EPOS BAT Advanced Course
Vienna, Austria: 11–13 May 2022

Motion Analysis for Paediatric Orthopaedic Surgeons

- Understanding of gait and motion biomechanics
- Interpretation of gait reports
- Learn motion analysis methods
- Clinical application of movement analysis
- Dynamic foot deformities assessment
- Sport biomechanics in paediatric athletes

- Theoretical Lectures
- Workshops & Seminars
- Techniques in instrumental outcome evaluation

info www.epos.org/ac0521
Welcome

Dear Colleagues, dear Friends,

It is a great pleasure to invite you to the first multidisciplinary EPOS BAT Advanced Course with focus on clinical biomechanics and functional assessment of various conditions in pediatric orthopedics. This is the first course to be held in cooperation between two European societies: EPOS (European Paediatric Orthopaedic Society) and ESMAC (European Society for Movement Analysis in Adults and Children).

With the International Classification of Functioning, Disability and Health (ICF) as a framework for describing functioning and disability we adopted a new approach of treating children not only based on body structure but also at the functional and activity levels. However, functional approach to treatment has not been fully adopted so far.

Technology is changing our lives in many different ways and technological advancements allow us an easy access to information and help us in personal as well as professional lives. However, even if modern technologies allow us to capture movement and function easier than ever before, this is not reflected in our decision making process. Here, pediatric orthopedic surgeons still rely on static radiologic imaging like X-ray, CT or MRI examinations.

To be able to stand for the technical challenges in the 21st century pediatric orthopedic surgeons have to develop a common language with biomedical engineers and human movement scientists. Therefore we prepared a first multidisciplinary course in cooperation with ESMAC having a pediatric orthopaedic surgeon in mind. During the course you learn basics of clinical biomechanics and you get an overview about application, limitation and interpretation of different instrumented methods of functional examination like e.g. gait analysis, dynamic electromyography or pedobarography. The course is practically oriented and we are going to cover a wide variety of pediatric orthopedic topics (neuro orthopedics, foot deformities, spine, diseases of the hip, sport orthopedics etc.) as well to bring your attention to new treatment modalities like gaming therapy and offer you an insight into the nearest future. Moreover, workshops and seminars in small groups are going enhance your experience and allow us to focus on your personal needs and questions.

Our multidisciplinary faculty of pediatric orthopedic surgeons, biomedical engineers and human movement scientists is looking forward to share their knowledge with you. Help us to improve the functional outcomes of your patients and get pediatric orthopedics ready for the 21st century!

Yours,

Elke Viehweger  
Co-Chair EPOS

Martin Svehlik  
Co-Chair ESMAC

Sebastian Farr  
EPOS Education Committee Chair
Programme
Wednesday 11 May

Schedule | Topic | Faculty
---|---|---
09:00 | Welcome | E. Viehweger, M. Svehlik
09:15 | Basics of walking | A. Shortland
How we get to walk? | M. Svehlik
Gait phases | A. Kranzl
Temporal-spatial parameters of gait | J. Romkes
Video Assessment Scores: Edinburgh visual score, Rancho Los Amigos... | J. Romkes
10:00 | Normal gait biomechanics - Kinematics | M. Sangeux
10:45 | Workshops (including coffee break) | |
12:15 | Essential mechanics | A. Shortland
13:00 | Lunch | |
14:00 | Normal gait biomechanics - Kinetics | M. Sangeux
14:45 | Relevant clinical examination and scores (ICF) | E. Viehweger
15:15 | Workshops (including coffee break) | |
16:45 | Interaction between planes | A. Shortland
17:10 | Interpretation of gait data | A. Van Campenhout
17:35 | Communicating gait data and diagnostic of gait deviation | R. Brunner
18:00 | Resume of first day - Experience of workshops | E. Viehweger, M. Svehlik, Faculty
18:15 | End of the day | |
## Programme
### Thursday 12 May

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Topic</th>
<th>Faculty</th>
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<tbody>
<tr>
<td>08:00</td>
<td>Summary day 1</td>
<td>M. Sangeux</td>
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<tr>
<td>08:30</td>
<td>Foot models: Introduction</td>
<td>M. Svehlik</td>
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<td></td>
<td>Foot model (Oxford, Heidelberg, ...)</td>
<td>J. Romkes</td>
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<td>Foot pressure measurement</td>
<td>A. Kranzl</td>
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<td>Clubfoot</td>
<td>C. Radler</td>
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### 09:30 Workshops (including coffee break)

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<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Faculty</th>
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<tbody>
<tr>
<td>11:00</td>
<td>EMG - introduction</td>
<td>A. Shortland</td>
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<td></td>
<td>EMG - interpretation and typical patterns</td>
<td>A. Van Campenhout</td>
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<tr>
<td>12:00</td>
<td>Measurements of upper extremity</td>
<td>A. Kranzl</td>
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<tr>
<td>12:15</td>
<td>What to expect from Motion Analysis for upper limb management?</td>
<td>S. Farr</td>
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### 12:30 Lunch

### 13:30 Neuroorthopaedics

<table>
<thead>
<tr>
<th>Topic</th>
<th>Faculty</th>
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<tbody>
<tr>
<td>Introduction including long-term follow up</td>
<td>M. Svehlik</td>
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<tr>
<td>Cerebral palsy - Rotational deformity - Derotational osteotomy</td>
<td>R. Brunner</td>
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<tr>
<td>Cerebral palsy - Pes equinus and plantarflexion/knee extension couple</td>
<td>E. Viehweger</td>
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<tr>
<td>Cerebral palsy - Crouch</td>
<td>A. Van Campenhout</td>
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<tr>
<td>Spina Bifida (MMC)</td>
<td>R. Brunner</td>
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<td>Muscle Dystrophy</td>
<td>J. Romkes</td>
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### 15:00 Workshops (including coffee break)

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<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Faculty</th>
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</thead>
<tbody>
<tr>
<td>16:30</td>
<td>Paediatric Foot</td>
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<td></td>
<td>Idiopathic Planovalgus</td>
<td>E. Viehweger</td>
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<td></td>
<td>Idiopathic toe-walking</td>
<td>M. Svehlik</td>
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<td></td>
<td>Charcot Marie Tooth + Cavovarus</td>
<td>A. Van Campenhout</td>
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<td>Gait Indexes</td>
<td>M. Sangeux</td>
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<tr>
<td>17:15</td>
<td>New technologies in Motion Analysis (IMU, Markerless, Activity Monitoring, Apps, Gaming...)</td>
<td>M. Sangeux</td>
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<tr>
<td>18:15</td>
<td>Resume of the second day - Experience of workshops</td>
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### 18:30 End of the day

### 19:00 Course Dinner (until 23:00)
# Programme
Friday 13 May

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Topic</th>
<th>Faculty</th>
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<tbody>
<tr>
<td>08:00</td>
<td>Lower Limb Deformities and Hip</td>
<td>M. Svehlik</td>
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<tr>
<td></td>
<td>Hip pathologies (DDH, Perthes, SCFE...)</td>
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<td></td>
<td>Modelling in clinical application</td>
<td>M. Sangeux</td>
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<td></td>
<td>Lower Limb Alignment</td>
<td>A. Kranzl</td>
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<td></td>
<td>Rotational deformities of lower limb</td>
<td>M. Sangeux</td>
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<tr>
<td>09:30</td>
<td>Trunk/Scoliosis assessment</td>
<td>J. Romkes, E. Viehweger</td>
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<tr>
<td>10:00</td>
<td>Workshops (including coffee break)</td>
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<tr>
<td>11:30</td>
<td>Sport biomechanics + Paediatric Knee</td>
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<td></td>
<td>Introduction Pediatric Sports Orthopedics</td>
<td>E. Viehweger</td>
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<td>ACL Reconstruction</td>
<td>A. Praetorius</td>
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<td></td>
<td>Running analysis</td>
<td>A. Kranzl</td>
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<td></td>
<td>Back to sport testing</td>
<td>A. Praetorius</td>
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<tr>
<td>12:30</td>
<td>Lunch</td>
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<tr>
<td>13:30</td>
<td>Workshops (including coffee break)</td>
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<tr>
<td>15:00</td>
<td>Measuring muscle properties (ultrasound, elastosonography)</td>
<td>A. Shortland</td>
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<tr>
<td>15:15</td>
<td>Instrumented spasticity measurement</td>
<td>A. Van Campenhout</td>
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<tr>
<td>15:30</td>
<td>Conclusion and evaluation of the course</td>
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<tr>
<td>15:45</td>
<td>End of the course</td>
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### Workshops

#### Day 1
- Normal gait - observational gait analysis
- Case - Kinematics
- Case - Kinetics
- Marker placement

#### Day 2
- Case - Foot (Clubfoot/Flatfoot), Pedobarography
- Case - EMG - Muscle transfer
- Orthotic adjustments based on gait analysis
- Surgical Workshop (Crouch Gait and surgical correction/Demo)

#### Day 3
- Inertial sensors, Markelss
- Case - Limb Malalignment, Derotation OT
- Case - Running and sport analysis - Knee
- Spasticity vs Stability/Weakness

### EPOS Courses

#### Future EPOS BAT Trilogy & Advanced Courses

**7th EPOS BAT Instructional Course Trilogy**

Vienna, Austria | 12-14 October 2022

Part I

**EPOS BAT Advanced Course**

Vienna, Austria | 25-26 November 2022

Pediatric Hand and Upper Extremity Surgery

**EPOS BAT Advanced Course**

Vienna, Austria | 26-28 January 2023

Lower Limb Deformity Course

**7th EPOS BAT Instructional Course Trilogy**

Vienna, Austria | 15-17 March 2023

Part II

**EPOS BAT Advanced Course**

Vienna, Austria | 11-13 May 2023

Pediatric Spine Surgery
Course fees

Early registration fees**
( until 17 April 2022)

Participants EUR 462.00

EPOS or ESMAC members* EUR 374.00

Residents & Non-medical personnel* EUR 319.00

Dinner EUR 40.00

Late and on-site registration fees
(as of 18 April until 13 May 2022 incl.)

Participants EUR 550.00

EPOS or ESMAC members* EUR 462.00

Residents & Non-medical personnel* EUR 407.00

* Proof of status mandatory
** The early registration fee is valid only when the payment is made before the early registration deadline

Registration fees include:

• Participation to all course educational activities
• Lunches & coffee breaks
• 10% VAT

Course language

English – no translation

CME Credits

20 European CME credits (ECMEC®s) have been accredited for the course.

Please note that each medical specialist should claim only those credits that he/she actually spent in the educational activity.

Opening hours

Wednesday, 11 May 07:30-18:30
Thursday, 12 May 07:30-18:30
Friday, 13 May 07:30-16:30

Contact

EPOS Central Office
courses@epos.org

Venue

Orthopaedic Hospital Speising
Speisinger Strasse 109
1130 Vienna
Austria

Auditorium: Prof. Spitzy-Auditorium

Orthopädisches Spital Speising
Wien
Faculty
Reinald Brunner, Switzerland
Sebastian Farr, Austria
Andreas Kranzl, Austria
Arthur Praetorius, Germany
Christoph Radler, Austria
Jacqueline Romkes, Switzerland
Morgan Sangeux, Switzerland/France
Adam Shortland, UK
Martin Svehlik, Austria
Anja Van Campenhout, Belgium
Elke Viehweger, France

Course Programme Committee
Elke Viehweger, Course Co-Chair EPOS
Martin Svehlik, Course Co-Chair ESMAC

Course Sponsors

www.epos.org/ac0521