MODULE 1
BASIC COMPREHENSIVE COURSE
11 January 2021
PRELIMINARY PROGRAMME
QUICK FACTS

WHEN: 11 JANUARY 2021
WHERE: IRCAD
Hôpitaux Universitaires
1, place de l’Hôpital
67091 Strasbourg, France
www.ircad.fr
+ 33 (0)3 88 11 90 00
MAXIMUM ATTENDEES: 50 delegates
REGISTRATION FEE: EUROSPINE Member: €300
Non-member: €400
CME CREDITS: Accreditation by EACCME® (European Accreditation Council for Continuing Medical Education) pending
LANGUAGE: English
DRESS: Casual
IMPORTANT NOTE: Attendance at every session is mandatory. This will be a paperless course and not printed programme will be provided. A wireless Internet device (mobile phone/ipad/computer) will be necessary to access on-line resources during the course and for completing the course evaluation. Please bring one with you. The course evaluation is mandatory to obtain the CME certificate.

TARGET AUDIENCE

Senior trainees and trained surgeons, who are planning a career in spinal surgery.

COURSE LEARNING OUTCOMES MODULE 1

1. Evaluate a patient with low back pain (LBP) in a multidisciplinary approach
2. Discuss appropriate clinical and radiologic tests
3. Evaluate systemic causes of back pain as differential diagnosis
4. Discuss the role of psychosocial models and rehabilitation
5. Explain the impact of spinal disorders on the individual and society
6. Discuss the application and limitation of biomechanical lumbar spine in vitro and finite element models
7. Explain the principles of intervertebral disc biology and degeneration
8. Be aware of current molecular research on intervertebral disc degeneration
9. Explain the role of EBM, clinical trials and registries
10. Discuss the use of clinical outcome scores
11. Recognise serious and urgent spinal disorders
12. Demonstrate sound clinical judgment in planning patient management around selected cases

**PRE-LEARNING**

Participants of Module 1 will be asked to build foundation knowledge for the module with online pre-module work. Learning outcomes have been defined, so participants and faculty are clear about the standards expected. **Module 1 will target multidisciplinary approaches in LBP, principles of spinal biomechanics and intervertebral disc biology.** These subjects are aimed to provide complementary knowledge around spine care, which might differ from clinical surgical practice. Preparation is therefore required using prelearning material which will serve as a basis for an interactive discussion during the course.

Resources to help participants achieve learning outcomes include: recorded PowerPoint presentations.

Registered delegates will receive email instructions prior to the course on how to proceed with the pre-learning content.

By the end of the pre-course learning, participants should be able to:

1. **Clinical Examination**
   - Select appropriate clinical tests for a clinical situation
   - Perform a safe and effective clinical examination
   - Select appropriate communication skills with patients and their families

2. **Biomechanic in vitro models**
   - Outline loading in different positions of the spine
   - Explain how loading changes with age and pathology
   - Describe the basic principles of an in vitro experiment
   - Discuss the interpretation and limitation for evaluation of biomaterials

3. **Finite element models**
   - Discuss applications for FE models
   - Explain setup, boundary conditions and validation of FE models
   - Interpretation and value of FE studies

4. **Biology of the lumbar intervertebral disc**
   - Outline principles of cellular and molecular biology of the nucleus
   - Explain the role of nutrition and changes with age
   - Discuss the role of genetics in disc degeneration
   - Mechanical alteration of microstructures in the annulus
5. Cellular and molecular research
- Describe pre-clinical models for the intervertebral disc
- Outline principles of stem cell therapy for disc regeneration
- Explain the role of molecular for disc regeneration

6. Evidence Based Medicine
- Rank levels of evidence
- Define the needs of individual patients in the context of EBM
- Explain the risk of bias and justify the role of EBM and guidelines

7. Clinical research
- How to design an appropriate clinical study and select classification criteria
- Discuss the use of study results for own clinical practice
- Define the role of registries

8. Outcome measures
- Explain the content of common scores used for LBP
- Discuss the selection of appropriate questionnaires in a study or registry
- Implement outcome measures in own clinical applications

FACE-TO-FACE MODULE
LEARNING OUTCOMES: SESSION 1 – LOW BACK PAIN (LBP)

Case Discussion: Low back pain
- Use clinical information to formulate a diagnosis and treatment plan
- Recognising Serious Spine Disorders: Rule out red flags

Clinical Examination (interactive workshop: prelearning required)
- Select appropriate clinical tests for a clinical situation
- Perform a safe and effective clinical examination
- Select appropriate communication skills with patients and their families

Radiology (lecture)
- Explain risks of exposure to radiation and minimize risks for patients
- Select the most appropriate investigations in spinal disorders
- Discuss role, costs, advantages and limits of imaging in LBP
- Select appropriate image guided infiltration tests and discuss clinical significance

New perspectives in LBP (lecture)
- Discuss differential diagnosis in patients with LBP
- Recognise non-surgical systemic causes of LBP
- Provide basic knowledge on spondyloarthritis
- Nociception in non-specific LBP
- Central sensitization in non-specific LBP
Rehabilitation and manual therapy (lecture)
- Outline principles of physical therapy
- Discuss the possibilities of rehabilitation programs for patients with LBP
- Select appropriate patients and explain principles of manual therapy

LEARNING OUTCOMES: SESSION 2 – FUNDAMENTAL RESEARCH

Biomechanic in vitro models (interactive workshop: prelearning required)
- Outline loading in different positions of the spine
- Explain how loading changes with age and pathology
- Describe the basic principles of an in vitro experiment
- Discuss the interpretation and limitation for evaluation of biomaterials

Finite element models (interactive workshop: prelearning required)
- Discuss applications for FE models
- Explain setup, boundary conditions and validation of FE models
- Interpretation and value of FE studies

Biology of the lumbar intervertebral disc (interactive workshop: prelearning required)
- Outline principles of cellular and molecular biology of the nucleus
- Explain the role of nutrition and changes with age
- Discuss the role of genetics in disc degeneration
- Mechanical alteration of microstructures in the annulus

Cellular and molecular research (interactive workshop: prelearning required)
- Describe pre-clinical models for the intervertebral disc
- Outline principles of stem cell therapy for disc regeneration
- Explain the role of molecular for disc regeneration

LEARNING OUTCOMES: SESSION 3 – EPIDEMIOLOGY AND CLINICAL RESEARCH

Epidemiology & Economics (lecture)
- Quantify the problem of back in the society
- Propose a strategy to reduce the problem
- Explain research definitions, quality of life, economic utility values (QUALY)

Evidence Based Medicine (interactive workshop: prelearning required)
- Rank levels of evidence
- Define the needs of individual patients in the context of EBM
- Explain the risk of bias and justify the role of EBM and guidelines

Clinical research (interactive workshop: prelearning required)
- How to design an appropriate clinical study and select classification criteria
• Discuss the use of study results for own clinical practice
• Define the role of registries

Outcome measures (interactive workshop: prelearning required)
• Explain the content of common scores used for LBP
• Discuss the selection of appropriate questionnaires in a study or registry
  Implement outcome measures in own clinical applications

LEARNING OUTCOMES: SESSION 4 – RED FLAGS: CASE DISCUSSION

Traumatic spinal cord injury
• Recognise, plan transport, investigation and treatment of a patient with SCI
• Anticipate potential complications and how to avoid them

Spondylodiscitis
• Discuss diagnostic pathways, potential complications, treatment options

Primary tumor of the spine
• Interpret clinical information and imaging studies
• Formulate a diagnosis and treatment plan

Inflammatory diseases of the spine
• Discuss differential diagnosis, clinical, biologic, imaging studies and treatment
## COURSE CHAIR:

<table>
<thead>
<tr>
<th>Name</th>
<th>Country</th>
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</thead>
<tbody>
<tr>
<td>YANN-PHILIPPE CHARLES</td>
<td>FRANCE</td>
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<tr>
<td>STEPHANE GENEVAY</td>
<td>SWITZERLAND</td>
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## COURSE FACULTY:

<table>
<thead>
<tr>
<th>Name</th>
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<tr>
<td>GUILLAUME BIERRY</td>
<td>FRANCE</td>
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<tr>
<td>FABIO GALBUSERA</td>
<td>ITALY</td>
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<tr>
<td>SYBILLE GRAD</td>
<td>SWITZERLAND</td>
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<tr>
<td>MARIE-EVE ISNER-HOROBETI</td>
<td>FRANCE</td>
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### SCIENTIFIC PROGRAMME, MODULE 1
**MONDAY 11 JANUARY 2021**

**Venue**: IRCAD, Strasbourg, France

**COURSE ATTENDANCE IS MANDATORY**

<table>
<thead>
<tr>
<th>TIME</th>
<th>TOPIC</th>
<th>FACULTY</th>
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<tbody>
<tr>
<td>07:30-08:00</td>
<td>Course Registration &amp; Welcome Coffee</td>
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<tr>
<td><strong>SESSION 1: Low back pain (LPB)</strong></td>
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<tr>
<td>08:00-08:10</td>
<td>Introduction</td>
<td>Yann Philippe Charles</td>
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<tr>
<td>08:10-08:15</td>
<td>Case Presentation Low Back pain</td>
<td>Yann Philippe Charles</td>
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<td>08:15-09:00</td>
<td>Workshop - Clinical Examination</td>
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<td>09:00-09:30</td>
<td>Radiology</td>
<td>Guillaume Bierry</td>
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<td>09:30-10:00</td>
<td>New perspectives in LBP</td>
<td>Stéphane Genevay</td>
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<td>10:00-10:30</td>
<td>Rehabilitation and manual therapy</td>
<td>Marie-Eve Isner-Horobeti</td>
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<td>Coffee Break 30 mins.</td>
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<tr>
<td>11:00-11:30</td>
<td>Workshop - Biomechanic in vitro models</td>
<td>Fabio Galbusera</td>
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<td>11:30-12:00</td>
<td>Workshop - Finite element models</td>
<td>Fabio Galbusera</td>
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<td>Lunch 60 mins.</td>
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<td>13:00-13:30</td>
<td>Workshop - Biology of intervertebral disc</td>
<td>Sybille Grad</td>
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<td>13:30-14:00</td>
<td>Workshop - Celuluar and molecular therapy</td>
<td>Sybille Grad</td>
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<td><strong>SESSION 2: Fundamental Research</strong></td>
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<td>14:00-14:30</td>
<td>Epidemiology &amp; Economics</td>
<td>Yann Philippe Charles</td>
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<td>14:30-15:00</td>
<td>Workshop - EBM and study designs</td>
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<td>15:00-15:30</td>
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<td>Coffee Break 30 mins.</td>
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<td>16:00-16:20</td>
<td>Traumatic spinal chord injury</td>
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<td>16:20-16:40</td>
<td>Spondylodiscitis</td>
<td>Stéphane Genevay</td>
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<td>16:40-17:00</td>
<td>Primary tumour of the spine</td>
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<tr>
<td>17:00-17:20</td>
<td>Inflammatory diseases of the spine</td>
<td>Stéphane Genevay</td>
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<td>17:20-17:30</td>
<td>Final course evaluation</td>
<td>Yann Philippe Charles</td>
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<td>17:30</td>
<td>End of Module 1</td>
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CONTACTS

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SCIENTIFIC CONTENT

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