

# Postgraduate Certificate Shock Waves





## Postgraduate Certificate

### Shock Waves

Course Modality: Online

Duration: 6 weeks

Certificate: TECH Technological University

Official N° of hours: 150 h.

Website: [www.techtute.com/medicine/postgraduate-certificate/shock-waves](http://www.techtute.com/medicine/postgraduate-certificate/shock-waves)

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# 01

# Introduction

Over the years, the number of research studies focused on discovering or perfecting non-invasive techniques has increased. In this sense, Shock Waves have become a treatment that delivers a lot of energy to painful points in musculoskeletal tissues with some kind of condition. This Postgraduate Certificate will deepen in the use of waves in therapeutic contexts, promoting the learning of their use and benefits based on the latest scientific developments.



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*Learn with an updated program which are the recommendations of the scientific societies about Shock Waves”*

Energy can become a great ally when treating injuries and chronic pain. In this regard, new therapies involving acoustic waves have been developed for musculoskeletal rehabilitation or, in some cases, to treat inflammation, calcification and chondral processes. Shock waves for therapeutic purposes in medicine are pressure waves that are generated quickly with a positive pressure phase, exerting sufficient force to cause cavitation in the fluid.

For this reason, the Shock Wave Postgraduate Certificate program focuses on providing interested students with all the information they need on this subject. In this way, the recommendations of the medical and scientific society on the use of this therapy will be taken into consideration, as well as the realization of a complete study of the physical and biological principles of Shock Waves.

All the content is available in a 100% online modality that provides the student with the ease of being able to study it comfortably, wherever and whenever they want. All you need is a device with internet access to take your career one step further. A modality according to the current times with all the guarantees to position the professional in a highly demanded sector.

This **Postgraduate Certificate in Shock Waves** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- More than 75 practical cases presented by experts in electrotherapy
- The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional
- New developments on the role of the rehabilitation physician in the application of electrotherapy
- Practical exercises where self-assessment can be used to improve learning
- Algorithm-based interactive learning system for decision-making in the situations that are presented to the student
- Its special emphasis on research methodologies on electrotherapy applied to Rehabilitation Medicine
- 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



*Discover how to use Shock Waves in therapies for patients with chronic pain"*



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*This Postgraduate Certificate will help you to learn about the indications, recommendations, contraindications and side effects of Shock Waves"*

*Learn from the best the application of Shock Waves in a medical environment.*

*It is a program with a methodology focused on providing you with practical cases to enhance your training.*

The teaching staff includes professionals from the field of Medicine, who bring their experience to this training 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 training programmed to train in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this, the professional will have the help of an innovative interactive video system made by recognized experts in Electrotherapy in Rehabilitation Medicine, with great experience.



# 02 Objectives

The program has been designed to help professionals carry out a high-quality process that involves all the current knowledge and techniques in the sector of specialization of their interest. Through this approach, a series of general and specific objectives emerged to guide the path to be followed. In this way, it will be possible to generate a scientific discussion on the recommendations provided by the medical society on Shock Waves. At the same time, it will favor the learning of the indications, recommendations, contraindications and side effects of this therapy.







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*Apply the knowledge acquired in your profession and face new work challenges”*



## General Objectives

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- Update the knowledge of the Rehabilitation Medicine professional in the field of Electrotherapy
- Promote work strategies based on a comprehensive approach to the patient as a standard model for achieving excellent care
- Encourage the acquisition of technical skills and abilities, through a powerful audiovisual system, and the possibility of development through online simulation workshops and/or specific training
- Encourage professional stimulation through continuing education and research





## Specific Objectives

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- Discuss the recommendations of the scientific societies on shock waves
- Know the physical and biological principles of shock waves
- Identify the types of generators and focal applicators
- Know the indications, recommendations, contraindications and side effects of shock waves



*Become a differentiating agent in your work environment and apply therapies that help your patients with their ailments"*

# 03

# Course Management

We put at your service the competence and direction of specialists with long experience in the application of the different systems and techniques of Electrotherapy, professionals chosen for their wide prestige in the profession. All of them have an excellent background in rehabilitation medicine and are professionals with years of teaching experience that offer the student of the program, the most complete, direct and real vision of the work with Electrotherapy in rehabilitation medicine.







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*With the support and guidance of an excellent group of professionals, you will take your skills to the next professional level"*

## Management



### **Dr. del Villar Belzunce, Ignacio**

- ◆ Head of the Rehabilitation and Physical Medicine Department of the Rey Juan Carlos I Hospital in Móstoles. Madrid
- ◆ Specialist in Physical Medicine and Rehabilitation, University Hospital La Paz, Madrid
- ◆ Head of the Rehabilitation and Physical Medicine Associate Department of the Rey Juan Carlos I Hospital in Móstoles
- ◆ Specialist Physician in the Rehabilitation and Physical Medicine Service of the Rey Juan Carlos I Hospital in Móstoles
- ◆ Professor of ultrasound-guided interventional techniques in the locomotor system Quierón Salud
- ◆ Degree in Medicine and Surgery from the University of Zaragoza
- ◆ Specialist in Physical Medicine and Rehabilitation, University Hospital La Paz, Madrid





## Professors

### Dr. Salmerón Celi, Miguel Bernardo

- ◆ Specialist Physician/Physical Medicine and Rehabilitation (General Rehabilitation and Pelvic Floor Unit). Rey Juan Carlos University Hospital. Móstoles, Madrid
- ◆ Specialist Physician/Physical Medicine and Rehabilitation (General Rehabilitation and Shock Waves Unit). Rey Juan Carlos University Hospital. Móstoles, Madrid
- ◆ Specialist Physician/Traumatology Service. Rey Juan Carlos University Hospital. Móstoles, Madrid
- ◆ Medical Surgeon Degree, San Martin de Porres, Lima-Peru Private University
- ◆ Specialist in Physical Medicine and Rehabilitation, University Hospital La Fe, Valencia.
- ◆ Doctorate, Research Work: "Effects of Nitric Oxide in the Treatment of Rotator Cuff Tendinitis". In the Applied Sports Sciences program
- ◆ Diploma of Advanced Studies (DAS): Applied Sports Sciences, Faculty of Physiology. University of Valencia

# 04

## Structure and Content

The syllabus has been designed to meet the requirements of the profession in a demanding work environment. In this way, and following the recommendations of an excellent teaching staff, a broad vision is offered on the physical and biological principles of Shock Waves, as well as the indications, recommendations, contraindications and side effects of this electrotherapy. Throughout the modules that make up the Postgraduate Certificate, students will study each and every one of the aspects that the rehabilitation physician must master to ensure their competence in this type of intervention.





*Develop your professional profile with a program that will prepare you in a practical way to perform an excellent professional work"*



## Module 1. Shock Waves

- 1.1. Recommendations from Scientific Societies
- 1.2. Physical Principles of Shock Waves
- 1.3. Biological Effects of Shock Waves
- 1.4. Types of Generators and Focal Applicators
- 1.5. Pressure Wave Generator and Applicators
- 1.6. Indications and Recommendations
- 1.7. Contraindications and Secondary Effects
- 1.8. Types of Indications I: Standard Approved Indications
- 1.9. Types of Indications II: Indications Empirically Proven Common Clinical Uses
- 1.10. Types of Indications III: Exceptional and Experimental Indications





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*Become a high-level professional  
and be prepared to face your  
patients' electrotherapies”*

# 05 Methodology

This training program provides you with 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. 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. Gervas, 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.

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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. 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 Harvard 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 multimedia content presentation training Exclusive 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 your goals.



#### Classes

There is scientific evidence on the usefulness of learning by observing experts: The system termed Learning from an Expert strengthens knowledge and recall capacity, and generates confidence in the face of difficult decisions in the future.



#### 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 Certificate in Shock Waves, in addition to the most rigorous and updated training, access to a Postgraduate Certificate issued by TECH Technological University.



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*Successfully complete this training and receive your university degree without travel or laborious paperwork”*

This **Postgraduate Certificate in Shock Waves** contains the most complete and updated scientific program on the market.

After the student has passed the evaluations, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** by tracked delivery\*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Certificate in Shock Waves**

Official N° of hours: **150 h.**



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

health future confidence people education information tutors guarantee accreditation teaching institutions technology learning community commitment personalized service innovation knowledge present quality development languages virtual classroom



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**Shock Waves**

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