Erasmus+

Development of innovative training solutions in the field of functional evaluation aimed at updating of the curricula of health sciences schools

MODULE BIOMECHANICS OF SPINE

Didactic Unit D: INSTRUMENTED ANALYSIS OF THE SPINE

D.1. Which cervical biomechanical instrumented evaluation protocols exist?

Self-Questionnaire

Politechnika Śląska · IBV Instituto de Biomecánica de Valencia · Universitat de València · AMSE The Association of Medical Schools in Europe

Self-questionnaire:

- Self-questionnaire to test knowledge acquired.
- This will include 5 objective questions with 4 possible answers.
- Mark the correct answer in bold.

Types of questions:

- **Drag and drop into text:** Students select missing words or phrases and add them to the text by dragging boxes to the correct location. Items may be grouped and used more than once.
- **Drag and drop markers:** Students drop markers into a selected area on a background image. Unlike the drag-and-drop-onto-image question type, there are no predefined underlying areas visible to the student.
- **Drag and drop onto image:** Students make selections by dragging text, images or both to predefined boxes on a background image. Items may be grouped.
- **Matching:** A list of sub-questions is provided, along with a list of answers. The respondent must match the correct answers with each question.
- **Multichoice:** With the Multichoice question type, you can create single-answer and multiple-answer questions, include pictures, sound or other media in the question and/or answer options and weight individual answers.
- **Select missing words:** Students select a missing word or phrase from a dropdown menu. Items may be grouped and used more than once.
- **True/False:** In response to a question (which may include an image), the respondent selects from two options: True or False.

Question 1

We can use any protocol we like to evaluate the cervical spine from a kinematic point of view, provided that:

□ A We know how to choose the right instrument and technique;

□ B The biomechanical model chosen and subsequent data processing are correct.

□ C There are standardised criteria for interpreting the results.

□ **D** **A, B and C are correct.**

Question 2

The Multi Cervical Unit system enables evaluation of:

□ A The cervical spine's isometric strength.

□ B The cervical spine's mobility.

□ C The trapezius' muscular activation.

□ **D** **A and B are correct.**

Question 3

Answer true or false (T or F):

□ A The instructions given to the subject prior to and during the test seem to be important in creating an evaluation protocol. **T**

□ B According to the AMA guides, for evaluation of cervical mobility the same movement must be performed at least three times and the measurements must differ by less than 20% between themselves. **F**

□ C In evaluating isometric strength via manual isometric dinamometry, it is important to accompany the subject's movement, enabling the joint to move throughout its entire range. **F**

□ D EMG is only used for the cervical spine to measure the flexion-relaxation phenomenon, and there is a strict protocol. **F**

Question 4

Kinematic evaluation of the cervical spine, during a task such as staring at a series of light displays and noting down the symbol that appears (there may be more than one correct answer):

□ **A** **Enables different movements to be evaluated within the same gesture, such as rotation and extension.**

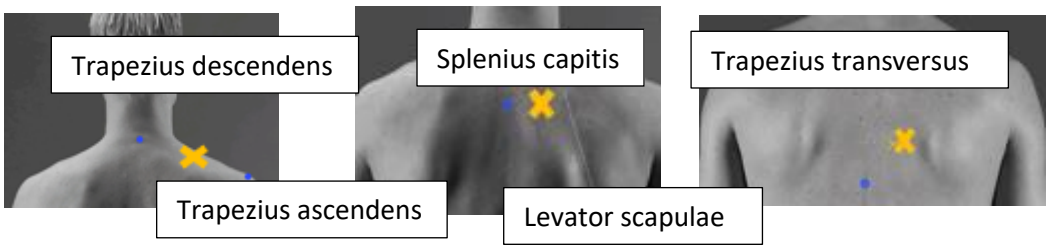
□ B Can only be carried out via photogrammetry.

□ C The spine can only be evaluated from a kinematic point of view by repeating cyclic movements.

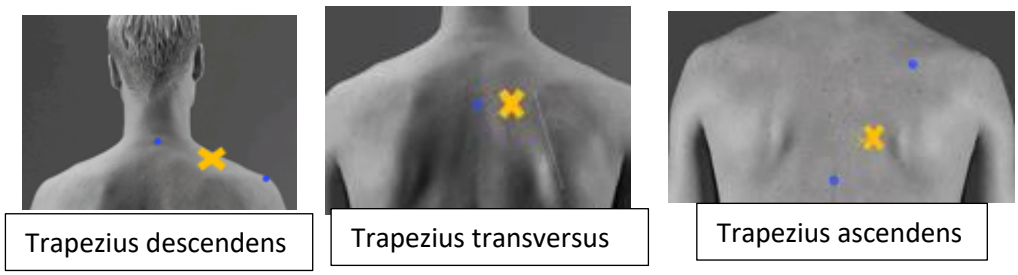
□ **D** **Values can be obtained related to the quality of the movement, such as acceleration, harmony, range and velocity.**

Question 5

According to the SENIAM protocols, the following points refer to placing EMG electrodes for which muscular fibres (match each answer to its corresponding image).



Correct answers.



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