Scientific Programme

Basic Module 2:
Degenerative Diseases of the Spine
Module 2: Degenerative Diseases of the Spine

-General Information-

EUROSPINE, the Spine Society of Europe
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Christian Hellum, Norway
Wouter Moojen, Netherlands
Everard Munting, Belgium
Lukas Panzenböck, Austria

Education and Research Manager
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Important:
- Completion of e-learning module is mandatory.
- Attendance of the 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!

*Skills lab faculty
# Quick Facts

| **When** | Group 1: 27 June 2023 (13:50-18:30 CEST) and 28 June 2023 (08:00-12:30 CEST)  
| **When** | Group 2: 28 June 2023 (07:50-18:30 CEST)  
| **Where** | IRCAD, Strasbourg (France)  
| **Max. attendees** | 40 delegates (per group)  
| **Registration fee** | EUROSPINE Member: €800  
| **Registration fee** | Non-member: €1,000  
| **CME credits** | Module completion is achieved only after the completion of both the e-learning and live component.  
| **CME credits** | - 4 ECMC®s (European CME credits) are awarded after completing the e-learning component.  
| **CME credits** | - 8 ECMC®s (European CME credits) are awarded separately upon completion of the in person live component.  
| **Language** | English  
| **Dress** | Smart casual  
| **Important note** | A module is only deemed as complete when participants have met ALL of the following conditions:  
| **Important note** | - Passed e-learning/pre-learning component of the module AND  
| **Important note** | - Attended the live session AND  
| **Important note** | - Submitted course evaluations for the e-learning and the live session component  
| **Target audience** | Senior trainees and trained surgeons, who are planning a career in spine surgery.  
| **Target audience** | A computer (Mac/PC) or tablet (Android/Mac) and stable internet connection are required to access the e-learning content.  

### E-learning Programme
*(available from 1 April 2023)*

<table>
<thead>
<tr>
<th>Time/Duration</th>
<th>Topic</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cervical &amp; Lumbar</strong></td>
<td></td>
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</tr>
<tr>
<td>00:21</td>
<td>Epidemiology, natural history, and imaging of radicular pain</td>
<td>Peter Försth</td>
</tr>
<tr>
<td>00:15</td>
<td>Effective non-surgical interventions for radicular pain</td>
<td>Lukas Panzenböck</td>
</tr>
<tr>
<td>00:17</td>
<td>Surgery for radicular pain in the lumbar spine</td>
<td>Everard Munting</td>
</tr>
<tr>
<td>00:17</td>
<td>Surgery for radicular pain in the cervical spine</td>
<td>Bertrand Debono</td>
</tr>
<tr>
<td>00:20</td>
<td>Knowledge check questions</td>
<td></td>
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<tr>
<td><strong>Cervical &amp; Thoracic Myelopathy</strong></td>
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<tr>
<td>00:11</td>
<td>Presentation, causes, and natural history of myelopathy</td>
<td>Bertrand Debono</td>
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<tr>
<td>00:11</td>
<td>Imaging myelopathy: techniques and prognostic indicators</td>
<td>Paulo Pereira</td>
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<tr>
<td>00:17</td>
<td>Clinical and surgical decision making in cervical myelopathy</td>
<td>Paulo Pereira</td>
</tr>
<tr>
<td>00:18</td>
<td>Clinical and surgical decision making in thoracic myelopathy</td>
<td>Paulo Pereira</td>
</tr>
<tr>
<td>00:20</td>
<td>Knowledge check questions</td>
<td></td>
</tr>
<tr>
<td><strong>Lumbar Spinal Stenosis &amp; Degenerative Spondylolisthesis</strong></td>
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<tr>
<td>00:10</td>
<td>Presentation, natural history, and non-surgical treatment of spinal stenosis</td>
<td>Wouter Moojen</td>
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<tr>
<td>00:13</td>
<td>Imaging of spinal stenosis and degenerative spondylolisthesis</td>
<td>Lukas Panzenböck</td>
</tr>
<tr>
<td>00:17</td>
<td>Surgical treatment of lumbar stenosis</td>
<td>Peter Försth</td>
</tr>
<tr>
<td>00:12</td>
<td>Surgical treatment of degenerative spondylolisthesis</td>
<td>Christian Hellum</td>
</tr>
<tr>
<td>00:20</td>
<td>Knowledge check questions</td>
<td></td>
</tr>
<tr>
<td><strong>Spondylolysis &amp; Low-Grade Isthmic Spondylolisthesis, Axial Back Pain, Degenerative Deformity</strong></td>
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<tr>
<td>00:13</td>
<td>Spondylolysis and low-grade isthmic spondylolisthesis</td>
<td>Peter Försth</td>
</tr>
<tr>
<td>00:14</td>
<td>Natural history, obstacles to recovery and non-surgical treatment of axial pain</td>
<td>Wouter Moojen</td>
</tr>
<tr>
<td>00:14</td>
<td>How to investigate a patient with axial pain</td>
<td>Lukas Panzenböck</td>
</tr>
<tr>
<td>00:14</td>
<td>Surgical treatment for axial back pain</td>
<td>Christian Hellum</td>
</tr>
<tr>
<td>00:17</td>
<td>Degenerative deformity of the lumbar spine</td>
<td>Everard Munting</td>
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<tr>
<td>00:20</td>
<td>Knowledge check questions</td>
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</tbody>
</table>
### Live Session Programme

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Group 1</th>
<th>Time</th>
<th>Activity</th>
<th>Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:50–16:00</td>
<td>Cases</td>
<td>27 June</td>
<td>07:50–10:00</td>
<td>Cases</td>
<td>28 June</td>
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<tr>
<td>16:00–16:15</td>
<td>Coffee break</td>
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<td>10:00–10:15</td>
<td>Coffee break</td>
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<tr>
<td>16:15–18:30</td>
<td>Cases</td>
<td></td>
<td>10:15–12:30</td>
<td>Cases</td>
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<td></td>
<td>12:30–13:30</td>
<td>Lunch</td>
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<tr>
<td>28 June 2023</td>
<td>07:30 – 07:45 Participants’ check-in and welcome</td>
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<td>13:30 – 13:45 Participants’ check-in and welcome</td>
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<tr>
<td>07:45 – 08:00</td>
<td>Preparation for CadLab workshop (changing, going to assigned tables etc)</td>
<td></td>
<td>13:45 – 14:00 Preparation for CadLab workshop (changing, going to assigned tables etc)</td>
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<tr>
<td>08:00–12:30 (incl. 1x30 min. break around 10:00–10:30)</td>
<td>CadLab Workshop 1</td>
<td></td>
<td>14:00–18:30 (incl. 1x30 min. break around 16:00–16:30)</td>
<td>CadLab Workshop 2</td>
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<td>12:30</td>
<td>End Group 1</td>
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<td>18:30</td>
<td>End Group 2</td>
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</table>

### Topics Group 1 and 2

<table>
<thead>
<tr>
<th>Case Based Discussions</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recurrent lumbar disc herniation with radicular pain</td>
<td>Lukas Panzenböck</td>
</tr>
<tr>
<td>3 level lumbar spinal stenosis with minor slip</td>
<td>Peter Försth</td>
</tr>
<tr>
<td>2-level cervical radicular pain</td>
<td>Betrand Debono</td>
</tr>
<tr>
<td>Low back pain</td>
<td>Christian Hellum</td>
</tr>
<tr>
<td>Cervical myelopathy with multilevel pathology</td>
<td>Wouter A. Moojen</td>
</tr>
<tr>
<td>Degenerative deformity and root pain</td>
<td>Everard Munting</td>
</tr>
</tbody>
</table>
### Module 2: Degenerative Diseases of the Spine

<table>
<thead>
<tr>
<th>Topic</th>
<th>Support</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skills Lab Workshop Group 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endoscopic spine surgery</td>
<td>Stenosis, RealSpine simulator</td>
<td>Zdenek Klezl, Esat Kiter</td>
</tr>
<tr>
<td>Transforaminal Lumbar Interbody Fusion (TLIF)</td>
<td>Surgical STUDs</td>
<td>Sandro Krieg, Alpaslan Senkoylu</td>
</tr>
<tr>
<td>Cervical instrumentation including cervical pedicle fixation (Bone models)</td>
<td>Spine, cervical with occipital, ligaments, and tan discs, solid foam bone model</td>
<td>Yu-Mi Ryang</td>
</tr>
<tr>
<td>Lateral Approach: Lateral Lumbar Interbody Fusion (LLIF)</td>
<td>Cadaver specimen</td>
<td>Thomas Blattert</td>
</tr>
<tr>
<td>Thoracic pedicle screw fixation and hybrid solutions</td>
<td>Cadaver specimen</td>
<td>Esat Kiter</td>
</tr>
<tr>
<td><strong>Skills Lab Workshop Group 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endoscopic spine surgery</td>
<td>RealSpine simulator</td>
<td>Peter Försth, Everard Munting</td>
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Learning Outcomes

Cervical & Lumbar: Herniated Discs, Diagnosis & Treatment of Radicular Pain

Epidemiology, Natural History and Imaging of Radicular Pain
- Use common epidemiological terms to define and outline prevalence of radicular pain
- Understand the natural history of radicular pain
- Identify the contributory factors
- Diagnose causes of radicular pain
- Explain how disc herniation occurs
- Differentiate between the roles of MRI and CT in radicular pain imaging
- Interpret images using correct nomenclature

Effective Non-Surgical Interventions for Radicular Pain
- Evaluate non-surgical options for radicular pain
- Explain these options to patients
- Identify suitable patients for non-operative management
- Differentiate between the 3 types of analgesics
- Summarise the roles of physiotherapy and injection therapy.

Surgery for Radicular Pain in the Lumbar Spine
- Differentiate between absolute and relative indications for surgery
- Identify appropriate timing for surgery
- Evaluate common surgical techniques with supporting evidence
- Compare surgical and non-surgical options
- Formulate a surgical plan
- Anticipate complications and plans for return to work and activity

Surgery for Radicular Pain in the Cervical Spine
- Outline the causes and incidence of radicular pain in the cervical spine
- Justify indications for surgery
- Identify factors influencing regression of symptoms from cervical disc herniation
- Select appropriate surgical approach
- Evaluate surgical options
- Anticipate complications and plans for return to work and activity
- Formulate a plan when an adjacent level problem emerges

Cervical & Thoracic Myelopathy

Presentation, Causes, and Natural History of Myelopathy
- Compare functional and clinical presentation of cervical spondylotic myelopathic syndromes
- Grade the disease using validated instruments
Module 2: Degenerative Diseases of the Spine

- Anticipate clinical traps in diagnosis and consider differentials
- Describe the natural history
- Identify the distinctive clinical presentation of craniocervical and thoracic myelopathy

Imaging Myelopathy: Techniques & Prognostic Indicators
- Interpret MRI and CT findings in spondylotic myelopathy
- Recognize signal changes in different MRI sequences and their significance
- Consider differential diagnoses in spinal cord non tumoral pathology
- Understand the current place of myelography and CT myelography in imaging myelopathy

Clinical & Surgical Decision Making in Cervical Myelopathy
- Define a treatment plan for patients with cervical myelopathy
- Identify absolute and relative indications for surgery in cervical spondylotic myelopathy
- Compare different surgical approaches to cervical myelopathy and define a rationale for the surgical plan
- Discuss the place of intraoperative neuromonitoring in cervical myelopathy

Clinical & Surgical Decision Making in Thoracic Myelopathy
- Assess the risk-benefit balance for surgery in patients with thoracic myelopathy
- Compare different surgical approaches to thoracic myelopathy

Lumbar Spinal Stenosis & Degenerative Spondylolisthesis

Presentation, Natural History and Non-Surgical Treatment of Spinal Stenosis
- Outline the signs & symptoms of lumbar spine stenosis (LSS)
- Understand the clinical features and natural history of neurogenic claudication
- Classify LSS
- Evaluate surgical and non-surgical options
- Appraise rehabilitation alternatives

Imaging of Spinal Stenosis and Degenerative Spondylolisthesis
- Describe the different imaging techniques to identify lumbar stenosis and degenerative spondylolisthesis
- Classify and grade lumbar stenosis
- Appraise the role of full spine and functional X-rays in the assessment of patients with lumbar spinal stenosis and degenerative spondylolisthesis

Surgical Treatment of Lumbar Stenosis
- Formulate principles for stenosis surgery
- Tailor the surgical technique to the individual patient
- Recognize indications for fusion in patients with lumbar stenosis

Surgical Treatment of Degenerative Spondylolisthesis
- Evaluate surgical and non-surgical options for degenerative spondylolisthesis
- Summarise controversies in the choice of treatment for degenerative spondylolisthesis
Spondylolysis & Low-Grade Isthmic Spondylolisthesis, Axial Back Pain, Degenerative Deformity

Spondylolysis & Low-Grade Spondylolisthesis
- Outline the epidemiology and natural history
- Describe the signs & symptoms of spondylolysis & low-grade spondylolisthesis
- Formulate principles of management
- Evaluate surgical options
- Anticipate complications of instrumentation and repositioning
- Appraise rehabilitation alternatives

Natural history, Obstacles to Recovery and Non-Surgical Treatment of Axial pain
- Anticipate potential obstacles to recovery
- Explain how flagging can be used
- Plan strategies for managing catastrophizing
- Differentiate between acute and chronic back pain
- Evaluate options for non-surgical management of back pain
- Summarise current evidence pertaining to operative and non-operative management

How to investigate a Patient with Axial Pain
- Understand the role of clinical history and physical examination in the assessment of patients with axial pain
- Decide the need for imaging studies
- Select patients with axial pain who need advanced diagnostic techniques
- Review the place of diagnostic blocks and discography in patients with axial pain

Surgery for Axial Back Pain
- Provide a rationale for fusion surgery
- Evaluate alternative options
- Select appropriate approach
- Link to current evidence

Degenerative Lumbar Deformity
- Describe the pathogenesis and natural history of degenerative lumbar deformity
- Explain the concept of spinal balance and the spinopelvic parameters
- Evaluate the risk-benefit balance for surgery and potential for complications
- Formulate a surgical plan for lumbar degenerative kyphoscoliosis
Skills Workshop

Anterior Cervical Fixation Systems: Cages & Plates

- Describe the surgical steps of the procedure
- Identify surgical differences between cage fusion and disc arthroplasty
- Identify tricks and pitfalls in decompression of the spinal canal and foramen
- Identify tricks and pitfalls in anterior plating

Lateral Approach: Lateral Lumbar Interbody Fusion (LLIF)

- Identify the fluoroscopic targets for lateral approach to the lumbar spine
- Perform minimally invasive lateral approach to the discs L2-L3, L3-L4, L4-L5
- Identify key structures and discuss risks related to local vascular neuro anatomy
- Approach the disc using neuromonitoring and tubular system
- Convert the approach to mini-open lumbotomy and access the disc by reclining the psoas muscle
- Perform a discectomy and prepare endplates
- Insert a LLIF cage

Lumbar Pedicle Screws & Transforaminal Lumbar Interbody Fusion (TLIF)/Posterior Lumbar Interbody Fusion (PLIF)

- Identify entry points for lumbar pedicle screws insertion
- Prepare lumbar pedicles and insert lumbar pedicle screws
- Learn/revise neural anatomy of the lumbar spine
- Perform facetectomy, prepare the disc space and insert a TLIF/PLIF cage

Recommended Reading


Module 2: Degenerative Diseases of the Spine