

# Professional Master's Degree

## Rehabilitation Medicine in Acquired Brain Injury Management





## Professional Master's Degree Rehabilitation Medicine in Acquired Brain Injury Management

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/professional-master-degree/master-rehabilitation-medicine-acquired-brain-injury-management](http://www.techtute.com/us/medicine/professional-master-degree/master-rehabilitation-medicine-acquired-brain-injury-management)

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# 01

# Introduction

The increase in the incidence of Acquired Brain Injury (ABI), especially stroke, and its survival make Neurorehabilitation and, therefore, an indispensable element of Rehabilitation Medicine, since stroke is, for example, one of the leading causes of disability in the world today. This, coupled with the public's awareness of the need for specialized professionals, is leading to an increase in the demand for rehabilitation physicians who are able to understand the functioning of the nervous system after an injury and to get the most out of it in order to minimize the after-effects of the injury.





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*This program will generate a sense of confidence in the performance of the physiotherapist's professional practice, which will help you grow personally and professionally”*

This is a time of great advances in the field of neuroscience, as well as rehabilitative medicine as a science, which forces specialists to have to update their knowledge both about the functioning of the nervous system, as well as how to assess and therapeutically approach a person with ABI, since each injury is different and will manifest itself in a different way in each patient.

This Professional Master's Degree in Rehabilitation Medicine in ABI Management aims to be a compendium of the evidence and the most up-to-date scientific knowledge about the nervous system and its rehabilitation when it is injured. As a result, it is a Professional Master's Degree capable of specializing the rehabilitation physician who has never dealt with people with ABI and, nevertheless, is interested in having a professional future with this type of patients.

Likewise, the professional who is already a neurological rehabilitation physician, whether or not dealing with ABI, will find a space to update their knowledge and reach super-specialization in this group of patients.

On the other hand, by understanding so much information about neuroscience and functionality, it can be a useful tool for the physiotherapist whose patient is not specifically one suffering from an ABI or a neurological pathology, but who nevertheless needs to know the ins and outs of the nervous system to better understand and address the injury or therapeutic need of the patient.

In this Professional Master's Degree, a space has also been reserved to talk about ABI in pediatric age, since it represents an even greater challenge for the rehabilitation physician due to the specific characteristics of the nervous system and the organism according to the neurodevelopment acquired and to be acquired depending on the age at which the injury occurs.

This **Professional Master's Degree in Rehabilitation Medicine in Acquired Brain Injury Management** contains the most complete and up-to-date scientific program on the market. The most important features include:

- The development of more than 75 practical case studies presented by experts in Rehabilitation Medicine in Acquired Brain Injury Management
- The graphic, schematic, and practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice
- New developments on the role of the Rehabilitation Physician
- Contains practical exercises where the self-evaluation process can be carried out to improve learning
- Algorithm-based interactive learning system for decision-making in the situations that are presented to the student
- Special emphasis on evidence-based Rehabilitation Medicine and research methodologies in Rehabilitation Medicine in Acquired Brain Injury Management
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection



*Update your knowledge through the Professional Master's Degree in Rehabilitation Medicine in Acquired Brain Injury Management"*

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*This Professional Master's Degree may be the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge in Rehabilitation Medicine in Acquired Brain Injury Management, you will obtain a certificate endorsed by TECH Global University"*

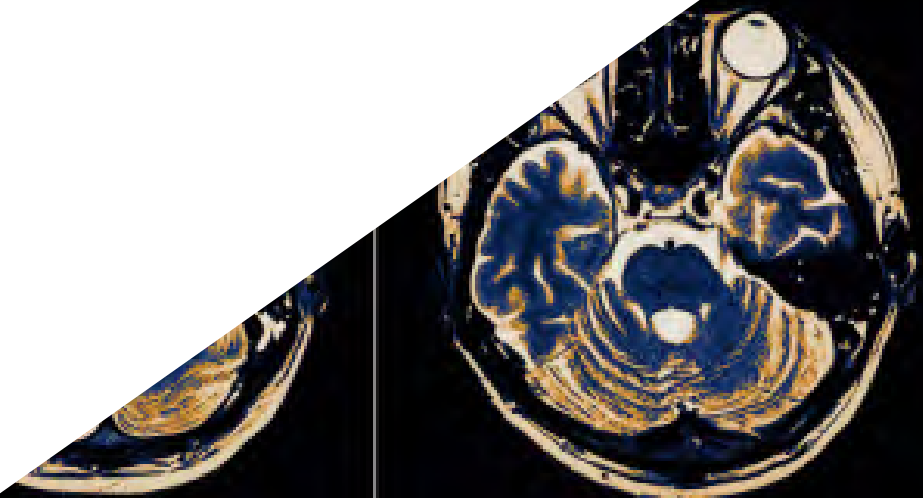
It includes in its teaching staff professionals belonging to the field of Rehabilitation Medicine in Acquired Brain Injury Management, who bring to this program their work experience, in addition to recognized specialists belonging to leading scientific societies.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive learning programmed to prepare in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the Rehabilitation Physician must try to solve the different professional practice situations that arise throughout the course. For this purpose, the Rehabilitation Physician will be assisted by an innovative interactive video system created by renowned experts in the field of Rehabilitation Medicine in Acquired Brain Injury Management who have extensive teaching experience.

*This Professional Master's Degree offers education in simulated environments, which provides an immersive learning experience designed to prepare for real-life situations.*

*It includes clinical cases to bring the program as close as possible to the reality of medical care.*




02

# Objectives

The Rehabilitation Medicine in Acquired Brain Injury Management program is oriented to facilitate the practice of the medical professional in their daily work.





A close-up photograph of a person's face, showing their eye and nose. A hand is gently touching the person's forehead. The image is partially obscured by a diagonal white and blue graphic overlay.

“ This program is designed to update your knowledge in Rehabilitation Medicine in Acquired Brain Injury Management, with the use of the latest educational technology, to contribute with quality and confidence to decision-making, diagnosis, treatment and patient support”



## General Objectives

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- Promote the specialization of the Rehabilitation Physician in the field of neurological rehabilitation
- Update the knowledge of the Rehabilitation Physician in Neuroscience applied to the clinic
- Enhance clinical practice that is based on scientific evidence and clinical reasoning
- Facilitate the integral care of the neurological patient in all their complexity



*Make the most of this opportunity and take the step to get up to date on the latest developments in Rehabilitation Medicine in Acquired Brain Injury Management"*





## Specific Objectives

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### Module 1. Neuroanatomy and Neurophysiology

- ♦ Get to know the structural anatomical bases of the nervous system
- ♦ Get to know the functional anatomical bases of the nervous system
- ♦ Gain up-to-date knowledge of the physiology of movement
- ♦ Analyze the neurophysiological processes of motor learning
- ♦ Revise the different theories of motor control
- ♦ Gain up-to-date knowledge in the neuroscience applied to neurological injuries

### Module 2. ABI

- ♦ Recognize what is and what is not ABI
- ♦ Gain in-depth understanding of the epidemiology of ABI
- ♦ Know the implications of ABI according to the age of the patient
- ♦ Identify different symptoms and syndromes according to the area affected by the ABI
- ♦ Learn to identify hemineglect and understand its implications for the patient and for the therapeutic approach
- ♦ Learn to recognize the pusher syndrome and gain up-to-date knowledge about it in view of its implications in the therapeutic approach
- ♦ Understand the difference between cerebellar versus basal ganglia symptomatology
- ♦ Distinguish spasticity from other tone disturbances
- ♦ Recognize apraxia and its implications for the patient and for the therapeutic approach
- ♦ Learn to identify alien hand syndrome

### **Module 3. Assessment of a Patient with ABI**

- ♦ Interpret the radiological findings in a CAT scan
- ♦ Interpret the radiological findings in MRI
- ♦ Get to know the different types of complementary radiodiagnostic tests
- ♦ Learn to carry out a complete neurological examination
- ♦ Plan the therapeutic approach according to the findings of the neurological examination and the Rehabilitation Physician
- ♦ Learn examination techniques for the differential diagnosis of the different neurological signs and symptoms
- ♦ Gain knowledge about the pathological reflexes and identify them
- ♦ Conduct a review of assessment scales and tests
- ♦ Learn how to write Rehabilitation Medicine reports
- ♦ Learn to interpret medical reports or reports from other specialists in order to extract the relevant information

### **Module 4. Multidisciplinary Intervention in ABI**

- ♦ Know the different methods and concepts used by neurological rehabilitation physicians
- ♦ Perform a review of the scientific evidence of the different methods, concepts and therapeutic tools
- ♦ Gain knowledge about the therapeutic tools of other professionals from the clinical team
- ♦ Get to know the expertise of other professionals on the clinical team to refer patients when necessary
- ♦ Review the most useful orthoses and support products for patients with ABI
- ♦ Learn to identify communication disorders in order to refer them to the competent professional and contemplate them in the patient's overall condition
- ♦ Learn to identify swallowing disorders in order to refer them to the competent professional and contemplate them in the overall condition of the patient

- ♦ Know the different cognitive domains
- ♦ Recognize the implication of the different cognitive domains injured or intact in movement impairment and what implication they have in the medical approach
- ♦ Learn to identify behavioral disorders secondary to ABI in order to refer them to the competent professional and contemplate them in the overall condition of the patient
- ♦ Take into account the emotional state of the patient and the family and how it affects the approach and rehabilitation

### **Module 5. Complications in Patients with ABI**

- ♦ Revise the most frequent complication of patients with ABI to prevent them or alleviate them
- ♦ Learn to identify pain and how to approach it
- ♦ Identify the factors which provoke shoulder pain, how to prevent it and how to approach it once it appears
- ♦ Recognize respiratory complications and know how to approach them from the Rehabilitation Medicine point of view
- ♦ Learn to identify the signs and symptoms of complications that must be referred to other professionals

### **Module 6. ABI in Pediatrics**

- ♦ Revise the neurodevelopment normative in order to identify the prognosis in the rehabilitation of the ABI according to the age of the patient
- ♦ Learn to assess pediatric patients for their unique and age-specific characteristics
- ♦ Know the specific approach models of pediatric rehabilitative medicine in ABI
- ♦ Revise the skills of other professionals in the working team in the field of pediatrics
- ♦ Know the implication of the educational field in the rehabilitation of minors with ABI



### **Module 7. ABI in Altered States of Consciousness**

- ♦ Review the neurophysiology of consciousness
- ♦ Learn to assess the grade of alteration of consciousness
- ♦ Learn to estimate a prognosis based on examination and evolution
- ♦ Identify the appearance of pain in people with altered consciousness
- ♦ Learn to program a physiotherapeutic approach protocol
- ♦ Gain knowledge about the work of the rest of the professionals in the team to carry out the program of the Rehabilitation Physician
- ♦ Carry out a review of the possible complications in an attempt to avoid them or alleviate them

### **Module 8. ABI in Geriatrics**

- ♦ Know the characteristics specific to geriatric patients with ABI
- ♦ Revise the typical comorbidities in the elderly
- ♦ Learn to create a rehabilitation program in conjunction with the rest of the team
- ♦ Know the discharge options in order to make the best decision for the patient regarding their residence and rehabilitation
- ♦ Learn to appropriately adjust the environment to make it as functional as possible
- ♦ Know the role of the family and legal guardians
- ♦ Carry out a review of the most used technical supports for geriatric patients with ABI

# 03 Skills

After passing the evaluations of the Professional Master's Degree in Rehabilitation Medicine in Acquired Brain Injury Management, the specialist will have acquired the necessary professional skills for a quality and up-to-date practice based on the latest scientific evidence.



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*With this program, you will be able to master the new diagnostic and therapeutic procedures in Rehabilitation Medicine in Acquired Brain Injury Management”*



## General Skills

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- ♦ Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context
- ♦ Apply acquired knowledge and problem-solving skills in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study
- ♦ Apply knowledge and face the complexity of making judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities linked to the application of student knowledge and judgments
- ♦ Apply conclusions, knowledge and the ultimate rationale behind them to specialized and non-specialized audiences in a clear and unambiguous manner
- ♦ Apply learning skills that will enable them to continue studying in a largely self-directed or autonomous manner



*Get the competencies of a specialist with a high-level education process created to boost your progress and your professional practice"*







## Specific Skills

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- ♦ Gain in-depth understanding of the epidemiology of ABI
- ♦ Describe the implications of ABI according to the age of the patient
- ♦ Explain the therapeutic tools of other professionals from the clinical team
- ♦ Define the competencies of other professionals in the clinical team in order to learn how to refer to them when necessary
- ♦ Explain the different types of complementary radiodiagnostic tests
- ♦ Learn to carry out a complete neurological examination
- ♦ Plan the therapeutic approach according to the findings of the neurological examination and medical rehabilitation assessment
- ♦ Explain the work of the rest of the professionals of the team in order to carry out the therapeutic program
- ♦ Carry out a review of the possible complications in an attempt to avoid them or alleviate them
- ♦ Gain up-to-date knowledge of the physiology of movement
- ♦ Analyze the neurophysiological processes of motor learning
- ♦ Explain the characteristics specific to geriatric patients with ABI
- ♦ Revise the typical comorbidities in the elderly
- ♦ Learn to create a rehabilitation program in conjunction with the rest of the team
- ♦ Define the different methods and concepts used by Neurological Rehabilitation Physicians
- ♦ Perform a review of the scientific evidence of the different methods, concepts and therapeutic tools
- ♦ Define the different cognitive domains
- ♦ Recognize the implication of the different cognitive domains injured or intact in movement impairment and what implication they have in the medical rehabilitative approach

# 04

# Course Management

The program's teaching staff includes leading specialists in Rehabilitation Medicine in Acquired Brain Injury Management who bring their work experience to this education program. Additionally, other recognized specialists participate in its design and preparation, which means that the program is developed in an interdisciplinary manner.



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*Learn from leading professionals,  
the latest advances in procedures  
in the field of Rehabilitation Medicine  
in Acquired Brain Injury Management”*

## International Guest Director

Dr. David Lin is an internationally renowned neurologist, specializing in Intensive Care and Neurorehabilitation. As such, his clinical practice focuses on the treatment of patients with acute neurological injuries, including Stroke, Cerebral Hemorrhage, Head Trauma and Spinal Cord Injury, providing a comprehensive approach to the recovery of these patients in the Neurosciences Intensive Care Unit at Massachusetts General Hospital, USA, where he has held a senior position as Director of the Neurorehabilitation Clinic.

In the field of research, he has served as Director of the Translational Recovery Laboratory, where he has employed advanced techniques such as Quantitative Movement Analysis, Neuroimaging and Brain Stimulation to understand and improve motor recovery after a stroke. In fact, his work has been oriented towards the clinical application of these discoveries, seeking to transform Neurological Rehabilitation through a deeper understanding of the brain mechanisms involved.

In addition, David Lin, M.D., has been recognized for his clinical innovations, including the development of the Outpatient Stroke Motor Recovery Program and a follow-up program for patients with post-Covid-19 neurological complications. He has also established an interdisciplinary outpatient program, which integrates various health professionals to provide comprehensive care for patients with acute neurological diseases.

Likewise, his work has been highlighted in international conferences, such as the International Spring School of BCI and Neurotechnology, in Austria, where he has shared his knowledge on the clinical relevance of brain-computer interfaces for stroke rehabilitation. At the same time, he has continued to advance in the field of Neurorehabilitation, with innovative projects such as the design of next generation neurotechnologies, including an Orthotic Arm System based on brain-computer interfaces, in collaboration with the Laboratory of Restorative Neurotechnology (BrainGate).



## Dr. Lin, David

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- Director of the Neurological Recovery Clinic at Massachusetts General Hospital, USA
- Director of the Translational Recovery Laboratory at Massachusetts General Hospital
- Principal Investigator at Providence Veterans Affairs Medical Center, Providence, VA
- Fellow in Neurocritical Care at Massachusetts General Hospital and Brigham and Women's Hospital
- Neurorecovery Fellow at Massachusetts General Hospital and Spaulding Rehabilitation Hospital
- Fellow in Neurology at Massachusetts General Hospital and Brigham and Women's Hospital
- M.D. Harvard University
- B.S. in Mathematics and Computer Science from Stanford University
- Member of: American Academy of Neurology, Society for Neuroscience, American Heart Association  
American Society of Neurorehabilitation

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*Thanks to TECH, you will be able to learn with the best professionals in the world”*

## Management



### Ms. De Andrés Garrido, Berta

- ♦ Neurophysiotherapist at the Neurological Rehabilitation Center in Neurointegra
- ♦ Diploma in Physiotherapy
- ♦ Master's Degree in Neurological Physiotherapy of Adults and Children
- ♦ Master's Degree in Neurological Physiotherapy

## Professors

### Ms. Aguirre Moreno, Arantzazu

- ♦ Occupational Therapist at Clinica Galey and Bionika Salud
- ♦ Occupational Therapist at Bionika Salud

### Mr. Abeledo, Juan Luis

- ♦ Physiotherapist. Upacesur Foundation
- ♦ Diploma in Physiotherapy
- ♦ Specialist in Hydrotherapy by the UCLM

### Mr. Arévalo Mora, Óscar

- ♦ Physiotherapist at Beato Fray Leopoldo Residence(Granada)
- ♦ Physiotherapist in Maria Zayas Residency (Granada)

### Ms. Aguado Caro, Patricia

- ♦ She works at the Neurointegra Neurological Rehabilitation Center
- ♦ Neuropsychologist

### Ms. Arjona Vega, Maria Del Rocío

- ♦ Speech Therapist in San Juan de Dios Hospital, Seville

### Ms. Bacardit Riu, Laura

- ♦ Physiotherapist. MIT
- ♦ Diploma in Physiotherapy
- ♦ Master's in Neurorehabilitation in the Guttmann Institute (UAB)
- ♦ Specialist in Neurosciences, Aquatic Therapu and Therapeutic Exercise

**Dr. Bravo, Elisabeth**

- ♦ University School of Nursing and Physiotherapy in Toledo University of Castilla La Mancha,
- ♦ He has been a member of the CSIC bioengineering group and did his thesis in the Sensory Motor Function group at the National Hospital of Paraplegics
- ♦ Associate PhD Professor
- ♦ Master's Degree in Study and Treatment of Pain

**Mr. Crespillo, Víctor**

- ♦ Psychologist
- ♦ Domus vi sad Sevilla

**Ms. De la Fuente, Rebeca**

- ♦ Attending Physician in the Neurology Unit of the Leon University Care Complex
- ♦ Degree in Medicine from the University of Salamanca
- ♦ Neurology Specialist in Salamanca University Hospital
- ♦ Master's Degree in Neuro-immunology from the Autonomous University Madrid

**Mr. Entrena, Álvaro**

- ♦ Uner Rehabilitation Clinic
- ♦ Physiotherapist

**Dr. Ferrand Ferri, Patricia**

- ♦ Specialist in Physical Medicine and Rehabilitation at the Hospital Universitario Virgen del Rocío
- ♦ Degree in Medicine and Surgery
- ♦ Postgraduate Diploma in Child Rehabilitation
- ♦ Field of Work: Children's Rehabilitation. Instrumented Gait Analysis

**Dr. Gómez Soriano, Julio**

- ♦ Head of the Research Group in Physiotherapy Toledo (GIFTO) University School of Nursing and Physiotherapy of Toledo University of Castilla La Mancha(UCLM)
- ♦ Sensory-Motor function National Hospital of Paraplegics Toledo
- ♦ Diploma in Physiotherapy
- ♦ Degree in Physical Activity and Sports Sciences from UCLM
- ♦ Master's Degree in Neurological Pathology and PhD from Rey Juan Carlos University

**Ms. Hurtado de Mendoza Fernández, Alba**

- ♦ Diploma in Occupational Therapy
- ♦ Master's Degree in Neuroscience
- ♦ Specialty in Cognitive Neuroscience
- ♦ Advanced training in Neurorehabilitation

**Ms. Lara, Lidia**

- ♦ Attending Physician in the Neurology Department of León Care Complex
- ♦ Degree in Medicine and Surgery
- ♦ Specialist Degree in Neurology

**Mr. Lafuente, Ignacio**

- ♦ Freelance Physiotherapist

**Dr. Lerma Lara, Sergio**

- ♦ Professor and researcher at CSEU La Salle
- ♦ Dean of the Faculty of Health Sciences. La Salle Higher Center for University Studies. UAM
- ♦ Researcher in the Biomedical Research Foundation of the Niño Jesús Children's University Hospital
- ♦ Diploma in Physiotherapy
- ♦ PhD in Physiotherapy

**Mr. Lozano Lozano, Mario**

- ♦ Research Professor
- ♦ Department of Physiotherapy, Faculty of Health Sciences
- ♦ University of Granada

**Ms. Mena, Alba**

- ♦ Social Worker

**Ms. Monís Rufino, Estela**

- ♦ Neurophysiotherapist
- ♦ Neurointegra

**Mr. Moreno Martínez, Alejandro**

- ♦ Physiotherapy in Pediatrics and Early Care Dry Needling in Myofascial Pain Syndrome
- ♦ Specialist in Orthopedic Manual Therapy
- ♦ Master's Degree in Advanced Manual Physiotherapy
- ♦ Postgraduate Diploma Respiratory Physiotherapy

**Mr. Montero Leyva, José Luis**

- ♦ Physiotherapist at Beato Fray Leopoldo Residence. Rehabilitation Coordinator

**Ms. Narbona González, Natividad**

- ♦ Carries out her work at the Neurological Rehabilitation Center at Neurointegra
- ♦ Neuropsychologist

**Ms. Piñel Cabas, Inmaculada**

- ♦ Occupational Neurotherapist
- ♦ Neurointegra

**Pérez Rodríguez, Mónica**

- ♦ Neuropsychologist at Neurointegra
- ♦ Psychologist
- ♦ Master's Degree in Advanced Studies of the Brain and Behavior
- ♦ Master's Degree in General Health Psychology
- ♦ Neuropsychology Specialist

**Mr. Pérez Miralles, José Antonio**

- ♦ Physiotherapist in the New Option Association of Acquired Cerebral Damage Valencia
- ♦ Diploma in Physiotherapy
- ♦ Specialist in Neurological Physiotherapy

**Dr. Rodríguez Sánchez, Augusto Rembrandt**

- ♦ PDI at Cardenal Spínola University Center of Studies CEU
- ♦ Degree in Physical Activity and Sports Science
- ♦ PhD from the University of Seville

**Mr. Rubiño Díaz, José Ángel**

- ♦ Research Collaborator at the University of the Balearic Islands
- ♦ General Health Psychologist
- ♦ PhD in Neuroscience. University of the Balearic Islands
- ♦ Advanced Studies Certificate in Psychobiology
- ♦ Master's Degree in Neuroscience



**Mr. Sarrias Arrabal, Esteban**

- ♦ University of Seville Department of Experimental Psychology

**Dr. Vázquez Sánchez, Fernando**

- ♦ Neurologist. Burgos University Hospital

**Ms. Gallego, Belén**

- ♦ Occupational Therapist

**Ms. Fernández Muñoz, María**

- ♦ Physiotherapist at Las Sabinas Residence (JCCM)

**Mr. Del Barco Gavala, Alberto**

- ♦ Degree in Psychology from the University of Granada
- ♦ Master's Degree in Clinical Neuropsychology from the Pablo Olavide University
- ♦ Master's Degree in Neurosciences and Behavioral Biology from the Pablo de Olavide University
- ♦ International Master's Degree Neuroscience and Biology of Behavior from the Autonomous University of Barcelona
- ♦ Specialist in Neuropsychology

**Ms. Carrasco Pérez, Ana**

- ♦ Synergia Physiotherapist
- ♦ Child Physiotherapy and Early Childhood Care Center (C.A.I.T.) of Dos Hermanas, Seville

**Mr. Lucena Calderón, Antonio**

- ♦ Medical Park Rehabilitation Clinic (Bad Feilnbach)
- ♦ Occupational Therapist

**Dr. Mendoza González, Lucrecia**

- ♦ Medical Specialist in Physical Medicine and Rehabilitation
- ♦ Master's Degree in Evaluative Medicine and Medical Expertise
- ♦ Specialist Degree in Child Disability
- ♦ Expert in Child Rehabilitation
- ♦ Expert in Musculoskeletal Ultrasonography

**Ms. Alba Soto, Alicia**

- ♦ Neurological Physiotherapist. FISUN Physiotherapy Center

**Dr. Pérez Nombela, Soraya**

- ♦ Research Group in Physiotherapy Toledo (GIFTO). University of Castilla La Mancha,
- ♦ Diploma in Physiotherapy
- ♦ Master's Degree in Neurological Pathology
- ♦ Specialist in Human Gait Biomechanics, Neurorehabilitation, Robotics and Spinal Cord Injury

**Ms. Abelleira, Estefanía**

- ♦ Neurophysiotherapist
- ♦ Master's Degree in Neurophysiotherapy
- ♦ Basal Stimulation Training
- ♦ Bobath Training
- ♦ Perfetti Training
- ♦ Neurodynamics Training
- ♦ Social and Cultural Anthropology Studies

**Ms. Agúndez Leroux, Sandra**

- ♦ She works at the Neurointegra Neurological Rehabilitation Center
- ♦ Occupational Therapist

**Ms. Salgueiro, Carina**

- ♦ Degree in Physiotherapy with specialization in the Bobath Concept in adults and initial in children

**Ms. Campos, Julia**

- ♦ Neurophysiotherapist in Neurodem Clinic

**Ms. Moral Saiz, Beatriz**

- ♦ La Salle Functional Rehabilitation Institute
- ♦ Physiotherapist. MSc

**Ms. Ferreiro Pardo, Tatiana**

- ♦ Physiotherapist at the Teresa Herrera Maternity Hospital in A Coruña
- ♦ Degree in Physiotherapy
- ♦ Master's Degree in Neuroscience with a major in Medical Neurobiology
- ♦ Specialist in the evaluation and treatment of adult neurological patients
- ♦ Specialist in the treatment and evaluation of pediatric patients with neurological alterations and collaboration with the virtual reality development programs for physical rehabilitation

**Mr. Mariño Estelrich, Ignacio**

- ♦ Physiotherapist in Hospital Sant Joan de Déu de Martorell (Barcelona)
- ♦ Degree in Physiotherapy
- ♦ Master's Degree in Neurophysiotherapy
- ♦ Master's Degree in Direction, Management and Entrepreneurship of Health Centers and Social Services

**Mr. Ruiz García, Pablo**

- ♦ Physiotherapist at ADACEA Alicante
- ♦ Degree in Physiotherapy
- ♦ Master's Degree in Neurorehabilitation



**Mr. Díez, Óscar**

- ♦ Clinical Manager in Neurem Functional Recovery S.C.P
- ♦ Physiotherapist

**Ms. Amor Hernández, Paloma**

- ♦ Psychologist
- ♦ Currently studying a PhD in Health Psychology from the National University of Remote Education (UNED)

**Mr. Gálvez Garrido, Álvaro**

- ♦ Occupational Therapist. Beato Fray Leopoldo Residence

**Mr. Francisco García, Antonio**

- ♦ Physiotherapist at home in Motril
- ♦ Diploma in Physiotherapy from the University of Granada
- ♦ Master's Degree in Neurophysiotherapy from the Universidad Pablo de Olavide

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*Our teaching team will provide you with all their knowledge so that you are up to date with the latest information on the subject"*

05

# Structure and Content

The structure of the contents has been designed by a team of professionals from the best centers and universities, aware of the relevance of current education in order to intervene with the patient with acquired brain damage, and committed to quality teaching through new educational technologies.





*This Professional Master's Degree in Rehabilitation Medicine in Acquired Brain Injury Management contains the most complete and up-to-date scientific program on the market"*

## Module 1. Neuroanatomy and Neurophysiology

- 1.1. Anatomy
  - 1.1.1. Introduction to Structural Anatomy
  - 1.1.2. Introduction to Functional Anatomy
  - 1.1.3. Spinal Cord
  - 1.1.4. Brainstem
  - 1.1.5. Frontal
  - 1.1.6. Parietal
  - 1.1.7. Temporal
  - 1.1.8. Occipital
  - 1.1.9. Cerebellum
  - 1.1.10. Basal Ganglia
- 1.2. Physiology
  - 1.2.1. Neuroplasticity
  - 1.2.2. Muscle Tone
- 1.3. Motor Control
  - 1.3.1. Motor Behavior
  - 1.3.2. Motor Control

## Module 2. ABI

- 2.1. Defining ABI
  - 2.1.1. ABI in Adults
  - 2.1.2. ABI in Childhood
  - 2.1.3. ABI in Elderly People
- 2.2. Functional Alterations
  - 2.2.1. Tone Alterations
  - 2.2.2. Hemineglect
  - 2.2.3. Pusher Syndrome
  - 2.2.4. Cerebellar Syndrome vs. Basal Ganglia Injury
  - 2.2.5. Alien Hand Syndrome
  - 2.2.6. Apraxia



### Module 3. Assessment of a Patient with ABI

- 3.1. Medical History
- 3.2. Neuroimaging
  - 3.2.1. Structural
  - 3.2.2. Functional Criteria
- 3.3. Neurological Examination
  - 3.3.1. Cranial Nerves
  - 3.3.2. Pathological Reflexes
  - 3.3.3. Muscular
    - 3.3.3.1. Osteotendinous Reflexes
    - 3.3.3.2. Tone
    - 3.3.3.3. Strength
  - 3.3.4. Sensitivity
    - 3.3.4.1. Sensitivity
    - 3.3.4.2. Gnosis
  - 3.3.5. Coordination
  - 3.3.6. Balance
  - 3.3.7. March
  - 3.3.8. Manipulation
- 3.4. Neurological Assessment Scales
- 3.5. Writing the Report
  - 3.5.1. Writing a Physiotherapy Report
  - 3.5.2. Interpretation of Medical Information

### Module 4. Multidisciplinary Intervention in ABI

- 4.1. Physiotherapy
  - 4.1.1. Ease of Movement
  - 4.1.2. Neurodynamics
  - 4.1.3. Mirror Therapy
  - 4.1.4. Approach in Context
  - 4.1.5. Approach Oriented to the Task

- 4.1.6. Intensive Treatment
- 4.1.7. Constraint Induced Movement Therapy
- 4.1.8. Dry Needling for Spasticity
- 4.1.9. Therapeutic Exercise
- 4.1.10. Hydrotherapy
- 4.1.11. Electrotherapy
- 4.1.12. Robotics and Virtual Reality
- 4.2. Equipment
  - 4.2.1. Work Models
  - 4.2.2. Medicine
    - 4.2.2.1. Pharmacology
    - 4.2.2.2. Botulinum toxin
  - 4.2.3. Speech Therapy
    - 4.2.3.1. Communication Disorders
    - 4.2.3.2. Swallowing Disorders
  - 4.2.4. Occupational Therapy
    - 4.2.4.1. Autonomy
    - 4.2.4.2. Occupation
  - 4.2.5. Cognitive Deficit Implications on Movement
  - 4.2.6. Neuropsychology
    - 4.2.6.1. Cognitive Domains
    - 4.2.6.2. Behavioral Disorders
    - 4.2.6.3. Psychological Care for Patients and Their Family
- 4.3. Orthopedics
  - 4.3.1. Orthotics and Support Products
  - 4.3.2. Low-Cost Material
- 4.4. Acute, Subacute and Chronic Phases in ABI
  - 4.4.1. Acute Phase
  - 4.4.2. Subacute Phase
  - 4.4.3. Chronic Phase of ABI

## Module 5. Complications in Patients with ABI

- 5.1. Pain
  - 5.1.1. Comprehensive Pain Assessment
  - 5.1.2. Painful Shoulder
  - 5.1.3. Neuropathic Pain
- 5.2. Respiratory System
  - 5.2.1. Associated Respiratory Complications
  - 5.2.2. Respiratory Physiotherapy
- 5.3. Epilepsy
  - 5.3.1. Injury Prevention
  - 5.3.2. Injury Recovery
- 5.4. Musculoskeletal Complications
  - 5.4.1. Comprehensive Assessment
  - 5.4.2. Physiotherapy Applied to These Complications
  - 5.4.3. Monitoring Injuries
- 5.5. Complications of Spinal Cord Injury
  - 5.5.1. Characteristics of Such Complications
  - 5.5.2. Physiotherapy Approach

## Module 6. ABI in Pediatrics

- 6.1. Normative Neurodevelopment
  - 6.1.1. Features
  - 6.1.2. Aspects to take into account
- 6.2. Pediatric Examination in Physiotherapy
  - 6.2.1. Exploration
  - 6.2.2. Neurological Assessment Scales
- 6.3. Intervention
  - 6.3.1. Physiotherapy
  - 6.3.2. Rest of the Team
    - 6.3.2.1. Medicine
    - 6.3.2.2. Speech Therapy
    - 6.3.2.3. Occupational Therapy
    - 6.3.2.4. Neuropsychology
    - 6.3.2.5. Educational Team







## Module 7. ABI in Altered States of Consciousness

- 7.1. What is an Altered State of Consciousness?
  - 7.1.1. Arousal
  - 7.1.2. Awareness
  - 7.1.3. Neuroanatomy
  - 7.1.4. Neurophysiology
  - 7.1.5. Neuroplasticity
  - 7.1.6. Prognosis
- 7.2. Assessment
  - 7.2.1. Physical Examination
  - 7.2.2. Neurological Assessment Scales
  - 7.2.3. Pain
- 7.3. Intervention
  - 7.3.1. Physiotherapy
    - 7.3.1.1. Stimulation
    - 7.3.1.2. Movement
    - 7.3.1.3. Environment

## Module 8. ABI in Geriatrics

- 8.1. Distinguishing Features of ABI in Geriatrics
  - 8.1.1. Pluripathology
    - 8.1.1.1. Advantages and Disadvantages Associated with Age
  - 8.1.2. Physiotherapeutic Treatments
    - 8.1.2.1. The Importance of Setting Team Objectives
- 8.2. Institutionalization vs. Usual Housing
  - 8.2.1. Adaptation to Surroundings
  - 8.2.2. The Role of the Family
  - 8.2.3. Legal Guardians
  - 8.2.4. Technical Aids

06

# Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.



“

*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.*



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

“

*Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”*

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



## Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

*Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



This program offers the best educational material, prepared with professionals in mind:



#### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



#### Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



#### Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.







#### Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



#### Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



#### Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



#### Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



# 07 Certificate

The Professional Master's Degree in Rehabilitation Medicine in Acquired Brain Injury Management guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree diploma issued by TECH Technological University.



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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

This private qualification will allow you to obtain a **Professional Master's Degree diploma in Rehabilitation Medicine in Acquired Brain Injury Management** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.



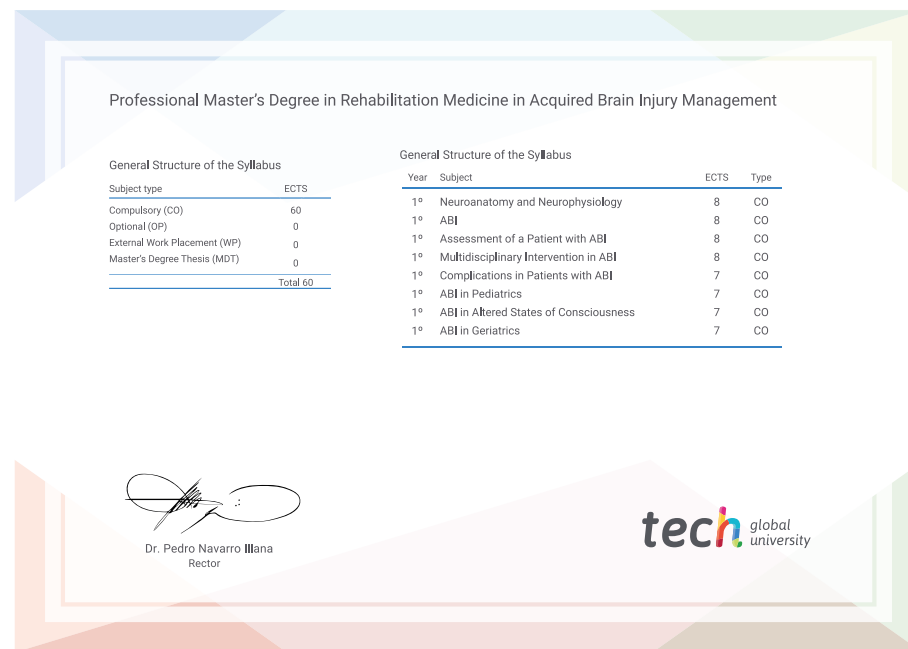
This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Professional Master's Degree in Rehabilitation Medicine in Acquired Brain Injury Management**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

personalized service innovation

knowledge present quality

online training

development language

virtual classroom

**tech** global  
university

## Professional Master's Degree

Rehabilitation Medicine  
in Acquired Brain Injury  
Management

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

# Professional Master's Degree

## Rehabilitation Medicine in Acquired Brain Injury Management