

Instrumental Assessment in Physiotherapy of the Locomotor System

Code: 102984
ECTS Credits: 6

Degree	Type	Year	Semester
2500892 Physiotherapy	OB	2	1

Contact

Name: Josep Medina Casanovas
Email: Josep.Medina@uab.cat

Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Teachers

Jordi Cuartero Archs

External teachers

Josep Padros Valls

Prerequisites

It is recommended to have acquired basic knowledge and competences of Human Anatomy I and II, Biological Bases of the Human Body, as well as Function of the Human Body.

Objectives and Contextualisation

This subject intends to give the student the necessary knowledge for the evaluation of the patient with pathology of the locomotor system, as well as of the nervous system, based on the indispensable criteria that describe the need to evaluate to be able to plan a treatment physiotherapist. This subject will be carried out simultaneously with the subjects of Physiotherapy in Neurology I, Pathological Clinical Concepts. Diagnostic Techniques, Clinical Evaluation in Locomotor System Physiotherapy, Therapeutic Techniques in Locomotor System Physiotherapy, Physiotherapy in Locomotor System Pathology I, and Medico-Surgical Pathology, necessary and very useful knowledge to give the patient a quality Healthcare and an optimal return to functionality.

- Demonstrate the importance of monitoring and instrumentation to plan patient treatments.
- To adequately evaluate the different ailments of the patients.
- Determine the evolutionary changes or involved of the patients in relation to certain treatments.

Competences

- Analyse and synthesise.

- Apply quality-assurance mechanisms in physiotherapy practice, in accordance with the recognised and validated criteria.
- Develop independent learning strategies
- Display critical reasoning skills.
- Display knowledge of the morphology, physiology, pathology and conduct of both healthy and sick people, in the natural and social environment.
- Display knowledge of the physiotherapy methods, procedures and interventions in clinical therapeutics.
- Evaluate the functional state of the patient, considering the physical, psychological and social aspects.
- Express ideas fluently, coherently and correctly, both orally and in writing.
- Integrate, through clinical experience, the ethical and professional values, knowledge, skills and attitudes of physiotherapy, in order to resolve specific clinical cases in the hospital and non-hospital environments, and primary and community care.
- Make a physiotherapy diagnosis applying internationally recognised norms and validation instruments.
- Make the most correct decisions in given situations.
- Organise and plan.
- Participate in drawing up physiotherapy protocols on the basis of scientific evidence, and promote professional activities that facilitate physiotherapy research.
- Solve problems.

Learning Outcomes

1. Analyse and synthesise.
2. Apply physiotherapy methods, procedures and interventions in the different clinical specialisations that treat conditions of the musculoskeletal system.
3. Apply specific physiotherapy methods to promote a healthy lifestyle, in relation to the musculoskeletal system, through health education.
4. Describe and analyse human movement.
5. Describe and analyse the evidence-based physiotherapy protocols for disorders of the musculoskeletal system.
6. Describe and apply advanced evaluation procedures in physiotherapy in order to determine the degree of damage to the musculoskeletal system and possible functional repercussions.
7. Describe clinical practice guidelines applied to disorders of the musculoskeletal system.
8. Develop independent learning strategies
9. Display critical reasoning skills.
10. Establish diagnostic physiotherapy hypotheses through clinical cases with disorders of the musculoskeletal system.
11. Express ideas fluently, coherently and correctly, both orally and in writing.
12. Identify the physiological and structural changes that may occur as a result of physiotherapy intervention in disorders of the musculoskeletal system.
13. Locate the different muscles through surface palpation.
14. Make the most correct decisions in given situations.
15. Organise and plan.
16. Solve problems.
17. Use physiotherapy to treat clinical cases involving musculoskeletal system conditions.

Content

1 - Measure and evaluation. What and why

- Observational methodology
- Observation vs. Experimentation

2 - Deficiency, disability and handicap

- ICDH model
- CIF model

3 - General exploration:

1. Modulating factors and biotypology

- Intrinsic
- Extrinsic
- Physiological
- Psychological
- Pathological modulating factors

4 - Exploration of lesions of the nervous roots by neurological level:

- Upper extremity
- Trunk
- Lower extremity

5 - Introduction muscular balance (Goniometry and Oxford Scale)

- Measuring variables
- Interferences in measure
- Measurement systems
- New conception of the muscle

6- Joint Balance and Balance of the Trunk and the Head (Goniometry and Oxford Scale)

- Measuring variables
- Measurement systems
- Special tests

7- Stance and balance

- Posture analysis
- Characteristics and main evaluation systems
- Functional ladders

8- Normal human walking

- Biomechanics of the normal march
- Analysis of the personal employer
- Muscle dysfunction and walking
- Functional ladders

9- Communication with the patient as an instrumental tool

- Contents of the communication
- Variables and interferences in communication
- Expectations and beliefs
- Legibility

10- General evaluation of spinal cord injury and brain damage. Validated scales

11- Specific techniques of functional evaluation:

- Daily cleansing activities. Validated scales
- Upper Tip Validated scales
- Lower extremity Validated scales

12- Kinematic, kinetic, electromyographic analysis and pressure map. Interpretation of results.

13 - Evaluation of technical aids:

a. Support products

a.1. Upper limbs

a.2. Lower limbs

a.3.Trunk

14 -Assessment of the perception of health and quality of life. Validated scales

Methodology

The methodology is based on theory and practice.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Theory	30	1.2	2, 3, 4, 6, 10, 12, 13, 17
laboratory practice	15	0.6	2, 3, 4, 6, 7, 10, 12, 13, 17
Type: Autonomous			
PREPARATION OF WRITTEN WORKS	31.5	1.26	1, 5, 8, 11, 15
READING ARTICLES /REPORTS OF INTEREST	40	1.6	1, 5, 8, 11, 15
Self Study	30	1.2	1, 5, 8, 11, 15

Assessment

The evaluation of the subject includes the following sections:

30% of the final grade will be written test:

- Multiple Choice. 50 questions at 1 point per question. Errors minus 0.25 points.

30% of the final grade will be a case-resolution case (2 cases):

- Determine explorations to be carried out in each clinical case. Demonstrate the suitability of scales administered for each case.

20% of the final mark will be in relation to the contributions and contributions to the Virtual Campus UAB:

Folder Clipping:

- After finishing issues 1,2,3,7 and 9, an article related to the content of the subject will be included in Clipping.

20% of the final grade will be work, Poster Folder:

- Scientific poster. Presentation of a subject from the scientific poster.

Art 116.8. When it is considered that the student has not been able to provide sufficient evidences of evaluation in the act, this subject will be assigned as non-evaluable

Students who have not passed the insurance by means of the continuous assessment may submit to a final exam or a final recovery test.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Narrative records	20 %	1	0.04	1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13, 15, 9, 17
Oral Assessment :structured test	20 %	0.5	0.02	5, 11, 14, 9, 16
Written avaluation:objective tests	60 %	2	0.08	2, 3, 4, 6, 10, 12, 13, 14, 17, 16

Bibliography

- Sánchez Blanco, I. i cols., Manual SERMEF de rehabilitación y medicina física. Sociedad Española de Rehabilitación y Medicina física, Ed. Panamericana, 2006
- Shumway-Cook,A,Woollacott, MH., Motor Control, Theory and practical Applications 2nd edition. Lippincot Williams and Wilkins, 2000
- Alcott, D., Dixon, K., Swann, R. (1997). The reliability of the items of the Functional Assessment Measures (FAM): differences in abstractness between FAM items. *Disabil Rehabil.* 19(9):355-8.
- Badia, X., Salamero, M., Alonso, J. (2002). La medida de la salud. Edimac, 3ª edición.
- Barbeau, H., Ladouceur, M., Norman, K., Pépin, A., Leroux, A. (1999).Walking After Spinal Cord Injury : Evaluation, Treatment, and Functional Recovery. *Arch Phys Med Rehabil.* Vol. 80, February
- Cid Ruzafa J., Damián Moreno J. (1997). Valoración de la discapacidad física: El Índice de Barthel. *Rev. Esp Salud Pública;* 71: 127 - 137.
- Harada, N., Chiu, V., Stewart, A. Mobility-Related Function in Older Adults: Assessment With a 6-Minute Walk Test. (1999).*Arch Phys Med Rehabil.* Vol. 80.
- Hayek, V.E., Gagnon, S., Ruderman, J. E. (1997). Cognitive and Fuctional Assessments of Stroke Patients: An Analysis of Their Relation. *Arch Phys Med Rehabil.* 78:1331-7.
- Heinemann, K. (2003). Introducción a la metodología de la investigación empírica. Editorial Paidotribo.
- Hoppenfeld, S. (1979). Exploración física de columna vertebral y extremidades. Manual Moderno.
- Hoppenfeld, S. (1981). Neurología ortopèdica. Manual Moderno
- Mahoney Fl., Barthel DW (1965). Functional evaluation: the Barthel Index. *Maryland State Med J.* 14; 61 - 65.
- Riener R., Lünenburger, L., Colombo, G. (2006). Human-centered robotics applied to gait training and assessment. *Journal of Rehabilitation Reseach & Development.* Vol 43, Nº 5, 679-694.
- Bermejo Pareja, F.,Porta Etessam, J., Díaz Guzmán, J., Martínez-Martín, P. Más de cien escalas en neurología. (Vol. I-II). Serie Manuales, Biblioteca Aula Médica.