

# Postgraduate Diploma

## Respiratory Disorders During Sleep





## Postgraduate Diploma Respiratory Disorders During Sleep

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

Website: [www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-respiratory-disorders-during-sleep](http://www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-respiratory-disorders-during-sleep)

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# 01

# Introduction

Sleep disordered breathing (SRD) is a group of disorders ranging from snoring to sleep apnea-hypopnea syndrome (SAHS). SAHS has a high morbidity and mortality rate, as well as an increasing prevalence, and is clearly underdiagnosed in the general population. Currently, the therapeutic options go much further, both within and outside CPAP.

All of this implies for all sleep medicine professionals a need for continuous updating on the latest developments in this field.





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*The new scenarios in Sleep Medicine lead us to implement up to date programs that meet the real needs of experienced professionals, so that they can incorporate current advances into their daily practice"*

There is an increasing multidisciplinary interest in Sleep Medicine, a rapidly growing discipline. Whether approached from a global point of view or from "partial specialisation" depending on the original field of medicine or specific area of interest, it is always vital to have rigorous and up-to-date generic knowledge in all areas. This Postgraduate Diploma more than fulfills this objective from an eminently practical point of view. Its approach sets it apart from many other courses on this very transverse discipline, which are often criticised for being too "descriptive" and "theoretical", and therefore not entirely useful in resolving many situations that arise in clinical management.

With the clear objective of combining scientific evidence and practical utility, this Postgraduate Diploma in Respiratory Disorders During Sleep has a broad, up to date and unbeatable program prepared by a varied team of professional experts (physicians, psychologists, biologists, engineers...), who bring their proven experience in the form of explanations and practical examples, entertaining but clarifying, and abundant graphic and audiovisual support, absolutely essential in the teaching of this thriving discipline.

In addition, this Postgraduate Diploma has the advantage of being developed in a 100% online format, so students will be in charge of deciding when and where to study, distributing their study hours autonomously, so that they can combine their training time with the rest of their daily obligations.

This **Postgraduate Diploma in Respiratory Disorders During Sleep** contains the most complete and up to date scientific program on the market. The most important features of the specialization are:

- ♦ The development of practical cases presented by experts in Sleep Medicine
- ♦ 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
- ♦ Advance in safety and Sleep Medicine
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Emphasis on innovative methodologies in Sleep Medicine
- ♦ 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



*We offer you a complete Postgraduate Diploma for you to develop in the field of Respiratory Disorders During Sleep. Think no more and enrol with us"*

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*This Postgraduate Diploma is the best investment you can make in selecting a refresher program to update your knowledge in Respiratory Disorders During Sleep"*

*We offer you an interactive video system that will make it easier for you to study this Postgraduate Diploma.*

*Our 100% online specialization and our innovative educational methodology will allow you to combine your studies with the rest of your daily obligations.*

The program's teaching staff includes professionals from the sector who contribute their work experience to this program, in addition to renowned specialists from leading societies and prestigious universities.

Its 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 an immersive education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.



# 02 Objectives

The main objective of the programme is the development of theoretical and practical learning, so that the doctor is able to master the latest techniques in the field in a practical and rigorous manner.







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*Our main objective is to help our students to achieve academic and professional excellence”*



## General Objective

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- To master and/or update the necessary skills and knowledge for adequate practice in the field of Sleep Medicine at a global level, from the clinical and instrumental points of view.



*Train yourself for success with the help of this Postgraduate Diploma with which you will learn to develop yourself in the field of Respiratory Disorders During Sleep"*



## Specific Objectives

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- Gain a deep understanding of which biological parameters are of interest in the different sleep recordings, how they can be recorded and how the sensors that monitor them work
- From the whole range of possible tests, you should acquire and master the skills to choose the most appropriate sleep test to be performed
- Gain the skills and understanding of the indications, recording, analysis and interpretation of all kinds of simplified systems in the diagnosis of sleep disorders
- Apply knowledge and skills on the indications, recording and practical problem solving during the Polysomnography (PSG) overnight sleep test, as a gold-standard sleep study technique. Include the acquisition of specific skills and training to perform analysis and interpretation of the sleep structure and all types of recorded events, as well as training to understand and evaluate external log reports
- Specialise in the current indications for PSG and learn when to extend or complement this test with a wide range of complementary elements
- Master the skills to implement and interpret additional instrumental tests to support the diagnosis in cases of daytime hypersomnolence or restless leg syndrome
- Gain a deep understanding of new ways of dealing with sleep disorders, through monitoring with sensors or with alternative systems different to the classic ones. Some of them through wireless systems, pulse transit sensors, or the use of microwave sensors aimed at reducing the complexity of existing tests. Others, such as circadian monitoring with chronosensors, aim to record key parameters for the diagnosis of sleep disorders that are not covered by classical tests
- Emphasise the importance of image and sound recording in sleep studies
- Define theoretical knowledge of how the bioelectrical signal can be analyzed with software

integrated in the devices, in order to be able to program the different diagnostic devices and to use the tools that each one of them provides us with

- ♦ Specialise in how a sleep unit is organised at different levels of care. To this end, the student will learn the different cycles for prevalent or specific sleep pathologies, which optimise resources and integrate the entire care process
- ♦ Gain an in-depth knowledge of the clinical, scientific and technical aspects of sleep-related breathing disorders, in particular SAHS
- ♦ Update the student's clinical skills in TRS in order to encourage them in their daily work
- ♦ Acquire skills to identify other sleep-disordered breathing disorders beyond SAHS
- ♦ Develop and update competencies in the individualized clinical management of the patient with SAHS, primarily in the field of the different options of non-invasive ventilation and, beyond it, in the novelties in positional treatment and incipient findings and evidences in the pharmacological field
- ♦ Know in depth the characteristics of normal sleep in children and adolescents and identify the physiological changes that occur (in sleep) as the process of brain maturation is completed until adulthood
- ♦ Develop anatomical-functional knowledge of the upper airways and their exploration methods that are very useful from the point of view of surgical and dental management guidance of factors influencing upper airway obstruction. Special attention is given, but not limited to, the indications and methodology of modern somnoscopia technology (DISE)
- ♦ Specialize in the different surgical techniques, including multilevel techniques, their precise indications and their usefulness in different situations, alone or in combination with other techniques,
- ♦ Apply skills in the effectiveness, indications and mechanisms of action of modern dental devices and techniques used either alone, as an alternative, or in combination with other therapeutic techniques
- ♦ Specialize in the different myofunctional techniques for rehabilitation of muscles involved in airway obstruction, their indications and how and to what extent they can help in the prevention and resolution of problems
- ♦ Knowing how to integrate all the techniques discussed at the decision-making level, in order to properly protocolize the therapeutic line to be followed in each patient, maintaining possible alternative or rescue solutions according to the particular evolution

03

# Course Management

The program includes in its teaching staff leading experts in Sleep Medicine, who bring to this specialization the experience of their years in the profession. Additionally, other recognized experts participate in its design and preparation, completing the program in an interdisciplinary manner.



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*The leading professionals in the field have come together to offer you the most comprehensive knowledge in this field, so that you can develop with total guarantees of success"*

## International Guest Director

Dr. Craig Canapari is an eminent specialist in Pediatric Pulmonology and Sleep Medicine. He has been internationally recognized for his commitment to the study and treatment of sleep disorders in children, as well as his work in the field of pulmonary diseases. Throughout his extensive professional career, Dr. Canapari has had an outstanding praxis focused on treating pediatric patients with chronic and life-threatening respiratory diseases.

As director of the Pediatric Sleep Medicine Program at Yale-New Haven Children's Hospital, Dr. Canapari has been dedicated to the management of various disorders such as Sleep Apnea and Obstructive Sleep Apnea. He also treats those suffering from general pulmonary problems, including cough, shortness of breath and asthma, as well as those suffering from Muscular Dystrophy. In this field, he is noted for his interdisciplinary approach, combining Pneumology, Neurology and Psychiatry in the research and treatment of these complex disorders.

In addition to his clinical expertise, Dr. Canapari is a celebrated researcher who has collaborated with other Harvard professionals to develop innovative tools, such as a smart phone application to assist parents in sleep training. His tireless efforts have also focused on how the use of CPAP machines can help children with Obstructive Sleep Apnea improve their quality of life. His in-depth knowledge in this area has led him to publish the book *It's Never Too Late to Sleep Train: The Low-Stress Way to High-Quality Sleep for Babies, Kids, and Parents*.

To this must be added his exceptional work as an Assistant Professor of Pediatrics, specializing in Respiratory Medicine, at the Yale School of Medicine. There he contributes to both clinical care and the training of future pediatric and pediatric pulmonology professionals.



## Dr. Canapari, Craig

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- ♦ Director of the Pediatric Sleep Medicine Postgraduate Certificate Program at Yale-New Haven Children's Hospital
- ♦ Attending Physician in Pediatric Pulmonology and Sleep Medicine at Yale-New Haven Children's Hospital
- ♦ Assistant Professor of Pediatrics, Respiratory Medicine, Yale School of Medicine, Yale University School of Medicine
- ♦ Doctor of Medicine, University of Connecticut School of Medicine
- ♦ Specialist in Pediatric Pulmonology and Sleep Medicine

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

## Management



### Dr. Larrosa Gonzalo, Óscar

- ♦ Specialist in Clinical Neurophysiology, San Rafael Hospital
- ♦ Expert in Sleep Medicine (CEAMS accredited, first national exam, 2013)
- ♦ Coordinator and founder of the Sleep Medicine Unit of MIPsalud, Madrid. Specialist and clinical consultant in sleep medicine at the Center of Neurological Diseases in Madrid and at the Multidisciplinary Unit for Sleep Disorders in San Rafael Hospital in Madrid, Spain
- ♦ Member of the Spanish Sleep Society (SES), founding member and former coordinator of its working group on Sleep Behaviour and Behavioural Disorders
- ♦ Member of the Spanish Society of the Neurophysiology Clinic (SENEC), founding member and former coordinator of its working group on sleep disorders
- ♦ Honorary Member, medical advisor and recommended specialist of the Spanish Restless Legs Syndrome Association (AESPI)
- ♦ Director of the Online Course "RESTLESS LEGS SYNDROME (WILLIS-EKBOM DISEASE)", (AESPI/Information without borders) for healthcare professionals, July 2016 - July 2017



## Professors

### Dr. Rodríguez Falces, Javier

- ♦ Telecommunications Engineer
- ♦ Interim Professor, Department of Electrical and Electronic Engineering, Public University of Navarre
- ♦ PhD in Communication Engineering

### Dr. Jiménez Setuain, Izaskun

- ♦ Specialist in Pulmonology
- ♦ Sleep Multidisciplinary Unit. Navarra Hospital Complex. Pamplona
- ♦ Member of the Spanish Society of Pulmonology and Thoracic Surgery and of the European Respiratory Society

### Dr. Azcona Ganuza, Gurutzi

- ♦ Medical Specialist in Clinical Neurophysiology
- ♦ Sleep Multidisciplinary Unit. Navarra Hospital Complex, Pamplona
- ♦ Pre-doctorate of the Master's Degree in Neurosciences and Cognition from the Clinical University of Navarra
- ♦ Member of the Spanish Society of Clinical Neurophysiology, the Association of Intraoperative Monitoring (AMINE) and the Spanish Society of Neurology (SEN)

### Dr. Ramos-Arguelles Gonzalez, Fernando

- ♦ Medical Specialist in Clinical Neurophysiology
- ♦ Clinical Neurophysiology Services and the Sleep Unit at the Rotger Clinic-Baleares Quirónsalud Group, Mallorca
- ♦ Member of the Spanish Society of Sleep and the Spanish Society of Clinical Neurophysiology

### Dr. Rodríguez Ulecia, Inmaculada

- ♦ Head of Clinical Neurophysiology Service at the San Roque Meloneras University Hospital, Maspalomas, Las Palmas (Canary Islands)
- ♦ Medical Specialist in Clinical Neurophysiology
- ♦ Master's Degree in Emergency Medicine, Cardenal Herrera University

### Dr. Ciorba Ciorba, Cristina

- ♦ Specialist in Pulmonology
- ♦ Sleep Multidisciplinary Unit. Navarra Hospital Complex, Pamplona
- ♦ Master's Degree in Advances in the Diagnosis and Treatment of Sleep from the University of Murcia
- ♦ Master's Degree in Neuromuscular Diseases and Respiratory Complications from the University of Versailles, Paris
- ♦ Head of the Sleep Unit at the Castellón General University Hospital
- ♦ Associate Professor of the Faculty of Medicine at Jaume I University in the field of Neurophysiology and Sleep
- ♦ Medical Specialist in Clinical Neurophysiology
- ♦ Expert in Sleep Medicine, accredited by the ESRS and CEAMS (Spanish Accreditation Committee of Sleep Medicine) /FESMES (Spanish Federation of Sleep Medicine Societies)
- ♦ Member of the Spanish Society of Sleep (SES) and the Spanish Society of Clinical Neurophysiology (SENFC)
- ♦ Spanish Society of Pulmonology and Thoracic Surgery (SEPAR)
- ♦ Castilian-Leonese and Cantabrian Society of Respiratory Pathology (SOCALPAR)
- ♦ Spanish Society of Sleep (SES)
- ♦ Head Researcher in 1 research project and associate researcher in 5 multidisciplinary research projects in Sleep Medicine

**Dr. García de Gurtubay Gállego, Iñaki**

- ♦ Specialist in Clinical Neurophysiology. Doctorate in Medicine. Expert in Sleep Medicine (CEAMS accreditation, 2013)
- ♦ Head of the Clinical Neurophysiology Service and Head of the multidisciplinary sleep pathology unit of CHN-SNS, Pamplona, Spain
- ♦ Lecturer and tutor of the practical side of the Professional Master's Degree in Biomedical Engineering of the ETS of Industrial and Telecommunication Engineering of the Public University of Navarra (UPNA)
- ♦ Member of the Spanish Society of the Neurophysiology Clinic (SENEC), founding member and former coordinator of its working group on sleep disorders
- ♦ Member of the Spanish Sleep Society (SES), founding member and former coordinator of its working group on movement and behavioural disorders during sleep
- ♦ Project Consultant as Biomedical Technology Expert at the Carlos III Health Institute
- ♦ Member of the Medical Technologies Assessment working group of the International Federation of Clinical Neurophysiology (IFCN)
- ♦ Medical Advisor to Walden Medical Neurodigital Therapies
- ♦ Member of the Neurophysiology of brain rhythms, epilepsy and sleep research group of the Navarra Health Research Institute- IdISNA
- ♦ Member of the Sociotechnology for Innovation in Health Group

**Mr. Madrid Pérez, Juan Antonio**

- ♦ Graduate in Biological Sciences. PhD in Physiology
- ♦ Specialist in Chronobiology, Pierre et Marie Curie University, Paris
- ♦ Head Lecturer of Physiology
- ♦ Director of the Chronobiology Laboratory at the University of Murcia, IMIB-Arrixaca and CIBERFES
- ♦ Member of the Spanish Society of Sleep and of the working group of Chronobiology
- ♦ Member of the Spanish Society of Physiological Sciences

**Dr. Rol de Lama, María Ángeles**

- ♦ Degree in Biological Sciences with a PhD grade from the Complutense University of Madrid
- ♦ Director of the Department of Physiology and Head Professor of the same department, University of Murcia. Founding member of Kronohealth SL
- ♦ Member of the Expert Committee of the Spanish Government for the study of the change of the official time. Member of the Innovation Commission of IMIB
- ♦ Member of the Spanish Society of Sleep and of the working group of Chronobiology

**Dr. Navallas Irujo, Javier**

- ♦ Telecommunications Engineer
- ♦ Professor in the Department of Electrical Engineering, Electronics and Communication, Public University of Navarra
- ♦ PhD in Communication Engineering

**Dr. Alfonso Imizcoz, María**

- ♦ Specialist in Pulmonology
- ♦ Sleep Multidisciplinary Unit. Navarra Hospital Complex. Pamplona
- ♦ PhD in Medicine and Surgery. Associate Professor at University of Navarra
- ♦ Expert in Sleep Medicine, accredited by the ESRS and CEAMS (Spanish , Accreditation Committee of Sleep Medicine) /FESMES (Spanish Federation of Sleep Medicine Societies)
- ♦ Member of the Spanish Society of Sleep and the Spanish Society of Pulmonology and Thoracic Surgery

**Dr. Díaz de Terán López, Teresa**

- ♦ Specialist in Internal Medicine. Specialist in Pulmonology
- ♦ Assistant Specialist Physician in the Pulmonology Department and in the Multidisciplinary Unit of Sleep Disorders and Ventilation of the Marqués de Valdecilla University Hospital, Santander, Spain
- ♦ Member of the following scientific societies
- ♦ Spanish Society of Pulmonology and Thoracic Surgery (SEPAR)
- ♦ Castilian-Leonese and Cantabrian Society of Respiratory Pathology (SOCALPAR)
- ♦ Spanish Society of Sleep (SES)
- ♦ Head Researcher in 1 research project and associate researcher in 5 multidisciplinary research projects in Sleep Medicine
- ♦ Training placement at Lane Fox Unit, St Thomas' Hospital, London (2017, 3 months)

**Dr. Cristeto Porras, Marta**

- ♦ Resident of 4th year of Pulmonology at the Marqués de Valdecilla University Hospital
- ♦ Degree in Medicine from the University of Salamanca
- ♦ Training geared towards Sleep Pathology and Ventilation Has presented different sleep medicine communications in national congresses
- ♦ Internship in France to complete her training in the Outpatient Unit of Home Respiratory Apparatus and in the Functional Unit of Respiratory Care and Rehabilitation of the Pulmonology and Resuscitation Service R3S at the Pitié-Salpêtrière Hospital in Paris
- ♦ Member of different scientific societies such as the Spanish and Cantabrian Society of Respiratory Pathology (SOCALPAR), Spanish Society of Respiratory Tract Pathology (SEPAR), Respiratory Sleep Disorders, Mechanical Ventilation and Critical Respiratory Care Area (TRS-VM-CRC) and the European Respiratory Society (ERS)

**Dr. Andretta Juárez, Guido Eduardo**

- ♦ 4Th year, medical resident intern at the Marqués de Valdecilla University Hospital, Santander, Spain
- ♦ Degree in Medicine and Surgery (Guatemala)

**Dr. Ruiz Cubillán, Juan José**

- ♦ Attending physician of the Pulmonology Services, Marqués de Valdecilla University Hospital, Santander, Spain
- ♦ Specialist in Pulmonology
- ♦ Master's Degree in Respiratory Support and Mechanical Ventilation, University of Valencia
- ♦ Member of the Spanish Society of Respiratory System Pathology (SEPAR) and of the European Respiratory Society (ERS)

**Dr. Díaz Román, Mónica**

- ♦ Faculty specialist in the Clinical Neurophysiology Services, Lluís Alcanyis Hospital, Xativa (Valencia), Spain
- ♦ Specialist in Clinical Neurophysiology, Valencia La Fe Hospital, Spain
- ♦ Expert in Sleep Medicine for the Spanish Committee of Accreditation in Sleep Medicine (CEAMS, FESMES)
- ♦ Master's Degree in "Sleep: Physiology and Medicine" from the University of Murcia
- ♦ Active member of the Spanish Society of Sleep (SES), the Spanish Society of Clinical Neurophysiology (SENFC) and the Spanish Society of Neurology (SEN)

**Dr. Abascal Bolado, Beatriz**

- ♦ Specialist in Pulmonology, Obstructive Pulmonary Disease Unit, Marqués de Valdecilla University Hospital, Santander, Spain
- ♦ Master's Degree in Advances in the Diagnosis and Treatment of Airway Diseases from the San Antonio Catholic University of Murcia
- ♦ Master's Degree in Advances in the Diagnosis and Treatment of Diffuse Interstitial Lung Diseases (DILD) from the San Antonio Catholic University of Murcia
- ♦ Master's Degree in Clinical Management of Care Units from the Spanish Society of Cardiology
- ♦ Member of the Spanish Society of Respiratory System Pathology (SEPAR) and of the European Respiratory Society (ERS)

**Dr. Ortega González, Ángel**

- ♦ Attending physician in the Pulmonology Service, Coordinator of the Home Ventilation Unit and Pulmonology Tutor at the Nuestra Señora del Prado General Hospital, Talavera de la Reina (Toledo, Spain)
- ♦ Specialist in Pulmonology, Jiménez Díaz Foundation University Hospital, Madrid, Spain
- ♦ Master's Degree in Respiratory Support and Mechanical Ventilation, University of Valencia
- ♦ Master's Degree Distance Learning in Clinical Unit Management, University of Murcia
- ♦ Postgraduate Diploma in Patient Safety, Organization and Equipment, University of Cadiz

**Dr. Vargas Arévalo, Carmen Rosa**

- ♦ Attending physician in Pulmonology, Barcelona Clinical Hospital and Palamós Hospital
- ♦ Specialist in Pulmonology
- ♦ Studying a PhD in Medicine, University of Barcelona (UB), Clinical Hospital of Barcelona
- ♦ International postgraduate diploma in Non-Invasive Mechanical Ventilation Methodology from the Andalusian Society of Intensive Care Medicine and Coronary Units
- ♦ Postgraduate Diploma in Pathology of the Pleura, the University of Barcelona

**Dr. Juarros Martínez, Santiago Antonio**

- ♦ Head of the Breathing Disorders Unit at the Valladolid Clinical University Hospital
- ♦ Specialist degree in Pulmonology, Valladolid University
- ♦ Specialist Degree in Occupational Medicine from the Complutense University of Madrid
- ♦ Postgraduate Diploma in Sleep Medicine
- ♦ Master's Degree in Advances in the Diagnosis and Treatment of Sleep Disorders from the San Antonio Catholic University of Murcia)
- ♦ Member of the European Respiratory Society, the Spanish Sleep Society, the Spanish Society of Pulmonology and Thoracic Surgery, and the Castilian-Leonese and Cantabrian Society of Respiratory Pathology (Member of the Scientific Committee)

**Dr. Petanàs Argemí, Joan**

- ♦ Attending Neuro-Pediatrician in Pediatric Medicine Services of the Corporació Sanitària Parc Taulí Hospital in Sabadell
- ♦ Neuro-Pediatrician in Sant Joan de Deú Hospital, Barcelona

**Dr. Sans Capdevila, Óscar**

- ♦ Medical Specialist in Clinical Neurophysiology
- ♦ Expert in Sleep Medicine (CEAMS accredited, 2013), European Somnologist (ESRS accredited, 2014)
- ♦ Coordinator of the Sleep Unit at the Sant Joan de Beu Children's Hospital, Barcelona, Spain
- ♦ Lecturer in the Master's Degree in Pediatric Neurology (UB)
- ♦ Lecturer in the Master's Degree in Psychopathology (UAB)
- ♦ Member of the following scientific societies
- ♦ Spanish Society of Sleep (SES), member of its board of directors (treasurer)
- ♦ American Academy of Sleep Medicine (AASM)
- ♦ International Pediatric Sleep Association (IPSA)
- ♦ European Sleep Research Society (ESRS)
- ♦ Member of local committee at the 2013 World Congress of Sleep Medicine, Valencia , Spain
- ♦ Reviewer of publications in the following medical journals
- ♦ Neurology Journal (Spain)
- ♦ Pediatrics (Sleep)

**Dr. Aguilar Andújar, María**

- ♦ Faculty Specialist in the Clinical Neurophysiology Department of the Virgen Macarena University Hospital, Seville Head of the Sleep Disorders Unit in this hospital
- ♦ Medical Specialist in Clinical Neurophysiology. Virgen del Rocío University Hospital, Seville
- ♦ Master's Degree in Physiology and Neuroscience from the University of Seville
- ♦ PhD in Medicine from the University of Seville

**Dr. Marco Garrido, Alfonso**

- ♦ Attending physician at the ENT Unit at Reina Sofia University Hospital Murcia
- ♦ Degree in Medicine and Surgery from the Faculty of Medicine of the University of Murcia
- ♦ Faculty specialist in Otorhinolaryngology through a medical residency internship carried out at the Virgen de la Arrixaca Healthcare Center (Murcia)
- ♦ Postgraduate Diploma in Respiratory Sleep Disorders, Snoring and Applied Rhinology Faculty of Medicine. Autonomous University of Nuevo León. Monterrey. Mexico. Coordinator Dr. Rodolfo Lugo Saldaña
- ♦ Member and Spokesperson of the Murcia Society of ENT (SORLMU)
- ♦ Member of the Spanish Society of Sleep (SES)
- ♦ Founding member of the Ibero-American Society of Sleep Surgery (SIBECS)
- ♦ Member of the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR)
- ♦ Spokesperson of the Commission on Roncopathy and Sleep Disorders. Spanish Society of Otorhinolaryngology and Head and Neck Surgery

**Dr. Fernández Jáñez, Cristina**

- ♦ Teacher in different training projects in centers such as VITHAS Arturo Soria Hospital of Madrid
- ♦ Degree in Medicine from the University of Navarra
- ♦ Internships at the Great Ormond Street Hospital for Children (London) "Visiting Observer" Program in the Pediatric Otorhinolaryngology and Head and Neck Surgery department
- ♦ Specialist training through medical residency internship from the Spanish Ministry of Health and Consumer Affairs in Otorhinolaryngology at the Gregorio Marañón General University Hospital (Madrid)

**Dr. García Chillerón, Raimon**

- ♦ Associate Specialist in Otorhinolaryngology and Head and Neck Surgery
- ♦ Degree in Medicine from the Autonomous University of Barcelona
- ♦ Professional Master's Degree in Otorhinolaryngology Update by CEU Cardenal Herrera
- ♦ University. Professional Master's Degree in Comprehensive Management of Head and Neck Cancer, Complutense University of Madrid
- ♦ Postgraduate Certificate in Specialization in Healthcare Management from the Polytechnic University of Valencia

**Dr. Bazán Inostroza, Borja**

- ♦ Resident physician of Otorhinolaryngology and Head and Neck Surgery at La Princesa University Hospital (Madrid)
- ♦ Doctoral thesis carried out in the Faculty of Medicine at the Autonomous University of Madrid

**Dr. Guillén Lozada, Enrique**

- ♦ Faculty specialist in Otorhinolaryngology and Cervicofacial Pathology at Niño Jesús Children's University Hospital
- ♦ Faculty specialist in Otorhinolaryngology and Cervicofacial Pathology at Nuestra Señora de América Hospital
- ♦ Otorhinolaryngology and Head and Neck Surgery medical residency internship Virgen del Rocío University Hospital
- ♦ Master's Degree in Medical Research: Clinical and Experimental University of Seville
- ♦ Cum Laude PhD in Molecular Biology, Biomedicine and Clinical Research University of Seville
- ♦ Postgraduate Diploma in Voice Pathology. University of Alcalá

**Dr. De Carlos Villafranca, Félix Antonio**

- ♦ Professor of Orthodontics at the University of Oviedo
- ♦ Director of the Master's Degree in Orthodontics at Deusto University
- ♦ Degree in Medicine and Surgery. Specialist in Stomatology
- ♦ Master's Degree in Orthodontics and Dentofacial Orthopedics
- ♦ Doctor of Medicine and Surgery
- ♦ Postgraduate Diploma in Sleep Medicine: Accredited by the Spanish Committee of Sleep Medicine
- ♦ Postgraduate Diploma in Sleep Dental Medicine: Accredited by the Spanish Federation of Sleep Societies
- ♦ Member of the SFODF (French Society for Dento-Facial Orthopedics)
- ♦ Active member of SEDO (Spanish Society of Orthodontics), AESOR (Spanish Association of Orthodontic Specialists), EOS (European Orthodontic Society), SOCEFF (Spanish Society for Facial Fissures), EADSM (European Academy of Dental Sleep Medicine), SES

**Dr. Jiménez Ferreres, Luis**

- ♦ Specialist in otorhinolaryngology and head and neck surgery, Autonomous University of Madrid. Doctorate in Medicine. (Universidad Complutense de Madrid)
- ♦ Assistant Doctor at the Department of Otorhinolaryngology and Cervico-Facial Surgery, San Rafael Hospital, Madrid
- ♦ Director of the Multidisciplinary Sleep Unit, San Rafael Hospital, Madrid
- ♦ Master's Degree in "Senior Healthcare Management", Arthur Andersen (Madrid)
- ♦ Master's Degree in "Sleep: physiology and medicine" from UCAM
- ♦ Member of the following scientific societies
- ♦ Spanish society of otorhinolaryngology and head and neck surgery (SEORL)
- ♦ Spanish Society of Sleep (SES)
- ♦ American Association of Sleep Medicine (AASM)
- ♦ Otorhinolaryngology Society of Madrid
- ♦ Otorhinolaryngology Society of Castilla la Mancha
- ♦ European Society of Pediatric Otorhinolaryngology (ESPO)
- ♦ Interamerican Association of Pediatric Otolaryngology. (IAPO)

**Ms. Neves Leal, Daniela**

- ♦ Exclusive clinical practice in Myofunctional Orofacial Therapy, author and co-author of scientific publications and books related to oral respiration, sleep apnea, maxillofacial surgery and lingual frenulum
- ♦ Teaching collaboration in various Undergraduate Degrees and Master's Degrees in Dentistry, Orthodontics and Pediatric Dentistry
- ♦ Degree in Speech Therapy from the Complutense University of Madrid
- ♦ Master's Degree in the Advances in Speech Therapy Intervention and a Master's Degree in Orofacial Motricity - Speciality in Orofacial Myofunctional Therapy

04

# Structure and Content

The structure of the curriculum has been designed by a team of professionals knowledgeable about the implications of medical specialization, aware of the relevance of current training and committed to quality teaching through new educational technologies.





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*A comprehensive teaching program, structured in well-developed teaching units, oriented towards efficient and swift learning”*

## Module 1. Technical and Organizational Aspects of the Diagnosis Process

- 1.1 Measurable Biological Parameters and Detection Sensors
  - 1.1.1. Types of Parameters and their Recording Methods
  - 1.1.2. Selection of the Parameters According to the Diagnostic Suspicion.
  - 1.1.3. General Protocols and Selection of the Tests to be Performed.
- 1.2 Simplified Registration Systems.
  - 1.2.1. Relevance of Simplified Systems.
  - 1.2.2. Pulse Oximetry, Actigraphy and Activity Wristbands.
  - 1.2.3. Abbreviated Systems and Respiratory Polygraphy.
- 1.3 Polysomnography (PSG): The Apparatus and Signal Acquisition.
- 1.4 Polysomnography (PSG): Analysis, Coding and Interpretation (I).
  - 1.4.1. Analysis and Coding of Sleep Phases in Adults. Hypnogram.
  - 1.4.2. Analysis and Coding of Sleep in Pediatric Age.
  - 1.4.3. Analysis and Coding of Cardiac Activity.
- 1.5 Polysomnography (PSG): Analysis, Coding and Interpretation (II)
  - 1.5.1. Coding of Respiratory Events and their Interpretation.
  - 1.5.2. Analysis and Coding of Motor Events.
  - 1.5.3. Analysis of Other Signals.
  - 1.5.4. Joint Interpretation and Report Generation.
- 1.6 Polysomnography (PSG): Indications and Extended PSG.
- 1.7 Other Tests in Wakefulness and Sleep.
  - 1.7.1. Evaluation of Tiredness
    - 1.7.1.1. Test of Multiple Sleep Latency Test-TLMS.
    - 1.7.1.2. Maintenance of Wakefulness Test-TMV.
  - 1.7.2. Suggested Immobilization Test (SIT) and Variants (mSIT).
- 1.8 Alternative Integrated Monitoring Systems.
  - 1.8.1. Another Approach to Sleep Disorders.
  - 1.8.2. Wireless Systems.
  - 1.8.3. Systems with Pulse Transit Time (PTT).
  - 1.8.4. Microwave Motion Sensors.
  - 1.8.5. Image and Sound in the Sleep Studies.
- 1.9 Methods for Studying the Circadian System
- 1.10 Automated and Advanced Bioelectrical Signal Analysis.
  - 1.10.1. Concepts, Preparation and Analysis.
  - 1.10.2. Analysis of Each Signal or Multichannel.
  - 1.10.3. Algorithms for Cleaning, Artifact Detection, and Specific Signal Detection.
  - 1.10.4. Learning and Classification Networks, Analysis Matching and Data Mining.

- 1.11 Organization of a Sleep Unit.
  - 1.11.1. From Basic to Multidisciplinary Units. Local, Multidisciplinary and Multi-Sectoral Integration.
  - 1.11.2. The Patient as the Central Axis.
  - 1.11.3. Sleep Nursing.
  - 1.11.4. External Integration with Health Services and Support Units.
  - 1.11.5. Supply Companies and Private Activity.
  - 1.11.6. Accreditation of Centers and Individuals.
  - 1.11.7. Innovation and Resources. Integration of Programs, Networks and Servers. Home Monitoring Systems.

## Module 2. Disordered Sleep Breathing (DSB) : Clinical Aspects in Adults

- 2.1 Respiratory Physiology and Pathophysiology During Sleep
  - 2.1.1. Introduction
  - 2.1.2. Anatomical Factors
  - 2.1.3. Functional Factors
    - 2.1.3.1. Upper Airway Reflexes (UAR). Answers
    - 2.1.3.2. Degree of Sensitivity of the Centers to Triggering Events
    - 2.1.3.3. Sensitivity of Respiratory Centers
  - 2.1.4. Assessment of Traits Involved in SAV Characteristics in SAHS
    - 2.1.4.1. Known Characteristics
    - 2.1.4.2. Critical Pressure Measurement as an Expression of SAV Collapsibility
- 2.2 Characteristics of the Most Typical TRS: Breath Sounds, SARVAS, SAHS
  - 2.2.1. Snoring Definition, Classification and Epidemiology.
  - 2.2.2. Catathrenia
  - 2.2.3. Syndrome of Increased Upper Airway Resistance Syndrome (SARVAS)
  - 2.2.4. Sleep Apnea-Hypopnea Sleep Apnea-Hypopnea Syndrome (SAHS)
    - 2.2.4.1. Definition and Concept
    - 2.2.4.2. Prevalence
    - 2.2.4.3. Risk Factors
- 2.3 Central Apneas Syndrome
- 2.4 Non-Respiratory Comorbidities of SAHS
  - 2.4.1. HTA and Cardiovascular Risk
  - 2.4.2. Other Comorbidities

- 2.5 Respiratory Comorbidities of SAHS
  - 2.5.1. Chronic Obstructive Pulmonary Disease (COPD)
  - 2.5.2. Asthma
  - 2.5.3. Diffuse Interstitial Lung Disease
  - 2.5.4. Pulmonary Hypertension
- 2.6 SAHS, Obesity and Metabolic Impairment: Associations and Effect of CPAP
  - 2.6.1. SAHS and Metabolic Syndrome.
  - 2.6.2. SAHS and Lipid Metabolism.
  - 2.6.3. SAHS and Glucose Metabolism.
- 2.7 Hypoventilation Syndrome - Obesity
  - 2.7.1. Definition, Prevalence and Epidemiology
  - 2.7.2. Effects of Obesity on the Respiratory System
  - 2.7.3. Contribution of Airway Obstruction During Sleep to Hypercapnia
  - 2.7.4. Clinical Features, Predictive Factors and Diagnosis
  - 2.7.5. Treatment
- 2.8 Diagnosis of SAHS
  - 2.8.1. Polysomnography: "Gold Standard" Method
  - 2.8.2. Polygraphy and Simplified Diagnostic Methods. Indications and Decision Making.
  - 2.8.3. Other Complementary Methods
- 2.9 Treatment of SAHS (I)
  - 2.9.1. Global Measures
  - 2.9.2. Positive Airway Pressure. CPAP and APAP Indication
  - 2.9.3. Adaptation and Follow-Up of the Treatment. The Era of Telemonitoring
- 2.10 Treatment of SAHS (II)
  - 2.10.1. Bi-Level Pressure Treatment
  - 2.10.2. Servoventilation
  - 2.10.3. Other Therapeutic Options

### Module 3. Sleep-Wake Disorders in the Pediatric Age Group

- 3.1 Sleep-Disordered Breathing Disorders (SRD) in Pediatrics
  - 3.1.1. Concepts and Types of Pediatric SRT
  - 3.1.2. Pathophysiology of TRS in Children.
  - 3.1.3. Consequences of Untreated TRS in Children.
  - 3.1.4. Diagnosis of TRS in Children.
  - 3.1.5. Treatment of TRS in Children.

### Module 4. Sleep-Disordered Breathing Disorders (SRD) : Surgery, Dentistry and Functional Rehabilitation in SAHS

- 4.1 Functional Anatomy and Exploration of the Airway from a Surgical and Dental Perspective
  - 4.1.1. Exploration of the Airway in the Otolaryngological Consultation
  - 4.1.2. Dental and Maxillofacial Examination
- 4.2 Airway Imaging Tests
  - 4.2.1. Somnoscopy (DISE) in Pediatrics and Adults
  - 4.2.2. Applied Radiology
- 4.3 Palato-Oropharyngeal Surgery and Treatments:
  - 4.3.1. Tonsillectomy, Adenoidectomy and Pharyngoplasty: Concepts and Techniques
  - 4.3.2. Lingual Frenulum Surgery
  - 4.3.3. Soft-Tissue Stiffness Augmentation Techniques
    - 4.3.3.1. Radiofrequency
    - 4.3.3.2. Sclerosants
    - 4.3.3.3. Devices
- 4.4 Hypopharyngeal Surgery
  - 4.4.1. Base of Tongue and Epiglottis Surgery
  - 4.4.2. Other Treatment Techniques with Cervical Approach
    - 4.4.2.1. Tongue and Hyoid Suspension
    - 4.4.2.2. Hypoglossal Nerve Neurostimulation
    - 4.4.2.3. Tracheotomy
- 4.5 Nasal Surgery. Optimization of CPAP Adherence.
- 4.6 Oro-Dental Sleep Medicine (I): Mandibular Advancement Devices in Adults
- 4.7 Oro-Dental Sleep Medicine (II): Expanders in Pediatrics and Adults
- 4.8 Maxillary-Mandibular Advancement and other Orthognathic Surgery Treatments
- 4.9 Myofunctional Therapy and Respiratory Reeducation in the Treatment of SHAS
- 4.10 Multilevel and Multidisciplinary Treatment. Conclusions

# 05 Methodology

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

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





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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.*



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

“

*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 Postgraduate Diploma in Respiratory Disorders During Sleep guarantees, in addition to the most rigorous and up to date training, access to a Postgraduate Diploma issued by TECH Global University.



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*Successfully complete this program  
and receive your certificate without  
travel or cumbersome paperwork”*

This program will allow you to obtain your **Postgraduate Diploma in Respiratory Disorders During Sleep** 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.

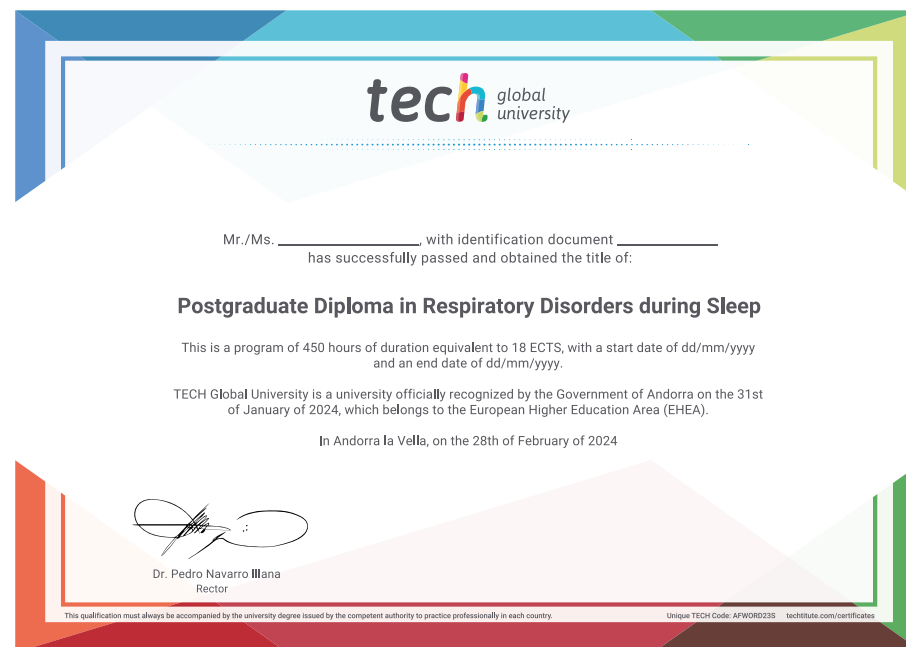
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Respiratory Disorders During Sleep**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



\*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.



**Postgraduate Diploma**  
Respiratory Disorders  
During Sleep

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

# Postgraduate Diploma

## Respiratory Disorders During Sleep

