

Postgraduate Diploma

Neuro-Ophthalmological Pathologies of the Central Nervous System





Postgraduate Diploma Neuro-Ophthalmological Pathologies of the Central Nervous System

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitute.com/in/medicine/postgraduate-diploma/postgraduate-diploma-neuro-ophthalmological-pathologies-central-nervous-system

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01

Introduction

During this program, the doctor will be able to delve into the different supranuclear pathologies that can affect eye motility, including nystagmus, and some neurological syndromes with ophthalmological repercussion. It will also approach, on the one hand, the Neuro-Ophthalmological manifestations of the recent COVID-19 disease and, on the other, the detailed study of headaches with ophthalmological repercussions. This in-depth review of Neuro-Ophthalmological diseases of the central nervous system will allow the student a remarkable improvement in their approach and in the treatment of patients.



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*Delve into the different Neuro-
Ophtalmological Pathologies of the
Central Nervous System and become
a much more trained doctor"*

This comprehensive academic program will train the physician for the correct approach and following the latest scientific evidence on the different Neuro-Ophthalmological Pathologies that take place in the Central Nervous System, which in many cases are potentially dangerous to patient's vision or even life.

To achieve the best academic results, the contents of this Postgraduate Diploma have been prepared by ophthalmologists, neurologists and neurosurgeons, with the aim of enriching the student's experience to the maximum. In this way, the professional will acquire diagnostic and therapeutic skills of the various Neuro-Ophthalmological pathologies known, including COVID-19. In this way, you will be able to make a correct diagnostic approach by knowing the proper use of the most innovative technologies.

On the other hand, during the course of the program a thorough review will be carried out on the so-called Nystagmus, a term used to call sudden rapid and involuntary eye movements that can be from one side to the other, or from top to bottom (vertical nystagmus). Thus, after completing the Postgraduate Diploma, the physician will be trained for the identification and treatment of Neuro-Ophthalmological pathologies with supranuclear origin.

This **Postgraduate Diploma in Neuro-Ophthalmological Pathologies of the Central Nervous System** contains the most complete and up-to-date scientific program on the market. The most important features 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



One of the aspects that make this program unique is the treatment of the sequelae produced by COVID-19 at the Neuro-Ophthalmological level"

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This program makes a complete review of the subspecialty of Neuro-Ophthalmology. Thus, the doctor will learn to treat and diagnose patients of all ages with this type of pathology”

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

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive 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.

TECH's proven teaching methodology will help you reach the top of your profession. Do not hesitate and come to study at this great university.

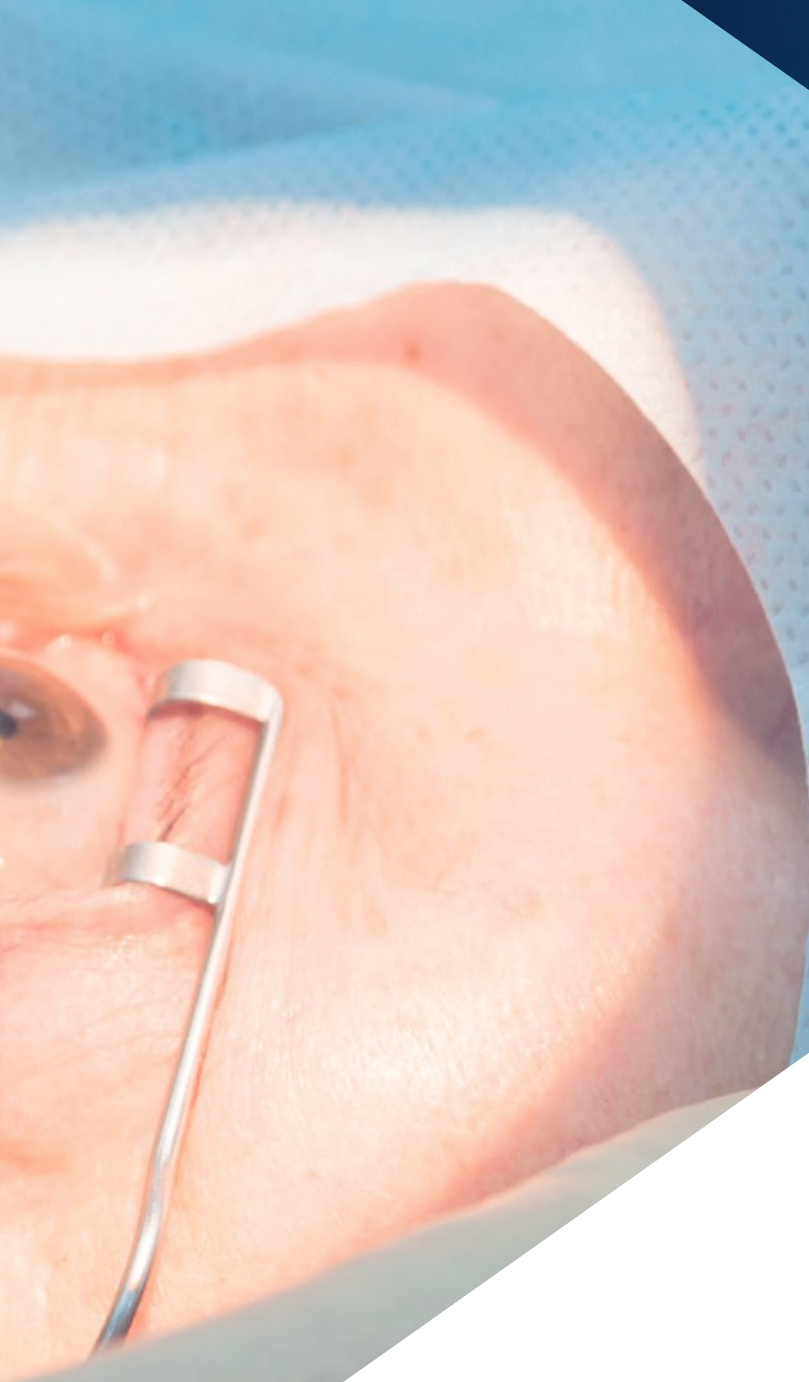
This Postgraduate Diploma is unique for offering the student advanced knowledge in the Neuro-Ophthalmological impact of the new disease COVID-19.



02 Objectives

One of the most ambitious objectives sought by this Postgraduate Diploma is that, after having passed the assessments it contemplates, the physician holds a set of diagnostic and therapeutic skills of the various Neuro-Ophthalmological pathologies known, including those produced after COVID-19. In this way, they will be able to perform a correct diagnostic approach through the knowledge of the appropriate use of technologies applied to professional practice. Therefore, the set of skills, tools and knowledge that the doctors will have after completing the program will enable them to practice, following the highest quality standards and in the most prestigious hospitals in the world.





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You are facing a great academic opportunity that will allow you to continue growing in a booming sector”

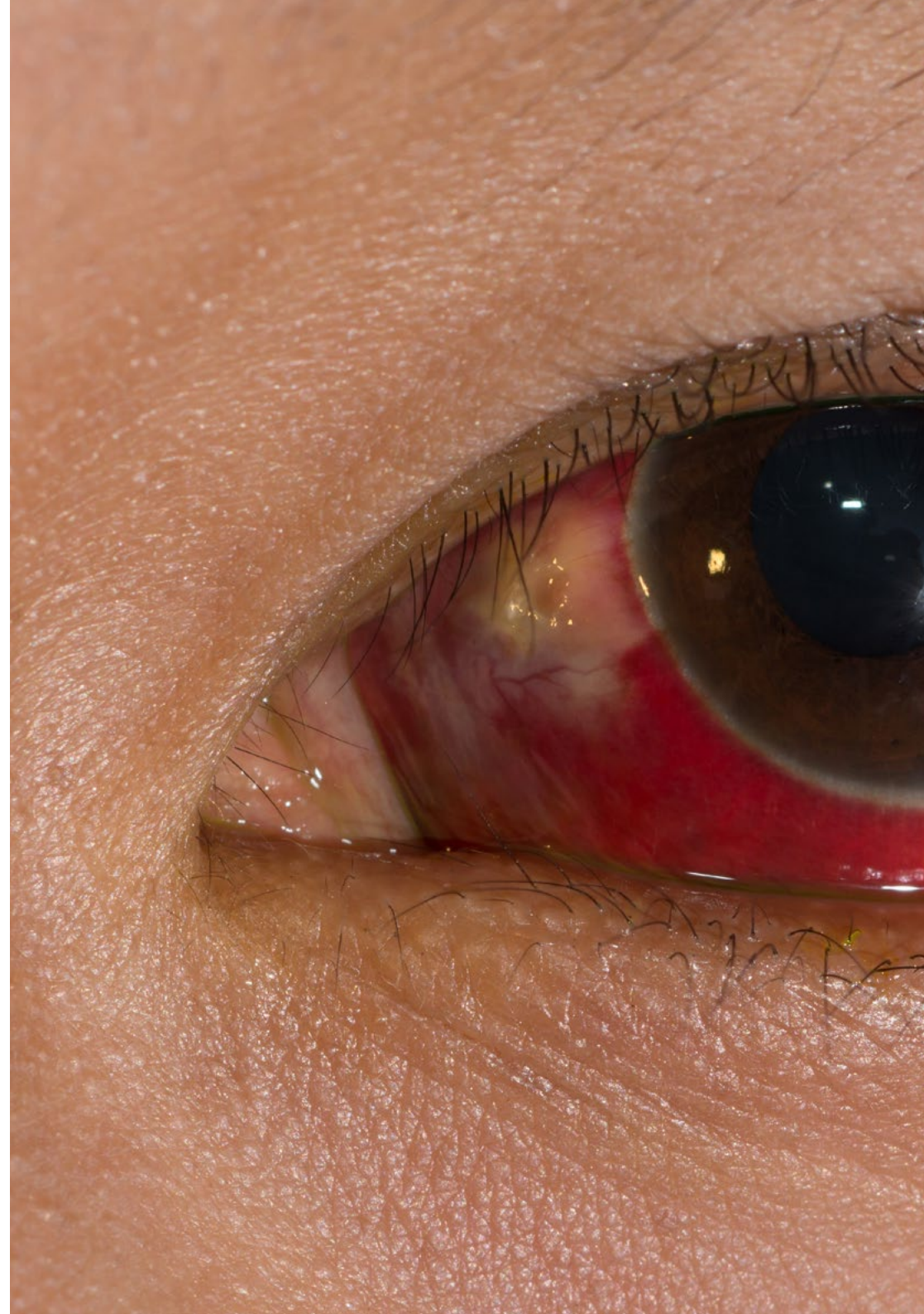


General Objectives

- Make known the pathologies associated with pupillary and optic nerve alterations
- Expand knowledge about COVID-19 and its impact on Neuro-Ophthalmology
- Delve into the different types of headaches with origin or eye symptoms
- Provide the necessary knowledge for the Neuro-Ophthalmologist on the primary alterations of ocular motility and its therapeutic options



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 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 2 Neuro-Ophthalmological manifestations of COVID-19. Headaches and Cranial Neuralgia

- ◆ List the Neuro-Ophthalmological alterations described so far in COVID patients
- ◆ Train the student for a correct diagnostic and therapeutic approach to headaches with ocular origin or symptomatology

Module 3 Vascular and Tumor Pathology

- ◆ Develop different vascular alterations with visual impairment
- ◆ Delve into the etiology, clinical and treatment of intracranial hypertension
- ◆ Approach the visual repercussion of different neoplasms of the visual pathway

03

Course Management

The contents and materials of this Postgraduate Diploma have been designed, devised and created by a group of subject matter experts with years of experience in the profession. These professionals, who make up the teaching staff of the program, will be responsible for teaching the student, from the latest evidence and with the maximum scientific rigor, the latest therapeutic approaches to Neuro-Ophthalmological Pathologies of the Central Nervous System.



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*Learning from the best in
the industry is a sure and
guaranteed future success"*

Management



Dr. Luque Valentín-Fernández, María Luisa

- Head of the Ophthalmology Service of the El Escorial University Hospital, Madrid (HUEE)
- Professor of Ophthalmology in the degree of Medicine at the Francisco de Vitoria University, Madrid
- Degree in Medicine and Surgery from the Autonomous University of Madrid
- MIR specialist in Ophthalmology from the Gregorio Marañón University Hospital, Madrid
- Doctor in Medicine and Surgery from the Complutense University of Madrid
- Master in Healthcare 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 HUEE Hospital Continuing Training Commission
- Responsible for Ongoing Hospital Training HUEE
- Quality Coordinator of HUEE

Professors

Dr. Celdrán Vivancos, Diego

- ♦ Head of the pediatric and adult neuro-ophthalmology section at IMO Grupo Miranza
- ♦ Optional Area Specialist in the Neuro-Ophthalmology section
- ♦ Bachelor of Medicine from the University of Murcia
- ♦ Doctoral candidate in Medicine and Surgery from the Autonomous University of Madrid: "Drusen of the optic nerve, complications and evolutionary comparison between children and adults". Tutored by: Dra. Susana Noval and Dra. Inés Contreras. Ongoing project
- ♦ Ophthalmo-genetics course, Hospital La Paz de Madrid
- ♦ Course on Retinoblastoma, Hospital La Paz in Madrid

Dr. Fernández Jiménez-Ortiz, Héctor

- ♦ Ophthalmologist, strabismus and neuro-ophthalmology section at the Hospital Universitario de Fuenlabrada and at IMO–Madrid
- ♦ Reviewer of the journal Archives of the Spanish Ophthalmology Society
- ♦ Doctor of Medicine Cum Laude mention from the Complutense University of Madrid
- ♦ Degree in Medicine from the Autonomous University of Madrid
- ♦ Master in Clinical Management and Medical and Assistance Direction from the Cardenal Herrera University
- ♦ University Specialist in Health Informatics and Telemedicine from UNED

Dr. Cabrejas Martínez, Laura

- ♦ Adjunct Doctor of Ophthalmology. Children's ophthalmology, strabismus and neuro-ophthalmology section. Jiménez Díaz Foundation. Madrid
- ♦ Adjunct Doctor of Ophthalmology. Children's ophthalmology, strabismus and neuro-ophthalmology section. Ruber Juan Bravo Hospital. Madrid
- ♦ Associate Professor of Ophthalmology of the Degree of Medicine. European University of Madrid
- ♦ Bachelor of Medicine and Surgery. University of Salamanca
- ♦ MIR specialist in Ophthalmology at the Ramón y Cajal University Hospital. Madrid
- ♦ Doctor of Medicine and Surgery from the University of Alcalá
- ♦ Bachelor of Medicine and Surgery. University of Salamanca
- ♦ Master in Clinical Ophthalmology. CEU. Cardenal Herrera University
- ♦ University expert in ocular pathologies and treatment, glaucoma and pediatric ocular pathology, ophthalmic surgery, uveitis and retina. CEU. Cardenal Herrera University
- ♦ MIR specialist in Ophthalmology at the Ramón y Cajal University Hospital. Madrid

Dr. Santos Bueso, Enrique

- ♦ Associate Professor of Ophthalmology at the Complutense University of Madrid
- ♦ Optional specialist in the area of the Ophthalmology service in the Neuro-ophthalmology Unit of the Hospital Clínico San Carlos de Madrid
- ♦ Associate Professor of Ophthalmology at the Complutense University of Madrid
- ♦ Bachelor of Medicine and Surgery from the University of Extremadura
- ♦ Doctor of Medicine from the University of Extremadura
- ♦ Specialist via MIR in Family and Community Medicine (Hospital Infanta Cristina de Badajoz) and in Ophthalmology (Hospital Clínico Universitario San Carlos de Madrid)

Dr. Díaz Otero, Fernando

- ♦ Specialist in the Neurology Service of the Hospital General Universitario Gregorio Marañón, Madrid
- ♦ Graduate in medicine and surgery. Autonomous University of Madrid
- ♦ Specialist in Neurology from the Gregorio Marañón University Hospital
- ♦ Master in Cerebrovascular Pathology from the Complutense University of Madrid

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 Service of the University Hospital of Móstoles
- ♦ Adjunct Physician of the Hospital de Móstoles, Madrid, Spain
- ♦ Adjunct Physician of the Hospital Universitario de La Princesa, Madrid, Spain
- ♦ Bachelor of Medicine and Surgery. Autonomous University of Madrid
- ♦ Ophthalmology specialist. Ramón y Cajal University Hospital, Madrid
- ♦ Research aptitude. University of Alcalá
- ♦ Master in Medical Management and Clinical Management. UNED

04

Structure and Content

The syllabus of this academic program has been created following the latest scientific developments in the field. Likewise, these contents are presented not only with a theoretical approach, but also practical to teach the students from real clinical cases that will teach them to carry out their profession with greater guarantees. This ensures that, after completing the Postgraduate Diploma, you will have acquired the necessary knowledge to work and approach Neuro-Ophthalmological Pathologies of the Central Nervous System in a more effective way.





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A syllabus of excellence, designed to meet the needs of the most demanding students and committed to their professional growth”

Module 1 Supranuclear Disorders of Motility, Nystagmus

- 1.1. Anatomical Relationships, Paramedian Pontine Reticular Formation (PPRF) and Medial Longitudinal Fasciculus (MLF)
 - 1.1.1. Anatomical Constituents of the Supranuclear Eye Movement
 - 1.1.2. Functional Anatomy of Saccadic and Tracking Movements
 - 1.1.3. Functional Anatomy of Horizontal Versions
 - 1.1.4. Functional Anatomy of Vertical Versions
 - 1.1.5. Functional Anatomy of Convergence/Divergence
 - 1.1.6. Non-Optic or Vestibular Reflexes
- 1.2. Ophthalmological Manifestations in Pathology of the Trunk
 - 1.2.1. Horizontal Gaze Pathology
 - 1.2.2. Vertical Gaze Pathology
 - 1.2.3. Pathology of Convergence and Divergence
- 1.3. Ophthalmological Manifestations in Pathology of the Cerebellum
 - 1.3.1. Localization of Lesions in the Cerebellum According to Ophthalmological Manifestations
 - 1.3.2. Ophthalmologic Manifestations in Cerebellar Vascular Pathology
 - 1.3.3. Ophthalmological Manifestations in Cerebellar Developmental Pathology
- 1.4. Ophthalmological Manifestations in Pathology of the Vestibular System
 - 1.4.1. Ophthalmological Manifestations of Central Oculo-Vestibular Dysfunction
 - 1.4.2. Ophthalmological Manifestations of Peripheral Oculo-Vestibular Dysfunction
 - 1.4.3. Oblique Deflection (Skew)
- 1.5. Ophthalmological Manifestations in Degenerative Neurological and Other Diseases
 - 1.5.1. Parkinson's Disease
 - 1.5.2. Huntington's Disease
 - 1.5.3. Epilepsy
 - 1.5.4. Coma.
- 1.6. Phacomatosis
 - 1.6.1. Neurofibromatosis
 - 1.6.2. Tuberous Sclerosis
 - 1.6.3. Von-Hippel-Lindau Disease

- 1.7. Nystagmus
 - 1.7.1. Definition and Pathophysiology
 - 1.7.2. Classification
 - 1.7.3. Examination and Recording Methods
 - 1.7.4. Physiological Nystagmus
- 1.8. Nystagmus in Adults
 - 1.8.1. Vestibular Nystagmus
 - 1.8.2. Eccentric Gaze Nystagmus
 - 1.8.3. Acquired Pendular Nystagmus
 - 1.8.4. Treatment
- 1.9. Nystagmus in Childhood
 - 1.9.1. Sensory Nystagmus
 - 1.9.2. Idiopathic Motor Nystagmus
 - 1.9.3. Nystagmus due to Fusional Maldevelopment
 - 1.9.4. Other Childhood Nystagmus
 - 1.9.5. Diagnostic Protocol
 - 1.9.6. Treatment
- 1.10. Saccadic Intrusions and Oscillations
 - 1.10.1. Saccadic Intrusions
 - 1.10.2. Saccadic Oscillations
 - 1.10.3. Other Ocular Oscillations

Module 2 Neuro-Ophthalmological manifestations of COVID-19. Headaches and Cranial Neuralgia

- 2.1. Neuro-Ophthalmological manifestations of COVID-19 I: Pathogenesis
 - 2.1.1. Characteristics of SARS-CoV-2
 - 2.1.2. Pathogenic Mechanisms
 - 2.1.3. Neurotropism and Autoimmunity
- 2.2. Neuro-Ophthalmological Manifestations of COVID-19 II: Neuropathies
- 2.3. Neuro-Ophthalmological Manifestations of COVID-19 III: Headache, Papillitis
- 2.4. Clinical Approach to Headache

- 2.5. Migraine with Aura
 - 2.5.1. Characteristics of Migraine
 - 2.5.2. Neuro-Ophthalmological Phenomena Associated to Migraine
- 2.6. Other Primary Headaches with Orbital Pain
- 2.7. Cranial Neuralgia and Neuropathies
- 2.8. Neuro-Ophthalmological Manifestations and Ocular Pain in Secondary Headaches
- 2.9. Diagnosis of Headaches
 - 2.9.1. Diagnostic Techniques
 - 2.9.2. Indications
 - 2.9.3. Referral Criteria
- 2.10. Treatment of Headaches
 - 2.10.1. Anesthetic Blocks
 - 2.10.2. Botulinum Toxin
 - 2.10.3. Neurostimulation

Module 3 Vascular and Tumor Pathology

- 3.1. Vascular Pathology I
 - 3.1.1. Aneurysms
 - 3.1.2. Arteriovenous Malformations
 - 3.1.3. Carotid-Cavernous Fistulas
- 3.2. Vascular Pathology II
 - 3.2.1. Temporal Arteritis
 - 3.2.2. Vasculitis
 - 3.2.3. Carotid Dissection
- 3.3. Visual Disturbances in Stroke
 - 3.3.1. Parietal Lobe Involvement
 - 3.3.2. Temporal Lobe Involvement
 - 3.3.3. Occipital Lobe Involvement
 - 3.3.4. Bihemispheric Syndromes
- 3.4. Optic Nerve Tumors I
 - 3.4.1. Meningioma

- 3.5. Optic Nerve Tumors II
 - 3.5.1. Glioma
- 3.6. Chiasm Pathology I
 - 3.6.1. Pituitary Tumors
- 3.7. Chiasm Pathology II
 - 3.7.1. Cysts
 - 3.7.2. Metastatic Diseases
 - 3.7.3. Sphenoidal Mucocele
 - 3.7.4. Trauma
 - 3.7.5. Empty Sella Syndrome
 - 3.7.6. Other Alterations
- 3.8. Suprasellar Neoplasms
 - 3.8.1. Craniopharyngioma
 - 3.8.2. Other Tumors of the Sellar and Suprasellar Region
- 3.9. Intracranial Hypertension
 - 3.9.1. Etiology
 - 3.9.2. Symptoms
 - 3.9.3. Signs
 - 3.9.4. Diagnosis
 - 3.9.5. Differential Diagnosis
- 3.10. Treatment of Intracranial Hypertension
 - 3.10.1. Weight Loss
 - 3.10.2. Medical Treatment
 - 3.10.3. Surgical Management
 - 3.10.4. Prognosis



A unique specialization program that will allow you to acquire advanced training in this field"

05

Methodology

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

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



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

At TECH we use the Case Method

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

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



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

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

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

1. Students who follow this method not only 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 Harvard case method with the best 100% online teaching methodology available: Relearning.

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



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

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

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

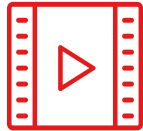
Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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

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



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



Study Material

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

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



Surgical Techniques and Procedures on Video

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



Interactive Summaries

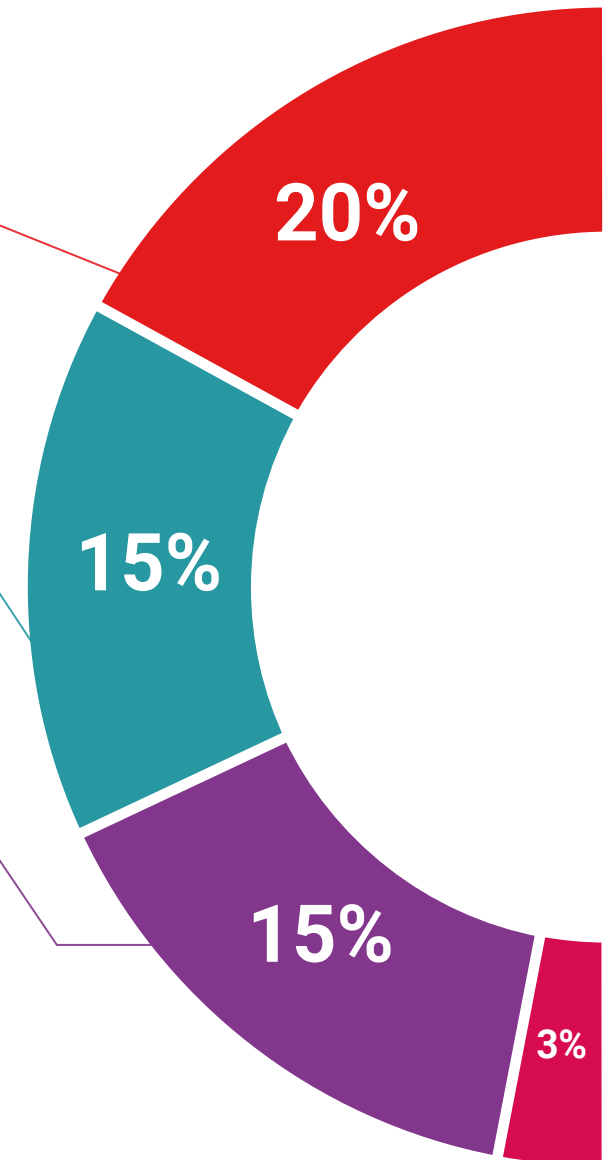
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

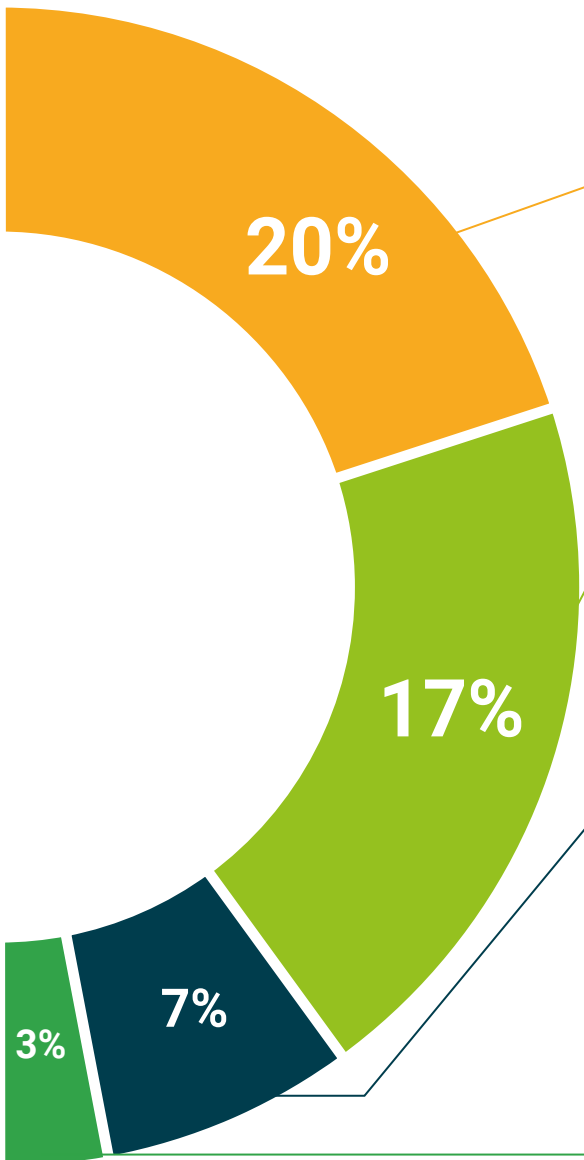
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

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





Expert-Led Case Studies and Case Analysis

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



Testing & Retesting

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



Classes

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



Quick Action Guides

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



06 Certificate

The Postgraduate Diploma in Neuro-Ophthalmological Pathologies of the Central Nervous System guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



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

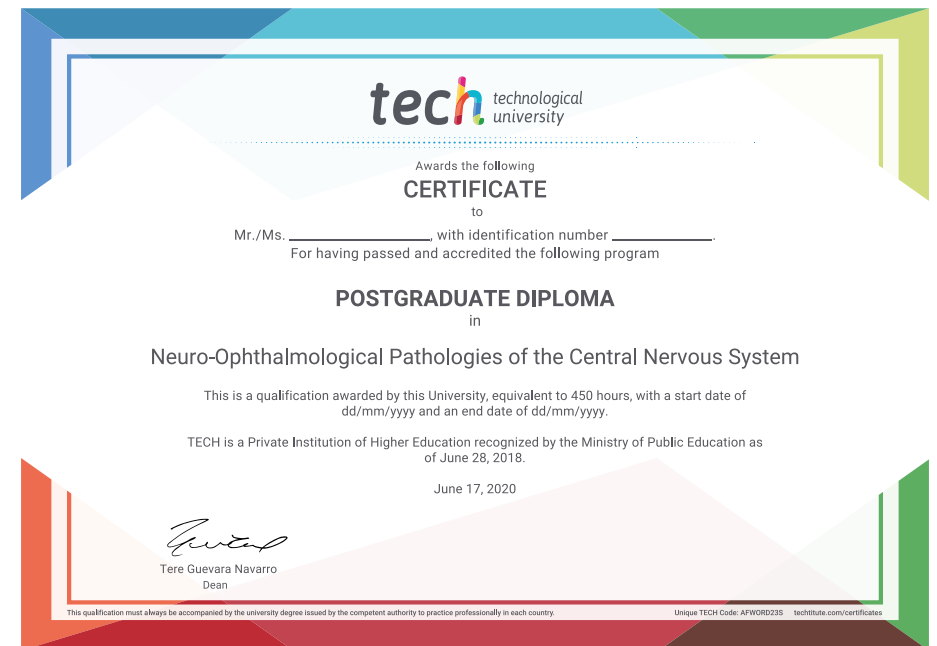
This **Postgraduate Diploma in Neuro-Ophthalmological Pathologies of the Central Nervous System** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by TECH Technological University will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Neuro-Ophthalmological Pathologies of the Central Nervous System**

Official N° of Hours: **450 h.**



*Apostille Convention. In the event that the student wishes to have their paper certificate issued, with an apostille, TECH EDUCATION 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
development language
virtual classroom



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Nervous System

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