

# Postgraduate Certificate Pediatric Anesthesia





## Postgraduate Certificate Pediatric Anesthesia

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

Website: [www.techtute.com/us/medicine/postgraduate-certificate/pediatric-anesthesia](http://www.techtute.com/us/medicine/postgraduate-certificate/pediatric-anesthesia)

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# 01

# Introduction

Anesthesia procedures in critical care medicine have undergone significant development in recent years. Pharmacological and advances, intraoperative and postoperative monitoring, imaging techniques and new multimodal handling paradigms, as well as who are by specific fields, have contributed decisively to this transformation, and contribute toward reducing pediatric patient morbidity and mortality.



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*The new scenarios in anesthesia procedures in critically ill patients motivate us to propose new training programs that meet the real needs of experienced professionals, so that they can incorporate advances in anesthesia procedures management in in Walking Children into their medical practice”*

The progressive increase of biomedical knowledge, the constant introduction of new technologies and the change in the conception of health, impose a constant evolution in the teaching of the different medical specialties, which must be addressed by professionals with a permanent attitude of continuous training that favors the maintenance of their skills throughout their future professional lives.

This Postgraduate Certificate deals in depth with anesthesia procedures for pediatric patients. These patients are their own entity and, on many occasions, present base pathology that differs both in its etiology (congenital diseases) and clinical manifestations, as well as in the way in which they are tolerated, and the criteria established by inexperienced personnel may confuse the degree of severity.

Through the latest educational technology, the program is designed to facilitate specialist physicians to update on anesthesia procedures in pediatric patients.

This **Postgraduate Certificate in Pediatric Anesthesia** is the most complete and up-to-date scientific program on the market. The most important features of the course are:

- Clinical cases presented by specialists in anesthesiology and other areas. 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
- Real high-resolution images of pathologies, diagnostic imaging tests and guided procedures
- Practical workshops on anesthesia procedures and techniques for pediatric patients
- Algorithm-based interactive learning system for decision-making in the presented clinical situations
- All this will be complemented by 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 be able to learn, through the latest educational technology, the most recent advances in Pediatric Anesthesia”*

“

*This Postgraduate Certificate may be the best investment you can make when choosing a refresher program for two reasons: in addition to updating your knowledge of pediatric anesthesia, you will obtain a qualification from TECH Global University”*

The teaching staff is made up of a team of leading anesthesiologists, who bring to this training the experience of their work, in addition to recognized specialists in other medical areas.

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

Problem-Based Learning underpins this program design, and the specialists must use it to try and solve the different professional practice situations that arise throughout the course. For this reason, you will be assisted by an innovative, interactive video system created by renowned and experienced experts in the field of psychology with extensive teaching experience.

*Incorporate the latest developments in pediatric anesthesia to your medical practice and improve patient prognosis.*

*It includes real clinical cases to bring medical practice as close as possible to the development of the program.*



# 02 Objectives

The main objective is to facilitate the incorporation of advances in pediatric anesthesia, so that specialists can update their knowledge in a practical way, using the latest educational technology and adapting the educational process to their real needs.







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*This refresher program will provide you with the skills to act safely in decision making during procedures in cardiovascular anesthesiology, and will help you grow professionally”*



## General Objective

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- ♦ Update specialist physicians on the procedures and techniques performed in pediatric anesthesia, incorporating the latest advances to increase the quality of their daily medical practice and improve patient prognosis



## Specific Objectives

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- ♦ Update on the evaluation tools for preoperative anxiety
- ♦ Incorporate the prophylaxis techniques for preoperative anxiety
- ♦ Assess the consequences of anxiety in children
- ♦ Update on the preoperative evaluation procedures in pediatrics
- ♦ Incorporate the different risk scales in pediatric anesthesia to medical practice
- ♦ Explain what information to divulge in consultation and how
- ♦ Review the most appropriate fasting time for each patient, and fasting replacement time
- ♦ Identify the latest advances in crystalloid replacement
- ♦ Describe the most important aspects in colloid use in children
- ♦ Identify the latest advances in monitoring in different subspecialties: Cardiac Surgery, Neurosurgery, Spine Surgery and Neonatal Surgery



- ♦ Review the procedures for difficult airway management in pediatric patients
- ♦ Update on the approach to increasingly frequent pathologies in children such as asthma, diabetes, obesity and children with OSAHS
- ♦ Describe the most important aspects of collateral pathologies in complex pediatric patients such as mucopolysaccharidosis and metabolopathies or myopathies
- ♦ Incorporate new indications in ultrasound use
- ♦ Identify the latest developments in inhalation anesthesia
- ♦ Update on the procedures for TIVA use in pediatrics. Pediatric TCI
- ♦ Describe the particularities in the pediatric use of new drugs such as Sufentanil, Dexmedetomidine and Sugammadex
- ♦ Assess the importance of the anesthesiologist outside the operating room in a 21st century hospital
- ♦ Identify the minimum safety requirements that a facility must meet to perform anesthesia
- ♦ Explain the peculiarities of the different environments outside the operating room: MRI, digestive endoscopy, emergency, oncology or evoked potentials
- ♦ Analyze the short and long term consequences of pain in children
- ♦ Incorporate advanced analgesia techniques in pediatric patients
- ♦ Review the basic fundamentals in the anesthetic management of congenital heart disease
- ♦ Update on the anesthetic processes in the hemodynamic room
- ♦ Reflect on the new fast-track concepts (multimodal rehabilitation) in pediatric surgery

*Seize the opportunity and take the step to get up-to-date on the latest developments in pediatric anesthesia”*



03

# Course Management

The materials have been created by a team of leading professionals in the field of pediatric anesthesia, who work in prestigious hospitals. Additionally, other recognized specialists participate in its design and preparation, which means that the program is developed in an interdisciplinary manner.



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*Learn about the latest advances in pediatric anesthesia from leading professionals”*

## International Guest Director

Dr. Betelehem M. Asnake is a leading anesthesiologist with an extensive international career, noted for her commitment to health equity and medical education. She has practiced in San Francisco, California, at Kaiser Permanente Medical Centers in Oakland and Richmond. In addition, she has held an important role as Director of Global Health Initiatives at UCLA Health, considered one of the best hospitals in the United States, and ranked first in both California and Los Angeles in a comprehensive assessment of excellence in patient care.

In addition to her clinical practice, she has been recognized for her passionate work in coaching and promoting diversity in Medicine. In this regard, she has founded MuluMentor, a virtual platform designed to support medical students from underrepresented and disadvantaged backgrounds. This program has facilitated the connection between these students and healthcare professionals in reviewing medical school applications, preparing for the MCAT and obtaining letters of recommendation. In this way, the platform has had a significant impact on inclusion and support for future physicians.

In turn, Dr. Betelehem M. Asnake has been a key international figure in bridging educational gaps in the field of Anesthesia. In fact, she has worked as a facilitator of the SAFE course in Tanzania, teaching safe anesthesia in remote areas. She has also been a co-leader of COVID-19 response teams and has collaborated with the World Society of Anesthesia in the development of international standards of post-anesthesia care. In addition, her role as a peer reviewer for the COVID-19 Repository for Ethiopian Health Professionals has highlighted her commitment to the global improvement of medical education in low-resource settings.



## Dr. Asnake, Betelehem M.

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- ♦ Director of Global Health Initiatives at UCLA Health, Southern California, United States
- ♦ General Anesthesiologist at UCLA Health
- ♦ General Anesthesiologist at Kaiser Permanente Oakland and Richmond Medical Centers
- ♦ Founder of MuluMentor
- ♦ General Anesthesiologist at Zuckerberg General Hospital and Trauma Center
- ♦ Global Health Equity Fellow at Zuckerberg General Hospital & Trauma Center
- ♦ Anesthesiology Specialist from the University of California
- ♦ PhD in Medicine from the University of Virginia
- ♦ M.S., Pharmacology and Toxicology from the University of Virginia  
B.A., French Studies from the University of California

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*Thanks to TECH, you will be able to learn with the best professionals in the world”*

## Management



### Dr. Muedra Navarro, Vicente

- ♦ Head of the Anesthesia Service at the General University Hospital Consortium of Valencia.
- ♦ Professor-Doctor of Anesthesiology at the Universitat de Valencia
- ♦ Degree in Medicine from the University of Valencia
- ♦ MIR Specialist in Anesthesiology, Resuscitation and Pain Therapeutics at La Fe University Hospital in Valencia
- ♦ PhD in Medicine and Surgery from the University of Valencia
- ♦ Professor of the Department of Biomedical Sciences. Faculty of Medicine. CEU Cardenal Herrera University. Valencia
- ♦ Director of doctoral theses and Master's Degree theses
- ♦ Member of several Health Care Improvement Commissions at La Ribera University Hospital
- ♦ University Expert in the Comprehensive Management of the Airway, by the Catholic University of Valencia
- ♦ Vice-president of the Department of Anesthesiology and Critical Care in Cardiac Surgery of the Valencian Community
- ♦ Member of the Spanish Society of Anesthesiology, Resuscitation and Pain Therapy
- ♦ Member of the Spanish Society of Multimodal Rehabilitation
- ♦ Head researcher in several research projects with competitive funding from Public Institutions (Carlos III Health Institute)
- ♦ Collaborating Researcher in the Prometeo Program for research groups of Excellence in the Department of Education and Science at Generalitat Valenciana.
- ♦ Research member of the Translational Medicine Doctoral Program in the research line Multidisciplinary Intervention in Prevention and Clinical Therapeutics of International Doctoral School CEINDO



## Coordinator

### Dr. Lázaro Alcay, Juan José

- ◆ Degree in Medicine and Surgery
- ◆ Doctor Specialist in Anesthesiology, Resuscitation and Pain Therapy
- ◆ Head of the Anaesthesiology Services
- ◆ Sant Joan de Déu hospital. Barcelona, Spain

## Professors

### Dr. Arbona, Celia

- ◆ Degree in Medicine and Surgery
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# 04

# Structure and Content

The syllabus structure has been designed by a team of professionals who understand the implications of medical training in anesthesia procedures in pediatrics, aware of the relevance of current training and committed to quality teaching through new educational technologies.





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*This Postgraduate Certificate in Pediatric Anesthesia is the most complete and up-to-date scientific program on the market”*

**Module 1.** Update on Cardiovascular Anesthesia

- 1.1. Pediatric Patient Psychological Preparation for Surgical Procedures

**Module 2.** Preanesthesia Visit in Pediatrics

- 2.1. Evaluation
- 2.2. Surgical Anesthetic Risk Assessment

**Module 3.** Fluid and Hemotherapy in Pediatrics

**Module 4.** Pharmacology in Pediatrics

**Module 5.** Anesthetic Monitoring in Pediatric Surgery

**Module 6.** Advances in Pediatric Monitoring in Specific Surgeries (Cardiac, Neurosurgery, Spinal and Neonatal Surgery)

**Module 7.** Difficult Airway in Pediatric Surgery

- 7.1. Preoperative VAD Evaluation
- 7.2. Pediatric VAD Management Algorithms
- 7.3. New Ventilation Devices and Methods

**Module 8.** Associated Pathology Perioperative Management

- 8.1. Asthma, Diabetes, Obesity and OSA
- 8.2. Managing the Most Frequent Complications:
  - 8.2.1. Nausea
  - 8.2.2. Vomit
  - 8.2.3. Tremors
  - 8.2.4. Agitation



### Module 9. Ultrasound

- 9.1. Current Indications.
- 9.2. Advantages

### Module 10. Neonatal and Infant Anesthesia

- 10.1. New Surgical Approaches in Neonatal Pathology

### Module 11. General Anesthesia in Pediatric Surgery

- 11.1. Advances in Inhalation General Anesthesia
- 11.2. Advances in Intravenous Anesthesia TIVA General Anesthesia

### Module 12. Anesthesia Outside the Operating Room

### Module 13. Pain in the Child

- 13.1. Advances in Advanced Analgesia Techniques
- 13.2. Loco-regional Anesthesia in Pediatrics

### Module 14. Anesthesia in Pediatric Cardiovascular Procedures

### Module 15. Pediatric Cardiac Surgery Management

### Module 16. Pediatric Polytraumatism

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



05

# Methodology

This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

This teaching system is used 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 Re-learning, 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

In a given situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, 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 can 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 potential 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 professional medical 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 grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the 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.



## Re-learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

Our 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, which represent a real revolution with respect to simply studying and analyzing cases.

*The physician will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*



At the forefront of world teaching, the Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking online university (Columbia University).

With this methodology we have trained more than 250,000 physicians with unprecedented success, in all clinical specialties regardless of the surgical load. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Re-learning 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 (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by our learning system is 8.01, according to the highest international standards.



In this program you will have access to the best educational material, prepared with you in mind:



#### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is really specific and precise.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



#### Latest Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



#### Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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



#### Additional Reading

Recent articles, consensus documents, international guides. in our virtual library you will have access to everything you need to complete your training.





#### Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through 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 your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your goals.



#### Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an expert strengthens knowledge and memory, and generates confidence in our difficult future decisions.



#### Quick Action Guides

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.



06

# Certificate

The **Postgraduate Certificate in Pediatric Anesthesia** guarantees, in addition to the most accurate and updated training, access to a qualification issued by **TECH Global University**.





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

This program will allow you to obtain your **Postgraduate Certificate in Pediatric Anesthesia** 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** title 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 Certificate in Pediatric Anesthesia**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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



## Postgraduate Certificate Pediatric Anesthesia

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- » Duration: 6 weeks
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