

Professional Master's Degree

Pediatric Orthopedics





Professional Master's Degree Pediatric Orthopedics

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/medicine/professional-master-degree/master-pediatric-orthopedics

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01

Introduction

Pediatric Orthopedics has seen significant advances in recent years thanks to research and new technologies, which, for example, have resulted in surgical interventions by means of virtual reality in musculoskeletal tumors. This progress also benefits patients affected by osteoarticular infections, hip and arm fractures or skeletal dysplasias. A potential for improvement that leads medical professionals to be constantly updated. This 100% online program, taught by a leading specialized team in the field, was born in order to offer the most exhaustive and recent information available. Thanks to this, physicians will update through innovative multimedia content of the latest developments in the diagnosis and treatment of pathologies of the foot, hip and knee.



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This Professional Master's Degree provides you with the latest knowledge in techniques and materials used in Pediatric Orthopedics, including modules on osteoarticular infections and dysplasias”

The incursion of technologies applied to medicine has recently led to an increase in the number of interventions performed by means of surgeries navigated with mixed reality, bioresorbable implants or general improvements in osteosynthesis materials. A boost to Pediatric Orthopedics, which, in turn, starts from a knowledge base of the entire locomotor system of the child.

In addition to treatment itself, advances in diagnosis, on which professionals in the field are constantly working, continue to be key. An early and adequate detection of certain pathologies favors child recovery, which is also undergoing full development. That is why more and more specialists are demanding to renew their knowledge in the field. This Professional Master's Degree is born in this context, where physicians will delve into radial longitudinal deficiency of the upper limb, Embryology, anatomy and biomechanics of the hip, Osgood-Schlatter disease or the staging of musculoskeletal tumors.

The multimedia didactic material provided by TECH on all its programs, will allow professionals to access advanced knowledge through video summaries, detailed videos, interactive diagrams and clinical case simulations. All this, with the main objective that students acquire up-to-date knowledge in the field.

What is more, professionals are offered higher education in a convenient and flexible format. Students only need an electronic device with an Internet connection to access the virtual campus, the syllabus and the rest of the material. All of which will be available from the very first day. This will allow students to distribute the course load according to their needs, with a 100% online program, and no fixed class schedules. An ideal program for people looking for a university qualification that allows them to balance their work and personal responsibilities.

This **Professional Master's Degree in Pediatric Orthopedics** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ Developing practical cases presented by experts in Pediatric Orthopedics
- ♦ 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 the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies in Pediatric Orthopedics
- ♦ 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



A 100% online academic program designed for professionals like you, who wish to balance their work responsibilities with a quality education"

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From your computer and at any time, you can comfortably update your knowledge of osteoid osteoma or aneurysmal bone cyst”

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 specialization 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 throughout the program. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

Access the most recent scientific studies in the early diagnosis of adolescent hip pathology.

This program will help you update your knowledge of the emergency approach to pediatric patients with spine pathology, torticollis or atlantoaxial instability.



02 Objectives

The main goal of the program is to offer medical professionals the latest knowledge in the field of Pediatric Orthopedics. To this end, TECH has assembled a team of specialized professionals who have developed teaching materials based on the latest technology applied in academic teaching. Thus, at the end of this online program, physicians will be aware of the latest diagnostic and therapeutic advances in different pathologies affecting the locomotor system of children and adolescents.





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The teaching team on the program will support you during the 12 months the course lasts to offer you the most current knowledge in Pediatric Orthopedics”



General Objectives

- ◆ Knowing how to carry out a good assessment of the child, starting with the anamnesis, a tool that is often underused but essential, a structured and complete examination that, depending on the age, will have different perspectives
- ◆ Become familiar with the management of the different congenital and/or acquired alterations affecting the upper limb of growing patients
- ◆ Delve into the complementary studies that help diagnose and make decisions, as well as the appropriate moment to perform them
- ◆ Manage therapeutic options, as well as the treatment schedule
- ◆ Apply the different surgical techniques used to treat the various pathologies
- ◆ Become familiar with the pathology, clinical presentation and management of the most common benign and malignant tumors of the upper extremity affecting children
- ◆ Recognize and manage the major diseases of the hip that affect children
- ◆ Manage the examination and diagnosis of hip pathology in children according to their age and the prevalence associated with it
- ◆ To review the most important pathologies that occur in pediatric orthopedics, as knowledge of them is the fundamental pillar of this speciality
- ◆ To learn about the latest advances in the treatment of these classic pediatric orthopedics diseases
- ◆ Become familiar with the diagnosis, treatment and prognosis of orthopedic and traumatological knee pathologies in children and their particular characteristics compared to adults





Specific Objectives

Module 1. Child Orthopedics

- ◆ Perform a detailed anamnesis and a complete, orderly and systematic examination of pediatric patients
- ◆ Distinguish physiological from pathological development, as well as their radiological characteristics
- ◆ Learn the complementary tests and radiological characteristics of bone growth
- ◆ Learn the intricacies of the etiopathogenesis of deformities in the lower limb axis
- ◆ Anticipate and correct potential deformities
- ◆ Differentiate and know how to treat musculoskeletal pathologies associated with normal child development
- ◆ Apply the basics of fracture treatment in pediatric patients

Module 2. Upper Limb

- ◆ Delve into the knowledge of the origin and embryology of the different congenital malformations
- ◆ Become familiar with the different congenital malformations, studying etiopathogenesis, clinical studies, complementary studies, classifications and treatments of each pathology

Module 3. Hip

- ♦ Manage the diagnosis, examination and treatment of hip dysplasia, taking into account the different ages of children
- ♦ Delve into hip exploration, which is essential in neonatal screening
- ♦ Understand Perthes' disease with clear management ideas, differentiating between outdated treatments and new perspectives on the disease
- ♦ Make an early diagnosis of adolescent hip pathology, which is crucial for the survival of the hip in adulthood, and learning how to manage it properly, including complex hip reduction surgeries
- ♦ Learn to recognize coxa vara and spring hip to assess their clinical implications for receiving proper treatment

Module 4. knee

- ♦ Learn to distinguish the clinical-radiological characteristics of patients with discoid meniscus
- ♦ Differentiate the types of discoid meniscus
- ♦ Perform a differential diagnosis of popliteal cysts
- ♦ Recognize the clinical, radiological and epidemiological features of Osgood-Schlatter disease
- ♦ Identify possible warning signs of Osgood-Schlatter disease
- ♦ Establish an adequate diagnosis of patellofemoral instabilities
- ♦ Learn the osteochondral lesions of children
- ♦ Delve into the implications of cruciate ligament rupture in children
- ♦ Manage fractures around the knee
- ♦ Differentiate between stable and unstable fractures for correct treatment

Module 5. Pathology of the Foot

- ♦ Gain in-depth knowledge of the etiopathogenesis of foot malformations and deformities
- ♦ Diagnose through anamnesis and physical examination
- ♦ Apply the complementary tests required for diagnosis, and primarily be able to assess and describe the radiographic images in the different pathologies
- ♦ Interpret when different diagnostic tests are appropriate
- ♦ Gain in-depth knowledge on treating each pathology Learn the common techniques of manipulation and casting in the pediatric age, as well as the different surgical techniques required to treat each pathology
- ♦ Learn the natural history and evolution of each process

Module 6. Spine

- ♦ Learn the characteristics of the different spine pathologies in pediatric patients
- ♦ Learn the most frequent causes of spine deformity
- ♦ Manage the urgency of pediatric patients with spinal pathology, torticollis, atlantoaxial instability
- ♦ Long-term management of patients diagnosed with spinal deformity in infancy
- ♦ Long-term management of patients diagnosed with tumors / fractures during infancy
- ♦ Suspect and learn the management of tumors such as osteoid osteoma, aneurysmal bone cyst, etc.
- ♦ Perform the necessary tests to diagnose the different entities

Module 7. Orthopedic Alterations Linked to Neuromuscular Diseases

- ♦ Learn available knowledge on the prevention and management of hip dislocation
- ♦ Learn the management algorithms for each pathological gait pattern
- ♦ Make decisions using three-dimensional motion analysis
- ♦ Delve into surgical techniques by anatomical segments
- ♦ Learn the application of orthoses and rehabilitation after multilevel surgery

Module 8. Skeletal Dysplasias and Syndromic Diseases

- ♦ Specialize in the etiology and pathogenic theories of bone dysplasias and congenital malformations of the lower limbs
- ♦ Perform an accurate assessment of the different diagnostic tests
- ♦ Delve into the natural history and evolution expectancy of each process
- ♦ Gain in-depth knowledge of the different treatment methods and the best moment to carry them out, depending on the pathology



This program will provide you with a sense of confidence in your medical practice, which will help you grow personally and professionally”

Module 9. Osteoarticular Infections

- ♦ Learn the microbiologic characteristics of the different infectious musculoskeletal pathologies in pediatric patients
- ♦ Delve into the most prevalent germs that cause infectious pathology
- ♦ Develop a correct strategy for the differential diagnosis of diseases that cause lameness in pediatric patients
- ♦ Learn the emergency management of pediatric patients with infectious musculoskeletal pathologies
- ♦ Gain in-depth knowledge on the hospital management of patients admitted for musculoskeletal infections
- ♦ Apply the long-term management of patients diagnosed with musculoskeletal infections during infancy
- ♦ Manage and identify other non-infectious arthropathies, as well as their management in pediatric patients
- ♦ Suspect and learn how to manage recurrent multifocal osteomyelitis

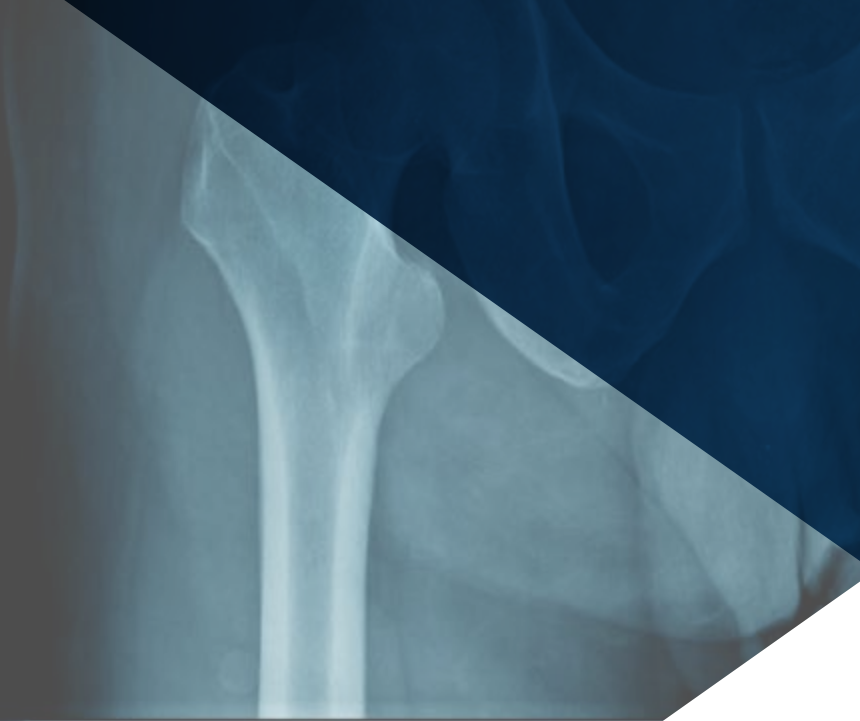
Module 10. Tumours

- ♦ Appropriately guide the diagnostic study of this lesion and, if a musculoskeletal biopsy is necessary, learn how to perform it
- ♦ Learn the latest up-to-date treatments for the main musculoskeletal injuries in children

03 Skills

This Professional Master's Degree in Pediatric Orthopedics has been created as a high-quality tool for medical professionals, enhancing their competencies and skills in the field of diagnosis and treatment of pediatric patients with foot, hip or knee conditions. This update will be achieved in a more successful way thanks to the simulation of case studies that will bring physicians closer to reality, who can then apply this knowledge to their usual clinical practice.





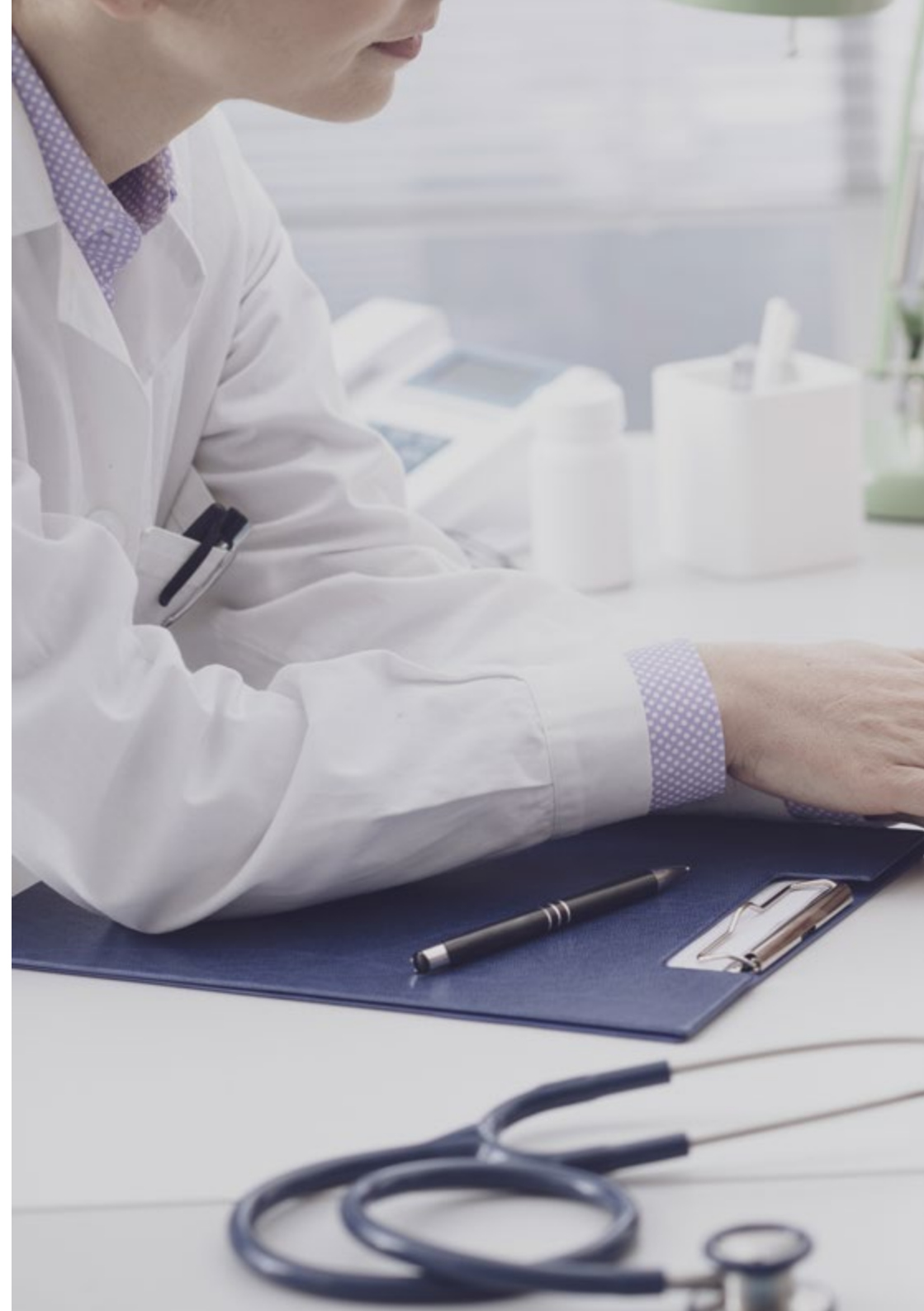
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With this program, you will be able to keep up with new techniques and advances in Pediatric Orthopedics”



General Skills

- ♦ Review the most important pathologies that occur in pediatric orthopedics
- ♦ Advise patients and family members on the use and benefits of orthopedic products
- ♦ Apply learning to explore and diagnose knee pathologies in children, losing the usual fear generated in many specialists due to lack of knowledge of the pathology
- ♦ Recognize the different pathologies of children's feet and be able to make an accurate diagnosis together with a suitable therapeutic approach
- ♦ Describe the main aspects of spinal pathology in pediatric patients
- ♦ Review advances and update knowledge on the management of spinal pathologies in pediatric patients
- ♦ Develop the necessary skills to appropriately diagnose and treat pediatric patients with spinal diseases
- ♦ Learn the treatment by applying physiopathological principles
- ♦ Explore physical examinations integrated with three-dimensional movement analysis
- ♦ Manage functional and quality of life classifications and scales
- ♦ Develop the necessary skills to appropriately diagnose and treat pediatric patients with infectious musculoskeletal diseases and other arthropathies
- ♦ Learn how to make a comprehensive and early diagnosis, and guide the treatment of the main musculoskeletal injuries that appear in children





Specific Skills

- ◆ To make a full differential diagnosis of a pathology as frequent as lameness in children
- ◆ Evaluate the possibilities of treating tumors affecting children's hands, including surgical treatment, resections, amputations and reconstructions
- ◆ Differentiate fractures and know how and when to treat them, as well as the surgical indications versus conservative treatment of fractures
- ◆ Delve into the diagnosis and early treatment of congenital knee dislocation
- ◆ Learn to interpret when different diagnostic tests are suitable
- ◆ Develop a correct strategy in the differential diagnosis of pathologies that cause spinal pain in pediatric patients
- ◆ Manage spasticity, locally and globally, as well as other movement disorders
- ◆ Perform a correct anamnesis, physical examination and interpretation of imaging and laboratory tests required for diagnosis
- ◆ Be able to perform the necessary tests to diagnose the different infectious entities
- ◆ Learn how to differentiate a lesion with aggressive clinical and radiological characteristics from a non-aggressive one

04

Course Management

TECH has recruited an extensive teaching team specialized in the field of Pediatric Orthopedics for this program. A rigorous selection of teachers based on their high qualifications and professional experience in public and private healthcare. Thus, medical professionals who enroll in the program will benefit from an administrative and teaching staff specialized in traumatology and orthopedic surgery. In addition to their extensive knowledge, their human qualities have also been taken into account for their inclusion on the program.





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The teaching team delivering this higher education provides you with clinical case simulations to bring you closer to clinical practice in Pediatric Orthopedics”

International Guest Director

Mininder Kocher is an internationally prominent pediatric orthopedic surgeon. His professional merits and results have been recognized with numerous awards, including the Kappa Delta award, considered the “Nobel Prize” in this surgical field. In addition, he practices as a specialist at Harvard Medical School.

The scientist also holds the program of Chief of the Division of Sports Medicine at Boston Children’s Hospital. From that entity, he deals with different complex pathologies such as **joint injuries, Osteomyelitis, Hip Labral Rupture, Osteochondritis Dissecans or Pigmented Villonodular Synovitis**, among others. His innovations in these areas of Orthopedic Medicine are reflected in more than 150 academic articles published in first impact indexed journals. He is also the author of more than 100 chapters in books and is the sole author of 4 books. His texts have become an indispensable reference for the medical community, highlighting his undeniable contributions to the field.

Dr. Mininder Kocher’s impact extends beyond the borders of the United States, as he serves as a **consultant and advisor to hospitals and universities in more than 20 countries**. Moreover, he has been listed as one of the top surgeons in the world on platforms such as US News & World Report, Castle Connelly, Top Doctors and Boston Magazine. Likewise, his skills and experiences have been the subject of attention in reference media such as the New York Times, Wall Street Journal, USA Today, Boston Globe, Chicago Tribune, Scientific American, among others.

Especially committed to the rehabilitation of children and adolescent athletes, his exhaustive work in this area has been decorated with awards as prominent as the **Von Meyer, Richard Kilfoyle, Angela Kuo or Arthur Heune awards**.



Dr. Kocher, Mininder

- Orthopaedic Surgery Specialist at Harvard Medical School
- M.D. from Harvard University
- Board Certified in General Practice by the American Board of Orthopaedic Surgery
- Board Certified in Sports Medicine by the American Board of Orthopedic Surgery
- Member of: Board of Directors of the American Academy of Orthopaedic Surgeons, American Orthopaedic Society for Sports Medicine, Pediatric Orthopaedic Society of North America, Herodicus Society, International Pediatric Orthopaedic Think Tank

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

Management



Dr. Palazón Quevedo, Ángel

- Head of the Pediatric Orthopedics Service, Niño Jesús University Hospital
- Medical specialist in Orthopedic Surgery and Traumatology with wide and recognized professional experience in the field of O.S.T. for children and adults
- Doctoral course in Pediatrics with the following Doctoral Thesis project: "Long-term follow-up of surgically repaired hip dysplasias in infancy"
- Degree in Medicine and Surgery from the Complutense University of Madrid and Medical Specialist in O.S.T. via MIR at the San Juan Clinical University Hospital (Alicante-Valencian Community)
- Member of SECOT
- Member of SEOP

Professors

Dr. Egea Gámez, Rosa María

- ♦ Attending Physician in the Orthopedics and Traumatology Department, Niño Jesús Pediatric University Hospital
- ♦ Specialist in Orthopedic and Trauma Surgery
- ♦ Degree in Medicine and Surgery from the Complutense University of Madrid

Dr. Martínez Álvarez, Sergio

- ♦ Attending Physician in the Orthopedics and Traumatology Department, Niño Jesús Pediatric University Hospital
- ♦ Head of the Upper Limb and Pediatric Hand Unit
- ♦ Specialist in Pediatric Orthopedic Surgery and Traumatology. La Princesa University Hospital

Dr. Ramírez Barragán, Ana

- ♦ Attending physician in the Traumatology and Orthopedic Surgery Service, Niño Jesús Hospital
- ♦ PhD in Medicine from the University of Salamanca
- ♦ Degree in Medicine and Surgery from the Complutense University of Madrid
- ♦ Member of the Spanish Society of Pediatric Orthopedics (SEOP).
- ♦ Member of the Spanish Society of Orthopedic Surgery and Traumatology (SECOT)

Dr. Abad Lara, José Antonio

- ♦ Pediatrics at Reina Sofía University Hospital
- ♦ Specialist in Pediatric Orthopedic Surgery and Traumatology, with exclusive devotion to the management of pediatric orthopedic conditions in the Pediatric Orthopedics Unit
- ♦ Coordinator of the Children's Orthopedics Unit, Reina Sofia University Hospital
- ♦ Degree in Medicine and Surgery from the University of Córdoba

Dr. Abril Martín, Juan Carlos

- ♦ Specialist in Traumatology and Orthopedic Surgery. Jiménez Díaz Foundation, Madrid
- ♦ Faculty Area Specialist of O.S.T. at Insalud hospitals
- ♦ Graduate in Medicine and Surgery from the University of Valladolid

Dr. Alonso Hernández, Javier

- ♦ Medical specialist in Traumatology and Orthopedic Surgery
- ♦ Specialist in Pediatric Traumatology and Orthopedics and in Pediatric Sports Traumatology
- ♦ Assistant to the Pediatric Orthopedics Service of the Niño Jesús Hospital in Madrid
- ♦ Head of the Pediatric Traumatology and Orthopedics Unit at the CEMTRO Clinic in Madrid

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- ♦ Neurosurgery coordinator at the Gregorio Marañón General University Hospital. Madrid
- ♦ Medical specialist in Traumatology and Orthopedic Surgery. Gregorio Marañón General University Hospital. Madrid
- ♦ Degree in Medicine from the Complutense University of Madrid

Dr. Alves, Cristina

- ♦ Attending physician in the Neurosurgery Unit, Niño Jesús Pediatric University Hospital
- ♦ Orthopedic Physician in the Pediatric Orthopedics Service Pediatric Hospital - CHUC, EPE

Dr. Budke Neukamp, Marcelo

- ♦ PhD in Surgery, Autonomous University of Madrid
- ♦ Degree in Medicine and Surgery from the Faculty of Medicine of the Federal De Pelotas University in Rio Grande do Sul (Brazil)

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- ♦ Specialist in Orthopedic Surgery and Traumatology. Residency at the La Paz University Hospital of Madrid
- ♦ Children's Traumatology and Orthopedics, Ruber International Clinic
- ♦ Degree in Medicine from the Complutense University of Madrid

Dr. Castañeda, Pablo G

- ♦ Specialized in Orthopedics and Traumatology from the National Autonomous University of Mexico
- ♦ Sub-specialized in hip and knee reconstructive surgery by the University of Oxford, Nuffield Orthopaedic Centre, Oxford, England
- ♦ Sub-specialized in Pediatric Orthopedics, Baylor University, Houston, Texas, USA
- ♦ Medical Surgeon graduated from the Universidad Nacional Autonoma de Mexico through the Universidad Anahuac
- ♦ Professor of Orthopedic Surgery - New York University
- ♦ Chief of the Pediatric Orthopaedic Surgery Division, New York University Hassenfeld Children's Hospital

Dr. Chorbadian Alonso, Gonzalo Andrés

- ♦ Surgeon at the Universidad de Santiago de Chile
- ♦ Specialist in Orthopedia and Traumatology at the Universidad de Chile

Dr. Clemente Garulo, Daniel

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- ♦ PhD in Health Sciences from the Universidad Camilo José Cela
- ♦ Degree in Medicine and Surgery from the Faculty of Medicine of the Universidad de Alcalá

Dr. De Pablos Fernández, Julio

- ♦ Associate Professor of Orthopedic Surgery and Traumatology at the Universidad de Navarra
- ♦ PhD in Medicine and Surgery from the Universidad de Navarra

Dr. Del Cura Varas, Marisol

- ♦ Attending Physician in the Orthopedic Surgery and Traumatology Department, Ramón y Cajal Hospita, Madrid
- ♦ Degree in Medicine at the U.A.M. (Universidad Autónoma de Madrid)

Dr. Downey Carmona, Francisco Javier

- ♦ Specialist in Orthopedic Surgery and Traumatology at the Hospital Universitario de Valme
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- ♦ PhD in Medicine and Surgery from the Universidad de Navarra
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- ♦ Head of the Pediatric Orthopedic Surgery and Traumatology Department. Virgen del Rocío University Hospital
- ♦ Graduate in Medicine and Surgery from the Sevilla University

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- ♦ Degree in Medicine from the Faculty of Medicine at the University of Cantabria.
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- ♦ Specialized in Pediatric Orthopedics at the Pediatric Hospital CHUC, EP

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- ♦ Medical Captain of the Military Health Corps on the Ordinary Officer Level
- ♦ Office of the Medical Lieutenant of the Military Health Corps on the Ordinary Officer Level, Specialist in Orthopedic Surgery and Traumatology
- ♦ Orthopedic Surgery and Traumatology resident, Gómez Ulla Central Defense Hospital

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- ♦ Specialist Physician at the Niño Jesús Hospital in Madrid
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- ♦ Head of the Pediatric Orthopedics Sections, 12 de Octubre University Hospital, Madrid
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- ♦ Specialist at Infanta Elena Hospital Pediatric Orthopedics and Hip-Knee Unit
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- ♦ Digestive Surgery at the A Coruña University Hospital Complex
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- ♦ Master's Degree in clinical Reasoning and clinical skills, Alcalá University, Madrid
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- ♦ Member of the Multidisciplinary Unit of skeletal dysplasias at the La Paz Hospital
- ♦ Orthopedic Surgery and Traumatology Service, Pediatric Orthopedics Unit, La Paz University Hospital, Madrid

Dr. Salom Taverner, Marta

- ♦ Specialist in Orthopedic Surgery and Traumatology. La Fe University Hospital of Valencia
- ♦ Degree in Medicine and Surgery from the University of Valencia

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- ♦ Head of the Orthopedic Surgery and Pediatric Traumatology Service, Son Espases University Hospital
- ♦ Professor and Head of the Department of Medical-Surgical Pathology-Locomotor System. Associate Professor of Human Anatomy. Faculty of Medicine. University of the Balearic Islands
- ♦ Vice-President of the European Society of Pediatric Orthopedics (EPOS)
- ♦ Doctor of Medicine
- ♦ Degree in Medicine from the Autonomous University of Barcelona

Dr. Soldado Carrera, Francisco

- ♦ Head of the Department of Orthopedic Surgery and Pediatric Traumatology. Barcelona Childrens University Hospital HM nens
- ♦ Director of Hand, Plexus and Pediatric Microsurgery Unit, Vall Hebron Barcelona Hospital Campus
- ♦ Pediatric Orthopedic Surgery and Traumatology Service, Vall Hebron Barcelona Hospital Campus

Dr. Sosa González, Guillermo

- ♦ Medical specialist in Traumatology and Orthopedic Surgery. Gregorio Marañón General University Hospital. Madrid
- ♦ Faculty Specialist at the Department of Traumatology and Pediatric Orthopedics at the Gregorio Marañón General University Hospital. Madrid
- ♦ Pediatric Oncologic Musculoskeletal Faculty specialist at the Gregorio Marañón General University Hospital. Madrid
- ♦ Degree in Medicine from the Autonomous University Madrid

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- ♦ Attending Physician in the Orthopedic Surgery and Traumatology Department, Sant Joan de Déu Hospital, Barcelona
- ♦ Degree in Medicine and Surgery from the Autonomous University of Barcelona (UAB)



Dr. Villa García, Ángel José

- ♦ Head of the Department of Traumatology and Pediatric Orthopedics at the Gregorio Marañón General University Hospital. Madrid
- ♦ Medical specialist in Traumatology and Orthopedic Surgery. Gregorio Marañón General University Hospital. Madrid
- ♦ Degree in Medicine and Surgery from the University of Salamanca.
- ♦ Coordinator of the Pediatric Hip and Pediatric Musculoskeletal Oncology Department of the Gregorio Marañón General University Hospital. Madrid

Dr. Yáñez Hernández, Marta

- ♦ MIR in Orthopedic Surgery and Traumatology in Majadahonda (Madrid)
- ♦ Degree in Medicine and Surgery from the Autonomous University of Madrid

05

Structure and Content

TECH uses the *Relearning* system on all its programs, which is based on the reiteration of content, allowing students to advance in a more natural and progressive way throughout the program. Furthermore, it is a method that reduces the long study hours that are so common to other methodologies. Under this model, professionals will much more flexibly obtain an advanced update of their knowledge on the surgical approach to the spine, tumors or the most commonly used diagnostic techniques for the detection of certain pathologies.



“

The multimedia content on the program will allow you to delve into skeletal dysplasias and syndromic diseases in a more dynamic way”

Module 1. Pediatric Orthopedics

- 1.1. Clinical History of Children and their Examination
 - 1.1.1. The Examination of Infants
 - 1.1.2. The Examination of Teenagers
- 1.2. Radiodiagnostics
- 1.3. Characteristics of Children's Bones and Bone Growth
- 1.4. Angular Deformities
 - 1.4.1. Genu Varum
 - 1.4.2. Genu Valgum
 - 1.4.3. Recurvatum
 - 1.4.4. Antecurvatum
- 1.5. Torsional Deformities
 - 1.5.1. Femoral Anteversion
 - 1.5.2. Tibial Torsion
- 1.6. Length Discrepancy
- 1.7. Pediatric Lamenes
- 1.8. Apophysitis and Enthesitis
- 1.9. Pediatric Fractures
- 1.10. Pediatric Immobilizations and Orthoses
 - 1.10.1. Types of Immobilizations
 - 1.10.2. Duration of the Immobilizations

Module 2. Upper Limb

- 2.1. Agenesis and Transverse Defects
- 2.2. Radial longitudinal deficiency. Hypoplasias and Agenesis of the Thumb
- 2.3. Ulnar Longitudinal Deficiency. Proximal Radioulnar Synostosis
- 2.4. Preaxial and Postaxial Polydactyly
- 2.5. Syndactyly. Macrodactyly Clinodactyly. Camptodactyly. Kirner's Deformity
- 2.6. Amniotic Band Syndrome
- 2.7. Madelung's Deformity
- 2.8. Arthrogryposis
- 2.9. Obstetric Brachial Palsy
- 2.10. Tumors Affecting the Pediatric Hand: Osteochondromatosis, Enchondromatosis and Soft Tissue Tumors

Module 3. Hip

- 3.1. Embryology, Anatomy and Biomechanics of the Hip
- 3.2. Transient Synovitis of the Hip
 - 3.2.1. Aetiopathogenesis.
 - 3.2.2. Differential Diagnosis
 - 3.2.3. Orthopedic Management
- 3.3. Developmental Dysplasia of the Hip in Children under 18 Months of Age
 - 3.3.1. Concept. Historical Recollection
 - 3.3.2. Dysplasia in Children Under 6 Months of Age
 - 3.3.2.1. Diagnostic Examination
 - 3.3.2.2. Hip Ultrasound: Methods and Interpretation
 - 3.3.2.3. Therapeutic Orientation
 - 3.3.3. Dysplasia in Children aged 6-12 Months
 - 3.3.3.1. Clinical and Radiological Diagnosis
 - 3.3.3.2. Treatment
 - 3.3.4. Dysplasia in Walking Children (>12 Months)
 - 3.3.4.1. Late Diagnosis Errors
 - 3.3.4.2. Treatment Management
- 3.4. Developmental Dysplasia of the Hip in Children over 18 Months Old
 - 3.4.1. Definition and Natural History
 - 3.4.2. Etiology and Clinical Manifestations
 - 3.4.3. Clinical and Radiological Classification. Hip Risk Factors
 - 3.4.4. Differential Diagnosis
 - 3.4.5. Treatment
- 3.5. Hip Dysplasia in Older Children and Teenagers
 - 3.5.1. Causes and Types
 - 3.5.2. Diagnostic Guidance
 - 3.5.2.1. Teenage Hip Dysplasia Radiology
 - 3.5.2.2. Complementary Studies of Dysplasia: RMN, Arthro rmn, tac, etc.
 - 3.5.3. Treatment
 - 3.5.3.1. Arthroscopic Treatment
 - 3.5.3.2. Open Surgery
 - 3.5.3.2.1. Pelvic Osteotomies: Techniques and Guidelines
 - 3.5.3.2.2. Femoral Osteotomies: Techniques and Guidelines



- 3.6. Legg-Calvé-Perthes Disease
 - 3.6.1. Perthes After-Effects
 - 3.6.2. Syndromic Hip
 - 3.6.3. Chondrolysis
 - 3.6.4. Sequelae of Arthritis (Septic, Rheumatic Diseases, etc.)
- 3.7. Epiphysiolysis of the Femoral Head
 - 3.7.1. Diagnosis. The way they are formed
 - 3.7.2. Aetiopathogenesis.
 - 3.7.3. Types of Epiphysiolysis. Pathophysiological Mechanism
 - 3.7.4. Surgical Management
 - 3.7.4.1. In Situ Reduction
 - 3.7.4.2. Modified Dunn Procedure
 - 3.7.4.3. Late Treatment
- 3.8. Coxa vara
 - 3.8.1. Aetiopathogenesis
 - 3.8.2. Differential Diagnosis
 - 3.8.3. Treatment
- 3.9. Musculoskeletal Pain Around the Hips in Children
 - 3.9.1. Snapping Hip Syndrome
 - 3.9.1.1. Types of Snapping (Internal, External)
 - 3.9.1.2. Treatment
 - 3.9.2. Enthesitis Around the Hips in Children
 - 3.9.2.1. Enthesitis of the Spines (EIAS): Differential Diagnosis and Treatment
 - 3.9.2.2. Ischial and Iliac Crest Enthesitis. Diagnosis and Treatment
- 3.10. Hip Fractures in Children
 - 3.10.1. Biomechanical Implications of the Hip Fractures in Children
 - 3.10.2. Types of Fractures. Classification
 - 3.10.3. Diagnosis and Treatment. Treatment Management
 - 3.10.3.1. Children With Open Physes
 - 3.10.3.2. Children With Skeletal Maturity

Module 4. knee

- 4.1. Congenital Dislocation of the Knee
 - 4.1.1. Diagnosis and Classification
 - 4.1.2. Etiology
 - 4.1.3. Clinical - Radiological Findings
 - 4.1.4. Differential Diagnosis
 - 4.1.5. Clinical Findings and Associated Lesions
 - 4.1.6. Treatment
- 4.2. Patellofemoral Instability
 - 4.2.1. Prevalence and Etiology
 - 4.2.2. Types: Recurrent Dislocation, Recurrent Subluxation, Habitual Dislocation and Chronic Dislocation
 - 4.2.3. Associated Conditions
 - 4.2.4. Clinical Findings
 - 4.2.5. Radiological Findings
 - 4.2.6. Treatment
- 4.3. Osteochondritis Dissecans
 - 4.3.1. Definition and Aetiology
 - 4.3.2. Pathology
 - 4.3.3. Clinical Radiological Findings
 - 4.3.4. Treatment
- 4.4. Discoid Meniscus
 - 4.4.1. Pathogenesis.
 - 4.4.2. Clinical - Radiological Findings
 - 4.4.3. Treatment
- 4.5. Popliteal Cyst
 - 4.5.1. Definition and Clinical Findings
 - 4.5.2. Differential Diagnosis
 - 4.5.3. Pathology
 - 4.5.4. Diagnostic Tests
 - 4.5.5. Treatment
- 4.6. Apophysitis: Osgood-Schlatter's Disease, Sinding-Larsen-Johansson's Disease
 - 4.6.1. Definition and Epidemiology
 - 4.6.2. Clinical and Radiological Findings
 - 4.6.3. Treatment
 - 4.6.4. Complications
- 4.7. Ligament Lesions of the Knee: Anterior Cruciate Ligament
 - 4.7.1. Prevalence and Etiology
 - 4.7.2. Diagnosis
 - 4.7.3. Treatment in Patients with Growth Cartilage
- 4.8. Epiphysiolysis of the Distal Femur and Fractures of the Proximal Tibia
 - 4.8.1. Anatomic Considerations. Pathophysiology
 - 4.8.2. Diagnosis
 - 4.8.3. Treatment
- 4.9. Fractures of the Tibial Spines
 - 4.9.1. Pathophysiology
 - 4.9.2. Anatomic Considerations
 - 4.9.3. Diagnosis
 - 4.9.4. Treatment
- 4.10. Anterior Avulsion Fracture
 - 4.10.1. Pathophysiology
 - 4.10.2. Anatomic Considerations
 - 4.10.3. Diagnosis
 - 4.10.4. Treatment
- 4.11. Periosteal Tear of the Patella
 - 4.11.1. Pathophysiology
 - 4.11.2. Anatomic Considerations
 - 4.11.3. Diagnosis
 - 4.11.4. Treatment

Module 5. Pathology of the Foot

- 5.1. Embryology, Malformations and Deformities of the Foot in Newborns
 - 5.1.1. Polydactyly
 - 5.1.2. Syndactyly
 - 5.1.3. Ectrodactyly
 - 5.1.4. Macrodactyly
 - 5.1.5. Calcaneal Valgus or Talus Foot
- 5.2. Congenital Vertical Astragalus
- 5.3. Flexible Valgus Flatfoot
- 5.4. Serpentine Foot
- 5.5. Tarsal Coalition
- 5.6. Metatarsus Adductus and Metatarsus Varus
- 5.7. Congenital Clubfoot
- 5.8. Pes Cavus
- 5.9. Hallux valgus
- 5.10. Toe Pathology
 - 5.10.1. Hallux Varus
 - 5.10.2. Quintus Varus
 - 5.10.3. Quintus Supraductus
 - 5.10.4. Deformities of Small Toes: Mallet Toe, Hammer Toe, Claw Toe, Clinodactyly
 - 5.10.5. Brachymetatarsia
 - 5.10.6. Constriction Band Syndrome
 - 5.10.7. Agenesis and Hypoplasia of the Toes
- 5.11. Miscellaneous
 - 5.11.1. Osteochondrosis: Köning's Disease, Freiberg's Disease
 - 5.11.2. Apophysitis: Sever's Disease, Iselin's Disease
 - 5.11.3. Os Trigonum Syndrome
 - 5.11.4. Accessory Scaphoid
 - 5.11.5. Osteochondritis Dissecans of the Talus

Module 6. Spine

- 6.1. Surgical Anatomy and Approaches to the Spine
- 6.2. Cervical Spine Pathology
 - 6.2.1. Congenital Torticollis
 - 6.2.1.1. Muscular Congenital Torticollis
 - 6.2.1.2. Klippel-Feil Syndrome
 - 6.2.2. Acquired Torticollis
 - 6.2.2.1. Atlantoaxial Dislocation
 - 6.2.2.2. Other Causes: Inflammatory, Infectious, Sandifer's Syndrome
 - 6.2.3. Cervical Instability: Os Odontoideo
- 6.3. Spine Pathology
 - 6.3.1. Spondylolisthesis
 - 6.3.2. Juvenile Disc Herniation
 - 6.3.3. Scoliosis
 - 6.3.4. Early Onset
 - 6.3.5. Teenage Idiopathic Scoliosis
 - 6.3.6. Congenital Scoliosis
 - 6.3.7. Neuromuscular Scoliosis
 - 6.3.8. Early Onset Scoliosis
 - 6.3.9. Congenital Scoliosis
 - 6.3.10. Neuromuscular Scoliosis
 - 6.3.11. Spine Deformity in Other Syndromes
- 6.4. Spondylolisthesis
- 6.5. Alterations in the Sagittal Plane: Hyperkyphosis, Hyperlordosis
- 6.6. Back Pain in the Pediatric Age
- 6.7. Spinal Tumors
- 6.8. The Main Spine Fractures in Children

Module 7. Orthopedic Alterations Linked to Neuromuscular Diseases

- 7.1. Pediatric Cerebral Palsy
- 7.2. Normal and Pathological Gait. Usefulness of the Inclinometer in Gait Disturbances
- 7.3. Orthopedic Management of SCI: Botulinum Toxin, Casts, Orthoses
- 7.4. Hip Pathology in SCI
- 7.5. Crouch Gait in SCI
- 7.6. Myelomeningocele
- 7.7. Spinal Muscular Atrophy
- 7.8. Muscular Dystrophies: Duchenne's Disease, Other Myopathies
- 7.9. Neurological Upper Limb: Spasticity
- 7.10. Foot Associated With Neurological Pathologies (Clubfoot...)

Module 8. Skeletal Dysplasias and Syndromic Diseases

- 8.1. Achondroplasia. Hypochondroplasia and Pseudoachondroplasia
- 8.2. Congenital Malformations of the Lower Limb
- 8.3. Other Dysplasias: Spondyloepiphyseal Dysplasia, Multiple Epiphyseal Dysplasia, Diastrophic Dysplasia, Kniest Dysplasia, Osteopetrosis, Infantile Cortical Hyperostosis, Cleidocranial Dysostosis
- 8.4. Mucopolysaccharidosis
- 8.5. Osteogenesis Imperfecta
- 8.6. Hyperlaxity Syndromes
 - 8.6.1. General Hyperlaxity Syndrome
 - 8.6.2. Marfan and Ehlers Danlos Syndromes
- 8.7. Neurofibromatosis. Congenital Pseudoarthrosis of the Tibia
- 8.8. Arthrogyriposis
- 8.9. Down Syndrome
- 8.10. Children's Bone Alterations
 - 8.10.1. Rickets
 - 8.10.2. Transient Osteoporosis



Module 9. Osteoarticular Infections

- 9.1. Septic Arthritis
- 9.2. Osteomyelitis
- 9.3. Discitis and Vertebral Osteomyelitis
- 9.4. Orthopedic Pathology in Rheumatoid Arthritis
- 9.5. Other Arthropathies: Psoriatic Arthritis Reiter's Syndrome, Psoriatic Arthritis
- 9.6. Chronic Recurrent Multifocal Osteomyelitis. CRMO

Module 10. Tumours

- 10.1. Overview and Staging of Musculoskeletal Tumors
 - 10.1.1. Epidemiology
 - 10.1.2. Clinical Presentation
 - 10.1.3. Imaging Tests
 - 10.1.4. Staging.
 - 10.1.4.1. Benign Tumors
 - 10.1.4.2. Malignant tumours
- 10.2. Biopsy and Treatment Principles
 - 10.2.1. Types of Biopsy
 - 10.2.2. How to Perform a Musculoskeletal Biopsy?
 - 10.2.3. Types and Principles of Oncologic Resection
- 10.3. Cystic Lesions
 - 10.3.1. Simple Bone Cyst
 - 10.3.2. Aneurysmal Bone Cyst
- 10.4. Benign Tumors from Cartilage in Children
 - 10.4.1. Osteochondroma: Osteochondromatosis
 - 10.4.2. Enchondroma. Endochromatosis
 - 10.4.3. Chondroblastoma
 - 10.4.4. Chondromyxoid Fibroma
- 10.5. Benign Tumors from Bones in Children
 - 10.5.1. Osteoma Osteoid
 - 10.5.2. Osteoblastoma
- 10.6. Benign Tumors from Fibrous Tissue in Children
 - 10.6.1. Non-Ossifying Fibroma
 - 10.6.2. Fibrous Dysplasia
 - 10.6.3. Osteofibrous Dysplasia
 - 10.6.4. Langerhans cell histiocytosis
- 10.7. Other Tumours: Miscellaneous
 - 10.7.1. Langerhans Cell Histiocytosis: Eosinophilic Granuloma
 - 10.7.2. Giant Cell Tumor
- 10.8. Benign Tumors From Soft Tissue in Children
 - 10.8.1. Ganglion: Popliteal Cysts
 - 10.8.2. Giant cell tumour of the Tendon Sheath: Villonodular Synovitis
 - 10.8.3. Hemangioma
- 10.9. Malignant Bone Tumors of the Pediatric Skeleton
 - 10.9.1. Ewing Sarcoma
 - 10.9.2. Osteosarcomas
 - 10.9.3. Surgical Treatment Options for Unformed Skeletons
- 10.10. Malignant Tumors in Soft Tissue in Children
 - 10.10.1. Rhabdomyosarcoma
 - 10.10.2. Synovial Sarcoma
 - 10.10.3. Congenital Fibrosarcoma



A 100% online program that will allow you to expand your knowledge of infantile cerebral palsy and malignant tumors in children"

06

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. Gervas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

“

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.



07 Certificate

The Professional Master's Degree in Pediatric Orthopedics guarantees students, in addition to the most rigorous and updated education, access to a Professional Master's Degree issued by TECH Global University.



“

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

This program will allow you to obtain your **Professional Master's Degree diploma in Pediatric Orthopedics** 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: **Professional Master's Degree in Pediatric Orthopedics**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**

tech global university

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

Professional Master's Degree in Pediatric Orthopedics

This is a program of 1,500 hours of duration equivalent to 60 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
Rector

Unique TECH Code: APW0RD23S techinstitute.com/certificates

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.

Professional Master's Degree in Pediatric Orthopedics

| Subject type | ECTS |
|------------------------------|-----------|
| Compulsory (CO) | 60 |
| Optional (OP) | 0 |
| External Work Placement (WP) | 0 |
| Master's Degree Thesis (MDT) | 0 |
| Total | 60 |

| General Structure of the Syllabus | | | |
|-----------------------------------|---|------|------|
| Year | Subject | ECTS | Type |
| 1º | Child Orthopedics | 6 | CO |
| 1º | Upper Limb | 6 | CO |
| 1º | Hip | 6 | CO |
| 1º | knee | 6 | CO |
| 1º | Pathology of the Foot | 6 | CO |
| 1º | Spine | 6 | CO |
| 1º | Orthopedic Alterations Linked to Neuromuscular Diseases | 6 | CO |
| 1º | Skeletal Dysplasias and Syndromic Diseases | 6 | CO |
| 1º | Osteoarticular Infections | 6 | CO |
| 1º | Tumours | 6 | CO |

Dr. Pedro Navarro Illana
Rector

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*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.

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

personalized service **tech** global university information

knowledge present quality

online training

development languages

virtual classroom

Professional Master's Degree

Pediatric Orthopedics

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Professional Master's Degree

Pediatric Orthopedics

