractures treated in evening overnight with those treated the next morning

OP-044 **Susan Mahan, Patricia Miller, Jiwoo Park, Nicholas Sullivan, Carley Vuillermin** (USA)

17.05 Discussion

17.15 Risk factors for secondary displacement of both bone diaphyseal fractures treated without surgery

OP-045 **Joaquín Núñez De Armas¹, Luis Moraleda Novo¹, Gaspar Gonzalez¹, Alyssa Carroll², Tracey Bastrom², Vidyadhar Upasani², Eric Edmonds²** (¹Spain, ²USA)

17.20 What is the optimal immobilisation after forearm fracture fixed by elastic stable intra-medullary nailing?

OP-046 **Pierre Meynard, Audrey Angelliaume, Abdelfetah Lalioui, Clémence Pfirrmann, Yan Lefèvre** (France)

17.25 Minimally displaced lateral humeral condyle fractures - Optimizing follow up and minimizing cost

OP-047 **Carlos Pargas, Mihir M. Thacker, Kenneth Rogers** (USA)

17.30 Discussion

Chair: **Rüdiger Krauspe** (Germany)

Web Moderators: **Pierre Journeau** (France), **Annelie Weinberg** (Austria)

17.40 Open fractures in children: high morbidity challenge

OP-048 **Cristina Alves, João Francisco Oliveira, João Cabral, Ines Balacó, Pedro Sá Cardoso, Tah Ling, Gabriel Matos** (Portugal)

17.45 Pediatric spine injuries - Results from a German multicenter study including 367 children

OP-049 **Hauke Rüter, Christian Herren, Jan-Sven Jarvers, Alexander Disch, Matthias Jung, Holger Meinig, Michael Ruf, Thomas Weiß, Thomas Welk, Stefan Matschke, Michael Kreinest** (Germany)

17.50 Retrospective evaluation of polytrauma pediatric orthopaedic patients of a tertiary university hospital

OP-050 **João Pedro, Mafalda Castelão, Graça Lopes** (Portugal)

17.55 Discussion

VIRTUAL ROOM 2

11.30 SESSION 3B: NEUROMUSCULAR & UPPER LIMB

12.20 Chair: **Gunnar Hägglund** (Sweden)

Web Moderators: **Jan Charvat** (Czech Republic), **João Lameiras Campagnolo** (Portugal)

11.30 Pain appearance after spastic hip dislocation treatment - comparison between palliative and reconstruction treatment
OP-051

Aleksander Koch, Marek Jozwiak, Joanna Krasny, Maria Wolff, Maciej Idzior (Poland)

11.35 Epigenetic marks at the ribosomal DNA promoter are negatively associated with degree of impairment (GMFCS, MACS, contracture) in cerebral palsy
OP-052

Eva Pontén¹, Rodrigo Fernandez Gonzalo¹, Jessica Pingel², Per Stål¹, Ferdinand von Walden¹ (¹Sweden, ²Denmark)

11.40 Pre-operative nutrition assessments do not improve outcomes in cerebral palsy patients undergoing varus derotational osteotomy
OP-053

Kyle Obana, Bensen Fan, Rachel Goldstein, Lindsay Andras, Bob Kay (USA)

11.45 Discussion

Chair: **Sebastian Farr** (Austria)

Web Moderators: **Giovanni Luigi Di Gennaro** (Italy), **Francisco Soldado** (Spain)

11.55 Radial head resection and hemi- interposition vs “functional radial head resection” with a computerized ring fixator in patients with chronic Monteggia pathology: a prospective analysis
OP-054

Konrad Mader¹, Milad Farkondeh Fal¹, S. John Ham², Kristofer Wintges¹, Jakob Valentin Nuechtern¹ (¹Germany, ²The Netherlands)

12.00 Evaluation of radiological instability signs in the distal radioulnar joint in children and adolescents with arthroscopically-verified TFCC tears
OP-055

Florian Schachinger¹, Marcos Fernandes Carvalho², Sascha Wiener¹, Sebastian Farr¹ (¹Austria, ²Portugal)

12.05 Our approach to treatment internal rotation shoulder contractures in children with arthrogryposis
OP-056

Olga Agranovich, Alexey Baidurashvili, Petrova Ekaterina, Svetlana Trofimova, Evgenya Kochenova (Russia)

12.10 Discussion

12.20 **Break**

13.20

13.20 **SESSION 4B: HIP**

14.30 Chair: **Deborah Eastwood** (United Kingdom)
Web Moderator: **Jaroslav Czubak** (Poland)

13.20 Ellipsoidal process of the femoral head in Perthes disease. Is epiphysiodesis effective technique? Part II
OP-057 **Margarita Montero Díaz, Juan Carlos Abril Martín, Rosa M Egea-Gámez, Manuel Fraga Collaget** (Spain)

13.25 Declining rates of Legg-Calve-Perthes surgery: national trends using the kids' in patient database
OP-058 **Jaren LaGreca, Amanda Nickel, Michael Finch, Benjamin D. Martin, Jennifer Laine** (USA)

13.30 Discussion

13.40 Does the epiphysis translate or rotate in slipped capital femoral epiphysis (SCFE)?
OP-059 **Deaniel Maranhó, Ata Kiapour, Shayan Hosseinzadeh, Eduardo Novais** (USA)

13.45 Prospectively applied protocol using posterior sloping angle cut-off of 14.5 degrees safely prevents 75% of
future contralateral SCFE
OP-060 **David Little, Justine St George, Michel Genon** (Australia)

13.50 Discussion

Chair: **Renata Pospischill** (Austria)
Web Moderators: **Vladimir Kenis** (Russia), **Manoj Ramachandran** (United Kingdom)

14.00 The femoral head - neck translation ratio: a simple mathematical model to measure postslip deformity of
the hip. Correlation with cam-type femoroacetabular impingement secondary to slipped capital femoral
epiphysis
OP-061 **Panagiotis Samelis, Eftychios Papagrigorakis, Panagiotis Koulouvaris** (Greece)

14.05 The sliding screw for slipped capital femoral epiphysis: is it safe and does it slide?
OP-062 **Edward Lindisfarne, Annabelle Stabler, Matthew Barry, Ed Gent, Alexander Aarvold** (United Kingdom)

14.10 Quantitative analysis of perfusion MRI in SCFE accurately predicts both intra operative epiphyseal bleeding
status and post-operative avascular necrosis
OP-063 **Nicholas Green, Rachael Ashworth, Alison Lee, Sanjay Chilbule, Penny Broadley, James Fernandes, Sanjeev Madan** (United Kingdom)

14.15 Modified Dunn procedure for stable SCFE -- 100 cases with a minimum of 1 year follow-up
OP-064 **Oliver Birke, Justine St George, Paul Gibbons, David Little** (Australia)

14.20 Discussion

14.30 **INDUSTRY SYMPOSIUM**

15.30 (see page 29)

15.30 **Break**

15.40

VIRTUAL ROOM 2

15.40 SESSION 5B: SPINE

16.40 Chair: **Carol Hasler** (Switzerland)

Web Moderators: **Dror Ovadia** (Israel), **Tah Pu Ling** (Portugal)

15.40 Do side-bending radiographs change the planning of posterior spinal fusion in adolescent idiopathic scoliosis?
OP-065

Roxane Compagnon, Baptiste Brun-Cottan, Jean-Luc Jouve, Christophe Garin, Raphaël Vialle, Brice Ilharreborde, Yan Lefèvre, Kariman Abelin-Genevois, Emmanuelle Ferrero, Tristan Langlais, Sebastien Pesenti, Audrey Angelliaume, Christian Morin, Franck Accadbled, Jérôme Sales de Gauzy (France)

15.45 Does navigation make spinal fusion for adolescent idiopathic scoliosis safe? Insights from 17,400 cases from a national database
OP-066

Japsimran Kaur, Jayme Koltsov, Ivan Cheng, John S. Vorhies (USA)

15.50 Deformity correction using proximal hooks and distal screws improves radiological metrics in adolescents idiopathic scoliosis
OP-067

Pawin Gajasenj, Stuart Weinstein (USA)

15.55 Halo-gravity traction to avoid three-column osteotomy in severe early onset scoliosis reaching skeletal maturity
OP-068

Audrey Angelliaume, Anne-Laure Simon, Florence Julien-Marsollier, Brice Ilharreborde (France)

16.00 Discussion

Chair: **Ilkka Helenius** (Finland)

Web Moderators: **Nuno Alegrete** (Portugal), **Franck Plasschaert** (Belgium)

16.10 Deformity angular ratio is associated with neuromonitoring changes without a vertebral column resection: spinal deformity is more influential than type of surgery
OP-069

Ali Siddiqui, Kenneth Illingworth, David Skaggs, Edward Compton, Vernon Tolo, Lindsay Andras (USA)

16.15 The effect of use "growth friendly" implants on the level of titanium released into the tissue
OP-070

Anna Danielewicz, Michał Latałski, Grzegorz Starobrat, Marek Fatyga (Poland)

16.20 The safety and efficacy of intrathecal morphine in pediatric spinal deformity surgery - A 25 year single center experience
OP-071

Connie Poe-Kochert, Jason Ina, George H. Thompson, Christina Hardesty, Jochen Son-Hing, Kasia Rubin, Paul Tripi (USA)

16.25 Pelvic fixation with ilio sacral screws in fusionless surgery for early onset spinal deformities
OP-072

Sami Bouchoucha, Rim Boussetta, Ahmed Msakni, Walid Saied, Mohamed Zairi, Mohamed Nebil Nessib (Tunisia)

16.30 Discussion

- 09.00** Live - Welcome
Cristina Alves (Portugal), **Thomas Wirth** (Germany)
- 09.10** **SESSION 7: THE FABULOUS FOUR: CONGENITAL & TRAUMA**
10.10 Chair: **Bjarne Møller Madsen** (Denmark)
Web Moderators: **Ismat Ghanem** (Libanon), **Pedro Sá Cardoso** (Portugal)
- 09.10** Is growth-friendly surgery effective for the treatment of spinal deformity in patients with arthrogryposis multiplex congenita?
OP-073 **Bram Verhofste, John Emans, Patricia Miller, George Thompson, Amer Samdani, Francisco J. Sanchez Perez-Gruoso, Anna McClung, Pediatric Spine Study Group, Michael Glotzbecker** (USA)
- 09.15** Monitoring with tantalum beads demonstrates no clinically significant growth following percutaneous transphyseal screw epiphysiodesis
OP-074 **Sreetha Sidharthan, Clare Kehoe, Grace Wang, Roger Widmann, John Blanco, Emily Dodwell** (USA)
- 09.20** Marfan syndrome in children: correlation between musculoskeletal features, cardiac Z-score and FBN1 gene mutations
OP-075 **Fernando De Maio, Linda Pisano, Tomaso Cosseddu, Emanuela Raffone, Alessandro Caterini, Pasquale Farsetti** (Italy)
- 09.25** Quantifying effects of hip surgery in Hurler syndrome
OP-076 **Eline van der Veer, Willem Paul Gielis, Harry Weinans, Erik Beek, Peter van Hasselt, Ralph Sakkers** (The Netherlands)
- 09.30** Discussion

Chair: **Pierre Lascombes** (Switzerland)
Web Moderators: **Cristina Alves** (Portugal), **Jiri Chomiak** (Czech Republic)
- 09.40** Use of titanium elastic nail for treatment of long oblique, spiral or comminuted fractures of lower extremity long bones
OP-077 **Cenk Ermutlu, Bartu Sarisozen, Saltukbuğra Güler** (Turkey)
- 09.45** Prospective study of pediatric medial humeral epicondyle fractures non-operatively treated. Clinical, radiological and functional evaluation at long term
OP-078 **Serafin Garcia-Mata, Daniel Sanchez-Guardamino, Miriam Brun, Laura Azcona, Julio Duarte, Andrea D'Arrigo-Azzarelli** (Spain)
- 09.50** Risk factors for the development of avascular necrosis after femoral neck fractures in children: a review of 239 cases
OP-079 **Wen Tao Wang¹, Yi Qiang Li¹, Federico Canavese², Shun You Chen¹** (¹China, ²France)
- 09.55** Extra-articular proximal femur fractures in children and adolescents treated by elastic stable intramedullary nailing
OP-080 **Flavia Alberghina¹, Antonio Andreacchio¹, Mattia Cravino¹, Federico Canavese²** (¹Italy, ²France)
- 10.00** Discussion

VIRTUAL ROOM 1

10.10 SESSION 8: THE FABULOUS FOUR: SPINE & NEUROMUSCULAR

11.10 Chair: **André Kaelin** (Switzerland)
Web Moderator: **David Farrington** (Spain)

10.10 Reoperative risk factors following final fusion for traditional growing rod treatment in early onset scoliosis
OP-081 **Jerry Du, Connie Poe-Kochert, George H. Thompson, Christina Hardesty, Jeff Pawelek, John Emans, John Flynn, Pediatric Spine Study Group** (USA)

10.15 Serious perioperative adverse events after pediatric cervical spine fusions
OP-082 **Bram Verhofste, Nora O'Neill, Michael Timothy Hresko, John Emans, Daniel Hedequist** (USA)

10.20 Is the axial spinal cord classification predictive of intra-operative neurologic alert for pediatric scoliosis patients
OP-083 **Anthony Stans, Smitha Mathew, Todd Milbrandt, William Shaughnessy, A. Noelle Larson** (USA)

10.25 Os odontoideum in children: treatment outcomes and neurologic risk factors
OP-084 **Ilkka Helenius¹, Jennifer Bauer², Bram Verhofste², Paul Sponseller², Walter Kernel², Daniel Hedequist², Patrick Cahill², A. Noelle Larson², Joshua Pays², John T. Anderson², Jeffrey E. Martus², Burt Yaszay, Jonathan Phillips²** (¹Finland, ²USA)

10.30 Discussion

Chair: **Reinald Brunner** (Switzerland)
Web Moderator: **Elke Viehweger** (France)

10.40 Effect of pediatric orthopedic intervention on ambulatory adults with cerebral palsy: a long-term longitudinal assessment
OP-085 **Tanyawat Saisongcroh, Michael W. Shrader, Freeman Miller, Julieanne P. Sees, Chris Church, Nancy Lennon** (USA)

10.45 Musculoskeletal pain in children with cerebral palsy. A cross-sectional register study of 3545 individuals
OP-086 **Elsa Eriksson, Ann Alriksson Schmidt, Gunnar Hägglund** (Sweden)

10.50 Intraoperative neuromonitoring during distal femoral extension osteotomy in cerebral palsy
OP-087 **Ozan Ali Erdal, Baris Gorgun, Ilker Abdullah Sarikaya, Muharrem Inan** (Turkey)

10.55 Impact of hip surveillance on surgical practice: what makes a difference?
OP-088 **Stacey Miller, Maureen O'Donnell, Kishore Mulpuri** (Canada)

11.00 Discussion

11.10 SESSION 9: BASIC SCIENCE

12.00 Chair: **Franck Accadbled** (France)

Web Moderators: **Andreas Roposch** (United Kingdom), **Ignacio Sanpera** (Spain)

11.10 Estimating skeletal maturity using knee radiographs during pre-adolescence using the epiphyseal:
OP-089 metaphyseal ratio

Alex Benedick, Bailyn Hogue, Raymond Liu (USA)

11.15 Bone morphogenic protein-2 increases mechanical strength of bone regenerate in distraction osteogenesis
OP-090 **Emre Kalay, Cenk Ermutlu, Bartu Sarisozen, Ulviye Yalçinkaya** (Turkey)

11.20 Evaluation of impaired skeletal development in skeletal immature mice by anti rheumatic agents
OP-091 **Marjolein Caron, Mirella Haartmans, Tessy Castermans, Bert van Rietbergen, Lodewijk van Rhijn, Tim Welting, Adhiambo Witlox** (The Netherlands)

11.25 Serum-derived exosomes of congenital pseudarthrosis of tibia in children suppresses bone formation and
OP-092 increases bone resorption via alteration of exosomal bone-related proteins
Ge Yang¹, Qian Tan¹, Hui Yu², Haibo Mei¹ (¹China, ²Germany)

11.30 Magnetic resonance quantification of meniscus vascularity in pediatric versus adult knees
OP-093 **Kenneth Lin, Naomi Gadinsky, Craig Klinger, Jonathan Dyke, Scott Rodeo, Daniel Green, Peter Fabricant, David L. Helfet, Kevin Shea, Lionel Lazaro** (USA)

11.35 The possible role of tissue hypoxia - Newly detected pathway in the contracted tissue of the relapsed clubfoot
OP-094 **Tomas Novotny, Adam Eckhardt, Jarmila Knitlova, Martina Doubkova, Jana Musilkova, Martin Ošťádal** (Czech Republic)

11.40 Discussion

12.00 INDUSTRY SYMPOSIUM

13.00 (see page 30)

VIRTUAL ROOM 1

13.00 SESSION 10: BEST OF THE BEST

14.00 Chair: **Stephen Albanese** (USA)

Web Moderators: **Gilberto Brandão** (Brazil), **Thomas Wirth** (Germany)

13.00 Predictors and prediction-score in clubfoot; what predicts recurrence?

OP-095 **Omer Angel, EHUD Lebel, Amit Davidson** (Israel)

13.05 Correction of foot and ankle malalignment with SUPERankle procedure in severe fibular hemimelia

OP-096 **Milud Shadi, Piotr Janusz, Tomasz Kotwicki** (Poland)

13.10 Midterm results of treated symptomatic calcaneonavicular coalitions

OP-097 **Ignacio Sanpera, Miguel García-Cancho Sánchez, Marta Salom, Jean Marie Gomez Alessandri, Ana Fernandez-Ansorena, Guillem Frontera Juan** (Spain)

13.15 Identification of complications in pediatric cerebral palsy patients treated with intrathecal baclofen pump therapy: a descriptive analysis of 15 years at one institution

OP-098 **Julianne P. Sees, Ahmet Imerci, Kenneth Rogers, Freeman Miller** (USA)

13.20 Verification of hip reduction using medial ultrasound in spica cast treatment for DDH

OP-099 **Gang Fu** (China)

13.25 Incidence of delayed spinal cord injury in paediatric spine deformity surgery seems to be higher than previously assumed

OP-100 **Jeroen Renkens, Adriaan Mostert, Agnita Stadhouder, Moyo Kruyt, Luc De Klerk, Tom Schlösser, Marinus de Kleuver, René Castelein, Joost Rutges** (The Netherlands)

13.30 Discussion

14.00 INDUSTRY SYMPOSIUM

15.00 *(see page 30)*

15.00 **LIVE SESSION - MEET THE MENTOR**
16.00 Web Moderators: **Stephan Huhnstock** (Norway), **Salih Marangoz** (Turkey)

Introduction
Thomas Wirth (Germany)

EPOS, how it all started
Klaus Parsch (Germany)

16.00 **PRESIDENTIAL GUEST LECTURE**
16.30

Live - Introduction
Thomas Wirth (Germany)

Biological and practical aspects of long bone growth and elongation
Bruce K. Foster (Australia)

16.30 **LIVE SESSION - PRO MAXIMIS MERITIS**
16.40

Live - Introduction
Thomas Wirth (Germany), **Pierre Lascombes** (Switzerland)

André Kaelin (Switzerland)

16.40 **TRANSFER PRESIDENCY**
16.55

16.55 **LIVE - CLOSING REMARKS**
17.00

Antonio Andreacchio (Italy), **Thomas Wirth** (Germany)

E-POSTERS

- EP-001** Femoro-pedal distraction in tibial aplasia: preparing the limb for reconstruction
Andrea Laufer, Adrien Frommer, Georg Gosheger, Robert Rödl, Bjoern Vogt (Germany)
- EP-002** Congenital osteofibrous campanacci dysplasia - A case report
Dimosthenis Kiimetoglou, Lluís Terricabras Carol, Carmen Sevillano de la Puente, Laura Corominas, Lydia De Sena, Cesar Garcia Fontecha (Spain)
- EP-003** Congenital Volkmann's ischemic contracture, a rare and challenging condition
Laura M. Perez-Lopez, Marisa Cabrera-Gonzalez, Diego Gutierrez-de la Iglesia, César Galo García Fontecha (Spain)
- EP-004** Use of titanium telescopic rodding and reduced external fixation in pediatric osteogenesis imperfecta patients
Dmitry Popkov (Russia)
- EP-005** The surgical treatment of severe cervical kyphosis in diastrophic dysplasia
John Heydemann, W.G. Stuart Mackenzie, Kenneth Rogers, Colleen Ditro, Jeffrey Campbell, Suken Shah, William Mackenzie (USA)
- EP-006** Complex regional pain syndrome
Cosimo Gigante, Sonia Viale, Giorgia Martini, Francesco Zulian (Italy)
- EP-007** Is the DDH associated with twin pregnancy? Correlation and utility of radiographical exploration in 538 Latin-American twin births
Marco Ascacio-Solis, Mario Abraham Almaraz-Ledezma, Luz Gabriela Villarreal-Rivera, Santos S. Serna-Reyna, Jorge Garza-Martínez, Javier Meza-Flores, Luis A. Valverde-Galindo, Abraham G. Espinosa-Urbe (Mexico)
- EP-008** Comparison of clinical and radiological parameters of periacetabular osteotomy (PAO) and Triple pelvic osteotomy (TPO)
Jiri Chomiak, Martin Ošťádal, Pavel Dungal (Czech Republic)
- EP-009** Lateral edge and sourcil acetabular index measurements are not interchangeable for evaluation acetabular morphology in patients with developmental dysplasia of the hip
Alpesh Kothari, Saqib Noor, Connor Maddock, Catharine Bradley, Simon Kelley (Canada)
- EP-010** Even 'experts' can be fooled: the reliability of clinical examination in diagnosing developmental hip dislocations in newborns
Alexander Aarvold, Kishore Mulpuri, Emily Schaeffer, Wudbhav Sankar, Philip Harper, Brijil Joseph, Nicholas Clarke, Jose Herrera-Soto (United Kingdom)
- EP-011** The international hip dysplasia institute (IHDI) classification may be easier to use than the Tönnis classification in late diagnosed hip dislocations
Adam Sonesson, Daniel Wenger, Carl-Johan Tiderius (Sweden)
- EP-012** The association of BMI and physical activity on acetabular dysplasia in children
Kuan Chung, Fernando Rivadeneira, Suzanne de Vos-Jakobs, Sita Bierma-Zeinstra, Erwin Waarsing (The Netherlands)
- EP-013** Validation of risk factors in the failure of Pavlik Harness treatment in infants with dislocated hips
Ahmet Imerci, Kenneth Rogers, Abhishek Bhattacharjee, Mihir M. Thacker (USA)
- EP-014** Inverted acetabular labrum is predictive of Pavlik harness treatment failure for children with developmental hip dysplasia
Ali Siddiqui, Lillian Lai, Rachel Goldstein (USA)

- EP-015** Use of the bimalleolar method for tibial torsion measurement shows the most reliable results in MRI of paediatric patients
Karin Hebenstreit, Madeleine Willegger, Martin Zalaudek, Alexander Kolb, Reinhard Windhager, Catharina Chiari (Austria)
- EP-016** The variability of the flatfoot frequency depending on the diagnostic criteria and the method of statistical analysis
Alena Dimitrieva, Vladimir Kenis (Russia)
- EP-017** Ankle deformities in children: differential approach to surgical correction
Dmytro Iershov, Viktor Rokutov, Igor Makedonsky (Ukraine)
- EP-018** Clubfoot associated to Nail-Patella syndrome. Evolution and treatment with Ponseti method
Anna Ey Batlle, Marta Vinyals Rodriguez, Dimosthenis Kiimetoglou, Jaime Brajones (Spain)
- EP-019** The influence of laterality, sex and family history on clubfoot severity
Giada Salvatori, Caterina Novella Abati, Camilla Bettuzzi, A. Zanardi, Manuele Lampasi (Italy)
- EP-020** Symptomatic too long calcaneal process. A very infrequent cause of foot pain in adolescence
Serafin Garcia-Mata, Laura Azcona, Miriam Brun, Daniel Sanchez-Guardamino (Spain)
- EP-021** The effect of lateral column lengthening on subtalar motion: are we trading deformity for stiffness?
Brittany Hedrick, Jacob Zide, Danielle McClelland, Claire Shivers, Matthew Siebert, Mitchell Harris, William Pierce, Robert Wimberly, Anthony Riccio (USA)
- EP-022** Is it flatfoot or not: the consistency of visual perception of flatfoot among orthopedists
Vladimir Kenis, Alexey Baidurashvili, Alena Dimitrieva (Russia)
- EP-023** Training of one-leg balance enhances foot arch development in children
Chia Chang, Shu Mei Wang (Taiwan)
- EP-024** Development of foot length in children with clubfoot. A prospective follow up study
Evgenia Manousaki, Gunnar Hägglund, Anna-Clara Esbjörnsson, Hanneke Andriesse (Sweden)
- EP-025** Quality of life impact and deformity correction in Flexible Flat Foot with calcaneo-stop technique - Retrospective study
Rita Alçada, Joao Caetano, João Figueiredo, Patrícia Wircker, Teresa Alves da Silva, António Camacho (Portugal)
- EP-026** Complex clubfoot - Still existing problem
Blazej Pruszczyński, Marek Synder (Poland)
- EP-027** Treatment and outcomes of clubfeet associated with amniotic band syndrome
Melissa Esparza, Elaine Tran, B. Stephens Richards, Anthony Riccio (USA)
- EP-028** Calcaneal osteotomies: which indications in Paediatric flatfoot?
Elena Manuela Samaila, Bruno Magnan (Italy)
- EP-029** Calcaneal shortening osteotomy for varus foot deformity in older children
Nurul Shakirah Abdul Halim¹, Chia Chang² (¹Malaysia, ²Taiwan)
- EP-030** Long-term effect on plantar pressure change of the calcaneofibular ligament release in surgical treatment of Clubfoot
Serkan Erkuş, Ata Elvan, Ali Turgut, Mehmet Alphan Çakıroğlu, Ibrahim Engin Simsek, Önder Kalenderer (Turkey)

- EP-031** Understanding the Juvenile Bunion
Caitlin Hardin, Jacob Zide, Claire Shivers, Kirsten Tulchin-Francis, Chan-Hee Jo, Anthony Riccio (USA)
- EP-032** Treatment of severe flatfeet with gastrocnemius shortening by percutaneous lengthening of the heel cord
Stefan Bluemel, Rafael Velasco, Vincent Stadelmann, Anika Stephan (Switzerland)
- EP-033** Computer-assisted subcapital correction osteotomy in slipped capital femoral epiphysis using individualized drill templates
Sima Zakani, Christopher Chapman, Adam Saule, Anthony Cooper, David Wilson, Kishore Mulpuri (Canada)
- EP-034** An assessment of risk factors and outcomes in the surgical management of slipped capital femoral epiphysis - A single-centre, retrospective review
Winston Jin, Eva Habib, Ash Sandhu, Jeffrey Bone, Emily Schaeffer, Kishore Mulpuri (Canada)
- EP-035** Rate of total hip replacement for developmental dysplasia of the hip, Legg-Calve-Perthes disease and slipped capital femoral epiphysis - a linkage study with a National Joint Replacement Registry
Manuel Johannes Kraus^{1,2}, Ines Kraus¹, Peter John Cundy¹, Nicole Williams¹ (¹Australia, ²Switzerland)
- EP-036** The role of MRI in assessing acute avascular necrosis in slipped capital femoral epiphysis
Michael Flatman, Anshul Rastogi, Nikolaos Papadakos, Martin Siebachmeyer, Yael Gelfer, Andrea Yeo (United Kingdom)
- EP-037** Probability analysis of sequential SCFE (PASS Score)
Barry Danino¹, Satbir Singh², Kevin Klingele² (¹Israel, ²USA)
- EP-038** The skinny SCFE
Kyle Obana, Ali Siddiqui, Alexander Broom, Kody Barrett, Lindsay Andras, Michael Millis, Rachel Goldstein (USA)
- EP-039** Dega periacetabular osteotomy: the patient based finite element analysis study
Serkan Erkuş, Önder Kalenderer, Semih Demir, Ali Turgut, Eser Pala (Turkey)
- EP-040** Smaller epiphyseal tubercle but larger metaphyseal fossa and peripheral cupping in SCFE compared to healthy hips: a 3D-Ct Study
Ata Kiapour, Shayan Hosseinzadeh, Young-Jo Kim, Eduardo Novais, Deaniel Maranhó, Alireza Emami, Gabriela Portilla (USA)
- EP-041** Is subcapital shortening osteotomy reproducible for the surgical treatment of severe slipped femoral capital epiphysis?
Cindy Mallet, Anne-Laure Simon, Brice Ilharreborde (France)
- EP-042** Bilateral horizontal Salter osteotomies with anterior symphyseal closure using nylon tape in the treatment of extrophy of the bladder
Ahmad Saeed Ali (Egypt)
- EP-043** Descriptive epidemiology of upper extremity septic arthritis (UESA) in Children - Review of the CORTICES Database
Ying Li, Rachel Y. Goldstein, Danielle Cook, Allan Beebe, Jaime Rice Denning, Joseph Janicki, Megan Johnson, Antoinette Lindberg, CORTICES Study Group (USA)
- EP-044** Is surgery always necessary in case of pediatric hematogenous osteomyelitis associated with intra-osseous abscess?
Anne-Laure Simon, Marion Caseris, Olivier Freaud, Cindy Mallet, Brice Ilharreborde (France)
- EP-045** Osteoarticular infections in children at a tertiary hospital in Morocco: a prospective survey of microbiological data
Abdellaoui Hicham, Moutaoukil Kaoutar, Chater Lamiae, Atarraf Karima, Bouchra Oumokhtar, Afifi My Abderrahmane (Morocco)

- EP-046** Large bone defects secondary to chronic-osteomyelitis and infected non-union in pediatric patients managed by induced membrane technique
Federico Canavese¹, Antonio Andreacchio², Alain Dimeglio¹ (¹France, ²Italy)
- EP-047** Culture-negative septic arthritis of the knee - A single institution study
Alina Frolova, Flávia Moreira, Joana Freitas, Sara Almeida Santos, Rui Martins, Pedro Negrão, António Sousa (Portugal)
- EP-048** The outcomes of double-incision posterior knee release in patients with severe knee flexion contracture
Bartosz Musielak, Marek Jozwiak, Aleksander Koch, Milud Shadi (Poland)
- EP-049** Treatment of dislocation of the patella as a result of sports injuries in children. Forecast and consequences in adulthood
Oleg Loskutov, Ksenia Furmanova (Ukraine)
- EP-050** Proximal tibial epiphysiodesis: what about the fibular growth?
Adele Happiette, Florence Muller, Dominique Barbier, Pierre Journeau (France)
- EP-051** Fascia iliaca pain block results in lower overall narcotic usage and shorter hospital stay than epidural anesthesia after hip reconstruction in children with cerebral palsy
Dominique Laron, Jennifer Kelley, James McCarthy (USA)
- EP-052** Long term outcomes of ambulatory function in adults with cerebral palsy: evaluating change from adolescence
Nancy Lennon, Chris Church, Michael W. Shrader, William Robinson, Jose Salazar-Torres, John Henley, Tim Niiler, Freeman Miller (USA)
- EP-053** Pallidal lesion is the risk factor for hip dislocation in dyskinetic cerebral palsy
Kyoko Okuno, Kenichi Fukiage, Toru Shibata, Yukihiro Kitai, Hiroshi Arai (Japan)
- EP-054** Hip displacement in asymmetric diplegia: are all gross motor function classification system IIs and IIIs the same?
Stacey Miller, Lise Leveille, Maria Juricic, Kishore Mulpuri (Canada)
- EP-055** Long term patient reported outcomes of physical function, life satisfaction, and pain in young adults with cerebral palsy
Michael W. Shrader, Nancy Lennon, Chris Church, William Robinson, John Henley, Tim Niiler, Julieanne P. Sees, Freeman Miller (USA)
- EP-056** Semitendinosus transfer to distal femur improves knee extension more than hamstrings surgical lengthening, however it does not prevent the increase of anterior pelvic tilt
Mauro César de Moraes Filho, Marcelo Fujino, Francesco Blumetti, Bruna Caroline Alexandrino Ramos, Cátia Kawamura, José Augusto Lopes (Brazil)
- EP-057** The Impact of asymmetrical hip dysplasia on the outcomes of patients with cerebral palsy
Carlos Pargas, Tanyawat Saisongcroh, Julieanne P. Sees, Kenneth Rogers, Freeman Miller, Michael W. Shrader (USA)
- EP-058** Predicted life expectancy in patients with cerebral palsy and neuromuscular scoliosis undergoing spinal fusion: an exploratory analysis from a single institution over 15-years
Arun Hariharan, Carlos Pargas, Margaret Baldwin, Joseph Petfield, Kenneth Rogers, Julio Jauregui, Peter Gabos, Suken Shah, Kirk Dabney, Freeman Miller, Michael W. Shrader, Julieanne P. Sees (USA)
- EP-059** Has the evolution of pelvic fixation in neuromuscular scoliosis improved outcomes?
Dan Kym, Japsimran Kaur, Nicole A. Segovia, Ivan Daniel Mayor, Meghan Imrie, John S. Vorhies (USA)
- EP-060** Spinal fusion and pelvic fixation in Rett syndrome patients affected by scoliosis: management of complications in a 10 years follow-up series
Luca Labianca, Iliaria Nicolosi, Antonello Montanaro, Carmelo D'Arrigo, Fabio Marzilli, Andrea Ferretti (Italy)

- EP-061** CHOP: center variability in baseline presentation and management
Maria Juricic¹, Emily Schaeffer¹, Stacey Miller¹, Jeffrey Bone¹, Benjamin Shore², Unni Narayanan¹, Kishore Mulpuri¹ (¹Canada, ²USA)
- EP-062** The effect of selective dorsal rhizotomy on spinal deformities in children with cerebral palsy: a long term follow up study
Stacey Miller, Jonathan Lau, Maria Juricic, Bejaan Jivraj, Paul Steinbok, Firoz Miyanji, Kishore Mulpuri (Canada)
- EP-063** Does utilizing two spine surgeons for neuromuscular scoliosis impact operative outcomes and complications
Lindsay Schultz, Nichole Leitsinger, Bryan Menapace, Viral Jain, Peter Sturm, James McCarthy (USA)
- EP-064** Mehta casting: where are they now?
Nichole Leitsinger, Lindsay Schultz, Peter Sturm, Viral Jain, James McCarthy (USA)
- EP-065** Vertebral fractures in children: severe injuries with high morbidity
Pedro Sá Cardoso, Luís Pedro Vieira, João Moreno Morais, Joana Freitas, Cristina Alves, Tah Ling, Nuno Alegrete (Portugal)
- EP-066** Does autism alter the risk profile for adolescent idiopathic scoliosis surgery?
Dana A. Leonard, Nicole A. Segovia, Japsimran Kaur, Karthik Nathan, John S. Vorhies (USA)
- EP-067** Intrathecal morphine in the presence of a syrxin in pediatric spinal deformity surgery
Jason Ina, Connie Poe-Kochert, Christina Hardesty, Jochen Son-Hing, Paul Tripi, George H. Thompson (USA)
- EP-068** Do routine nutrition consults for neuromuscular scoliosis help the patient or just the rankings?
Kavish Gupta, David Skaggs, Stephen Stephan, Adrian Lin, Kenneth Illingworth, Lindsay Andras (USA)
- EP-069** Surgical site prevention protocol for pediatric spinal deformity surgery: does it make a difference?
Jilan Shimberg, Connie Poe-Kochert, Christina Hardesty, Jochen Son-Hing, George H. Thompson, Justin Mistovich (USA)
- EP-070** Using a dedicated spine radiology technologist is associate with reduced fluoroscopy time, radiation dose, and surgical time in pediatric spinal deformity surgery
Ali Siddiqui, Lindsay Andras, Edward Compton, Kyle Obana, Rajan Murgai, Vernon Tolo, Kenneth Illingworth, Skorn Ponrartana, David Skaggs (USA)
- EP-071** In-office maximal voluntary ventilation (MVV) testing demonstrates pulmonary improvement following posterior spinal fusion for adolescent idiopathic scoliosis
Hulaimatu Jalloh, Lindsay Andras, Gregory Redding, Hanna Omar-Payne, Gabriela Villamor, Joshua Yang, Vernon Tolo, David Skaggs (USA)
- EP-072** Is growth-friendly surgery adequate for the treatment of non-ambulatory early-onset scoliosis myelomeningocele patients?
Norman Ramirez Lluch¹, Ryan Fitzgerald², Gerardo Olivella¹, John Smith², Peter Sturm², Paul Sponseller², Lawrence Karlin², Scott Luhmann², Tricia St. Hilaire², Pediatric Spine Study Group² (¹Puerto Rico, ²USA)
- EP-073** Conventional growing rod in EOS treatment - Revision of 22 severe cases with long term lengthening
João Lameiras Campagnolo, Andreia Mercier Nunes, Pedro Jordão, Jorge Mineiro (Portugal)
- EP-074** Can opioid free anesthesia reduce postoperative pain after adolescent idiopathic scoliosis surgery?
Florence Julien-Marsollier, Anne-Laure Simon, Souhayl Dahmani, Brice Ilharreborde (France)
- EP-075** Using a modified Jackson table for elongation, derotation, flexion casting
Blake Montgomery, Kali R. Tileston, Japsimran Kaur, Nicole A. Segovia, Dan Kym, Meghan Imrie, James Policy, Lawrence A. Rinsky, John S. Vorhies (USA)

- EP-076** Power pedicle tract preparation and screw placement: a multicenter study of early adopters
Edward Compton, Lindsay Andras, Michael Vitale, Sumeet Garg, Joseph Stone, Nicholas Fletcher, Kenneth Illingworth, Roxana Martinez, Eun Bi Kim³ Lukas Keil, Hilary Harris, Vernon Tolo, David Skaggs (USA)
- EP-077** Synovial fluid cytokine patterns in skeletally immature patients with anterior cruciate ligament injury
Marco Bigoni¹, Marco Turati^{1,2}, Massimiliano Piatti¹, Marcello Catalano¹, Diego Gaddi¹, Massimo Gorla¹, Nicolò Zanchi¹, Giovanni Zatti¹, Antonio Torsello¹ (¹Italy, ²France)
- EP-078** Neuromuscular intervention of upper extremities for children in wheelchair
Florian Liepe, Julia Funk (Germany)
- EP-079** Reconstruction of medial patellofemoral ligament in adolescents with modern and synthetic material tape
Lukasz Lipinski, Radoslaw Lebiezinski, Marek Synder, Andrzej Grzegorzewski (Poland)
- EP-080** Anterior cruciate ligament reconstruction with quadriceps autograft in patients under the age of 20
Daniel Green, Lindsay Schlichte, Alexandra Aitchison, Frank Cordasco (USA)
- EP-081** Quadriceps versus hamstring autografts for anterior cruciate ligament repair in adolescent athletes: comparing graft signal intensity on MRI
Alexandra Aitchison, David Alcoloumbre, Douglas Mintz, Frank Cordasco, Daniel Green (USA)
- EP-082** Opioid re-prescription following ACL reconstruction is associated with subsequent opiate use disorders
Eli M. Cahan, Nicole A. Segovia, Japsimran Kaur, Charles M. Chan, John S. Vorhies (USA)
- EP-083** Repair of chondral lesions in adolescents with chronic patellar instability
Ioannes Melas, Dimitrios Metaxiotis, Michael Iosifidis (Greece)
- EP-084** Treatment of unstable supracondylar humeral fractures in children: a comparative study
Sinisa Ducic, Bojan Bukva, Vladimir Radlovic, Mikan Lazovic (Serbia)
- EP-085** Cost- effectiveness using midazolam or nitrous oxide during manipulation of forearm fractures and distal radial fractures in the pediatric emergency department
Ana Fernandez Ansorena, Laura Corominas, Ignacio Sanpera (Spain)
- EP-086** An analysis of the scale of orthopaedic injuries associated with trampolines & bouncy castles
Cathleen McCarrick, Fiachra Power, Ciaran Mc Donald, Noelle Cassidy (Ireland)
- EP-087** Prospective, randomized, blinded trial demonstrates decreased pain during supracondylar pin removal with noninvasive electrotherapy stimulation compared to placebo
Natalya Sarkisova, Rachel Goldstein, Trevor Anesi, Erin Meisel, Nina Lightdale-Miric, David Skaggs, Lindsay Andras (USA)
- EP-088** Size of metaphyseal fracture fragment does not predict delayed or nonunion in pediatric lateral condyle fractures
Edward Compton, Stephen Stephan, Rachel Goldstein, Nina Lightdale-Miric, Kenneth Illingworth, David Skaggs, Lindsay Andras (USA)
- EP-089** Nerve injuries in supracondylar humerus fractures: does time to surgery influence time to recovery?
Susan Mahan, Patricia Miller, Jiwoo Park, Nicholas Sullivan, Carley Vuillermin (USA)
- EP-090** Results of pediatric diaphyseal femoral fractures treated with traction and a subsequent spica cast immobilization
Sarah Mills, Carmen Goetz, Luis Moraleda Novo, Joaquín Núñez De Armas, Gaspar Gonzalez (Spain)
- EP-091** Isolated femoral shaft fractures in children rarely require a blood transfusion
Edward Compton, Lindsay Andras, Rajan Murgai, David Skaggs, Vernon Tolo, Kenneth Illingworth (USA)

- EP-092** K-wire size has no effect on outcomes of percutaneous pinning of supracondylar humerus fractures in children age > 5 yo or weighing > 20 kg
Kavish Gupta, Ali Siddiqui, Mary Kate Erdman, Mathew Schur, Rachel Y. Goldstein, Erin M. Meisel (USA)
- EP-093** Displaced diaphyseal femur fractures managed by elastic stable intramedullary nailing with or without the use of intraoperative traction during nail insertion: comparative analysis of 69 patients
Antonio Andreacchio¹, Flavia Alberghina¹, Mattia Cravino¹, Federico Canavese² (¹Italy, ²France)
- EP-094** Pediatric pelvic fractures: 7-year review in a level 1 trauma center
Luisa Vital, Joana Freitas, Luis Pedro Vieira, Sara Almeida Santos, Vitorino Veludo, André Rodrigues Pinho, André Couto (Portugal)
- EP-095** Clinical and Radiographic and Pedobarographic analysis of skeletally immature patients with surgically treated distal metaphyseal fractures of the tibia: is concomitant fixation of the fibula necessary?
Wen Tao Wang¹, Federico Canavese², Shun You Chen¹ (¹China, ²France)
- EP-096** Age is a predictor of elbow stiffness after type III or IV supracondylar humerus fracture
Kavish Gupta, Mary Kate Erdman, Ali Siddiqui, Mathew Schur, Kenneth Illingworth, Rachel Goldstein (USA)
- EP-097** Semi-automatic osteotomy planning with optimal joint alignment
Ruurd Kuiper, Koen Willemsen, Harry Weinans, Max Viergever, Peter Seevinck, Ralph Sakkers (The Netherlands)
- EP-098** Are headless cannulated compression screws a more economical option for fixing tibial tuberosity fractures?
Nickolas Nahm, Kenneth Rogers, Jeanne Franzone, Mihir M. Thacker (USA)
- EP-099** The association of maternal alcohol consumption, birth weight and birth length to fractures in childhood
Roope Parviainen, Juha Auvinen, Juha-Jaakko Sinikumpu (Finland)
- EP-100** Iliac wing and acetabular fixation with lag screw technique in pediatric population
Cláudia Vale, Raquel Afonso, Cecilia Sá-Barros, Elisabete Ribeiro, Guilherme França, Nuno Oliveira, Mário Xavier Baptista, Joni Nunes, Melanie Ribau da Costa, Pedro Pinho, Pedro Varanda, Luísa Fardilha, Ricardo Maia (Portugal)
- EP-101** Pediatric olecranon fractures - what to expect?
Miguel Silva, André Rodrigues Pinho, João Lixa, Maria João Leite, António Sousa, Joana Freitas (Portugal)
- EP-102** Orthopaedic complications in children treated for lymphoblastic acute leukemia
Pauline Savidan, Brice Ilharreborde, Anne Notz-Carrere, Yan Lefèvre, Anne-Laure Simon (France)
- EP-103** Endoprosthetic replacement after resection of humerus sarcomas in children
Bulent Erol, Omer Sofulu, Evrim Sirin, Fevzi Saglam, Mehmet Deniz Kesimer (Turkey)
- EP-104** Best time to surgery in terms of age and severity of scoliosis and what could affect complications in large cohort of neuromuscular patient underwent scoliosis surgery with 15 years of follow-up
Iliaria Nicolosi, Alessio Rossato, Fabio Marzilli, Luca Labianca, Antonello Montanaro, Carmelo D'Arrigo, Dario Perugia, Andrea Ferretti (Italy)

INDUSTRY SYMPOSIA



VIRTUAL ROOM 1

12.20 ORTHOFIX INDUSTRY SYMPOSIUM

13.20 COMPUTER-ASSISTED PRE-OPERATIVE PLANNING. TIPS AND TRICKS

Chair: **Manuel Cassiano Neves** (Portugal)

Advantages in preplanning in pediatric plating
Ignacio Sanpera (Spain)

Clinical experience using preplanning – tips and tricks with software planning programs
Elizabeth Moulder (United Kingdom)

Computer-assisted planning for foot deformity correction
Alexander Cherkashin (USA)

Live Q&A and panel discussion

14.30 ORTHOPEDIATRICS INDUSTRY SYMPOSIUM

15.30 COMPLEX GROWTH PLATE INJURIES OF THE LOWER EXTREMITY: CURRENT TRENDS IN TREATMENT

Chairs: **Peter Armstrong** (USA - OrthoPediatics), **Federico Canavese** (France)

Introduction
Peter Armstrong (USA - OrthoPediatics)

Salter-Harris type II fracture of the distal tibia and fibula
Xuemin Lyu (China)

Displaced juvenile Tillaux fracture
Anthony Riccio (USA)

Triplane fracture: a complex transitional injury pattern
Antonio Andreacchio (Italy)

McFarland fracture: a severe growth plate injury
Federico Canavese (France)

Patella sleeve avulsion fracture
Manuel Cassiano Neves (Portugal)

Avulsion fracture of the anterior tibial tuberosity with/without intra-articular involvement
Thomas Wirth (Germany)

Live Q&A and panel discussion



VIRTUAL ROOM 2

14.30 BIOMARIN INDUSTRY SYMPOSIUM

15.30 ACHONDROPLASIA: NATURAL HISTORY & CURRENT MANAGEMENT

Chair: **João Cabral** (Portugal)

Genetic cause and natural history [LIASE]

Mohamad Maghnie (Italy)

Current care pathways

Encarna Guillén-Navarro (Spain)

Current thinking on limb lengthening in achondroplasia

Antonio Leiva (Spain)

Live Q&A and panel discussion

BOMARIN

VIRTUAL ROOM 1

12.00 IPSEN INDUSTRY SYMPOSIUM

**13.00 WHAT ARE YOU MISSING?
THE CHALLENGES OF RARE DISEASE DIAGNOSIS**

Chair: **Peter Kannu** (Canada)

12.00 Chair's welcome and introduction
Peter Kannu (Canada)

12.05 Case study 1: Telling the tale – the signs of rare disease
Vladimir Kenis (Russia)

12.15 Case study 2: Understanding the etiology to prevent misdiagnosis
Peter Kannu (Canada)

12.25 Case study conclusions
Peter Kannu (Canada), **Vladimir Kenis** (Russia)

12.40 Live Q&A and panel discussion

14.00 ORTHOFIX INDUSTRY SYMPOSIUM

15.00 LIMB LENGTHENING WITH FITBONE® - EXPERIENCE WITH ADOLESCENT PATIENTS

Chair: **Frank Accadbled** (France), **Toby Jameson** (United Kingdom - Orthofix)

Speaker: **Frank Accadbled** (France)

Live Q&A and panel discussion



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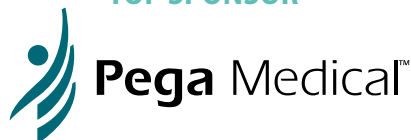
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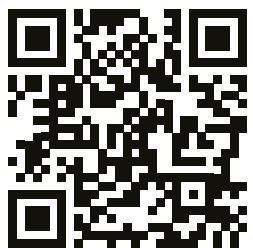
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always see
the hero
inside...**



Not an actual patient



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ACHONDROPLASIA

NATURAL HISTORY & CURRENT MANAGEMENT



**THURSDAY,
15TH OF APRIL
2021**

CET 2:30 - 3:30 pm
Virtual Room 02

PROGRAM

OPENING

JOÃO CABRAL – HOSPITAL PEDIÁTRICO DE COIMBRA, CHUC, PORTUGAL

GENETIC CAUSE AND NATURAL HISTORY

MOHAMAD MAGHNIÉ – GIANNINA GASLINI INSTITUTE, UNIVERSITY OF GENOVA, ITALY

CURRENT CARE PATHWAYS

ENCARNA GUILLÉN-NAVARRO – VIRGEN DE LA ARRIXACA UNIVERSITY CLINICAL HOSPITAL, SPAIN

CURRENT THINKING ON LIMB LENGTHENING IN ACHONDROPLASIA

ANTONIO LEIVA – VIRGEN DE LA VICTORIA UNIVERSITY CLINICAL HOSPITAL, SPAIN

RARE

WHAT ARE YOU MISSING? THE CHALLENGES OF RARE DISEASE DIAGNOSIS

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FRIDAY 16TH APRIL 2021 | 12:00 – 13:00 (CET)

VIRTUAL SYMPOSIUM

THIS SYMPOSIUM WILL BE AVAILABLE ON
EPOS ON-DEMAND UNTIL JULY 2021



ALL-CH-000069
March 2021

 **IPSEN**
Innovation for patient care

AGENDA

CHAIRPERSON'S WELCOME AND INTRODUCTION

*Dr. Peter Kannu,
University of Alberta, Canada*

CASE STUDY 1: TELLING THE TALE – THE SIGNS OF RARE DISEASE

*Dr. Vladimir Kenis,
The Turner Institute for Children's Orthopedics,
Saint-Petersburg, Russia*

CASE STUDY 2: UNDERSTANDING THE ETIOLOGY TO PREVENT MISDIAGNOSIS

*Dr. Peter Kannu,
University of Alberta, Canada*

CASE STUDY CONCLUSIONS

*Dr. Peter Kannu
Dr. Vladimir Kenis*

LIVE Q&A AND PANEL DISCUSSION

*Dr Peter Kannu
Dr Vladimir Kenis*

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