



EDUCATION **EURO
SPINE**

EduWeek 2024

24-26 JUNE | STRASBOURG, FRANCE

**Basic Module 3:
Spinal Deformities**

General Information

EUROSPINE, the Spine Society of Europe
 c/o Pfister Treuhand AG
 Bankstrasse 4, 8610 Uster-Zurich, Switzerland
 W: www.eurospine.org

Chair of Education Committee

Paulo Pereira
 E: educationl@eurospine.org

Director of Education and Research

Julie-Lyn Noël
 E: noel@eurospine.org

Education and Research Manager

Angelika Salmen
 E: salmen@eurospine.org

Module Chair

Ahmet Alanay, Turkey
 Frank Kleinstück, Switzerland

Module Faculty

Cedric Barrey*, France
 René Castelein*, Netherlands
 Yann-Philippe Charles, France
 Martin Gehrchen*, Denmark
 Ilkka Helenius, Finland
 Colin Nnadi*, United Kingdom
 Susana Nuñez-Pereira, Spain
 Dominique Rothenfluh*, Switzerland

*E-learning only

EduWeek 2024 Overview			
AUTUMN 2023	APRIL - JUNE 2024	24 - 26 JUNE 2024	3-6 SEPTEMBER 2024
<p>REGISTRATION OPENS</p> <ul style="list-style-type: none"> Registrations open in early October 2023 Exact date announced on the EUROSPINE website, through newsletters and social media Participants can now register and save their place for Basic and Advanced modules Further details and preliminary programmes are shared on the EUROSPINE website 	<p>PART 1 - E-LEARNING</p> <ul style="list-style-type: none"> Enrolment of participants to the EUROSPINE Learning Management System (LMS) by the Education team Self-paced completion of the module/s by participants Assessment: MCQs that must be passed with a minimum of 70% + CME evaluation Mode of study: online/distance learning through the LMS <u>NO physical presence required</u> 	<p>PART 2 - LIVE SESSIONS</p> <ul style="list-style-type: none"> Live sessions take place at <u>IRCAD</u> in Strasbourg/France Live sessions include, lectures, case based discussions, workshops, group work (and CadLabs/SkillsLabs for designated modules) Participants arrange their own travel/accommodation to/in Strasbourg/France to take part in the modules Assessment: CME evaluation after completion of part 2+3 Mode of study: <u>in-person</u> <u>Physical presence required</u> 	<p>PART 3 - VIRTUAL LIVE SESSION</p> <ul style="list-style-type: none"> Bring Your Own Case (BYOC) Participants submit a case prior to the session. Module faculty choose three case that are discussed in breakout groups and facilitated by faculty members. Assessment: CME evaluation after completion of part 2+3 Mode of study: <u>online live via Zoom</u> <u>NO physical presence required</u> <p>NEW in 2024</p>

Quick Facts

DATES & TIMES	<u>Live session</u> Group 1: 24 June 2024 (13:00-17:15 CEST) Group 2: 25 June 2024 (08:00-12:15 CEST)
	<u>Virtual live session</u> Group 1 and 2: 03 September 2024 (18:00-19:30 CEST)
LIVE SESSION VENUE	IRCAD, 1 Place de l'Hôpital, 67000 Strasbourg, FRANCE
MAX. ATTENDEES	40 delegates (per group)
REGISTRATION FEES	EUROSPINE Member: €800 Non-member: €1,000
CME CREDITS	EACCME accreditation is currently pending.
LANGUAGE	English
DRESS CODE	Smart casual
E-LEARNING	A computer (Mac/PC) or tablet (Android/Mac) and stable internet connection are required to access the e-learning content. In preparation for the live session, the mandatory self-paced e-learning component will be available from 1 April 2024 on the EUROSPINE Learning Management System (LMS). <u>This component must be completed before the live session.</u>
MODULE COMPLETION	A module is only deemed as complete when participants have met ALL of the following conditions: <ul style="list-style-type: none"> • Passed the e-learning with at least 70% AND • Attended the live session AND • Attended the virtual BYOC live session AND • Submitted the course evaluations for the e-learning and the (virtual) live session component
TARGET AUDIENCE	Senior trainees and trained surgeons, who are planning a career in spine surgery.
IMPORTANT (!)	<ul style="list-style-type: none"> • Completion of e-learning module is mandatory • Attendance of the live session and virtual live session is mandatory • Group 1 and 2 contain the same content. Participants are registered for ONE of the groups only! • Changing groups once registered is NOT possible!

PART 1 - E-learning Programme

(available from 1 April 2024)

Time/ Duration	Topic	Faculty
Principles of Spinal Deformity & Surgical Treatment		
00:19	Spinal alignment and balance	Dominique Rothenfluh
00:12	Casting, bracing and role of rehabilitation	René Castelein
00:19	Preoperative assessment and positioning	Frank Kleinstück
00:21	Intraoperative monitoring	Colin Nnadi
00:25	Blood saving in spinal deformity surgery	Cedric Barrey
00:20	Knowledge check questions	
Adolescent Idiopathic Scoliosis		
00:13	Pathogenesis and natural history of Adolescent Idiopathic Scoliosis (AIS)	René Castelein
00:08	AIS: Classification and surgical indications	Martin Gehrchen
00:08	Selection of AIS fusion levels	Ilkka Helenius
00:14	Surgical strategy: Posterior approach	Martin Gehrchen
00:14	Surgical strategy: Anterior approach	Dominique Rothenfluh
00:20	Knowledge check questions	
Scoliosis & Kyphosis		
00:12	Neuromuscular scoliosis	René Castelein
00:39	Congenital spinal deformities	Colin Nnadi
00:40	Hyperkyphosis (congenital, Scheuermann, ankylosing spondylitis)	Cedric Barrey
00:09	Surgical strategy for correcting hyperkyphosis	Ilkka Helenius
00:20	Knowledge check questions	
Spondylolisthesis		
00:20	Spondylolisthesis: Pathogenesis and classification	Colin Nnadi
00:28	Spondylolysis and low-grade olisthesis	Frank Kleinstück
00:07	High-grade spondylolisthesis	Ilkka Helenius
00:20	Knowledge check questions	

Adult Spinal Deformity		
00:13	From degenerative to adult deformity	Dominique Rothenfluh
00:21	Assessment of Adult Deformity Patients	Frank Kleinstück
00:15	Adult deformity planning of surgical correction	Martin Gehrchen
00:17	Spinal osteotomies	Dominique Rothenfluh
00:31	Anterior-posterior techniques to treat sagittal balance disorders	Cedric Barrey
00:20	Knowledge check questions	

PART 2 - Live Session Programme

Group 1 24 June 2024	
13:00–15:10	Cases
15:10–15:25	Coffee break
15:25–17:15	Cases
17:15	End Group 1

Group 2 25 June 2024	
08:00–10:10	Cases
10:10–10:25	Coffee break
10:25–12:15	Cases
12:15	End Group 2

Topic List Group 1 and 2	Faculty
Introduction	Alanay
Adolescent idiopathic scoliosis	TBC
Early onset scoliosis	TBC
High-grade spondylolisthesis	TBC
Scheuermann's kyphosis	TBC
Adult degenerative deformity	TBC
END OF LIVE SESSION	

PART 3 - Virtual Live Session

Bring Your Own Case (BYOC)

03 November 2024	
18:00 – 19:30 CEST	
17:00-17:05	Introduction
17:05-17:25	Breakout session 1
17:25-17:30	Discussion 1
17:30-17:50	Breakout session 2
17:50-17:55	Discussion 2
17:55-18:00	Break
18:00-18:20	Breakout 3
18:20-18:25	Discussion 3
18:25-18:30	Wrap-up and conclusion
END OF MODULE	

Learning Outcomes

Principles of Spinal Deformity & Surgical Treatment

Spinal Alignment and Balance

- Goals of surgery in the spinal deformity continuum
- Understand the concepts of alignment versus balance
- Know key spino-pelvic parameters and their limitations
- Understand the concept of spinal harmony
- Know compensation mechanisms

Casting, Bracing and the Role of Rehabilitation

- Justify the role of casting today
- Explain the pros and cons of different types of brace treatment
- Formulate principles of rehabilitation for patients with spine deformity, both paediatric and adult
- Define the role of halo traction as definitive or interim treatment

Preoperative Assessment and Positioning

- Record a comprehensive preoperative assessment
- Consider special issues including pulmonary, cardiac, haematological, nutritional, and metabolic
- Position patients safely
- Explain the rationale to other team members
- Compare the purpose of prone, lateral, and supine positions

Intraoperative Monitoring

- Select appropriate types of monitoring
- Differentiate between SEP and MEP
- Perform a safe and reliable wake up test
- Recognise when a wake-up test is required
- Respond appropriately when monitoring indicates intervention required

Blood Saving

- Anticipate the factors affecting blood loss
- Recognize trigger points for transfusion
- Minimise the risks of homologous transfusion
- Outline the role of erythropoietin
- Compare the pros and cons of autologous transfusion, haemodilution, hypotensive anaesthesia, anti-fibrinolytic agents, intraoperative blood salvage

Adolescent Idiopathic Scoliosis (AIS)

Pathogenesis and Natural History Of AIS

- Know concepts of development of AIS and subsequent implications for surgical treatment
- Describe the natural history of AIS

Classification and Surgical Indications

- Know the pertinent classification systems and their limitations
- Understand and formulate surgical indications
- Goals of surgery for AIS

Selection of Fusion Levels

- Use classification to determine the end limits of fusion (Lenke)
- Understand factors which may determine fusion levels such as curve flexibility, adding on etc.
- Define the lower and upper limit of instrumentation

Surgical Strategy: Posterior Approach

- Formulate principles of surgical correction of AIS
- Understand the role of the sagittal plane in AIS and for surgical correction
- Evaluate strategic surgical options
- Recognise indications for a posterior or combined approach

Surgical Strategy: Anterior Approach

- Differentiate between anterior release, anterior fusion, and anterior instrumentation
- Select appropriate approach for procedure
- Recognise indications for anterior approach
 - anterior instrumentation

Scoliosis and Kyphosis

Neuromuscular Scoliosis

- Describe the aetiology and prognostic factors associated with neuromuscular scoliosis
- Identify factors indicating progression or risk to neurological structures
- Evaluate management options
- Assess associated pulmonary and cardiac problems

Congenital Spinal Deformities (Including Growing Rods)

- Relate the stages of development to deformities of the spinal cord
- Select appropriate investigations
- Evaluate treatment options

Hyperkyphosis (Congenital, Scheuermann, Ankylosing Spondylitis...)

- Differentiate between the aetiology and prognostic factors associated with regular and angular kyphosis
- Evaluate management options

Correcting Hyperkyphosis

- Review the spinal osteotomy options
- Explain how to correct Scheuermann kyphosis versus congenital kyphosis

Spondylolisthesis

Spondylolisthesis: Pathogenesis and Classification

- Describe the pathogenesis and causes of developmental spondylolisthesis
- Differentiate between high- and low-grade spondylolisthesis
- Know current classification systems

Spondylolysis, Low-Grade Olisthesis

- Understand patho-anatomic features
- Know surgical indications
- Select appropriate surgical technique

High-Grade Spondylolisthesis

- Describe the patho-anatomy of high-grade spondylolisthesis
- Differentiate between balance and unbalanced olisthesis
- Know different surgical techniques
- Understand the pros and cons of reduction versus in situ fusion

Adult Spinal Deformity

From the Degenerative Spine Deformity

- Evaluate the lumbar spine in the context of spinal deformity
- Classify the continuum from the degenerative spine to deformity

Adult Idiopathic and Degenerative Deformities

- Identify common problems associated with adult deformity
- Differentiate between idiopathic and degenerative (de novo) deformity
- Use spino-pelvic parameters to assess degenerative deformities
- Evaluate operative and non-operative options for different age groups
- Consider comorbidities associated with age
- Define surgical indications
- Assess patient expectations

Adult Deformity Planning of Surgical Correction

- Formulate principles of surgical correction
- Plan surgical correction of adult spinal deformity
- Know current software planning tools
- Evaluate the appropriate techniques

Spinal Osteotomies

- Justify the aim of osteotomy
- Differentiate between the different types of osteotomies (focus on posterior column and pedicle subtraction osteotomies)
- Technique of spinal osteotomies
- Outcomes and complications of spinal osteotomies

Anterior-Posterior Techniques to Treat Sagittal Balance Disorders

- Recognise indications for an anterior/lateral or combined with posterior approach
- Describe the amount of correction that can be achieved with each technique
- Know outcomes and complications of the different techniques/approach

Learning Outcomes – Bring Your Own Case (BYOC)

The module concludes with the Bring Your Own Case (BYOC) virtual live session. The BYOC is a case-based learning session based on the participants own practice or experience. Participants will be asked to submit a case on the module topic before the virtual live session.

The cases are ideally the participant's own case and should preferably present questions with no single right answer or dilemmas. The cases could also be from their own departments and ideally, the participant should have had some personal connection or have at least seen the case.

The cases will be shared with assigned faculty preceptors who will process the cases and determine the line-up and order of discussion. Some cases may be grouped with that of other colleagues in discussion.

At the end of the session participants will be able to:

- Synthesise background knowledge and principles on the topic (module name) and apply to their own case and other cases presented

- Identify dilemmas and issues with their own case and other cases presented
- Raise points and questions on their own case and other cases presented
- Defend their positions regarding their own case and cases presented during the discussion
- Recognise and understand diverse perspectives from other participants and faculty
- Assimilate new ideas, new techniques and information, and adopt them appropriately in practice
- Formulate clinical decisions, strategies and generate possible solutions on their own case and other cases presented

Recommended Reading

Part III Basic Module 3: Deformity. B. Meyer and M. Rauschmann (Eds.), Spine Surgery A Case-Based Approach. Switzerland: Springer.

- M. Balsano and S. Negri. (2019). Natural Course and Classification of Idiopathic Scoliosis. B. Meyer and M. Rauschmann (Eds.), Spine Surgery A Case-Based Approach (pp. 141-148). Switzerland: Springer.
- M. Balsano and S. Negri. (2019). Diagnosis and Conservative Treatment of Adolescent Idiopathic Scoliosis: Case Presentation. B. Meyer and M. Rauschmann (Eds.), Spine Surgery A Case-Based Approach (pp. 149-152). Switzerland: Springer.
- U. Liljenqvist. (2019). Idiopathic Scoliosis: Operative Treatment. B. Meyer and M. Rauschmann (Eds.), Spine Surgery A Case-Based Approach (pp. 153-158). Switzerland: Springer.
- A. Senkoylu and E. Acaroglu. (2019). A Congenital Scoliosis Case Characterized with Contralateral Hemivertebrae. B. Meyer and M. Rauschmann (Eds.), Spine Surgery A Case-Based Approach (pp. 159-164). Switzerland: Springer.
- S. Nuñez-Pereira and F. Pellisé. (2019). Delayed Neurological Deficit and Surgical Site Infection After Pedicle Subtraction Osteotomy in a Revision Case. B. Meyer and M. Rauschmann (Eds.), Spine Surgery A Case-Based Approach (pp. 165-172). Switzerland: Springer.
- D. Jeszenszky and M. Loibl. (2019). Operative Treatment of High-Grade Spondylolisthesis. B. Meyer and M. Rauschmann (Eds.), Spine Surgery A Case-Based Approach (pp. 173-184). Switzerland: Springer.
- A. Toquart and C. Barrey. (2019). Parameters of Spino-Pelvic Balance, Aetiology and Pathogenesis of Disturbed Spino-Pelvic Balance. B. Meyer and M. Rauschmann (Eds.), Spine Surgery A Case-Based Approach (pp. 185-196). Switzerland: Springer.
- M. Arabmotlagh and M. Rauschmann. (2019). Diagnosis, Classification and General Treatment Options for Hyperkyphosis. B. Meyer and M. Rauschmann (Eds.), Spine Surgery A Case-Based Approach (pp. 197-202). Switzerland: Springer.
- M. Arabmotlagh and M. Rauschmann. (2019). Scheuermann Kyphosis and Ankylosing Spondylitis. B. Meyer and M. Rauschmann (Eds.), Spine Surgery A Case-Based Approach (pp. 203-210). Switzerland: Springer.
- S. Haddad, A. Matamalas, and F. Pellisé. (2019). Surgical Correction and Special Features in Traumatic and Congenital Kyphotic Deformities. B. Meyer and M.

Rauschmann (Eds.), Spine Surgery A Case-Based Approach (pp. 211-221).
Switzerland: Springer.