

# Postgraduate Diploma

## Special Situations in Locoregional Anesthesia





## Postgraduate Diploma Special Situations in Locoregional Anesthesia

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitute.com/in/medicine/postgraduate-diploma/postgraduate-diploma-special-situations-locoregional-anesthesia](http://www.techtitute.com/in/medicine/postgraduate-diploma/postgraduate-diploma-special-situations-locoregional-anesthesia)

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# 01

# Introduction

Locoregional anesthesia, like any treatment, in addition to promoting health, can cause side effects in the patient on whom it is used. The fact is that the different cases that occur in the clinical setting in relation to the physiological characteristics of the person, as well as their condition or the criteria of the pathology they suffer, are determining factors in the medical guideline to be used. For this reason, TECH Technological University has decided to launch a program focused on special situations for the practice of Anesthesiology and on the most innovative strategic and pharmacological guidelines to avoid adverse effects. Therefore, in only 6 months of 100% online study, you will be able to update your practice in a guaranteed way.





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*You will work on the latest developments in the application of anesthesia in patients with pulmonary, systemic or cardiac diseases throughout 450 hours of the best theoretical, practical and additional content"*



Among the risks that most concern medical professionals when local anesthesia is applied is syncope, whose sudden loss of consciousness can lead to severe cognitive consequences. However, the most frequent adverse effects are based on dizziness, nausea, vomiting, hypotension and, in the most extreme cases, transient coma. The variety of conditions that may arise from the application of this treatment is extensive and should always be considered by the specialist in order to avoid them as far as possible. Therefore, when deciding to apply Locoregional Anesthesia, the physicians must place special emphasis on the clinical context they are dealing with and, depending on the patient's characteristics and pathology, apply the most appropriate treatment.

And in order for them to be updated on the latest developments in this field, TECH Technological University and its team versed in Anesthesiology, Resuscitation and Pain Therapies have developed the present program. It is a Postgraduate Diploma at the forefront of medicine that includes 450 hours of the best multidisciplinary content, developed exclusively for this program. Therefore, over a period of 6 months, the specialist will be able to immerse himself in the novelties of Major Ambulatory Surgery, in critical care and in the specific situations that may arise when applying regional anesthesia.

You will have all the resources to conveniently and flexibly update your practice. The program is presented in a 100% online format, precisely so that you can access it from wherever and whenever you want, without fixed schedules and through any device with an internet connection. In addition, the entire theoretical and practical content can be downloaded for your reference whenever you need it. Therefore, it presents itself as a unique opportunity that you cannot miss to perfect your practice through the largest medical school in the world: TECH.

This **Postgraduate Diploma in Special Situations in Locoregional Anesthesia** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ Practical cases presented by experts in Locoregional Anesthesiology
- ♦ 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 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



*If you are looking for a program that allows you to keep up to date with the latest developments in Regional Anesthesia in Pediatrics from wherever you want and without schedules, this is the ideal academic opportunity"*

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*In the virtual campus you will find detailed videos, research articles, complementary readings and much more material to expand each section of the syllabus in a personalized way"*

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.

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

*A 100% online program with which you can delve into the pharmacological novelties to alleviate the side effects of complications in regional anesthesia.*

*You will have access to an up-to-date syllabus with the issues to be taken into account when applying regional anesthesia guidelines in the allergic patient.*



# 02 Objectives

The development of this Postgraduate Diploma has been carried out with the aim that the graduates can access the most advanced theoretical and practical content that will allow them to get up to date, in just 6 months, with the latest developments in Locoregional Anesthesiology in special situations. Thanks to the very high level of demand with which its curriculum has been developed, any professional will be able to achieve even their highest goals, through the course of a program adapted to their needs and presented in a convenient and accessible 100% online format.





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*If one of your objectives is to improve your practice in the management of polytraumatized patients through anesthesia, in this Postgraduate Diploma you will find the most innovative and effective guidelines to achieve it"*



## General Objectives

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- Emphasize the importance of maintaining adequate standards of quality and safety in health care
- Review the usefulness of ultrasound in critical care units and its clinical novelties for Anesthesiology
- Update the graduate's useful knowledge in the field of patient safety in the operating room

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*In this Postgraduate Diploma, you will find a specific module dedicated to the canalization of the central pathways and the most effective guidelines to achieve this without pain”*





## Specific Objectives

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### Module 1. Major Outpatient Surgery

- ♦ Understand the organization and planning of Major Outpatient Surgery Units
- ♦ Analyze the criteria for the choice of surgical procedures, as well as the selection of patients for Major Outpatient Surgery
- ♦ Analyze the available anesthetic techniques to establish an adequate anesthetic plan for each patient and procedure
- ♦ Assess therapeutic options for optimal postoperative pain control
- ♦ Thorough knowledge of UCMA discharge criteria, as well as hospital admission criteria and possible complications

### Module 2. Critical Care and Regional Anesthesia

- ♦ Review the peculiarities of the critically ill patient and their specific risks
- ♦ Know in depth the options for assessment and control of pain in the critically ill patient
- ♦ Analyze the potential uses of locoregional analgesia in the critically ill patient
- ♦ Delve into the indications of Locoregional Analgesia/Anesthesia in specific situations such as burned, polytraumatized or amputated patients
- ♦ Learn in depth the importance of locoregional techniques in reconstructive surgery with flaps

### Module 3. Specific Situations of Regional Anesthesia

- ♦ Know in depth the aspects to be taken into account in a patient with peripheral neuropathy who is going to undergo regional anesthesia
- ♦ Describe the appropriate management of the anticoagulated/anti-aggregation patient who is potentially undergoing a regional technique
- ♦ Become familiar with regional continuum techniques for the management of acute postoperative pain
- ♦ Identify the factors related to comorbidity in the face of these anesthetic techniques
- ♦ Describe the particularities of elderly and pediatric patients

# 03

## Course Management

A team versed in the field of Anesthesiology, Resuscitation and Pain Therapy has come together to design this program in Special Situations in Locoregional Anesthesia. In this way, the students will have access to an academic experience in which they will find the support of a group of professionals of the highest level, who combine teaching with work. Thanks to this, they have created a theoretical and practical syllabus at the forefront of medicine, which will serve as a guide for students to update their practice in a guaranteed way and from different points of view.





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*The teaching team has extracted clinical cases from their own practices so that you can put your skills into practice through the resolution of real situations in Locoregional Anesthesiology"*

## Management



### Dr. Burgueño González, María Dolores

- ◆ FEA in Anesthesiology and Resuscitation at HU La Paz
- ◆ Anesthesia Coordinator of Cantoblanco Hospital
- ◆ Responsible for Surgical Patient Safety at Cantoblanco Hospital
- ◆ Specialist Physician at the Virgen del Mar Hospital
- ◆ MIR in Anesthesiology, Resuscitation and Pain Therapy at the University Hospital La Paz
- ◆ Master PROANES: Official Updating Program in Anesthesiology, Resuscitation and Pain Therapy by the Catholic University of Valencia
- ◆ Postgraduate Diploma in Airway Management by the Catholic University of Valencia

## Professors

### Dr. Zurita Copoví, Sergio

- ◆ FEA of Anesthesiology and Resuscitation at the University Hospital La Paz
- ◆ Specialist Physician at the Virgen del Mar Hospital
- ◆ Resident Tutor at the University Hospital La Paz
- ◆ Clinical teaching collaborator at the Autonomous University of Madrid
- ◆ Master's Degree in Clinical Management, Medical and Health Care Management
- ◆ Master in Patient Management
- ◆ European Postgraduate Certificate in Anesthesia and Critical Care
- ◆ Member of the Spanish Society of Anesthesiology and Pain Treatment (SEDAR)

### Dr. Sancho De Ávila, Azahara

- ◆ Free practice anesthesiologist at La Zarzuela Hospital
- ◆ FEA of Anesthesiology and Resuscitation at the University Hospital of La Paz
- ◆ Free practice anesthesiologist at the University Hospital of La Luz
- ◆ Free practice anesthesiologist at Nuestra Señora del Rosario Hospital
- ◆ Doctor in Medicine and Surgery from the University of La Laguna
- ◆ Specialist in Anesthesiology, Resuscitation and Pain Therapy by MIR examination at the University Hospital Nuestra Señora de la Candelaria

**Dr. Canser Cuenca, Enrique**

- ♦ FEA of Anesthesiology and Resuscitation at El Escorial Hospital
- ♦ Specialist in Anesthesiology and Resuscitation at the University Hospital La Paz
- ♦ Residency in the Department of Anesthesiology and Resuscitation at the University Hospital La Paz
- ♦ PhD in "Neurosciences: Morphofunctional organization of the nervous system"
- ♦ Master in Pathophysiology and Treatment of Pain by the Autonomous University of Barcelona
- ♦ Master's Degree in Palliative Medicine and Supportive Care of the Cancer Patient

**Dr. Salgado Aranda, Patricia**

- ♦ FEA in Anesthesiology and Resuscitation at the HU La Paz
- ♦ Teaching and research experience
- ♦ Clinical Teaching Collaborator of the University Hospital La Paz
- ♦ PhD from the Autonomous University of Madrid
- ♦ Degree in Medicine from the University of Alcalá, Spain
- ♦ Master's Degree in Infectious Diseases in Intensive Care
- ♦ Member of the Illustrious Official College of Physicians of Madrid

**Dr. Vallejo Sanz, Irene**

- ♦ FEA in Anesthesiology and Resuscitation at HU La Paz
- ♦ Collaborator in Clinical Simulation workshops
- ♦ MIR in Anesthesiology, Resuscitation and Pain Therapy
- ♦ European Certificate of Anaesthesiology and Intensive Care, EDAIC part I
- ♦ Member of the Illustrious Official College of Physicians of Madrid
- ♦ Member of the Spanish Society of Anesthesiology and Pain Treatment (SEDAR)

**Dr. Rodríguez Roca, María Cristina**

- ♦ FEA of Anesthesiology and Resuscitation at the University Hospital La Paz
- ♦ Teaching and research experience in several university centers
- ♦ PhD from the Autonomous University of Madrid
- ♦ European Postgraduate Certificate in Anesthesia and Critical Care (EDAIC)
- ♦ Member of the Spanish Society of Anesthesiology and Pain Treatment (SEDAR)
- ♦ Member of the working group of Chronic Pain of the Spanish Society of Anesthesiology and Resuscitation

**Dr. Martín Martín, Almudena**

- ♦ FEA in Anesthesiology and Resuscitation at HU La Paz
- ♦ Clinical Teaching Collaborator of the University Hospital La Paz
- ♦ MIR in Anesthesiology, Resuscitation and Pain Therapy at the University Hospital La Paz
- ♦ Master of Continuing Education in "Patient Management"

# 04

## Structure and Content

This program has been designed by the teaching team following the guidelines of quality and exigency that define and differentiate TECH Technological University from other academic centers. Therefore, taking as a reference the latest developments in Locoregional Anesthesiology and based on the Relearning methodology for the development of the theoretical-practical content, they have created an unparalleled experience. Therefore, in just 450 hours, the students will have been able to update their practice in a guaranteed way, through the course of a dynamic, flexible and innovative program.





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*You will work with the most sophisticated and innovative anti-aggregation therapies, used by leading professionals in the field of Locoregional Anesthesiology”*

## Module 1. Major Outpatient Surgery

- 1.1. Major Outpatient Surgery
  - 1.1.1. What is Major Outpatient Surgery?
  - 1.1.2. History
- 1.2. Current Situation of Major Outpatient Surgery
  - 1.2.1. Implementation Difficulties
  - 1.2.2. Cost-Effectiveness Approach
  - 1.2.3. Achievements of Major Outpatient Surgery
- 1.3. CMA Circuit
  - 1.3.1. Types of Units
  - 1.3.2. Structure and Organization
- 1.4. Selection Criteria
  - 1.4.1. What Surgical Procedures Can Be Performed?
  - 1.4.2. Which Patients do we Select?
- 1.5. Role of the Pre-Anesthesia Consultation
  - 1.5.1. Pre-Anesthesia Consultation
  - 1.5.2. Patient Preparation
- 1.6. Anesthetic Technique Selection
  - 1.6.1. What Anesthetic Technique do we Use?
  - 1.6.2. Opioids in Major Outpatient Surgery
- 1.7. Pain Control in Major Outpatient Surgery
  - 1.7.1. Pain Relieving Techniques
  - 1.7.2. Multimodal Analgesia
- 1.8. Complications in Major Ambulatory Surgery
  - 1.8.1. Nausea and Vomiting
  - 1.8.2. Pain
  - 1.8.3. Urinary Retention
  - 1.8.4. Other Complications

- 1.9. Discharge from the Major Outpatient Surgery Unit
  - 1.9.1. Discharge Criteria at Home
  - 1.9.2. Hospital Admission Criteria
- 1.10. Morbimortality, Safety and Quality in Major Outpatient Surgery
  - 1.10.1. Morbidity and Mortality Data
  - 1.10.2. Security/Safety
  - 1.10.3. Indicators of Quality of Care

## Module 2. Critical Care and Regional Anesthesia

- 2.1. Peculiarities of Critical Patients
  - 2.1.1. Pathophysiology of Critical Patients
  - 2.1.2. Special Considerations for the Locoregional Techniques
- 2.2. Pain Assessment in the Critical Patients
  - 2.2.1. Introduction
  - 2.2.2. Assessment of Pain in Conscious and/or Communicative Patient
  - 2.2.3. Assessment of Pain in Unconscious and/or Non-Communicative Patients
- 2.3. Pain Management in Critical Care Units
  - 2.3.1. Origin of Pain
  - 2.3.2. Impact of Pain in the Critically Ill Patient
  - 2.3.3. Therapeutic Options for Pain
- 2.4. Locoregional Technique in Critical Care Units
  - 2.4.1. Upper Limb Blocks
  - 2.4.2. Lower Limb Blocks
  - 2.4.3. Central Blocks
  - 2.4.4. Thoracoabdominal Wall Block
- 2.5. The Polytraumatized Patient
  - 2.5.1. Etiopathogenesis
  - 2.5.2. Characteristics of the Polytraumatized Patient
  - 2.5.3. Locoregional Techniques in the Polytraumatized Patient

- 2.6. Amputee Patient and Phantom Limb
  - 2.6.1. Amputee Patient. Incidence and Characteristics
  - 2.6.2. Phantom Limb. Incidence and Characteristics
  - 2.6.3. Prevention and Management of Phantom Limb
- 2.7. Burn patient
  - 2.7.1. Incidence and Etiopathogenesis
  - 2.7.2. Characteristics of the Burn Patient
  - 2.7.3. Locoregional Techniques in the Burned Patient
- 2.8. Regional Anesthesia and Microvascularized Flap
  - 2.8.1. The Flap
  - 2.8.2. Physiological Considerations
  - 2.8.3. Anesthetic Approach
- 2.9. Ultrasound in Critical Care Units
  - 2.9.1. Utility of Ultrasound in Critical Care Units
  - 2.9.2. Ultrasound-Guided Techniques in Critical Care Units
- 2.10. Central Line Canalization
  - 2.10.1. Internal Jugular Vein Canalization
  - 2.10.2. Subclavian Vein Canalization
  - 2.10.3. Femoral Vein Canalization
  - 2.10.4. Central line Canalization by Peripheral Access
  - 2.10.5. Others

### Module 3. Specific Situations of Regional Anesthesia

- 3.1. Regional Anesthesia in Patients with Pre-existing Neurological Disease
  - 3.1.1. Introduction
  - 3.1.2. Peripheral Nervous System Disorders
    - 3.1.2.1. Hereditary Peripheral Neuropathy
    - 3.1.2.2. Acquired Peripheral Neuropathy. Diabetic Polyneuropathy
    - 3.1.2.3. Chemotherapy-Induced Neuropathy
    - 3.1.2.4. Entrapment Neuropathy
    - 3.1.2.5. Inflammatory Neuropathy. Guillain-Barré Syndrome
    - 3.1.2.6. Post-Surgical Inflammatory Neuropathy
- 3.1.3. Central Nervous System disorders
  - 3.1.3.1. Multiple Sclerosis
  - 3.1.3.2. Post-Polio Syndrome
  - 3.1.3.3. Amyotrophic Lateral Sclerosis
  - 3.1.3.4. Spinal Stenosis and Neural Disc Disease.
  - 3.1.3.5. Spinal Cord Injury
- 3.2. Anti-Aggregation Therapy, Anticoagulation Therapy
  - 3.2.1. Introduction
  - 3.2.2. Minimum Hemostatic Values
  - 3.2.3. Anticoagulants, Antiplatelet Agents and Anesthesia
    - 3.2.3.1. Unfractionated Heparin
    - 3.2.3.2. Low Molecular Weight Heparin
    - 3.2.3.3. Fondaparinux
    - 3.2.3.4. Antivitamin K Drugs (Acenocoumarol, Warfarin)
    - 3.2.3.5. Platelet Aggregation Inhibitors
  - 3.2.4. Ophthalmological Procedures
    - 3.2.4.1. Surgeries in which Antithrombotic Treatment can Be Continued
    - 3.2.4.2. Surgeries in which Antithrombotic Treatment Should Be Discontinued and Bridging Therapy Considered
    - 3.2.4.3. How to Use Guides in Peripheral Nerve Blocks
- 3.3. Continuous Techniques for Postoperative Pain Control
  - 3.3.1. Introduction
  - 3.3.2. Drugs:
    - 3.3.2.1. Coadjuvants
    - 3.3.2.2. Continuous Perfusions Through Catheters
    - 3.3.2.3. New Local Anesthetics
  - 3.3.3. Material
    - 3.3.3.1. Needle and Catheter
    - 3.3.3.2. Infusion Pumps
  - 3.3.4. Modes of Administration
    - 3.3.4.1. Boluses
    - 3.3.4.2. Continuous Administration

- 3.3.5. Techniques
  - 3.3.5.1. Interscalene Block
  - 3.3.5.2. Infraclavicular Block
  - 3.3.5.3. Axillary Block
  - 3.3.5.4. Posterior Lumbar Plexus Block
  - 3.3.5.5. Anterior Lumbar Plexus Block
  - 3.3.5.6. Proximal Sciatic Nerve Blocks
  - 3.3.5.7. Proximal Sciatic Nerve Blocks
  - 3.3.5.8. Distal Blocks
- 3.4. Regional Anesthesia and Pulmonary Disease
  - 3.4.1. Introduction
  - 3.4.2. Epidural and Spinal Anesthesia
  - 3.4.3. Brachial Plexus Block
  - 3.4.4. Paravertebral Blockade and Intercostal Nerves
  - 3.4.5. Importance of Regional Anesthesia during the COVID-19 Pandemic
- 3.5. Regional Anesthesia and other Systemic Diseases
  - 3.5.1. Renal disease
    - 3.5.1.1. Introduction
    - 3.5.1.2. Effects on Renal Function
    - 3.5.1.3. Considerations in Patients with Renal Pathology
  - 3.5.2. Liver Diseases
    - 3.5.2.1. Introduction
    - 3.5.2.2. Effects on Hepatic Blood Flow
    - 3.5.2.3. Hepatic Coagulopathy
  - 3.5.3. Diabetes Mellitus
    - 3.5.3.1. Introduction
    - 3.5.3.2. Effects on Glucose Homeostasis
    - 3.5.3.3. Peripheral Neuropathy in the Diabetic Patient
  - 3.5.4. Obesity
  - 3.5.5. Cancer
- 3.6. Regional Anesthesia in the Elderly
  - 3.6.1. Introduction and Definition of the Elderly
    - 3.6.1.1. Is Anesthetic Risk Increased in the Elderly?
    - 3.6.1.2. What is the Reason for this?
    - 3.6.1.3. How is this Organ Degradation Reflected at the Level of all Systems?
    - 3.6.1.4. Is the Metabolism of Anesthetic Drugs Altered in the Elderly Patient?
    - 3.6.1.5. What type of Interventions are Most Common in the Elderly?
    - 3.6.1.6. Is Regional Anesthesia Specially Indicated in these Patients?
  - 3.6.2. Physiologic Changes Associated with Aging and Considerations for Regional Anesthesia/Analgesia
    - 3.6.2.1. Nervous System Function
    - 3.6.2.2. Pulmonary Function
    - 3.6.2.3. Pharmacokinetic and Pharmacodynamic Changes in the Elderly
    - 3.6.2.4. Multimodal Pharmacotherapy and the Elderly
    - 3.6.2.5. Kidney
    - 3.6.2.6. Physiology and Perception of Pain in the Elderly
  - 3.6.3. Assessment of Pain in Elderly Patients with Cognitive Impairment
  - 3.6.4. Considerations for the Use of Regional and Neural Blockade
  - 3.6.5. Types of Regional Blocks in the Elderly
    - 3.6.5.1. Epidural Anesthesia and Analgesia
    - 3.6.5.2. Intrathecal Opioid Analgesia
    - 3.6.5.3. Peripheral Nerve and Nerve Plexus Blockage
- 3.7. Regional Anesthesia in Pediatrics
  - 3.7.1. Introduction
    - 3.7.1.1. Why Regional Anesthesia in Pediatric Patients?
    - 3.7.1.2. Applications of Pediatric Regional Anesthesia
    - 3.7.1.3. Regional Anesthesia: Awake or Asleep?
  - 3.7.2. Peculiarities of Pediatric Regional Anesthesia





- 3.7.3. Neurostimulation
  - 3.7.3.1. Anatomical Differences Between Children and Adults
  - 3.7.3.2. Pharmacology of Local Anesthetics
  - 3.7.3.3. Dosage of Local Anesthetics
  - 3.7.3.4. Toxicity of Local Anesthetics
- 3.7.4. Types of Peripheral Blocks
  - 3.7.4.1. Upper Limb Blocks
  - 3.7.4.2. Lower Limb Blocks
  - 3.7.4.3. Penile Block
  - 3.7.4.4. Ilioinguinal/Iliohypogastric Block
  - 3.7.4.5. Rectus Sheath Block or Umbilical Blockade
  - 3.7.4.6. Caudal Block
- 3.7.5. Central Blocks
  - 3.7.5.1. Epidural Anesthesia
  - 3.7.5.2. Subarachnoid Anesthesia
- 3.7.6. Complications of Pediatric Regional Anesthesia
- 3.8. Allergy and Regional Anesthesia
  - 3.8.1. Introduction
    - 3.8.1.1. Type A Reactions
    - 3.8.1.2. Type B Reactions
    - 3.8.1.3. Type C Reactions
  - 3.8.2. Epidemiology
  - 3.8.3. Pathophysiology
    - 3.8.3.1. Type I: Immediate Hypersensitivity or IgE Mediated Hypersensitivity.
    - 3.8.3.2. Type II: Cytotoxic or IgG, IgM Mediated Reaction
    - 3.8.3.3. Type III: Immunocomplex-Mediated Reaction
    - 3.8.3.4. Type IV: Delayed Hypersensitivity or T-Cell Mediated reaction

- 3.8.4. Etiology
- 3.8.5. Signs and Symptoms
- 3.8.6. Diagnosis
- 3.8.7. Differential Diagnosis
  - 3.8.7.1. Reddening Syndrome
  - 3.8.7.2. Syndromes Associated with Substance Use
  - 3.8.7.3. Increased Endogenous Histamine Production
  - 3.8.7.4. Functional Criteria
  - 3.8.7.5. Others
- 3.8.8. Treatment
- 3.9. Complications in Regional Anesthesia
  - 3.9.1. Introduction
  - 3.9.2. Complications following Neuroaxial Block Procedures
    - 3.9.2.1. Post Dural Puncture Headache
    - 3.9.2.2. Complications due to Air Injection. Pneumocephalus
    - 3.9.2.3. Spinal Cord Compression
    - 3.9.2.4. Neurological Damage. Neurotoxicants
    - 3.9.2.5. Infectious Complications
    - 3.9.2.6. Iatrogenic Spinal Tumors
    - 3.9.2.7. Tattoos and Anesthetic Considerations
  - 3.9.3. Complications after Peripheral Nerve Blocks
    - 3.9.3.1. Introduction
    - 3.9.3.2. Preventive Measures
    - 3.9.3.3. Classification of Acute Nerve Injuries



- 3.9.4. Mechanisms Capable of Producing Complications During the Performance of Nerve Blocks
  - 3.9.4.1. Mechanical Mechanism
  - 3.9.4.2. Vascular Mechanism
  - 3.9.4.3. Chemical Mechanism
  - 3.9.4.4. Infectious Mechanism
  - 3.9.4.5. Systemic Toxicity
- 3.10. Regional Anesthesia and Patient Safety
  - 3.10.1. Introduction
  - 3.10.2. How has Regional Anesthesia Evolved during these Years?
  - 3.10.3. Advantages and Disadvantages of the Different Types of Regional Anesthesia
  - 3.10.4. What is ISO 80369-6 and how does it Affect Regional Anesthesia?
  - 3.10.5. Comparison between Traditional Spinal Needles and the new NRFIT version.
  - 3.10.6. Adjusted *checklist* for Regional Anesthesia
  - 3.10.7. SENSAR

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*If you are looking for a program that suits you and not the other way around, this Postgraduate Diploma is the perfect choice. What are you waiting for to enroll?"*

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.







“

*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 Special Situations in Locoregional Anesthesia guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



“

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



This **Postgraduate Diploma in Special Situations in Locoregional Anesthesia** 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 certificate 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 evaluation committees.

Title: **Postgraduate Diploma in Special Situations in Locoregional Anesthesia**

Official N° of Hours: **450 h.**



\*Apostille Convention. In the event that the student wishes to have their paper certificate 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



**Postgraduate Diploma**  
Special Situations in  
Locoregional Anesthesia

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Diploma

## Special Situations in Locoregional Anesthesia

