

# Postgraduate Diploma Musculoskeletal Ultrasound in Wrist and Hand Physiotherapy

Endorsed by the NBA





## Postgraduate Diploma Musculoskeletal Ultrasound in Wrist and Hand Physiotherapy

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 16 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/physiotherapy/postgraduate-diploma/postgraduate-diploma-musculoskeletal-ultrasound-wrist-hand-physiotherapy](http://www.techtute.com/us/physiotherapy/postgraduate-diploma/postgraduate-diploma-musculoskeletal-ultrasound-wrist-hand-physiotherapy)

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# 01

# Introduction

Hands and wrists, used daily to perform numerous everyday activities, can suffer from various ailments that must be properly treated to restore their functionality. This has led to the emergence of innovative imaging methods that make it easier to detect the extent of pathologies and, consequently, establish the most appropriate treatment to ensure the patient's rapid rehabilitation. These advancements should be incorporated into the daily practice of the physiotherapist to provide top-notch care, which is why TECH has created this qualification. In a 100% online format, you will enhance your abilities in musculoskeletal ultrasound for exploring the dorsal and palmar aspects of the wrist and hand.







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*Thanks to this qualification, you will master the latest techniques for examining the dorsal and palmar aspects of the wrist and hand"*

Injuries to the hand and wrist are particularly challenging to treat, as they often cause long-term discomfort and limit a person's range of motion. Consequently, existing ultrasound techniques for diagnosing these injuries have experienced significant development, facilitating more precise detection of the pathology and its detailed monitoring over time to tailor physiotherapeutic activities to its progression. Thanks to the significant positive impact of these cutting-edge methods on the patient, physiotherapists are required to be proficient in using them to provide a high-quality service to their clients.

For that reason, TECH has designed this program, through which physiotherapy professionals will assimilate the most up-to-date techniques to master musculoskeletal ultrasound in the wrists and hands, enabling them to confidently tackle the daily challenges of their profession. During this academic period, they will delve into the examination of the most common tendon pathologies of both the dorsal and palmar aspects of the wrist and hand. Additionally, they will enhance their skills in conducting tests to evaluate wrist stability following an injury.

All of this is done following a 100% online methodology, allowing students to create their own study schedules for a highly efficient learning experience. Likewise, they will have access to didactic materials available in a wide range of textual and multimedia formats, promoting engaging learning tailored to their academic needs.

This **Postgraduate Diploma in Musculoskeletal Ultrasound in Wrist and Hand Physiotherapy** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of practical cases presented by experts in Physical Medicine and Rehabilitation and Physiotherapy
- ♦ 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
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ 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



*Access the best job opportunities in the field of Physiotherapy upon completing this Postgraduate Diploma"*

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*Through educational materials created by top specialists in musculoskeletal ultrasound, you will acquire knowledge that will enhance your professional development”*

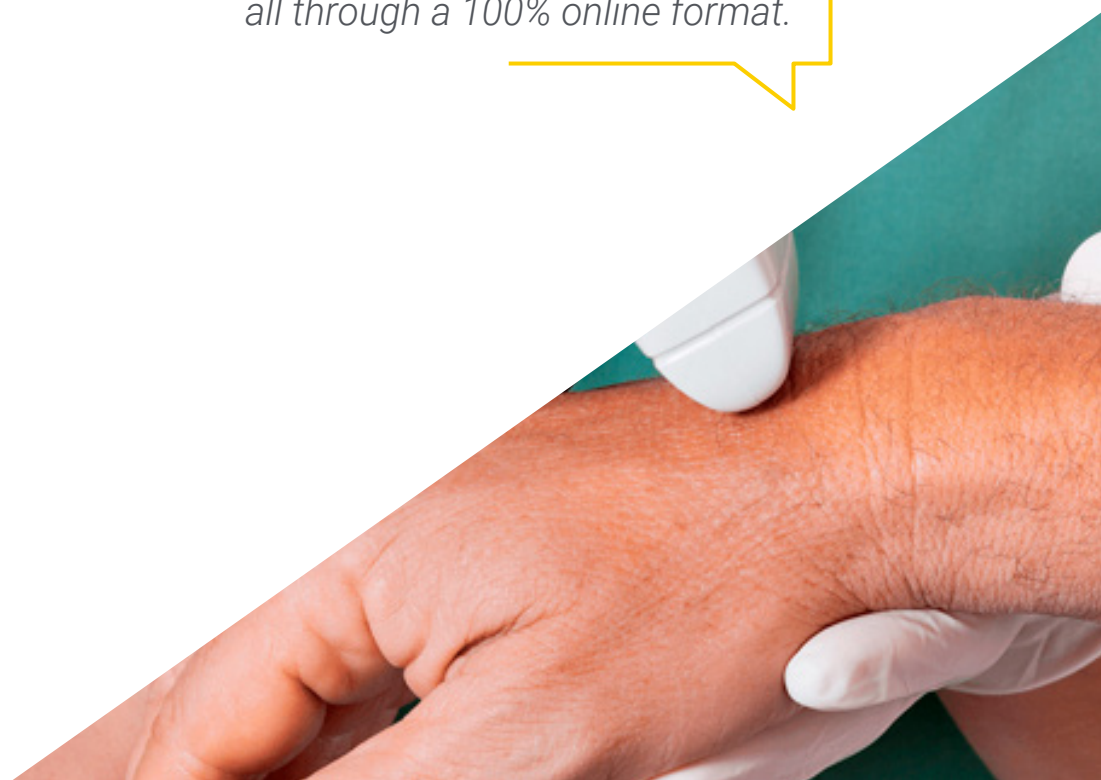
The program’s teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby students must try to solve the different professional practice situations that arise throughout the program. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

*Conduct the most reliable tests to assess wrist stability post-injury effectively.*

*Enroll in this program to enhance your skills in musculoskeletal ultrasound for the treatment of wrist and hand injuries, all through a 100% online format.*



# 02 Objectives

The design of this Postgraduate Diploma has been carried out with the idea in mind of enabling the update and expansion of the physiotherapist's knowledge in the field of using musculoskeletal ultrasound to detect and treat pathologies that occur in the hand and wrist. This way, you will master the most innovative examination techniques, ensuring their acquisition through the following general and specific objectives set by TECH.







“

*Incorporate the latest advances in Musculoskeletal Ultrasound in Wrist and Hand Physiotherapy into your daily practice to confidently address all your professional challenges”*



## General Objectives

- ♦ Learn to locate the different anatomical structures of the region
- ♦ Identify pathologies for a correct treatment of ultrasound-guided rehabilitation medicine
- ♦ Define the limits of ultrasound
- ♦ Learn about the use of ultrasound in the framework of physiotherapist skills



*Identify the most common ligament pathologies occurring in the hand and wrist to establish their proper treatment through this qualification"*





## Specific Objectives

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### Module 1. Basic Ultrasound

- ♦ Learn about ultrasound and an ultrasound scanner, its history and application to physiotherapy
- ♦ Identify the ultrasound patterns of the different structure of the locomotor system
- ♦ Study the different devices available in ultrasound and learn how to use them beneficially
- ♦ Explain the use of ultrasound by the rehabilitation physician and its legal considerations
- ♦ Describe the piezoelectric effect and the physical basis of ultrasound
- ♦ Explain the different components of the equipment
- ♦ Explain the production of the ultrasound image
- ♦ Describe the terminology used in ultrasound
- ♦ Define the types of images obtained by ultrasound and the different tissue patterns
- ♦ Elbow

### Module 2. Ultrasound of the Upper Limb: Wrist

- ♦ Describe the sonoanatomy of the wrist joint
- ♦ Describe the normal examination of the structures of the dorsal aspect of the wrist
- ♦ Describe the normal examination of the structures of the palmar aspect of the wrist
- ♦ Identify the most common lesions of wrist, to ensure correct ultrasound-guided treatment and/or monitoring of their evolution
- ♦ Learn how to perform ultrasound-guided dynamic assessment tests for the wrist
- ♦ Describe less common pathologies that can affect the wrist joint

### Module 3. Ultrasound of the Upper Limb: Hand

- ♦ Describe the sonoanatomy of the hand joint
- ♦ Describe the normal examination of the structures of the dorsal aspect of hand
- ♦ Describe the normal examination of the structures of the palmar aspect of hand
- ♦ Identify the most common lesions of the hand, to ensure correct ultrasound-guided treatment and/or monitoring of their evolution
- ♦ Learn how to perform ultrasound-guided dynamic assessment tests for the hand
- ♦ Describe the least common pathologies that can affect the hand



03

# Course Management

To preserve the excellent academic quality inherent in TECH's programs, this qualification features a teaching team composed of specialists in Physical Medicine and Rehabilitation and in Physiotherapy, who have worked in the best hospitals and top-level clinics. Furthermore, the didactic resources available to the student during the duration of this Postgraduate Diploma are specifically prepared by these professionals. For this reason, the provided contents will be applicable in the daily work.







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*The teaching staff of this Postgraduate Diploma is composed of highly skilled professionals with extensive expertise in musculoskeletal ultrasound management"*

## Management



### Dr. Castillo Martín, Juan Ignacio

- ♦ Head of Physical Medicine and Rehabilitation Department at HU 12 de Octubre
- ♦ Doctor Specialist in Physical and Rehabilitation Medicine, Hospital Complex Ruber Juan Bravo
- ♦ Rehabilitation Physician at the Traffic Accidents Unit of the Ruber Juan Bravo Hospital Complex
- ♦ Rehabilitation Physician. Recoletas Cuenca Hospital
- ♦ Coordinator of continuing education of the Spanish Society of Cardiology in Exercise Testing with Oxygen Consumption
- ♦ Associate Professor, Complutense University of Madrid. Faculty of Medicine
- ♦ Teaching coordinator in continuing education courses at the Madrid Regional Ministry of Health: "Tertiary prevention in chronic cardiopathic patients. Cardiac Rehabilitation"
- ♦ Bachelor in Medicine and Surgery. University of Salamanca
- ♦ Master's Degree in Cardiac Rehabilitation. SEC-UNED
- ♦ Master in Disability Assessment Autonomous University Madrid
- ♦ Master Child Disability. Complutense University of Madrid
- ♦ Doctorate Course: Neurosciences University of Salamanca
- ♦ Member of the Spanish Society of Cardiology

## Professors

### Dr. Teijeiro, Javier

- ◆ Director and physiotherapist at Atlas Physiotherapy Clinic
- ◆ Physiotherapist and technical director of the Physiotherapy Service at the San Pablo and San Lázaro Care Center in Mondoñedo
- ◆ Regional Delegate of the Spanish Society of Ultrasound and Physiotherapy
- ◆ Physiotherapist at the Dinán Viveiro Clinic
- ◆ Ph.D. in Health, Disability, Dependence, and Well-being
- ◆ Master's Degree in Natural Medicine and its Applications in Primary Care from the University of Santiago de Compostela
- ◆ Master's Degree in Pharmacology for Physiotherapists from the University of Valencia
- ◆ Official Master's Degree in Disability and Dependence Intervention from the University of A Coruña
- ◆ Master's Degree in Diagnostic Imaging from the University of Valencia
- ◆ Postgraduate Diploma in Musculoskeletal Ultrasound from Francisco de Vitoria University

### Mr. Nieri, Martín Alejandro

- ◆ Diagnostic Imaging Technician expert in Musculoskeletal Ultrasonography
- ◆ Diagnostic Imaging Technician at the Son Espases University Hospital
- ◆ CEO of Ultrasound Assistance & Teleradiology Service SL
- ◆ Director of the Quality Control Department in Ultrasound at Ultrasound Assistance & Teleradiology Service SL
- ◆ Freelance Diagnostic Imaging Technician
- ◆ Teacher in medical training courses
- ◆ Participation in Ultrasound training courses

### Dr. Pérez Calonge, Juan José

- ◆ Podiatrist expert in Integral Foot Surgery
- ◆ Podiatrist at Gayarre Podiatric Clinic
- ◆ Author of the article Direct Examination Technique of Onychomycosis using Potassium Hydroxide Microscopy
- ◆ Ph.D. in Health Sciences from the Public University of Navarra
- ◆ Official Master's Degree in Health Assessment from the Complutense University of Madrid
- ◆ Official Master's Degree in Advanced Podiatry from CEU
- ◆ Expert in Surgery from the Complutense University of Madrid
- ◆ Foot Infiltration Course from the Complutense University of Madrid

### Ms. Sánchez Marcos, Julia

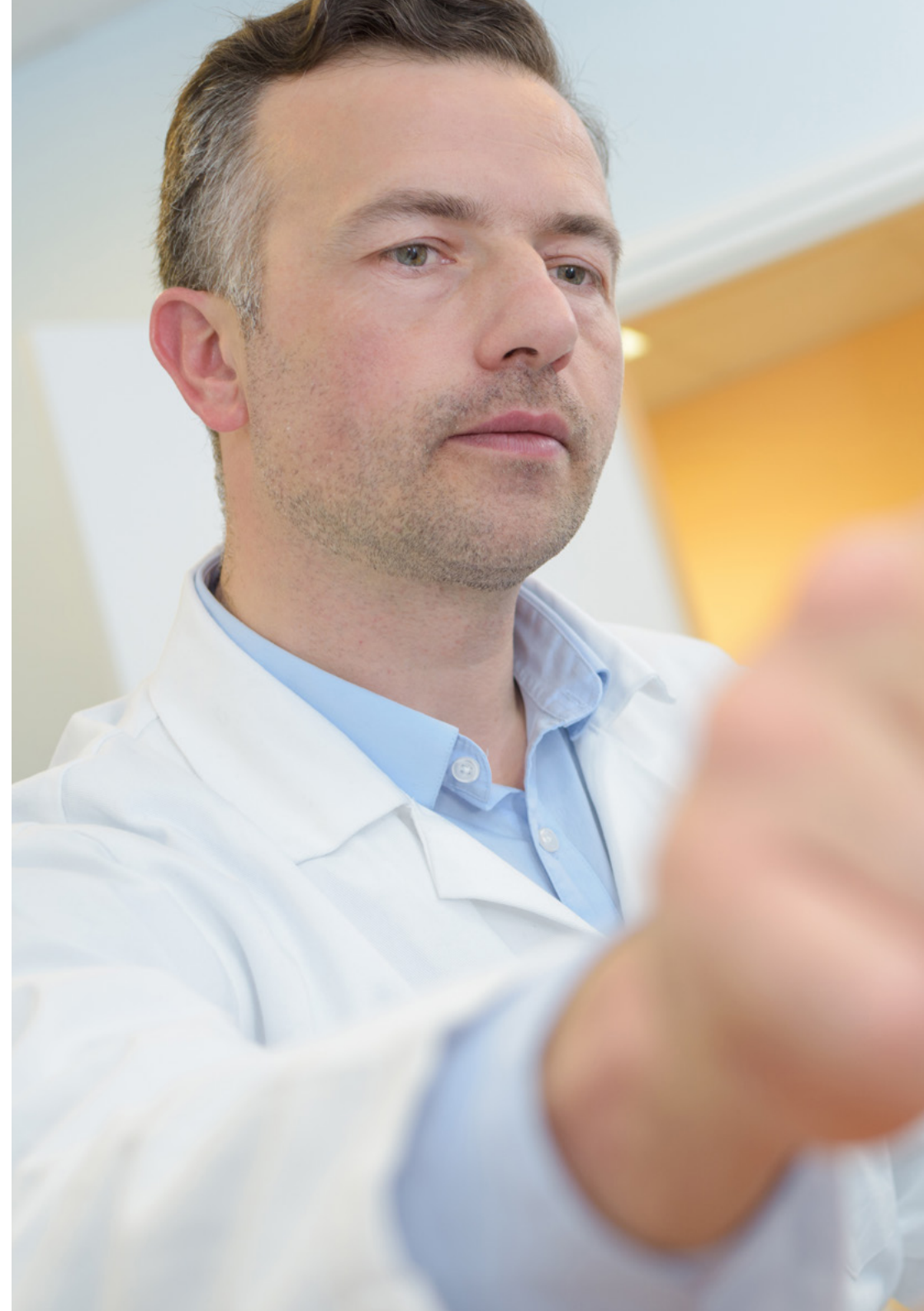
- ◆ Physiotherapist, osteopath, and Pilates instructor at Nupofis Clinic
- ◆ Physiotherapist and osteopath at Isabel Amoedo Physiotherapy Clinic
- ◆ Physiotherapist at Vithas Nuestra Señora de Fátima Hospital
- ◆ Physiotherapist at ASPODES-FEAPS
- ◆ Physiotherapist at Fisiosalud Clinic
- ◆ Master's Degree in Electrotherapy from CEU Cardenal Herrera University
- ◆ Expert in Sonographic Anatomy of the Musculoskeletal System from European University
- ◆ Neurodynamics Course by Zerapi Advanced Physiotherapy
- ◆ Percutaneous Therapeutic Electrolysis "EPTE" Course
- ◆ Myofascial and Articular Neurodynamic Fibrolysis "Hooks" Course by Instema
- ◆ Diathermy Course by Helios Electromedicine

**Dr. Santiago Nuño, Fernando**

- Physiotherapist, osteopath, podiatrist, and co-director at Nupofis Clinic
- Physiotherapist and podiatrist at Armstrong International Clinic
- Orthopedist at Ortoaccesible
- Teacher of Musculoskeletal Ultrasound and Guided Injections at Complutense University of Madrid and European University of Madrid
- Doctor in Podiatry from the University of La Coruña
- Specialized physiotherapist in Traumatology, Neurology, and Sports Injury Rehabilitation at Armstrong International Clinic
- Own Master's Degree in Advanced Clinical Podiatry from CEU - Cardenal Herrera University
- Own Master's Degree in Clinical Management, Medical and Healthcare Management from the CEU - Cardenal Herrera Oria University
- Own Master's Degree in Musculoskeletal Ultrasound from CEU - Cardenal Herrera University
- Master's Degree in Manual Therapy Specialist from Complutense University Madrid
- Master in Online Pediatrics Research from Rey Juan Carlos University Madrid
- Master's Degree in Orthopedic Product Specialist and Supervisor from Complutense University Madrid

**Mr. García Expósito, Sebastián**

- Expert in radiodiagnostic applications and techniques
- Radiodiagnosis technician at Sanitas Women's Center
- Radiodiagnosis technician at Hospital de la Zarzuela
- Graduate in Bioimaging Production from the National University of Lomas de Zamora





### **Mr. Santiago Nuño, José Ángel**

- ◆ Physiotherapist, osteopath, dietitian, nutritionist, and co-director of Nupofis Clinic
- ◆ Dietitian and nutritionist in various physiological situations at Medicadiet
- ◆ Diploma in Physiotherapy from San Pablo CEU University
- ◆ Postgraduate Certificate in Human Nutrition and Dietetics from San Pablo CEU University
- ◆ Postgraduate Specialist in Food Exchange System for Diet Preparation and Menu Planning from the University of Navarra
- ◆ Specialized physiotherapist in Traumatology, Neurology, and Sports Injury Rehabilitation at Armstrong International Clinic
- ◆ Master's Degree in Sports Physiotherapy from the Complutense University of Madrid
- ◆ Expert in Traditional Chinese Medicine and Acupuncture for Physiotherapists at the University of Castilla La Mancha

### **Dr. Casado Hernández, Israel**

- ◆ Podiatrist and Podiatry Researcher
- ◆ Director of Vitalpie
- ◆ Podiatrist for youth football clubs such as Getafe CF and AD Alcorcón
- ◆ Associate Professor in university studies
- ◆ Author of over 20 scientific articles and 7 book chapters
- ◆ Doctor in Epidemiology and Clinical Research in Health Sciences from Rey Juan Carlos University
- ◆ Degree in Podiatric Medicine from Complutense University of Madrid
- ◆ Master's Degree in Podiatry Research from Rey Juan Carlos University

# 04

## Structure and Content

The syllabus of this Postgraduate Diploma has been designed with the intention of providing the physiotherapist with the knowledge required to expand and update their skills in the use of musculoskeletal ultrasound to diagnose and treat wrist and hand conditions. The didactic contents you will access during the duration of this program are available in a wide range of textual and interactive formats, with the aim of promoting a 100% online, individualized, and engaging education.



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*The cutting-edge relearning system offered by this Postgraduate Diploma will enable you to enhance your musculoskeletal ultrasound skills at your own pace"*



### Module 1. Basic Ultrasound

- 1.1. Basic Ultrasound I
- 1.2. General Aspects of Musculoskeletal
- 1.3. Physical Bases of Ultrasound. Piezoelectric Effect
- 1.4. Basic Ultrasound II
- 1.5. Knowledge of the Equipment
- 1.6. Equipment Management: Parameters
- 1.7. Technological Improvements
- 1.8. Basic Ultrasound III
- 1.9. Artifacts in Ultrasound
- 1.10. Foreign Bodies
- 1.11. Types of Images and Different Tissue Patterns in Ultrasound
- 1.12. Dynamic Maneuvers
- 1.13. Advantages and Disadvantages of Ultrasound

### Module 2. Ultrasound of the Upper Limb: Wrist

- 2.1. Normal Sonoanatomy of the Wrist
- 2.2. Dorsal Aspect Examination
- 2.3. Palmar Aspect Examination
- 2.4. Wrist Pathology
- 2.5. Most Common Tendon Pathology
- 2.6. Other Wrist Joint Pathology
- 2.7. Dynamic Tests on the Wrist
- 2.8. Clinical Cases

### Module 3. Ultrasound of the Upper Limb: Hand

- 3.1. Introduction
- 3.2. Normal Sonoanatomy of the Hand
- 3.3. Dorsal Aspect Examination
- 3.4. Palmar Aspect Examination
- 3.5. Pathology of the Hand
- 3.6. Most Common Pathologies of the Hand
- 3.7. Dynamic Tests on the Hands
- 3.8. Clinical Cases







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*The syllabus of this program, designed by specialists in Physical Medicine and Rehabilitation and in Physiotherapy, will provide you with the latest knowledge in Musculoskeletal Ultrasound in Wrist and Hand Physiotherapy”*

# 05

# 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.





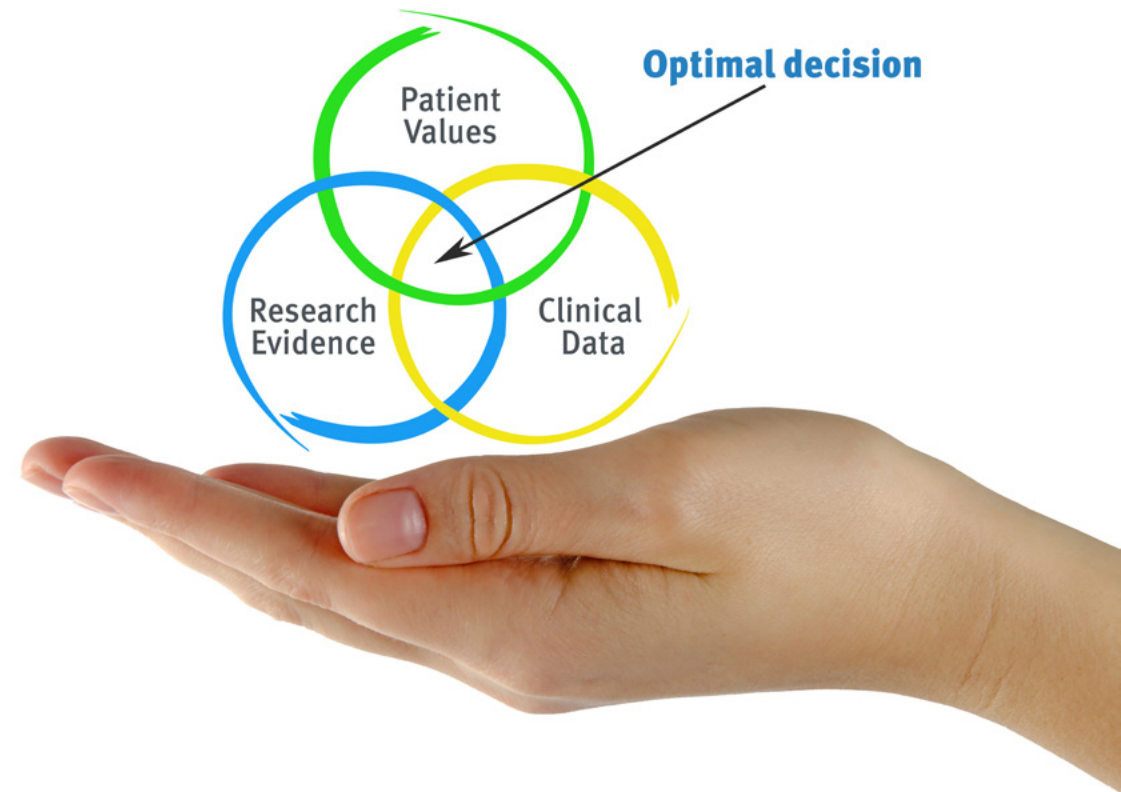
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## 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. Physiotherapists/kinesiologists 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 of professional physiotherapy practice.



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*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. Physiotherapists/kinesiologists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the physiotherapist/kinesiologist 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.



*The physiotherapist/kinesiologist will learn through real cases and by solving 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 we trained more than 65,000 physiotherapists/kinesiologists with unprecedented success in all clinical specialties, regardless of the workload. 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 training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for 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 our 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 really 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.



#### Physiotherapy Techniques and Procedures on Video

TECH brings students closer to the latest techniques, the latest educational advances and to the forefront of current Physiotherapy techniques and procedures. 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 them as many times as you want.



#### 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.

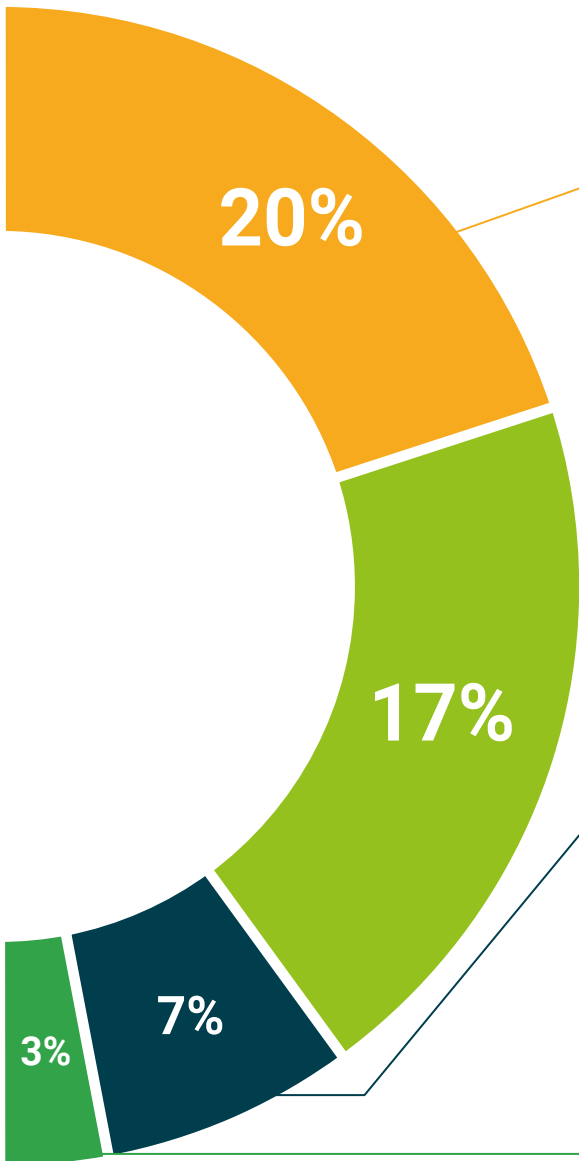
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



#### 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.





# 06 Certificate

The Postgraduate Diploma in Biostatistics and Health Research Musculoskeletal Ultrasound in Wrist and Hand Physiotherapy guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global 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 **Postgraduate Diploma in Musculoskeletal Ultrasound in Wrist and Hand Physiotherapy** 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: **Postgraduate Diploma in Musculoskeletal Ultrasound in Wrist and Hand Physiotherapy**

Modality: **online**

Duration: **6 months**

Accreditation: **16 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.





## Postgraduate Diploma Musculoskeletal Ultrasound in Wrist and Hand Physiotherapy

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 16 ECTS
- » Schedule: at your own pace
- » Exams: online

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