



Postgraduate Diploma

Neuro-Ophthalmology

» Modality: online

» Duration: 6 months

» Certificate: TECH Global University

» Credits: 18 ECTS

» Schedule: at your own pace

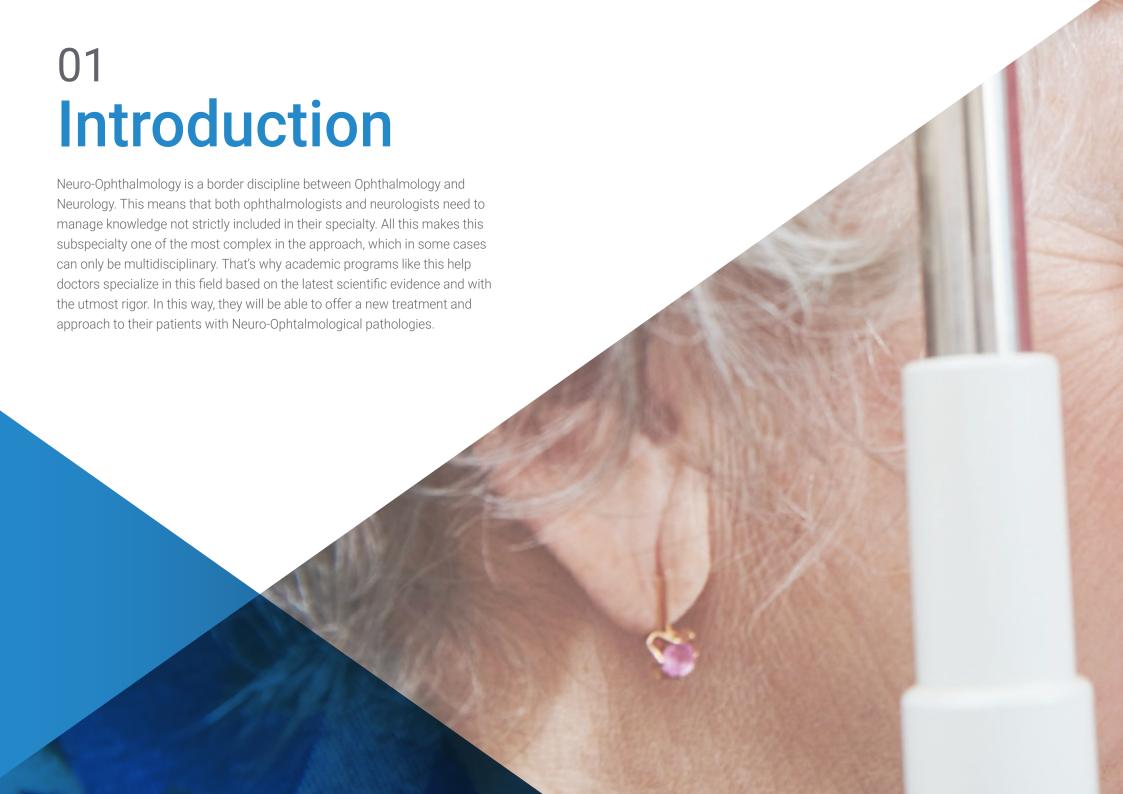
» Exams: online

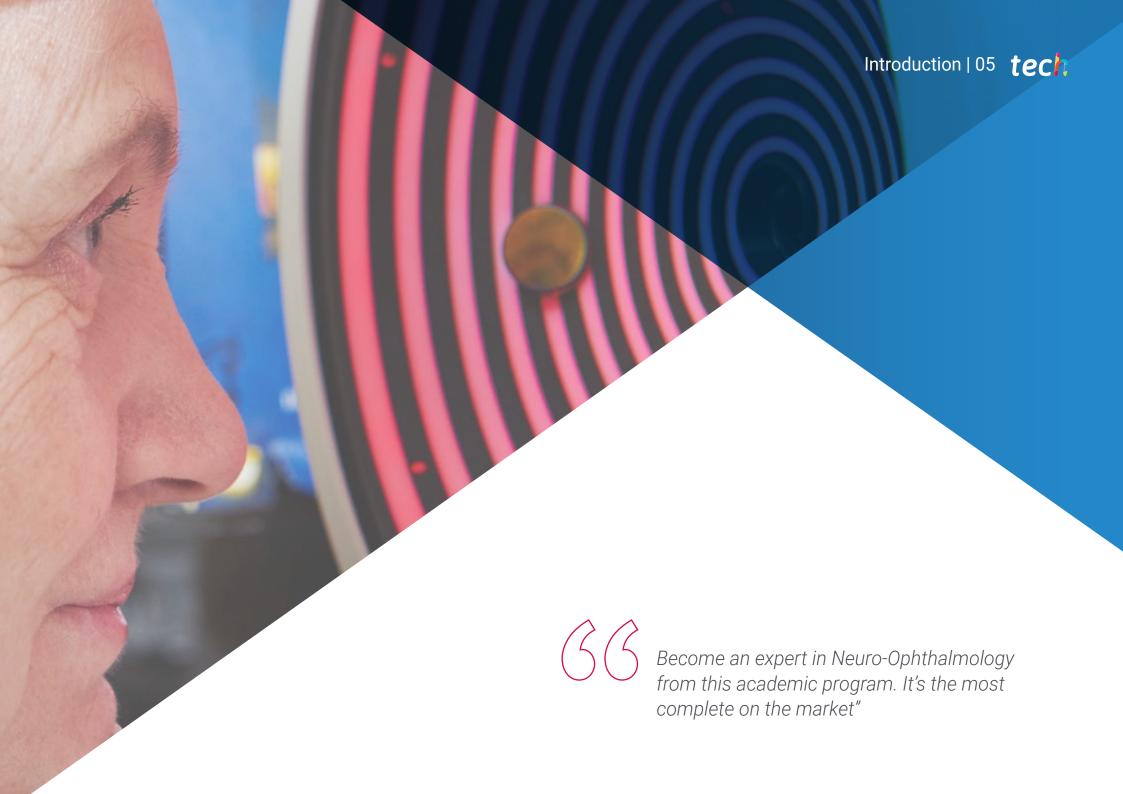
We bsite: www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-neuro-ophthalmology

Index

> 06 Certificate

> > p. 30





tech 06 | Introduction

The boundaries between Ophthalmology and Neurology are sometimes, blurred. Therefore, it is the Neuro-Ophthalmology that tries to define them through knowledge and treatment diseases that affect the optical pathway. This forces the professionals of both medical specialties to handle knowledge not strictly included in their field of study.

Thus, this Postgraduate Diploma is unique for offering professionals in both areas the possibility to expand and update their knowledge to correctly approach complex Neuro-Ophthalmological problems, which, in many cases, are potentially dangerous to patient's vision or even life. All this, based on the knowledge of a multidisciplinary faculty and the most effective and proven teaching methodology in the market.

On the other hand, the contents of this Postgraduate Diploma have been elaborated by ophthalmologists, neurologists and neurosurgeons, with the aim of enriching to the maximum the experience of the student. In this way, the professional will acquire diagnostic and therapeutic skills of the various Neuro-Ophthalmological pathologies known. It will also be able to make a correct diagnostic approach by knowing the proper use of the most innovative technologies.

This **Postgraduate Diploma in Neuro-Ophthalmology** contains the most complete and up to date educational program on the market. The most important features of the program include:

- Practical cases presented by experts in medicine
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where the self assessment process can be carried out to improve learning
- Its special emphasis on innovative methodologies
- 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



This Postgraduate Diploma has a first class teaching staff to help the student acquire novel and highly effective knowledge in their professional practice"



Study from an award winning and internationally recognized teaching methodology and start to see your professional future soar to another level"

The program includes, in its teaching staff, professionals from the sector who have the experience of their work in this training, in addition to renowned specialists from reference societies and prestigious universities.

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

This program is designed around Problem Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

Whether you are a neurologist or ophthalmologist, with this Postgraduate Diploma you can provide a novel vision to your patients with visual problems.

Because is taught completely online, the professionals can study wherever and whenever they want. No annoying displacements or waste of time.







tech 10 | Objectives



General Objectives

- Develop nuclear and infranuclear Neuro-Ophthalmological pathologies
- Train the student for the identification and treatment of Neuro-Ophthalmological pathologies with supranuclear origin
- Make known the pathologies associated with pupillary and optic nerve alterations



Achieve your professional goals by studying at a university that offers you the most complete and up to date academic tools on the market"







Specific Objectives

Module 1 Nuclear and Infranuclear Motility Disorders

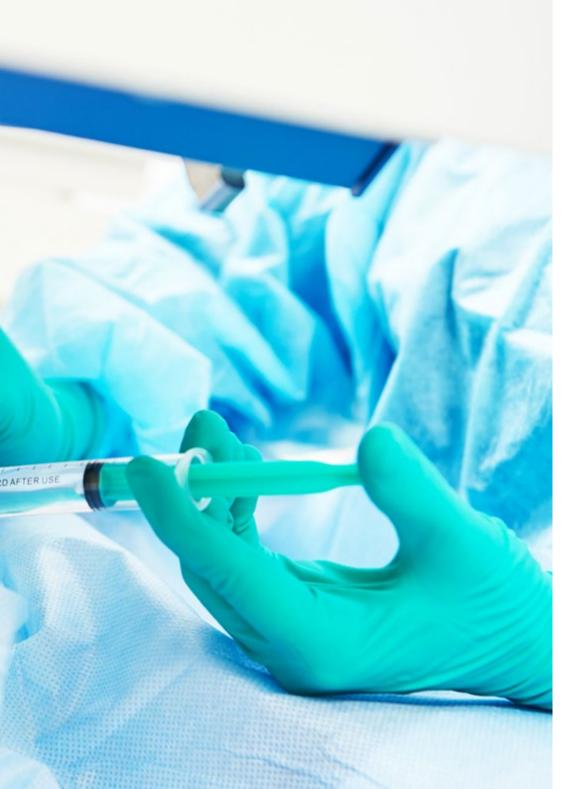
- Delve into the etiology, diagnosis and treatment of paralysis of oculomotor cranial pairs
- Delve into the characteristics of the affectations of pairs V and VII
- Perform a diagnostic and therapeutic approach to the different hyperkinetic facial disorders that may occur
- Facilitate in depth knowledge of myopathies with ophthalmological repercussions

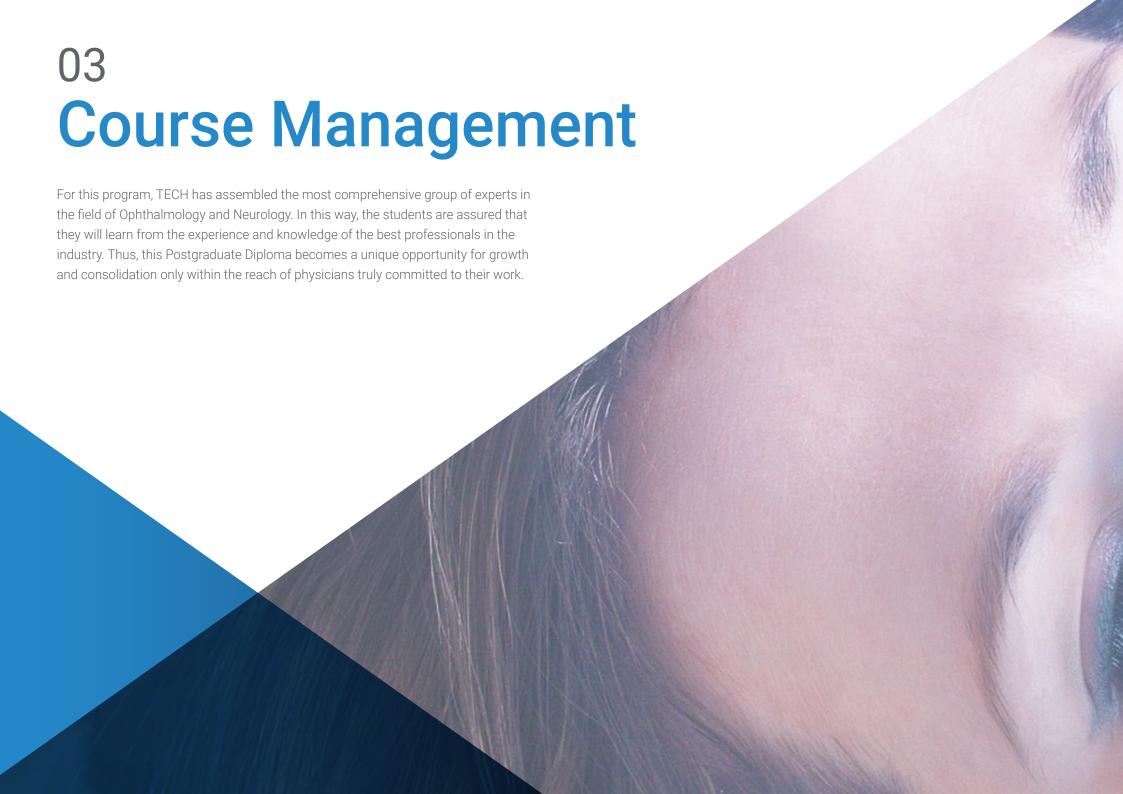
Module 2 Supranuclear Disorders of Motility. Nystagmus

- Learn oculomotor alterations originating in the brain stem from an anatomical and pathophysiological point of view
- Make known the cerebellar and vestibular origin alterations that produce Neuro-Ophthalmological alterations
- Develop the ophthalmological repercussions of certain complex neurological diseases such as phacomatosis, Parkinson's disease, etc.
- Train the student to diagnose and classify the different types of nystagmus and other oscillatory eye movements

Module 3 Pupils. Optic Nerve

- Define concepts of pupillary anisocoria and reactivity and associated neurological pathologies
- Develop pathologies of vascular, inflammatory, infiltrative and metabolic origin of the optic nerve
- Approach the visual impact of traumatic optic nerve damage







International Guest Director

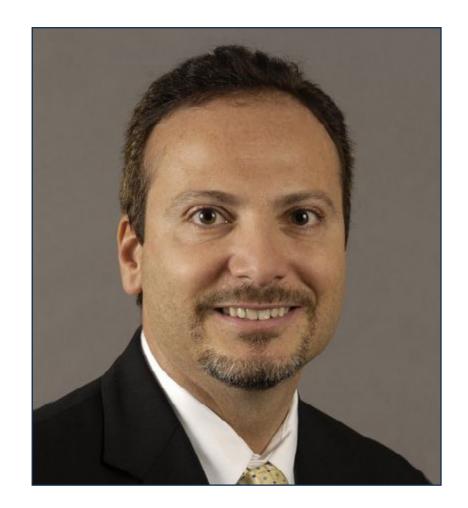
Doctor Dean Cestari is widely recognized for his dedication to the treatment of **Neuro-Ophthalmological Disorders, Strabismus and Diplopia**, which has made a significant difference in the lives of numerous patients. Therefore, I am one of only a few ophthalmologists around the world certified by the council in **Neurology** and **Opthalmology**, which underlines his deep knowledge in both disciplines.

With extensive experience as a Neuro-Ophthalmologist and Strabismus Surgeon, Cestaria has excelled in leading healthcare settings such as Mass Eye & Ear. Within this same institution, he also serves as Codirector of the Center for Thyroid Eye Disease and Orbital Surgery where he leads a team of experts committed to medical excellence.

In addition to his outstanding clinical department, he is a pioneer in the investigation of Optical Nerve Diseases and has dedicated a large part of his work to Ischemic Optical Neuropathy. In this sense, his tireless search for solutions has led to the evaluation of innovative neuroprotective agents to preserve and restore vision affected by Vascular Occlusion. Today, Doctor Cestari has developed as an outstanding Principal Investigator (PI) and Co-PI in multiple research projects and clinical trials. To this must be added the authorship of the first Case Book

of Cases Teaching Strabismus Surgery Using the Adjustable Suture Technique.

Moreover, Dean Cestari has played crucial roles in committees of renowned ophthalmological organizations. In addition, he combines his work as a clinician and researcher supervising and guiding future medical professionals, as Chairman of the Clinical Fellowship Committee and Director of the Neuro-Ophthalmology Fellowship Program at Mass Eye & Ear. In 2012, he was honored with an Achievement Award, given by the American Academy of Ophthalmology, a recognition of his outstanding contribution to Ophthalmology and scientific education.



Dr. Cestari, Dean

- · Adult Neuro-Ophthalmologist and Strabismus Surgeon at Mass Eye & Ear
- · Co-Director of the Center for Thyroid Eye Disease and Orbital Surgery at Mass Eye & Ear
- · Associate Professor of Ophthalmology at Mass Eye & Ear.
- · Co-Founder of *Total Direct* Care (Atención Directa Total)
- President of the Mass Eye & Ear Clinical Care Committee
- · Director of the Mass Eye & Ear in Neuro-Ophthalmology Care Programming
- · Harvard Medical School Catalyst Grant
- · Achievement Award (2012) from the American Academy of Ophthalmology
- Miembro de la Digital Media Committee of the American Academy of Ophthalmology y el Curriculum Development Committee of the North American



tech 16 | Course Management

Management



Dr. Luque Valentin-Fernández, María Luisa

- Head of the Ophthalmology Department of the El Escorial University Hospital, Madrid (HUEE)
- Professor of Ophthalmology, Francisco de Vitoria University, Madrio
- · Degree in Medicine and Surgery from the Autonomous University of Madrid
- · Specialist via MIR in Ophthalmology at the Gregorio Marañón University Hospital, Madrid
- · PhD in Medicine and Surgery from the Complutense University of Madrid
- · Master's Degree in Health Care Quality from the Rey Juan Carlos University of Madrid
- · Postgraduate Diploma in Design and Statistics in Health Sciences, Autonomous University of Barcelona
- President of the Continuing Education Commission of the HUEE hospital
- Head of Hospital Continuing Education HUEE
- HUEE Quality Coordinator

Professors

Dr. García Basterra, Ignacio

- Specialist in the Ophthalmology Department of the Clinical University Hospital Virgen de la Victoria in Málaga
- Head of the Adult Neuro-Ophthalmology and Strabismus Unit at the Clinical University Hospital Virgen de la Victoria in Málaga
- Doctor of Medicine and Surgery from the University of Málaga
- * Specialist via MIR in Neurology, Virgen de las Nieves University Hospital, Granada
- Degree in Medicine and Surgery from the University of Granada
- Specialist via MIR in Ophthalmology, Virgen de la Victoria University Hospital, Malaga
- Member of the Neuro-Ophthalmology group of the Andalusian Society of Ophthalmology

Dr. Cabrejas Martínez, Laura

- Ophthalmology Attending Physician. Section of pediatric ophthalmology, strabismus and neuro-ophthalmology. Jiménez Díaz Foundation Madrid
- Ophthalmology Attending Physician. Section of pediatric ophthalmology, strabismus and neuro-ophthalmology. Ruber Juan Bravo Hospital. Madrid
- * Associate Professor of Ophthalmology, Medical Degree. European University of Madrid
- Doctor of Medicine and Surgery from the University of Alcalá
- Degree in Medicine and Surgery. University of Salamanca
- Master's Degree in Clinical Ophthalmology. CEU. Cardenal Herrera University
- University expert in ocular pathologies and treatment, glaucoma and pediatric ocular pathology, ophthalmologic surgery, uveitis and retina. CEU Cardenal Herrera University
- * Specialist via MIR in Ophthalmology at the Ramón y Cajal University Hospital. Madrid

Dr. Fernández Jiménez-Ortiz, Héctor

- Ophthalmologist, strabismus and Neuro-Ophthalmology section at the University Hospital of Fuenlabrada and IMO of Fuenlabrada Madrid
- Reviewer of the journal Archives of the Spanish Society of Ophthalmology
- PhD in Medicine Cum Laude Mention from the Complutense University of Madrid
- Degree in Medicine from the Autonomous University Madrid
- Master's Degree in Clinical Management and Medical and Healthcare Management from Cardenal Herrera University
- University Specialist in Health Informatics and Telemedicine by the UNED

Dr. De las Rivas Ramírez, Nieves

- Graduate in Medicine and Surgery. University of Zaragoza
- Ophthalmology specialist at the Serranía de Ronda Hospital, Málaga
- Currently Studying a PhD at the University of Málaga
- Specialist in Ophthalmology. Regional University Hospital of Málaga

Dr. González Manrique, María del Mar

- Head of the Ophthalmology Department of the University Hospital of Móstoles
- * Attending Physician, Móstoles Hospital, Madrid, Spain
- * Assistant Physician, La Princesa University Hospital, Madrid, Spain
- Degree in Medicine and Surgery. Autonomous University of Madrid
- Medical Specialist in Ophthalmology. Ramón y Cajal University Hospital, Madrid
- * Research Sufficiency. University of Alcalá
- Master's Degree in Medical and Clinical Management UNED





tech 20 | Structure and Content

Module 1 Nuclear and Infranuclear Motility Disorders

- 1.1. Horner Syndrome
 - 1.1.1. Anatomical Bases and Pathophysiology of the Oculosympathetic Pathway
 - 1.1.2. Causes of Horner's Syndrome
 - 1.1.3. Clinical Findings
 - 1.1.4. Diagnosis
 - 1.1.5. Treatment
- 1.2. Paralysis of the III Pair
 - 1.2.1. Anatomical and Pathophysiology Bases
 - 1.2.2. Etiology
 - 1.2.3. Clinical Findings
 - 1.2.4. Aberrant Regeneration of the III Cranial Nerve
 - 1.2.5. Diagnosis
 - 1.2.6. Treatment
- 1.3. Paralysis of the IV Pair
 - 1.3.1. Anatomical and Pathophysiology Bases
 - 1.3.2. Etiology
 - 1.3.3. Clinical Findings
- 1.4. Paralysis of the VI Pair
 - 1.4.1. Anatomical and Pathophysiology Bases
 - 1.4.2. Etiology
 - 1.4.3. Clinical Findings
- 1.5. Paralysis of the VII Pair
 - 1.5.1. Anatomical and Pathophysiology Bases
 - 1.5.2. Etiology
 - 1.5.3. Clinical Findings
- 1.6. Treatment of Facial Paralysis
 - 1.6.1. Management of Facial Paralysis
 - 1.6.2. Prognosis
 - 1.6.3. New Treatments

- 1.7. Combined Paralysis of the cranial Nerves
 - 1.7.1. Keys in the Diagnosis of Multiple Cranial Nerve Pair Paralysis
 - 1.7.2. Most Common Causes of Multiple Cranial Nerve Pair Involvement
 - 1.7.3. Useful Complementary Tests and Diagnostic Algorithm
- 1.8. Other Neuropathies
 - 1.8.1. Hyperkinetic Facial Disorders
 - 1.8.2. Infectious and Immune-Mediated Neuropathies
 - 1.8.3. Trauma and Tumors
- 1.9. Myopathies I
 - 1.9.1. Myasthenia Gravis
 - 1.9.2. Pseudomyasthenic Syndromes
- 1.10. Myopathies II
 - 1.10.1. Chronic Progressive External Ophthalmoplegia
 - 1.10.2. Myotonic Dystrophy

Module 2 Supranuclear Disorders of Motility. Nystagmus

- 2.1. Anatomical Relationships. Paramedian Pontine Reticular Formation (PPRF) and Medial Longitudinal Fasciculus (MLF)
 - 2.1.1. Anatomical Constituents of the Supranuclear Eye Movement
 - 2.1.2. Functional Anatomy of Saccadic and Tracking Movements
 - 2.1.3. Functional Anatomy of Horizontal Versions
 - 2.1.4. Functional Anatomy of Vertical Versions
 - 2.1.5. Functional Anatomy of Convergence/Divergence
 - 2.1.6. Non-Optic or Vestibular Reflexes
- 2.2. Ophthalmological Manifestations in Pathology of the Trunk
 - 2.2.1. Horizontal Gaze Pathology
 - 2.2.2. Vertical Gaze Pathology
 - 2.2.3. Pathology of Convergence and Divergence
- 2.3. Ophthalmological Manifestations in Pathology of the Cerebellum
 - 2.3. 1 Localization of Lesions in the Cerebellum According to Ophthalmological Manifestations
 - 2.3. 2 Ophthalmological Manifestations in Cerebellar Vascular Pathology
 - 2.3. 3 Ophthalmological Manifestations in Cerebellar Developmental Pathology

- 2.4. Ophthalmological Manifestations in Pathology of the Vestibular System
 - 2.4.1. Ophthalmological Manifestations of Central Oculo-Vestibular Dysfunction
 - 2.4.2. Ophthalmological Manifestations of Peripheral Oculo-Vestibular Dysfunction
 - 2.4.3. Oblique Deflection (Skew)
- 2.5. Ophthalmological Manifestations in Degenerative Neurological and Other Diseases
 - 2.5.1. Parkinson's Disease
 - 2.5.2. Huntington's Disease
 - 2.5.3. Epilepsy
 - 2.5.4. Coma.
- 2.6. Phacomatosis
 - 2.6.1. Neurofibromatosis
 - 2.6.2. Tuberous Sclerosis
 - 2.6.3. Von-Hippel-Lindau Disease
- 2.7. Nystagmus
 - 2.7.1. Definition and Pathophysiology
 - 2.7.2. Classification
 - 2.7.3. Examination and Recording Methods
 - 2.7.4. Physiological Nystagmus
- 2.8. Nystagmus in Adults
 - 2.8.1. Vestibular Nystagmus
 - 2.8.2. Eccentric Gaze Nystagmus
 - 2.8.3. Acquired Pendular Nystagmus
 - 2.8.4. Treatment
- 2.9. Nystagmus in Childhood
 - 2.9.1. Sensory Nystagmus
 - 2.9.2. Idiopathic Motor Nystagmus
 - 2.9.3. Nystagmus due to Fusional Maldevelopment
 - 2.9.4. Other Childhood Nystagmus
 - 2.9.5. Diagnostic Protocol
 - 2.9.6. Treatment

- 2.10. Saccadic Intrusions and Oscillations
 - 2.10.1. Saccadic Intrusions
 - 2.10.2. Saccadic Oscillations
 - 2.10.3. Other Ocular Oscillations

Module 3 Pupils. Optic Nerve

- 3.1. Pupillary Assessment
 - 3.1.1. Importance of Proper Pupillary Assessment
 - 3.1.2. Pupillary Reflexes
 - 3.1.3. Accommodation and Convergence
- 3.2. Anisocoria
 - 3.2.1. Physiological Anisocoria
 - 3.2.2. Major Anisocoria in Darkness: Mechanical Anisocoria, Pharmacological Anisocoria, Horner's Syndrome
- 3.3. Greater Anisocoria in Light
 - 3.3.1. Introduction
 - 3.3.2. Iris Lesion
 - 3.3.3. Pharmacological Mydriasis
 - 3.3.4. Tonic Pupil
 - 3.3.5. III Cranial Nerve Paralysis
- 3.4. Alterations of Pupillary Reactivity
 - 3.4.1. Light-Near Dissociation
 - 3.4.2. Relative Afferent Pupillary Defect
 - 3.4.3. Argyll-Robertson Pupil
 - 3.4.4. Aberrant Regeneration
 - 8.4.5. Other Pupillary Alterations: Benign Episodic Mydriasis
- 3.5. Anatomy and Physiology of the Optic Nerve
 - 3.5.1 Anatomy and Physiology
 - 3.5.2 Intraocular and Intraorbital Optic Nerve
 - 3.5.3 Intracanalicular and Intracranial Optic Nerve
 - 3.5.4 Physiology

tech 22 | Structure and Content

- 3.6. Vascular Pathology of the Optic Nerve
 - 3.6. 1 Non-Arteritic Ischemic Optic Neuropathy
 - 3.6. 2 Arteritic Ischemic Optic Neuropathy
 - 3.6. 3 Other Ischemic Optic Neuropathies: Hypovolemia and Diabetic Papillopathy
- 3.7. Inflammatory Pathology of the Optic Nerve
 - 3.7. 1 Inflammatory Pathology of the Optic Nerve
 - 3.7. 2 Demyelinating Optic Nerve Pathology
 - 3.7. 3 Infectious Pathology of the Optic Nerve
 - 3.7. 4 Other Inflammatory Neuropathies: Perineuritis, Sarcoidosis and Autoimmune
- 3.8. Infiltrative and Compressive Pathology
 - 3.8.1. Tumor Pathology of the Optic Nerve
 - 3.8.2. Optic Nerve Metastases, Lymphoma and Leukemia
 - 3.8.3. Aneurysms and Compressive Bone Pathology of the Optic Canal
- 3.9. Metabolic and Nutritional Pathology
 - 3.9.1. Metabolic Neuropathies
 - 3.9.2. Nutritional Neuropathies
 - 3.9.3. Toxic Neuropathies
- 3.10. Traumatic Pathology
 - 3.10.1. Direct Trauma
 - 3.10.2. Indirect Trauma
 - 3.10.3. Clinical Management







Welcome to the best academic program in Neuro-Ophthalmology. You're just one step away from taking your career to the next level"





tech 26 | Methodology

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:

- 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.



Methodology | 29 tech

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.









tech 34 | Certificate

This program will allow you to obtain your **Postgraduate Diploma in Neuro-Ophthalmology** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

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

Title: Postgraduate Diploma in Neuro-Ophthalmology

Modality: online

Duration: 6 months

Accreditation: 18 ECTS



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

Postgraduate Diploma in Neuro-Ophthalmology

This is a program of 450 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024



^{*}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.

tech global university

Postgraduate Diploma Neuro-Ophthalmology

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

