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SPPCV  
SOCIEDADE  
PORTUGUESA  
DE PATOLOGIA  
DA COLUNA  
VERTEBRAL

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# Spanish & Portuguese Spine Societies COURSE DIPLOMA 2019 Module 4

**Module 4:**

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Trauma

**When:**

—

12-13 // July // 2019

**Where:**

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Lisbon - Portugal



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## Learning Outcomes:

# Module 4 Trauma

1. Select & Interpret Appropriate X-Ray, CT and MRI in Spinal Trauma
2. Classify Fractures of C0-2, Subaxial C-spine, TL-Spine and Sacrum
3. Compare Surgical and Conservative Treatment Methods at Different Levels, Including C0-2, Subaxial C, TL and Sacrum
4. Define Special features of Sonditions Including AS, Osteoporosis and Trauma of the Immature spine
5. Plan How to Prevent Complications in Spinal Trauma
6. Describe Characteristics of Spinal Shock and Spinal Cord Injury Syndromes

## Pre-Learning

Participants on Module 4 will be asked to prepare for the module by reviewing the AOSpine Injury Classification Systems to establish a strong working knowledge of spine fracture classification. It is really important to be able to classify spine fractures before joining the faceto-face component

of the module, so that we can use this knowledge to work on cases in small groups, with faculty. If you are not fully conversant with fracture classification, you will struggle to join in. Review of the papers and the self-assessment should take no more than 1 hour.

# Quick Facts

<b>When</b>	12-13 July 2019
<b>Where</b>	Lisbon / Portugal Course: Lusíadas Hospital - Rua Abílio Mendes, 12 Cad Lab Workshops: Nova Medical School. Lisbon Nova University: Campo dos Mártires da Pátria, 130
<b>Maximum Attendees</b>	30 delegates
<b>Registration Fee</b>	800 € for Members / 1000 € for Non Members Discounts for SPPCV, GEER members are available <i>Modules with a discount structure of 10% for 2 modules and 15% for 3 modules</i>
<b>CME Credits</b>	CME CREDITS: 14 European CME Credits (ECMEC <sup>®</sup> s) by European Accreditation Council for Continuing Medical Education (EACCME <sup>®</sup> )
<b>Language</b>	English
<b>Dress</b>	Casual
<b>Important Note</b>	Attendance at every session is mandatory A final exam will be performed 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

**Learning Outcomes:**

# **Session 1**

## **Cadaver LAB**

- **MIS Vertebral Body Augmentation**
- **MIS Pedicle Screw Fixation**

## • MIS Vertebral Body Augmentation

- Explain the important steps of vertebral body augmentation including
  - Correct patient positioning
  - Use of C-arm fluoroscopy
  - Placement of Jamshidi needle
  - Changing of Jamshidi to working cannula
  - Injecting the cement into the vertebral body

## • MIS Pedicle Screw Fixation

- Explain the important steps of MIS pedicle screw fixation and augmentation
  - Correct patient positioning
  - Use of C-arm
  - Placement of Jamshidi needle and guidewire
  - Drilling and screw placement
  - Cement Injection
  - Accommodation of rod percutaneously

**Learning Outcomes:**

## **Session 2**

# **Trauma of the Upper C-Spine**

- **Imaging of Cervical Trauma**
- **Trauma of C0-C2: Classification & Management**



## • Imaging of Cervical Trauma

- Select appropriate imaging for suspected cervical spinal injury
- Evaluate options for x-ray views
- Select CT and/or MRI as appropriate
- Differentiate between requirements following major and minor cervical spine trauma

## • Trauma of C0-C2: Classification & Management

- Define the role of ligaments in cervical spine stability
- Classify and relate to treatment
  - Occipital condyle fractures
  - Occipito-cervical dislocation
  - Occipito-atlantal dislocation
  - Axial atlanto-axial Instability
  - Atlas (C1) fracture
  - Axis (C2) fracture
  - Traumatic spondylolisthesis C2

**Learning Outcomes:**

## **Session 3**

# **Trauma of the Subaxial C-Spine**

• **Trauma of Subaxial C- Spine: Classification & Management**

## • Trauma of Subaxial C- Spine: Classification & Management

- Estimate the incidence of and classify using the AO classification
- Use other classifications to determine treatment and prognosis
- Anticipate diagnostic pitfalls
- Evaluate non-surgical management options and when appropriate
- Recognise indications for surgical management
  - Emergency
  - Urgent
  - Elective
- Justify different surgical approaches (anterior vs posterior, combined ant-post or post -ant)

**Learning Outcomes:**

## **Session 4**

# **Trauma of the Thoracolumbar Spine & Sacrum**

- **Imaging of Thoracic/Thoracolumbar Trauma**
- **Trauma of TL Spine: Classification & Management**
- **Sacral Fractures: Classification & Management**

## • **Imaging of Thoracic/Thoracolumbar Trauma**

- Use the AO classification
- Select appropriate imaging for major and minor trauma
- Assess x-ray images
- Define the indications of CT and MRI as appropriate
- Identify specific conditions with compromised spinal function

## • **Trauma of TL spine: Classification & Management**

- Recognise the signs and symptoms of TL spine trauma
- Differentiate Denis, AO and TLICS classifications
- Explain the role of PLC for burst fractures
- Evaluate surgical techniques in:
  - Anterior surgery including MIS techniques
  - Posterior surgery including MIS techniques

## • **Sacral Fractures: Classification & Management**

- Describe the relevant anatomy
- Differentiate sacral fracture types
- Use the AO classification
- Recognize signs and symptoms of sacral fractures
- Compare surgical vs conservative treatment
- Evaluate surgical options

**Learning Outcomes:**

## **Session 6**

# **Metabolic Spine Diseases & Pediatric Spine Trauma**

- **Trauma of Spine with Ankylosing Spondylitis: Features & Management**
- **Osteoporotic Fractures: Diagnosis & Management**
- **Paediatric Spinal Trauma: Features & Management**

## • Trauma of Spine with Ankylosing Spondylitis: Features & Management

- Explain the aetiology of ankylosing spondylitis
- Define the role of the spine surgeon in AS
- Formulate a surgical management plan for AS fractures
- Anticipate particular difficulties in this patient population
- Explain what kind of imaging is mandatory and why

## • Osteoporotic Fractures: Diagnosis & Management

- Define osteoporosis
- Describe medical management of osteoporosis
- Summarize the diagnosis of osteoporotic fractures
- Use the AOSpine osteoporotic fracture classification
- Evaluate surgical options
- Outline the indications for vertebral augmentation procedures
- Outline indications for spinal instrumentation±VBR

## • Paediatric Spinal Trauma: Features & Management

- Outline features of the immature cervical and thoracolumbar spine
- Define SCIWORA/SCIWORET
- Explain mechanism of:
  - C-spine injury
  - Lumbar apophyseal injuries
- Plan appropriate investigations and management of injuries

**Learning Outcomes:**

## **Session 7**

# **Post-Traumatic Kyphosis & Spinal Cord Injury**

- **Prevention and Management of Post-traumatic Kyphosis**
- **Spinal Shock and Incomplete SCI Syndromes**



## • **Prevention and Management of Post-traumatic Kyphosis**

- Discuss the reasons of post traumatic kyphosis
- Formulate therapeutic goals
- Explain how to restore sagittal balance
- Evaluate surgical options
- Justify a multidisciplinary team approach

## • **Spinal Shock and Incomplete SCI Syndromes**

- Explain spinal shock and its pathomechanism
- Define the different types of incomplete spinal cord injury
- Classify SCI by using the ASIA impairment scale and explain its clinical and surgical relevance
- Describe the clinical symptoms and pathomechanism of Central Cord Syndrome
- Discuss the importance of timing of surgery
- Explain why there is no role for methylprednisolone in SCI (NASCIS I-III)

# Course Chairman:

**Manuel Tavares de Matos** PORTUGAL

**Antonio Martín Benlloch** SPAIN

# CAD Lab Chairman:

**Manuel Tavares de Matos** PORTUGAL

**Antonio Martín Benlloch** SPAIN

# Course Faculty:

**Antonio Martín Benlloch** SPAIN

**Artur Teixeira** PORTUGAL

**Bruno Santiago** PORTUGAL

**Carla Reizinho** PORTUGAL

**Claudio Cano Gómez** SPAIN

**Jesús Betegón Nicolas** SPAIN

**João Pedro Maia Gonçalves** PORTUGAL

**José María López Puerta González** SPAIN

**Jose Ramirez Villaescusa** SPAIN

**Manuel Tavares de Matos** PORTUGAL

**Máximo-Alberto Díez Ulloa** SPAIN

**Pedro Varanda** PORTUGAL

**Raquel Lax Pérez** SPAIN

# Scientific Programme

## Module 4

Day 1 - Friday, 12 July 2019

Time	Topic	Faculty
-	-	-
08.00 - 08.15	Course Registration & Welcome Coffee	
08.15 - 08.45	Cad Lab discussion	M.Tavares de Matos
08.45 - 09.00	Go To the Lab	
-	-	-
	<b>Session 1: Cadaver Lab</b>	
09.00 - 10.45	Group A: MIS Vertebral Body Augmentation; MIS Percutaneous Pedicle Screw Placement & Augmentation	All
09.00 - 10.45	Group B: PL Lumbar Approach and Pedicle Placement	All
-	-	-
	Coffee Break 30 mins.	
-	-	-
11.15 - 13.00	Group B: MIS Vertebral Body Augmentation; MIS Percutaneous Pedicle Screw Placement & Augmentation	All
11.15 - 13.00	Group A: PL Lumbar Approach and Pedicle Placement	All
-	-	-
	Lunch 60 mins.	
-	-	-
14.00 - 14.30	Pre-Course Assessment	All
14.30 - 15.00	Introduction	M. Tavares de Matos
-	-	-

Course Attendance is Mandatory

## Day 1 - Friday, 12 July 2019 (continuation)

Time	Topic	Faculty
-	-	-
	<b>Session 2: Trauma of Upper C-Spine (Artur Teixeira)</b>	
15.00 - 15.20	Imaging of Cervical Trauma	Raquel Lax Pérez
15.20 - 15.40	Trauma of CO-C2: Classification & Management	Bruno Santiago
15.40 - 16.00	Discussion	All
16.00 - 16.30	Case Discussion	
	<i>Case presentation 1 (5´)</i>	Bruno Santiago
	Discussion and solution (10´)	All
	<i>Case presentation 2 (5´)</i>	Antonio Martín Benlloch
	Discussion and solution (10´)	All
-	-	-
	Coffee Break 30 mins.	
-	-	-
	<b>Session 3: Trauma of Subaxial C-Spine (Carla Reizinho)</b>	
17.00 - 17.20	Trauma of Subaxial C-Spine: Classification & Management	Claudio Cano Gómez
17.20 - 17.30	Discussion	All
17.30 - 18.00	Case Discussion	
	<i>Case presentation 1 (5´)</i>	Pedro Varanda
	Discussion and solution (10´)	All
	<i>Case presentation 2 (5´)</i>	Jesús Betegón Nicolas
	Discussion and solution (10´)	All
-	-	-
	<b>End of Day 1</b>	
-	-	-

**Cadaver Lab Workshops:** we inform all the participants that there is a variety of different similar products that they can be use beyond the ones provided at this event.

# Scientific Programme

## Module 4

Day 2 - Saturday, 13 July 2019

Time	Topic	Faculty
-	-	-
08.00 - 08.30	Attendance Signature & Coffee	-
-	-	-
	<b>Session 4: Trauma of the TL Spine and Sacrum (Manuel Tavares de Matos)</b>	
08.30 - 08.50	Imaging of Thoracic/Thoracolumbar Trauma	José Ramirez Villaescusa
08.50 - 09.10	Trauma of TL Spine: Classification & Management	Pedro Varanda
09.10 - 09.20	Discussion	All
09.20 - 09.50	Case Discussion (TL)	
	<i>Case presentation 1 (5´)</i>	Jesús Betegón Nicolas
	Discussion and solution (10´)	All
	<i>Case presentation 2 (5´)</i>	José María López Puerta González
	Discussion and solution (10´)	All
09.50 - 10.10	Sacral Fractures: Classification & Management	Artur Teixeira
10.10 - 10.40	Case Discussion (Sacral)	
	<i>Case presentation 1 (5´)</i>	Artur Teixeira
	Discussion and solution (10´)	All
	<i>Case presentation 2 (5´)</i>	Raquel Lax Pérez
	Discussion and solution (10´)	All
-	-	-
	Coffee Break 30 mins.	
-	-	-
	<b>Session 5: Small Group Discussions</b>	
11.10 - 11.45	Classification of Subaxial C-Spine	Moderator: Antonio Martín Benlloch
	Case presentation 5´	J.P.Maia Gonçalves
	Discussion within individual groups 10´	All
	Opinions of each group 10´	All
	Case solution 5´	J.P.Maia Gonçalves
	Discussion 5´	All
11.45 - 12.20	Classification of TL-Spine	Moderator: Pedro Varanda
	Case presentation 5´	José Ramirez Villaescusa
	Discussion within individual groups 10´	All
	Opinions of each group 10´	All
	Case solution 5´	José Ramirez Villaescusa
	Discussion 5´	All
-	-	-

Course Attendance is Mandatory

## Day 2 - Saturday, 13 July 2019 (continuation)

Time	Topic	Faculty
-	-	-
Lunch 60 mins.	-	-
-	-	-
	<b>Session 6: Metabolic Spine Diseases &amp; Pediatric Spine Trauma (Máximo-Alberto Díez Ulloa)</b>	
13.20 - 13.40	Trauma of Spine with Ankylosing Spondylitis: Features & Management	Máximo-Alberto Díez Ulloa
13.40 - 14.00	Osteoporotic Fractures: Diagnosis & Management	J.P.Maia Gonçalves
14.00 - 14.20	Paediatric Spinal Trauma: Features & Management	José María López Puerta González
14.20 - 14.30	Discussion	All
14.30 - 15.00	Case Discussion (Osteoporotic Fractures) <i>Case presentation 1 (5´)</i> Discussion and solution (10´) <i>Case presentation 2 (5´)</i> Discussion and solution (10´)	M. Tavares de Matos All Pedro Varanda All
-	-	-
Coffee Break 30 mins.	-	-
-	-	-
	<b>Session 7: Posttraumatic Kyphosis &amp; Spinal Cord Injury (J.P. Maia Gonçalves)</b>	
15.30 - 15.50	Prevention and Management of Post- Traumatic Kyphosis	M. Tavares de Matos
15.50 - 16.20	Case Discussion <i>Case presentation 1 (5´)</i> Discussion and solution (10´) <i>Case presentation 2 (5´)</i> Discussion and solution (10´)	M. Tavares de Matos All Antonio Martín Benlloch All
16.20 - 16.40	Spinal Shock & Incomplete Spinal Cord Injury Syndromes	Carla Rezinho
16.40 - 16.50	Discussion	All
16.50 - 17.20	Case Discussion (Incomplete SCI Syndromes) <i>Case presentation 1 (5´)</i> Discussion and solution (10´) <i>Case presentation 2 (5´)</i> Discussion and solution (10´)	Carla Rezinho All Claudio Cano Gómez All
17.20 - 17.35	Post Course Assessment	All
17.35 - 17.50	Course Evaluation (Mandatory for all participants)	All Participants
17.50 - 18.05	Closing Remarks, Diplomas & End of Module	All
-	-	-
	<b>End of Module</b>	
-	-	-

# Contacts

## **EUROSPINE, the Spine Society of Europe:**

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## **SPPCV Sociedade Portuguesa de Patologia da Coluna Vertebral**

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## **GEER Sociedad Española de Columna Vertebral**

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## Course Organisation

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### Scientific Content

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Dr. Manuel Tavares de Matos





**Thank you**  
**for your participation.**

**Spanish & Portuguese Spine Societies**  
**COURSE DIPLOMA**  
**Module 4: Trauma**  
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