

EPOS NEWSLETTER



European Paediatric Orthopaedic Society · MARCH 2018



www.epos.org

Welcome Address



Dear EPOS members

Thank you for your interest in reading our 2018 Spring Newsletter.

It will be my last one as Editor as my time in the EPOS board comes to an end this year and I am happy that we again are able to provide you with some interesting topics within Paediatric Orthopaedics.

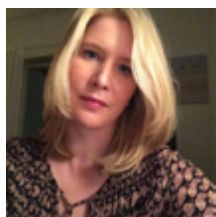
You can catch up "what happens in other societies", receive "Tips and Tricks...in Foot Surgery" and get an impression what it means to be a Female Paediatric Orthopaedic Surgeon.

Also the next EPOS meeting in Oslo gets really close and you are warmly welcomed by the Norwegian Local Hosts. Enjoy !

All my best wishes

Stephanie Böhm

Stockholm, Sweden March 2018



Dr. Stephanie Böhm

EPOS board member

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Index



Welcome
PAGE 2

02

Tips and tricks in... Foot Surgery
PAGE 3-6

03

12th Chinese Orthopedic
Association Congress in Zhuhai
PAGE 7-8

07

Ped Orth Meeting Guang Zhou
PAGE 9

09

Advanced course: Fundamentals
on Paediatric Spine Deformities
PAGE 10

10

BAT Course in Vienna, Austria
PAGE 11

11

POSNA-SLAOTI-EPOS
5th International Course
PAGE 12

12

Management Guidelines for
Emergency Trauma in Children
PAGE 13-16

13

1st Cadaver EPOS Advanced
Course in Geneva, Switzerland
PAGE 17-18

17

The State of Gender Equality in
Paediatric Orthopaedics:
a US perspective
PAGE 19-23

19

Welcome to Oslo
PAGE 24

24

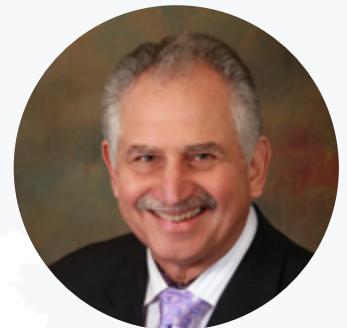
Tips and tricks in... Foot Surgery



TARSAL COALITIONS: CLINICAL AND RADIOGRAPHIC DIAGNOSIS AND MANAGEMENT



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 LT MC USN
 Orthopaedic Surgery
 Naval Medical Center San Diego, CA, USA



Scott Mubarak, MD
 Surgeon in Chief and
 Emeritus Chief of Pediatric Orthopedics
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Orthopaedic surgeons rely on history and physical exam findings to help establish any diagnosis. When the orthopaedic surgeon examines a child with painful foot or flatfoot, the patient's gait and motion should be evaluated. A careful evaluation of subtalar motion should be performed with the foot positioned near neutral (plantigrade). In this position the talus is fixed in the ankle mortise. If the physician notes a decrease in subtalar motion, a likely diagnosis is tarsal coalition. The two main types are calcaneonavicular (CN) and talocalcaneal (TC). Often, careful clinical exam can elicit which coalition is present.

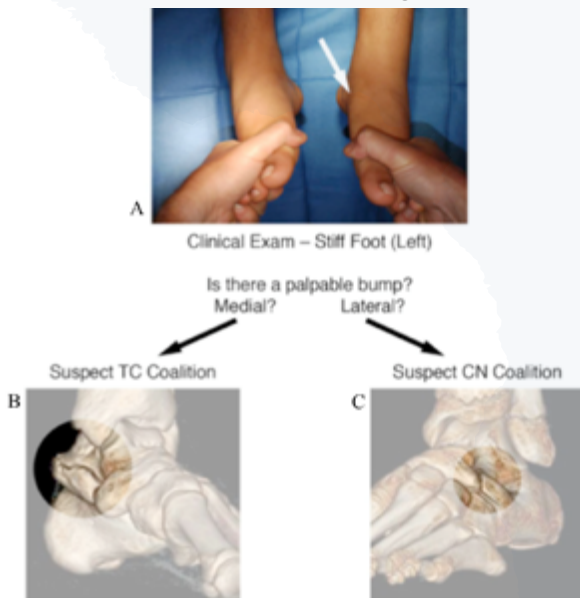
Talocalcaneal (TC) coalition will also present with the aforementioned decreased subtalar motion. In most cases, a characteristic bony prominence exists just below the medial malleolus, (Fig 1B) the "double medial malleolus" sign due to the enlarged middle facet [1] See also Fig 2A and B.

Figure 2



Calcaneonavicular coalition will present with stiff subtalar motion. Ankle plantarflexion is often decreased by more than 10-20 degrees compared to the contralateral normal side due to the CN coalition preventing talonavicular motion.

Figure 1

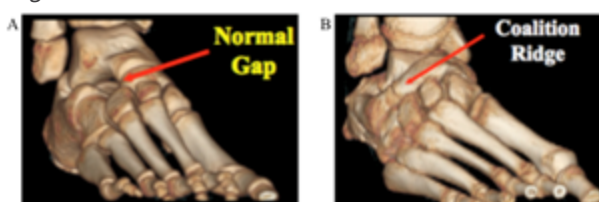


Tips and tricks in... Foot Surgery



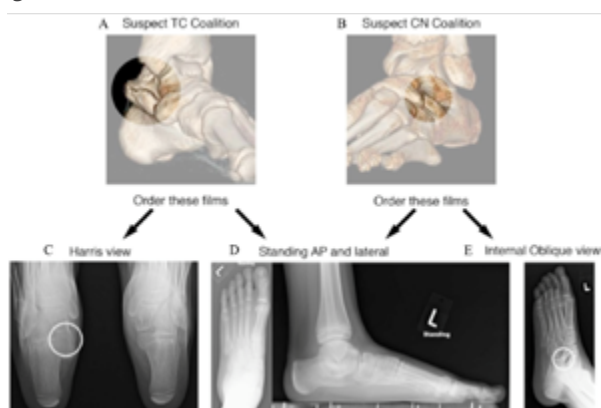
With decreased range of motion, look for a palpable, often tender, bony ridge laterally in the distal sinus tarsi (Fig 1C, 3A and B).

Figure 3



Once we have established clinical suspicion for a tarsal coalition, appropriate imaging may be obtained. Tarsal coalitions are hard to appreciate on standard imaging. Standard weight bearing AP and lateral radiographs are needed, bilateral views are helpful for comparison. Standing lateral radiographs may demonstrate a C-sign,

Figure 4



which is a fairly reliable indicator of talocalcaneal coalition. This is seen when there is a confluence of the subchondral bone of the talar dome with the posterior and inferior edge of the enlarged middle facet coalition and the sustentaculum tali (Fig 4D). This was studied in detail by Moraleda and colleagues [2]. A complete C-sign is present in 41% of TCCs and 77% will have an incomplete C-sign, but so will flexible flatfeet (44%). If TC coalition is suspected, the Harris heel views may be useful (Fig 4C). In normal feet, the posterior and

middle subtalar joints appear parallel, whereas in feet with TC coalition, the middle facet is often angled, and parallelism is lost. Our research has shown that an additional finding on this view is an abnormally enlarged sustentaculum tali and sometimes complete bridging of the talocalcaneal joint (seen with an osseous coalition) [1].

When CN coalition is suspected, an internal oblique view is needed (Fig 4E). This will show fibro-osseous bridging of the anterior calcaneal process and lateral navicular fusion.

Following this diagnostic pathway, after appropriate plain radiographs, we advise CT scans with 3D reconstructed images to define the size of the coalition, type, and for surgical planning [3, 4].

A tarsal coalition is rarely treated in a cast. The underlying issue is a pathologic coalition of two tarsal bones, which fundamentally changes foot mechanics. Surgical excision may prevent future pathology, including sprains, fractures, and ankle arthritis, by restoring more normal foot and ankle kinematics. In nearly all cases we recommend surgical excision once the diagnosis is made.

Calcaneonavicular coalition is excised using an oblique skin incision centered over the coalition. The extensor digitorum brevis (EDB) muscle is identified and freed at its proximal insertion to expose the coalition. Freer elevators are inserted to protect the talar head and cuboid while a small osteotome is used to resect the bar. A Kerrison rongeur can be inserted to remove any remaining deeper bony connections (Fig 5).

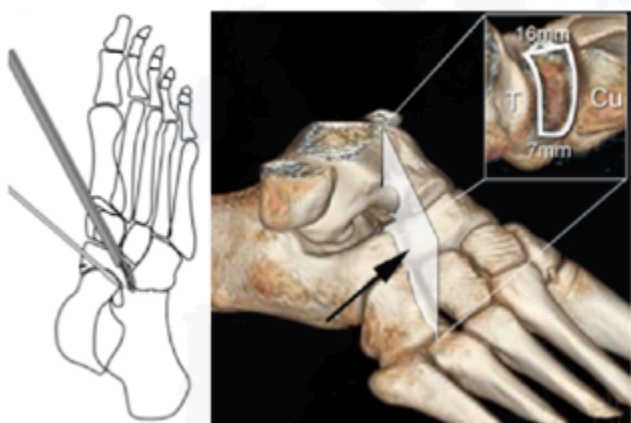
A fat graft (abdomen or buttock) is then inserted into the defect prior to closure. Fat interposition grafting is preferred over an EDB interposition graft given the depth of the coalition (25mm) and inadequate size of EDB (17mm), as verified on CT and cadaver studies [5]. After closure, the patient is placed into a cast for two



weeks, after which therapy is initiated. CN coalition excision is a successful operation in 90%, restoring function, motion and relieving pain.

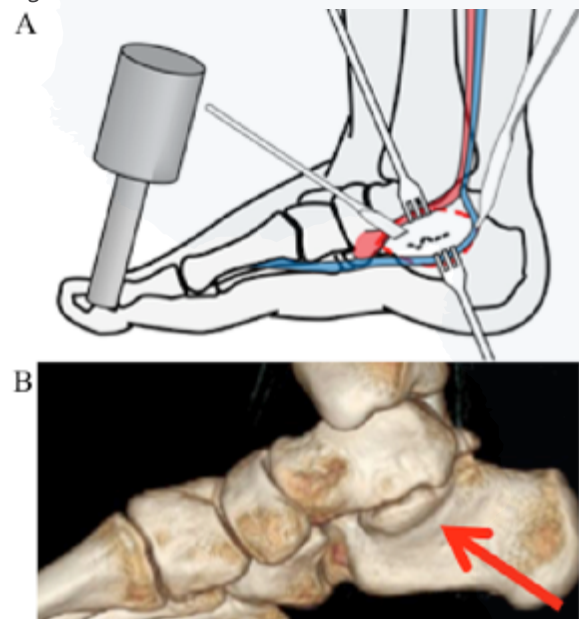
Talocalcaneal coalition excision is performed using an incision centered over the prominent coalition inferior

Figure 5



to the medial malleolus. The posterior tibialis and flexor digitorum tendons are retracted to expose periosteum, which is then incised. If a posterior TCC exists, care must be taken to also identify and protect the flexor hallucis longus tendon and neurovascular bundle.

Figure 6

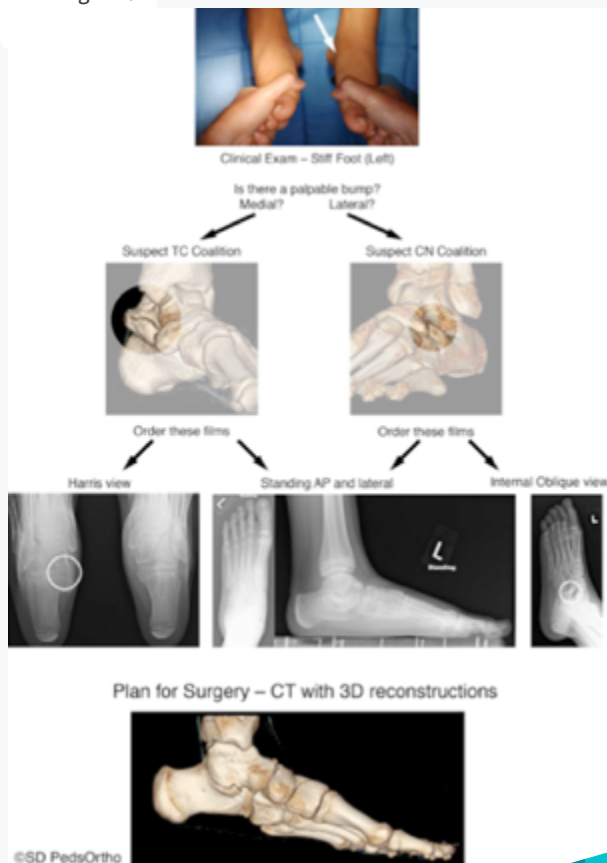


Based on preoperative templating, the appropriate plane of resection is identified, often compared to a fibrocartilaginous "physis", and then removal is completed using osteotomes, ronguers, and high speed burrs until normal appearing cartilage of the posterior facet is visualized (Fig 6A and B).

Again, fat grafting is used for adequate interposition. Intraoperative assessment of hindfoot motion as well as intra-op CT scanning after the resection of the coalition has been shown to alter surgical decision-making resulting in an improved ability to obtain a complete resection [3, 6]. Again we expect near 90% relief of symptoms even in these more difficult coalitions.

In the setting of concomitant severe planovalgus, 3C osteotomies which include calcaneal, cuboid and cuneiform osteotomies should be considered, but not until 6-12 months after first obtaining motion [7].

Figure 7



Tips and tricks in... Foot Surgery



Using this clinical and diagnostic pathway (Fig 7), the orthopaedic surgeon may identify, characterize, and excise a symptomatic tarsal coalition, providing effective symptomatic relief while preventing future injury.

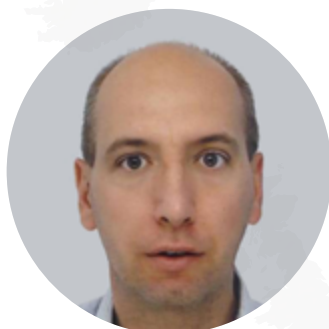
Bibliography

1. Rocchi, V., et al., *The "Double Medial Malleolus": A New Physical Finding in Talocalcaneal Coalition.* *J Pediatr Orthop*, 2016.
2. Moraleda, L., G.D. Gantsoudes, and S.J. Mubarak, *C sign: talocalcaneal coalition or flatfoot deformity?* *J Pediatr Orthop*, 2014. 34(8): p. 814-9.
3. Kemppainen, J., et al., *The use of a portable CT scanner for the intraoperative assessment of talocalcaneal coalition resections.* *J Pediatr Orthop*, 2014. 34(5): p. 559-64.
4. Rozansky, A., et al., *A radiologic classification of talocalcaneal coalitions based on 3D reconstruction.* *J Child Orthop*, 2010. 4(2): p. 129-35.
5. Mubarak, S.J., et al., *Calcaneonavicular coalition: treatment by excision and fat graft.* *J Pediatr Orthop*, 2009. 29(5): p. 418-26.
6. Upasani, V.V., R.C. Chambers, and S.J. Mubarak, *Analysis of calcaneonavicular coalitions using multi-planar three-dimensional computed tomography.* *J Child Orthop*, 2008. 2(4): p. 301-7.
7. Gantsoudes, G.D., J.H. Roocroft, and S.J. Mubarak, *Treatment of talocalcaneal coalitions.* *J Pediatr Orthop*, 2012. 32(3): p. 301-7.
8. Rathjen, K.E. and S.J. Mubarak, *Calcaneal-cuboid-cuneiform osteotomy for the correction of valgus foot deformities in children.* *J Pediatr Orthop*, 1998. 18(6): p. 775-82.

What's going on in other Societies



12TH INTERNATIONAL CONGRESS OF THE CHINESE ORTHOPAEDIC ASSOCIATION

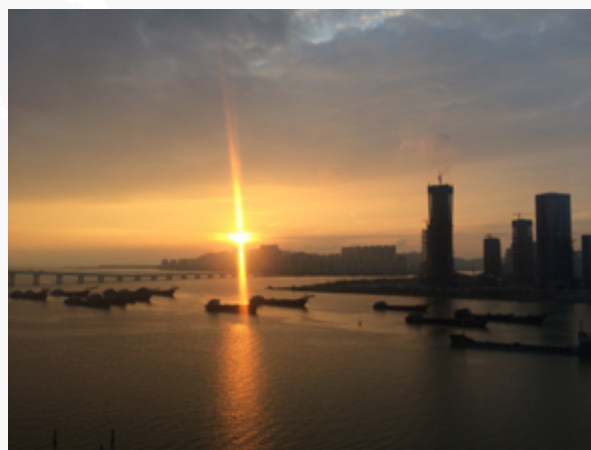


Federico Canavese MD PhD
 Head
 Pediatric Surgery Department
 University Hospital Estaing
 Clermont Ferrand, France

The XII International Congress of the Chinese Orthopedic Association (COA) was held in Zhuhai, China. Zhuhai, also known as "Chinese Riviera", is on the southern coast of Guangdong province located in the Pearl River delta. It is a modern, fast growing city that borders Macao and it is not far from Hong Kong, Guangzhou and ShenZhen, three of the major Chinese cities.



Overall, more than 18000 orthopedic surgeons from all over China and nearby countries attended the 2017 COA meeting, and over 250 guest speakers - coming from all over the world and representing all orthopedics and traumatology subspecialties - joined the Chinese faculty. Moreover, the German Orthopedic Association represented Germany as the 2017 COA Guest Nation.



As for the past three years, the European Pediatric Orthopedic Society (EPOS) had been given the opportunity to share the two days Pediatric Orthopedic Session with speakers from the Pediatric Orthopedic Society of North America (POSNA). One of the major goals of EPOS is to strengthen the relationship with the national pediatric orthopedic societies worldwide and the participation, together with POSNA, to the COA meeting was an ideal way of promoting this idea.

The 2017 EPOS representatives were 2017-2018 EPOS President Darko Anticevic from Croatia and EPOS Councilors Stephanie Bohm from Sweden and Manoj Ramachandran from United Kingdom.

In addition to these three officially invited EPOS speakers, Federico Canavese from France had the opportunity to join the Faculty as already in China at the time of the meeting. EPOS representatives shared the scientific program with Abigail Allen, Eric Edmonds and Meghan Imrie from POSNA.

The Pediatric Orthopedic Session took place on November 14th and 15th and it was coordinated, as in the past years, by Prof. Xuemin Lu from Beijing, China.

What's going on in other Societies



12TH INTERNATIONAL CONGRESS OF THE CHINESE ORTHOPAEDIC ASSOCIATION

The Pediatric Orthopedic Session turned out to be a successful and highly stimulating session. It was organized with great skill and care.

More than 270 pediatric orthopedic surgeons, coming mostly from China but also from Taiwan, Macao and Hong Kong, attended the session. During these two days, talks on osteogenesis imperfecta, SCFE, scoliosis, traumatology, sport, foot disorders, and infections followed one another. Each of the talks given sparked discussions amongst Chinese, European, and American colleagues.



The session was very enjoyable and academically very profitable. Moreover, to meet people across the globe who are passionate about pediatric orthopedics was very refreshing experience for all faculty members. All attendees agreed it was a great thing to be a part of.

Besides the well-organized scientific program, the social program, including a cruise around Macao was very enjoyable. Everything was perfectly well organized from the second EPOS and POSNA guests arrived in Zhuhai until their departure. In particular, EPOS Leadership and Members are proud of the relationships built with COA during the past few years and are looking forward to continuing close collaboration. Thank you so much to COA leadership, to Pr. Xuemin Lu and to our Chinese friends for a wonderful and stimulating conference!

What's going on in other Societies



PED ORTH MEETING GUANG ZHOU, CHINA



Antonio Andreacchio, MD
"Regina Margherita" Children's Hospital
Pediatric Orthopaedic Department
Turin, Italy
EPOS Reading Committee Chair

It was held in Guang Zhou (China) from 26 to 28 January 2018 a Meeting endorsed by EPOS organized in co-operation with the local host prof. Xu and the visiting professor Federico Canavese who is spending 1 year at Women and Children hospital in Guang Zhou.

The EPOS faculty panel was represented by 4 representative members of our Society: The EPOS President Darko Anticevic, Prof Alain DiMeglio (France), Cristina Alves (Portugal), Antonio Andreacchio (Italy) and Federico Canavese (France) who played the double role of local host and EPOS representative member

The 2 main topics of the meeting were Congenital Clubfoot and Pediatric Trauma. The meeting on the first day (Friday) focused on the current concept in clubfoot.

In addition to podium presentations on all the aspects of this congenital disease there were 2 practical live sessions. The first one in the morning where some newborns were casted from some experts of the EPOS faculty (Alves, Andreacchio, DiMeglio) and a second session in the afternoon where some children, who have relapse on their clubfeet were clinically examined by all EPOS faculty members.

During whole Saturday and Sunday morning the main topic was Pediatric Traumatology. Almost every aspect and all kind of fracture in childhood were focused.

The adjunct value of the event was due to 5 case discussion sessions were many case reports were presented and

the attendees were actively involved in the discussion.

The presence of more than 150 Chinese colleagues from several Region of this huge Country was the frame of this meeting which is the first held with the exclusive presence of EPOS invited speakers who

held 37 out of 42 podium presentations. The discussions after the conferences took long time and it was proof of the interest aroused. This event is a real step forward to open a new road in this Country by our Society.

After some representative speakers invited at the National Chinese Congress this event represents the first time with an exclusive panel of EPOS Members, which means to open their doors and considering our Scientific Society a landmark in a Country, till few years ago, close to foreign experts.

We'd like consider this meeting as a milestone to start building a bridge between Europe and China in a climate of reciprocal respect and I personally believe that the right tribute must be recognized to Federico Canavese ("a novel Marco Polo for our Society" citing the sentence of our President Darko Anticevic) who has been able to set in motion this process.



What's going on in our Society



EPOS ADVANCED COURSE IN VIENNA “FUNDAMENTALS OF PEDIATRIC SPINE DEFORMITIES”



Muharrem Yazici
EPOS Past President 2012/2013

After first EPOS Spine Study group activity...

EPOS BAT Advanced course “Children’s Spine is not a Miniature of Adults’ Ones!” has been organized in Vienna at last November.

The management of spinal deformities remains one of the most challenging areas of orthopaedic. Deformities appearing in early childhood further complicate the problem. The child is not a smaller model of the adult, and techniques that are reliable and safe in adults do not yield the same results in children. Due to their unique nature, children’s spinal deformities need to be managed with their own set of principles.

With advances in the past 20 years, great strides have been made in developing safe and efficient methods for the successful treatment of pediatric spinal deformities that remain respectful of the capacity for growth and avoid the negative impact on quality of life. Breathtaking developments in the fields of preoperative assessment, anesthesia, intensive care, instrumentation and monitorization have allowed these desperate children to no longer be destined for crooked spines, retarded height or insufficient pulmonary capacity.

In accordance with its pioneering mission to generate and distribute modern information in the field of pediatric orthopaedics, EPOS has decided to dedicate its annual advanced course of 2017 to the management of

pediatric spinal deformities. Course faculty, consisting of world-renowned experts in the field, spent 2 days sharing the most current knowledge through the unique perspective of their experience. Many topics including early-onset scoliosis, coronal and sagittal plane deformities of the spine, and disorders causing secondary spinal deformities discussed in detail.

More than 50 participants, all around from Europe and Georgia, Ukraine, Tunisia, Israel, South Korea, during 2 full days, had a chance to hear high-standard frontal lectures, to participate lovely discussions, and to practice techniques in hands-on workshops.



What's going on in our Society



BASIC ADVANCED TRAUMA (BAT) COURSE 18-20 OCTOBER 2017 IN VIENNA, AUSTRIA



Hakan Ömeroglu
EPOS Educational Committee, Chair

The 5th EPOS-EFORT BAT Instructional Course Trilogy, an integral part of the EPOS Educational started with the first part "Paediatric Orthopaedics Basic I Course" at the Orthopaedic Hospital Speising, Vienna, Austria from 18-20 October 2017.

The programme met the requirements set by the European Federation of National Associations of Orthopaedics and Traumatology (EFORT) and the European Board of Orthopaedics and Traumatology (EBOT). The trilogy total 226 graduates from 35 countries between May 2011 and October 2017.

The Course Programme included theoretical lectures, debates, techniques in paediatric orthopaedics, case discussions and workshops concerning development, bone metabolism and related disorders, the orthopaedic medical history and clinical examination, foot disorders, hip disorders, limb length discrepancy and lower limb deformity in children.



Note to the participants: all the pictures taken during the course are available from the EPOS

What's going on in our Society



POSNA-SLAOTI-EPOS 5TH INTERNATIONAL COURSE 12-14 OCTOBER 2017 SÃO PAULO, BRAZIL



Darko Anticevic, MD PhD
EPOS President 2017/2018

The 5th POSNA-SLAOTI-EPOS International Course on paediatric orthopaedics was held from 12th to 14th October 2017 in São Paulo, Brazil.

This course was inaugurated in 2009, and immediately received widespread appraisal due to its educational quality and become very popular among Latin American paediatric orthopaedic surgeons. From the third Course held in Buenos Aires in 2013, EPOS joined as an international partner contributing with programme faculty and session moderators.

The Course is held every other year in different Latin American country. In three days the Course programme covers all aspects of paediatric musculoskeletal trauma and elective orthopaedics.

Such endeavour could be possible with five minutes lectures and significant number of round table discussions, workshops, case based presentations, saw bone lab demonstrations and hands-on lab. More than three hundreds attendees were actively participated in all educational activities which were provided by twenty-nine faculty members (15 from SLAOTI, 12 from POSNA and two from EPOS).

A lot of credit for the success of this Course goes to Perry Schoenecker, who was the leading force behind and on the podium. Together with Alexandre Arkader, Miguel Akkari and Patricia Fucs they were Organizing committee of an extraordinary educational paediatric orthopaedic course. The next Course will be in Chile in 2019.



What's going on in our Society



MANAGEMENT GUIDELINES FOR EMERGENCY TRAUMA IN CHILDREN: JUNIORORTHO SYMPOSIUM AT EPOSNA ANNUAL MEETING



Pierre Lascombes, MD PhD
EPOS Foundation President

We all know that the world is nowadays the tragic theatre of many conflicts that produce thousands of civil victims, and among them lots of children.

We also know that the western world has been severely hit by terrorism in the last few years, and we remember each single tragedy with grief. Focusing on Europe, some days ago another suicide dramatic attack took place in Manchester (UK) during the concert of the American pop singer Ariana Grande: 22 victims, most of them teenagers and girls - the youngest was only 8 years old, and 120 injured people. Besides, we'll never forget that France on Nov. 13th 2015 suffered a dramatic multi-site attack at the Bataclan Theatre, the stadium and some restaurants in and near Paris, in which 129 people died and 415 were injured.

On July 14th 2016, during the attack of a cargo truck driver that ran over scores of people while celebrating the Bastille Day along the Nice Promenade, 86 people died (10 were children) and 434 were injured. 56 wounded children were admitted into the nearby hospital: 6 of them absolute emergency - 2 died in hospital.

*The analysis of this last Nice experience gave the start to the symposium organized by Orthofix (thru its new division JuniOrtho) entitled "**Management guidelines for emergency trauma in children**", which took place during the EPOSNA meeting in Barcelona (May 3-6, 2017) with the participation of about 150 trauma and pediatric surgeons from 24 countries in the world.*

The symposium was opened with a welcome address by Silvio Bellesini, Orthofix global marketing manager pediatrics and deformity correction, who introduced the symposium moderator Prof. Pierre Lascombes - chief of pediatric orthopedic surgery at the University of Geneva, Switzerland and past president of EPOS, and the speakers - all expert pediatric orthopedic surgeons. Together they tried to answer three fundamental questions regarding emergency pediatric trauma management:

1. *What is necessary and how to stabilize safely and quickly the bones of children during an extreme emergency situation, such as a terrorist attack?*
2. *Is it important to have a medical emergency "White Plan"?*
3. *Is specific training necessary for surgeons and emergency care teams who have to act in a quick, effective and safe way?*

What's going on in our Society



MANAGEMENT GUIDELINES FOR EMERGENCY TRAUMA IN CHILDREN: JUNIOR THO SYMPOSIUM AT EPOSNA ANNUAL MEETING

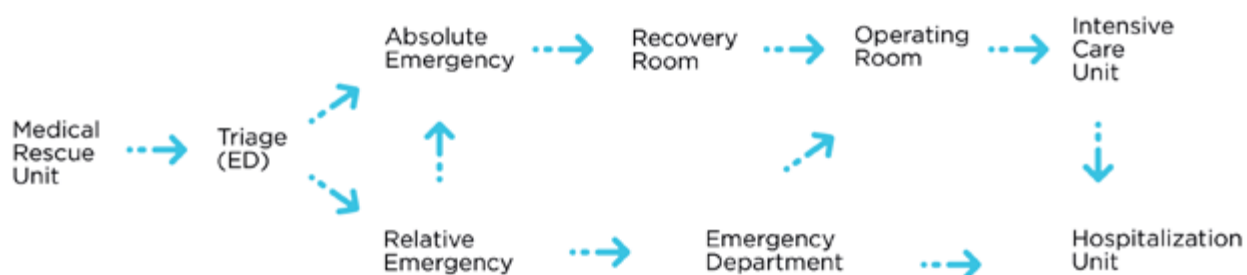
First speaker was **dr. Joachim Lauen**, a pediatric orthopedic surgeon from BGU Murnau Hospital, Germany – one of the largest trauma centers in the country, 120 surgeons, with a well defined emergency protocol. He put in evidence how children bones are different from adults' ones: their healing capacity is at maximum level, contractures are rare as well as thrombotic complications, often malalignments self-correct during growth, according to the child's age. The "Murnau Protocol" for children recommends anatomical reduction and if needed a reposition stable osteosynthesis, plus additional castings, and/or slings, in case of displaced, unstable and physeal fractures. Their preferred methods are K-wires and ESIN (elastic stable intramedullary nailing), leaving external fixation to the most severe cases (e.g. open fractures). His personal, suggested rule is **"do your best with the technique you are most familiar with"**.

Second speaker was **dr. Franck Launay** from the Timone Children Hospital, Marseille, France. A trauma center must be fully operational, with an effective emergency response plan (White Plan) in place, well-known by the hospital staff before the potential attack. Emergency management consists essentially of two phases: pre-hospital and in-hospital. Both have to follow a precise schedule of actions. The organization process of a trauma center starts from the medical rescue units and is followed by triage to ensure targeted aid according to the severity of injuries, and to provide the most effective care for the greatest number of patients.

Priority 1) Absolute emergency – Victims with injuries, compromising vital functions, which require immediate stabilization measures as shown below.

Priority 2) Relative emergency – Victims with injuries, with retained vital functions, but with the risk of developing life-threatening complications immediately ahead. They require urgent medical assistance, but not the immediate one, see diagram below.

Triage and step forwards



What's going on in our Society



MANAGEMENT GUIDELINES FOR EMERGENCY TRAUMA IN CHILDREN: JUNIORORTHO SYMPOSIUM AT EPOSNA ANNUAL MEETING

His first practical tips are: 1) "One must have a triage in front of the ED" (Emergency Department) where well experienced and highly qualified professionals are able to operate in a safe, efficient and quick way, and 2) "Keep your eggs in different baskets" (surgical equipments must be available in different medical facilities in case of multi-site attacks).

Urgent surgical procedures are hemostasis, revascularization, reduction of dislocation, aponevrotomy and bone fixation - which has to be fast (as there are many other cases to manage!). If the external fixation is required, the equipment must be sterile; but given that in emergency there is no time to sterilize it, the best choice is to store sterile pediatric kits ready

to use. One thing to improve in emergency care system is human resources management (staff training, staff rotation, staff in reserve) and the best way to achieve it is – again - specific training. Therefore, his last personal suggestion is: "One cannot predict the unpredictable, but can be trained to face it" (quoting Patrick Lagadec from Polytechnic School in Paris)

Third speaker was **dr. Jean-Damien Métaizeau** a pediatric orthopedic surgeon from CHU, Centre Hospitalier Universitaire Dijon Bourgogne, France. He explained that if in a normal situation the surgeon looks for the best stabilization, in emergency mass trauma the medical doctor **aims to the quickest and safest stabilization**, not the perfect one. Cast and traction are not good in mass trauma; plating and rigid nailing are too long procedures.

According to his experience, the best method is flexible nailing - smaller diameter than usual, stainless steel, not much bending. With this procedure the well-trained surgeon should use an open approach; not a traction for femur; no need to care for balance; the nails shouldn't be cut too short. One can use flexible nailing also in association with external fixation, which is quick and safe, but not always so easy or available (as quite often hospitals don't have enough fixators in stock). His suggested, personal rule is "Keep it simple and quick".

In the audience there was **dr. Virginie Rampal** a pediatric orthopedist born and raised in Nice, who works in Lenval Foundation Hospital, an ultramodern structure and one of the only two major pediatric centers in southern France. The hospital is located in sight of the sea, just on the beach, a few blocks farther west on the promenade site of the terrorist attack. Dr. Rampal was on-call that night. Like everyone else, she did not know of the attack, but rushed to the emergency room: the wounded were already filling the chairs, or lying on the floor, some with open fractures, most of them children. More were coming in, some carried in their parents' arms. She helped with triage, went into surgery, back to triage, working without resting. The pediatric injuries were mainly crush injuries: thorax, pelvis, limbs. Some huge trauma (head), a few vital urgencies.

Dr. Rampal was invited by prof. Lascombes to indicate what had worked well that night and what should be improved, according to her experience. She said that communication had worked well - GPS, social media and networks for calling volunteers, sharing info etc.

What's going on in our Society



MANAGEMENT GUIDELINES FOR EMERGENCY TRAUMA IN CHILDREN: JUNIOR THO SYMPOSIUM AT EPOSNA ANNUAL MEETING

Pediatric equipments, fixators, number of beds, technical services were enough: they had expected some sort of emergency situation for the just concluded Euro 2016 soccer tournament, but nothing dramatic had happened.

And also the role of nurses in managing the psychological aspects was fundamental. Some children felt totally lost – no name/identity, no parents with them. But psychological support can be also useful for the nurses themselves, who are strictly in touch with the wounded children, and this is terribly stressing.

Her personal suggestion, based on this live experience is: "You cannot always rely on what is available in other hospitals; in some emergency situations you have to do with what you have".

During the following open debate, prof. Lascombes and dr. Lauen pointed out the precious role of the army - especially trained to manage dramatic emergency events - with the possibility to use helicopters and other means of transport in case of blocked roads. At the end of their speeches, the experts didn't forget to quote and thank the other colleagues who shared with them their emergency experiences - physicians, X rays technicians, nurses, paramedics. All professional people who worked restlessly with them to treat and save the injured children.

Regarding the three initial questions, both speakers and participants fully agreed about the importance:

- 1. To have an effective medical emergency "White Plan"**
- 2. To train human resources (both medical and care/technical staff) involved in emergency management, with practical training and frequent simulations**
- 3. To keep necessary and sufficient surgical equipments in stock – sterile and ready to use – even in different hospital/medical facilities in case of multi-site attacks.**

A couple of last but not less fundamental questions were raised by the participants at the conclusion of the symposium: what else is still missing, and what can be done more - in terms of contents' transfer, innovative tools, specialized and technical training - to make more effective the pediatric mass trauma management in the next future.

The research of practical, shared answers should become the objective of the future scientific meetings and/or dedicated medical/surgical educational initiatives supported by Orthofix.

What's going on in our Society



1ST CADAVER EPOS ADVANCED COURSE 25-26 JANUARY 2018 GENEVA, SWITZERLAND



Pierre Lascombes, MD PhD
EPOS Foundation President



Franck Accadbled
EPOS Trauma Group Chair

Manuel Cassiano-Neves, MD, MSc
EPOS Past President 2016/2017



The first cadaver advanced Course, supported by the Chair of the EPOS Education Committee Prof Hakan Omeroglu, was dedicated to sport trauma - knee and ankle injuries in children and adolescents. The course took place in the new training center of the SWISS Foundation for Innovation and Training in Surgery (SFITS), under the umbrella of the University Hospital of Geneva (HUG).

This center is magnificent and offers a comfortable welcome lounge, a spacious auditorium, and an extraordinary surgical laboratory of 10 operating stations fully equipped for arthroscopy and surgery.



The hosts, Ms Jelena Godjevac and Fanny Keller, were fantastic organisers and facilitators.

Faculty: Franck Accadbled (Toulouse), head of the EPOS sport trauma study group, was associated with Pieter Berger (Leuven), Manuel Cassiano-Neves (Lisbon), Ricardo Telles Freitas (Lisbon), Stephane Tercier (Lausanne), Marco Turati (Monza) and Pierre Lascombes representing the EPOS Foundation.

Altogether, they offered to the participants the best of



What's going on in our Society



1ST CADAVER EPOS ADVANCED COURSE 25-26 JANUARY 2018 GENEVA, SWITZERLAND

education in this field. The course was limited to 40 participants coming from 16 European countries.

Lectures of surgical techniques were presented:

- ankle joint : tarsal coalition, OCD, fracture of the distal tibia
- knee: meniscal repairs, discoid meniscus, intercondylar eminence fracture, ACL reconstruction adult and children techniques, OCD (perforation, resorbable pins, mosaicplasty), MPFL reconstruction.

All these techniques were performed by the participants on good quality cadaver's knees and ankle joints. The arthroscopy equipment was of high quality.

We have to give a warm thank you to our industrial partners who supported the course with Grants and implants: Arthrex, ZimmerBiomet, Depuy-Synthes. The course was also supported by Swiss industries: Curmed, Medeco, and Ambelio. These generous Grants reduced the course fees for the EPOS members to 600 €. It included the course itself with all the necessary equipment, a one-night hotel accommodation and meals during the event.

In addition to the cadaver course, each participant had the chance to practice knee arthroscopy on a Virtamed simulator. They tested arthroscopy on a virtual knee



on both days. The results of the pre- and post- course evaluations, demonstrating positive impact of the overall practice, will be published later on.

The Course evaluation done by the participants was either excellent or good in most of the items. The quality and performance of the WetLab were specifically outlined as the best aspect of this event by many of them. The quality of the event was extremely useful (100%), and the event fulfilled the set educational goals for 100% of the attendees.

One major critic was the number of participants per station (4); two would have been preferable. Taking this into account, the registration fees would have been much higher to compensate for higher course costs and to avoid a negative financial balance.

The Course has been granted 12 European CME credits (ECMEC®s) by the European Accreditation Council for Continuing Medical Education (EACCME®).

The success of the 1st Cadaver EPOS Advanced Course is the result of a joint effort and great job done by

- the EPOS Foundation who has collected all the generous grants,
- the SFITS team (with special thanks to Els and Willy assisting the participants in the WetLab and to Julien and Minh-Duy who managed the Virtamed simulators)
- the industrial partners that were present and very efficient on site, and
- the quality of the instruction given by the faculty members.

All participants were really thrilled by this unique and rewarding experience. We hope to have launched a new era in the EPOS Education.

Women in Pediatric Orthopaedics 2018



THE STATE OF GENDER EQUALITY IN PEDIATRIC ORTHOPAEDICS: A US PERSPECTIVE



Meghan Imrie

Consultant Ped Orth Surgeon
Associate Professor
Stanford University
USA

It is an interesting time to be a woman, especially a professional one. From the recent historic candidacy of a female for president of the United States, to the #metoo movement, to the upheaval in Hollywood, conversations about gender, work, power and more are being had at every turn. So it seems a good time to take another look at women in orthopedics, and specifically pediatric orthopedics in the US.

By now, I think many know the statistics – according to the 2016 AAOS Census, only 6.5% of members were female. However, even more compelling is that the “pipeline” of women trainees is not keeping pace with the demographics of current medical students and orthopedics lags behind every other specialty in the percent of women represented. In 2015¹, although 46.3% of graduating US medical students was female, only 14.8% of orthopedic surgery residents were women. That means orthopedic surgery is the specialty with the lowest rate of female representation in residency. The next closest is neurosurgery with 17.3% (obstetrics and gynecology have the opposite problem, with only 17% of residents in 2015 being male. A brief Google search indicates some OB/GYN “soul searching” about their increasing gender disparity as well). Pediatric orthopedics fares a bit better than orthopaedics in general, with 20% of current POSNA members (including all membership types) being

female. There has not yet been a female president of the AAOS, but Dr Lori Karol broke the POSNA “glass ceiling” with her tenure from 2015-2016. However, even in the “progressive” subspecialty of pediatric orthopaedics, an objective evaluation of the numbers would indicate that we have a long way to go toward gender equality. Before we go further in the discussion, I think it is important to ask the more fundamental question of: to what end? Do we actually need more women in pediatric orthopedics, not just because we are a progressive group who believes in equality in all groups, but because of some tangible, measurable benefits to our patients, our colleagues, our society? I hear one of my mentor’s voices in my head as he once said to a patient’s parent, “Don’t force little Jimmy to play baseball. Clearly he has no aptitude for it and his talents lie in playing the clarinet.” Are we trying to force an issue that shouldn’t be forced?

Why We Should Want More Women in Pediatric Orthopedics?

I would argue that there are many tangible benefits to more women in our field.

- 1. We should want to attract the best students, with the highest aptitude, regardless of gender. The rise of female orthopedic residents is a positive but slow one, and slower than other traditionally*

Women in Pediatric Orthopaedics 2018



THE STATE OF GENDER EQUALITY IN PEDIATRIC ORTHOPAEDICS: A US PERSPECTIVE

male-dominated surgical fields (neurosurgery, urology, general surgery etc). This would imply there are barriers to women applying to orthopedics. If we, as a specialty, are not being considered by the best and brightest students of both genders, then we will be missing out on amazing talent that would improve patient care, research, collaboration, and make us collectively better. In fact, in both AAOS and POSNA surveys, a higher percentage of women than men go into academic practices^{2,3}.

2. We should want the best patient care.

Research has suggested that patients are more satisfied, communicate better, and potentially have better outcomes when the provider “looks like them.” If half of our patient population is female, then we should arguably have more women surgeons providing their care. That is obviously an over-generalization but the benefit of more balanced demographics in our specialty as it relates to patient-centered care should be considered.

3. We should want the fewest medical errors.

*The concepts of quality and safety are ingrained in the medical profession – primum non nocere – but have been receiving extensive attention in the US since the publication of *To Err is Human: Building a Safer Health System* by the Institute of Medicine in 2009. This report highlighted the number of deaths due to medication errors each year in the United States. One of the tenets of safety and improved outcomes in the surgical field is a functioning team⁴; unfortunately, many surgeons overestimate their*

*ability to communicate effectively and are more likely to favor a more hierarchical environment than other members of the team such as nurses and anesthesiologists⁵. Although every individual is unique and there are plenty of examples of women who are “bossy” and men who are great team players, the stereotype, which some behavioral research supports, is that women are more cooperative and less hierarchical than men⁶. This means that female pediatric orthopaedists may be natural at leveraging a team atmosphere that could potentially make everyone more comfortable speaking up, leading to fewer errors in the operating room, and better outcomes for our patients. Although not about surgical outcomes, there was a controversial paper published recently in *JAMA Internal Medicine*⁷ showing that Medicare patients were less likely to die within 30 days of a hospital admission if they were treated by a female rather than male general internist. I am not suggesting that our male colleagues should just quit now as a cadre of Amazon women MDs come blazing in, but do think that women have provided, and will continue to provide, high quality, safe surgical care in a team-based environment.*

If we agree that we should want more women in pediatric orthopaedics, the next step is to try and figure out what the barriers are to that goal.

Why is the number of women orthopaedic trainees increasing more slowly than other surgical specialties?
Women practicing orthopedics are, in general, quite

Women in Pediatric Orthopaedics 2018



THE STATE OF GENDER EQUALITY IN PEDIATRIC ORTHOPAEDICS: A US PERSPECTIVE

satisfied with their profession. A survey of female academic orthopedic surgeons conducted in 2011 found that 93% of respondents were satisfied with their subspecialty choice and would make the same decision again². So why isn't the word getting out? There are many proposed culprits:

1. Lack of exposure in medical school or earlier^{8,9}
2. Perception that too much physical strength is required⁸⁻¹⁰
3. Lack of strong mentorship in medical school or earlier¹⁰
4. Reputation as a "boys club"⁸
5. Conscious and unconscious gender bias, including "illegal" questions during residency applications (i.e. marital status, family planning, children)¹¹
6. Quality of life/lifestyle/stress level, perceived inability to have good work/life balance^{8,10,12}

Although being a woman does not automatically mean having children - and the decisions around personal life choices are by definition extremely individual and include having children, not having children, adopting, surrogacy and a myriad of others - it would be naïve to ignore the fact that one of the core differences between men and women is child bearing and the physical impact of pregnancy, child birth, and early child care. On that front, the US in general, and orthopedic surgery residencies in particular, are definitely not leading the way in progressive maternity and paternity leave policies. Nationwide, the Family and Medical Leave Act of 1993 mandates 12 weeks of unpaid leave to mothers for the purpose of attending to a newborn or

newly adopted child. However, it was not universally adopted due to provisions within the bill about which employers need to comply. Within orthopedics in the United States, Weiss et al¹³ found a lack of uniformity in maternity, paternity, and adoption leave policies in orthopaedic residency training programs with some programs having no official policy at all. Of those that do, 60% allow between 4 to 6 weeks off, and 46% require makeup time. The biggest barrier to offering more time appears to be the American Board of Orthopaedic Surgeons, the body which certifies orthopaedic surgeons in the US. They currently require 46 weeks of orthopedic education each year during training, meaning trainees cannot take more than 6 weeks of vacation or leave in any one year or they have to make up the time. In comparison, there is a lot of variation in other specialties for leave, but many, like general surgery, are working with their certification bodies to allow for more flexibility in the schedule (i.e., allowing for an averaging of education time over the entire residency rather than a strict annual requirement for each year of training). Because residency and the "window of best opportunity" for having children overlap for many women, the impact of limited or ill-defined maternity leave policies, especially when compared to other specialties, is not an insignificant deterrent for many medical students as they consider possible specialties.

Where do we go from here?

If we agree that attracting more women to orthopaedics is a good thing, and that there are visible and invisible barriers to that goal, what do we do differently moving

Women in Pediatric Orthopaedics 2018



THE STATE OF GENDER EQUALITY IN PEDIATRIC ORTHOPAEDICS: A US PERSPECTIVE

forward? Thankfully, many hard working, smart, and committed men and women have been thinking about and acting on this for some time and are making measurable progress. Residency programs already appear to work hard to recruit women applicants. The Ruth Jackson Society, Perry Initiative, and Nth dimensions have all implemented various programs as early as high school and through medical school to expose girls, women, and minorities to engineering and orthopaedic surgery, to increase interest and foster mentorships. Studies have shown these programs to increase the odds that a participant would apply for an orthopaedic surgery residency compared to national controls^{14,15}.

Efforts are being made to lobby the ABOS to change its program eligibility requirements to allow for more flexibility to accommodate parental leave (Sara VanNortwick MD, personal communication) that would then free up residency programs to perhaps lengthen the amount of parental leave residents could take. Increasing research is being done and attention is being given to this issue, with more and more articles being published each year on the topic. The SICOT December 2017 e-Newsletter was dedicated to the topic, with numerous excellent opinions from women all over the world. The observer effect (for which the somewhat similar Heisenberg uncertainty principle is often mistaken) would suggest that the system might change by merely studying it.

My personal, admittedly non-evidence based opinion, is that we are at the precipice of a sea change for women in orthopaedics for two main reasons.

First, although the percentage of women residents in orthopedics has risen slowly over the last 10 years, it is continuing to rise and we are getting ever closer to the "magical" 30 percent where we are no longer "token" members and orthopaedics is no longer seen as a male-dominated field to outside observers⁸. Hopefully, this will be the point at which female applicants will no longer think it unusual to be interested in orthopaedics; thankfully, in pediatric orthopaedics we are even closer to that magical 30 percent. The hard working, mid-career women that are rising through the ranks of their academic institutions, regional, national, and subspecialty societies, as well as their communities, are increasingly in leadership positions from which they can help mentor, shape, and lead both women and men. At a certain point, hopefully sooner rather than later, we will reach a tipping point where it is no longer an anomaly to be a female orthopaedic surgeon and rather we are seen as "just" another great orthopaedic surgeon.

Secondly, I think the importance of work-life balance has changed for both genders in the years since the 80 hour work week has really taken effect. My father is, and my grandfather was, an extremely dedicated orthopaedic surgeon; in fact, family legend says that my dad told my mom on the evening of their wedding that orthopaedics would always come first and was she willing to sign on to that deal? But the days of truly interning at the hospital during your internship and residing on the wards during your residency are no longer – the expectations, and in fact legal requirements, are that trainees sign out to the incoming team and go home; that when they are off duty, they are truly off duty. That mindset does not magically disappear once training is over. Anecdotally,

Women in Pediatric Orthopaedics 2018



THE STATE OF GENDER EQUALITY IN PEDIATRIC ORTHOPAEDICS: A US PERSPECTIVE

more and more of the trainees at my program are choosing large medical groups and hospital based practices rather than small private practices, I think in large part so that their schedules are manageable and their work-life balance maintained and even improved. I think that shift in mentality will help orthopaedics be, and be seen as, a specialty that is, in fact, compatible with "lifestyle," having a family, and having a work-home balance for both men and women – it will lead to continued changes in parental policies and practice opportunities that are beneficial to all.

In summary, we have come a long way in gender equality in pediatric orthopaedics but arguably still have a long way to go to attract more women to the field. I think we should collectively want more women in our field for the reasons above, but, ultimately, we should want more women in our field because

We are a progressive society that believes in the equality of all.

1. AAMC GME Track, August 2016
2. Hill JF, Johnson AH, Cannada L. A profile of female academic orthopaedic surgeons. *Curr Orthop Pract* (2013) 24: 636-640.
3. Amoli MA, Flynn JM, Edmonds EW et al. Gender differences in pediatric orthopaedics: what are the implications for the future workforce? *Clin Orthop Relat Res* (2016) 474:1973-1978.
4. Mazzocco K, Petitti DB, Fong KT et al. Surgical team behaviors and patient outcomes. *Am J Surg* (2009) 197:678-685.
5. Sexton JB, Thomas EJ, Helmreich RL. Error, stress, and teamwork in medicine and aviation: cross sectional surveys. *BMJ* (2000) 320:745-749.
6. Wilhelmsson M, Ponzer S, Dahlgren LO et al. Are female students in general and nursing students more ready for teamwork and interprofessional collaboration in healthcare? *BMC Med Educ* (2011) 11:15
7. Tsuguwa Y, Jena A, Figueroa JF et al. Comparison of hospital mortality and readmission rates for Medicare patients treated by male vs female physicians. *JAMA Intern Med* (2017) 177:206-213.
8. Miller EK. Why is orthopaedic surgery the most gender disparate field of medicine? *SICOT e-Newsletter* December 2017 Issue No. 89.
9. O'Connor MI. Medical school experiences shape women students' interest in orthopaedic surgery. *Clin Orthop Relat Res* (2016) 474:1967-1972.
10. Rohde RS, Moriatis Wolf J, Adams JE. Where are the women in orthopaedic surgery? *Clin Orthop Relat Res* (2016) 474: 1950-1956.
11. Hern HG, Trivedi T, Alter HJ et al. How prevalent are potentially illegal questions during residency interviews? A follow-up study of applicants to all specialties in the National Resident Matching Program. *Acad Med* (2016) 91:1546-1553.
12. Rao RD, Khatib ON, Agarwal A. Factors motivating medical students in selecting a career specialty: relevance for a robust orthopaedic pipeline. *J Am Acad Orthop Surg* (2017) 25:527-535.
13. Weiss J, Teuscher D. What provisions do orthopaedic programs make for maternity, paternity, and adoption leave? *Clin Orthop Relat Res* (2016) 474:1945-1949.
14. Lattanza LL, Meszaros-Dearolf L, O'Connor MI et al. The Perry Initiative's medical student outreach program recruits women into orthopaedic residency. *Clin Orthop Relat Res* (2016) 474: 1962-1966.
15. Mason BS, Ross W, Ortega G et al. Can a strategic pipeline initiative increase the number of women and underrepresented minorities in orthopaedic surgery? *Clin Orthop Relat Res* (2016) 474:1979-1985

Welcome to Oslo



Dear Colleagues and Friends,

It is a great pleasure to welcome you to the 37th EPOS Annual Meeting in Oslo, April 11 - 14, 2018. This is the first time the EPOS Meeting is being arranged in Norway and we are honored and pleased to have the opportunity to host this event which has become so important to pediatric orthopedic specialists and residents, not only in Europe but also in other parts of the world.

For the scientific program, we received more than 500 abstracts that have been reviewed by members of EPOS Reading Committee. Under the leadership of Antonio Andreacchio, they have done a great job in selecting 236 abstracts for presentation: 113 podium presentations, 20 posters, and 103 e-posters. Furthermore on Friday afternoon we will have 4 EPOS Study Group Symposia in 2 parallel sessions, and there will be industry-sponsored symposia. In addition, there will be the Pre-meeting Course on Wednesday, with various controversial topics in DDH presented by well-known speakers from Europe and USA. All these contributions provide an excellent scientific program which you should not miss.

Oslo lies between the Oslofjord and surrounding hills and has more than 600 000 inhabitants. The combination of modern city life, world-known museums and attractions, and easy access to outdoor activities makes Oslo a unique destination. As meeting venue we have booked Oslo Congress Center, which is ideally located in the heart of the city, within walking distance from all city hotels, the City Hall and the harbor area.

We would propose, especially if you have not been to Norway before, that you set aside a few days before or after the Congress to see more of our beautiful country. Mid-April is spring-time in Norway usually with pleasant temperature, but it can still be perfect conditions for skiing in the mountains.

We are looking forward to seeing you in Oslo!

Terje Terjesen

Chairman of the Local Organizing Committee



