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Spanish & Portuguese Spine Societies COURSE DIPLOMA 2021 Module 1

Module 1:

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Basic Comprehensive
Course

When:

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12 // October // 2021

Where:

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Lisbon - Portugal

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Scientific Content

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Dr. Álvaro Lima

Quick Facts

When	12 October 2021
Where	Lisbon / Portugal Course: Lusíadas Hospital Rua Abílio Mendes, 12
Maximum Attendees	40 delegates
Registration Fee	Discount fee for SPPCV/GEER members Module 1: 300€ for Members / 400€ for Non Members
CME Credits	An application has been made to the UEMS EACCME® for CME accreditation of this event
Language	English
Dress	Casual
Important Note	Attendance at every session is mandatory; A final exam will be performed; The course evaluation is mandatory to obtain the CME certificate; This will be a paperless course and no printed programme will be provided.

Target Audience

Senior trainees and trained surgeons, who are planning a career in spinal surgery and general practitioners, rheumatologists, physiatrists and others who wish to develop their knowledge in the area of spinal pathology.

Learning Outcomes:

Module 1

Basic Comprehensive Course

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 (muscle pain, inflammatory diseases)
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

Learning Outcomes:

Lectures

Participants of Module 1 will be asked to build foundation knowledge for the module with the 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 topics may provide complementary knowledge around spine care, which might differ from clinical surgical practice.

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. Imaging in low back pain

- Select appropriate radiologic exams for a clinical situation
- Discuss advantages and disadvantages of radiologic examination methods
- Be aware of radiation exposure when selecting an exam

3. Different perspectives on low back pain

- Discuss differential diagnosis of inflammatory spinal disorders
- Evaluate the role of muscle pain
- Discuss the role of non-surgical approaches (e.g., infiltration)

4. Low back pain: Rehabilitation and manual therapy

- Be aware of the principle of the bio-psycho-social model
- Discuss the principles of a rehabilitation program
- Select appropriate patients for manual therapy

5. Biomechanics 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

6. Finite element (FE) models

- Discuss applications for FE models
- Explain setup, boundary conditions and validation of FE models
- Interpretation and value of FE studies

7. 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

8. 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 research for disc regeneration

9. Epidemiology and economics

- Be aware of the impact of LBP on the society
- Explain outcome measures for quality of life and economy (QUALY)
- Discuss the impact of direct and indirect medical costs in LBP

10. Principles of 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

Learning Outcomes:

Session 1

Low Back Pain (LPB)

- **Case Discussion: Low Back Pain**
- **Clinical Examination**
- **Imaging in low back pain**
- **Different perspectives on low back pain**
- **Low back pain: Rehabilitation and Manual Therapy**

• Case Discussion: Low Back Pain

- Use clinical information to formulate a diagnosis and treatment plan
- Recognizing Serious Spine Disorders: Rule out red flags

• 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

• Imaging in low back pain

- Select appropriate radiologic exams for a clinical situation
- Discuss advantages and disadvantages of radiologic examination methods
- Be aware of radiation exposure when selecting an exam

• Different perspectives on low back pain

- Discuss differential diagnosis of inflammatory spinal disorders
- Evaluate the role of muscle pain
- Discuss the role of non-surgical approaches (e.g. infiltration)

• Low back pain: Rehabilitation and Manual Therapy

- Be aware of the principle of the bio-psycho-social model
- Discuss the principles of a rehabilitation program
- Select appropriate patients for manual therapy

Learning Outcomes:

Session 2

Fundamental Research

- **Biomechanic in Vitro Models**
- **Finite Element Models**
- **Biology of the Lumbar Intervertebral Disc**
- **Cellular and Molecular Research**
- **Discussion**

• 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

• Finite Element Models

- Discuss applications for FE models
- Explain setup, boundary conditions and validation of FE models
- Interpretation and value of FE studies

• Discussion

• 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

• 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 research for disc regeneration

• Discussion

Learning Outcomes:

Session 3

Epidemiology and Clinical Research

- **Epidemiology & Economics**
- **Evidence Based Medicine**
- **Principles of Clinical Research**
- **Outcome Measures**
- **Discussion**

• Epidemiology & Economics

- Be aware of the impact of LBP on the society
- Explain outcome measures for quality of life and economy (QUALY)
- Discuss the impact of direct and indirect medical costs in LBP

• 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

• Principles of 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

• 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

• Discussion

Learning Outcomes:

Session 4

Red Flags: Case Discussion

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Case: 5' – Small groups: 10' – Discussion: 15'

- **Traumatic Spinal Chord Injury**
- **Spondylodiscitis**
- **Primary Tumor of the Spine**
- **Inflammatory Diseases of the Spine**
- **Course Evaluation (Mandatory for All Participants)**

• Traumatic Spinal Chord Injury

- Recognize, 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 Evaluation (Mandatory for All Participants)

Course Chairperson:

Álvaro Lima PORTUGAL

Course Faculty:

Álvaro Lima PORTUGAL

Bruno Santiago PORTUGAL

João Pinto Coelho PORTUGAL

Jorge Alves PORTUGAL

Mário Vaz PORTUGAL

Pedro Santos Silva PORTUGAL

Raquel Gonçalves PORTUGAL

Teresa Nunes PORTUGAL

Scientific Programme

Module 1

Time	Topic	Faculty
-	-	-
07.30 - 08.00	Course Registration & Welcome Coffee	-
08.00 - 08.10	Introduction	-
-	-	-
	Session 1: Low Back Pain (LPB)	
08.10 - 08.30	Case Discussion: Low Back Pain	Álvaro Lima
08.30 - 09.00	Clinical Examination	Bruno Santiago
09.00 - 09.30	Imaging in low back pain	Teresa Nunes
09.30 - 10.00	Different perspectives on low back pain	Jorge Alves
10.00 - 10.30	Low back pain: Rehabilitation and Manual Therapy	João Pinto Coelho
-	-	-
Coffee Break 30 mins.		
-	-	-
	Session 2: Fundamental Research	
11.00 - 11.20	Biomechanic - in Vitro Models	Mário Vaz
11.20 - 11.40	Finite Element Models	Mário Vaz
11.40 - 11.50	Discussion	All participants
11.50 - 12.10	Biology of the Lumbar Intervertebral Disc	Raquel Gonçalves
12.10 - 12.30	Cellular and Molecular Research	Raquel Gonçalves
12.30 - 12.40	Discussion	All participants
-	-	-
Lunch Break 50 mins.		
-	-	-
	Session 3: Epidemiology and Clinical Research	
13.30 - 13.50	Epidemiology & Economics	Jorge Alves
13.50 - 14.10	Evidence Based Medicine	Bruno Santiago
14.10 - 14.30	Principles of clinical research	Pedro Santos Silva
14.30 - 14.50	Outcome Measures	Pedro Santos Silva
14.50 - 15.00	Discussion	All participants
-	-	-
Coffee Break 30 mins.		
-	-	-
	Session 4: Red flags: Case discussion - Case: 5' – Small groups: 10' – Discussion: 15'	
15.30 - 16.00	Traumatic Spinal Chord Injury	Jorge Alves
16.00 - 16.30	Spondylodiscitis	Pedro Santos Silva
16.30 - 17.00	Primary Tumor of the Spine	Bruno Santiago
17.00 - 17.30	Inflammatory Diseases of the Spine	Álvaro Lima
17.30 - 17.45	Course Evaluation (Mandatory for All Participants)	All participants
-	-	-
	End of Module	
-	-	-

Course Attendance is Mandatory

Recommended Reading

Part I Basic Module 1:

- **Conservative Therapy.**

B. Meyer and M. Rauschmann (Eds.)

- **Spine Surgery A Case-Based Approach.**
Switzerland: Springer.

- **E. Shiban and B. Meyer. (2019).**

Treatment for Acute, Subacute and Chronic Low Back Pain. B. Meyer and M. Rauschmann (Eds.), Spine Surgery A Case-Based Approach (pp. 3-8).
Switzerland: Springer.

- **M. Jägersberg and E. Tessitore. (2019).**

Indications for Emergency Surgical Treatment. B. Meyer and M. Rauschmann (Eds.), Spine Surgery A Case-Based Approach (pp. 9-15).
Switzerland: Springer.

Contacts

Course Organisation

SPPCV Sociedade Portuguesa de Patologia da Coluna Vertebral

Portuguese Spine Society

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Scientific Content

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Dr. Álvaro Lima

EUROSPINE, the Spine Society of Europe:

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Portuguese Spine Society

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Spanish Spine Society

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Thank you for your participation.

Spanish & Portuguese Spine Societies

COURSE DIPLOMA

Module 1: Basic Comprehensive Course

2021

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