

Physical Activity Medicine

Code: 103615
ECTS Credits: 3

Degree	Type	Year	Semester
2502442 Medicine	OT	5	0
2502442 Medicine	OT	6	0

Contact

Name: Maria Jose Dura Mata
Email: MariaJose.Dura@uab.cat

Use of Languages

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

Teachers

Roser Coll Fernandez

External teachers

M Àngels Ribera Alcazar
Marc Colomer Giralt
María Boldó Alcaine
Mercè Molleda Marzo

Prerequisites

It is recommended to have core competences in General Comprehensive Medicine

It is necessary to have enough knowledge in:

1. Human Anatomy
2. Medical Physiology
3. Applied Physiology
4. The student acquires the commitment to respect confidentiality and professional secrecy of health care data that will be accessed. The student will also maintain professional attitudes and behaviors on all actions

Objectives and Contextualisation

The subject is scheduled for students in fifth year of their Bachelor of Medicine. Students already have enough knowledge of human body and functionality in healthy individuals and have basic understanding on different medical and surgical pathologies.

The general objectives of the subject are:

1. To acquire basic knowledge about physical activity in prevention, development and rehabilitation of health.
2. To acquire essential knowledge about evaluation, diagnostic and therapeutic procedures of acute or chronic diseases that cause permanent or transitory disability

Competences

Medicine

- Demonstrate understanding of the manifestations of the illness in the structure and function of the human body.
- Demonstrate understanding of the structure and function of the human organism in illness, at different stages in life and in both sexes.
- Demonstrate, in professional activity, a perspective that is critical, creative and research-oriented.
- Establish a diagnostic approach and a well thought-out strategy for action, taking account of the results of the anamnesis and the physical examination, and the results of the appropriate complementary tests carried out subsequently.
- Maintain and sharpen one's professional competence, in particular by independently learning new material and techniques and by focusing on quality.
- Obtain and prepare a patient record that contains all important information and is structured and patient-centred, taking into account all age and gender groups and cultural, social and ethnic factors.
- Perform the basic practical procedures of examination and treatment.

Learning Outcomes

1. Demonstrate, in professional activity, a perspective that is critical, creative and research-oriented.
2. Describe the main diagnostic and therapeutic techniques performed in the hospital service corresponding to the subject.
3. Describe the main diagnostic and therapeutic techniques used in the prescription of physical activity and in the re-establishment of functionality.
4. Establish clear and effective communication with patients and their family-members.
5. Identify the radiological and anatomopathological alterations of the commonest diseases in the different body systems, at different stages in life and in both sexes.
6. Interpret the most specific images in the most common pathologies.
7. Maintain and sharpen one's professional competence, in particular by independently learning new material and techniques and by focusing on quality.
8. Understand the manifestations of the main pathologies on the structure and function of the human body.

Content

Development of the effects that physical activity and muscle training produce in the prevention of diseases and the therapeutic benefits

that exercise produces in different pathological situations.

As in the disability caused by respiratory problems, cardiovascular, neurological, musculoskeletal , pelvic floor dysfunctions and disability associated with aging.

A. General aspects

1. Physical Activity and Training. Fiber type muscle fiber. Effects of inactivity on the human body.
2. Exercise type. Assessment of the training. How to design a training plan. Exercise tolerance test. Exercise
3. Evaluation of muscle function. Biomechanics. Joint mechanics. Instrumental techniques to evaluate the fur

Analysis of the progress, analysis of the position and the balance.

B. physical activity and Function in specific pathological processes

1. Musculoskeletal system pathology. Upper limbs: Muscles and tendon structures. Functional evaluation and the
2. Musculoskeletal system pathology. Lower limbs: Upper limbs: Muscles and tendon structures. Functional eval
3. Evaluation of the respiratory patient. Strength training in respiratory pathology. Energy saving techniques. Res
4. Cardiac Rehabilitation. Exercise tolerance test. Cardiac Rehabilitation Programs.
5. Exploration and functional evaluation in the neurological patient. Neurological aspects of motor skills. Motor C

Physical activity in the neurological patient.

6.
spinal cord injury. Clinical evaluation. Acute spinal cord injury treatment. Rehabilitation in spinal cord injury. Clinic
1. 7. Dizziness and balance rehabilitation. Clinical assessment and other diagnostic tests. Benign paroxysmal positional vertigo (BPPV) Dix-Hallpike Test. Epley manoeuvre. Vestibular rehabilitation programmes
1. Pelvic floor. Physiology of urination. Type of urinary incontinence. Urinary incontinence of effort, voiding urgency. Urinary incontinence in men. Rehabilitation treatment of urinary incontinence

Seminars. Development of clinical cases

1 Physical examination in orthopedics. Musculoskeletal Physical exam and evaluation. Musculoskeletal ultrasonography. Practices among students. Practical seminar with clinical cases, practices with ultrasound.

2 Functional physical exams in neurological pathology. Anamnesis approach and physical exam and function evaluation of. Clinical cases of rehabilitation in neurological pathology. Practical seminar with clinical cases, practices among students

3 Gait and balance exam. Clinical and biomechanical analysis Evaluation of volunteers among students. Practical seminar with posturography and dynamometrical platforms.

4 Evaluation of muscle strength. Manual and instrumented Quadriceps evaluation. Grip strength. Manual strength evaluation. Practical seminar with force measurement among pupils with hand-influencing dynamometer.

5 . Presentations of clinical cases. 5 minute presentation and 1 minute questions. Power point / video

Classes

Presentations 10H

Seminars 5H

supervised activities

Pràcticum

No formal guidelines (180 min)

Outpatient clinic and interventional
rehabilitation techniques

Pràcticum

No formal guidelines (180 min)

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ACTIVITATS SUPERVISADES

TOTAL 15 HORES

Methodology

Títol	Hores	ECTS	Resultats d'aprenentatge
self directed learning			
	40,5	1,62	
Guided learning			
	5	0,2	
	10	0,4	

supervised activities

15

0,6

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Guided activities . Classes	10	0.4	
Guided activities. Seminars	5	0.2	
Type: Supervised			
Outpatient clinic and interventional techniques in rehabilitation medicine	15	0.6	
Type: Autonomous			
self-directed learning	40.5	1.62	

Assessment

Attendance and active participation in class and seminars	35%	1,25	0,05	RA085, RA086, T01.00, T05.00, E36.22, E38.13, E40.34, E40.44
Evaluation of practices	5%	1,25	0,05	RA085, T01.00, T05.00, E36.22, E38.13, E40.44
Written assessments Multiple-choice test	60%	2	0,08	RA085, RA086, T01.00, T05.00, E38.13, E40.34, E40.44

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Attendance and active participation in class and seminars	35%	1.25	0.05	8, 1, 2, 3, 4, 5, 6, 7
Evaluation of practices	5%	1.25	0.05	1, 3, 4, 5, 6, 7
Written assessments Multiple-choice test	60%	2	0.08	8, 1, 2, 3, 5, 6, 7

Bibliography

- DeLee & Drez's OrthopaedicSportsMedicine, 4th Edition. Mark D. Miller, MD and Stephen R. Thompson. EdElsevier. Philadelphia, Pennsylvania2015.
- Essentials of ExercisePhysiology, 5th Edition. William D. McArdle, Frank I. Katch. Victor L. Katch, Ed Wolters Klubberr 2016
- Oxford American Handbook of PhysicalMedicineandRehabilitation. Lyn D. Weiss, Jay M. Weiss, Thomas Pobre. Oxford University press . New York 2010.
- Essentials of physical medicine and rehabilitation : musculoskeletal disorders, pain, and rehabilitation Third Edition. Walter R. Frontera, Julie K. Silver, Thomas D. Rizzo, Jr. Elsevier Saunders. Philadelphia 2015

- Sociedad Española de Rehabilitación y Medicina Física (SERMEF). Sánchez Blanco I, Ferrero Méndez A. Editorial Médica Panamericana. 2006.
- Netter's Orthopaedic Clinical Examination: An Evidence Based Approach, 3rd Edition. Saunders Elsevier. Philadelphia, Pennsylvania 2015.