

# Postgraduate Diploma Spinal Cord Injuries in Sports

Endorsed by the NBA





## Postgraduate Diploma Spinal Cord Injuries in Sports

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 8h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-spinal-chord-injuries-sports](http://www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-spinal-chord-injuries-sports)

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# 01

# Introduction

The need to improve treatment effectiveness in sports injuries to the spine in the shortest possible time has led to a deeper degree of athlete care. This requires a high level qualification and professional updating to establish the most appropriate therapeutic strategy for each case. Through a series of exercises based on real cases, physicians will be updated on the latest advances in treating sports injuries. The techniques shown in this 100% online course serve to delve deeper into athlete evaluations, including clinical, functional and imaging test aspects.





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*You will be able to optimize the use of body and technical resources to reach a highly competitive level with the best and most innovative tools on the market”*

Decision-making when dealing with sports injuries is conditioned not only by the type and severity of the injury, but also by the clinical functional situation of the athlete and their short, medium and long term requirements, without losing sight of their expectations and goals. For the correct therapeutic management of an injury, this program takes a deep look into the different therapeutic modalities, their indications and expected results, their possible complications and, of course, how to master their application.

This Postgraduate Diploma brings together up to date knowledge on the specific biomechanics present in spine pathology in sport. In addition to the causes, the program will present injury mechanisms, diagnoses and treatments, both conventional and state of the art, for the most common pathologies. Based on this, there will also be a deep study of the specific way each sport affects the different vertebral segments, and how modifications in the characteristics of training can prevent, avoid or minimize pain in the spine.

In the course of six months, physicians will delve deeper into the field of application of Sports Medicine, understanding the competitive advantages it provides regarding Sports Injuries in the Spine, which ultimately will result in physicians positioning themselves at the forefront of the medical field. Furthermore, the program enjoys the best 100% online study methodology, which eliminates the need to attend classes in person and to follow a predetermined schedule.

This **Postgraduate Diploma in Spinal Cord Injuries in Sports** contains the most complete and up to date academic program on the market. Its most notable features are:

- ♦ Practical cases presented by experts in Sports Medicine and Sports Injuries
- ♦ 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 practice
- ♦ Practical exercises where self assessment can be used 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



*TECH compiles updated content to make this Postgraduate Diploma a highly effective specialization process”*

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*It takes a deep look into athlete evaluations by collecting clinical, functional and imaging test aspects not only to do sport, but also to improve physical performance”*

The program's teaching staff includes professionals from the sector who contribute their work 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 purpose, the student will be assisted by an innovative, interactive video system created by renowned and experienced experts.

*You are before a highly specific online course, which will allow you to get up to speed in the therapeutic management of sports injuries in no time at all.*

*Learn about the advances in biomechanics specific to the spine pathology in sport from an eminently practical approach.*



# 02 Objectives

The main objective of this Postgraduate Diploma is to offer the vision and updated skills necessary to turn the area of sports medicine into an invaluable tool to treat spinal injuries. Beyond its potential in physical terms, this program will delve into the different therapeutic modalities to prevent and treat sports injuries, their indications and benefits.





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*Increase your competencies in the approach to emotional intervention based on spirituality through this Postgraduate Diploma”*



## General Objectives

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- ♦ Study the different injuries that can occur in different sports
- ♦ Know the most frequent upper limb pathologies in athletes
- ♦ Explore the radiological findings for upper limb pathologies
- ♦ Know the most frequent lower limb injuries in athletes, their etiology and injury mechanisms
- ♦ Learn how to perform correct clinical assessments
- ♦ Know the most effective diagnostic methods and treatment options
- ♦ Know different situations in which exercise and sport have differential aspects from the general population
- ♦ Know the benefits and risks of sport in certain diseases
- ♦ Explore the different therapeutic modalities to prevent and treat sports injuries, their indications and benefits
- ♦ Acquire more specific and current knowledge in the field of sports nutrition and dietetics for specific cases of sports activity and sports nutritional supplementation
- ♦ Gain in depth knowledge of the meaning of doping, its origins, doping substances and their consequences on health, detection techniques, legal bases of regulation and the methods to fight against it, as well as its prevention strategies





## Specific Objectives

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### Module 1. Athlete Assessment

- ◆ Know the clinical and functional tests to be performed on athletes
- ◆ Explore the mechanisms of strength, speed, power and physical condition production in athletes and their performance
- ◆ Know the main imaging tests that can be performed on athletes
- ◆ Explore the main specific functional tests to rule out pathologies in athletes and to adapt the types of training

### Module 2. Spinal Sports Injuries

- ◆ Know spinal injury biomechanics in athletes Injury-inducing movements: How to train the athlete to avoid them and, according to the location and characteristics of the pain, which segment or structure to think about at the time of diagnosis
- ◆ Distinguish which sports can produce a negative evolution of vertebral deformities and which combinations deformity/ specific sport present a greater tendency toward spinal injuries or pain
- ◆ Investigate what real benefit can be expected from new therapeutic alternatives that promise rapid recovery from injuries or the disappearance of spinal pain where classical treatments have failed

### Module 3. Therapeutic Management of Sports Injuries

- ◆ Know the indications and contraindications of the different therapeutic options studied
- ◆ Explore the expected effects of each one of them as well as possible complications
- ◆ Enter the world of new technologies in the field of sports
- ◆ Know how to handle the high demands of professional or high performance sports



03

# Course Management

The design and development of this Postgraduate Diploma has been carried out by a multidisciplinary teaching staff of recognized competence. In pursuit of excellence, the professors offer their experience to create learning situations that will allow physicians to expand and update their knowledge. Professionals will be updated thanks to a highly competent teaching staff that will support them along the way to updating their knowledge.





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*Don't miss the opportunity to update your skills and deepen your understanding of sports injuries with this high level Postgraduate Diploma taught by elite professionals”*

## International Guest Director

As President of the Department of Physical Medicine and Rehabilitation at the Mayo Clinic in Arizona, Dr. Arthur De Luigi is one of the leading exponents in the field of Sports Medicine. In fact, he is the director of this specialty at the same clinic, also dedicating himself to the areas of pain medicine, brain injury medicine and musculoskeletal ultrasound.

Internationally, he is recognized as a leading figure in Adaptive Sports Medicine, serving as the director and lead physician for both the U.S. Paralympic Alpine Ski Team and the U.S. Para-Snowboard Team. In this role, he has served as a physician on the U.S. Olympic Committee, performing his work at the Colorado Olympic Training Center.

In fact, his involvement in sports is considerable, as he has treated players in basketball, soccer, soccer, golf, baseball, field hockey and other sports. Thus, he is the medical director of the Washington Wizards and Washington Mystics teams, being part of the medical staff of Phoenix Rising FC, Arizona Coyotes, Washington Nationals and DC United. He has also served as co-medical director of the Phoenix Open and chief medical advisor for the American 7 Football League.

In addition, he has had a prominent role on concussion task forces and research groups, including the NBA's own. His experience also extends to the U.S. Army, having held the rank of major and participated as a medic in Operation Iraqi Freedom. For this, he received numerous awards, including the Bronze Star and the Superior Unit Decoration.



## Dr. De Luigi, Arthur

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- ♦ Director of Sports Medicine - Mayo Clinic Arizona
- ♦ President of the Department of Physical Medicine and Rehabilitation at the Mayo Clinic - Scottsdale/Phoenix, Arizona.
- ♦ Phoenix Rising FC Team Physician
- ♦ Arizona Coyotes Team Physician
- ♦ Medical Director at Kilogear Cut
- ♦ Special Olympics Arizona Medical Director
- ♦ Co-Medical Director, Waste Management Phoenix Open
- ♦ Chief Medical Advisor for the American 7 Football League
- ♦ Professor of Rehabilitation Medicine at Georgetown University
- ♦ Director of Electrodiagnostic, Physical Medicine and Rehabilitation at Blanchfield Army Community Hospital, Fort Campbell
- ♦ Director of Research at Fort Belvoir Community Hospital
- ♦ Director of Sports Medicine at MedStar Montgomery Medical Center
- ♦ Team Physician, Washington Mystics
- ♦ Chief Medical Officer, Washington Wizards
- ♦ Doctor of Osteopathic Medicine, Lake Erie College of Osteopathic Medicine
- ♦ U.S. Army Major
- ♦ Graduate in Biology and Chemistry from George Washington University
- ♦ Resident manager at Walter Reed Army Medical Center
- ♦ Master's Degree of Science in Health Management from Lake Erie College of Osteopathic Medicine
- ♦ Superior Unit Decoration from the U.S. Army
- ♦ Bronze Star awarded by the U.S. Army

## Professors

### Dr. Fernández López, Juan Marcelo

- ♦ Manager and Clinical and Sports Nutritionist at Nutrir
- ♦ Co-founder and Director of the Spanish Society for the Study-Advancement of Sports Nutrition and Dietetics
- ♦ Specialist in Clinical-Sports Nutrition, treating amateur, semi-professional and professional athletes
- ♦ Associate Professor at Isabel I University
- ♦ Bachelor's Degree in Nutrition from the University of Córdoba
- ♦ Master's Degree and PhD in Nutrition and Metabolism, University of Cordoba







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*A unique, key and decisive training experience to boost your professional development”*

# 04

# Structure and Content

The content structure for this Postgraduate Diploma has been designed by the best professionals in the field of Sports Medicine, with extensive experience and recognized prestige in the profession, backed by the volume of cases they have reviewed, studied and diagnosed. They also have extensive mastery of new technologies applied to sports injuries in the spine.





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*This program will bring you up to speed on the knowledge you need to help your patients with disc and cervical pathology”*

## Module 1. Athlete Assessment

- 1.1. Anthropometric Measurements
  - 1.1.1. Anthropometry and Kineanthropometry
  - 1.1.2. The Anthropometric Method and Implementation
  - 1.1.3. Anthropometric Measurements Proportionality Topic: Body Composition
- 1.2. Body Composition
  - 1.2.1. Body Composition Assessment Methods
  - 1.2.2. Body Composition Fractionation
  - 1.2.3. Body Composition, Nutrition and Physical Activity
  - 1.2.4. Somatotype
- 1.3. Clinical Assessment
- 1.4. Usefulness of the Electrocardiogram and Echocardiogram in Cardiological Assessment in Healthy Athletes
- 1.5. Usefulness of Stress Tests in Cardiological Assessments of Healthy Athletes
- 1.6. Usefulness of Stress Tests with Oxygen Consumption in Athletes
- 1.7. Ultrasound in Sports Injuries
- 1.8. MRI in Sports Injuries
- 1.9. TC in Sports Injuries
- 1.10. Useful Tools in Sports Psychology

## Module 2. Spinal Sports Injuries

- 2.1. Spine Pathology and Injury Biomechanics in Sports
- 2.2. Cervical Pathology
  - 2.2.1. Anatomy and Biomechanics
  - 2.2.2. Injury Mechanism and Classification
  - 2.2.3. Diagnosis
  - 2.2.4. Treatment *Return to Play*
- 2.3. Spondylolysis-Spondylolisthesis
  - 2.3.1. Anatomy and Biomechanics
  - 2.3.2. Injury Mechanism and Classification
  - 2.3.3. Diagnosis
  - 2.3.4. Treatment *Return to Play*





- 2.4. Other Causes of Rachialgia
  - 2.4.1. Facet Pain
  - 2.4.2. Fractures
  - 2.4.3. Sprains
- 2.5. Disk Pathology
  - 2.5.1. Anatomy and Biomechanics
  - 2.5.2. Injury Mechanism and Classification
  - 2.5.3. Diagnosis
  - 2.5.4. Treatment *Return to Play*
- 2.6. Weightlifting and Bodybuilding
  - 2.6.1. Spine Injuries
- 2.7. Vertebral Deformities and Sport
- 2.8. Treating Vertebral Orthoses in Sport
- 2.9. Spine Interventionism
- 2.10. The Spine in Athletes
  - 2.10.1. Diagnostic and Therapeutic Alternatives to Be Considered

### Module 3. Therapeutic Management of Sports Injuries

- 3.1. Therapeutic Exercise
- 3.2. Physiotherapy
- 3.3. Bandages
- 3.4. Manual Therapy
- 3.5. Infiltrations
- 3.6. Nerve Blocks
- 3.7. Radiofrequency
- 3.8. Regenerative Medicine I
  - 3.8.1. Standards in Clinical Use
  - 3.8.2. Clinical and Administrative Considerations
- 3.9. Regenerative Medicine II
  - 3.9.1. PRP Therapies
  - 3.9.2. Stem Cell Therapies
  - 3.9.3. Amniotic and Other Products
  - 3.9.4. Rehabilitation after Regenerative Therapies
- 3.10. New Technologies

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. 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.



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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 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.



# 06 Certificate

The Postgraduate Diploma in Spinal Cord Injuries in Sports guarantees students, in addition to the most rigorous and up to date education, access to a Postgraduate 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 **Postgraduate Diploma in Spinal Cord Injuries in Sports** contains the most complete and up to date scientific program on the market.

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

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

**Title: Postgraduate Diploma in Spinal Cord Injuries in Sports**

**Official N° of hours: 450 h.**

**Endorsed by the NBA**



\*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.



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



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# Postgraduate Diploma

## Spinal Cord Injuries in Sports

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**tech** technological  
university