Postgraduate Diploma
Small Animal Neurosurgery

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Postgraduate Diploma
Small Animal Neurosurgery

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

Website: www.techtitute.com/us/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-small-animal-neurosurgery

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01

Introduction

Occasionally, surgery is the treatment of choice in the approach to neurological pathologies. An extremely delicate and complex process that, in recent times, has benefited from the emergence of new tools that technology has developed, both diagnostically and in terms of the surgery itself. This program was created to comprehensively compile all these advances in this intervention, so that the veterinarian can acquire the knowledge required quickly, efficiently and safely, from the hand of great experts in this area of work.

A Postgraduate Diploma in Small Animal Neurosurgery that will become an educational tool of high impact and high qualification"

This Postgraduate Diploma addresses all those pathologies that require surgical intervention, emphasizing on the performance of the same, the different techniques and applications, the anesthesia and analgesia of the patient, as well as his recovery (rehabilitation).

Neurosurgery is a fundamental part of learning veterinary neurology, since a large number of processes must be treated and approached surgically for their correct evolution. Surgeries as frequent in this specialty as the resolution of herniated discs or vertebral dislocations are the day to day of this specialty, being familiar with the approaches, anatomy and surgical technique.

It is equally or even more important to plan the procedure and carry out the most appropriate anesthetic protocols for each case, knowing the pathophysiology of the disease and the most appropriate drugs and doses for each case.

In the postoperative period, it is essential to manage the patient's pain correctly. To this end, TECH has factored into this module a unit that deals in depth with physiotherapy and rehabilitation, fundamental therapies in neurological processes and in the good results of the cases.

Throughout the program, the different pathologies affecting the brain and the most common clinical signs that identify a localization at the level of the thalamus-cortex are examined. For this purpose, it is essential to identify exhaustively all the physiological mechanisms that allow a correct understanding of the functioning of the encephalon.

The different pathologies affecting the brain are presented divided by their etiology, with a focus on studying and analyzing inflammatory, toxic, vascular and traumatic processes.

It deals with the different neoplasms that occur in the brain, their diagnosis, the different types and their histopathological study. It also deals with congenital anomalies and their identification by means of different diagnostic tests.

Finally, it examines the different degenerative pathologies and primary and acquired metabolic diseases affecting the brain.

TECH also includes an in-depth analysis of all the pathologies that can affect the spinal cord. Myelopathies are a group of very frequent pathologies in the neurology office, being essential to know how to recognize their affectation, which segments are affected

This **Postgraduate Diploma in Small Animal Neurosurgery** offers you the characteristics of a program of high scientific, teaching and technological level. These are some of its most notable features:

- The latest technology in online teaching software
- A highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand
- Practical cases presented by practising experts
- State-of-the-art interactive video systems.
- Teaching supported by telepractice
- Continuous updating and recycling systems
- Autonomous learning: full compatibility with other occupations
- Practical exercises for self-evaluation and learning verification
- Support groups and educational synergies: questions to the expert, debate and knowledge forums.
- Communication with the teacher and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection
- Supplementary documentation databases are permanently available, even after the program

A study that includes knowledge of the anatomy and physiology of the nervous system, brain or spinal cord"

With the real experience of specialists in Small Animal Neurology who pour into this program their realistic and practical vision of veterinary intervention in this field"

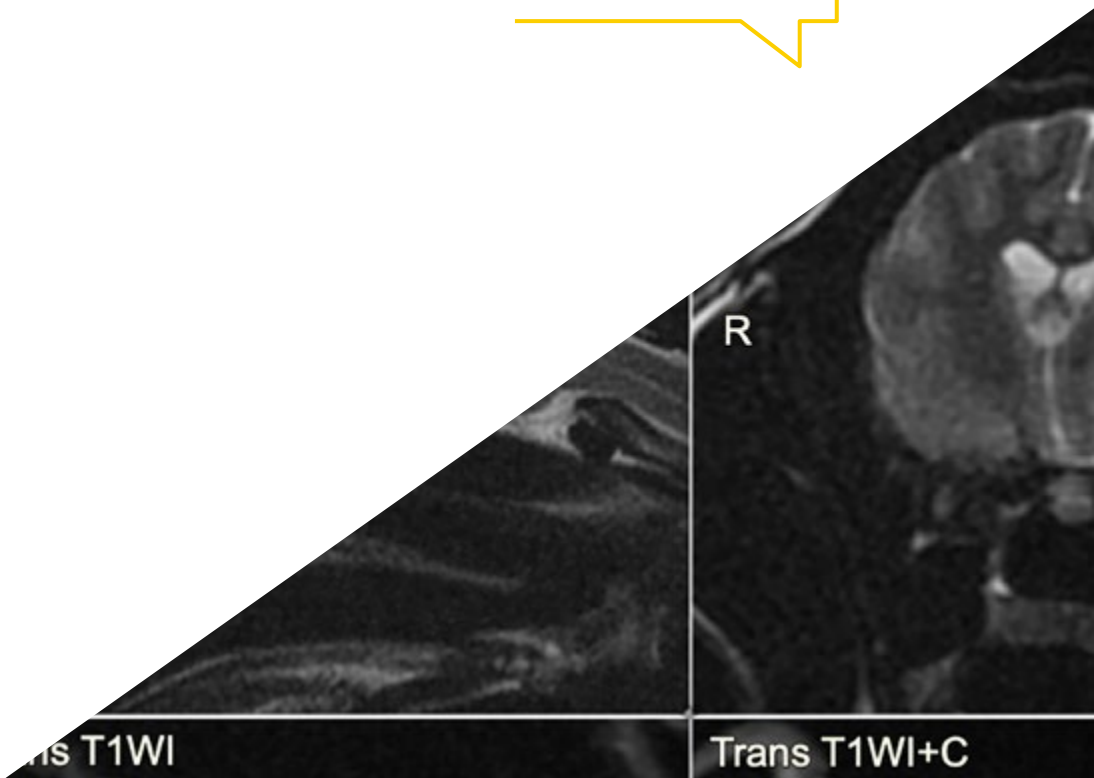
Advance your accuracy in the diagnosis and detection of congenital anomalies and other pathologies by incorporating the most useful practical advances in this field.

With the support of the most efficient audiovisual systems, the purpose of this program is for students to not only acquire specialized knowledge, but, upon completion, to have the working skills they will need in this field.

The topics and clinical cases proposed, as well as their resolution, are based on both the teachers' practical experience and on the latest advances in research and development that contribute to this field of work.

All knowledge is presented through high-quality multimedia content, analysis of clinical cases prepared by the professors, master classes and video techniques that allow knowledge and experience exchange, maintaining and updating the educational level of its members, creating protocols for action and disseminating the most important developments in emergencies in small animal medicine.

TECH's teaching staff is made up of professionals from different fields related to this specialty. This way, we ensure that we deliver the educational refresher course we are aiming for. Qualified and experienced multidisciplinary professionals in different environments, who will develop the theoretical knowledge in an efficient way, but, above all, will put at the service of the program the practical knowledge derived from their own experience: one of the differential qualities of this University Expert.



02

Objectives

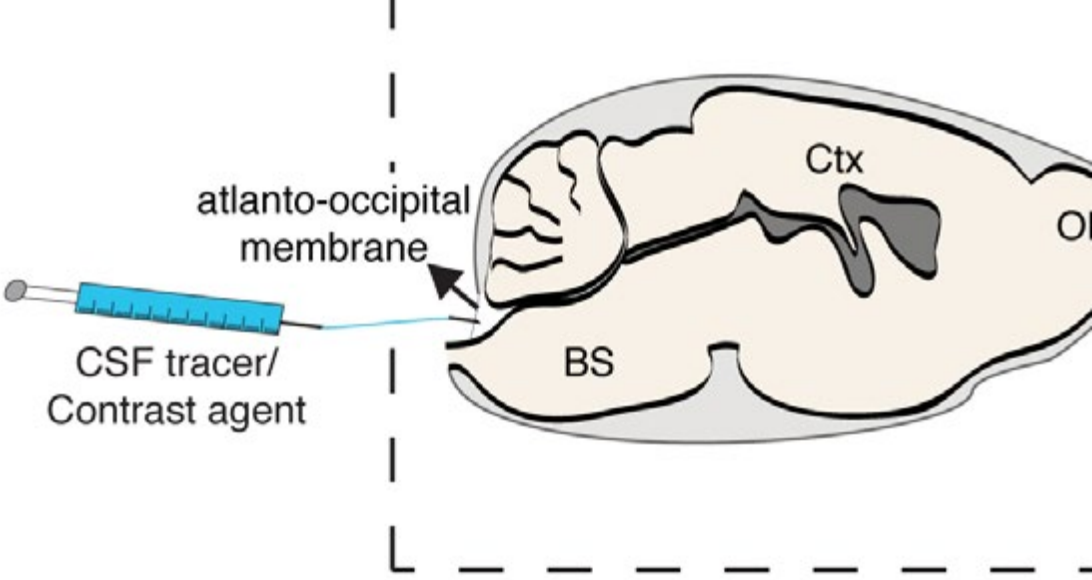
Acquire in a safe way, the most current knowledge in terms of scientific research and technological development in diagnostic techniques and intervention in neurological pathologies in small animals. The objective is for students to generate specialized knowledge, creating a well-structured basis to identify the clinical signs associated with each neurological location and to be able to establish a list of differential diagnoses, acting correctly to achieve the best possible prognosis in patients.

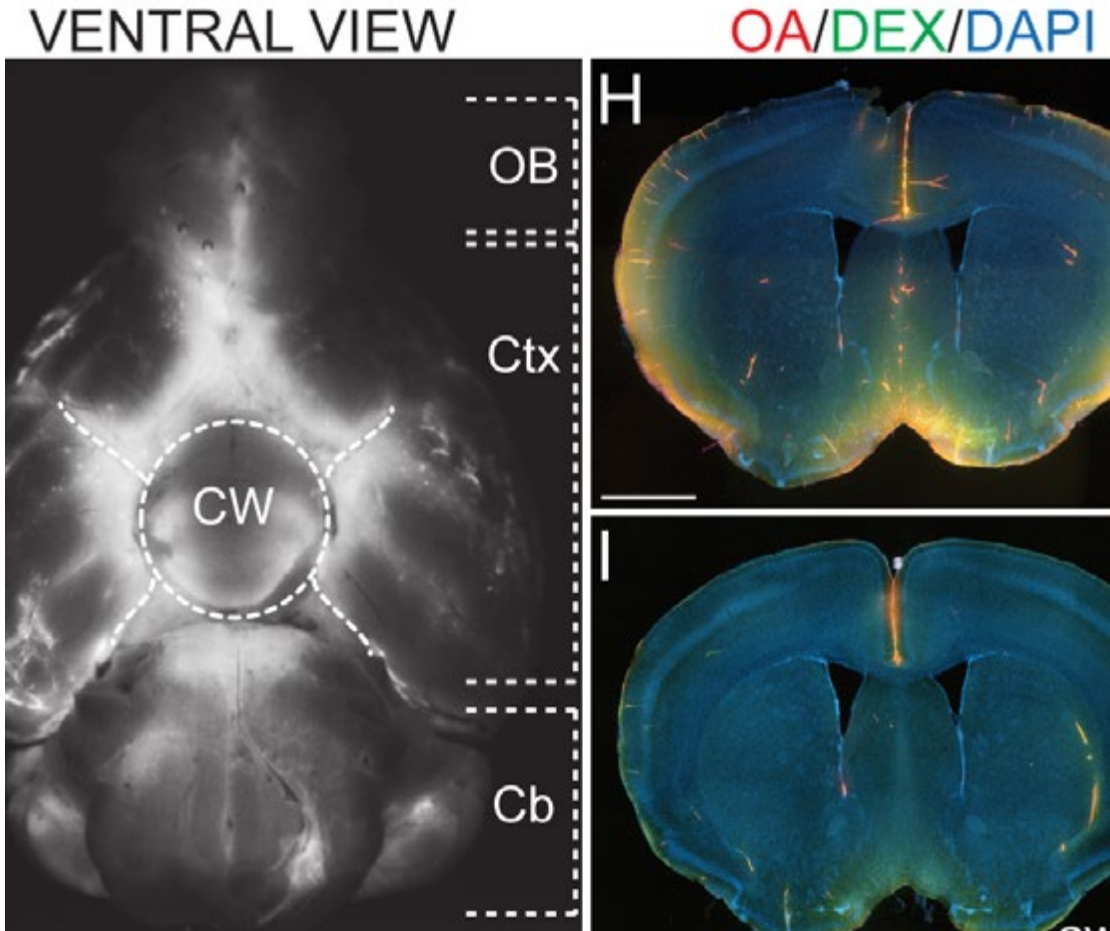
This Postgraduate Diploma will allow you to acquire the skills you need to intervene in Small Animal Neurosurgery, in the most frequent cases such as herniated discs or vertebral dislocations, and in others of varying complexity"

General Objectives

- Structure the different anesthetic protocols in neurosurgery.
- Identify the different pathologies that require surgical intervention, as well as their technique.
- Propose the appropriate analgesic management for each case.
- Define the fundamentals of rehabilitation, its indications and the most appropriate techniques for each case.
- Identify common clinical signs affecting the brain
- Analyze inflammatory and vascular diseases, various toxic, traumatic and metabolic diseases.
- Compile and classify the most common neoplasms of the brain.
- Reinforce concepts of localization and characteristic clinical signs of myelopathies.
- Define and present the different etiologies in myelopathies.
- Manage and treat the different types of herniated discs.
- Analyze the different diagnostic tests required and their interpretation for the different causes of spinal cord pathologies.

A skill that is increasingly in demand among veterinary professionals, which will propel you towards greater competitiveness in the job market"





Specific Objectives

Module 1. Anesthesia, Analgesia: Neurosurgery

- Define types and protocols of the different procedures in neurosurgery
- Determine the types and indications for analgesia in neurological patients
- Examine the basic principles of neurosurgery
- Address the techniques necessary to perform surgery for herniated discs, vertebral fractures and dislocations
- Present and discuss the concepts and techniques of intracranial surgery and oncologic surgery
- Structure correct physiotherapy plans for neurological patients

Module 2. Brain Pathologies

- Define, develop and classify vascular accidents affecting the brain
- Examine the different inflammatory and infectious pathologies affecting the brain
- Analyze and classify neoplasms of the brain
- Determine the different metabolic and degenerative diseases of the brain
- Present congenital anomalies and identify them
- Structure and define toxic diseases

Module 3. Spinal Cord Pathologies

- Determine the management of different therapeutics for various spinal cord pathologies.
- Develop vascular, inflammatory and infectious diseases of the spinal cord.
- Outline the management of spinal trauma
- Analyze metabolic and degenerative diseases of the spinal cord.
- Identify the different types of herniated discs and their management.
- Examine congenital anomalies affecting the spinal cord, pathogenesis and treatment of caudal cervical spondylomyelopathy and atlantoaxial dislocation.

A unique specialization program that will enable you to acquire superior training for development in this field"

03

Course Management

The veterinarians who will be the professors of this Postgraduate Diploma make up a teaching staff of the highest level, chosen for their proven experience in the field of small animal neurology; professionals from different areas and competencies that make up a complete multidisciplinary cast. A unique opportunity to learn from the best.

An extensive tour through the different neurological pathologies that the veterinarian may encounter in the practice, including those affecting the brain and spinal cord"

Director Invitado Internacional

Dr. Steven de Decker's interest in the field of Veterinary Neurology has led him to be one of the most important figures in this area worldwide. He has participated in several international congresses, including the Singapore Vet Show, the largest veterinary conference in the Asian continent.

Such is his relevance that he has become president of the British Society of Veterinary Neurology. He is also a senior lecturer and head of the Neurology and Neurosurgery service at the Royal Veterinary College, considered one of the best veterinary institutions in the world.

His main area of research is spinal disorders and neurosurgery, having delved into the diagnosis and treatment of cervical disc-associated spondylomyelopathy or Wobbler's syndrome in dogs. His most cited studies deal with the prevalence of thoracic vertebral malformations, meningoencephalomyelitis of unknown origin and spinal arachnoid diverticula in dogs.

Dr. De Decker, Steven

- Head of Neurology and Neurosurgery Service, Royal Veterinary College - Hertfordshire, United Kingdom
- Head and Professor of the Neurology and Neurosurgery Service of the Royal Veterinary College - Hertfordshire, UK
- Past President of the British Veterinary Neurological Society.
- Doctor of Veterinary Neurology and Neurosurgery, University of Ghent, Belgium
- Graduate of the University of Ghent, Belgium

Gracias a TECH podrás aprender con los mejores profesionales del mundo"

Management

Dr. Moya García, Sergio

- Doctoral candidate with the Chair of Surgery at the Faculty of Veterinary Medicine of Córdoba
- Miembro de Royal Collage Veterinary Surgeon (MRCVS)
- Member of the Endoscopy Group (GEA) of the Association of Veterinary Specialists in Small Animals (GEA-AVEPA) and of the Association of Veterinary Specialists in Minimally Invasive Medicine (AEVMI)
  and of the Neurology Group of AVEPA
- Vocal of Small Animals of the Official College of Veterinarians of Malaga since 2014
- Headof ATV training for AVEPA. Postgraduate in Neurology by the European School of Veterinary Studies Postgraduate (ESVP)
  Master's Degree in Clinical and Therapeutic Research from the University of Las Palmas de Gran Canaria
- Veterinary Specialist Degree in Endoscopy and Minimally Invasive Surgery by the University of Extremadura
- Assistance Director of the Vetersalud Dr. Moya Day Hospital and Head of the Neurology Department of the Bluecare Animal Hospital
- Currently pursuing neurology accreditation by AVEP

Professors

Dr. Maeso Ordás, Christian

- LV. PGCert Neuro. Degree in Veterinary Medicine from the University of Extremadura (2011)
- 2020, he joined Anicura Ars Veterinaria as a clinical veterinarian in the Neurology Service
- General veterinarian for three years in different veterinary clinics nationwide
- Two general internships at the Rof Codina Veterinary Hospitals in Lugo (University of Santiago
  de Compostela) and Ars Veterinaria (Barcelona) in 2013 and 2015 respectively.
- 2016: a specialty internship in Neurology and Neurosurgery at the Anicura Valencia Sur Veterinary Hospital
- ECVN European Residency in 2017 at Ars Veterinaria
- He has attended multiple national and international courses and congresses in the specialty of Neurology
- Dr. Blasco has published in national and international journals and congresses. Training in different European reference veterinary hospitals (United Kingdom, Italy).
- Member of veterinary associations such as AVEPA and ESVN. He focuses his current interest within the field of neurology on neuromuscular diseases, epilepsy, as well as neurosurgery

Dr. Ródenas González, Sergio

- Graduated from the Veterinary University of Cáceres (Uex), he did an internship in the Surgery Department of the same faculty
- Doctorate in Neurology at the Veterinary Faculty of Maisons Alfor;
- Stays in American Universities and European reference centers in Neurology and Neurology services (University of Davis California, Pennsylvania, Guelph (OVC), Animal Health Trust, etc).
- ECVN Diplomate and European specialist in veterinary neurology
- 2 years in a referral center in England (SCVS) in the Neurology and Neurosurgery Department.
- One year clinical instructor in Neurology and Neurosurgery at the Faculty of Veterinary Medicine of the University of Montreal (Canada)
- In Canada, responsible for Neurology and Neurosurgery in two referral centers while continuing his work in England for two years
- Numerous national and international publications, as well as speaker at numerous international congresses on veterinary neurology and neurosurgery

Dr. Mangas Ballester, Teresa

- Degree in Veterinary Medicine from the University of Extremadura (2009).
- Since 2017 she has been working as Head of the Anesthesia Service at AniCura Valencia Sur Veterinary Hospital.
- Subsequently, she worked as a resident intern at the Veterinary Clinic Hospital Complutense University for 3 years.
- In 2015 she began working at the Jesús Usón Minimally Invasive Surgery Center as a researcher in the Anesthesiology Unit.
- There, in addition to participating as a professor in the official university Master's Degree in endoscopy and minimally invasive surgery in small animals and courses in small animal anesthesia, she participated in several research projects.
- During his professional career, he has made stays in hospitals in Europe and North America, as well as participating in several publications and communications in congresses.

04

Structure and Content

The development of the Postgraduate Diploma has been carried out according to the educational efficiency criteria offered by TECH. Through a comprehensive and detailed syllabus, you will cover all the essential subject areas, gradually acquiring the necessary skills to put the necessary knowledge into practice. A well-developed learning scheme that will allow you to learn in a continuous, efficient and customized way.

A high intensity teaching program, structured in didactic units of great impact, oriented to a constant and efficient learning that will allow you to organize your time and effort by yourself"

Module 1. Anesthesia, Analgesia. Neurosurgery

1.1. Anesthesia in Neurological Patients
- 1.1.1. Types of Anesthetic Agents
- 1.1.2. Protocols of the Different Procedures

1.2. Analgesia in Neurological Patients
- 1.2.1. Types
- 1.2.2. Indications

1.3. Neurosurgery
- 1.3.1. Patient Preparation
- 1.3.2. Material

1.4. Herniated Cervical Disc
- 1.4.1. Surgical Approach and Technique

1.5. Thoracolumbar Disc Herniation
- 1.5.1. Approach and Surgical Techniques

1.6. Atlantoaxial Dislocation and Caudal Cervical Spondylomyelopathy
- 1.6.1. Atlantoaxial Dislocation. Surgical Approach and Technique
- 1.6.2. Caudal Cervical Spondylomyelopathy. Surgical Approach and Technique

1.7. Fractures, Vertebral Dislocations, Vertebral Diverticulum and Vertebral Malformations
- 1.7.1. Vertebral Fractures, Surgical Approach and Resolution
- 1.7.2. Vertebral Dislocations, Surgical Approach and Resolution
- 1.7.3. Arachnoid Diverticulum, Surgical Approach and Resolution
- 1.7.4. Vertebral Malformations, Types and Medical Management

1.8. Principles of Intracranial Surgery
- 1.8.1. Indications
- 1.8.2. Approach
- 1.8.3. Surgical Technique

1.9. Surgery in Spinal and Intracranial Neoplasia
- 1.9.1. Approach
- 1.9.2. Surgical Technique

1.10. Rehabilitation
- 1.10.1. Practical Application in Neurological Patients
- 1.10.2. Kinesiotherapy
- 1.10.3. Laser Therapy
- 1.10.4. Hydrotherapy
- 1.10.5. Electrostimulation

Module 2. Brain Pathologies

2.1. Basic Location
- 2.1.1. Mental Status Disorders

2.2. Vascular Diseases
- 2.2 1. Types
- 2.2.2. Pathogenesis

2.3. Inflammatory and Infectious Diseases of the Brain
- 2.3.1. Types
- 2.3.2. Pathophysiology

2.4. Traumatic Diseases
- 2.4.1. Types
- 2.4.2. Pathophysiology

2.5. Congenital Brain Abnormalities
- 2.5.1. Types
- 2.5.2. Pathophysiology

2.6. Metabolic Acquired Diseases
- 2.6.1. Types
- 2.6.2. Pathophysiology

2.7. Primary Metabolic Diseases (Organic Acidurias, Mitochondrial)
- 2.7.1. Types
- 2.7.2. Pathophysiology

2.8. Brain Tumors
- 2.8.1. Types
- 2.8.1. Histopathology
- 2.8.2. Prognosis

2.9. Degenerative Diseases
- 2.9.1. Types and Clinical Signs

2.10. Toxic Diseases
- 2.10.1. Types and Clinical Signs

Module 3. Spinal Cord Pathologies

3.1. Basic Localization, Gait Disorders, Spinal Shock
- 3.1.1. Clinical Signs Depending on Localization
- 3.1.2. Spinal Shock and Schiff Sherrington

3.2. Vascular Diseases of the Spinal Cord
- 3.2.1. Fibrocartilaginous Embolism
- 3.2.2. Myelopathies due to Hemorrhage or Bleeding

3.3. Inflammatory Diseases
- 3.3.1. Meningomyelitis Granulomatosa
- 3.3.2. Steroid-Responsive Meningitis-Arteritis

3.4. Infectious Diseases
- 3.4.1. Viral Diseases
- 3.4.2. Bacterial Diseases
- 3.4.3. Protozoan Diseases
- 3.4.4. Fungal Diseases

3.5. Spinal Trauma
- 3.5.1. Important Aspects
- 3.5.2. Pathophysiology
- 3.5.3. Congenital Anomalies of the Spinal Cord
  - 3.5.3.1. Hemivertebra
  - 3.5.3.2. Arachnoid Diverticula and other Congenital Diseases

3.6. Metabolic Diseases
- 3.6.1. Primary
- 3.6.2. Acquired

3.7. Spinal Cord Neoplasms
- 3.7.1. Types of Neoplasia

3.8. Degenerative Myelopathy and other Degenerative Abnormalities
- 3.8.1. Degenerative Myelopathy
- 3.8.2. Other Degenerative Abnormalities

3.9. Herniated Disc
- 3.9.1. Hansen I
- 3.9.2. Hansen II
- 3.9.3. ANNPE, HNPE

3.10. Cervical Spondylomyelopathy and Atlantoaxial Dislocation
- 3.10.1. Etiology
- 3.10.2. Pathogenesis and Clinical Signs

05

Methodology

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

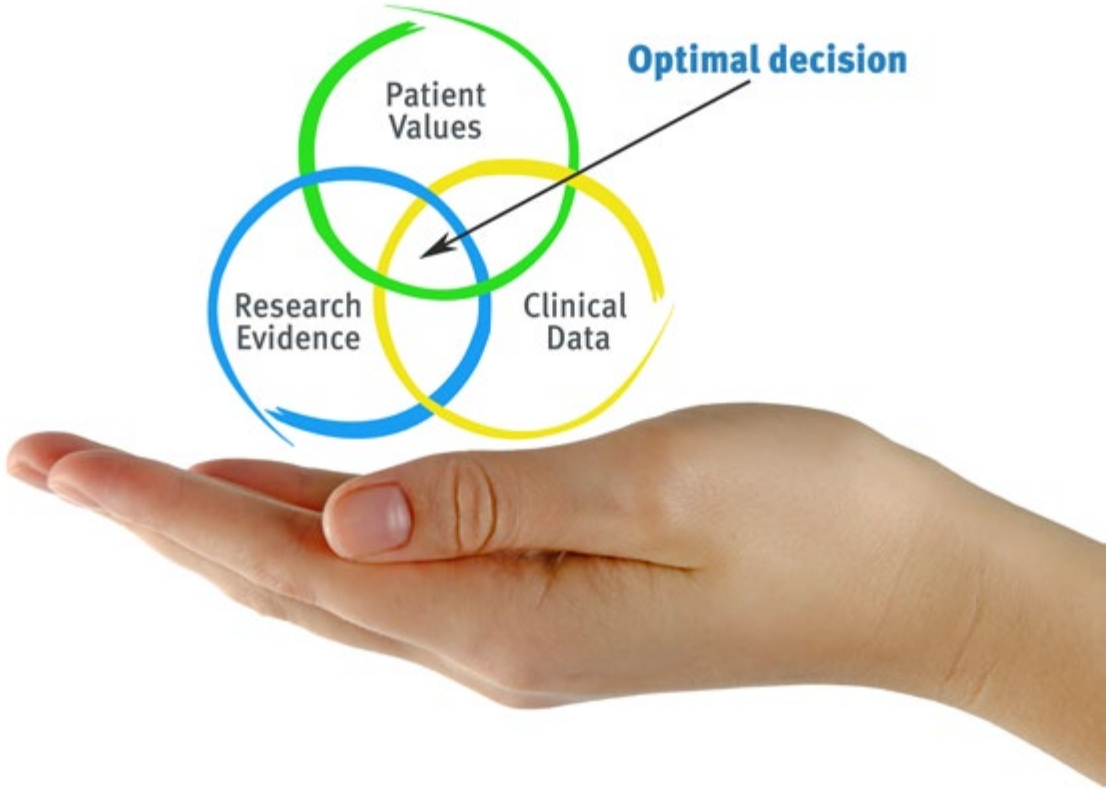
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the ***New England Journal of Medicine*** have considered it to be one of the most effective.

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 you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, 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, in an attempt to recreate the actual conditions in a veterinarian'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:

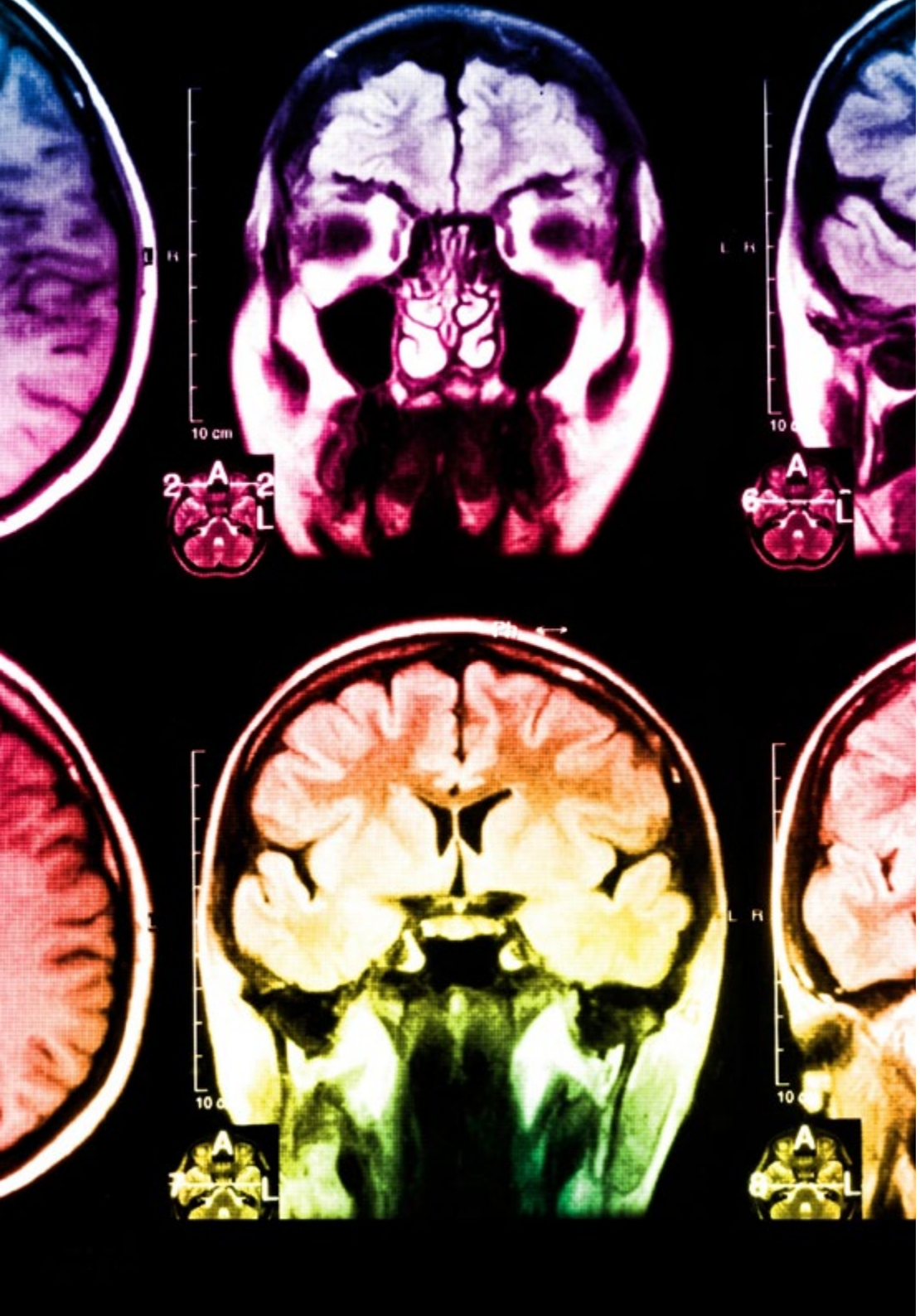
1. Veterinarians who follow this method not only manage to assimilate concepts, but also develop their mental capacity through exercises to evaluate real situations and knowledge application
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real 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 program.

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.

Veterinarians 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 65,000 veterinarians have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. Our teaching method is developed in a highly demanding environment, where students have a high socio-economic profile and an average age of 43.5.

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

Latest Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current and procedures of veterinary 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.

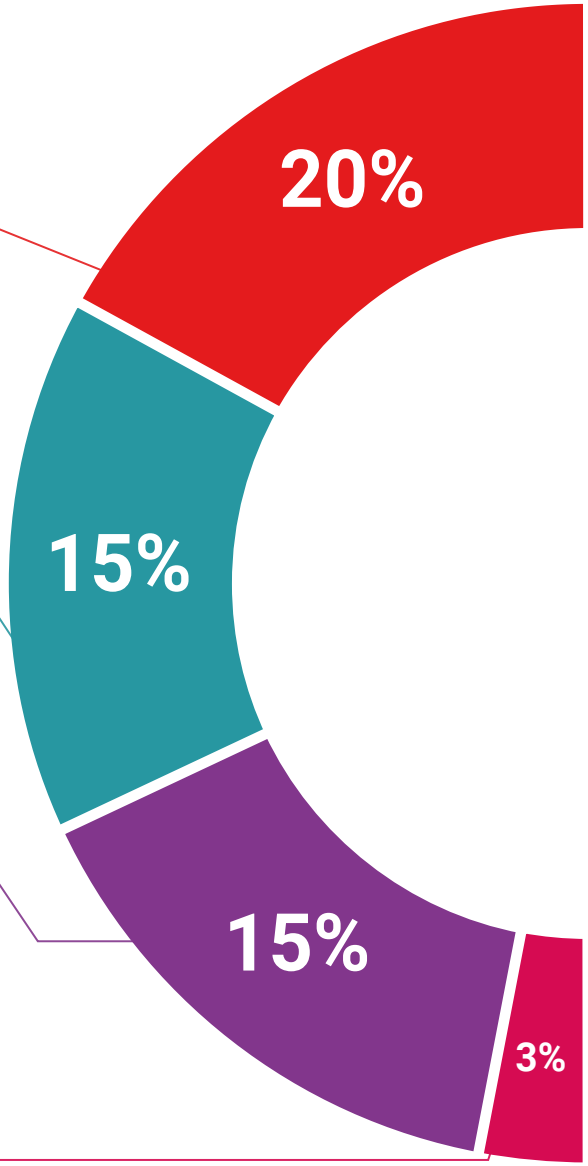
Interactive Summaries

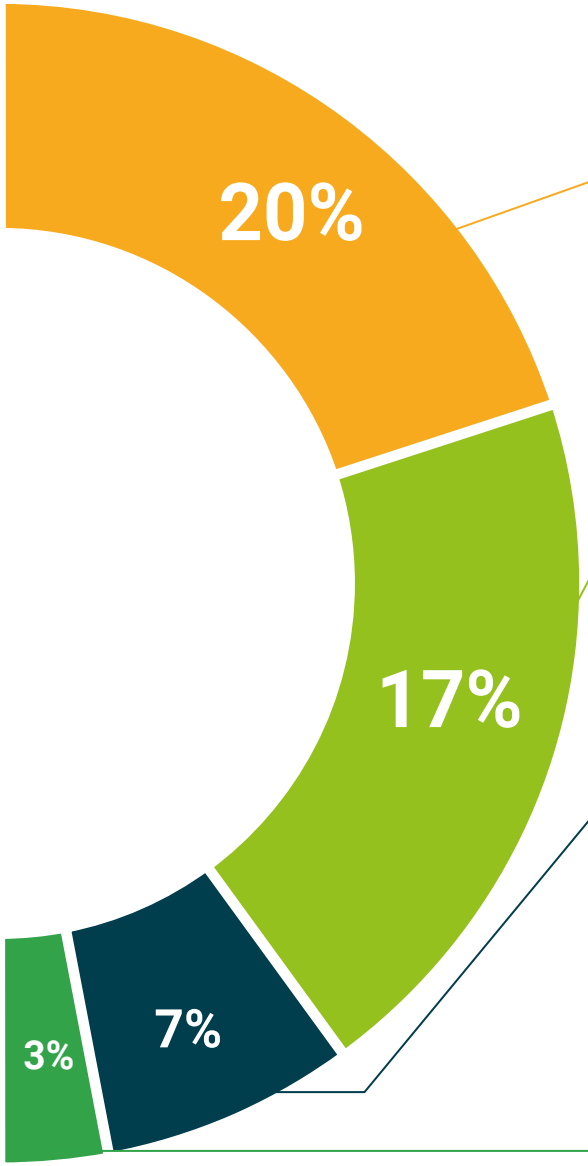
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 suggesting that observing third-party experts can be useful.

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 Small Animal Neurosurgery guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.

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

This **Postgraduate Diploma in Small Animal Neurosurgery** contains the most complete and up-to-date scientific program on the market.

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

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

Title: **Postgraduate Diploma in Small Animal Neurosurgery**

Official Nº of Hours: **450 hours.**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C. _____, con documento de identificación nº_____

Por haber superado con éxito y acreditado el programa de

EXPERTO UNIVERSITARIO

en

Neurocirugía de Pequeños Animales

Se trata de un título propio de esta Universidad con una duración de 450 horas, con fecha de inicio dd/mm/aaaa y fecha de finalización dd/mm/aaaa.

TECH es una Institución Particular de Educación Superior reconocida por la Secretaría de Educación Pública a partir del 28 de junio de 2018.

A 17 de junio de 2020

Mtra.Tere Guevara Navarro
Rectora

Este título propio se deberá acompañar siempre del título universitario habilitante expedido por la autoridad competente para ejercer profesionalmente en cada país. código único TECH: AFWOR23S techtitute.com/titulos

*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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