

TEACHER'S GUIDE SHEET

MODULE	BIOMECHANICS OF SPINE
DIDACTIC UNIT	D: INSTRUMENTED ANALYSIS OF THE SPINE D.1. Which cervical biomechanical instrumented evaluation protocols exist?
TITLE OF ACTIVITY/CLASS	Which cervical biomechanical instrumented evaluation protocols exist? Designing an assessment protocol
OBJECTIVES	<ul style="list-style-type: none"> • Remembering the main elements that define a biomechanical assessment test • Knowing some protocols used for the kinematic evaluation of the cervical spine • Knowing some protocols used for the assessment of muscle strength and activity in cervical spine • Working on the definition of a cervical mobility assessment protocol
LENGTH	1h' OF CLASS MATERIAL IN TOTAL, including the power point presentation (about 30') and the class activity (about 30')
PREVIOUS KNOWLEDGE REQUIRED	In order to fully understand the concepts explained during class, and to work fluently on the activity, the student should revise in advance the video associated to this didactic unit (provided in the autonomous work teacher's material)
TECHNICAL NEEDS	PC with software for the reproduction of a power point presentation. Projector and screen to show contents appropriately to all the students during class. It is also advisable to count on internet connection, to be able to access to the hyperlinks provided in the presentation if the teacher finds it appropriate.



RESOURCES NEEDED	<p>The class distribution should allow the gathering of the students into a series or working groups.</p> <p>Each group should count on at least one of each of the scientific papers recommended to help them during the activity (articles from Strimpakos et al., parts I and II). Also, they should count on the pertinent resources to be able to write down the results of the activity proposed, whether it is done in paper, or in a PC.</p>
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DESCRIPTION OF THE CLASS/ACTIVITY

A power point will be used by the profesor in order to guide the class:

1st part: PROFESOR EXPLANATION (20' TO 30')

Power point class presentation

First , some knowledge about the main elements that define a biomechanical assessment test, as well as some protocols for the instrumented analysis of the cervical spine will be shared. The teacher is responsible for explaining the theoretical parts of the power point class presentation, which is in turn based on that from the teacher's autonomous work section (video an power point). It is important to highlight the importance of defining an assesment protocol thoroughly, taking into account all possible matters that could alter the measurement results.

2nd part: CLASS ACTIVITY (30' TO 40')

Power point class presentation (slide 21)

The teacher will introduce this workshop by means of the last slide of the power point presentation (slide 21), where basic instructions for the students are given.

The students will gather in groups of X people (depending on the total amount of students participating, the teacher will decide how many members will form each group). Each group should count on the necessary recources to write down the results of the activity (either in paper or in a PC) and on the scientific papers from Strimpakos et al, which the can use as a support to perform the activity.

Each group of students should then discuss and write down the questions proposed in the aforementioned slide:

- Make a list of factors that can influence the measurement of the strength and mobility of the spine and its results.
- Organize these factors into groups, depending on: f they relate to the gesture to be measured, to the protocol designing itself, to the orders and instructions given to the subject, to factors external to the test, or to others
- Design a protocol for measuring cervical mobility through kinematic analysis. You must define gesture, times, number of repetitions, posture, orders and instructions and all the information you can.

Finally, and depending on the remaining time of class and the number of student groups, each group will explain their ideas and the protocol designed to the rest of the students.

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

In order to fully understand the concepts explained during class, the student should revise immediately after the class, the 2 scientific papers from Strimpakos et al which they have made use of during the activity.

EVALUATION METHODOLOGY

OPTIONAL (only in case the teacher decides to evaluate the activity; ALSO in case the teacher decides so, they can choose another evaluation system or punctuation grading if they find it more appropriate in the given context)

To evaluate the activity, the teacher might have into account:

- The number of factors proposed that could affect the protocol, and if they are adequate. (from 0 = insufficient number of factor proposed and not adequate to 5 = a far enough amount of factors proposed, all of them fully adequate).*
- The level of depth and detail in which the protocol proposed is defined. The clarity of the explanation in class (from 0 = subject only superficially adressed and not clearly exposed to 5 = subject treated in depth and explaind with far enough clarity).*

Final punctuation (from 0-10)= the sum of the two punctuations proposed.

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