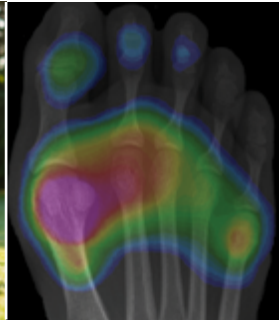


## EPOS BAT Advanced Course

Vienna, Austria: 26-28 May 2021



## 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



# Welcome



Elke Viehweger



Martin Svehlik



Antonio Andreacchio

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 21<sup>st</sup> 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 21<sup>st</sup> century!

Yours,

Elke Viehweger  
EPOS General Secretary

Martin Svehlik  
ESMAC President

Antonio Andreacchio  
EPOS President 2020/2021

# Programme

Wednesday 26 May

Schedule	Topic
09:00	Welcome - EPOS, ESMAC and OSS representatives
09:05	Introduction to gait analysis
09:20	Observational gait analysis
10:00	Normal gait biomechanics - Kinematics
10:45	<b>Workshops (including coffee break)</b>
12:15	Essential mechanics
13:00	Lunch
14:00	Normal gait biomechanics - Kinetics
14:45	Communicating gait data and diagnostic of gait deviation
15:15	<b>Workshops (including coffee break)</b>
16:45	Relevant clinical examination and scores (ICF)
17:15	Interaction between planes
	Interpretation of gait data
18:00	Resume of first day - Experience of workshops
18:15	End of the day

# Programme

Thursday 27 May

Schedule	Topic
08:00	Summary day 1
08:05	Gait indices (GGI, GDI, GPS, MAPS)
08:30	Foot models and foot pressure measurement
09:30	<b>Workshops (including coffee break)</b>
11:00	EMG - introduction
	EMG - interpretation and typical patterns
11:45	Inertial sensors, activity monitoring, apps, gaming
13:00	Lunch
13:30	Neuroorthopaedics
	Cerebral palsy - Rotational deformity
	Cerebral palsy - Pes equinus and plantarflexion/knee extension couple
	Cerebral palsy - Crouch
	Charcot Marie Tooth
	Spina Bifida (MMC)
	Muscle Dystrophy
15:00	<b>Workshops (including coffee break)</b>
16:30	Paediatric Foot
	Pes planovalgus
	Pes equinoplanovalgus
	Clubfoot
	Pes cavovarus
17:30	Movement analysis of upper extremity
18:00	Resume of the second day - Experience of workshops
18:15	End of the day

# Programme

Friday 28 May

Schedule	Topic
08:00	Summary day 2
08:05	Paediatric Hip and Lower Limb
	Perthes disease
	Tumor limb reconstruction
	Developmental dysplasia of the hip
	Lower Limb Aligment
	Rotational deformities of lower limb
09:15	Trunk/Scoliosis assessment
10:00	<b>Workshops (including coffee break)</b>
11:30	Sport biomechanics + Paediatric Knee
	ACL Reconstruction
	Hip Impingement + SCFE
	Running analysis
	Back to sport testing
12:30	Lunch
13:30	<b>Workshops (including coffee break)</b>
15:00	Muskuloskelatal modeling and virtual reality
15:45	Conclusion and evaluation of the course
16:00	End of the course

# Workshop

Group 1

## Wednesday 26 May

10:45-10:55 Rotation

**10:55-11:25** Workshop 1: Normal gait – observational gait analysis

11:25-11:35 Rotation

**11:35-12:05** Workshop 2: Kinematics – Kinetics

12:05-12:15 Break

15:15-15:25 Rotation

**15:25-15:55** Workshop 4: Sponsor break

15:55-16:05 Rotation

**16:05-16:35** Workshop 3: Moments and rotations smartphone apps

16:35-16:45 Break

## Thursday 27 May

09:30-09:40 Rotation

**09:40-10:10** Workshop 5: Foot (Clubfoot/flatfoot)

10:10-10:20 Rotation

**10:20-10:50** Workshop 6: EMG – Muscle transfer?

10:50-11:00 Break

15:00-15:10 Rotation

**15:10-15:40** Workshop 8: Derotational osteotomy monitoring

15:40-15:50 Rotation

**15:50-16:20** Workshop 7: Orthotic adjustments based on gait analysis + Electrostimulation

16:20-16:30 Break

## Friday 28 May

10:00-10:10 Rotation

**10:10-10:40** Workshop 9: Smart games for rehabilitation

10:40-10:50 Rotation

**10:50-11:20** Workshop 10: Limb Alignment

11:20-11:30 Break

13:30-13:40 Rotation

**13:40-14:10** Workshop 12: Scoliosis

14:10-14:20 Rotation

**14:20-14:50** Workshop 11: Running and sport analysis – Knee

14:50-15:00 Break

*Rotation=you will have 10 minutes time to go from one workshop to another*

# Workshop

Group 2

## Wednesday 26 May

10:45-10:55 Rotation

**10:55-11:25** Workshop 2: Kinematics – Kinetics

11:25-11:35 Rotation

**11:35-12:05** Workshop 1: Normal gait – observational gait analysis

12:05-12:15 Break

15:15-15:25 Rotation

**15:25-15:55** Workshop 3: Moments and rotations smartphone apps

15:55-16:05 Rotation

**16:05-16:35** Workshop 4: Sponsor break

16:35-16:45 Break

## Thursday 27 May

09:30-09:40 Rotation

**09:40-10:10** Workshop 6: EMG – Muscle transfer?

10:10-10:20 Rotation

**10:20-10:50** Workshop 5: Foot (Clubfoot/flatfoot)

10:50-11:00 Break

15:00-15:10 Rotation

**15:10-15:40** Workshop 7: Orthotic adjustments based on gait analysis + Electrostimulation

15:40-15:50 Rotation

**15:50-16:20** Workshop 8: Derotational osteotomy monitoring

16:20-16:30 Break

## Friday 28 May

10:00-10:10 Rotation

**10:10-10:40** Workshop 10: Limb Alignment

10:40-10:50 Rotation

**10:50-11:20** Workshop 9: Smart games for rehabilitation

11:20-11:30 Break

13:30-13:40 Rotation

**13:40-14:10** Workshop 11: Running and sport analysis – Knee

14:10-14:20 Rotation

**14:20-14:50** Workshop 12: Scoliosis

14:50-15:00 Break

*Rotation=you will have 10 minutes time to go from one workshop to another*

# Workshop

Group 3

## Wednesday 26 May

10:45-10:55 Rotation

**10:55-11:25** Workshop 4: Sponsor break

11:25-11:35 Rotation

**11:35-12:05** Workshop 3: Moments and rotations smartphone apps

12:05-12:15 Break

15:15-15:25 Rotation

**15:25-15:55** Workshop 1: Normal gait – observational gait analysis

15:55-16:05 Rotation

**16:05-16:35** Workshop 2: Kinematics – Kinetics

16:35-16:45 Break

## Thursday 27 May

09:30-09:40 Rotation

**09:40-10:10** Workshop 8: Derotational osteotomy monitoring

10:10-10:20 Rotation

**10:20-10:50** Workshop 7: Orthotic adjustments based on gait analysis + Electrostimulation

10:50-11:00 Break

15:00-15:10 Rotation

**15:10-15:40** Workshop 5: Foot (Clubfoot/flatfoot)

15:40-15:50 Rotation

**15:50-16:20** Workshop 6: EMG – Muscle transfer?

16:20-16:30 Break

## Friday 28 May

10:00-10:10 Rotation

**10:10-10:40** Workshop 12: Scoliosis

10:40-10:50 Rotation

**10:50-11:20** Workshop 11: Running and sport analysis – Knee

11:20-11:30 Break

13:30-13:40 Rotation

**13:40-14:10** Workshop 9: Smart games for rehabilitation

14:10-14:20 Rotation

**14:20-14:50** Workshop 10: Limb Alignment

14:50-15:00 Break

*Rotation=you will have 10 minutes time to go from one workshop to another*



# Workshop

Group 4

## Wednesday 26 May

10:45-10:55 Rotation

**10:55-11:25** Workshop 3: Moments and rotations smartphone apps

11:25-11:35 Rotation

**11:35-12:05** Workshop 4: Sponsor break

12:05-12:15 Break

15:15-15:25 Rotation

**15:25-15:55** Workshop 2: Kinematics – Kinetics

15:55-16:05 Rotation

**16:05-16:35** Workshop 1: Normal gait – observational gait analysis

16:35-16:45 Break

## Thursday 27 May

09:30-09:40 Rotation

**09:40-10:10** Workshop 7: Orthotic adjustments based on gait analysis + Electrostimulation

10:10-10:20 Rotation

**10:20-10:50** Workshop 8: Derotational osteotomy monitoring

10:50-11:00 Break

15:00-15:10 Rotation

**15:10-15:40** Workshop 6: EMG – Muscle transfer?

15:40-15:50 Rotation

**15:50-16:20** Workshop 5: Foot (Clubfoot/flatfoot)

16:20-16:30 Break

## Friday 28 May

10:00-10:10 Rotation

**10:10-10:40** Workshop 11: Running and sport analysis – Knee

10:40-10:50 Rotation

**10:50-11:20** Workshop 12: Scoliosis

11:20-11:30 Break

13:30-13:40 Rotation

**13:40-14:10** Workshop 10: Limb Alignment

14:10-14:20 Rotation

**14:20-14:50** Workshop 9: Smart games for rehabilitation

14:50-15:00 Break

*Rotation=you will have 10 minutes time to go from one workshop to another*

## Course fees

### Early registration fees\*\*

(until 27 April 2021)

#### Participants

EUR 420.00

#### EPOS or ESMAC members\*

EUR 340.00

#### Residents & Non-medical personnel\*

EUR 290.00

### Late registration fees

(as of 28 April until 25 May 2021 incl.)

#### Participants

EUR 460.00

#### EPOS or ESMAC members\*

EUR 380.00

#### Residents & Non-medical personnel\*

EUR 330.00

### On-site registration fees

#### Participants

EUR 500.00

#### EPOS or ESMAC members\*

EUR 420.00

#### Residents & Non-medical personnel\*

EUR 370.00

\* 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

Application under process

## Opening hours

Wednesday, 26 May 07:30-18:30

Thursday, 27 May 07:30-18:30

Friday, 28 May 07:30-16:30

## Contact

EPOS Central Office

[courses@epos.org](mailto:courses@epos.org)

+41 (0) 21 822 09 25

## Venue

Orthopaedic Hospital Speising

Speisinger Strasse 109

1130 Vienna

Austria

Auditorium: Prof. Spitzky-Auditorium



Orthopädisches  
Spital Speising  
Wien

# Faculty

## Faculty

Gabor Barton, UK

Harald Böhm, Germany

Thomas Dreher, Switzerland

Rudolf Ganger, Austria

Andreas Kranzl, Austria

Guy Molenaers, Belgium

Sebastien Pesenti, France

Adam Shortland, UK

Martin Svehlik, Austria

Elke Viehweger, France

Sebastian Wolf, Germany

## Course Programme Committee

Elke Viehweger, *Course Co-Chair*

Martin Svehlik, *Course Co-Chair*