

### TEACHER'S GUIDE SHEET

MODULE	BIOMECHANICS OF SPINE
DIDACTIC UNIT	<p>D: INSTRUMENTED ANALYSIS OF THE SPINE</p> <p>D.5. How do I interpret a biomechanics instrumented analysis report in a case of spinal pathology?</p>
TITLE OF ACTIVITY/CLASS	Pathology biomechanical assessment of the spine
OBJECTIVES	<ul style="list-style-type: none"> <li>• To become familiar with the interpretation of the results obtained from a cervical kinematic assessment in a normal population.</li> <li>• To understand the interpretation of the results obtained from an assessment of the cervical muscle strength in a pathological population.</li> <li>• To know the interpretation of the results obtained from a lumbar kinematic assessment in a pathological population.</li> <li>• To understand the interpretation of the results obtained from the assessment of the lumbar strength in a pathological population.</li> <li>• To learn how to work with the pathological results of a biomechanical assessment of the cervical and/or lumbar spine through clinical cases.</li> </ul>
DURATION	1h' OF CLASS MATERIAL IN TOTAL, including the PowerPoint presentation (about 30') and the class activity (about 30')
PREVIOUS KNOWLEDGE REQUIRED	It is advisable for the student to have at least read the theoretical document associated with this module (.pdf provided in the autonomous work teacher's material). The student should review the lumbar biomechanical instrumented assessment protocols in didactic unit D.2 and the results in didactic unit D.3 and D.4.



<b>TECHNICAL REQUIREMENTS</b>	PC with software for video and audio playback as well as for PowerPoint presentations. Appropriate projector and screen to show the contents to all the students during class.
<b>RESOURCES NEEDED</b>	Activity student in pdf. One physical copy per student.

## DESCRIPTION OF THE CLASS/ACTIVITY

A PowerPoint will be used by the teacher to guide the class:

### **PART ONE:**

The teacher will introduce the biomechanical analysis techniques that can be used in a biomechanical assessment of cervical and lumbar pathologies, showing graph examples of the results that are most frequently obtained using this type of technique. Generally, the results section will be structured in:

- Measuring technique
- Type of analysis
- Graph
- Interpretation of the results

The teacher will take advantage of the didactic content included in Autonomous to support the explanation of each result.

### **PART TWO: EXAMPLE OF CLINICAL CASES**

In the second part of the class, the teacher shows and explains an example of the results of the functional biomechanical assessment of a person with cervical pathology and another example of a person with lumbar pathology through biomechanical tests that the student has seen in class.

### **PART THREE: CLASS ACTIVITY**

After the explanation about the pathological results that can be found in this type of assessment, the students will perform an activity in class to analyse and interpret the results of two clinical cases evaluated using an instrumental technique.

The objective of the class activity is for the students to work on the interpretation of the results obtained in a clinical case of cervical pain and another case of low back pain by analysing how the limitation can alter the mobility of the spine or the overall performance of an activity.

This activity can be done individually or in groups. The recommended maximum number of students per group is 4-5 people. The teacher decides if all the groups work on both cases, or each group analyses one case.

In order to perform this activity, the teacher must verify that each student has a copy of the clinical case on which they are going to work.

### Activity:

The students must carefully read the data included in the clinical cases (documents D.5\_CervicalCase and D.5\_LumbarCase) and review the results shown in the document provided.

Next, after reviewing the results of the assessment, they must answer the questions that the teacher provides, this answers are shown and explain within the pertinent slides and comments of the Class Presentation power point.

After discussing in groups for approximately 10', the teacher will collect the answers provided by each group and they will correct them. The teacher can show the solutions on the PowerPoint itself, use software like Kahoot! or also a system of colour cards for each answer. The solution of each question proposed is embedded in the additional text of every slide in the class presentation document(power point document).

The information about the cases included in the autonomous document can help the teacher.

At the end, the teacher will answer the questions that the students may have.

### TASKS TO BE DEVELOPED BY THE STUDENT OUTSIDE THE CLASS (if required)

It is not compulsory to perform any previous tasks, although it is recommended that the students review the documents provided in the class as well as the previous lessons.

### EVALUATION METHODOLOGY

The teacher will assess the students through their motivation and participation in the discussion groups.

In case the teacher wishes so, they can quantify correct answers from the clinical cases as well.

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