

# Postgraduate Diploma

## Surgical Techniques in Avian Patients





## Postgraduate Diploma Surgical Techniques in Avian Patients

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

Website: [www.techtute.com/us/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-surgical-techniques-avian-patients](http://www.techtute.com/us/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-surgical-techniques-avian-patients)

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# 01

# Introduction

Surgical procedures in avian patients can be complex. Therefore, it is necessary for veterinarians to be up to date with the latest developments in the most effective techniques and tools that cause less impact on the animals. TECH offers students this very complete program in Surgical Techniques in Avian Patients so they can specialize in the subject and be more effective in their daily practice.





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*We offer you a very complete training in avian surgery so you can specialize in this veterinary field and give a boost to your career”*

The objective for this Postgraduate Diploma in Surgical Techniques in Avian Patient is to provide a comprehensive resource for avian surgery in general. It is especially valuable for veterinary students, veterinary technicians and clinical veterinarians, as well as biologists, wildlife center directors and researchers.

Monitoring is essential for patient immobilization and anesthesia and a fundamental process in surgical interventions. The objectives are to detect physiological changes in time to correct irreversible injuries, to ensure adequate anesthetic depth and to evaluate the effectiveness of supportive care.

Moreover, animal pain and suffering are clinically important conditions that adversely affect an animal's quality of life, so extensive knowledge in avian analgesia is also necessary.

This program provides a wide range of surgical options for the most common conditions in avian patients. However, orthopedic surgery can never be performed at the desired level without prior knowledge in avian anesthesia, radiology and ophthalmology.

Thus, this academic program becomes a useful and essential tool for clinical veterinarians specializing in avian surgery, practitioners and residents in training, as well as individuals dealing with comparative species, such as zoo medicine and interspecies surgery.

In short, this training provides students with specific tools and skills to successfully develop their professional activity in the wide field of avian medicine and surgery. It addresses key competencies such as knowledge of the reality and daily practice of the veterinary professional, and develops responsibility in the monitoring and supervision of their work, as well as communication skills within the essential teamwork.

As it is an online program, students will not be bound by fixed schedules or the need to commute to another location, but rather, they can access the content at any time of the day, balancing their professional or personal life with their academic life.

This **Postgraduate Diploma in Surgical Techniques in Avian Patients** contains the most complete and up-to-date academic program on the market. The most important features include:

- ♦ Practical cases presented by experts in avian medicine
- ♦ The graphic, schematic, and eminently practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Latest developments in the main surgical techniques used in avian patients
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ Special emphasis on innovative methodologies in avian medicine
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*Do not miss the opportunity to study this Postgraduate Diploma with us. It's the perfect opportunity to advance your career"*



*This Postgraduate Diploma is the best investment you can make when choosing a refresher program to expand your existing knowledge of the subject matter”*

Its teaching staff includes professionals from the veterinary field, who bring the experience of their work to this training, as well as recognized 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 specialist must try to solve the different professional practice situations that arise during the academic year. For this purpose, the professional will be assisted by an innovative, interactive video system created by renowned and experienced experts in avian patient diseases with extensive experience.

*This training comes with the best didactic material, providing you with a contextual approach that will facilitate your learning.*

*This 100% online Postgraduate Diploma will allow you to combine your studies with your professional work while increasing your knowledge in this field.*



# 02

# Objectives

The Postgraduate Diploma in Surgical Techniques in Avian Patients is designed to facilitate professional veterinary practice with the latest advances and most innovative procedures in the sector.







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*This is the best option to learn about the latest advances in bird medicine and surgery”*



## General Objectives

- ♦ Generate specialized knowledge of anesthetic techniques commonly used in bird clinics
- ♦ Develop the most important aspects about the types of anesthesia and frequently asked questions by veterinarians
- ♦ Analyze management techniques for exploration and anesthetic drug administration
- ♦ Determine the most common emergency situations
- ♦ Analyze the different anatomical and physiological aspects of birds to apply them to anesthetic techniques
- ♦ Examine emergencies in situations of hemorrhage and more advanced surgical problems
- ♦ Establish emergency protocols, as in any animal that is injured or needs surgical assistance
- ♦ Reach the shock state protocol, which is very difficult to determine in avian patients
- ♦ Develop specialized knowledge to properly treat fractures and determine prognosis
- ♦ Determine the proper praxis in resolving fractures in avian patients, using bandages and surgical methods of osteosynthesis, by means of external immobilizations, centromedullary interlocking, external fixators or locks
- ♦ Examine the most effective methods for treating each type of bird and potential fractures in terms of physical recovery and total recovery of the limb
- ♦ Analyze the different anatomical and physiological aspects of birds to apply them to the most effective treatments





## Specific Objectives

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### Module 1.

- ♦ Determine the anatomical and physiological characteristics of birds to adequately perform anesthetic procedures
- ♦ Perform the anesthetic technique of choice: inhalation anesthesia
- ♦ Generate specialized knowledge on cardiorespiratory monitoring and temperature control during and after anesthetic procedures
- ♦ Examine injectable anesthesia in birds
- ♦ Perform the most up-to-date methods for local anesthesia and analgesia
- ♦ Implement the most frequent emergency anesthetics to deal with them successfully
- ♦ Determine the anesthetic particularities of each type of bird

### Module 2.

- ♦ Develop specialized knowledge in soft tissue surgery, starting from supplies in the operating room prior to any surgery
- ♦ Determine the special surgical supplies for avian patients
- ♦ Establish the main surgical problems of the skin and its appendages
- ♦ Perform all surgical techniques on male and female reproductive systems
- ♦ Evaluate all surgeries of the digestive and respiratory systems, following comprehensive and updated protocols
- ♦ Demonstrate the need for biopsies to reach a definitive diagnosis
- ♦ Emphasize the necessary guidelines for patient recovery

### Module 3.

- ♦ Develop specialized knowledge regarding the most frequent ocular pathologies and the most updated treatments
- ♦ Analyze the most frequent pathologies in obese birds in captivity: nails
- ♦ Address bone fracture emergencies situations and treatments
- ♦ Establish bone fixation methods in wings and shoulder girdles
- ♦ Analyze the osseous injuries in bird carpus and tarsus
- ♦ Determine how to conduct bone repairs of the femur and their surgical treatments
- ♦ Gain in-depth knowledge of postoperative care in repaired fractures



*This training will give you a sense of confidence when practicing veterinary medicine, which will help you grow both personally and professionally"*

03

# Course Management

The program's teaching staff includes leading experts in Avian Medicine and Surgery, who contribute their vast work experience to this training program. Professionals of recognized prestige have joined forces to offer you this high-level training.





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*Our teaching team will help you achieve professional success”*

## Management



### Ms. Trigo García, María Soledad

- ♦ Veterinarian in charge of the Internal Medicine and Exotic Animal Surgery Service at the Clinical Veterinary Hospital of the Alfonso X El Sabio University in Madrid
- ♦ Degree in Veterinary Medicine from the Alfonso X el Sabio University (2012)
- ♦ Postgraduate degree in General Practitioner Certificate Programme in Exotic Animals, Improve International
- ♦ Postgraduate degree in Food Safety from the Complutense University of Madrid
- ♦ Veterinary consultant at the José Peña Wildlife Center, and various veterinary clinics in Madrid
- ♦ Director of the Exotic Animal Service at the Prado BOADILLA veterinarian center

## Professors

### Dr. Moraleda Berral, Pablo

- ♦ Clinical Veterinarian at Exotic Veterinary Clinic
- ♦ Degree in Veterinary Medicine, University of Santiago de Compostela, 2018
- ♦ Degree Training in Exotic and Wild Animal Clinics, attending congresses, stays in specialized centers such as GREFA, CRAS, Bioparc Fuengirola, Faunia, etc.
- ♦ Certificate Degree in Exotic and Wild Animals Complutense University of Madrid
- ♦ Enrolled in the PhD program on Veterinary Medicine at UCM in the field of wildlife parasitology

### Dr. Fernández Boto, Rubén

- ♦ Clinical Veterinarian at Exotic Veterinary Clinic
- ♦ Member of AVEPA
- ♦ Degree in Veterinary Medicine from the UCM
- ♦ Postgraduate Certificate in Abdominal Ultrasound in Small Animals
- ♦ Update Course in Exotic Animal Medicine and Surgery



**Dr. González Fernández-Cid, José Vicente**

- ◆ Owner of the Exotic Veterinary Clinic in Fuenlabrada
- ◆ Lecturer on the Master's Degree in Exotic Animals organized by AEVA
- ◆ Professor on the Advanced Master's Degree in Exotic Animals organized by Forvetex
- ◆ Degree in Veterinary Medicine from the Complutense University of Madrid
- ◆ Speaker at the I AVEXYS Conference on exotic and wild animal medicine at Faunia
- ◆ Speaker at the I and II Conference on Wildlife and Exotic Animal Medicine, Faculty of Veterinary Medicine of Madrid

**Dr. García Hernando, Javier**

- ◆ Responsible for Internal Medicine for Exotic Animals at Privet Veterinary Hospital
- ◆ Outpatient veterinarian for exotic animal medicine and surgery (Madrid)
- ◆ Degree in Veterinary Medicine from the UAX
- ◆ Diploma in in Herpetology, UCM

**Ms. Jaime Aquino, Sara**

- ◆ Veterinary Assistance at Prado de Boadilla
- ◆ Collaborator in the Exotic Animal Medicine and Surgery Service at Alfonso X El Sabio University
- ◆ Nova Veterinary Clinic, Boadilla del Monte
- ◆ Degree in Veterinary Medicine Alfonso X El Sabio University

**Mr. Sánchez Góngora, Juan**

- ◆ Veterinarian at Clinique Vétérinaire de l'Epte, Gisors
- ◆ Degree in Veterinary Medicine, Complutense University Madrid
- ◆ Speaker at the XVII Congress of Veterinary and Biomedical Sciences in relation to Bacterial Stomatitis in Chameleons *Calumma parsonii* in Captivity
- ◆ External stays at ZooAquarium, Madrid

# 04

# Structure and Content

The content structure has been designed by the best professionals in the Exotic Animal Medicine and Surgery sector, with extensive experience and recognized prestige in the profession, backed by the volume of cases reviewed, studied, and diagnosed, with extensive knowledge of new technologies applied to veterinary studies.







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*We have the most complete and up-to-date academic program in the market. We strive for excellence and for you to achieve it too”*

## Module 1. Anesthesia and Analgesia in Avian Patients

- 1.1. Anatomical and Physiological Characteristics in Avian Anesthesia
  - 1.1.1. Anatomical Characteristics: Air Sacs
  - 1.1.2. Physiological Considerations
    - 1.1.2.1. Inspiration and Expiration
    - 1.1.2.2. Ventilation Triggers
    - 1.1.2.3. Hypoglycemia
  - 1.1.3. Pharmacokinetic and Pharmacodynamic Characteristics in Avian Patients
- 1.2. Administering Distant Anesthesia
  - 1.2.1. Handler Safety
  - 1.2.2. Cooperating Birds: Adequate Management
    - 1.2.2.1. Administering Anesthesia Routes and Techniques
  - 1.2.3. Uncooperative Birds: Wild Birds
    - 1.2.3.1. Administering Anesthesia Techniques
    - 1.2.3.2. Darts
    - 1.2.3.3. Other Mechanisms
  - 1.2.4. Stress Prior to Administering Anesthesia
    - 1.2.4.1. Activating the Sympathetic Nervous System
    - 1.2.4.2. Other Hormonal Changes
    - 1.2.4.3. How to Measure Stress
    - 1.2.4.4. Physiological Effects Caused by Capture
- 1.3. Anesthesia Inhalation in Birds: The Anesthesia of Choice
  - 1.3.1. Anesthesia Equipment Technical Considerations
    - 1.3.1.1. Gases and Vapors
      - 1.3.1.1.1. Isoflorane, Sevoflorane and Other Anesthetic Gases
  - 1.3.2. Endotracheal Intubation
  - 1.3.3. Air Sac Intubation
    - 1.3.3.1. Exceptional Intubation
- 1.4. Monitoring during Anesthesia
  - 1.4.1. Reflexes
  - 1.4.2. Circulatory Volume
  - 1.4.3. Pain
    - 1.4.4. Cardiovascular Monitoring
      - 1.4.4.1. Cardiac Suscultation
      - 1.4.4.2. Capillary Refill Time
      - 1.4.4.3. Electrocardiograms
      - 1.4.4.4. Doppler Cardiac Monitoring or Echocardiography
      - 1.4.4.5. Other Monitoring Techniques
      - 1.4.4.6. Intravenous Fluid Therapy
        - 1.4.4.6.1. Crystalloids and Colloids
    - 1.4.5. Respiratory Monitoring
      - 1.4.5.1. Respiratory Auscultation
      - 1.4.5.2. Pulse Oximetry
      - 1.4.5.3. Capnography
    - 1.4.6. Temperature Monitoring: Hypothermia and Hyperthermia
      - 1.4.6.1. Body Temperature Loss during Surgery: Monitoring and Prevention
      - 1.4.6.2. The Consequences of Hypothermia
      - 1.4.6.3. Hyperthermia
        - 1.4.6.3.1. Prevention and Treatment
- 1.5. Injectable Anesthesia
  - 1.5.1. Anesthetic Perfection
  - 1.5.2. Dissociative Anesthetics
  - 1.5.3. Opioids
  - 1.5.4. Anesthesia in Field Conditions
  - 1.5.5. Hypothermia
    - 1.5.5.1. Important Aspects in Preventing and Reducing Heat Loss during Anesthesia
- 1.6. Local Anesthesia and Analgesia
  - 1.6.1. Local Anesthesia
    - 1.6.1.1. Cardiovascular Monitoring
    - 1.6.1.2. Drugs Used
    - 1.6.1.3. Therapy Options
  - 1.6.2. Analgesia
    - 1.6.2.1. Types of Pain: Analgesia
    - 1.6.2.2. Physiological Sensitivity in Birds
    - 1.6.2.3. Analgesic Drugs
      - 1.6.2.3.1. Acetylsalicylic Acid

- 1.6.2.3.2. Buprenorphine Hydrochloride
- 1.6.2.3.3. Butorphanol
- 1.6.2.3.4. Flunixin-Meglumine
- 1.6.2.3.5. Carprofen
- 1.6.2.3.6. Ketoprofen
- 1.6.2.3.7. Copper Indomethacin
- 1.6.2.3.8. Meloxicam
- 1.6.2.3.9. Other Analgesics
- 1.7. Anesthetic Emergencies
  - 1.7.1. Respiratory Complications during Anesthesia
    - 1.7.1.1. Respiratory Depression
    - 1.7.1.2. Apnea and Respiratory Arrest
    - 1.7.1.3. Airway Obstruction
    - 1.7.1.4. Hyperventilation
    - 1.7.1.5. Hypoxia
  - 1.7.2. Specific Cardiovascular Complications during Anesthesia
    - 1.7.2.1. Bradycardia
    - 1.7.2.2. Tachycardia
    - 1.7.2.3. Hypotension
    - 1.7.2.4. Hypertension
    - 1.7.2.5. Arrhythmias
    - 1.7.2.6. Cardiac Arrest
  - 1.7.3. Hemorrhaging in Avian Patients during Anesthesia
- 1.8. Anesthesia in Caged Birds: Psittaciformes and Passeriformes
  - 1.8.1. Anatomical and Physiological Considerations
  - 1.8.2. The Cardiovascular System
  - 1.8.3. Thermoregulation
  - 1.8.4. Respiratory Ventilation Systems
  - 1.8.5. Preanesthetic Evaluation in Birds
  - 1.8.6. Anesthetic Procedures
  - 1.8.7. Types of Anesthetics Used
  - 1.8.8. Local Anesthesia and Analgesia

- 1.9. Anesthesia in Aquatic and Semi-Aquatic Birds
  - 1.9.1. Patients: Aquatic and Semi-Aquatic Birds
  - 1.9.2. Physiological Constants Monitoring
  - 1.9.3. Thermoregulation
  - 1.9.4. Anesthetic Procedures
  - 1.9.5. Types of Anesthetics Used
  - 1.9.6. Local Anesthesia and Analgesia
- 1.10. Other Anesthetic Particularities
  - 1.10.1. Anesthetic Particularities in Ratites
    - 1.10.1.1. Anatomical and Physiological Considerations
    - 1.10.1.2. Anesthetic Procedures
    - 1.10.1.3. Types of Anesthetics
    - 1.10.1.4. Local Anesthesia and Analgesia
  - 1.10.2. Anesthesia in Galliforms
  - 1.10.3. Anesthesia in Falconiformes
  - 1.10.4. Euthanasia: A Humane Act
    - 1.10.4.1. Special considerations

## Module 2. Soft Tissue Anesthesia and Surgery

- 2.1. Soft Tissue Surgery
  - 2.1.1. Soft Tissue Surgeon in Birds
  - 2.1.2. Patient Preparation
    - 2.1.2.1. Hypothermia.
    - 2.1.2.2. Skin Preparation
  - 2.1.3. Necessary Equipment
  - 2.1.4. Sterile Cotton Balls
  - 2.1.5. Bifocal Surgical Lenses
  - 2.1.6. Microsurgery Tools
  - 2.1.7. Suture Materials.
- 2.2. Special Surgical Supplies in Bird Surgery
  - 2.2.1. Hemoclips
  - 2.2.2. Radiosurgery
  - 2.2.3. Surgical Lasers
    - 2.2.3.1. Most Used Types and Equipment

- 2.2.4. Microsurgery
- 2.3. Skin and Appendage Surgery
  - 2.3.1. Feather Cysts
    - 2.3.1.1. Plumafolliculoma
  - 2.3.2. The Uropygial Gland
    - 2.3.2.1. Most Common Pathologies
  - 2.3.3. Wounds and Soft Tissue Injury Treatment
  - 2.3.4. Most Common Neoplasms
    - 2.3.4.1. Lipoma
    - 2.3.4.2. Xanthoma
- 2.4. Reproductive System Techniques
  - 2.4.1. Prior Patient Preparation
  - 2.4.2. Sterilization.
  - 2.4.3. Female Sterilization
    - 2.4.3.1. Surgical Technique
  - 2.4.4. Egg Obstruction in the Oviduct Dystocia in Birds
    - 2.4.4.1. Cesarean Section: Egg Obstruction in the Oviduct
    - 2.4.4.2. Uterine Torsion: Coeloma Inflammation
  - 2.4.5. Orchidectomy
    - 2.4.5.1 Anatomical Location of the Testicles: Intracellular
    - 2.4.5.2. Technique
  - 2.4.6. Testicular Endoscopic Biopsy
- 2.5. Gastrointestinal Tract Techniques I
  - 2.5.1. The Tongue
    - 2.5.1.1. Most Common Pathologies
  - 2.5.2. The Proximal Esophagus
    - 2.5.2.1. Esophageal Strictures: Causes and Treatments
    - 2.5.2.2. Esophageal Trauma: Causes and Treatments
  - 2.5.3. Inguvotomy
    - 2.5.3.1. Localization
    - 2.5.3.2. Indications: Foreign Bodies.
  - 2.5.4. Crop Burns
    - 2.5.4.1. Pathology Origin
    - 2.5.4.2. Adequate Surgical Technique
  - 2.5.5. Others Surgical Techniques of Choice
- 2.6. Gastrointestinal Tract Techniques II
  - 2.6.1. Crop or Esophagus Lacerations
    - 2.6.1.1. Traumatic Diet: Causes and Treatments
    - 2.6.1.2. External Trauma: Causes and Treatments
  - 2.6.2. Inguvostomy Tube Placement
    - 2.6.2.1. Feeding Tube Indications
  - 2.6.3. Celiotomy: Opening the Coelomic Cavity
    - 2.6.3.1. Indications and Complications
    - 2.6.3.2. Left Lateral Celiotomy
  - 2.6.4. Others Surgical Techniques of Choice
- 2.7. Gastrointestinal Tract Techniques III
  - 2.7.1. Proventriculotomy: Proventriculus or Ventricle Access
    - 2.7.1.1. Indications
    - 2.7.1.2. Surgical Techniques of Choice
  - 2.7.2. Yolk Saculectomy: Newborn Chicks
    - 2.7.2.1. Indications
    - 2.7.2.2. Surgical Techniques of Choice
  - 2.7.3. Enterotomy
    - 2.7.3.1. Cases Where Enterotomy Is Necessary
    - 2.7.3.2. Type of Surgery to Applied
  - 2.7.4. Enterectomy: Intestinal Anastomosis
    - 2.7.4.1. Clinical Situations
    - 2.7.4.2. Surgical Process
  - 2.7.5. Ventral Midline Celiotomy
    - 2.7.5.1. Indication This Type of Surgical Access
    - 2.7.5.2. Approaches
  - 2.7.6. Cloaca Disorders
    - 2.7.6.1. Prolapsed Organs through the Cloaca
    - 2.7.6.2. Cloacolitho
- 2.8. Magnetic Biopsy Procedures
  - 2.8.1. Hepatic biopsy
    - 2.8.1.1. Indication This Type of Surgical Access
    - 2.8.1.2. Approach



- 2.8.2. Pancreatic Biopsy.
  - 2.8.2.1. Pancreatic Alterations
  - 2.8.2.2. Surgical Indications
- 2.8.3. Renal Biopsy
  - 2.8.3.1. Indications
  - 2.8.3.2. Necessary Technical Resources
  - 2.8.3.3. Technique and Approach
- 2.9. Respiratory Surgical Techniques
  - 2.9.1. Respiratory Surgery
    - 2.9.1.1. Necessary Anatomy Recap
  - 2.9.2. Tracheotomy
    - 2.9.2.1. Indications
      - 2.9.2.1.1. Presence of Aspergillomas and Foreign Bodies
    - 2.9.2.2. Surgical Technique
  - 2.9.3. Tracheotomy
    - 2.9.3.1. Indications: Severe Tracheal Stenosis
    - 2.9.3.2. Surgical Technique
  - 2.9.4. Pulmonary Biopsy
    - 2.9.4.1. Indications: Severe Tracheal Stenosis
    - 2.9.4.2. Surgical Technique
  - 2.9.5. Muting in Birds
    - 2.9.5.1. Ethical Considerations
- 2.10. Postoperative Care
  - 2.10.1. Stressful Situations
  - 2.10.2. Thermal Recovery and Maintenance
  - 2.10.3. Hospitalization and Swift Recovery
  - 2.10.4. Self-Trauma Prevention
  - 2.10.5. Postoperative Analgesia
  - 2.10.6. Adequate Fluid Therapy
  - 2.10.7. Nutritional Supplements

### Module 3. Orthopedic and Ophthalmologic Surgery in Avian Patients

- 3.1. Avian Ophthalmology: Eye and Eyelid Lesions
  - 3.1.1. Anatomy Recap
  - 3.1.2. Differences Between Species
  - 3.1.3. Eyeball Pathophysiology
  - 3.1.4. Most Used Treatments
- 3.2. Pododermatitis: Nails
  - 3.2.1. Pathology Characteristics
  - 3.2.2. Most Affected Bird Species
  - 3.2.3. Current Treatments
    - 3.2.3.1. Medical Treatment
    - 3.2.3.2. Surgical Management
      - 3.2.3.2.1. Necrotic Debridement
  - 3.2.4. Prevention
  - 3.2.5. Treatment
- 3.3. Fractures: Bone Definition Loss
  - 3.3.1. Bird Skeletons
  - 3.3.2. Necessary Surgical Supplies and Preliminary Technical Considerations
  - 3.3.3. Physical Examination and Preoperative Management of Avian Patients
  - 3.3.4. Types of Bone Fractures and Dislocations
- 3.4. Fracture Correction: Fracture Treatment Objectives
  - 3.4.1. Osteosynthesis Techniques in Birds
    - 3.4.1.1. Advantages
    - 3.4.1.2. Inconveniences
  - 3.4.2. Internal Fastening
    - 3.4.2.1. Medullary Nailing (Intramedullary or Centromedullary)
    - 3.4.2.2. Banding
  - 3.4.3. External Fastening: Bone Scaffolds
    - 3.4.3.1. The Kirschner-Ehmer Splint

- 3.5. Fastening Methods Humerus, Clavicle and Coracoid Fractures
  - 3.5.1. Shoulder Girdle and Forelimb Anatomy
  - 3.5.2. Humerus Fractures
  - 3.5.3. Fastening Method for Distal and Subcondylar Humerus Fractures
    - 3.5.3.1. Crossed Needles
- 3.6. Fastening Methods for Diaphyseal Forelimb Fractures
  - 3.6.1. Relevant Aspects
  - 3.6.2. Needles Placement in Different Fasteners
  - 3.6.3. Proximal Ulnar Diaphysis Fractures, with Intact or Fractured Radius
  - 3.6.4. Diaphyseal and Distal Ulnar Fractures, with Intact or Fractured Radius
  - 3.6.5. Special Forelimb Cases
    - 3.6.5.1. Proximally or Distally Fractured Radius
    - 3.6.5.2. Intact Ulna
  - 3.6.6. Elbow Dislocations
- 3.7. Fastening Methods of the Carpus and Tarsus
  - 3.7.1. Fastening the Carpal Joint
    - 3.7.1.1. Relevant Aspects
    - 3.7.1.2. Specific Treatment Recommendations
  - 3.7.2. Fastening Tibiotarsus Fractures
    - 3.7.2.1. Relevant Aspects
    - 3.7.2.2. Tibiotarsus Fractures and Surgical Stabilization
  - 3.7.3. Fastening Choices for Tarsometatarsal Fractures
- 3.8. Fastening Methods and Orthopedic Femur Pathologies
  - 3.8.1. Relevant Aspects
  - 3.8.2. Femur Fractures
    - 3.8.2.1. Surgical Stabilization
  - 3.8.3. Knee Dislocation
    - 3.8.3.1. Choice Treatment
- 3.9. Less Common Bone Injuries
  - 3.9.1. Neck Dislocation and Fracture
    - 3.9.1.1. Symptoms, Diagnosis and Treatment
  - 3.9.2. Keel Injuries
    - 3.9.2.1. Pathology
    - 3.9.2.2. Treatment
  - 3.9.3. Wing Tip Injuries
    - 3.9.3.1. Wing Wounds and Ulcers
      - 3.9.3.1.1. Types of Wounds and Treatment
    - 3.9.3.2. Bursitis
      - 3.9.3.2.1. Symptoms and Treatment
    - 3.9.3.3. Edema and Dry Gangrene Syndrome: Avascular Necrosis
      - 3.9.3.3.1. Localization
      - 3.9.3.3.2. Symptoms and Treatment
- 3.10. Postoperative Patient Care for Repaired Fractures
  - 3.10.1. Physical Therapy for Wing Fracture Treatment
  - 3.10.2. Patagium Treatment
  - 3.10.3. Physical Rehabilitation and Physiotherapy in Birds



*Join one of the largest online universities in the world*

# 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.







“

*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.

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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. 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. The feeling that the effort invested is effective becomes a very important motivation for veterinarians, which translates into a greater interest in learning and an increase in the 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.



*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 the students have a high socio-economic profile and an average age of 43.5 years.

*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 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.



#### 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.



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# Certificate

The Postgraduate Diploma in Surgical Techniques in Avian Patients guarantees, in addition to the most rigorous and up-to-date training, access to a qualification issued by TECH Global University.





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*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 **Postgraduate Diploma in Surgical Techniques in Avian Patients** 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 Surgical Techniques in Avian Patients**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



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

future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present quality  
development language  
virtual classroom



## Postgraduate Diploma Surgical Techniques in Avian Patients

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

# Postgraduate Diploma

## Surgical Techniques in Avian Patients

