

EPOS BAT Advanced Course

Bologna, Italy: 17–18 September 2026



Rare Bone Diseases

Highlights

- Comprehensive coverage of 10+ rare skeletal conditions, including osteogenesis imperfecta, achondroplasia, multiple exostoses, mosaicism, rickets, and more.
- Advances in genetics, molecular diagnostics, imaging, 3D planning, AI, and novel therapies (pharmacologic, gene- and cell-based).
- Best practices in limb and spine deformity and fracture management, with hands-on surgical training using key instrumentation.
- Interdisciplinary learning: orthopaedics, endocrinology, genetics, patient perspectives, and European reference networks.

Methods of education

- Theoretical lectures
- Interactive hands-on workshops
- Case discussions



EPOS gratefully acknowledges the contribution of ERN BOND as a supporting organisation for this course.

Welcome

Dear Colleagues,

It is a great pleasure to welcome you to the EPOS BAT Advanced Course in Rare Bone Diseases, a field that represents one of the most complex and rapidly evolving areas in paediatric orthopaedics. Although individually uncommon, rare skeletal conditions (including osteogenesis imperfecta, achondroplasia, multiple hereditary exostoses, rickets, etc.) collectively affect a substantial number of children and families worldwide and require highly specialized, multidisciplinary care.

This course provides an up-to-date and clinically focused overview of rare bone diseases, encompassing advances in classification, epidemiology, molecular diagnostics, imaging interpretation, and therapeutic innovation. Participants will explore key mechanisms such as genetic mutations, imprinting disorders, methylation defects, and mosaicism, and will gain practical guidance on phenotype-driven diagnosis and dysplasia-oriented radiographic assessment.

We will discuss emerging therapies ranging from pharmacologic treatments to gene and cell-based approaches and place particular emphasis on surgical management: current evidence, guidelines and recommendations on indications and timing of intervention, treatment strategies, technical considerations, and common pitfalls when operating on children with rare skeletal conditions. The programme also addresses rehabilitation, orthotic management, functional outcomes, psychosocial care, and the transition to adulthood.

The course offers valuable educational opportunities for residents and early-career clinicians seeking a structured foundation in this complex field, while also providing experienced surgeons with a focused and comprehensive update on rapidly evolving diagnostic and therapeutic approaches.

Our international faculty includes leading orthopaedic surgeons, paediatricians, geneticists, biologists, and members of European reference networks, together with patient advocacy representatives who bring essential perspectives on long-term outcomes and quality of life. The programme integrates lectures, case discussions, and hands-on workshops, supported by close collaboration with industry partners contributing to technological innovation and practical training.

We hope this course will foster knowledge exchange, multidisciplinary dialogue, and collaborative learning, ultimately strengthening care for patients with rare skeletal diseases.

We look forward to your active participation.

Warm regards,



Cristina Alves
EPOS Education
Committee Chair
2025–2028



Giovanni Trisolino
Course Chair



Ralph J.B. Sakkers
EPOS President
2026–2027

Programme

Thursday 17 September

Wednesday 16 September
at Rizzoli Orthopedic Institute

16:00-18:00

Pre-registration (optional)

Schedule	Topic	Faculty
07:30 – 08:30	Registration & welcome coffee	
	Welcome & course introduction	
08:30 – 08:40	<i>Setting the scene: objectives, structure, and expected outcomes of the course</i>	Giovanni Trisolino

SESSION 1: GENERAL PRINCIPLES

Moderators: Giovanni Trisolino, Darko Antičević

08:40 – 08:50	Rare Skeletal Diseases at a Glance – Classifying the Uncommon: A Fresh Look at Nosology and Epidemiology of Rare Bone Diseases	Ralph Sakkers
08:50 – 09:00	Connecting the Dots in Rare Bone Diseases – From European Networks to Patient Voices: Registries, CPMS, Patient Advocacy	Luca Sangiorgi
09:00 – 09:10	Decoding Disease: Molecular Diagnostics Essentials for Clinicians <i>Key concepts revisited: mutations, chromosomal disorders, methylation defects, mosaicism, genomic imprinting – and what happens when these mechanisms fail in rare skeletal diseases (with practical examples)</i>	Elena Pedrini
09:50 – 10:00	Phenotype First: How History and Exam Lead to Diagnosis Phenotypic Assessment in Practice <i>How to approach clinical phenotyping (facial features, anthropometry, body proportions), when to suspect a skeletal dysplasia, and key considerations for gynecological and prenatal counselling</i>	Thomas Wirth
10:00 – 10:10	Imaging in Rare Skeletal Disorders How to Read Radiographs With a “Dysplasia-Oriented” Eye: What to Look For and Red Flags Not to Miss	Joachim Horn
10:10 – 10:20	From Pills to Genes: Drugs, Gene, and Cell Therapy in Rare Bone Diseases	Federica Tamburrino
10:20 – 10:30	Holistic Healing – Rehab, Braces, Sports and Psychological Care: Driving the Transition to Adulthood	Wouter Nijhuis
10:30 – 10:40	Discussion	
10:40 – 11:00	Coffee break	

SESSION 2: OSTEOGENESIS IMPERFECTA

Moderators: Joachim Horn, Marco Turati

11:00 – 11:10	Etiology and Genetics, Diagnosis and Classification	Darko Antičević
11:10 – 11:20	Medical Aspects, Orthopaedic and Non-Orthopaedic Issues	Dmitry Popkov
11:20 – 11:30	Pharmacological Treatment of OI: Current Strategies, Indications, and Practical Considerations	Ralph Sakkers
11:30 – 11:40	Surgical Principles in OI: Indications, Timing, and Decision-Making	Muharrem Inan
11:40 – 11:50	Telescopic Nailing in OI: Techniques, Tips & Tricks, and Common Pitfalls	Zagorka Pejcin
11:50 – 12:00	Discussion	

Programme

Thursday 17 September

Schedule	Topic	Faculty
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SESSION 3: ACHONDROPLASIA

Moderators: Thomas Wirth, Laura Ruzzini

12:00 – 12:10	Epidemiology, Etiology, Pathophysiology	Maria Pia Monjardino
12:10 – 12:20	Clinical Aspects, Orthopaedic and Non-Orthopaedic Issues	Gabriel Mindler
12:20 – 12:30	Pharmacological Treatment of Achondroplasia: Current Strategies, Indications, and Practical Considerations	Ralph Sakkers
12:30 – 12:40	Surgical Management: General Principles	Dmitry Popkov
12:40 – 12:50	Principles of Limb Lengthening in Achondroplasia: Techniques, Tips & Tricks, and Common Pitfalls	Joachim Horn
12:50 – 13:10	Discussion and voluntary clinical case presentations from participants	
13:10 – 14:00	Lunch	
14:00 – 18:00	Industry-sponsored workshops	
18:00 – 18:30	Case discussion & wrap-up day 1	

Programme

Friday 18 September

Schedule	Topic	Faculty
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SESSION 4: MULTIPLE OSTEochondromas AND RELATED DISORDERS

Moderators: Deborah Eastwood, Ralph Sakkers

08:00 – 08:10	Diagnosis, Etiology, and Classification of Hereditary Multiple Exostoses	Zagorka Pejcin
08:10 – 08:20	Clinical Presentation, Natural History	Darko Antičević
08:20 – 08:30	Differential Diagnosis: Melorheostosis, Ollier Disease, Maffucci Syndrome, Trevor Disease and Others	Wouter Nijhuis
08:30 – 08:40	Orthopaedic Management: Upper Limbs	Thomas Wirth
08:40 – 08:50	Orthopaedic Management: Lower Limbs	Joachim Horn
08:50 – 09:00	Discussion	

SESSION 5: OTHER RARE BONE DISEASES - PART I

Other Collagen-Related and COMP Disorders

Moderators: Zagorka Pejcin, Wouter Nijhuis

09:00 – 09:10	Diagnosis and Overview: MED, SEMD, PSACH, Spondylometaphyseal Dysplasias, Diastrophic Dysplasia	Maria Pia Monjardino
09:10 – 09:20	Surgical Management. Evidence-Based Approaches to Growth Modulation, Deformity Correction, and Joint Replacement in Collagen-Related and COMP Disorders	Deborah Eastwood
09:20 – 9:30	Spinal Disorders in Skeletal Dysplasia: Key Challenges and Practical Solutions in Diagnosis and Treatment	Frank Plasschaert
09:30 – 09:40	Discussion	

Hypermobility Spectrum Disorders

Moderators: Muharrem Inan, Dmitry Popkov

09:40 – 09:50	Down Syndrome: Orthopaedic Issues and Evidence-Based Principles of Surgical Management	Marco Turati
09:50 – 10:00	Marfan and Marfan-Like Syndromes: Orthopaedic and Non-Orthopaedic Issues and Evidence-Based Principles of Surgical Management	Laura Ruzzini
10:00 – 10:10	Ehlers–Danlos and Other Hypermobility-Related Syndromes: Classification Criteria, Diagnostic Framework, Medical Work-Up, and Surgical Challenges	Maria Pia Monjardino
10:10 – 10:20	Facing Hypermobility in Surgery: Hip and Spine	Frank Plasschaert
10:20 – 10:30	Facing Hypermobility in Surgery: Knee, Foot and Ankle	Giovanni Trisolino
10:30 – 10:40	Discussion	

10:40 – 11:00 Coffee break

Programme

Friday 18 September

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SESSION 6: OTHER RARE BONE DISEASES - PART II

RASopathies, Mosaic Conditions and Overgrowth Syndromes

Moderators: Frank Plasschaert, Gabriel Mindler

11:00 – 11:10	Neurofibromatosis and Other RASopathies: Classification, Clinical Features, Medical Problems, and Principles of Medical Management	Marco Turati
11:10 – 11:20	Surgical Management in Neurofibromatosis: Bone Deformities, Pseudarthrosis, Overgrowth, and Spinal Involvement	Zagorka Pejcin
11:20 – 11:30	Fibrous Dysplasia and McCune–Albright Syndrome: Etiology, Clinical Presentation, and Associated Medical Issues	Muharrem Inan
11:30 – 11:40	Principles of Surgical Treatment	Thomas Wirth
11:40 – 11:50	Overgrowth Syndromes – BWS, KTS, and Related Conditions: Etiology, Clinical Presentation, and Medical Issues	Darko Antičević
11:50 – 12:00	Evidence-Based Surgical Treatment of Overgrowth Syndromes	Laura Ruzzini
12:00 – 12:10	Discussion and voluntary clinical case presentations from participants	

SESSION 7: THE PATIENT VOICE

Perspectives from Patients and Parents Living with Rare Skeletal Disorders

Chair: Luca Sangiorgi

A joint EPOS–ERN BOND session placing the patient perspective at the centre of discussions on the challenges and priorities in rare skeletal disorders, with contributions from leading European representatives of patient organisations and caregivers.

Speakers:

- **Liana La Forgia (UK)**
Multiple Osteochondromas (caregiver)
A.C.A.R. APS (International Relations Manager) & ERN BOND ePAG
- **Susana Noval Iruretagoyena (Spain)**
Achondroplasia (caregiver)
Fundación ALPE Acondroplasia (President) & ERN BOND ePAG
- **Alessandra Tolaccia (Italy)**
Osteogenesis Imperfecta (patient)
Osteogenesis Imperfecta Federation Europe (Vice-President)

13:10 – 14:00 Lunch

Programme

Friday 18 September

Schedule	Topic	Faculty
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SESSION 8: OTHER RARE BONE DISEASES - PART III

Moderators: Maria Pia Monjardino, Laura Ruzzini

Non-Collagen Disorders of Bone Metabolism and Mineralisation		
14:00 – 14:15	Rickets and Hypophosphatasia: Classification, Medical Management, Orthopaedic Issues and Evidence-Based Principles of Surgical Management	Gabriel Mindler
14:15 – 14:30	Mucopolysaccharidoses: Classification, Medical Management, Orthopaedic Issues and Evidence-Based Principles of Surgical Management	Deborah Eastwood
14:30 – 14:40	Discussion	
Congenital Arthrogyrosis		
14:40 – 14:55	Amyoplasia and Other Forms of Multiple Congenital Contractures	Giovanni Trisolino
14:55 – 15:10	Recommendations and Treatment Protocols: Challenges and Practical Solutions in the Management of Patients with Arthrogyrosis or Amyoplasia	Deborah Eastwood
15:10 – 15:30	Discussion and voluntary case presentation	
15:30 – 16:00	Final Panel & Closing Remarks	

Course fees

(incl. 22% Italian VAT)

Early registration*

(Valid until Sunday 16 August 2026 23:59 CET)

Participants	€660.00
EPOS Members**	€515.00
Residents**	€440.00

Late registration

(Valid as of Monday 17 August 2026)

Participants	€810.00
EPOS Members**	€660.00
Residents**	€590.00

Course Dinner

All participants	€75.00
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Registration fees include

- Participation in all course educational activities
- Lunches & coffee breaks

Expenses related to flights, accommodation, airport transfers, dinners etc. are at the participants' own expense.

Cancellation policy

- More than 4 weeks prior to the starting date: An administrative fee of 100 EUR will be charged.
- Less than 1 month prior the starting date: 50% of the paid registration fee will be charged.
- 2 weeks prior the starting date: 100% of the paid registration fee will be charged and no reimbursements will be made.

* The early registration fee is only valid when the payment is made before the early registration deadline

** Proof needs to be uploaded depending on the registration category chosen

Course language

English – no translation

CME Credits



The course has been accredited by the European Accreditation Council for Continuing Medical Education (EACCME®) with 10 European CME credits (ECMEC®s).

Opening hours

Wednesday 16 September:	16:00–18:00 (pre-registration, optional)
Thursday 17 September:	07:30–18:30
Friday 18 September:	08:00–16:00

Contact

EPOS Central Office
courses@epos.org

Venue

Rizzoli Orthopedic Institute
Codivilla-Putti Research Center
via di Barbiano 1/10
40136 Bologna

Case presentations

We encourage participants to bring along clinical case discussions. Please review our [instructions for case presentations](#).

Course Faculty

- Darko Antičević
- Deborah Eastwood
- Joachim Horn
- Muharrem Inan
- Gabriel Mindler
- Maria Pia Monjardino
- Wouter Nijhuis
- Elena Pedrini
- Zagorka Pejin
- Franck Plasschaert
- Dmitry Popkov
- Laura Ruzzini
- Ralph Sakkers
- Luca Sangiorgi
- Federica Tamburrino
- Giovanni Trisolino
- Marco Turati
- Thomas Wirth

Course Programme Committee

- Giovanni Trisolino, Course Chair
- Cristina Alves, EPOS Education Committee Chair 2025-2028
- Ralph J.B. Sakkers, EPOS President 2026-2027

Upcoming Events

Future EPOS Educational Events:

9th EPOS BAT INSTRUCTIONAL COURSE TRILOGY

[Part III](#)

Vienna, Austria | 25–27 November 2026

EPOS BAT ADVANCED COURSE

[Cadaver Lab Spine Course](#)

Dates & Venue TBC

EPOS BAT ADVANCED COURSE

[Hip Surgery from Infancy to Adulthood](#)

27–29 January 2026

10th EPOS BAT INSTRUCTIONAL COURSE TRILOGY

[PART I](#)

10–12 March 2027

EPOS BAT ADVANCED COURSE

[Neuromuscular Course](#)

10–11 June 2027

EPOS BAT ADVANCED COURSE

[Complex Trauma](#)

7–8 October 2027

10th EPOS BAT INSTRUCTIONAL COURSE TRILOGY

[Part II](#)

17–19 November 2027

10th EPOS BAT INSTRUCTIONAL COURSE TRILOGY

[Part III](#)

8–10 March 2028

EPOS BAT ADVANCED COURSE

[Arthroscopic Cadaver Lab Course](#)

22–23 June 2028

EPOS BAT ADVANCED COURSE

[Trauma Course](#)

September 2028

11th EPOS BAT INSTRUCTIONAL COURSE TRILOGY

[Part I](#)

22–24 November 2028

Workshops

INTERACTIVE INDUSTRY-SPONSORED WORKSHOPS AND HANDS-ON PRACTICAL SESSIONS

Workshop	Room	Mentors
A Surgical Planning and Deformity Correction Using Paediatric Implants (Blade Plates and Screw Plates) – supported by <i>OrthoPedic</i>	Room 2	Deborah Eastwood Ralph Sackers Thomas Wirth Franck Plasschaert
B Telescopic Intramedullary Nailing in Osteogenesis Imperfecta: Surgical Simulation and Practical Considerations – supported by <i>PediTST</i> and <i>Orthofix</i>	Manzoli Room	Zagorka Pejin Muharrem Inan Marco Turati Wouter Nijhuis
C External Fixation in Rare Skeletal Disorders: Principles, Techniques, and Practical Applications – supported by <i>Dial Medical</i>	Marchetti Amphitheater Classroom	Dmitry Popkov Darko Antičević Giovanni Trisolino Alexander Kirienko
D Motorised Intramedullary Lengthening Nails: Principles and Clinical Practice – supported by <i>Orthofix</i>	Federalism Room 3 rd Floor	Laura Ruzzini Joachim Horn Maria Pia Monjardino Gabriel Mindler

Workshops schedule and content subject to last-minute changes.

Disclaimer: Please note that there is a variety of different similar products available that can be used beyond the ones provided at this event.

Thank you to the official sponsors of the course for the valuable support:

