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Spanish & Portuguese Spine Societies COURSE DIPLOMA 2024 Module 1 BASIC COMPREHENSIVE COURSE

Module 1:

—
Basic Comprehensive
Course

When:

—
1 // July // 2024

Where :

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Virtual

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Scientific Content

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Dr. Pedro Santos Silva

Quick Facts

When	1 July 2024
Where	Virtual
Maximum Attendees	30 delegates
Registration Fee	SPPCV/ GEER Members : 300€ Non Members: 400€
CME Credits	7.0 European CME credits (ECMEC®s) by the European Accreditation Council for Continuing Medical Education (EACCME®)
Language	English
Dress	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 virtual live session, the mandatory self-paced e-learning component will be available from 17 June 2024 on the SPPCV Moodle page. This component must be completed before the virtual live session.
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 component with at least 70% AND • Attended the virtual live session AND • Submitted the course evaluations for the e-learning and the virtual live session component
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 component with at least 70% AND • Attended the live session AND • Submitted the course evaluations for the e-learning and the live session component.

Important Note

- Completion of eLearning component is mandatory
- Attendance of the live session is mandatory

Target Audience

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

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:

eLectures

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.

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Upon completion of the eLearning component, participants should be able to:

- 1. Clinical Examination**
- 2. Imaging in low back pain**
- 3. Different perspectives on low back pain**
- 4. Low back pain: Rehabilitation and manual therapy**
- 5. Biomechanics in vitro models**
- 6. Finite element (FE) models**
- 7. Biology of the lumbar intervertebral disc**
- 8. Cellular and molecular research**
- 9. Epidemiology and economics**
- 10. Principles of clinical research**

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

LIVE SESSION:

Case Discussion: Low back pain

- Use clinical information to formulate a diagnosis and treatment plan
- Recognising serious spine disorders: Rule out red flags
- Select appropriate clinical tests
- Perform a safe and effective clinical examination
- Select appropriate communication skills with patients and their families
- Discuss differential diagnosis, clinical, biologic, imaging studies for inflammatory diseases of the spine
- Discuss of pain, muscular component in LBP
- Discuss the principles of the psycho-biosocial model and conservative treatment options in pain management and rehabilitation

Interactive Workshops

Biomechanics:

• Biomechanics in vitro

- 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 (FE) models

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

Interactive Workshops

Disc Biology:

• 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 for disc regeneration

Course Chairman:

Pedro Santos Silva PORTUGAL

Course Faculty:

Álvaro Lima PORTUGAL

Bruno Santiago PORTUGAL

João Pinto Coelho PORTUGAL

Jorge Alves PORTUGAL

Marco Parente PORTUGAL

Mário Vaz PORTUGAL

Pedro Santos Silva PORTUGAL

Raquel Gonçalves PORTUGAL

Teresa Nunes PORTUGAL

Scientific Programme

Module 1 - Basic Comprehensive Course

Time	Topic	Faculty
-	-	-
E-LEARNING PROGRAMME		
-	-	-
	Low Back Pain	
00:15	Clinical Examination	Bruno Santiago
00:20	Imaging in low back pain	Teresa Nunes
00:25	Different perspectives on low back pain	Jorge Alves
00:20	Low back pain: Rehabilitation and manual therapy	João Pinto Coelho
00:20	Knowledge check questions	
-	-	-
	Fundamentals & Clinical Research	
00:15	Biomechanic - In vitro models	Marco Parente, Mário Vaz
00:15	Finite element models	Marco Parente, Mário Vaz
00:25	Biology of the lumbar intervertebral disc	Raquel Gonçalves
00:25	Cellular and molecular research	Raquel Gonçalves
00:15	Epidemiology and economics	Jorge Alves
00:25	Principles of clinical research	Pedro Santos Silva
00:20	Knowledge check questions	
-	-	-
Monday, 1 July 2024		
LIVE SESSION PROGRAMME		
-	-	-
Time	Topic	Faculty
-	-	-
08:30 - 08:40	Introduction	Pedro Santos Silva
08:40 - 10:40	Case Based Discussion: Diagnostic algorithms and non-surgical approach to low back pain	Álvaro Lima, Pedro Santos Silva, Jorge Alves , João Pinto Coelho,
-	-	-
Coffee Break 20 mins.		
-	-	-
11:00 - 12:00	Workshop - Biomechanics - in vitro and finite element models	Mário Vaz
12:00 - 13:00	Workshop - Biology of intervertebral disc and cellular and molecular therapy	Raquel Gonçalves
		Course Attendance is Mandatory
-	-	-
-	-	-
	End of Module 1	
-	-	-
		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
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- **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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GEER Sociedad Española de Columna Vertebral

Spanish Spine Society

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Scientific Content

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Dr. Pedro Santos Silva

Thank you for your participation.

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COURSE DIPLOMA
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