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.2. Which dorsal and lumbar 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 aimed to test the knowledge acquired.
- It will include 5 objective questions with 4 answer options.
- Mark in bold the correct answer.

Type of questions:

- **Drag and drop into text:** Students select missing words or phrases and add them to text by dragging boxes to the correct location. Items may be grouped and used more than once.
- **Drag and drop markers:** Students drop markers onto a selected area on a background image. Unlike the drag and drop onto image question type, the are no predefined areas on the underlying that are 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 the 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 (that 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 dorsolumbar 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 MicroFET2 system enables:

□ **A** **The spine's isometric strength (force) to be assessed.**

□ B The lumbar spine's mobility to be assessed.

□ C The erector spinae's muscular activation to be assessed.

□ 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 following 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 10% or 5º between each other. **T**

□ C Isokenitc evaluation involves measuring force within a free range and velocity chosen by the subject being assessed. **F**

□ D The lumbar flexion-relaxation phenomenon refers to a lack of muscular activation (with an electromyographic silence) at maximum lumbar flexion for pathological subjects. **F**

Question 4

Kinematic evaluation of the lumbar spine during a task such as lifting boxes of different weights from the ground (there may be more than one correct answer):

□ **A** **Enables the angle of flexion of the lumbar spine to be evaluated.**

□ B Can only be carried out via photogrammetry.

□ **C** **Enables the speed and acceleration at which the gesture is performed to be evaluated.**

□ **D** **Enables us to see how the weight (load) affects the pattern of motion.**

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)?

Longissimus dorsi

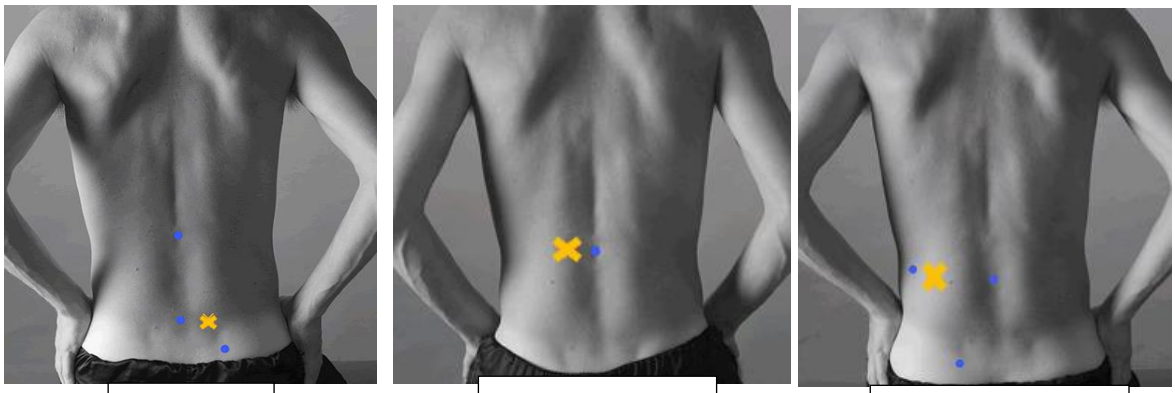
Erector spinae longissimus

Quadratus lumborum

Multifidus

Erector spinae iliocostalis

Correct answers.



Multifidus

Erector spinae longissimus

Erector spinae iliocostalis

Politechnika Śląska

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AMSE THE ASSOCIATION OF MEDICAL SCHOOLS IN EUROPE