

# Hybrid Master's Degree Sleep Medicine



## Hybrid Master's Degree Sleep Medicine

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

60 + 5 ECTS Credits

Website: [www.techtute.com/us/medicine/hybrid-master-degree/hybrid-master-degree-sleep-medicine](http://www.techtute.com/us/medicine/hybrid-master-degree/hybrid-master-degree-sleep-medicine)

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# 01

# Introduction

According to various studies, approximately 40% of the world's population suffers from some type of disorder that prevents them from falling asleep normally. Faced with this alarming figure, new drugs have been developed to speed up the treatment of these pathologies, which physicians are obliged to master in order to ensure the quality of life of their patients. Thus, TECH has created this program, with which the student will update their skills in the realization of polysomnography or in the therapy of hypersomnias, combining a theoretical learning 100% online with a practical hospital stay that will enable them to face the new challenges of their profession with solvency.



““

*You will master, with this program,  
the most updated procedures for  
performing a polysomnography”*

Lack of sleep is a problem that affects almost half of the world's population, has a direct impact on the increase of stress and anxiety and, therefore, leads to a decrease in the patient's quality of life. For this reason, new diagnostic methods are continuously emerging, such as postural polysomnography tests or advanced video polysomnography, which make it possible to detect and optimize the treatment to combat the disorder a person suffers from in just one night. Given the great advances that are constantly being made in this area of medicine, professionals who are experts in this field must update their knowledge and skills in order to provide excellent care to their patients.

Faced with this situation, TECH has designed this program, which will enable the physician to know and manage perfectly all the innovations produced in the field of Sleep Medicine, through the combination of theoretical teaching with practical experience. During this academic period, the student will increase their competencies in the administration of novel drugs used to combat sleep disorders or acquire relevant individualized clinical management of the SAHS patient. In the same way, it will update its diagnostic procedures to detect, in an early way, a possible sleep problem in the pediatric patient.

Thanks to the 100% online methodology of the theoretical part of this Hybrid Master's Degree, the physician will have the opportunity to combine his excellent learning with his professional duties. After completing this stage, you will enjoy your practical stay in a first class hospital center, where you will rub shoulders with the best experts in Sleep Medicine and develop skills that will position you as a reference professional in this field.

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

- Development of more than 100 clinical cases presented by physicians with extensive experience in the treatment of sleep disorders
- 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
- Novel procedures for performing sleep studies to establish a rigorous diagnosis in a short period of time
- Updated contents on new drugs used to combat insomnia
- State-of-the-art therapeutic methods to combat movement disorders such as Restless Legs Syndrome or Periodic Leg Motion Syndrome
- All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection
- Furthermore, you will be able to carry out a clinical internship in one of the best hospital centers



*Through a 100% online methodology in the theoretical part, you will expand your knowledge in diagnostic and therapeutic sleep disorders without having to travel to a study center"*

“

*The hospital internships that you will complete during the final stretch of this program will allow you to face the challenges of your profession with ease”*

In this Professional Master's Degree proposal, of a professionalizing nature and blended learning modality, the program is aimed at updating medical professionals who develop their health work oriented towards the diagnosis and treatment of various sleep disorders suffered by their patients. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate theoretical knowledge into Doctor practice, and the theoretical-practical elements will facilitate the updating of knowledge and allow decision making in patient management.

Thanks to the multimedia content, developed with the latest educational technology, Medicine professionals will benefit from contextual learning, i.e., a simulated environment that will provide immersive learning programmed to train in real situations. This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

*In just 12 months, you will increase both your knowledge and skills in the field of Sleep Medicine to grow professionally.*

*Gain access to the most prestigious hospital centers thanks to the broad competencies you will acquire through this Hybrid Master's Degree.*



# 02

## Why Study this Hybrid Master's Degree?

In the area of Sleep Medicine, it is as important to know the latest diagnostic methods used for the detection of sleep disorders as it is to master the necessary aspects to incorporate them into daily practice with patients. Therefore, with the intention of allowing the health professional to manage all the advances in this field, TECH has created this excellent program, which combines a great theoretical learning with a practical stay in a first level hospital.







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*TECH offers you a unique opportunity to combine the most updated theoretical learning in the market with a practical stay in a hospital characterized by having the most advanced technology in Sleep Medicine”*

### 1. Updating from the Latest Technology Available

Sleep Medicine has undergone a notorious evolution in recent times thanks to the appearance of new diagnostic methods and the use of updated drugs that allow to solve in a faster way several disorders of the patient. Thus, in order for the physician to be up to date in his profession in a theoretical-practical way, TECH offers this Hybrid Master's Degree.

### 2. Gaining In-depth Knowledge from the Experience of Top Specialists

This program, in its theoretical aspect, has didactic contents elaborated by physicians with experience in the treatment of sleep disorders, who will provide students with the most professionally applicable knowledge. In addition, during their internships, they will be integrated into a team of high-level professionals and guided by a tutor who will ensure their adequate learning.

### 3. Entering First-Class Clinical Environments

TECH carefully selects all the centers available for internships. Thanks to this, the specialist will have guaranteed access to a prestigious clinical environment in the field of Sleep Medicine. In this way, you will be able to see the day-to-day work of a demanding, rigorous and exhaustive sector, always applying the latest theses and scientific postulates in its work methodology.





#### **4. Combining the Best Theory with State-of-the-Art Practice**

Faced with an academic panorama characterized by offering programs with contents lacking in practical applicability, TECH has developed a novel learning model, which makes it possible to combine theoretical learning useful for professional life with a practical stay in which to develop all the knowledge acquired.

#### **5. Expanding the Boundaries of Knowledge**

TECH offers the possibility of carrying out the internships of this Hybrid Master's Degree in large centers. In this way, the specialist will be able to update his or her skills alongside the best professionals, who practice in first-class hospitals. A unique opportunity that only TECH, the largest online university in the world, could offer.



*You will have full practical immersion  
at the center of your choice"*

# 03 Objectives

The overall objective of the Hybrid Master's Degree in Sleep Medicine is to enable physicians to enhance and update their knowledge and skills in diagnostic and therapeutic procedures that enable the approach of different disorders in adulthood and pediatrics, combining excellent theoretical learning with a practical phase in a referral hospital.





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*Enroll now and advance in your field of work with a comprehensive program that will allow you to put into practice everything you have learned”*



## General Objective

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- The general objective of the Hybrid Master's Degree in Sleep Medicine is to enable physicians to enhance and update their knowledge and skills in diagnostic and therapeutic procedures that enable the approach of different disorders in adulthood and pediatrics, combining excellent theoretical learning with a practical phase in a reference hospital



*You will learn firsthand the reality of working in the area, in a demanding and rewarding environment”*





## Specific Objectives

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### Module 1. Previous Fundamental Aspects of Sleep Medicine

- ◆ Understand the mechanisms involved at the psychobiological and neurophysiological level in sleep from a practical point of view
- ◆ Master the necessary fundamentals of the chronobiological factors involved in the regulation of wake-sleep cycles
- ◆ Update knowledge on the not infrequent problems of commonly used drugs
- ◆ Familiarization with clinical history taking and initial orientation of the diagnostic process

### Module 2. Technical and organisational aspects of the diagnostic process

- ◆ Apply knowledge of indications, recording and practical troubleshooting during overnight sleep polysomnography testing
- ◆ Analyze the current indications for PSG and detect in which cases to extend or complete the test
- ◆ In-depth understanding of novel ways to address sleep disorders through sensor monitoring or wireless systems or pulse transit sensors
- ◆ Use the software integrated in the devices to analyze the bioelectrical signal

### Module 3. Insomnia in adults. Sleep in Adult Psychiatry

- ◆ Make a diagnosis that allows, among the different options, to select the most appropriate treatment for each case, often mixed and multidisciplinary
- ◆ Master the different non-pharmacological treatments for insomnia
- ◆ Update knowledge on the pharmacological approach to insomnia



#### **Module 4. Hypersomnia in adults Circadian rhythm disorders in adults**

- ♦ Differentiate between excessive daytime sleepiness and fatigue or anhedonia
- ♦ Know how to differentiate hypersomnias of central origin
- ♦ Manage the different disorders due to circadian alteration of the wake-sleep cycle
- ♦ Provide a rigorous update on the existing therapeutic options for treating hypersomnia

#### **Module 5. Sleep Disordered Breathing (RBD): clinical aspects in adults**

- ♦ Manage the clinical, scientific and technical aspects related to sleep-disordered breathing, especially SAHS
- ♦ Acquire skills to identify other sleep-disordered breathing disorders beyond SAHS
- ♦ Develop and update competencies in the individualized clinical management of the SAHS patient, primarily in the field of different noninvasive ventilation options

#### **Module 6. Sleep-disordered breathing disorders (SRD): surgery, dentistry and functional rehabilitation in SAHS**

- ♦ Master the different surgical techniques for the treatment of sleep disordered breathing
- ♦ Use myofunctional techniques for rehabilitation of muscles involved in airway obstruction

#### **Module 7. Behavioural and movement disorders during sleep in adults**

- ♦ In-depth knowledge of the field of parasomnias or behavioral disorders and other behavioral situations during NREM and REM sleep
- ♦ Identify and manage complex sleep-wake dissociation situations
- ♦ Managing Restless Legs Syndrome
- ♦ Detect and treat other disorders and manifestations of movement during sleep of a very varied nature

#### **Module 8. Neurological disorders related to sleep in adults**

- ♦ Master the mechanisms by which memory is consolidated during sleep, based on the latest scientific evidence
- ♦ Delve into in the concepts of neurobiology, neuroanatomy and neurophysiology of REM sleep behavior disorder, its relationship with different alpha-synucleopathies, as well as the relationship with different disease phenotypes and therapeutic implications
- ♦ In-depth knowledge of what sleep disorders occur and what they involve in specific groups of neurological processes, such as neuromuscular, the most common neurological autoimmune diseases, cerebrovascular diseases and traumatic brain injury

#### **Module 9. Sleep-wake disorders in childhood**

- ♦ Identify the physiological changes that occur in sleep as the process of brain maturation to adulthood is completed
- ♦ Undertake the treatment of the different pathologies most frequently associated with childhood and adolescence
- ♦ Manage the different existing techniques for the correct diagnosis of sleep disorders in pediatric patients
- ♦ Treat sleep disorders resulting from chronic diseases or neurodevelopmental problems





#### Module 10. Sleep in other medical and social situations Sleep and health

- ◆ Detect the bidirectional mutual relationship between sleep and cancer and between sleep and painful processes
- ◆ Establish the mutual influence of sleep and various situations, such as confinement, hospitalization or living in high altitude areas

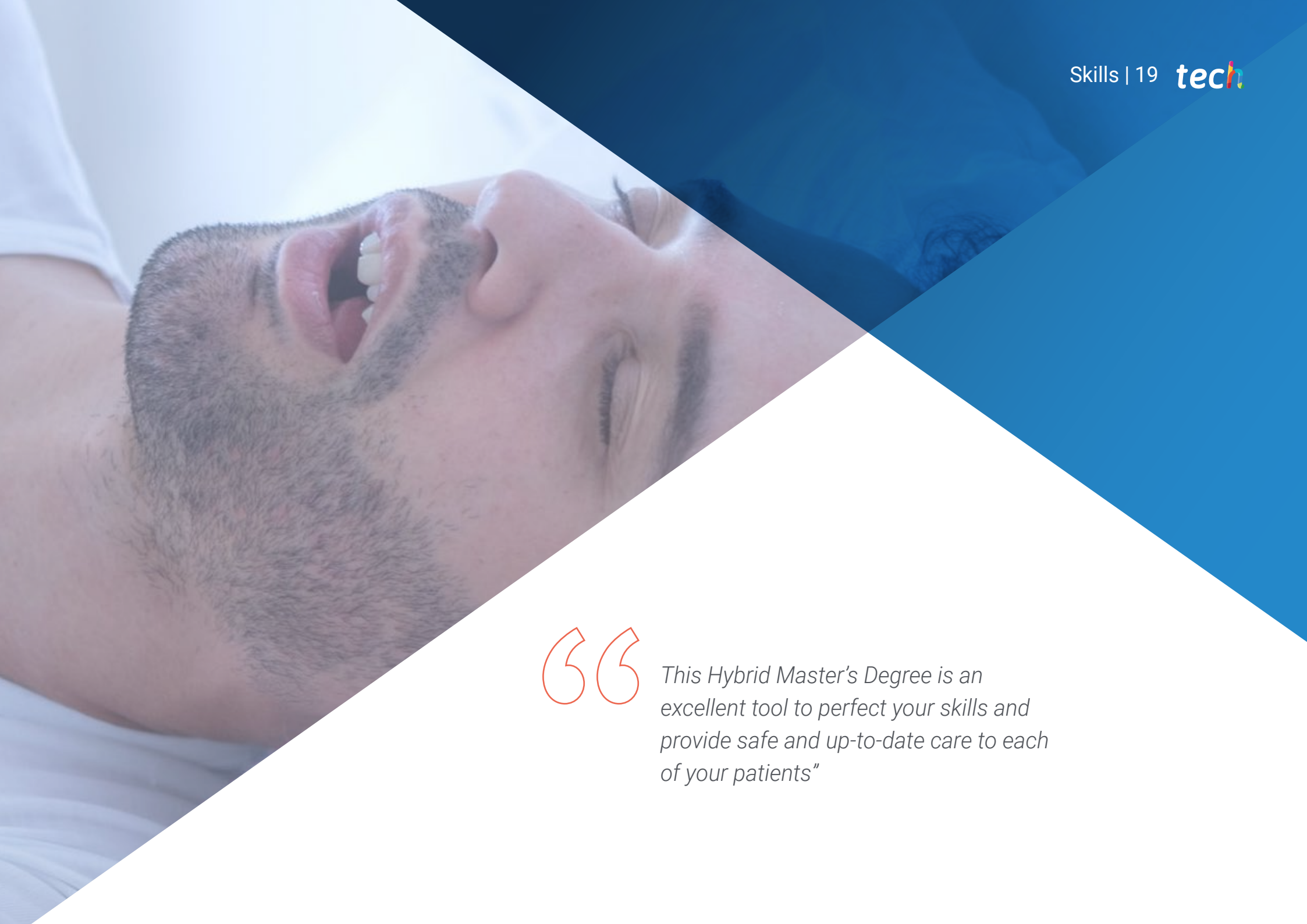
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*Throughout this academic itinerary, the student will master the different surgical techniques that allow the treatment of respiratory sleep disorders”*

# 04 Skills

After passing the evaluations of this program, the physician will have high and updated professional competencies that will allow him/her to develop his/her health practice with the maximum solvency, using daily the latest techniques supported by the latest scientific evidence.





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*This Hybrid Master's Degree is an excellent tool to perfect your skills and provide safe and up-to-date care to each of your patients”*



## General Skills

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- Understand the functioning of the mechanisms involved at the psychobiological and neurophysiological level in sleep
- Manage, in a precise and structured way, the clinical anamnesis and the initial orientation of the diagnostic process

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*Through this program, you will learn to use the most up-to-date techniques to detect a possible sleep disorder in the pediatric patient”*





## Specific Skills

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- ♦ Master the scope of sleep problems, beyond insomnia, associated with different mental health problems, in order to facilitate their global management
- ♦ Understand the use of light therapy as a mechanism for the prevention and treatment of circadian disturbances
- ♦ Manage the particularities of neurological disorders that either affect sleep or are characterized by their predominant manifestation during sleep
- ♦ Address the different sleep pathologies frequently associated in children and adolescents
- ♦ Use the different existing diagnostic techniques for the correct diagnosis of the most common sleep disorders in pediatrics
- ♦ Apply appropriate therapeutics for sleep disorders associated with chronically ill children
- ♦ Early identification of a potential sleep disorder to improve the patient's quality of life

05

# Course Management

TECH's tireless commitment to raising the level of its academic programs has led to the teaching staff of this program being made up of physicians who are actively working in the field of Sleep Medicine. These experts are the ones in charge of elaborating all the didactic materials that the student will study throughout this Hybrid Master's Degree, so the contents that they will provide will be completely updated.



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*Those responsible for teaching this program are physicians with extensive experience in the treatment of sleep problems, so the knowledge they will give you will have been applied in their professional lives”*

## International Guest Director

Craig Canapari, M.D. 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 for his work in the field of pulmonary diseases. Throughout his extensive professional career, Dr. Canapari has performed 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 addressing various disorders such as Sleep Apnea and Obstructive Sleep Apnea. It 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, it stands out for its interdisciplinary approach, which combines Pneumology, Neurology and Psychiatry in research and

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 smartphone app to assist parents with 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 Assistant Professor of Pediatrics, in the specialty of Respiratory Medicine, at the Yale School of Medicine. There he contributes both to clinical care and to the training of future professionals specialized in Pediatrics and Pediatric Pneumology.





## Dr. Craig Canapari

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- ♦ Director del Programa de Medicina Pediátrica del Sueño en el Yale-New Haven Children's Hospital
- ♦ Attending Physician in Pediatric Pneumology and Sleep Medicine at Yale-New Haven Children's Hospital
- ♦ Assistant Professor of Pediatrics, Respiratory Medicine, at Yale University School of Medicine
- ♦ Doctor of Medicine from the University of Connecticut School of Medicine
- ♦ Specialist in Pediatric Pneumology 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. Óscar Larrosa Gonzalo

- ♦ Coordinator of the Sleep Medicine Unit, MIPsalud, Madrid
- ♦ Clinical Manager of the Sleep Disorders and Electroencephalography Unit at Hospital Quirónsalud Sur
- ♦ Degree in Medicine and Surgery from the University of the Basque Country/ Euskal Herriko Unibertsitatea
- ♦ MIR Specialist in Clinical Neurophysiology at the Complutense University of Madrid, San Carlos Clinical Hospital
- ♦ Expert in Sleep Medicine by the Committee of Accreditation from Sleep Medicine (CEAMS)
- ♦ Spanish Society of Sleep (SES)
- ♦ Member of Neurology and Orthopedics working groups, SES)

## Professors

### Dr. Asier Gómez Ibáñez

- ♦ Assistant Physician at the Navarra University Clinic
- ♦ Assistant Physician of the Neurology Department at La Fe Polytechnic and University Hospital
- ♦ Doctor of Neurosciences from the University of Valencia
- ♦ Member of American Epilepsy Society, Sociedad Española de Neurología and Sociedad Española de Epilepsia

### Dr. Beatriz Rodríguez Morilla

- ♦ Physician in Circadian Rhythms Analysis at Kronohealth SL and Cronolab
- ♦ PhD in Psychology
- ♦ Degree in Psychology
- ♦ Master's Degree in Neuroscience
- ♦ Member of the World Association of Sleep Medicine and the Spanish Sleep Society (SES) of Sleep (SES)

**Dr. Iñaki García de Gurtubay Gálligo**

- ♦ Head of the Clinical Neurophysiology Department and Head of the multidisciplinary unit of Sleep Pathology
- ♦ Professor and tutor of programs related to Biomedicine at the ETS de Ingenieros Industriales y de Telecomunicación
- ♦ Medical Advisor to Walden Medical Neuro Digital Therapies
- ♦ PhD in Medicine from the University of Navarra
- ♦ Specialist in Clinical Neurophysiology
- ♦ Expert in Sleep Medicine
- ♦ Member of the Spanish Society of Clinical Neurophysiology (SENFC) in the Sleep Disorders working group, Spanish Sleep Society (SES) in the Movement and Behavioral Disorders during Sleep working group, Medical Technologies Assessment Working Group of the International Federation of Clinical Neurophysiology (IFCN), Research Group in Neurophysiology of Brain Rhythms, Epilepsy and Sleep of the Navarra Health Research Institute (IdISNA) and Sociotechnology Group for Innovation in Health
- ♦ Project Consultant as Expert in Biomedical Technology of the Instituto de Salud Carlos III

**Dr. Silvia Gismera Neuberger**

- ♦ CEO of Dormirmejor
- ♦ Master's Degree at the International University of La Rioja (UNIR)
- ♦ Honorary Professor at the Autonomous University of Madrid
- ♦ Expert in Healthy Business Management (Instituto de la Salud y Bienestar, ISLB)
- ♦ Degree in Psychology from the Universidad Autónoma de Madrid
- ♦ Doctorate in Biological Psychology from the Faculty of Medicine at the Autonomous University of Madrid
- ♦ Member of the Spanish Society of Sleep (SES)

**Dr. María Ángeles Martínez Martínez**

- ♦ Doctor Clinical neurophysiology Specialist, Marqués de Valdecilla University Hospital. Santander, Spain
- ♦ Assistant Specialist Physician in the Pulmonology Department and in the Multidisciplinary Unit of Sleep Disorders and Ventilation at Marqués - de Valdecilla University Hospital
- ♦ PhD Service, Marqués de Valdecilla University Hospital
- ♦ Degree in Medicine from the University of Cantabria
- ♦ Expert in Sleep Medicine, with CEAMS accreditation
- ♦ Master's Degree in Sleep: Physiology and Medicine from the Colegio de América of the Universidad Pablo de Olavide
- ♦ Co-chair of the XXV Annual Meeting of the Spanish Sleep Society. Santander
- ♦ Member of the Spanish Sleep Society, Working Group on Behavioral and Movement Disorders during Sleep, Spanish Society of Clinical Neurophysiology and Spanish Sleep Network

**Dr. Juan José Ortega Albás**

- ♦ Head of the Sleep Unit at the General University Hospital of Castellón
- ♦ Professor at the University Jaume I in the Area of Neurophysiology and Sleep
- ♦ Expert in Somnology accredited by ESRS
- ♦ Specialist in Clinical Neurophysiology
- ♦ Member of: Spanish Sleep Society (SES) and Spanish Society of Clinical Neurophysiology (SENFC) of Clinical Neurophysiology (SENFC)

### Dr. Teresa Díaz de Terán López

- ♦ Assistant Specialist in the Pneumology Department at the University Hospital Marqués de Valdecilla Physician specializing in Internal Medicine and Pneumology
- ♦ 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
- ♦ Specialist in Internal Medicine and Pneumology
- ♦ Researcher in projects related to Sleep Medicine
- ♦ Training stay at Lane Fox Unit, St Thomas's Hospital, London
- ♦ He is a member of the Spanish Society of Pneumology and Thoracic Surgery (SEPAR), the Castilian-Leonese and Cantabrian Society of Respiratory Pathology (SOCALPAR) and the Spanish Sleep Society (SES)

### Dr. Luis Jiménez Ferreres

- ♦ Medical Specialist in Otorhinolaryngology and Head and Neck Surgery
- ♦ Assistant Physician of the Otorhinolaryngology and Cervicofacial Surgery Service at Hospital San Rafael
- ♦ Director of the Pediatric Rheumatology Unit at Hospital San Rafael
- ♦ PhD in Medicine from the Complutense University of Madrid
- ♦ Master's Degree in Sleep: Physiology and Medicine from the UCAM
- ♦ Member of the Spanish Society of Otolaryngology and Head and Neck Surgery, Spanish Sleep Society, American Association of Sleep Medicine, Sociedad Madrileña de Otorrinolaringología, Sociedad Castilla-La Mancha de Otorrinolaringología, European Society of Paediatric Otolaryngology and Interamerican Association of Pediatric Otorhinolaryngology

### Dr. Ángela Milán Tomás

- ♦ Medical Specialist in Neurology and Sleep Medicine
- ♦ Physician in the Dementia and Sleep Disorders Department of the University Clinic of Navarra
- ♦ Research Collaborator at the University of Navarra, Spain
- ♦ Neurologist at Sunnybrook Medical Sciences Center. Toronto, Canada
- ♦ Neurologist at Toronto Western Hospital. Canada
- ♦ Member of the European Sleep Research Society

### Dr. Óscar Sans Capdevila

- ♦ Coordinator of the Sleep Unit at Hospital Sant Joan de Déu
- ♦ Medical Director of Sleep Medicine at AdSalutem Sleep Institute
- ♦ Physician of the Neurophysiology Service at the Clinic of the Fundació Hospital de Nens de Barcelona, in the Sleep Disorders Unit
- ♦ Degree in Medicine from the Autonomous University of Barcelona
- ♦ Specialty in Sleep Medicine by CEAMS
- ♦ Specialty in European Somnologist by ESRS
- ♦ Fellowship in Sleep Medicine at Kosair Children's Hospital, University of Louisville. United States
- ♦ Member of: SES, WASM, IPSA, AASM and ESRS

### Dr. Javier Rodríguez Falces

- ♦ Researcher in the field of Electromyography and Muscular Physiology at the Navarrabiomed Biomedical Research Center
- ♦ Degree in Medicine
- ♦ Author and co-author of scientific articles

**Dr. Francisco Javier Puertas Cuesta**

- ♦ Head of the Neurophysiology Service and the Sleep Unit at the University Hospital of La Ribera
- ♦ Specialist in Clinical Neurophysiology at the La Fe Polytechnic and University Hospital
- ♦ Degree of Doctor of Medicine from CEU Cardenal Herrera University
- ♦ Diploma Veille Sommeil by the University of Montpellier
- ♦ Expert in Sleep Medicine. Rochester, Minnesota, USA
- ♦ Local Organizer of the World Congress on Sleep Medicine
- ♦ Section Coordinator of the Spanish Sleep Society
- ♦ Member of the Board of Directors of the European Sleep Research Society and Governing Council of the World Association of Sleep Medicine

**Dr. Izaskun Jiménez Setuáin**

- ♦ Specialist in Pneumology at the University Hospital of Navarra, Spain
- ♦ Author of several specialized publications
- ♦ Member of the Spanish Society of Pneumology and Thoracic Surgery and European Respiratory Society

**Dr. María Ángeles Bonmatí Carrión**

- ♦ Researcher of the Cronolab group at the University of Murcia
- ♦ Postdoctoral stay at the University of Surrey. United Kingdom
- ♦ Dr. in Physiology from the University of Murcia
- ♦ Master's Degree in Technology and Research in Biomedical Sciences from the University of Murcia
- ♦ Member of the Saavedra Fajardo Program of the Seneca Foundation, associated with the University of Murcia

**Dr. Francisco Martínez Pérez**

- ♦ Physician at the service of Neurophysiology at the MIP Clinic
- ♦ Physician in the Clinical neurophysiology Unit Ruber Juan Bravo Hospital, Madrid
- ♦ Physician in the Pain Unit La Milagrosa Hospital
- ♦ Degree in Medicine and Surgery from the Complutense University of Madrid
- ♦ Master's Degree in Sleep: UPO Physiology and Pathology
- ♦ Master's Degree in Neurological Electrodiagnosis from the University of Barcelona
- ♦ Researcher, university lecturer and professor of the Master's Degree in Sleep Medicine
- ♦ Author of several guidelines and consensuses for different medical societies (SENEFC, SES, AEP) and the National Commission of the Specialty
- ♦ National Prize of Medicine XXI Century European Awards in Medicine
- ♦ Member of the Spanish Society of Clinical Neurophysiology (SENEFC), Sleep Group, Spanish Sleep Society (SES), Pediatric Group, Spanish Intraoperative Neurophysiological Monitoring Association and Neurological Cell Therapy Group

**Dr. Gurutzi Azcona Ganuza**

- ♦ Medical Specialist in Clinical Neurophysiology
- ♦ Adjunct Physician in the Multidisciplinary Sleep Unit at the Navarra Hospital Complex
- ♦ Master's Degree in Neuroscience and Cognition from the Clínica Universidad de Navarra, Spain of Navarra
- ♦ Member of the Spanish Society of Clinical Neurophysiology, Intraoperative Monitoring Association and Spanish Society of Neurology

**Dr. Sandra Giménez Badia**

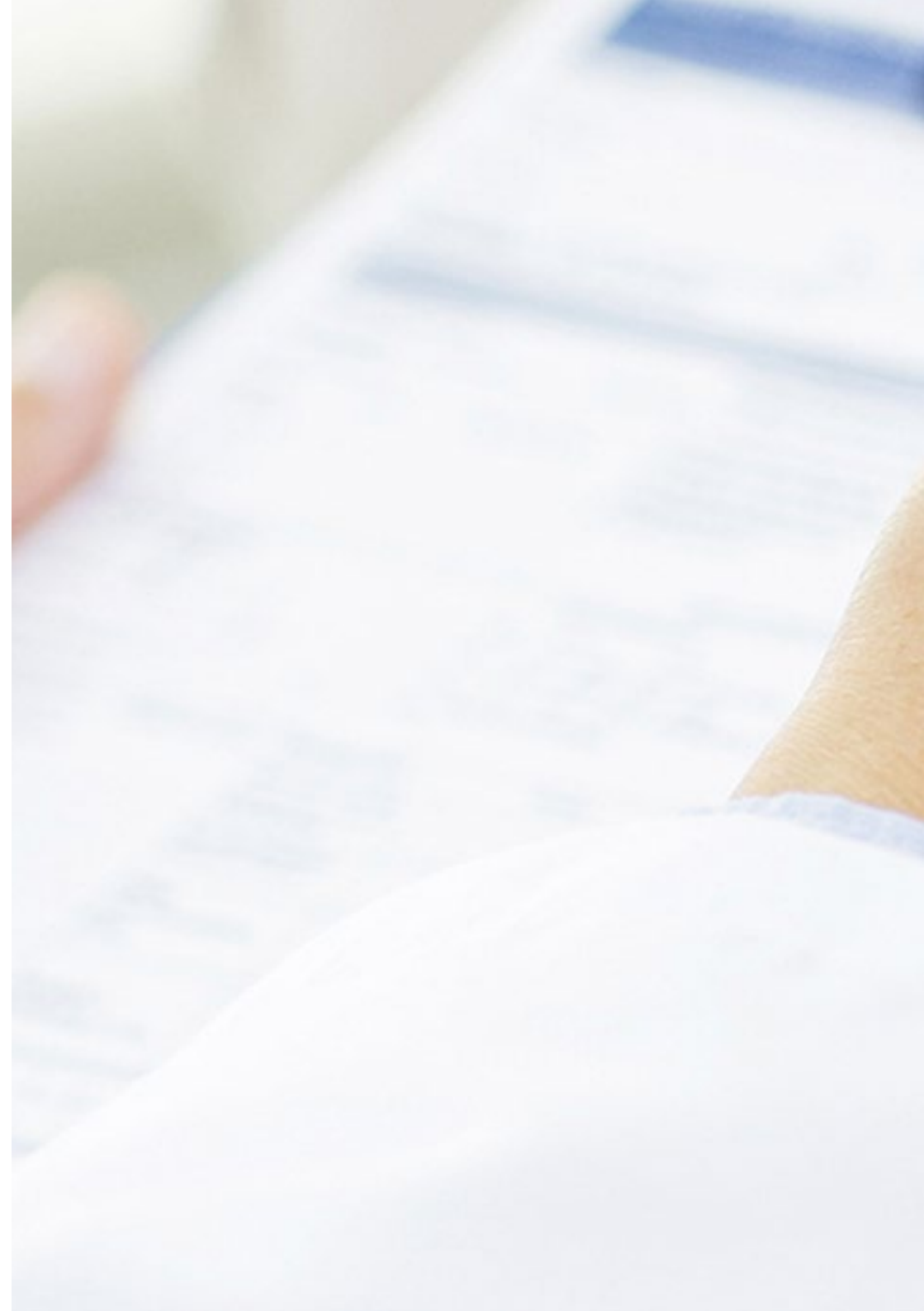
- ◆ Director of the Magnetoencephalography Unit at Centro Medico Teknon
- ◆ Head of the Drug Research Unit at the Research Institute of the Hospital de la Santa Creu i Sant Pau
- ◆ Clinical Neurophysiologist of the Sleep and Awakening Disorder Unit at the University Hospital Gui de Chauliac. Montpellier, Francia
- ◆ Associate Physician of the Sleep Unit at the Hospital de la Santa Creu i Sant Pau
- ◆ Coordinator of the multidisciplinary sleep group of the Catalan Society of Neurology
- ◆ Member of the Spanish Sleep Society and European Sleep Society

**Dr. Inmaculada Rodríguez Ulecia**

- ◆ Specialist in Clinical Neurophysiology
- ◆ Head of the Clinical Neurophysiology Service at the University Hospital San Roque. Maspalomas, Canary Islands
- ◆ Medical Specialist in the Sleep Disorder Unit at the University Hospital San Roque. Las Palmas de Gran Canaria
- ◆ Specialist in the the Clinical neurophysiology Service at the Navarra Hospital Complex
- ◆ Master's Degree in Emergency Medicine, CEU-Cardenal Herrera University
- ◆ Member of the Spanish Andalusian Society of Clinical Neurophysiology

**Dr. Valentín Sanz Costa**

- ◆ Director the Electroencephalography Unit of the Neurology Department at Caracas University Hospital
- ◆ Pediatrician Specialist in Child Neurology
- ◆ Master's Degree in Sleep and Child and Adolescent Psychiatry
- ◆ Professor of Neurophysiology and Neurology, Graduate Studies, Universidad Central de Venezuela





**Dr. Fernando Ramos-Argüelles Gonzáles**

- ◆ Medical Specialist in Clinical Neurophysiology
- ◆ Director of the Clinical Neurophysiology Service and Sleep Unit at Clínica Rotger of the Quirónsalud Group. Baleares, Mallorca
- ◆ Degree in Medicine from the University of Navarra
- ◆ Specialist in Clinical Neurophysiology at the Hospital Virgen del Camino. Pamplona, Spain
- ◆ Member of the Spanish Society of Clinical Neurophysiology and Spanish Sleep Society Spanish Sleep Society

**Dr. Rocío Pabón Meneses**

- ◆ Medical Specialist in Clinical Neurophysiology
- ◆ Medical Specialist in the Multidisciplinary Sleep Unit at the Navarra Hospital Complex
- ◆ Specialist Physician at Hospital Virgen del Camino
- ◆ Expert in Sleep Medicine accredited by FESMES
- ◆ Member of the Spanish Society of Clinical Neurophysiology (SENFC) and Spanish Sleep Society (SES)

**Dr. Javier Navallas Irujo**

- ◆ Researcher Telecommunications Engineer
- ◆ Associate Professor in the Department of Electrical, Electronic and Communication Engineering at the Public University of Navarra
- ◆ Telecommunications Engineer from the Public University of Navarra
- ◆ Dr. in Communication Engineering from the Public University of Navarra

**Dr. Cristina Ciorba Ciorba**

- ♦ Specialist in Pneumology
- ♦ Physician of the Multidisciplinary Sleep Unit at the Navarra Hospital Complex. Pamplona, Spain
- ♦ Master's Degree in Advances in the Diagnosis and Treatment of Sleep Disorders by the University of Murcia
- ♦ Master's Degree in Neuromuscular Diseases and Respiratory Complications by the University of Versailles
- ♦ Expert in Sleep Medicine, accredited by FESMES
- ♦ Expert in Non Invasive Mechanical Ventilation by the International School of NIMV
- ♦ Member of the Spanish Sleep Society, Spanish Society of Pneumology and Thoracic Surgery and European Respiratory Society

**Dr. Joan Petanàs Argemí**

- ♦ Medical Specialist in Neuropediatrics
- ♦ Assistant Neuropediatrician in the Pediatric Medicine Department of the Corporación Sanitaria Parc Taulí Hospital de Sabadell
- ♦ Neuropediatrician at Hospital Sant Joan de Déu. Barcelona
- ♦ Speaker at numerous specialized national congresses

**D. Juan Antonio Madrid Pérez**

- ♦ Researcher Specializing in Chronobiology
- ♦ Head of the Research Excellence Group in Chronodisruption and Health of the Region of Murcia
- ♦ Director of the Chronobiology Laboratory of the University of Murcia
- ♦ Coordinator of the Nutrition and Chronobiology group of the Instituto Murciano de Investigación Biosanitaria

- ♦ Author of hundreds of scientific publications
- ♦ Director of University Graduate Studies
- ♦ Physiology and Chronobiology teacher in university studies
- ♦ D. in Physiology from the University of Granada
- ♦ Degree in Biology from the University of Granada
- ♦ Specialist in Chronobiology from the University Pierre and Marie Curie. Paris

**Dr. María Alfonso Imizcoz**

- ♦ Specialist in Pneumology
- ♦ Pneumologist in the Multidisciplinary Sleep Unit at the Navarra Hospital Complex
- ♦ Dr. in Medicine and Surgery from the Public University of Navarra
- ♦ Associate Professor at the Public University of Navarra
- ♦ Postgraduate Diploma in Sleep Medicine, accredited by the Spanish Accreditation Committee for Sleep Medicine (CEAMS) and by the Spanish Federation of Sleep Medicine Societies (FESMES)
- ♦ Member of the Respiratory Diseases Research Group at Navarrabiomed, Spanish Sleep Society and Spanish Society of Pneumology and Thoracic Surgery

**Dr. María de los Ángeles Rol de Lama**

- ♦ Ph.D. in Biological Sciences
- ♦ Founding Partner of Kronohealth SL
- ♦ Co-director of the Chronobiology Laboratory of the University of Murcia
- ♦ Director and Professor of the Department of Physiology at the University of Murcia
- ♦ Line of research: Chronobiology, Nutrition and Aging
- ♦ Doctorate in Biological Sciences from the Complutense University of Madrid
- ♦ Degree in Biological Sciences



- ♦ Member of: Spanish Government Postgraduate Diploma Committee for the study of the change of official time, IMIB Innovation Commission and the Spanish Sleep Society and its Chronobiology Working Group
- ♦ Member of the Biomedical Engineering Research Group of the Public University of Navarra and the IdiSNA and Navarrabiome Institutes

#### **Mr. Iván Martín Villa**

- ♦ Psychologist Specialist in Sleep Disorders Psychotherapy
- ♦ Founding Partner of Psicología360
- ♦ Founding Partner of Psicología y Terapias EDS SL
- ♦ Clinical Psychologist at MIP Salud
- ♦ Degree in Psychology from the UNED, with Clinical Specialty of Legal Psychological Expert Psychological Legal Expert
- ♦ Expert in Behavioral Disorders, Addiction and Disruption in Adolescence

#### **Dr. Cristian Sánchez Barros**

- ♦ Specialist in Clinical Neurophysiology
- ♦ Head of the Sleep Unit and Specialist in Clinical Neurophysiology at the Juaneda Miramar Hospital of the Juaneda Healthcare Network Hospital Group. Palma de Mallorca, Balearic Islands
- ♦ International advisor in a research project on Huntington's Disease led by the Caribbean Neurosciences Group of the Universidad Simón Bolívar. Barranquilla, Colombia
- ♦ Online consultation in Sleep Medicine at We Doctor
- ♦ Medical Specialist in Clinical Neurophysiology in Sanitas

- ♦ Specialist in Clinical Neurophysiology at the Neurological Sciences Unit (UCN)
- ♦ Medical Specialist in Clinical Neurophysiology at Hospital Quirónsalud Sur
- ♦ Doctor of Medicine (PhD) Cum Laude from the Complutense University of Madrid
- ♦ Medical Specialist in Clinical Neurophysiology via MIR at the University Hospital San Carlos Clinical Hospital. Madrid
- ♦ 2 months external rotation in EEG and Epilepsy. Program and training in EEG and Epilepsy with Dr. Lüders at Case Western Reserve University, University Hospitals Cleveland
- ♦ Member of the Spanish Sleep Society (SES), Colombian Association of Sleep Medicine (ACMES), Spanish Society of Clinical Neurophysiology (SENEC) and SES Working Group on Movement and Behavioral Disorders during Sleep

#### **Dr. Esmeralda Rocío Martín**

- ♦ Medical Specialist in Clinical Neurophysiology at the University Hospital of La Princesa
- ♦ Medical Specialist in Clinical Neurophysiology at Clínica Santa Elena. Madrid
- ♦ Medical Specialist via MIR in Clinical Neurophysiology at the San Carlos Clinical Hospital. Madrid
- ♦ Specialist in Sleep Medicine, accredited by the Spanish Federation of Sleep Medicine Societies
- ♦ Master's Degree in Sleep: Physiology and Medicine from the University of Murcia
- ♦ Member of: Spanish Society of Clinical Neurophysiology, Spanish Sleep Society and its Insomnia Working Group, Fundación de Investigación del University Hospital de La Princesa and American Society of Clinical Neurophysiology

**Dr. Carmen Gutiérrez Muñoz**

- ♦ Neurophysiologist at Quirónsalud Córdoba Hospital
- ♦ Neurophysiologist at the Instituto de Especialidades Neurológicas
- ♦ Neurophysiologist at the Virgen Macarena University Hospital
- ♦ Degree in Medicine from the University of Córdoba
- ♦ Specialty in Neurophysiology from the University Hospital Virgen Macarena and the University Hospital Marqués de Valdecilla
- ♦ Premio Young Investigator Award por la World Sleep Society
- ♦ Member of the Spanish Society of Prosthetics, Stomatology and Aesthetics (SES)

**Dr. Javier Albares Tendero**

- ♦ Specialist in Clinical Neurophysiology and Sleep Medicine
- ♦ Director and founder of Dr. Albares Sleep Medicine
- ♦ Director of the Pediatric Sleep Disorders Unit at Sanitas CIMA Hospital
- ♦ Specialist in Sleep Medicine by the Estivill Sleep Clinic
- ♦ Director of the Doctor Estivill Sleep Disorders Research Unit of the Dexeu University Institute
- ♦ Speaker and lecturer at conferences and programs on Sleep Medicine
- ♦ Doctor in Medicine from the Autonomous University of Madrid
- ♦ Master's Degree in Acupuncture and Traditional Chinese Medicine from the University of Barcelona
- ♦ European Specialist in Sleep Medicine by the European Sleep Research Society
- ♦ Member of the Spanish Sleep Society, European Sleep Research Society and Advisory Council for Timetable Reform

**Dr. Irene Teresí Copoví**

- ♦ Medical Specialist in Clinical Neurophysiology at the La Fe Polytechnic and University Hospital
- ♦ Physician at Hospital Lluís Alcanyís
- ♦ Neurophysiology Specialist at the University Hospital of La Ribera
- ♦ Member of: Spanish Society of Clinical Neurophysiology

**Dr. María del Carmen Izaola Muñoz**

- ♦ Assistant Physician of the Neurophysiology Department at the University Hospital Virgen de las Nieves
- ♦ Specialist in Clinical Neurophysiology
- ♦ PhD in Medicine and Surgery
- ♦ Expert in Sleep Medicine accredited by the Spanish Federation of Sleep Medicine Societies (FESMES)
- ♦ Royal National Academy of Medicine Award in the category of Pediatrics
- ♦ Member of the Spanish Sleep Society, Spanish Society of Clinical Neurophysiology and Andalusian Society of Clinical Neurophysiology

**Dr. Mónica Díaz Román**

- ♦ Specialist in the Clinical Neurophysiology Service of the Lluís Alcanyís Hospital
- ♦ Researcher specialized in Sleep Medicine
- ♦ Specialist in Clinical Neurophysiology at La Fe Hospital in Valencia
- ♦ Expert in Sleep Medicine by the Spanish Committee of Accreditation in Sleep Medicine (CEAMS, currently FESMES)
- ♦ Master's Degree in "Sleep: Physiology and Medicine" by the University of Murcia
- ♦ He is a member of the Spanish Sleep Society, the Spanish Society of Clinical Neurophysiology (SENFC) and the Spanish Society of Neurology (SEN)

**Dr. Guido Eduardo Andretta Juárez**

- ◆ Specialist in Pneumology at the University Hospital Marqués de Valdecilla
- ◆ Specialist in Pneumology at the Hospital del Bierzo
- ◆ Staff Physician at UNIPHARM Group
- ◆ Internal Medicine Physician. San Juan de Dios General Hospital
- ◆ Degree in Medicine and Surgery. University of San Carlos
- ◆ Resident Medical Intern (MIR) at Marqués de Valdecilla University Hospital

**Dr. Mónica González Martínez**

- ◆ Pneumologist at the Multidisciplinary Unit of Sleep Disorders and Ventilation of the HU Marqués de Valdecilla
- ◆ Pneumologist of the Sleep Unit of the Hospital de Burgos
- ◆ Dr. in the Department of Pathology, Microbiology, Preventive Medicine and Public Health and Toxicology, University of Zaragoza, Spain
- ◆ Specialist Physician in Pulmonology

**Dr. Juan José Ruiz Cubillán**

- ◆ Specialist in Pneumology
- ◆ Assistant Physician of the Pneumology Service at the University Hospital Marqués de Valdecilla. Santander, Spain
- ◆ Specialist in Pneumology at Clínica Sorolla. Valencia, Spain
- ◆ Master's Degree in Respiratory Support and Mechanical Ventilation from the University of Valencia
- ◆ Member of the Spanish Society of Respiratory Pathology (SEPAR) and the European Respiratory Society (ERS)

**Dr. Beatriz Abascal Bolado**

- ◆ Specialist in Pneumology, Pulmonary Obstructive Diseases Area, Marqués de Valdecilla University Hospital
- ◆ Degree in Medicine and Surgery from the University of Cantabria
- ◆ Specialty in Pneumology at the Marqués de Valdecilla University Hospital
- ◆ Fellowship at the Department of Pneumology and Intensive Care at the Mayo Clinic in Rochester, USA
- ◆ Master's Degree in Advances in Diagnosis and Treatment of Airway Diseases by the Universidad Católica San Antonio de Murcia
- ◆ Master's Degree in Advances in Diagnosis and Treatment of Diffuse Interstitial Lung Diseases (EPID) by the Catholic University San Antonio of Murcia
- ◆ Master's Degree in Clinical Management of Care Units by the Spanish Society of Cardiology
- ◆ Member of SEPAR and ERS

**Dr. Borja Bazán Inostroza**

- ◆ Otorhinolaryngology Specialist Physician
- ◆ Otorhinolaryngology and Head and Neck Surgery Physician at the University Hospital of La Princesa
- ◆ Nurse at the Emergency Hospital Nurse Isabel Zendal
- ◆ PhD in Medicine and Surgery from the Autonomous University of Madrid
- ◆ Master's Degree in Diagnosis and Rehabilitation for Hearing Loss in Pediatrics from the University of Alcalá de Henares, Spain

### **Dr. Santiago Antonio Juarros Martínez**

- ♦ Head of the Respiratory Sleep Disorders Unit and Head of the Smoking Unit at the Hospital Clínico Universitario de Valladolid
- ♦ Associate Professor at the University of Valladolid
- ♦ Pneumologist at the Hospital Santos Reyes de Aranda de Duero
- ♦ Specialist Degree in Pneumology from the University of Valladolid
- ♦ Degree in Occupational Medicine from the Complutense University of Madrid
- ♦ Training stay in the Respiratory Sleep Disorders Unit at the University Hospital Marqués de Valdecilla
- ♦ Training stay in the Ventilation Unit at the University Hospital of Bellvitge
- ♦ Expert in Sleep Medicine
- ♦ Master's Degree in Advances in Diagnosis and Treatment of Disorders During Sleep by the Catholic University San Antonio of Murcia
- ♦ Member of the European Respiratory Society, Spanish Sleep Society, Spanish Society of Pneumology and Thoracic Surgery and Scientific Committee of the Sociedad Castellano-Leonesa y Cántabra de Patología Respiratoria

### **Dr. Rybe Wix Ramos**

- ♦ Physician in the Sleep Unit at the University Hospital of La Princesa
- ♦ Medical Specialist in the Sleep Unit of the Clinical Neurophysiology Service at the University Hospital of La Princesa
- ♦ Head of the Sleep Unit of the Neurology Department at HM Sanchinarro University Hospital
- ♦ Medical Specialist in the Sleep Unit of the Neurology Service at the University Hospital HM Puerta del Sur

- ♦ Collaborating teacher at the Faculty of Medicine of CEU San Pablo University
- ♦ Doctora en Medicina de la Facultad de Medicina por la Universidad CEU San Pablo
- ♦ Expert in Sleep Medicine by CEAMS
- ♦ Expert in Sleep Medicine by ESRS
- ♦ Expert in Sleep Medicine, European Sleep Research Society
- ♦ Master's Degree in Sleep: Physiology and Medicine, Pablo from Olavide University
- ♦ Member of the Spanish Society of Clinical Neurophysiology and Spanish Sleep Society

### **Dr. Carmen Rosa Vargas Arévalo**

- ♦ Assistant Physician in Pneumology at the Hospital Clinic of Barcelona
- ♦ Associate Physician in Pneumology at Palamós Hospital
- ♦ Specialist in Pneumology
- ♦ Doctor of Medicine from the University of Barcelona and the Hospital Clinic of Barcelona of Barcelona
- ♦ International Postgraduate Diploma in Methodology of Noninvasive Mechanical Ventilation by the Andalusian Society of Intensive Care Medicine and Coronary Units
- ♦ Postgraduate Diploma in Pleural Pathology by the University of Barcelona

**D. Miguel Florido Gómez**

- ♦ Telecommunications Engineer
- ♦ Commercial Director at LEDMOTIVE. Barcelona, Spain
- ♦ Lamps, LED, Technology and Lighting Training

**Dr. Ángel Ortega González**

- ♦ Head of Pneumology and Respiratory Sleep Unit at Quirónsalud Talavera Day Hospital
- ♦ Assistant Physician and MIR tutor of the Pneumology Service at the Hospital General Universitario Nuestra Señora del Prado
- ♦ Assistant Physician of the Pneumology Department at the University Hospital Marqués de Valdecilla
- ♦ Specialist Physician at Hospital Quirónsalud Toledo
- ♦ Research Fellow en Subintensive Respiratory Therapy in the Operative Unit of Pulmonary Rehabilitation
- ♦ Degree in Medicine and Surgery from the University of Granada Italy
- ♦ Master's Degree in Advances in Diagnosis and Treatment of Sleep Disorders from the Universidad Católica San Antonio de Murcia
- ♦ Professional Master's Degree in Respiratory and Mechanical Ventilation by the University of Valencia

**Dr. Cristina Fernández Jáñez**

- ♦ Otolaryngology physician at the University Hospital Vithas Madrid Arturo Soria
- ♦ Degree in Medicine from the University of Navarra
- ♦ Specialty performed by the MIR route of the Spanish Ministry of Health and Consumer Affairs in Otorhinolaryngology at the Hospital General Universitario Gregorio Marañón (Madrid)
- ♦ Estancias en el Great Ormond Street Hospital for Children (Londres). Visiting Observer program in the Department of Pediatric Otolaryngology and Head and Neck Surgery

**Dr. Marta Cristeto Porras**

- ♦ Physician attached to the Pneumology Department at the University Hospital San Pedro. Logroño, Spain
- ♦ Assistant Pneumology Physician in Rioja Salud
- ♦ Stay in the Home Respiratory Unit and the Respiratory Care Unit at the Hôpitaux Universitaires Pitié Salpêtrière. Paris
- ♦ Postgraduate Diploma in Respiratory Sleep Disorders in TECH Technological University
- ♦ Specialist in Pneumology at the University Hospital Marqués de Valdecilla
- ♦ Graduated in Medicine from the University of Salamanca
- ♦ Member of: Spanish Society of Transplantation, European Respiratory Society and Spanish Society of Pneumology and Thoracic Surgery

#### **Dr. Alfonso Marco Garrido**

- ♦ ENT Surgeon Assistant to the ENT Service at the University Hospital Reina Sofia
- ♦ Degree in Medicine and Surgery from the Faculty of Medicine of the University of Murcia
- ♦ Graduate in Respiratory Sleep Disorders, Snoring and Applied Rhinology from the Universidad Autónoma de Nuevo León
- ♦ Member of: Member of the ENT Society of Murcia, Spanish Sleep Society, Founder of the Iberoamerican Society of Sleep Surgery, Spanish Society of Pneumology and Thoracic Surgery Member of the Commission of Roncopathy and Sleep Disorders of the Spanish Society of Otorhinolaryngology and Head and Neck Surgery and Member of the Solidarity Surgery Association

#### **Dr. Enrique Guillén Lozada**

- ♦ Specialist in otorhinolaryngology and head and neck surgery, Autonomous University of Madrid
- ♦ Assistant Specialist in Otorhinolaryngology and Cervicofacial Pathology at the Niño Jesús University Children's Hospital
- ♦ Assistant Specialist in Otorhinolaryngology and Cervicofacial Pathology at the Hospital Vithas Nuestra Señora de América
- ♦ Dr. Cum Laude in Molecular Biology, Biomedicine and Clinical Research from the University of Seville
- ♦ Expert in Voice Pathology from the University of Alcalá, Spain
- ♦ Master's Degree in Medical Research: clinical and experimental by the University of Seville
- ♦ MIR Otorhinolaryngology and Head and Neck Surgery at the Virgen del Rocío University Hospital

#### **Ms. Daniela Neves Leal**

- ♦ Speech Therapy Specialist at the Gonzalez y Campos Clinic
- ♦ Degree in Speech Therapy from the Complutense University of Madrid
- ♦ Master's Degree in Advances in Speech Therapy Intervention from the Complutense University of Madrid
- ♦ Master's Degree in Orofacial Motricity from the University of Manresa
- ♦ Postgraduate degree in with the learning method RPM
- ♦ Spanish Ambassador for the TBI technique

#### **Dr. Elena Urrestarazu Bolumburu**

- ♦ Consultant Clinical La Neurophysiology Service
- ♦ Researcher Specializing in Sleep Disorders
- ♦ Lecturer from the University of Navarra
- ♦ Specialist in Clinical Neurology from the University of Navarra Pamplona, Spain
- ♦ Specialist in Clinical Neurophysiology, Clínica Universidad de Navarra. Pamplona, Spain
- ♦ Postgraduate Diploma in Sleep Medicine Accreditation by the European Sleep Research Society (ESRS)
- ♦ Postgraduate Diploma Training in Sleep Medicine by the Spanish Committee of Accreditation in Sleep Medicine (CEAMS) of Accreditation in Sleep Medicine (CEAMS)
- ♦ Member of: Spanish Society of Neurology (SEN), Spanish Society of Clinical Neurophysiology (SENEC), Spanish Sleep Society (SES), European Sleep Research Society

(ESRS), American Academy of Sleep Medicine (AASM) and World Sleep Society

- ♦ Physician at the Clínica Universidad de Navarra
- ♦ Physician in the Health Service of Castilla y La Mancha-SESCAM
- ♦ Physician in the Sleep Disorders Unit of the Clinical Neurophysiology Service of the University Hospital Virgen de las Nieves in Granada
- ♦ Researcher member of the Neurobiological Research Group
- ♦ European Postgraduate Diploma in Sleep Medicine accreditation by the ESRS (European Sleep Research Society)
- ♦ Master's Degree in Clinical Reasoning and Practice, University of Alcalá, Spain
- ♦ Master's Degree in Epilepsy, University of Murcia, Spain
- ♦ Training and education in EEG-Childhood Epilepsy and in Epilepsy-Sleep by the ILAE (The International League Against Epilepsy). Virtual Epilepsy Academy)
- ♦ Training and Expert in Sleep Medicine by CEAMS (Spanish Accreditation Committee in Sleep Medicine)
- ♦ He is a member of the Spanish Sleep Society (SES), European Sleep Society (ESRS), American Association of Sleep Medicine (AASM) and American Epilepsy Association (AES)

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

- ♦ Researcher in Orthodontics and Sleep Medicine
- ♦ Researcher specialized in Sleep Medicine and Orthodontics
- ♦ Lecturer in Orthodontics at the University of Oviedo
- ♦ Lecturer at the UCAM of Murcia
- ♦ Director of Master's Degree at the University of Deusto
- ♦ Degree in Medicine and Surgery. Specialist in Stomatology

- ♦ Doctor of Medicine and Surgery
- ♦ Master's Degree in Orthodontics and Dentofacial Orthopedics
- ♦ Expert in Sleep Medicine, accredited by the Spanish Committee of Sleep Medicine
- ♦ Expert in Dental Sleep Medicine, accredited by the Spanish Federation of Sleep Societies
- ♦ He is a member of the French Society of Dentofacial Orthopedics, Spanish Society of Orthodontics, The Spanish Association of Specialists in Orthodontics, European Orthodontic society, Spanish Society of Facial Fissures and European Academy of Dental Sleep Medicine

#### **Dr. María Aguilar Andújar**

- ♦ Expert in Clinical Neurophysiology and Expert in Sleep Disorders
- ♦ Head of the Sleep Disorders Unit at the Virgen de la Macarena University Hospital
- ♦ Area Specialist in the Clinical Neurophysiology Service of the University Hospital Virgen de Macarena
- ♦ PhD in Medicine, University of Seville
- ♦ Official Master's Degree in Physiology and Neuroscience from the University of Seville

#### **Dr. Fredy A. Escobar Ipuz**

- ♦ Specialist in the area of Clinical Neurophysiology at the Hospital Virgen de la Luz
- ♦ Specialist in Clinical Neurophysiology at the Virgen de la Luz Hospital in Cuenca
- ♦ Physician at the Albacete University Hospital Complex

#### **Mr. Oriol Mercadé Canals**

- ♦ Expert Psychologist in Sleep Disorders Psychologist
- ♦ Club Cercle Sabadellès Sports Advisor

- ♦ Psychologist Sleep Specialist at the AdSalutem Institute
- ♦ Psychologist of the Obesity and Health Unit of Clínica Londres
- ♦ Psychologist at Sanitas Seguro
- ♦ Psychologist Specialist in Sleep at the Sleep Clinic Doctor Estivill
- ♦ Psychologist at Quality Medical Service
- ♦ Master's Degree in Sleep Medicine and Sleep Physiology from the Universidad Pablo de Olavide
- ♦ Master's Degree in Sport Psychology at the Universidad Autónoma de Barcelona
- ♦ Degree in Psychology from Ramón Llull University

#### **Dr. María Miguélez González**

- ♦ Attending Physician of Endocrinology and Nutrition at the University Hospital Jiménez Díaz Foundation. of Madrid
- ♦ Degree in Medicine from the University of Valladolid
- ♦ Teaching collaborator in seminars given to students at the Complutense University of Madrid
- ♦ Professor of the Master Expert in Obesity and Metabolic Complications, endorsed by SEEDO

#### **Dr. Alejandro Herrero San Martín**

- ♦ FEA of the Neurology Service at the 12 de Octubre University Hospital
- ♦ Researcher in the Neurodegenerative Diseases Area in the I+12 Group at the 12 de Octubre University Hospital
- ♦ Degree in Medicine from the Autonomous University Madrid
- ♦ Specialist in Neurology Associated with Sleep at the 12 de Octubre University Hospital
- ♦ Member of the Sleep Institute and the Spanish Society of Neurology (SEN)

#### **Dr. Raquel López García**

- ♦ Specialist in Clinical Neurophysiology
- ♦ Medical Specialist in Clinical Neurophysiology in the multidisciplinary unit of Sleep Disorders at the General Hospital of Castellón
- ♦ Master's Degree in Pediatric Neurology and Neurodevelopment from CEU Cardenal Herrera University
- ♦ Master's Degree in Sleep: Physiology and Medicine from the University of Murcia
- ♦ European Expert in Sleep Medicine, accredited by the European Sleep Research Society (ESRS)

#### **Dr. Margarita Sánchez del Río**

- ♦ Specialist in Neurology
- ♦ Director of the headache program at the Headache Unit of the Neurology Department of the Ruber Internacional Hospital
- ♦ Clinical Collaborator in Neurology, monographic consultations of headaches at the Clínica Universidad de Navarra. Madrid
- ♦ Head of Headache Unit Development at the University Hospital Fundación Alcorcón
- ♦ Reviewer of scientific communications of the Spanish Society of Neurology
- ♦ Associate Professor at University of Navarra
- ♦ PhD in Applied Medicine and Biomedicine
- ♦ Degree in Medicine and Surgery from the Autonomous University of Madrid
- ♦ Neurology Specialist MIR at the Fundación Jiménez Díaz University Hospital
- ♦ MDA stay at the H. Houston Merritt Clinical Research Center for Muscular Dystrophy and Related Diseases with Professor Dr. DiMauro and Pediatric Neurology with Professor Dr. Darryl C. De Vivo. College of Physicians and Surgeons en Columbia University. New York



- ♦ Clinical Research Fellow in Headache at the Jefferson Headache Center. Thomas Jefferson University Hospital. Philadelphia
- ♦ Research Fellow in Migraine at the Stroke and Neurovascular Regulation Laboratory, Department of Neurology, Massachusetts General Hospital and Harvard Medical School, Boston
- ♦ Member of the Executive Committee of the European Headache Federation (EHF), International Headache Society (IHS) Committee, Ad Hoc Committee of the SEN Headache Study Group, Clinical Trials Committee at Hospital Ruber Internacional and Editorial Committee of Neurology
- ♦ Assistant Specialist in Otorhinolaryngology and Head and Neck Surgery
- ♦ University of Barcelona  
Master's Degree in Otorhinolaryngology Update by CEU Cardenal Herrera University
- ♦ Master's Degree in Comprehensive Management of Head and Neck Cancer from the Complutense University of Madrid
- ♦ Postgraduate Certificate of Specialization's Degree in Healthcare Management, Polytechnic University of Valencia
- ♦ Member of the Excellence in Facial Surgery Across the Specialties (AOCMF), Spanish Society of Otorhinolaryngology and Head and Neck Surgery (SEORL-CCC), Spanish Association of Microsurgery (AEM) and Madrid Society of Otorhinolaryngology (AMORL)

#### **Dr. Ana Fernández Arcos**

- ♦ Neurologist Specialist in Sleep Disorders at AdSalutem Sleep Institute
- ♦ Neurology Consultation at the Centre Mèdic Sant Andreu
- ♦ Medical guards at Llars Mundet
- ♦ Specialist in Neurology at the Hospital de la Santa Creu i Sant Pau
- ♦ Dr. in Medicine and Translational Research from the University of Barcelona
- ♦ Master's Degree in Sleep Disorders by the University of Barcelona
- ♦ Expert in Sleep Medicine by ESRS
- ♦ Coordinator of the Study Group on Wakefulness and Sleep Disorders of the SEN
- ♦ Member of the Spanish Sleep Society
- ♦ Member of the European Society of Sleep Medicine, Spanish Sleep Society and Spanish Society of Clinical Neurophysiology

#### **Dr. Raimon García Chillerón**

# 06

## Educational Plan

The curriculum of this Hybrid Master's Degree consists of 10 modules through which students will significantly expand and update their knowledge in the area of Sleep Medicine. The didactic resources that you will have at your disposal during the duration of this program are present in different types of textual and multimedia supports. This fact, added to the program's 100% online methodology, will allow students to optimize their learning without leaving their homes.



“

*Through TECH's own relearning system of this program, you will be able to achieve effective learning at your own pace”*

### Module 1. Previous Fundamental Aspects of Sleep Medicine

- 1.1. Normal sleep in humans. Sleep functions
- 1.2. Evolution of sleep throughout a lifetime
- 1.3. The neurobiology of sleep and wakefulness
- 1.4. Neurobiology mechanisms of sleep and wakefulness
- 1.5. Chronobiology of the sleep-wake cycle
- 1.6. Evolution of circadian system throughout a lifetime
- 1.7. Dream activity
- 1.8. Commonly used drugs which interfere with sleep
- 1.9. Sleep Disorders. From the anamnesis to the suspected diagnosis
  - 1.9.1. Introduction. Classification of Sleep Disorders
  - 1.9.2. Anamnesis and basic semiology
  - 1.9.3. Medical History. Sleep diary. Scales and test
  - 1.9.4. Suspected Diagnosis General tests and sleep specific tests

### Module 2. Technical and organisational aspects of the diagnostic process

- 2.1. Measurable biological parameters and detection sensors
  - 2.1.1. Types of parameters and their registration methods
  - 2.1.2. Selection of parameters according to diagnostic suspicion
  - 2.1.3. General protocol and the selection of which test to perform
- 2.2. Simplified systems of registration
  - 2.2.1. Relevance of the simplified systems
  - 2.2.2. Pulse oximetry, actigraphy and activity wristbands
  - 2.2.3. Abbreviated systems and respiratory polygraphy
- 2.3. Abbreviated systems and respiratory polygraphy. The apparatus and signal acquisition
- 2.4. Abbreviated systems and respiratory polygraphy. Analysis, coding and interpretation (I)
  - 2.4.1. Analysis and coding of the sleep phases in adults. Hypnogram
  - 2.4.2. Analysis and coding of the sleep phases in childhood
  - 2.4.3. Analysis and coding of cardiac activity
- 2.5. Abbreviated systems and respiratory polygraphy. Analysis, coding and interpretation (II)
  - 2.5.1. Coding of respiratory events and their interpretation
  - 2.5.2. Analysis and coding of motor events
  - 2.5.3. Analysis of other signs
  - 2.5.4. Joint interpretation and reporting

- 2.6. Polysomnography (PSG): indications and expanded PSG
- 2.7. Other sleep and wakefulness tests
  - 2.7.1. Evaluation of tiredness
    - 2.7.1.1. Multiple latency sleep test-TLMS
    - 2.7.1.2. Maintenance of wakefulness test-TMV
  - 2.7.2. Suggested Immobilisation Test (SIT) and variants (mSIT)
- 2.8. Alternative systems of integrated monitoring
  - 2.8.1. Other ways to address sleep disorders
  - 2.8.2. Wireless systems
  - 2.8.3. Pulse Transit Time (PTT) systems
  - 2.8.4. Microwave movement sensors
  - 2.8.5. Image and sound in sleep studies
- 2.9. Methods of studying the circadian system
- 2.10. Automised and advanced analysis of the bioelectric signal
  - 2.10.1. Concepts, preparation and analysis
  - 2.10.2. Analysis of each signal or multichannel
  - 2.10.3. Algorithms for cleaning, artefact detection and detection of specific signals
  - 2.10.4. Learning and classification networks, analytics matching and data mining
- 2.11. Organisation of a Sleep Unit
  - 2.11.1. From basic units to multidisciplinary units. Local, multidisciplinary and multi-sectoral integration
  - 2.11.2. The patient as a central focus
  - 2.11.3. Sleep nursing
  - 2.11.4. External integration with health services and support units
  - 2.11.5. Supply companies and private activity
  - 2.11.6. Accreditations for centers and people
  - 2.11.7. Innovation and resources. Integration of software, networks and servers. Homebased monitoring systems

**Module 3. Insomnia in adults. Sleep in Adult Psychiatry**

- 3.1. Insomnia: definitions, types, epidemiology and the socio-economic impact
- 3.2. Etiopathogenesis, assessment and differential diagnosis of chronic insomnia
- 3.3. Non-pharmacological management of chronic insomnia(I): locating the problem and its orientation
  - 3.3.1. Basis and importance of a non-pharmacological approach to insomnia
  - 3.3.2. Cognitive-behavioural treatment of insomnia. Conceptual framework
  - 3.3.3. Components of cognitive-behavioural treatment
    - 3.3.3.1. Stimulus control techniques
    - 3.3.3.2. Techniques to reduce the amount of time spent in bed
    - 3.3.3.3. Sleep hygiene rules: environmental and behavioural changes
    - 3.3.3.4. Effective relaxation techniques for insomnia
    - 3.3.3.5. Cognitive techniques applied in managing insomnia
  - 3.3.4. Other possible non-pharmacological approaches:
    - 3.3.4.1. Aromatherapy in sleep problems: myths and truths
    - 3.3.4.2. Music therapy for insomnia
    - 3.3.4.3. Acupuncture for insomnia
- 3.4. Non-pharmacological management of chronic insomnia(II): Behavioral techniques
  - 3.4.1. Step-by-Step relaxation technique
    - 3.4.1.1. Relaxation and diaphragm respiration techniques
    - 3.4.1.2. Progressive muscular relaxation training
    - 3.4.1.3. Other techniques: Biofeedback and Mindfulness
  - 3.4.2. Procedure for applying the Cognitive Techniques
    - 3.4.2.1. Negative thoughts and their impact on sleep
    - 3.4.2.2. Cognitive distortions
    - 3.3.2.3. Cognitive reconstructio: debate technique
    - 3.3.2.4. Thought stop
    - 3.3.2.5. Paradoxical intention
  - 3.4.3. Individual vs.group therapy
  - 3.4.4. Health education for the prevention of insomnia

- 3.4.5. Neurofeedback and insomnia: Basic and applied research
- 3.5. Pharmacological treatment for insomnia: options and latest findings
  - 3.5.1. Benzodiazepines (BZD)
  - 3.5.2. Non-benzodiazepine hypnotics ("Z-drugs")
  - 3.5.3. Antidepressive sedatives
  - 3.5.4. Melatonin and melatonin receptor agonists
  - 3.5.5. Dual orexin receptor antagonists (DORA): What does the future hold?
  - 3.5.6. Other drugs useful in treating insomnia
  - 3.5.7. Supplements and phytotherapy: myths and scientific evidence
- 3.6. Planning the pharmacological treatment of insomnia Special Situations
- 3.7. Mood disorders and sleep
- 3.8. Anxiety disorders and sleep
- 3.9. Other psychiatric disorders and sleep
  - 3.9.1. Psychotic Disorders
  - 3.9.2. Eating Disorders
  - 3.9.3. ADHD in adults
- 3.10. Sleep and addictions

**Module 4. Hypersomnia in adults Circadian rhythm disorders in adults**

- 4.1. Initial approach to hypersomnias of central origin
  - 4.1.1. Concepts, definitions and types
  - 4.1.2. Insufficient sleep syndrome
  - 4.1.3. Isolated symptoms and variants of normality: long sleeper
- 4.2. Narcolepsy (part I)
- 4.3. Narcolepsy (parte II)
- 4.4. Idiopathic hypersomnia
- 4.5. Recurrent hypersomnia
  - 4.5.1. *Kleine Levin* syndrome
  - 4.5.2. Hpersomnia related to menstruation

- 4.6. Other causes of hypersomnia
- 4.7. Chronopathology (I): Endogenous circadian disturbances
  - 4.7.1. Delayed sleep phase syndrome
  - 4.7.2. Sleep phase advancement syndrome
  - 4.7.3. Hypnictameral or free-course syndrome
  - 4.7.4. Irregular wake-sleep pattern
- 4.8. Chronopathology (II): External factors in circadian alterations
  - 4.8.1. Circadian alterations due to shift work patterns
  - 4.8.2. Circadian disturbance due to fast meridian crossing or jet lag
  - 4.8.3. Social jet lag
- 4.9. Phototherapy
- 4.10. Other therapeutic methods to regulate the circadian system
  - 4.10.1. Sleep hygiene rules
  - 4.10.2. Chronotherapy
  - 4.10.3. Melatonin
  - 4.10.4. Other Drugs

### Module 5. Sleep Disordered Breathing (RBD): clinical aspects in adults

- 5.1. Respiratory physiology and pathophysiology during sleep
  - 5.1.1. Introduction
  - 5.1.2. Anatomical factors
  - 5.1.3. Functional factors
    - 5.1.3.1. Upper airway reflexes (UAR). Answers
    - 5.1.3.2. Degree of sensitivity of the centres to triggering events
    - 5.1.3.3. Sensitivity of the respiratory centres
  - 5.1.4. Assessment of features involved in ASV characteristics in SAHS
    - 5.1.4.1. Known features
    - 5.1.4.2. Critical pressure measurement as an expression of ASV collapsibility
- 5.2. Characteristics of the most typical TRS: breathing sounds, SARVAS, SAHS
  - 5.2.1. Snoring Definition, classification and epidemiology
  - 5.2.2. Catathrenia
  - 5.2.3. Syndrome of increased upper airway resistance (SARVAS)
  - 5.2.4. Sleep apnoea-hypopnoea syndrome (SAHS)
    - 5.2.4.1. Definition and Concept
    - 5.2.4.2. Prevalence
    - 5.2.4.3. Risk Factors

- 5.3. Central Apnoea syndrome
- 5.4. Non-respiratory comorbidities of SAHS
  - 5.4.1. AHT and cardiovascular risk
  - 5.4.2. Other comorbidities
- 5.5. Respiratory comorbidities of SAHS
  - 5.5.1. Acute Chronic Obstructive Pulmonary Disease (COPD)
  - 5.5.2. Asthma
  - 5.5.3. Diffuse interstitial lung disease
  - 5.5.4. Pulmonary Hypertension
- 5.6. SAHS, obesity and metabolic disturbances: associations and effect of CPAP
  - 5.6.1. SAHS and metabolic syndrome
  - 5.6.2. SAHS and lipid metabolism
  - 5.6.3. SAHS and glucide metabolism
- 5.7. Hypoventilation-obesity syndrome
  - 5.7.1. Definition, prevalence and epidemiology
  - 5.7.2. Effects of obesity on the respiratory system
  - 5.7.3. Contribution of airway obstruction during sleep to hypercapnia
  - 5.7.4. Clinical features, predictive factors and diagnosis
  - 5.7.5. Treatment
- 5.8. Diagnosis of SAHS
  - 5.8.1. Polysomnography: "Gold standard" method
  - 5.8.2. Polygraphy and simplified diagnostic methods Indications and decision making
  - 5.8.3. Other complimentary methods
- 5.9. Treatment of SAHS (I)
  - 5.9.1. Global measures
  - 5.9.2. Positive pressure in the airway CPAP and APAP indication
  - 5.9.3. Adaptation and monitoring of treatment. The age of telemonitoring
- 5.10. Treatment of SAHS (II)
  - 5.10.1. Treatment with bi-level pressure
  - 5.10.2. Servo ventilation
  - 5.10.3. Other therapeutic options

## Module 6. Sleep-disordered breathing disorders (SRD): surgery, dentistry and functional rehabilitation in SAHS

- 6.1. Functional anatomy and exploration of the airway from surgical and dental perspectives
  - 6.1.1. Exploration of the airway in the otorhinolaryngological practice
  - 6.1.2. Dental and maxillofacial exploration
- 6.2. Airway imaging tests
  - 6.2.1. *Somnoscopy* (DISE) in paediatrics and adults
  - 6.2.2. Applied radiology
- 6.3. Surgery and Treatment the palatopharyngeal
  - 6.3.1. Tonsillectomy, *adenoidectomy* and pharyngoplasty: concepts and techniques
  - 6.3.2. Lingual frenulum surgery
  - 6.3.3. Soft tissue stiffness augmentation techniques
    - 6.3.3.1. Radiofrequency
    - 6.3.3.2. Sclerosants
    - 6.3.3.3. Devices
  - 6.3.4. Hypopharyngeal surgery
    - 6.3.4.1. Surgery of the base of the tongue and epiglottis
    - 6.3.4.2. Other treatment techniques from a cervical approach
      - 6.3.4.2.1. Tongue and hyoid suspension
      - 6.3.4.2.2. Neurostimulation of the hypoglossal nerve
      - 6.3.4.2.3. Tracheostomy
  - 6.3.5. Nasal surgery Optimising adherence to CPAP
  - 6.3.6. Oro-dental sleep medicine (I): mandibular advancement devices in adults
  - 6.3.7. Oro-dental sleep medicine (II): expanders in pediatrics and adults
  - 6.3.8. Maxillary-mandibular advancement and other orthognathic surgery treatments
  - 6.3.9. Myofunctional therapy and respiratory reeducation in the treatment of SHAS
  - 6.3.10. Multilevel and multidisciplinary treatment Conclusions

## Module 7. Behavioural and movement disorders during sleep in adults

- 7.1. Parasomnias during adult NREM sleep
  - 7.1.1. Circadian rhythm disorders in adults
  - 7.1.2. Nocturnal eating disorder
  - 7.1.3. Sexomnia
- 7.2. REM sleep behaviour disorder (RBD)
- 7.3. Others sleep disorders or behavioural situations
  - 7.3.1. Other REM parasomnias
    - 7.3.1.1. Nightmare Disorder
    - 7.3.1.2. Isolated sleep paralysis
  - 7.3.2. Somniloquy
  - 7.3.3. Explosive head syndrome
- 7.4. Sleep-wake disassociation
  - 7.4.1. The concept of sleep-wake disassociation
  - 7.4.2. *Status dissociatus*
- 7.5. Restless leg syndrome (Willis-Ekbom's disease): initial considerations and causal mechanisms
  - 7.5.1. Definitions and myths about the disease: clarifying concepts
  - 7.5.2. Epidemiology
  - 7.5.3. Living with the disease
  - 7.5.4. Pathophysiology
- 7.6. Restless Leg Syndrome: Etiopathogenic types and clinical aspects
  - 7.6.1. "Primary" and "secondary" disease: Current concepts
  - 7.6.2. Clinical symptoms
  - 7.6.3. Physical, psychological and social consequences
- 7.7. Restless leg syndrome: diagnostic methods and differential diagnosis
  - 7.7.1. Clinical diagnostic criteria
  - 7.7.2. Complementary methods of diagnostic support
  - 7.7.3. Differential Diagnosis
- 7.8. Treatment of restless leg syndrome
  - 7.8.1. Non-pharmacological methods
  - 7.8.2. Iron treatment Other deficits to consider

- 7.8.3. The pharmacological treatment of symptoms
  - 7.8.3.1. General Considerations
  - 7.8.3.2. Dopaminergic drugs
  - 7.8.3.3. Non-dopaminergic drugs
- 7.8.4. Other treatments
- 7.9. Other motor disorders related to sleep: limb and/or body activity
  - 7.9.1. Periodic limb movement syndrome during sleep
  - 7.9.2. Rhythmic movements during sleep
  - 7.9.3. Muscular cramps in the legs during sleep
  - 7.9.4. Hypnogenic foot tremor
  - 7.9.5. Alternating leg muscle activation
  - 7.9.6. Hypnagogic myoclonias
  - 7.9.7. Isolated myoclonias in the head and neck during sleep
  - 7.9.8. Prospinal myoclonias
- 7.10. Other motor disorders related to sleep: orofacial phenomena
  - 7.10.1. Bruxism during sleep
  - 7.10.2. Faciomandibular myoclonias

## Module 8. Neurological disorders related to sleep in adults

- 8.1. Sleep, learning and memory
  - 8.1.1. Short-term and long-term memory consolidation during sleep
  - 8.1.2. Synaptic homeostasis
  - 8.1.3. Hypnotoxins and the glymphatic system during sleep
  - 8.1.4. Aging, memory and sleep
- 8.2. Processing of information and sleep
  - 8.2.1. Sensory processing
  - 8.2.2. Motor control during sleep
- 8.3. Neurodegeneration and sleep (I): Alzheimer's disease (AD)
  - 8.3.1. Pathophysiology of AD and the glymphatic system
  - 8.3.2. Circadian disorders in AD
  - 8.3.3. Therapeutic management of sleep disorders in AD

- 8.4. Neurodegeneration and sleep (II): REM sleep behaviour disorder and alpha-synucleopathies
- 8.5. Neurodegeneration and sleep (III): other degenerative diseases
  - 8.5.1. Sleep disorders in frontotemporal dementia
  - 8.5.2. Sleep disorders in Huntington's disease
  - 8.5.3. Sleep disorders in other neurodegenerative processes
- 8.6. Neurological autoimmune diseases and sleep disorders
  - 8.6.1. Multiple sclerosis: sleep and fatigue
  - 8.6.2. Other demyelinating diseases and sleep disorders
  - 8.6.3. Autoimmune encephalitis and sleep
  - 8.6.4. Anti-IGLON 5 disease
- 8.7. Neuromuscular diseases and sleep
  - 8.7.1. Amyotrophic lateral sclerosis and other motor neuron diseases
  - 8.7.2. Myopathies and sleep disorders
- 8.8. Headaches and sleep
  - 8.8.1. Relationship between sleep and headaches
  - 8.8.2. Hypnic headaches
  - 8.8.3. Migraines and sleep
- 8.9. Epilepsy and sleep (author: Dr. Asier Gómez Ibañez)
- 8.10. Other neurological diseases and their relationship with sleep
  - 8.10.1. Cerebrovascular disease and sleep
  - 8.10.2. Head trauma, concussion and sleep
  - 8.10.3. Peripheral nervous system diseases and sleep



**Module 9. Sleep-wake disorders in childhood**

- 9.1. Organisation and ontogeny of sleep in childhood
  - 9.1.1. Differential concepts in sleep architecture
  - 9.1.2. Sleep in childhood and adolescence
- 9.2. Predominant sleep onset difficulties in paediatrics
  - 9.2.1. Paediatric insomnia
  - 9.2.2. Delayed sleep phase syndrome
  - 9.2.3. Restless leg syndrome (Willis-Ekbom's disease) in paediatrics
- 9.3. Respiratory disorders during sleep (TRS) in paediatrics
  - 9.3.1. Concepts and types of TRS in the paediatrics age group
  - 9.3.2. Pathophysiology of TRS in children
  - 9.3.3. Consequences of untreated TRS in children
  - 9.3.4. Diagnosis of TRS in children
  - 9.3.5. Treatment of TRS in children
- 9.4. Parasomnias in the paediatric age group
  - 9.4.1. Parasomnias of NREM sleep
  - 9.4.2. Parasomnias of REM sleep
- 9.5. Rhythmic disorders during sleep: a problem almost exclusively found in paediatric patients
- 9.6. Excessive secondary daily tiredness in paediatrics Chronic sleep deprivation
- 9.7. Excessive daytime tiredness of primary or central origin: paediatric issues
  - 9.7.1. Narcolepsy
  - 9.7.2. *Kleine - Levin* syndrome
- 9.8. Specific paediatric pathologies and sleep
  - 9.8.1. Asthma
  - 9.8.2. Allergies
  - 9.8.3. Coeliac Disease
  - 9.8.4. Childhood diabetes
  - 9.8.5. Nocturnal gastro-oesophageal reflux in paediatrics
  - 9.8.6. Cystic fibrosis
  - 9.8.7. Attention Deficit Hyperactivity Disorder (TDAH)
  - 9.8.8. Autism Spectrum Disorder (TEA)
  - 9.8.9. Prader - Willi Syndrome
  - 9.8.10. Down Syndrome

- 9.9. Sleep disorder diagnostic techniques in paediatrics
  - 9.9.1. Sleep diary
  - 9.9.2. Paediatric actigraphy
  - 9.9.3. Paediatric nocturnal video-polysomnography
  - 9.9.4. Multiple latency test en paediatrics

**Module 10. Sleep in other medical and social situations Sleep and health**

- 10.1. Sleep and cardiovascular health
- 10.2. Sleep and endocrine-metabolic changes Diet and sleep
- 10.3. Sleep and digestive changes
- 10.4. Sleep and pain
- 10.5. Sleep and cancer
- 10.6. Sleep in women Sleep at an older age
- 10.7. Sleep in special life situations
  - 10.7.1. Sleep in isolation and confinement
  - 10.7.2. Sleep in hospital patients
  - 10.7.3. Sleep at high altitude
  - 10.7.4. Sleep in aviation and outer space
- 10.8. Sleep and sport
- 10.9. Sleep and occupational and academic health
- 10.10. Sleep and legal aspects



*Expand your knowledge in Sleep Medicine in a comfortable way and adapted to your needs thanks to the 24-hour accessibility to the didactic resources offered by TECH"*

07

# Clinical Internship

Once the student has completed the theoretical period 100% online, they will enjoy a period of practical stay in a first level hospital center, where he/she will be integrated in a multidisciplinary team that will help him/her to perfect their competences in the area of diagnosis and treatment of sleep disorders.





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*TECH gives you the opportunity to do your clinical internship in one of the best hospitals”*

The practical phase of the Hybrid Master's Degree in Sleep Medicine consists of a 3-week stay in a first level hospital, from Monday to Friday with 8 consecutive hours of work with an associate specialist in this field. Through this healthcare experience, the physician will have an unbeatable opportunity to deal with real patients, applying the most up-to-date diagnostic and therapeutic procedures in this field of medicine.

In this practical stay, the activities are aimed at the development and improvement of the competencies necessary for the provision of health care in areas and conditions that require a high level of qualification, and are oriented to the specific training for the exercise of the activity, in an environment of safety for the patient and high professional performance.

This is, therefore, a great experience with which students will be able to perfect their skills in the treatment of sleep disorders through the development of their activity in a real environment, within a hospital center characterized by a high medical quality in the human and technological level.

The practical part will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of teachers and other fellow trainees that facilitate teamwork and multidisciplinary integration as transversal competencies for medical practice (learning to be and learning to relate).

The procedures described below will form the basis of the practical part of the





internship, and their implementation is subject to both the suitability of the patients and the availability of the center and its workload, with the proposed activities being as follows:

Module	Practical Activity
<b>Technical and organizational aspects of the diagnostic process</b>	Perform polysomnography test to detect the extent of a patient's sleep disorder
	Program the different diagnostic devices available to detect sleep disorders available to detect sleep disorders
	Coordinate the Sleep Unit in its different levels of care to ensure adequate service delivery to patients
<b>Insomnia and hypersomnias in adults</b>	Perform therapy based on the use of non-pharmacological treatments to help the patient overcome their sleep disorder
	Administer the most up-to-date drugs according to the latest scientific evidence for patients suffering from insomnia
	Treat, on an individualized basis, the different disorders caused by circadian alteration of the wake-sleep cycle
<b>Sleep-disordered breathing</b>	Approach to the treatment of hypoventilation-obesity syndrome in patients with different physical peculiarities
	Diagnosing SAHS by the Gold Standard Method
<b>Sleep-wake disorders in childhood</b>	Carry out early identification of a child's sleep disorder in order to optimize the evolution of his or her disease
	Develop a treatment for sleep disorders caused by diseases such as asthma or diabetes
	Diagnose and treat a sleep disorder caused by a neurodevelopmental problem in the pediatric patient

## Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.



## General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

**1. TUTOR:** During the Hybrid Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

**2. DURATION:** The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

**3. ABSENCE:** If the student does not show up on the start date of the Hybrid Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

**4. CERTIFICATION:** Professionals who pass the Hybrid Master's Degree will receive a certificate accrediting their stay at the center.

**5. EMPLOYMENT RELATIONSHIP:** the Hybrid Master's Degree shall not constitute an employment relationship of any kind.

**6. PRIOR EDUCATION:** Some centers may require a certificate of prior education for the Hybrid Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

**7. DOES NOT INCLUDE:** The Hybrid Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed.

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

08

# Where Can I Do the Clinical Internship?

For the internships of this Hybrid Master's Degree, TECH has chosen a wide range of hospitals where students can develop their skills, located in different geographical locations to preserve the comfort of each student.







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*Carry out your internship in a hospital center near your home”*



The student will be able to complete the practical part of this Hybrid Master's Degree at the following centers:



Medicine

### Hospital HM Modelo

Country	City
Spain	La Coruña

Address: Rúa Virrey Osorio, 30, 15011, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Anaesthesiology and Resuscitation
- Spine Surgery



Medicine

### Hospital HM Rosaleda

Country	City
Spain	La Coruña

Address: Rúa de Santiago León de Caracas, 1, 15701, Santiago de Compostela, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Hair Transplantation
- Orthodontics and Dentofacial Orthopedics



Medicine

### Hospital HM La Esperanza

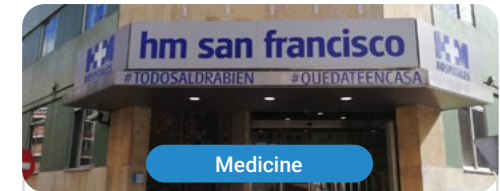
Country	City
Spain	La Coruña

Address: Av. das Burgas, 2, 15705, Santiago de Compostela, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Oncology Nursing
- Clinical Ophthalmology



Medicine

### Hospital HM San Francisco

Country	City
Spain	León

Address: C. Marqueses de San Isidro, 11, 24004, León

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Update in Anesthesiology and Resuscitation
- Nursing in the Traumatology Department



Medicine

### Hospital HM Regla

Country	City
Spain	León

Address: Calle Cardenal Landázuri, 2, 24003, León

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Psychiatric Treatments Update in Minor Patients



Medicine

### Hospital HM Nou Delfos

Country	City
Spain	Barcelona

Address: Avinguda de Vallcarca, 151, 08023, Barcelona

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Aesthetic Medicine
- Clinical Nutrition in Medicine



Medicine

### Hospital HM Madrid

Country	City
Spain	Madrid

Address: Pl. del Conde del Valle de Súchil, 16, 28015, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Clinical Analysis
- Anaesthesiology and Resuscitation



Medicine

### Hospital HM Montepíncipe

Country	City
Spain	Madrid

Address: Av. de Montepíncipe, 25, 28660, Boadilla del Monte, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Child Orthopedics
- Aesthetic Medicine



Medicine

### Hospital HM Torrelodones

Country: Spain City: Madrid

Address: Av. Castillo Olivares, s/n, 28250, Torrelodones, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**  
- Anaesthesiology and Resuscitation  
Hospital Pediatrics



Medicine

### Hospital HM Sanchinarro

Country: Spain City: Madrid

Address: Calle de Oña, 10, 28050, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**  
- Anaesthesiology and Resuscitation  
Sleep Medicine



Medicine

### Hospital HM Vallés

Country: Spain City: Madrid

Address: Calle Santiago, 14, 28801, Alcalá de Henares, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**  
- Gynecologic Oncology  
- Clinical Ophthalmology



Medicine

### HM CINAC Barcelona

Country: Spain City: Barcelona

Address: Avenida de Vallcarca, 151, 08023, Barcelona

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**  
Neurodegenerative Diseases  
Neurology Nursing



Medicine

### Policlínico HM Arapiles

Country: Spain City: Madrid

Address: C. de Arapiles, 8, 28015, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**  
- Anaesthesiology and Resuscitation  
- Pediatric Dentistry



Medicine

### Policlínico HM Cruz Verde

Country: Spain City: Madrid

Address: Plaza de la Cruz Verde, 1-3, 28807, Alcalá de Henares, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**  
- Advanced Clinical Podiatry  
- Optical Technologies and Clinical Optometry



Medicine

### Policlínico HM Virgen del Val

Country: Spain City: Madrid

Address: Calle de Zaragoza, 6, 28804, Alcalá de Henares, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**  
- Diagnosis in Physiotherapy  
- Physiotherapy in Early Care



Medicine

### Policlínico HM Imi Toledo

Country: Spain City: Toledo

Address: Av. de Irlanda, 21, 45005, Toledo

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**  
- Electrotherapy in Rehabilitation Medicine  
- Hair Transplantation

09

# Methodology

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

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



“

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

## At TECH we use the Case Method

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

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



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

“

*Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”*

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



## Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

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





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

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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



This program offers the best educational material, prepared with professionals in mind:



#### Study Material

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

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



#### Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



#### Interactive Summaries

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

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





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

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



#### Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



#### Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



#### Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



# 10 Certificate

The Hybrid Master's Degree in Sleep Medicine guarantees students, in addition to the most rigorous and up-to-date education, access to a Hybrid Master's Degree qualification issued by TECH Global University.



“

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

This program will allow you to obtain your **Hybrid Master's Degree diploma in Sleep Medicine** 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.

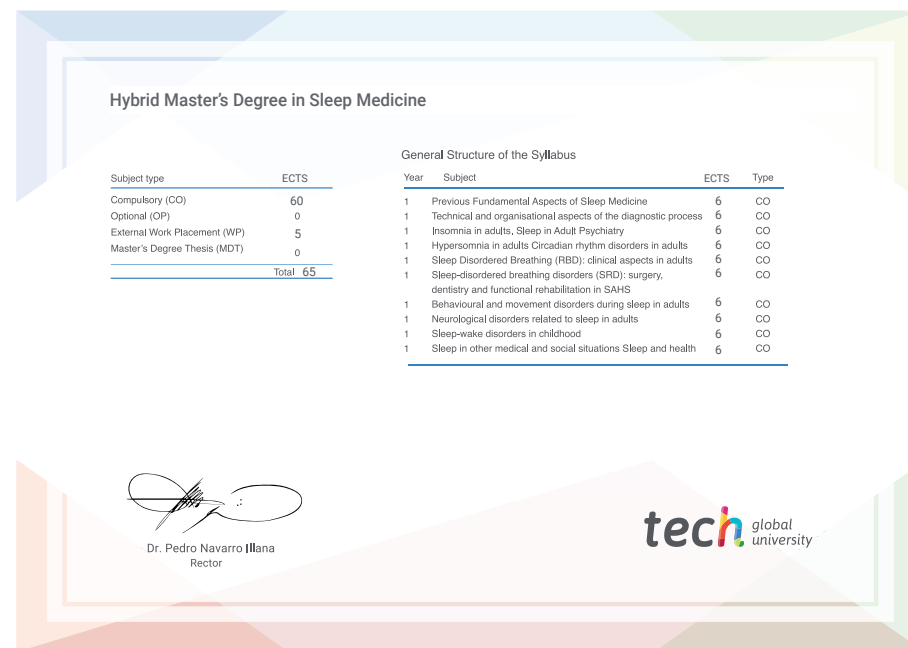
Title: **Hybrid Master's Degree in Sleep Medicine**

Course Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Certificate: **TECH Global University**

Recognition: **60 + 5 ECTS Credits**



\*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 innovation  
knowledge present quality  
development languages  
virtual classroom



**Hybrid Master's Degree**  
**Sleep Medicine**

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

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# Hybrid Master's Degree

## Sleep Medicine

