# Postgraduate Diploma

## Aortic and Pelvic Interventional Procedures

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# Postgraduate Diploma
## Aortic and Pelvic Interventional Procedures

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Global University**
- Credits: **18 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-aortic-pelvic-interventional-procedures

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# Introduction

Aortic and pelvic diseases represent a significant challenge in medical practice due to their high morbidity and mortality rate. In this context, Interventional Procedures in these areas has become a key therapeutic strategy that has been shown to improve the clinical status of affected patients. Thanks to the development of new technologies, specialists are able to obtain more precise information about patients' health, which is very useful when making diagnoses. However, to take advantage of its benefits, doctors need to keep abreast of all the advances in this field. For this reason, TECH implements a pioneering online program that will deal with the most modern intervention techniques.

*Thanks to this 100% online Postgraduate Diploma, you will perform interventional procedures such as endovascular repair of Aortic Aneurysms in a safe and effective way"*

In the face of an aging global population, along with the increasing prevalence of cardiovascular diseases, Aortic and Pelvic Interventional Procedures have become increasingly important. Reports from the International Heart Federation reveal that more than a quarter of the world's population suffers from some form of vascular pathology, highlighting the need for specialists to perform more effective and less invasive interventional procedures. In this context, physicians need to delve into these techniques to incorporate them into their usual clinical procedures with maximum efficiency.

In this scenario, TECH is developing an innovative program in Aortic and Pelvic Interventional Procedures. The academic itinerary will delve into state-of-the-art vascular procedures, among which Balloon Angioplasty stands out. In this same line, the syllabus will delve into aspects ranging from the placement of Stent-Grafts in Aneurysm treatments or Embolization techniques to diagnostic imaging procedures. In addition, the program will examine the use of Artificial Intelligence in Thoracic Aortic Interventional Procedures, in view of its usefulness in optimizing the precision of the procedures. In this way, graduates will develop advanced competencies to plan and perform interventions based on both anatomy and specific pathology of individuals.

The methodology of this program reinforces its innovative character. To this end, it employs the Relearning methodology, based on the repetition of key concepts to fix knowledge and facilitate learning. In this way, the combination of flexibility and a robust pedagogical approach makes it highly accessible. In addition, physicians will have access to a didactic library with a variety of multimedia resources in different formats such as interactive summaries, explanatory videos and infographics. The specialists will also be specialized in simulated learning environments to extract valuable lessons that will be applied in their work practice.

This **Postgraduate Diploma in Aortic and Pelvic Interventional Procedures** 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 Angiology and Vascular Surgery
- The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable 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

*You will achieve your objectives with the support of TECH didactic tools, including explanatory videos and interactive summaries"*

*Take this university program to update your knowledge at your own pace and without time constraints, thanks to the Relearning system"*

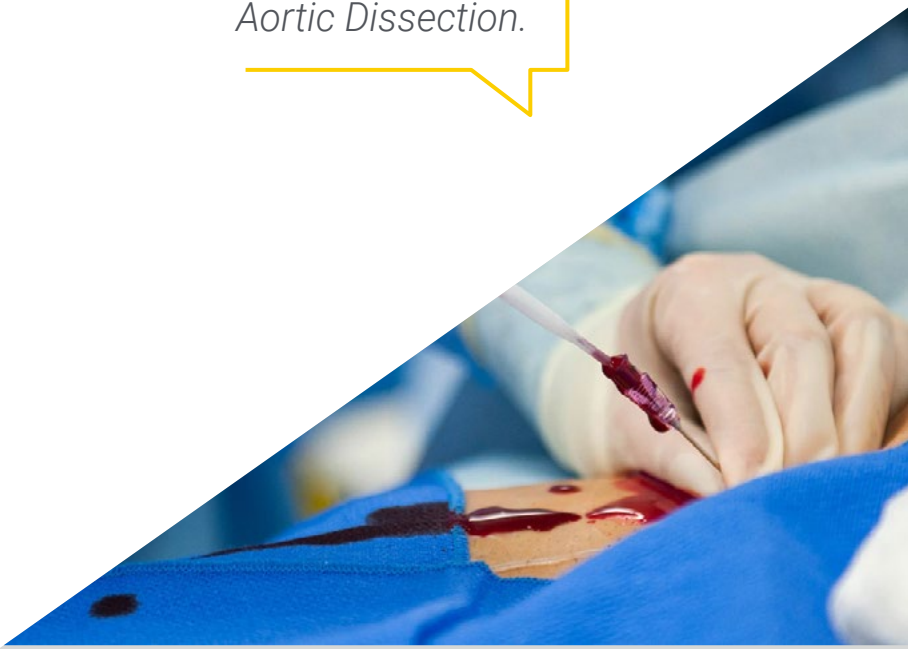
*You will master the Balloon Angioplasty procedure and restore flow.*

*You will delve into the therapeutic approach to treat Aortic Dissection.*

The program's teaching staff includes professionals from the sector who bring their work experience into this specialization, as well as recognized specialists. of reference 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 the professional must try to solve the different professional practice situations that arise during the course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.



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# Objectives

Through this Postgraduate Diploma, medical professionals will be highly qualified to perform interventional procedures in the aortic and pelvic areas. Likewise, graduates will obtain skills in the use of diagnostic imaging technologies (among which Magnetic Resonance Imaging or Computed Tomography stand out). In line with this, physicians will master the techniques of aortic endoprosthesis, embolization and other minimally invasive procedures. In addition, they will have the ability to identify and immediately address complications such as ruptures, bleeding or infections related to the interventions.


*You will be highly skilled in specific techniques of Aortic and Pelvic Interventional Procedures, such as aortic stenting or embolization"*

## General Objectives

- Develop the technical skills necessary to accurately perform and analyze angiographic studies
- Promote an appreciation of the importance of multidisciplinary teamwork in the interpretation and management of vascular angiographic results
- Acquire skills to apply techniques such as angioplasty, Stent placement, and other minimally invasive procedures
- Determine the procedures and protocols for performing and interpreting computed tomography angiography (CTA) in the context of vascular interventional procedures

*The emphasis on real clinical and practical cases that you will be able to study will help you enormously in the contextualization of the whole program"*

## Specific Objectives

### Module 1. Vascular Interventions

- Determine the fundamental principles of Angioplasty, including balloon dilatation and the use of Stents, in the treatment of arterial stenosis and Occlusions
- Identify the indications and contraindications for percutaneous angioplasty and detail the necessary pre- and postoperative care
- Analyze the techniques and devices used in embolization, including embolization materials and selective occlusion procedures
- Explore the applications of vascular interventional procedures in the treatment of aneurysms, vascular malformations and arteriovenous fistulae

### Module 2. Thoracic Aorta Interventional Procedures

- Identify the indications for interventional thoracic aortic surgery, including Aneurysms, Dissections and other pathologies
- Review imaging techniques used in the diagnosis and follow-up of thoracic aortic disease, such as computed tomography angiography (CTA) and magnetic resonance imaging (MRI)
- Determine therapeutic options for thoracic aortic aneurysms, including aortic stent-graft placement (EVAR) and open surgery
- Explore endovascular repair techniques for aortic dissections in the thoracic aorta

### Module 3. Interventional Procedures in Abdominal Aortic and Pelvic Arteries

- Identify the indications for interventional procedures in the abdominal aorta and iliac arteries, including Aneurysms, Stenosis and Occlusions
- Describe the imaging techniques used in the diagnosis and follow-up of disease in the abdominal aorta and iliac arteries, such as computed tomography angiography (CTA) and magnetic resonance angiography (MRA)
- Discuss therapeutic options for abdominal aortic aneurysms, including endovascular repair (EVAR) and open surgery
- Explore angioplasty and stenting techniques for iliac artery stenosis and occlusions

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# Course Management

TECH's priority is to offer anyone the most complete university programs aligned with the current demands of the labor market. For this reason, it carries out an exhaustive selection process to constitute its teaching staff. Thanks to this meticulous procedure, the present program counts with the collaboration of distinguished professionals in Aortic and Pelvic Interventional Procedures. These specialists have extensive work experience, where they have been part of renowned health institutions. Therefore, they have created teaching materials of the highest quality that will significantly optimize the clinical practice of the graduates.

*You will be advised at all times by the teaching team, made up of professionals with extensive experience in Aortic and Pelvic Interventional Procedures"*

## Management

### Dr. Del Río Solá, María Lourdes

- Chief from the Vascular Angiology and Surgery Service at the Valladolid University Clinical Hospital
- Specialist in Angiology and Vascular Surgery
- European Board in Vascular Surger
- Academic Correspondent of the Royal Academy of Medicine and Surgery
- Full Professor at the European University Miguel de Cervantes
- Associate Professor in Health Sciences at the University of Valladolid

## Professors

### Dr. Estévez Fernández, Isabel

- Chief of the Angiology and Vascular Surgery Section of the Hospital San Jorge de Huesca
- Physician at the Clinical Hospital of Valladolid
- Stay at Barnes-Jewish Hospital, St. Louis, Missouri USA
- Doctor of Medicine from the University of Valladolid
- Degree in Medicine from the University of Valladolid
- University Expert in Venous Thromboembolic Disease and Cancer
- Training as Director of X-Ray Facilities by the Spanish Society of Medical Physics
- Course on Radiological Protection by the Ministry of Health, Consumption and Social Welfare
- Member of: Spanish Society of Angiology and Vascular Surgery

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# Structure and Content

Through this program, physicians will have a solid anatomical and functional understanding of both the aortic and pelvic regions to apply interventional methods. The syllabus will delve into procedures such as Balloon Angioplasty, Stenting and Endovascular Ablation. In this sense, the syllabus will analyze diagnostic imaging techniques and evaluation methods for conditions such as Intramural Hematoma. The program will also provide the graduates with innovative strategies for endovascular treatment, which will be of great use in managing complications. In this way, specialists will develop advanced competencies to perform interventions based on patient specificities.

*You will acquire skills to effectively use sophisticated technologies such as Computed Tomography or Magnetic Resonance Imaging"*

## **Module 1.** Vascular Interventions

1.1. Balloon Angioplasty
- 1.1.1. Angioplasty Mechanisms
- 1.1.2. Patient Selection and Preprocedural Evaluation
- 1.1.3. Angioplasty Techniques and Procedures

1.2. Embolic Protection Devices
- 1.2.1. Embolic Protection Devices
- 1.2.2. Indications and Clinical Utility
- 1.2.3. Safety and Potential Complications of Atheroembolism

1.3. Stents and Stent-Grafts for Endovascular Treatment
- 1.3.1. Stents and Stent-Grafts
- 1.3.2. Implantation and Placement Techniques
- 1.3.3. Stent-Grafts in the Treatment of Aneurysms

1.4. Pharmacological Thrombolysis in Acute Thrombosis
- 1.4.1. Thrombolytic Agents
- 1.4.2. Administration and Monitoring Protocols
- 1.4.3. Clinical Outcomes and Associated Complications

1.5. Mechanical Thrombectomy in Acute Thrombosis
- 1.5.1. Thrombectomy Devices
- 1.5.2. Thrombectomy Procedures and Techniques
- 1.5.3. Outcomes and Effectiveness in Vascular Recanalization

1.6. Pharmacomechanical Thrombolysis in Acute Thrombosis
- 1.6.1. Pharmacomechanical Thrombolysis
- 1.6.2. Devices and Techniques Used
- 1.6.3. Comparison with Other Methods of Thrombolysis

1.7. Vasodilator Drugs in Limb Ischemia
- 1.7.1. Mechanism of Action and Vasodilator Effects in Limb Ischemia
- 1.7.2. Clinical Uses in Vascular Interventions
- 1.7.3. Administration of Drugs and Monitoring of Results after Administration of Vasodilator Drugs

1.8. Endovascular Embolization and Ablation in Vascular Malformations
- 1.8.1. Embolization and Ablation
- 1.8.2. Embolization Techniques
- 1.8.3. Endovascular Ablation: Methods and Clinical Applications

1.9. Pseudoaneurysms of Arterial Access
- 1.9.1. Evaluation of Pseudoaneurysms after Radial Access
- 1.9.2. Endovascular and Surgical Treatment
- 1.9.3. Follow-up and Management of Complications

1.10. Implantation of Devices for Endovascular Treatment
- 1.10.1. Implantation Techniques
- 1.10.2. Device Selection for Endovascular Treatment
- 1.10.3. Perioperative Management and Postimplantation Follow-Up

## **Module 2.** Thoracic Aorta Interventional Procedures

2.1. Interventional Procedures in Ascending Aortic Aneurysms
- 2.1.1. Associated Risk Factors
- 2.1.2. Clinical Manifestations and Diagnostic Methods
- 2.1.3. Treatment and Management of Ascending Aortic Aneurysms

2.2. Interventional Procedures in Aortic Arch Aneurysms
- 2.2.1. Diagnostic Evaluation and Imaging Strategies
- 2.2.2. Therapeutic Approaches for Transverse Arc Aneurysms
- 2.2.3. Innovations and Future Directions

2.3 Interventional Procedures for Descending Thoracic Aortic Aneurysms
- 2.3.1. Aneurysms of the Descending Thoracic Aorta
- 2.3.2. Clinical Findings and Diagnostic Imaging
- 2.3.3. Treatment and Management of Aneurysms of the Descending Thoracic Aorta

2.4. Interventional Procedures in Aortic Dissection
- 2.4.1. Clinical Manifestations and Differential Diagnosis
- 2.4.2. Therapeutic Approach and Treatment Strategies for Aortic Dissection
- 2.4.3. Innovations and Future Directions

2.5. Interventional Procedures in Intramural Hematoma
- 2.5.1. Diagnostic Imaging and Evaluation Methods in Intramural Hematoma
- 2.5.2. Treatment and Management of Intramural Hematoma
- 2.5.3. Innovations and Future Directions

2.6. Interventional Procedures in Penetrating Aortic Ulcers
- 2.6.1. Pathogenic Mechanisms
- 2.6.2. Clinical Diagnosis and Radiological Evaluation
- 2.6.3. Therapeutic Options and Surgical Considerations

2.7. Interventional Procedures in Trauma involving the Thoracic Aorta
- 2.7.1. Trauma Affecting the Thoracic Aorta
- 2.7.2. Initial Evaluation and Diagnosis of Traumatic Aortic Injuries
- 2.7.3. Emergency Management and Therapeutic Considerations in Aortic Trauma

2.8. Interventional Procedures in Vasculitis
- 2.8.1. Underlying Pathology and Inflammatory Mechanisms
- 2.8.2. Clinical Manifestations and Diagnostic Methods
- 2.8.3. Treatment and Management of Vasculitides Affecting the Thoracic Aorta

2.9. Interventional Procedures in Aortic Coarctation
- 2.9.1. Pathophysiology and Clinical Presentation
- 2.9.2. Diagnosis and Evaluation of Aortic Coarctation
- 2.9.3. Treatment Strategies and Long-Term Follow-Up

2.10. Use of Artificial Intelligence in Thoracic Aortic Interventional Procedures
- 2.10.1. AI Applications in Vascular Image Analysis
- 2.10.2. Outcome Prediction and Treatment Selection
- 2.10.3. Integration of AI in Endovascular Procedures

## **Module 3.** Interventional Procedures in the Abdominal Aorta and Iliac Arteries

3.1. Interventional Procedures in the Abdominal Aorta
- 3.1.1. Evaluation of the Abdominal Aorta through Imaging Techniques
- 3.1.2. Associated Pathologies and Clinical Considerations in the Abdominal Aorta
- 3.1.3. Endovascular Treatment Strategies and Management of Complications

3.2. Interventional Procedures in the Iliac Arteries and their Branches
- 3.2.1. Main Arterial Branches and their Function
- 3.2.2. Diseases and Disorders Affecting the Iliac Arteries
- 3.2.3. Endovascular Treatment Strategies and Management of Complications

3.3. Interventional Procedures in Aneurysms of the Lliac Artery
- 3.3.1. Risk Factors for the Development of Aneurysms in the Abdominal Aorta and Pelvic Arteries
- 3.3.2. Diagnosis and Evaluation of Aneurysms by Imaging Techniques
- 3.3.3. Endovascular Treatment Options and Management of Aneurysms of the Abdominal Aorta and Iliac Arteries

3.4. Interventional Procedures in Occlusive Disease
- 3.4.1. Occlusive Disease in the Abdominal Aorta and Pelvic Arteries
- 3.4.2. Diagnostic Evaluation and Diagnostic Imaging Methods
- 3.4.3. Endovascular Therapeutic Strategies to Address Occlusive Disease of the Abdominal Aorta and Pelvic Arteries

3.5. Interventional Procedures in Dissection
- 3.5.1. Dissection of the Abdominal Aorta and Pelvic Arteries
- 3.5.2. Diagnosis and Evaluation of Dissection Using Imaging Techniques
- 3.5.3. Endovascular Treatment Approaches and Therapeutic Considerations for Vascular Dissection

3.6. Infection after Endovascular Treatment
- 3.6.1. Infections after Endovascular Treatment in Abdominal Aorta and Iliac Arteries
- 3.6.2. Clinical Manifestations and Diagnosis of Vascular Infection
- 3.6.3. Endovascular Treatment and Management of Infections in the Abdominal Aorta and Iliac Arteries

3.7. Interventional Procedures in Embolic Occlusion
- 3.7.1. Vascular Occlusion due to Embolism
- 3.7.2. Diagnosis and Evaluation of Embolic Occlusion by Imaging Techniques
- 3.7.3. Endovascular Therapeutic Strategies for the Management of Embolic Occlusion in the Abdominal Aorta and Iliac Arteries

3.8. Interventional Procedures in Vasculitis
- 3.8.1. Vasculitis in the Abdominal and Pelvic Vascular System
- 3.8.2. Diagnosis and Evaluation of Vascular Vasculitis
- 3.8.3. Endovascular Treatment and Management of Vasculitis in the Abdominal Aorta and Iliac Arteries

3.9. Interventional Procedures in Trauma of the Abdominal Aorta and Iliac Arteries
- 3.9.1. Trauma Affecting the Abdominal Aorta and Pelvic Arteries
- 3.9.2. Initial Evaluation and Diagnosis of Traumatic Vascular Injuries
- 3.9.3. Emergency Management and Endovascular Therapeutic Considerations in Abdominal and Pelvic Vascular Trauma

3.10. Use of Artificial Intelligence in Thoracic Aortic Interventional Procedures
- 3.10.1. AI Applications in Vascular Image Analysis
- 3.10.2. Outcome Prediction and Treatment Selection
- 3.10.3. Integration of AI in Endovascular Procedures

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# Methodology

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

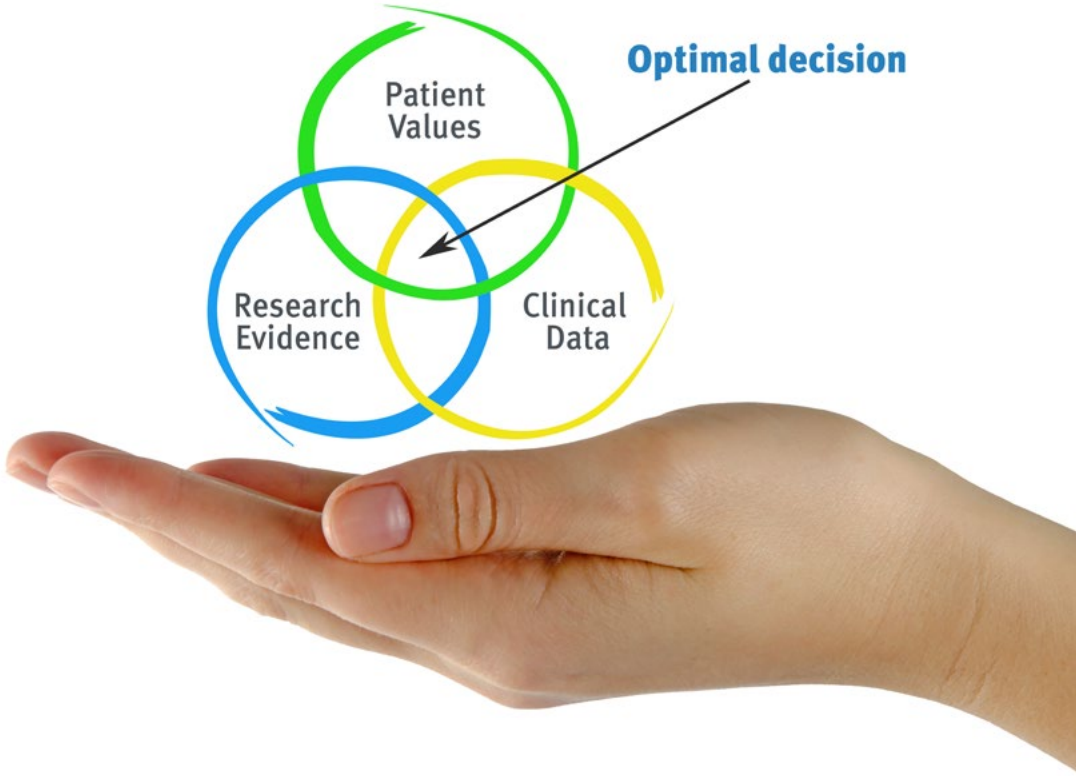
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

*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:**

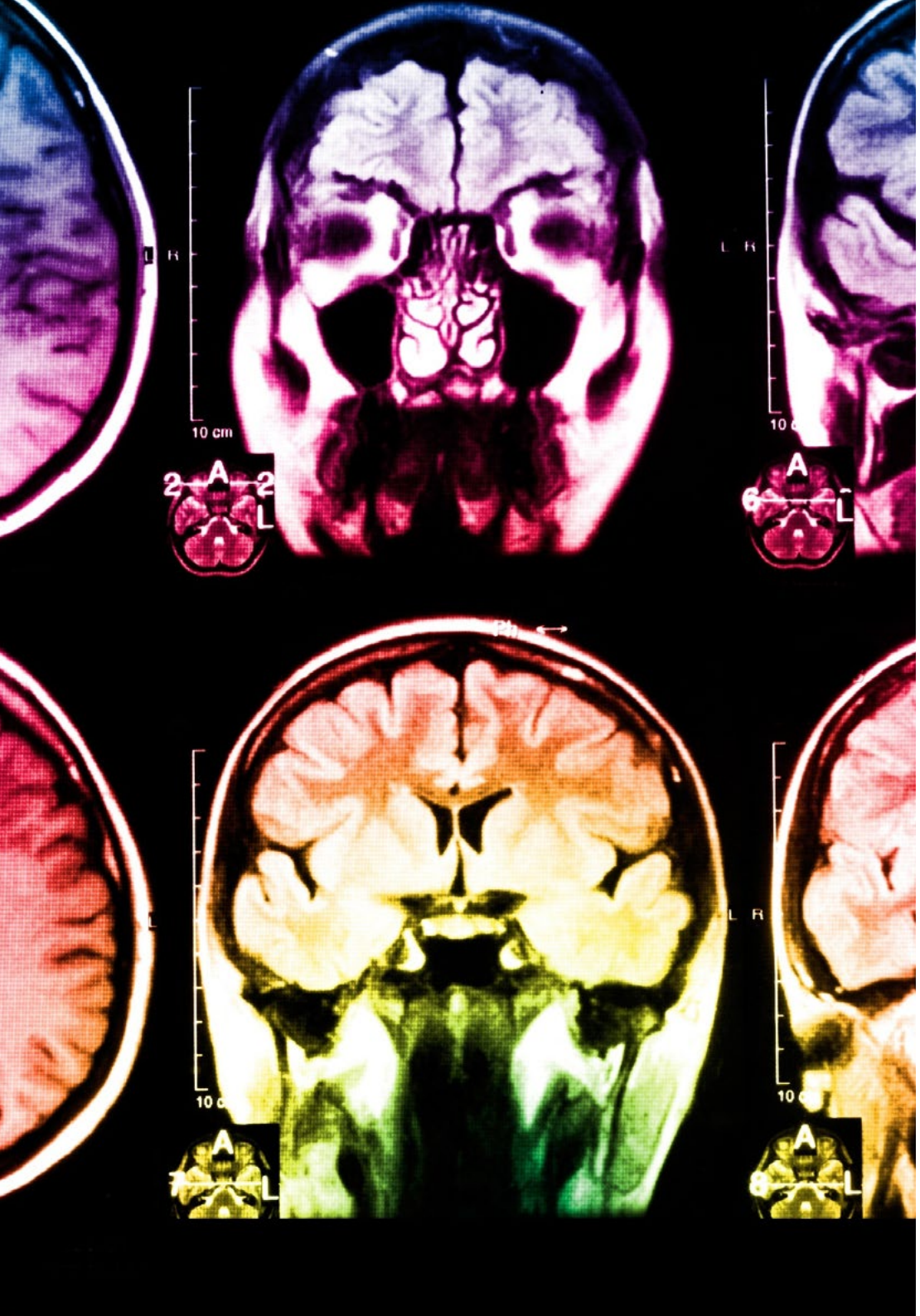
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better 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.

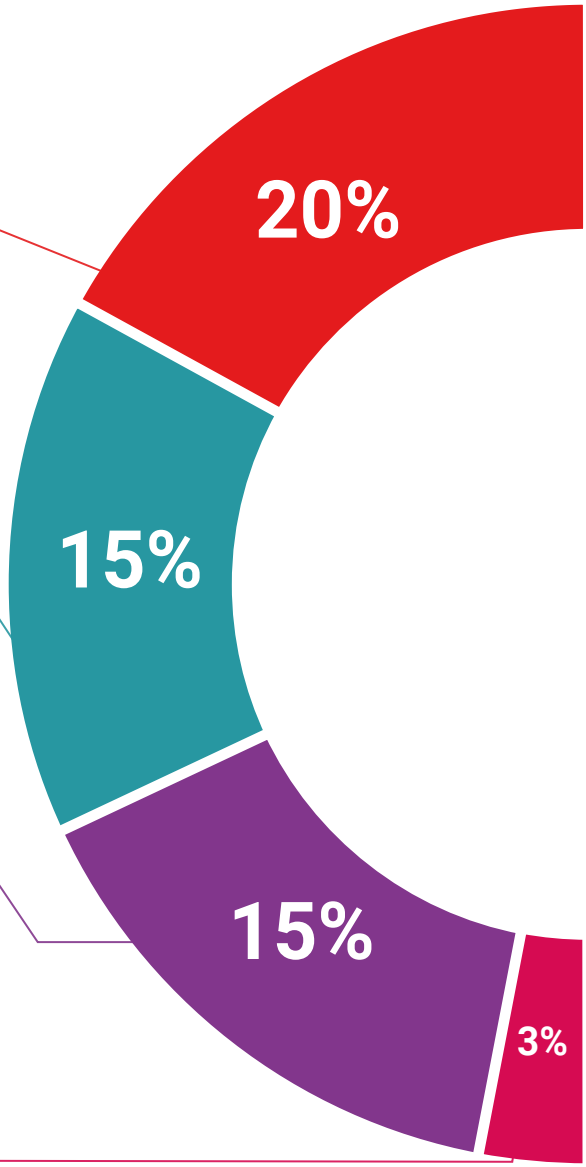
### Interactive Summaries

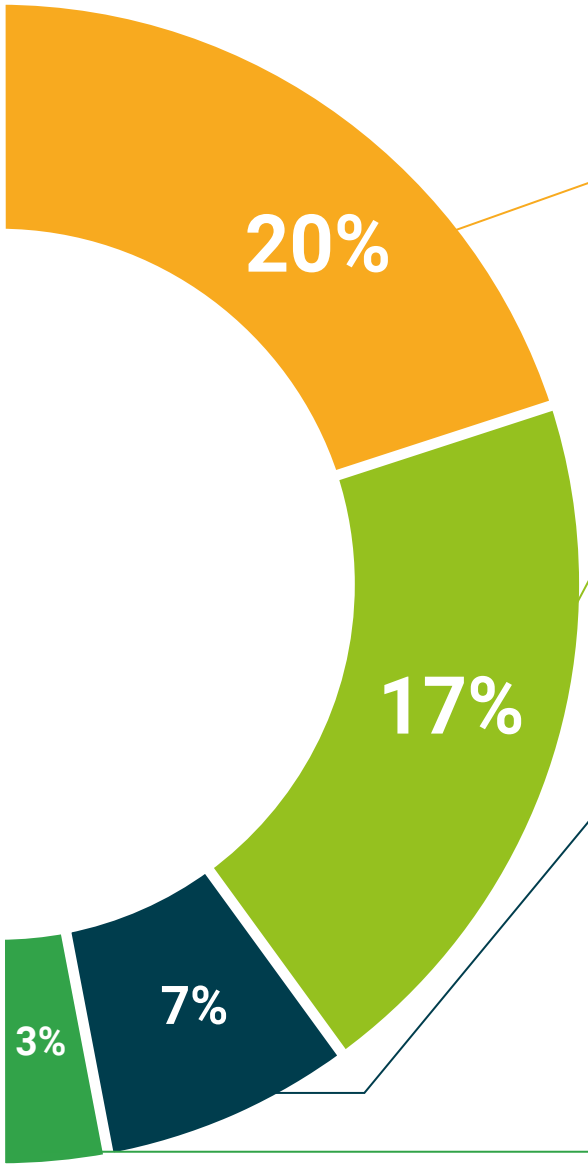
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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.

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# Certificate

The Postgraduate Diploma in Aortic and Pelvic Interventional Procedures guarantees students, in addition to the most rigorous and up-to-date education program, access to a Postgraduate Diploma issued by TECH Global University.

*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 Aortic and Pelvic Interventional Procedures** 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.

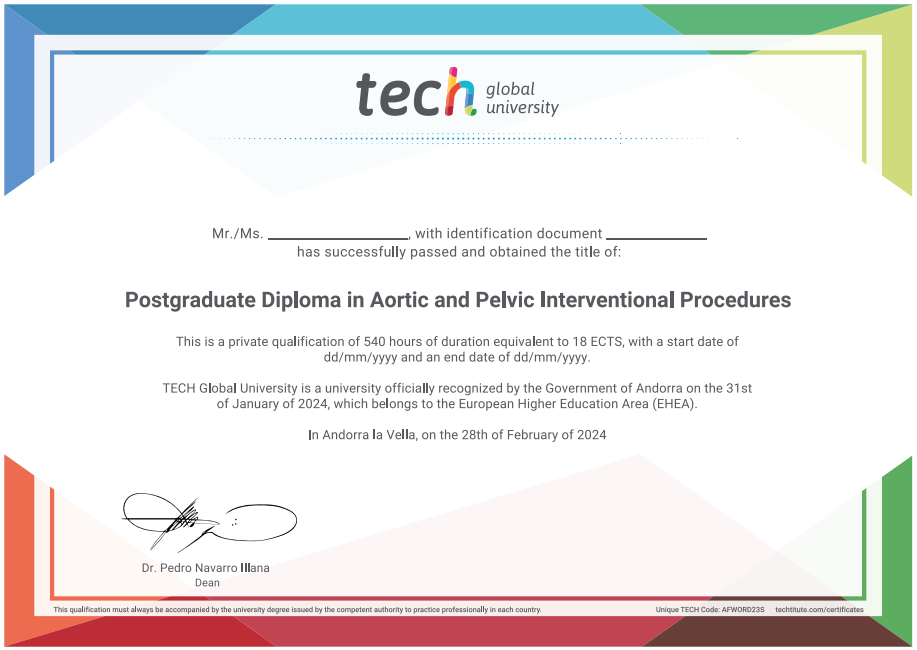
This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Aortic and Pelvic Interventional Procedures**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

**Postgraduate Diploma in Aortic and Pelvic Interventional Procedures**

This is a private qualification of 540 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*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.

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