Universitat Autònoma de Barcelona

2021/2022

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

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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

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Design the physiotherapy intervention plan in accordance with the criteria of appropriateness, validity and efficiency.
- 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.

- Evaluate the functional state of the patient, considering the physical, psychological and social aspects.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- Solve problems.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
- Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.
- Work in teams.

Learning Outcomes

1. Analyse a situation and identify its points for improvement.
2. Communicate using language that is not sexist.
3. Consider how gender stereotypes and roles impinge on the exercise of the profession.
4. Critically analyse the principles, values and procedures that govern the exercise of the profession.
5. 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.
6. Display critical reasoning skills.
7. Enumerate the different types of 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.
8. 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.
9. Identify situations in which a change or improvement is needed.
10. Identify the principal forms of sex- or gender-based inequality present in society.
11. Identify the social, economic and environmental implications of academic and professional activities within one?s own area of knowledge.
12. Propose new methods or well-founded alternative solutions.
13. Propose new ways to measure success or failure when implementing innovative proposals or ideas.
14. Propose projects and actions that incorporate the gender perspective.
15. Propose viable projects and actions to boost social, economic and environmental benefits.
16. Propose ways to evaluate projects and actions for improving sustainability.
17. Solve problems.
18. Weigh up the impact of any long- or short-term difficulty, harm or discrimination that could be caused to certain persons or groups by the actions or projects.
19. Weigh up the risks and opportunities of suggestions for improvement: one's own and those of others.
20. 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.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
LABORATORY PRACTICES (PLAB)	25	1	5, 7, 8, 6, 17, 20
THEORY (TE)	20	0.8	5, 7, 8
Type: Autonomous			
PERSONAL STUDY	61.5	2.46	6, 17, 20
READING ARTICLES / REPORTS OF INTEREST	36.5	1.46	6, 17, 20

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	4, 1, 2, 5, 7, 8, 11, 10, 9, 19, 16, 12, 13, 14, 15, 6, 17, 20, 3, 18
Written evaluation	50%	3	0.12	4, 1, 2, 5, 7, 8, 11, 10, 9, 19, 16, 12, 13, 14, 15, 6, 17, 20, 3, 18

Bibliography

Butler, D. S. *The neurodinamic 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 Douloreux*. *Du Diagnostic au traitement manuel*. Tomo 1. Miembro Supérieur. Elsevier Masson SAS, 2011

De Laere, J., Tixa, S. *Le Syndrome Neurogène Douloreux*. *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/

Software

It does not require the use of any specific software.