

Neurodynamics

Code: 103011
ECTS Credits: 6

Degree	Type	Year	Semester
2500892 Physiotherapy	OT	4	0

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

Name: Ana Aldeguer Espinilla
Email: Ana.Aldeguer@uab.cat

Use of Languages

Principal working language: spanish (spa)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: Yes

External teachers

Ana María Márquez Robles
Luis Daniel Paz del Río

Prerequisites

It is recommended to have the acquired knowledge of Anatomy and Physiology of the locomotor device, Basics in physiotherapy, Biophysics and Biomechanics, Human Pathology, Physiotherapy of the Locomotive I-II and III apparatus, therapeutic Techniques in Physiotherapy of the Locomotive Apparatus and Clinical Evaluation in Apparatus Physiotherapy Locomotive.

Objectives and Contextualisation

The objective is to give a vision of the neurodynamics, giving the student the ability to know when the use is appropriate of this, the correct progression in the treatment.

Provide the student with the manual skills to detect the abnormalities in the movement related to him nervous system.

Provide diagnostic skills and interpretation of neurodynamic tests and their relationships neuromusculoskeletal

Competences

- Design the physiotherapy intervention plan in accordance with the criteria of appropriateness, validity and efficiency.
- Develop critical thinking and reasoning and communicate ideas effectively, both in the mother tongue and in other languages.
- 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.
- 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.
- Solve problems.
- Work in teams.

Learning Outcomes

1. Assess and treat the muscle chains, the movement of the nervous system, using neurodynamic techniques, and the joints, using osteopathic manual therapy.
2. Define the general and specific objectives for the application of physiotherapy treatment, according to the specific methods of muscle chains, neurodynamics and osteopathic manual therapy applied to the treatment of the musculoskeletal system.
3. Describe and apply physiotherapy assessment procedures to the disorders that affect muscle chains, the movement of the nervous system in relation to itself and to its surroundings, and the joints as seen from an osteopathic perspective, with the aim of determining the degree of damage to the musculoskeletal system and its possible functional repercussions.
4. Describe the circumstances that can influence priorities when practising physiotherapy, according to the specific methods of muscle chains, neurodynamics and osteopathic manual therapy applied to the treatment of the musculoskeletal system.
5. Develop critical thinking and reasoning and communicate ideas effectively, both in the mother tongue and in other languages.
6. Develop independent learning strategies
7. Display critical reasoning skills.
8. Enumerate the different types of material and apparatus used in physiotherapy treatment, according to the specific methods of muscle chains, neurodynamics and osteopathic manual therapy applied to the treatment of the musculoskeletal system.
9. Establish a diagnostic physiotherapy hypothesis based on clinical cases, according to the specific methods of muscle chains, neurodynamics and osteopathic manual therapy applied to the treatment of the musculoskeletal system.
10. Explain the physiopathological mechanisms of the disorders that affect the muscle chains, the movement of the nervous system in relation to itself and to its surroundings, and the joints as seen from an osteopathic perspective.
11. Solve problems.
12. Use physiotherapy to treat clinical cases, according to the specific methods of muscle chains, neurodynamics and osteopathic manual therapy applied to the treatment of the musculoskeletal system.
13. Work in teams.

Content

1. Introduction to Neurodynamics (Ana Aldeguer)
2. Neurodynamic considerations of anatomy, biomechanics and physiology (Ana Aldeguer and Luis Paz)
3. Clinical Reasoning (Ana Márquez)
4. Method of Treatment (Ana Aldeguer)
5. Treatment (Ana Aldeguer, Ana Márquez and Luis Paz)
 - 5.1. Rachis
 - 5.2. Lower Member

5.3. Upper Member

Methodology

Esta asignatura se basa en una docencia teórico-práctica.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
LABORATORY PRACTICES (PLAB)	25	1	12, 1, 2, 3, 4, 6, 5, 8, 9, 10, 7, 11, 13
THEORY (TE)	20	0.8	2, 3, 4, 8, 9, 10
Type: Autonomous			
PERSONAL STUDY	61.5	2.46	6, 5, 7, 11, 13
READING ARTICLES / REPORTS OF INTEREST	36.5	1.46	6, 5, 7, 11, 13

Assessment

Written evaluation: 50% of the final mark.

Type test Minimum grade to pass: 5. Failed questions remain 0.25

- Practical type evaluation: 50% of the final mark (10% continuous evaluation during practices and 40% final practical exam)

The manual ability in the application of the different basic techniques in individual practice test. Reasoning Clinical and knowledge of palatal anatomy.

Students who have suspended any of the parts of the assessment may submit to a test of recovery (of knowledge, abilities and attitudes that have been achieved during the course).

The student who does not attend 100% of the practical classes, will have to do a small work of the subjects that have been treated in class that day. The student who does not attend at least 80% of the practices and / or is not present at the exam will be considered non-evaluable.

The evaluation of the exchange students will be the same as for the rest of students of the UAB.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Practical type evaluation	50%	4	0.16	12, 1, 2, 3, 4, 6, 5, 9, 10, 7, 11, 13
Written evaluation	50%	3	0.12	2, 3, 4, 8, 9, 10

Bibliography

Butler, D. S. *The neurodynamic techniques. A Definitive Guide from the Noigroup Team*. Noigroup Publications

Butler, D. S. *The sensitive nervous system*. Noigroup Publications, 2011

Butler, D. S., Moseley, L. *Explicando el dolor*. Noigroup Publications, 2010

De Laere, J., Tixa, S. *Le Syndrome Neurogène Douloureux. Du Diagnostic au traitement manuel*. Tomo 1. Miembro Supérieur. Elsevier Masson SAS, 2011

De Laere, J., Tixa, S. *Le Syndrome Neurogène Douloureux. Du Diagnostic au traitement manuel*. Tomo 2. Miembro Inférieur. Elsevier Masson SAS, 2012

López, C. *Cuentos analgésicos. Herramientas para una saludable percepción del dolor*. ZERAPI, 2011

Moseley, G., Butler, D., Beames, T., Giles, T. *The Graded Motor Imagery Handbook*. Noigroup Publications, 2012

Shacklock, M. *Neurodinámica clínica. Un nuevo sistema de tratamiento musculoesquelético*. Elsevier, 2005

Zamorano, E. *Movilización neuromeníngea. Tratamiento de los trastornos mecanosensitivos del sistema nervioso*. Ed. Médica Panamericana, 2013

Digital references

<https://www.youtube.com/user/noigroup99>

<https://carloslopezcubas.com/blog>

<https://www.neurodynamicsolutions.com/>

<https://lafisioterapia.net/>