Advanced Master's Degree

Equine Medicine and Rehabilitation

tech technological university

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Advanced Master's Degree
Equine Medicine and Rehabilitation

- Modality: **online**
- Duration: **2 years**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/in/veterinary-medicine/advanced-master-degree/advanced-master-degree-equine-medicine-rehabilitation**

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01

Introduction

This high-level specialization offers a new opportunity for veterinarians who want to specialize in equine medicine and rehabilitation to set themselves apart. The program is aimed at clinicians who wish to expand their knowledge of advanced aspects of their work, enabling them to develop their activity based on professional excellence.

This innovative program is a unique product, as there is no other first class postgraduate distance learning tool in its field capable of offering qualified and extensively developed, fully online teaching in Equine Medicine and Rehabilitation.

Equine rehabilitation is a growing discipline that requires trained professionals to correctly care for horses"

Equine Medicine and Rehabilitation encompasses multiple and complex specialties in continuous development that require clinicians to constantly update their skills.

Veterinary rehabilitation is a growing discipline complemented by the diagnosis and treatment of lameness which, although typically considered sports medicine, cannot now be separated from the concept of rehabilitation, since is impossible today to understand approaching sports injuries without a rehabilitation program, retraining and/or pain and dysfunction management.

Furthermore, veterinary clinic business is a highly competitive professional field that quickly incorporates new scientific advances into its outpatient clinics, so veterinarians are faced with a labor market that requires a very high level of competence in every way.

Mobile veterinarians' daily work is very time demanding, both in terms of the volume of working hours involved in mobile visits and the degree of personal dedication, and in terms of the time required to perform the company's administrative and management duties. For this reason, they often lack the free time they need to continue their training in-person, accredited centers, and in many instances resort to consulting procedures and other information on the Internet. Professionals expect to find reliable online specialization programs.

In order to address all of these issues, veterinarians in equine medicine and rehabilitation need continuing education programs to constantly update their expertise in a manageable and affordable way.

The contents of this educational program are based on experience, scientific evidence and practical application. The objective is for students to develop rehabilitation plans and treatments based on a solid foundation that provides the maximum guarantee of success in both planning and execution.

In conclusion, the Advanced Master's Degree in Equine Medicine and Rehabilitation is a complete, well-founded specialization with great experts in the field who have proven international experience, which will provide students with a high level of specialization in a discipline that has become essential in veterinary medicine.

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

- 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 remote training
- Continuous updating and retraining systems
- Self organized learning which makes the course completely compatible with other commitments
- 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 training program created for professionals who aspire to excellence that will allow you to acquire new skills and strategies in a smooth and effective way"

Advances in diagnostic and interventional techniques in equine veterinary medicine result in health improvements for these animals, so it is necessary to have specialists who know how to adapt to these changes"

Our teaching staff is made up of working professionals. That way, TECH ensures to offer students the updating objective it aims to provide. A multidisciplinary team of veterinary professionals trained and experienced in different environments who will impart the theoretical knowledge in an efficient way, but above all, who will bring their practical knowledge from their own experience to the course.

This command of the subject is complemented by the effectiveness of the methodological design of this Grand Master. Developed by a multidisciplinary team of e-learning experts, it integrates the latest advances in educational technology. Students will be able to study with a range of convenient and versatile multimedia tools that will give them the operability they need while specializing in the subject.

The design of this program is based on Problem-Based Learning, an approach that conceives learning as a highly practical process. To achieve this remotely, we will use telepractice. With the help of an innovative, interactive video system and Learning from an Expert, students will be able to acquire the knowledge as if they were dealing with the case in real time. A concept that will allow students to integrate and focus their learning in a more realistic and permanent way.

TECH offers you the opportunity to experience a deep and complete immersion into the strategies and approaches used in Equine Medicine and Rehabilitation.

Join the professional elite with this highly effective educational specialization and open new paths to career success.

02

Objectives

Our goal is to prepare highly qualified professionals for work experience. An objective that is complemented in a global manner by promoting human development that lays the foundations for a better society. This objective is focused on helping professionals reach a much higher level of expertise and control. A goal that you will be able to achieve thanks to a highly intensive and detailed course.

If your goal is to improve in your career and acquire a qualification that will enable you to compete among the best, then look no further: welcome to TECH"

General Objectives

- Identify the different anatomical structures and pathologies of the digestive tract of the horse
- Develop and advance in the most frequent procedures to solve oral cavity pathologies
- Recognize the symptoms of digestive disorders
- Enable the clinician to correctly assess the systemic state of the animal and the consequent severity of the pathology
- Establish diagnostic protocols and generate optimized treatments and prognoses
- Establish optimal preventive medicine criteria and good management guidelines
- Establish an appropriate methodology for the examination of the horse with respiratory or cardiac problems
- Identify all clinical signs associated with respiratory or cardiovascular disease in equines
- Generate specialized knowledge of respiratory and cardiac auscultation
- Establish the specific clinical approach to horses with a respiratory or cardiovascular disorders
- Approach patients with advanced alterations in the hemogram, biochemistry or hematopoiesis disorders
- Develop an innovative and up-to-date methodology for patients with immune-mediated disorders
- Develop and expand knowledge of endotoxic shock in order to provide patients with the latest treatments
- Examine the physiology of food consumption and the physical distribution and transport of the food bolus through the small and large intestine, as well as the processes of nutrient absorption in the different digestive compartments
- Determine the conversion of nutrients into energy available for the different organic functions of horses
- Establish the different nutritional needs in horse diets, as well as energy requirements according to sporting discipline, productive objective or domestic animal maintenance
- Assess cachectic horses: history and nutritional status, possible differentials, knowledge of metabolic consequences and requirements for subsequent dietary adjustments
- Acquire specialized knowledge on new developments in antibiotic therapy and antibiotic resistance
- Examine prebiotics, probiotics as well as the use of medicinal plants in accordance with the high market demand that exists today in this medical area
- Update and expand in-depth knowledge and new concepts in the diagnosis and treatment of lameness in horses
- Identify the applied anatomy and pathologies affecting the different structures of the locomotor system in horses
- Develop advanced screening and diagnostic methods available in the field clinic
- Take a deeper look into both medical and surgical treatments applicable in the field clinic
- Gain undamental knowledge of wounds, tendon lacerations and musculoskeletal infections
- Establish an appropriate methodology for exploration, diagnosis and treatment
- Acquire specialized knowledge of the different materials and techniques used to treat these pathologies
- Propose alternative therapeutic strategies in wound management in place of conventional ones

- Provide in-depth knowledge of the most common dermatological problems
- Identify all clinical signs associated with each dermatological disease
- Establish the specific clinical approach for each pathology and determine the prognosis and the most appropriate treatment for each skin disease
- Identify the challenges and problems encountered by veterinarians in the practice of equine clinical oncology
- Establish the principles of diagnosis and treatment of cutaneous neoplasms affecting horses
- Gain detailed knowledge of the pathological processes affecting the endocrine system of horses
- Develop management strategies for obese and insulin resistant horses
- Establish an appropriate methodology to identify and locate neurological injuries in horses
- Identify the alterations of consciousness and behavior, and establish protocols
- Define the approach to ataxic horses and establish action protocols
- Examine diagnostic methods in equine neurology
- Detail therapeutic protocols
- Establish an appropriate methodology for ophthalmologic examination of horses
- Identify all clinical signs associated with ocular alterations in horses
- Determine the specific clinical approach to horses with ocular disorders
- Analyze the complementary methods available to diagnose the main ocular alterations in horses

- Generate specialized knowledge on the main ocular pathologies in horses
- Establish the general and specific treatment plans for the main ocular pathologies in horses
- Identify urinary system pathologies horses
- Establish diagnostic protocols to facilitate urinary pathology identification in patients
- Expand the potential alternative treatments according to pathological situations
- Recognize the medical and surgical genital pathologies in stallions and broodmares, assess their extent and provide appropriate treatment plans for recovery and restoration of proper reproductive functions
- Develop surgical techniques to resolve reproductive system pathologies that can be performed in the field
- Recognize representative clinical signs of disease in newborn foals
- Establish effective working protocols for the early detection of sick neonates
- Develop treatment protocols for the different diseases present in neonates
- Optimize the use of foal imaging in the field
- Identify and decipher the particular characteristics of locomotor system pathologies that appear during foal development and growth from birth to the end of its pediatric period
- Develop the main specific medical and surgical techniques for pathologies affecting foals in the field
- Develop sedation and ambulatory anesthesia procedures
- Determine the necessary tools and knowledge to assess critically ill patients and to perform hospital treatments, such as advanced pain management, correction of hydro-electrolyte balance and acid-base balance, intensive care in neonates and adult patients
- Delve into the fundamental medicinal and pharmacological considerations for high level sport horses
- Delve into equine toxicology
- Develop the application of humane euthanasia protocols
- Examine the different methods used for objective measurement of the locomotor pattern of horses by means of biomechanical studies
- Analyze the functional anatomy and biomechanics of the main locomotor units in horses
- Define movement patterns in natural gaits
- Examine the locomotor demands and specific exercises in the main equestrian sports disciplines
- Establish the basis of comprehensive functional assessment approaches in horses
- Define the detailed protocol involved in functional assessments
- Develop tools to establish functional diagnoses
- Identify functional and biomechanical problems
- Plan and time a training program according to horse fitness levels, competitive objectives and the type of equestrian discipline
- Design stress tests according to the equestrian discipline, deciding on parameters to be measured and how to interpret them
- Establish the diagnostic protocol to be followed in the case of horses with loss, reduction or lack of sporting performance
- Develop protocols to treat and prevent pathologies associated with physical exercise and training, including overtraining syndrome
- Analyze the different modalities of manual therapy, their applications and effects on horses

- Identify the appropriate manual treatment modalities for each case
- Develop competencies in the application of the different modalities
- Establish treatments using different manual therapy modalities
- Analyze the electrophysical agents used in equine physiotherapy
- Establish the physicochemical foundations for therapeutic interventions
- Develop indications, application methodology, contraindications and risks
- Determine the most appropriate for each pathology from a therapeutic and scientific point of view based on evidence
- Analyze motor control and its importance in locomotion and rehabilitation
- Evaluate the main tools and exercises in active therapies
- Develop clinical and in-depth reasoning on the use of therapeutic exercises in horses
- Generate autonomy when developing active re-education programs
- Analyze the basic fundamentals of Traditional Chinese Medicine (TCM)
- Identify all the points to be treated according to TCM
- Establish an appropriate methodology for an acupuncture treatment approach
- Justify the selection of each technique and/or acupuncture points
- Analyze the characteristics of proprioceptive elastic taping
- Define proprioceptive elastic taping application techniques
- Identify in which cases to apply the proprioceptive elastic bandage
- Establish the basis for obtaining and reading diagnostic images
- Acquire knowledge of diagnostic techniques and clinical application
- Assess the different pathologies and their clinical significance
- Provide the basis on which to establish adequate physiotherapeutic treatments
- Develop the most common locomotor system pathologies equine athletes, their diagnosis and possibilities of conventional treatments and physiotherapy
- Present new techniques to diagnose and monitor pathology lesions
- Propose new treatments based on publications and analyze previous treatments
- Establish general recommendations to design injury treatment and rehabilitation plans

Quality specialized education for outstanding students. At TECH, we offer the perfect education for high level specialization in your field”

Specific Objectives

Module 1. Digestive System

- Define correct methods of anamnesis, evaluation and assessment of the patient with digestive pathology
- Develop and advance in the most frequent procedures to solve oral cavity pathologies
- Establish anesthetic blocking protocols for oral surgery and dental extractions
- Recognize and resolve mandibular and maxillary pathologies
- Properly develop general examination procedures such as rectal palpation, nasogastric probing, abdominocentesis, interpretation of analytical tests and diagnostic imaging in field conditions, and establish the appropriate treatments and issue the correct prognosis in the horse with abdominal pain
- Develop and advance in depth in the diseases affecting the digestive tract from the stomach to the rectum, assessing the stage of the pathologies that appear
- Develop and advance in depth on liver and biliary tract diseases in the horse and their possible treatments
- Develop and advance in depth in infectious and parasitic diseases of the digestive tract, as well as their various treatments
- Expand knowledge, establish and develop correct decision criteria to treat abdominal syndrome in horses in the field, or in case of requiring surgical treatment, how to correctly inform owners and advise hospital referral in cases surgery is required

Module 2. Cardio-Respiratory and Vascular System

- Specify the necessary information in clinical examinations of horses suffering from respiratory or cardiac pathology
- Accurately recognize normal respiratory and cardiac sounds in horses
- Identify respiratory pathologies in order to classify them and decide on possible diagnostic tests if needed
- Establish the knowledge required when performing diagnostic procedures on respiratory patients: Laboratory tests, cytology, BAL Diagnostic Imaging
- Propose work methodologies for patients with upper respiratory tract pathologies
- Propose work methodologies for patients with inflammatory lower respiratory tract pathologies
- Identify surgical pathologies of the upper respiratory tract and develop technical procedures that can be performed in the field both in scheduled and emergency conditions
- Propose work methodologies for patients with infectious respiratory pathologies
- Differentiate between physiological murmurs and pathological murmurs
- Establish differential diagnoses of abnormal rhythms in terms of irregularity and heart rate
- Propose work methodologies for patients with cardiac murmurs
- Propose work methodologies for patients with arrhythmias

Module 3. Hematopoiesis, Immune system and Nutrition

- Delve into the study of blood components and pay close attention to serological biochemical markers, all of which are analytical parameters that clinical specialists must know in depth so as to relate possible alterations in this sense to pathological situations of any kind
- Acquire advanced knowledge on possible alterations related to hematopoiesis, as well as alternatives in terms of cutting-edge treatments
- Achieve a high degree of knowledge of the pathophysiological mechanisms of immune-mediated disorders in order to select the latest diagnostic tests and appropriate treatment
- Delve into the pathophysiological mechanisms of endotoxemia and the development of endotoxic shock in order to prevent secondary complications associated with this process and to apply the most up-to-date treatments
- Understand the processes of digestion and absorption of nutrients in the different anatomical compartments of the horse's digestive tract
- Provide the basic knowledge on nutrients necessary to develop feeding programs
- Estimate horse weight and determine body condition
- Easy calculation of daily fodder and grain or compound feed requirements
- Differentiate and know how to apply the terms gross, digestible and net energy
- Delve deeper into the knowledge of antibiotic treatment alternatives, as well as the development of antibiotic resistance, in order to train clinicians for decision making in situations where there is an important restriction on antibiotic use, either due to the patient's category or the appearance of bacterial resistance
- Update on prebiotics, probiotics and the use of medicinal plants, their relevance as important tools in preventive medicine as well as in the treatment of specific pathologies

Module 4. Locomotor System

- Identify the pathologies affecting the musculoskeletal system of horses by pathology type based on the different anatomical regions
- Master the correct approach to clinical cases that may arise Obtain and control the tools to correctly explore animal patients and correctly interpret the data obtained
- Develop optimized work schemes and diagnostic protocols
- Advanced diagnosis of joint, tendon, bone and muscle pathologies in horses
- Master neural anesthetic blocks, the technique used, main advantages and possible disadvantages Develop proximal blocks and other advanced anesthetic desensitization techniques
- Master and develop in depth imaging techniques and other complementary diagnostic methods in the field
- Receive training in the latest published therapeutic measures and the latest advances in research in the treatment of locomotor pathologies
- Master and develop advanced medical and surgical techniques that can be performed in the field

Module 5. Surgical Pathologies of the Skin and Related Structures

- Specify the different types of wounds that can occur in equine clinics Identify them and differentiate between acute and chronic pathologies, assess their degree of contamination and/or infection, if any, and recognize damaged adnexal structures, assessing whether they are septic
- Gain knowledge of the different phases of skin healing
- Determine the techniques used in tissue management, hemostasis, suturing, reconstruction and skin grafting
- Set guidelines to choose the different types, materials and patterns of sutures, needles and drainage models available to clinicians in the field
- Establish the different bandage types and materials both for wound treatment and immobilization Select the appropriate dressing or bandage for each clinical situation
- Apply the different therapeutic guidelines, reparation procedures and other first aid techniques for acute and fresh wounds
- Apply the different therapeutic guidelines and repair procedures for complicated, chronic and infected wounds, contemplating potentially using alternative procedures and technologies
- Indicate the tests to be performed on patients with musculoskeletal injuries or infections to determine their significance
- Reach the correct diagnosis and treatment for synovial and bone infections and perform joint lavage procedures and regional and intraosseous perfusion of antibiotics in the field
- Specify the use of the different tenorrhaphy techniques in order to treat damage and lacerations of tendon and/or ligament structures
- Present the different causes of exuberant granulation and its treatment
- Apply the different therapeutic guidelines in burns and abrasions of different types

Module 6. Medical Pathologies of the Skin Endocrine System

- Identify the main pathologies affecting the skin
- Examine the origin of the problem and establish the dermatitis prognosis
- Recognize the clinical and laboratory signs of the main dermatological diseases
- Identify the symptoms of bacterial and viral skin diseases, and propose therapeutic options
- Determine the symptoms of skin diseases of fungal and parasitic origin, and propose therapeutic options
- Establish the symptoms of allergic and immune-mediated skin diseases, and propose therapeutic options
- Examine the symptoms of other skin diseases as well as their prognosis and treatment options
- Identify and develop the clinical presentation, diagnosis and management of the main types of neoplasms affecting horses
- Examine recent developments in the therapy of cutaneous neoplasms in horses

- Gain advanced knowledge of the pathology, diagnosis and management of sarcoids, squamous cell carcinomas, melanocytic tumors, mastocytomas and lymphomas
- Develop advanced knowledge on the pathology, diagnosis and management of equine metabolic syndrome and dysfunction of the intermediate pituitary gland in horses
- Identify the processes that occur with alterations in thyroid hormone concentrations
- Determine the most common causes of alterations in calcium, phosphorus and magnesium levels in horses

Module 7. Nervous System and Ophthalmology

- Identify all clinical signs associated with neurological diseases
- Define the key points of neurological assessments
- Establish differential diagnoses based on the main neurological pathologies in horses
- Present and analyze the diagnostic tools available for the different processes
- Propose specific measures for the management of neurological patients
- Update neurological patient treatments both in the field and in hospital settings
- Define parameters that help establish patient prognoses
- Delve into the use of diagnostic tools in ophthalmology, such as direct and indirect ophthalmoscopy, fundus examination and electroretinography
- Accurately recognize clinical signs of eye pain in horses
- Establish differential diagnoses of ocular clinical signs
- Propose working methodologies for patients with corneal ulcers and/or infectious keratitis
- Propose working methodologies for patients with stromal abscess and immune-mediated keratitis
- Establish working methodologies for patients with equine recurrent uveitis and patients suffering from cataracts
- Propose working methodologies for patients with glaucoma and for horses with ocular neoplasia

Module 8. Reproductive and Urinary System

- Expand knowledge of pathologies affecting the urinary system
- Recognize and establish protocols for the management of patients with acute renal failure and chronic renal failure
- Establish working protocols for patients with post-renal urinary tract pathology
- Comprehend the predisposing factors that may condition the appearance of this type of pathologies, and expand knowledge on the relevance of prevention
- Develop treatment alternatives available to ambulatory veterinary clinicians
- Study testicular, adnexal gland and penile pathology in depth, as well as their respective treatments
- Improve productive management in subfertile stallions and mares
- Identify and evaluate possible abnormalities in horse ejaculate, applying the necessary procedures to guarantee quality
- Identify, treat and prevent parasitic and infectious pathologies affecting the equine reproductive system
- Comprehend female pathologies during mating and potential treatments
- Comprehend the pathologies that affect females during gestation and potential treatments
- Comprehend the pathologies that affect females during the pre- and post-partum period and potential treatments
- Attend to the needs and demands of euthyroid delivery and placental assessment
- Develop the procedures involved in the care of dystocic labor and the performance of fetotomy
- Develop procedures that include the resolution of possible injuries associated with labor and delivery, such as correction of rectovestibular fistulas, reconstruction of external lacerations and repair of the perineal body

Module 9. Foal Medicine and Surgery

- Identify neonatal patients with abnormal behaviors indicative of disease
- Establish lines of action for neonatal patients with sepsis, based on severity
- Determine work protocols for patients with symptoms of neonatal asphyxia syndrome
- Recognize patients with cardio-respiratory symptomatology, and issue prognoses that determine their viability
- Develop field stabilization protocols for patients with bladder rupture or patent urachus
- Identify the difference in diagnostic test results between neonates and adults
- Determine the use of diagnostic imaging tools that can be used in the field to diagnose pathologies in foals, both in the neonatal and pediatric period Use these methods accurately to diagnose and assess the different pathologies that may occur in these stages
- Develop the techniques used in examination, diagnosis and parenteral and local treatment by joint lavage of septic arthritis in neonates
- Develop techniques that can be performed in the field to solve surgical pathologies of growing foals, such as umbilical hernia correction
- Compile the knowledge of angular and flexural deformities in foals Develop different treatments and establish specificities according to patient age and the anatomical region affected
- Detail the medical treatments and application of resins, splints and orthopedic hardware used in the treatment of angular and flexural deformities
- Specify the techniques used to delay and stimulate bone growth during the surgical treatment of angular deformities
- Determine the desmotomy and tenotomy techniques used in the treatment of flexural deformities
- Establish an appropriate methodology for the identification, treatment and prognostication of osteochondral injuries and subchondral bone cysts

Module 10. Advanced Therapeutic Protocols and Toxicology

- Analyze new alternatives in terms of drugs used in sedation and anesthesia for outpatient use, and delve into the most established protocols in order to optimize this type of procedures
- Make effective and dynamic decisions when dealing with patients with serious systemic conditions in order to establish diagnoses and treatments that ensure patient stabilization despite non-hospital conditions
- Correct hydro-electrolyte and acid-base imbalances to ensure the reversal of hemodynamic alterations
- Acquire advanced knowledge of equine pain management using the latest medications
- Examine the characteristics and special considerations to be taken into account when applying pharmacological treatments in sport horses, with special emphasis on avoiding problems in case of possible positive results in control tests for biological substances in competitions
- Gain advanced knowledge of equine toxicology, ensuring training for the recognition of toxic symptoms as well as the identification of plants and agents harmful to horses
- Analyze euthanasia procedures in depth Act correctly with patients in these last moments of their life, applying euthanasia in the most humane way possible as a last resort

Module 11. Applied Anatomy and Biomechanics of Horses

- Characterize the air of walk, trot and canter from a kinetic and kinematic point of view
- Examine the influence of neck position on the biomechanics of the dorsum and pelvis
- Analyze the biomechanical characteristics of the pelvic limb and its relation to gait, trot and canter quality
- Analyze locomotor modifications associated with speed and training in horses
- Characterize the biomechanical alterations found in claudication
- Develop variations in movement quality induced by patient age and genetics
- Evaluate the influence of the morphological characteristics of the hoof on the biomechanics of the thoracic limb
- Analyze the different types of shoeing and their effect on the biomechanical characteristics of horse hooves
- Establish the interaction of the saddle and rider on the horse's locomotor pattern
- Evaluate the effect of different embouchures and performance systems on the characteristics of horse movement

Module 12. Functional Assessment, Examination and Rehabilitation Planning

- Analyze the basis and importance of relationships in a multidisciplinary team
- Determine the difference between a functional and an anatomopathological diagnosis and the importance of global approaches
- Objectively compile the maximum information related to clinical cases
- Develop skills to perform general static physical examinations
- Define the detailed regional static evaluation methodology
- Develop analytical tools to perform complete palpation examinations
- Develop skills to perform dynamic examinations from a functional point of view
- Analyze the special considerations to be taken into account according to the sport discipline
- Value the importance of rider-horse pairing
- Define the methodology of neurological examinations complementary to functional assessments
- Identify the presence of pain in horses
- Determine the correct fit of the saddle
- Define the list of problems and treatment objectives according to the findings
- Develop basic knowledge to plan rehabilitation programs

Module 13. Physiology of Exercise and Training

- Examine respiratory, cardiovascular and musculoskeletal changes in response to submaximal and maximal, short and long duration, and intermittent exercises
- Understand the importance of histological and biochemical muscle changes with training and their impact on aerobic capacity and the respiratory, cardiovascular and metabolic response to exercise
- Establish how heart rate and blood lactate monitoring is performed, as well as measurement of ventilatory volumes and VO2 oxygen consumption
- Identify the mechanisms of thermoregulation of sport horses, associated pathologies, consequences and action protocols in case of thermoregulatory alterations
- Specify training strategies to develop oxidative potential, strength and anaerobic capacity
- Present strategies to reduce or delay the onset of fatigue during various types of exercise

Module 14. Manual Therapy

- Analyze different types of passive kinesitherapy and joint mobilizations
- Develop massage methodologies and applications
- Examine existing stretching exercises in horses and their applications
- Develop myofascial therapy techniques and understand their influence on horses
- Define "trigger points" and their consequences
- Establish the existing treatments of trigger points and their execution
- Analyze joint manipulative techniques and application methodology

Module 15. Electrophysical Agents in Equine Physiotherapy

- Analyze the use of analgesic electrotherapy and muscle stimulation, its application, scientific basis, indications and contraindications
- Identify possible applications of percutaneous electrolysis, as well as its scientific basis, indications and contraindications
- Evaluate the clinical use of diathermy and its use on horses
- Substantiate and expand knowledge on the clinical use of therapeutic lasers
- Determine the relationship of dose to power, frequency and penetration for effective and safe laser treatment
- Define the uses of shock waves in veterinary medicine and their application in different pathologies
- Propose different protocols for the application of electrophysical agents

Module 16. Therapeutic Exercise and Active Kinesitherapy

- Analyze the neuromuscular physiology involved in motor control
- Identify the consequences of altered motor control
- Define what specific tools we have and how we can include them in motor control re-education programs
- Examine what elements we should consider when designing active kinesitherapy programs
- Define core training techniques and their application as therapeutic exercise
- Define proprioceptive facilitation techniques and their application as therapeutic exercise
- Evaluate the characteristics and biomechanical implications of some of the main exercises from a therapeutic point of view
- Evaluate the effects of active work

Module 17. Complementary Modalities: Neuromuscular Taping and Acupuncture

- Define the most important aspects of TCM at the clinical level
- Analyze the effect of acupuncture at the clinical level
- Specifically evaluate the different meridians in horses
- Compile information on the advantages and disadvantages of available acupuncture techniques

- Analyze the response obtained in pretreatment scans
- Justify the selection of acupuncture points in reference to the response to pretreatment scans
- Propose work methodologies for horses with musculoskeletal problems
- Analyze the mechanisms of action of proprioceptive taping
- Develop proprioceptive elastic taping application techniques
- Identify neuromuscular taping techniques according to the diagnosis reached
- Integrate taping techniques and exercise in rehabilitation programs

Module 18. Diagnostic Imaging Oriented to the Diagnosis of Problems Susceptible to Physiotherapy Treatment

- Establish protocols for diagnostic imaging screening
- Identify which technique is necessary in each case
- Gain specialized knowledge in each anatomical area
- Establish diagnoses that helps better treat patients
- Determine various diagnostic techniques and their contributions to examinations
- Examine the normal anatomy of the different areas to be explored in the different imaging modalities
- Recognize individual anatomical variations
- Assess incidental findings and their possible clinical impact
- Establish the significant alterations in the different diagnostic modalities and how to interpret them
- Reach accurate diagnoses to assist in the establishment of an appropriate treatment

Module 19. Common Injuries in Sport Horses: Diagnosis, Conventional Treatment, Rehabilitation Programs and Physiotherapy Thoracic Limb Part I

- Present the most frequent thoracic pathologies, as well as their etiopathology, diagnosis, treatment and rehabilitation
- Recognize clinical signs associated to each thoracic pathology
- Evaluate conventional treatment options for the most frequent thoracic limb pathologies and subsequent monitoring
- Know the available physiotherapeutic treatments, rehabilitation protocols and physiotherapy treatments of the most frequent thoracic limb pathologies

Module 20. Common Injuries in Sport Horses: Diagnosis, Conventional Treatment, Rehabilitation Programs and Physiotherapy Pelvic Limb Part II

- Compile images by pathology to present examples of clinical cases
- Establish differential diagnoses that cause similar clinical signs
- Develop different therapies for each pathology
- Gain methodical knowledge for the diagnosis of forelimb lameness
- Determine guidelines to design individualized rehabilitation programs

03

Skills

Once all the contents have been studied and the objectives of the Advanced Master's Degree in Equine Medicine and Rehabilitation have been achieved, professionals will have superior competency and expertise in this area. A very complete approach, in a high-level specialization program that truly makes the difference.

Achieving excellence in any profession requires effort and perseverance. But, above all, the support of professionals, who will give you the boost you need, with the necessary means and assistance. At TECH, we offer you everything you need"

General Skills

- Recognize Equine Diseases
- Master the action protocols in each case
- Master equine examination protocols
- Be competent in acting in the places to which they travel
- Competently perform the tasks of the equine ambulatory clinic
- Issue appropriate diagnoses
- Perform rehabilitation-related therapies such as biomechanics, functional anatomy, exercise adaptation, rehabilitation planning and treatable pathologies
- Expand treatments and the concept of rehabilitation, creating rehabilitation plans and complementary treatment protocols
- Offer a new line of services that are becoming essential in horse medicine

Specific Skills

- Know how to diagnose equine colic
- Manage the most complicated and mildest cases
- Make quick decisions in case of emergency
- Decide when hospital referral is appropriate
- Perform appropriate nutritional management
- Determine group conditions and their intervention
- Diagnose equine respiratory diseases
- Recognize upper airway diseases
- Recognize lower respiratory tract diseases
- Educate owners on prevention and early detection measures
- Prescribe appropriate treatments
- Recognize cardiac disease in horses
- Evaluate the clinical repercussions of murmurs or arrhythmias
- Know the alterations affecting the cardiovascular system
- Know the alterations in respiratory pathologies
- Master diagnostic techniques and protocols
- Highly competently diagnose diseases related to the hematopoietic and immune systems
- Prescribe and interpret laboratory studies of blood components
- Recognize and manage endotoxic shock
- Quickly and effectively stabilize patients, especially in life-threatening situations

- Prescribe appropriate diets and teach owners to do it themselves
- Perform advanced nutritional counseling in special cases
- Understand the latest advances in equine antibiotic therapies
- Know which medicinal plants are useful in equine treatments
- Master equine anatomy
- Use medical advances in the locomotor area in horses
- Know the integumentary system in horses at an advanced level
- Utilize the therapeutic options available to treat wounds and musculoskeletal lesions
- Achieve wound healing
- Intervene in joint and tendon wounds
- Surgical approach to injuries in the field
- Perform perioperative management
- Diagnose and intervene early in musculoskeletal infections
- Use larvotherapy and skin grafts in appropriate cases
- Recognize cutaneous neoplasms
- Reach early diagnoses
- Detect, diagnose and treat endocrine diseases
- Recognize equine metabolic syndrome
- Recognize Cushing's syndrome in horses
- Know the geographic locations where these syndromes are more prevalent
- Recognize the most affected breeds
- Prescribe appropriate diagnostic tests
- Use conventional and advanced techniques in the approach
- Recognize equine neurological diseases
- Distinguish the etiological conditions that cause them
- Know the etiological agents that cause them
- Early detection and management of equine acular disorders
- Diagnose and treat corneal ulcers
- Diagnose and treat uveitis
- Diagnose and treat stromal abscesses
- Diagnose and treat immune-mediated keratitis
- Diagnose and treat retinal detachment
- Diagnose and treat cataracts
- Diagnose and treat glaucoma
- Prescribe appropriate diagnostic tests for each case
- Attend equine births
- Intervene in disorders of the reproductive system of equine males
- Intervene in equine female reproductive system disorders
- Deal with surgical pathologies
- Perform traditional and avant-garde techniques
- Detect, diagnose and intervene in urinary system alterations
- Prescribe and interpret diagnostic tests
- Detect and intervene in pathologies during pregnancy and foaling of equines
- Perform early detection of foaling and foal problems
- Handle portable diagnostic equipment in radiology and ultrasound used in foaling and foal delivery
- Detect and intervene in osteochondrosis in foals

- Use updated and advanced methods and protocols
- Master all aspects of sedation and anesthesia
- Induce, maintain and reverse anesthesia
- Perform the care and protocols used in hospital intensive care units
- Pharmacological management of sport horses, anti-doping
- Address toxicological problems
- Know all aspects of euthanasia procedures
- Know horse training and potential biomechanical alterations
- Perform physical diagnostics on horses and know how to detect potential pathologies
- Identify changes in animals when they perform physical exercise
- Perform different types of manual therapy on horses
- Use electrotherapy as the basis for the rehabilitation of the animal
- Evaluate the most appropriate therapeutic exercises for each horse according to its circumstances
- Apply acupuncture and neuromuscular bandages as a work tool horse rehabilitation and physiotherapies
- Identify musculoskeletal pathologies and apply appropriate treatments
- Treat animals suffering from sports injuries by developing specific therapies for each pathology

04

Course Management

Within TECH's concept of total quality, this program provides students with a teaching staff of the highest level, chosen for their proven experience in education. Professionals from different areas and fields of expertise that make up a complete, multidisciplinary team. A unique opportunity to learn from the best.

Our professors bring their vast experience and their teaching skills to offer you a stimulating and creative specialized training program"

International Guest Director

As one of the foremost veterinary surgeons in equine patient care, Dr. Andy Fiske-Jackson is the Deputy Director of the Royal Veterinary College Equine in the United Kingdom. This is one of the leading institutions in both equine patient care and veterinary development, education and innovation. This has allowed him to develop in a privileged environment, even receiving the James Bee Educator Awards for excellence in educational work.

In fact, Dr. Andy Fiske-Jackson is also part of the team of surgeons at the Equine Referral Hospital, focusing his work on orthopedic and soft tissue surgery. Thus, his main areas of focus are low performance, back pain, dental and sinus issues, digital flexor tendinopathies and regenerative medicine.

In terms of research, his work leans between diagnostic techniques for digital flexor tendinopathies, clinical uses of objective gait analysis and objective evaluation of back pain. His efficiency in this field has led him to actively participate in various international events and conferences, including congresses in Portugal, Czech Republic, Finland, Belgium, Hungary, Switzerland, Austria, Germany, Ireland, Spain and Poland.

Dr. Fiske-Jackson, Andy

- Deputy Director at the Royal Veterinary College Equine. Hertfordshire, United Kingdom
- Associate Professor of Equine Surgery at the Royal Veterinary College.
- Equine Surgeon at the Equine Referral Hospital. Hertfordshire, United Kingdom
- Veterinarian at Axe Valley Veterinary
- Veterinarian at Liphook Equine Hospital.
- Veterinarian at the Society for the Protection of Animals Abroad. Morocco Graduate of the University of Liverpool
- Master's Degree in Veterinary Medicine from the Royal Veterinary College

Thanks to TECH, you will be able to learn with the best professionals in the world"

Management

Ms. Varela del Arco, Marta

- Clinical Veterinarian in Equine Medicine, Surgery and Sports Medicine, DVM, PhD, CertEspCEq
- Head of the Large Animals Area of the Complutense Veterinary Clinic Hospital of Madrid (UCM)
- Associate Professor, Department of Animal Medicine and Surgery, Complutense University of Madrid (UCM)
- Head of Large Animal Unit at Complutense Clinical Veterinary Hospital of Madrid
- Assistant Professor, Department of Animal Medicine and Surgery, UCM, 2007 and 2015-present
- She teaches in different undergraduate and graduate courses, university specialization programs and Professional Master's Degrees

Ms. De la Cuesta Torrado, María

- Veterinarian with clinical specialty in Equine Internal Medicine, DVM, MSc
- Associate Professor, Department of Equine Medicine and Surgery, Cardenal Herrera CEU University of Valencia, 2012
- Member of the Organizing Committee of the 12th European College of Equine Internal Medicine Congress 2019 (ECEIM)
- Member of the Board of Directors of Spanish Society of Ozone Therapy
- Member of the Equine Clinicians Commission of the Official College of Veterinarians of Valencia
- Member of the Spanish Association of Equine Veterinarians (AVEE)
- Member of the scientific committee and coordinator of courses and congresses in the area of ozone therapy, supported by continuing education credits (CEC) granted by the National Health System

Dr. Hernández Fernández, Tatiana

- PhD in Veterinary Medicine, UCM
- Diploma in Physiotherapy, URJC
- Degree in Veterinary Medicine, UCM
- Professor at the Complutense University of Madrid of: Expert in Equine Physiotherapy and Rehabilitation, Expert in Bases of Animal Rehabilitation and Physiotherapy, Expert in Physiotherapy and Rehabilitation of Small Animals, Training Diploma in Podiatry and Shoeing
- Resident in the area of Equidae at the Clinical Veterinary Hospital of the UCM
- Practical experience of more than 500 hours in hospitals, sports centers, primary care centers and human physical therapy clinics
- More than 10 years working as a specialist in rehabilitation and physiotherapy

Dr. Aguirre Pascasio, Carla

- Degree in Veterinary Medicine, University of Santiago de Compostela, 1995-2000, DVM, PhD, CertAVP-EM, CertAVP-ESST, CertEspCEq
- Doctor in Veterinary Medicine, University of Murcia, 2009 Diploma in Advanced Studies, 2005
- And Postgraduate in Physiotherapy in Horses, 2001-2002 University of Barcelona
- Master's Degree in Business and Administration, 2010 ENAE Business School, Madrid
- Certified in Internal Medicine, Royal Veterinary College of London, University of Liverpool, (2012) (CertAVP EM - Equine Medicine)
- Certified in Surgery of Soft Tissues, Royal Veterinary College of London, University of Liverpool, (2015) (CertAVP ESST - Equine Soft tissue)
- Spanish Certificate in Equine Clinic, (2019) (CertEspCEq by the Spanish Veterinary Council)
- Residency at the European College of Internal Medicine Board Eligible in the ECEIM (European College of Equine Internal Medicine)
- Professional stays at Equine Hospitals in England, USA and Europe (Liphook Equine Hospital-UK; Rood and Riddle-USA; Hagyard-USA, Blue Ridge-USA; Alamo Pintado-USA; San Luis Rey-USA; University of Liverpool-UK; University of Ghent-Belgium; University of Edinburgh-UK; University of London-UK)
- Consecutive Fellowships and Internship at the Clinical Veterinary Hospital of the University of Murcia (2002-2007)
- Fellowship at the Equine Hospital Casal do Rio (2002)

Ms. de Diego, María Alonso

- Equine Internal Medicine Service of the Clinical Veterinary Hospital of the Alfonso X El Sabio University
- Associate Professor of the Faculty of Veterinary Medicine of the Alfonso X El Sabio University
- Spanish Certificate in Equine Clinic
- Member of the Association of Equine Veterinary Specialists
- Member of the Spanish Society of Ozone Therapy
- Residency at the Veterinary Clinical Hospital of the U.C.M
- Outpatient Equine Clinic Veterinarian contracted by Veterinarios Autónomos
- Freelance Equine Outpatient Clinic Veterinarian in Madrid
- Training stays in several hospitals in Kentucky, USA, in the area of Equine Internal Medicine

Dr. Barba Recreo, Marta

- Head of the Equine Internal Medicine Service, Hospital Clínico Veterinario, Universidad CEU Cardenal Herrera, Valencia
- Degree in Veterinary Medicine, University of Zaragoza (2009)
- PhD in Biomedical Sciences, Auburn University, Alabama, USA, (2016)
- Diplomate at the American College of Internal Medicine, Large Animals (2015)
- Rotating internship in Equine Medicine and Surgery, University of Lyon, VetAgro-Sup, France (2010-2011)
- Residency in Equine Internal Medicine, J.T. Vaughan Large Animal Teaching Hospital, Auburn University, Alabama, USA (2012-2015)
- Assistant Professor, Department of Animal Medicine and Surgery, Faculty of Veterinary Medicine, Universidad CEU Cardenal Herrera, Valencia
- Professor and veterinary specialist for the Equine Internal Medicine service and research associate, Weipers Centre Equine Hospital, University of Glasgow, Scotland, United Kingdom (2016)

Ms. Carriches Romero, Lucía

- Degree in Veterinary Medicine, Alfonso X el Sabio University (2008), DVM
- Rotating and Advanced Internships for Equine Specialization at the Hospital Clínico Veterinario Complutense (2016-2019)
- Collaborating Professor in Practical Teaching, Department of Animal Medicine and Surgery, Complutense University of Madrid (UCM) (2020)
- Outpatient veterinary clinic specializing in equine medicine, surgery, emergencies and reproduction
- External collaborating veterinarian hired by the Hospital Clínico Veterinario Complutense, Complutense University of Madrid (UCM) (2020)
- Various stays in centers abroad
- Attendance and publication of posters in national and international congresses

Ms. Roquet Carne, Imma

- Clinical Veterinarian Specialist in Equine Surgery, DVM, MVS, DACVS-LA
- Diploma from American College of Veterinary Surgery (2014)
- Degree in Veterinary Medicine, Autonomous University of Barcelona (UAB)(2005)
- Internship in Equine Medicine and Surgery at Spurlock Equine Hospital (Virginia, USA)
- Rotating Equine Internship at Kansas State University (USA)
- Residency Program in Large Animal Surgery (ACVS) at the Western College of Veterinary Medicine (Canada)
- Equine surgeon at several clinics in Europe (Belgium, Sweden, Portugal) and in Spain (Faculty of Veterinary Medicine of Cáceres) (2016)
- Member of the ACVS and AVEEC Associations
- Regular attendee and speaker at national and international courses and congresses
- Publications of communications and articles in scientific journals

Ms. Castellanos Alonso, María

- Degree in Veterinary Medicine, University of Santiago de Compostela
- Diploma in Equine Clinical Practice, Autonomous University of Barcelona
- Resident in the Equine Area, Hospital Clínico Veterinario UCM
- Clinical Veterinarian Specialist in Equine Surgery (2017)
- Member of the veterinary team of Compluvet S.L., performing inspection in races and anti-doping control in different racetracks nationwide (2018)
- Clinical veterinarian forming part of José Manuel Romero Guzmán's team
- Veterinary in National and International Conferences
- Member AVEE (Association of Veterinary Specialists in Equidae)

Mr. Muñoz Morán, Juan Alberto

- Degree in Veterinary Medicine, Complutense University of Madrid, 1999 ECVS, MSc, PhD
- PhD in Veterinary Science
- Graduate of the European College of Veterinary Surgeons
- Graduated in experimental animals, category C, University of Lyon (France)
- Master's Degree in Veterinary Sciences, Alfonso X El Sabio University, Madrid
- Residency in large animal surgery, Veterinary University of Lyon
- Internship in Equine Surgery, London Equine Hospital, Ontario
- Internship in Equine Medicine and Surgery, Veterinary University of Lyon
- Lecturer on Large Animal Surgery, Pretoria Veterinary University, South Africa
- Head of the Equine Surgery Residency Program, Veterinary University of Pretoria, South Africa
- Head of the Large Animal Surgery Service and Undergraduate Professor at Universidad Alfonso X el Sabio, Madrid
- Responsible for the Postgraduate Professional Master's Degree in Sports Medicine and Equine Surgery, Universidad Alfonso X el Sabio
- Responsible for the Postgraduate Master's Degree in Equine Surgery, Alfonso X el Sabio University
- Member of the Examination Committee of the European College of Veterinary Surgeons
- Editor of the Journal of Equine Veterinary Medicine and Surgery: Equinus
- Clinician in Equine Surgery, Veterinary University of Montreal
- Clinician in Equine Surgery, Veterinary University of Lyon
- Co-author of a CD-ROM on the anatomy of the Thoracic Extremity in Horses
- Partner Surgeon, Grand Renaud Veterinary Clinic, Saint Saturnin, France
- Surgeon at the Equine Hospital of Aznalcóllar, Seville

Mr. López Sanromán, Javier

- Clinical veterinarian member of the Equine Surgery Service of the Complutense Clinical Veterinary Hospital (UCM), DVM, CertEspCEq
- Professor of the Department of Animal Medicine and Surgery, Complutense University of Madrid (UCM) and deputy director of the Department
- University School Assistant Professor (LRU) (1992-1994)
- University Assistant Professor (First period) (LRU) (1994-19969)
- University Assistant Professor (Second Period) (LRU) (1996-1999)
- Full-time Associate Professor (Type 2) (1999-2000)
- Full University Professor (2000-present)
- Professor at other national Universities (University of Las Palmas de Gran Canaria, Cordoba and Extremadura) and abroad (Universidade de Trás-os-Montes e Alto Douro in Vila Real, Portugal; Ecole Nationale Veterinaire de Lyon, France; Universidad Nacional del Litoral, Argentina)
- Lecturer in different undergraduate and postgraduate courses, university specialization programs and masters, both national and international, and coordinator of different subjects and international courses
- Director of Master's Degrees, doctoral theses and final degree projects for the Veterinary Degree
- Reviewer of scientific articles in several journals indexed in the Journal Citation Report (JCR)
- Deputy Director of the Department of Animal Medicine and Surgery, UCM
- Three sexenios of recognized research (CNEAI)

Mr. Cervera Saiz, Álvaro

- Graduated in Veterinary Medicine, Catholic University of Valencia, San Vicente Mártir (2013-2018), DVM
- Attendance to specific courses and conferences in the equine area of the HUMECO group
- Attendance at training and refresher courses and seminars given by Spanish universities
- Collaboration as an internship teacher during the internship at CEU Cardenal Herrera University
- Equine Clinical Veterinarian in Outpatient Service at MC Veterinaria Equina (2020), Valencia
- Stays in reference hospitals in the United Kingdom, under the supervision of specialists in equine medicine and surgery such as Luis Rubio, Fernando Malalana and Marco Marcatili
- Internship in Equine Medicine and Surgery, Clinical Veterinary Hospital, CEU Cardenal Herrera University (2018-2019)
- Scholarship holder at the laboratories of the Faculty of Veterinary and Experimental Sciences, Catholic University of Valencia, San Vicente Martir (2013-2018)
- Numerous stays in reference hospitals in Spain during the degree

Ms. Benito, Irene

- Degree in Veterinary Medicine University of Extremadura (UEX), Faculty of Veterinary Medicine of Cáceres (2011), DVM
- Completion of an internship in Equine Medicine and Surgery, Clinical Veterinary Hospital, Autonomous University of Barcelona (2013-2014)
- Professional internship through the Quercus Scholarship (Leonardo Da Vinci Program) for graduates of the University of Extremadura, lasting half a year, at Hippiatrica Equine Medical Center, Lisbon (Portugal), under the coordination of Dr. Manuel Torrealba (clinical director) (2012)
- Completion of the Erasmus Practical Scholarship to work abroad at the Equine Hospital, University of Bristol, Referral Equine Hospital (directed by Prof. Alistair Barr) in Langford, (North Somerset), United Kingdom, under the supervision and coordination of Mr. Henry Tremaine (2011)
- Online training course on administrative activities in client relations and administrative management, Academia La Glorieta, Denia (2014-2015)
- Attended courses on Ozone Therapy in equines coordinated by Maria de la Cuesta and organized by the SEOT (Spanish Society of Ozone Therapy) in Valencia (2014-2015)
- Attendance at training and refresher courses and seminars given by Spanish universities

Dr. Gómez Lucas, Raquel

- Graduated in Veterinary Medicine, Complutense University of Madrid, LV, PhD, DACVSMR
- Doctor of Veterinary Medicine.
- Graduate of the American College of Veterinary Sports Medicine and Rehabilitation (ACVSMR).
- Professor of the Veterinary Degree at the Alfonso X el Sabio University, teaching Equine Diagnostic Imaging, Internal Medicine and Applied Anatomy.
- Professor of the Postgraduate Master of Equine Medicine and Surgery Internship at the Universidad Alfonso X el Sabio
- Responsible for the Postgraduate Professional Master's Degree in Sports Medicine and Equine Surgery, Universidad Alfonso X el Sabio
- Head of the Sports Medicine and Diagnostic Imaging Service of the Large Animal Area of the Clinical Veterinary Hospital, Alfonso X el Sabio University(2005)

Ms. Álvarez González, Carlota

- Degree in Veterinary Medicine from the Universidad Alfonso X El Sabio
- Certified in Acupuncture and Traditional Chinese Veterinary Medicine by the Chi Institute of Europe

- Veterinary part of the clinical service of Traditional Chinese Veterinary Medicine of the Chi Institute of Europe (CHIVETs)
- Veterinarian in charge of the Holistic Medicine service of the Villalba Veterinary Hospital (Veterinarea)
- Holistic Medicine Outpatient Service (2010)
- Specialist in animal physiotherapy at Fisioveterinaria
- Member of the WATCVM (World Association of Traditional Chinese Veterinary Medicine) and AVEE (Association of Equine Veterinarians)

Dr. Villalba Orero, María

- Clinical veterinarian member of the Anesthesia and Equine Internal Medicine Services of the Complutense Clinical Veterinary Hospital (UCM) and of the Equine Anesthesia Service of the Virgen de Las Nieves Clinical Veterinary Hospital (Madrid), DVM
- Degree in Veterinary Medicine, Complutense University Madrid
- Doctor of Veterinary Medicine, Complutense University of Madrid.
- European Certificate in Veterinary Cardiology (ESVPS)
- Master's Degree in Veterinary Sciences from the Complutense University of Madrid
- Master's Degree in Veterinary Cardiology
- Speaker at national equine cardiology congresses and courses
- Member of the Veterinary Cardiovascular Society (VCS), the European and Spanish Society of Cardiology (ESC and SEC) and the Spanish Association of Equine Veterinarians (AVEE)

Ms. Domínguez, Mónica

- Clinical Equine Veterinarian specializing in Internal Medicine and Reproduction, DVM, CertEspCEq
- Clinical Veterinary of the Reproduction Service of the Complutense Clinical Veterinary Hospital (HCVC).
- Currently pursuing a PhD, Department of Animal Medicine and Surgery (UCM)
- Degree in Veterinary Medicine from the Complutense University of Madrid, 2008.
- Official Professional Master's Degree in Veterinary Sciences (UCM) (2010)
- Obtained the Spanish Certificate in Equine Clinic (CertEspCEq) (2019)
- Associate Professor, Department of Animal Medicine and Surgery, Complutense University of Madrid (UCM)
- Collaborating Professor in Practical Teaching, Department of Animal Medicine and Surgery, Complutense University of Madrid (UCM) (2016- 2018)
- Associate Professor, Department of Animal Medicine and Surgery, Complutense University of Madrid (UCM) (2019-present)
- Teaching experience in Veterinary Technical Assistant (VTA) training in private academies (IDEA, Madrid) and other courses at the COVECA center (Equine Reproduction Center, Toledo)

Dr. Forés Jackson, Paloma

- Vice-Dean of Students and Professional Orientation, Faculty of Veterinary Medicine, Complutense University of Madrid, DVM, PhD
- Member of the Equine Medicine Service, Complutense Clinical Veterinary Hospital (HCVC)
- Degree in Veterinary Medicine, Complutense University of Madrid (1986)
- PhD in Veterinary Medicine, Complutense University of Madrid (1993)
- Full Professor, Department of Animal Medicine and Surgery, UCM
- Assistant in the Department of Animal Pathology II, Faculty of Veterinary Medicine, UCM (1987)
- Associate Professor and in 1996 obtained a tenured position in the Department of Animal Medicine and Surgery (1992)
- Stay at the College of Veterinary Medicine, Department of Large Animal ClinicalSciences, University of Gainesville, Florida (1994)

- He teaches on different undergraduate and postgraduate courses, university specialization programs and masters and coordinates different subjects He has participated and organized national and international courses

Mr. Goyoaga Elizalde, Jaime

- Head of the Equine Surgery Service, Complutense Clinical Veterinary Hospital (UCM), DVM, CertEspCEq
- Degree in Veterinary Medicine (1986)
- At the University of Bern, Germany (veterinary clinic "Dr. Cronau") and the United States (University of Georgia)
- Professor in the Professional Master's Degree in Animal Medicine, Health and Improvement Diagnostic Imaging Córdoba
- Lecturer on the Postgraduate Diploma in Bases of Physiotherapy and Animal Rehabilitation UCM
- Co-director and Professor on the Master's Degree in Equine Medicine and Surgery Improve International
- Associate Professor, Department of Animal Medicine and Surgery, Faculty of Veterinary Medicine, Complutense University of Madrid (1989)
- Teacher of Medical Pathology and Nutrition, Special Surgery of Large Animals, Equine Pathology and Clinic, Hospitalization, Emergency and Intensive Care in Equine Clinic, Radiology and Diagnostic Imaging (1989)

  Diagnostic Imaging (1989)

Mr. Manso Díaz, Gabriel

- Clinical veterinarian member, Diagnostic Imaging Service, Complutense Clinical Veterinary Hospital (HCVC), DVM, MSc, PhD, MRCVS
- Degree in Veterinary Medicine from the Complutense University of Madrid (UCM), obtaining the Extraordinary National Award
- PhD from the UCM with which he obtained the European Mention and the Extraordinary Doctorate Award (1989)
- Master's Degree in Veterinary Science Research (2011)
- Assistant Professor, Department of Animal Medicine and Surgery, Complutense University of Madrid (UCM)
- Collaborator in Practical Teaching, Department of Animal Medicine and Surgery (UCM) (2011)
- Assistant Professor Doctor, Department of Animal Medicine and Surgery (UCM) (2019)
- Regular speaker at courses, workshops and congresses in the field of Equine Diagnostic Imaging
- Large Animal Diagnostic Imaging Resident (ECVDI) Equine Referral Hospital, Royal Veterinary College (2016-present)
- University Teacher Training Fellowship (2011-2015) (Dept. of Animal Medicine and Surgery, Complutense University of Madrid)
- Assistant Professor, Department of Animal Medicine and Surgery, Universidad Complutense de Madrid (UCM) (2019-present)

Mr. Iglesias García, Manuel

- Clinical Veterinarian and Surgeon, Veterinary Hospital of the Extremadura Hospital (University of Extremadura), DVM, PhD, Cert. ES(ESVPS), CertEspCEq

- Degree in Veterinary Medicine from the Alfonso X el Sabio University (UAX).
- Professional Master's Degree in Equine Surgery and obtained the title of "General Practitioner in Equine Surgery" from the "European School of Veterinary Postgraduate Studies" (2013).
- Professional Master's Degree in Equine Surgery, Veterinary Hospital, Alfonso X el Sabio University (2013-2016)
- Doctorate Degree from Alfonso X el Sabio University (2017)
- In 2019 he obtained the Spanish Certificate in Clinical Equine (CertEspCEq)
- Actively participates as a director of final projects for the Veterinary Degree
- Collaboration in the teaching of interns and veterinary students on the Master's Degree in Equine Surgery
- Professor on the Master's Degree in Large Animal Internship, University of Extremadura, for the last 3 years

Ms. Millares Ramirez, Esther M

- Degree in Veterinary Medicine, Alfonso X El Sabio University, Madrid
- Master's Degree in Veterinary Science, University of Montreal, Canada
- Certified Veterinary Acupuncturist (CVA), Chi Institute, Florida, USA
- Certified in the application of Kinesiotaping (muscle taping) on horses, EquiTape in California, USA
- Participation in the teaching and development of clinical weeks for students, University of California, Davis, USA
- Equine Sports Medicine Service, University of California, Davis, USA (2015-2017)
- Equine Ambulatory Medicine Service, University of California, Davis, USA (2017-2018)

Dr. León Marín, Rosa

- Clinical Veterinarian specialized in Equine Dentistry
- Graduated in Veterinary Medicine, Complutense University of Madrid, September (1994)
- PhD in Veterinary Medicine, Complutense University of Madrid, unaniously obtaining the qualification of Outstanding cum Laude (2011) for the thesis Possible Role of Proinflammatory Mediators in Equine Dental Eruption
- External tutor of the subject "Internships", tutoring second cycle students of the Faculty of Veterinary Medicine of the Complutense University of Madrid, the Alfonso X el Sabio University of Madrid and the CEU Cardenal Herrera University of Valencia
- Courses on Sport Technician in Equitation, Equestrian Federation of Madrid, courses in Professional Training in the handling of racehorses
- Professor on postgraduate courses in Veterinary Rehabilitation, Equine Clinic I.A.C.E.S., Expert Courses in Therapeutic Riding and Bases of Physiotherapy and Animal Rehabilitation, Faculty of Veterinary Medicine, Complutense University of Madrid

Ms. Marín Baldo Vink, Alexandra

- Degree in Veterinary Medicine, University of Murcia., DVM
- Diploma of Advanced Studies Animal Medicine and Reproduction University of Murcia (2005)
- Professor, Faculty of Veterinary Medicine, Alfonso X El Sabio University (2008-2020)
- Teaching of the theoretical and practical teaching related to the equine species of the subjects: Parasitic diseases, propaedeutics and supervised practice
- Imparting practical teaching related to the equine species for the course on Medical Pathology
- Coordination of the Clinical Propedeutics course
- Equine Hospitalization Service, Clinical Veterinary Hospital, Alfonso X El Sabio University
- Training stays in several hospitals in Spain in the area of large animals

- Fellowship in the Department of Equine Surgery and Large Animals, Veterinary Hospital, University of Murcia
- Responsible for the large animal hospitalization service, Hospital Clínico Veterinario, Universidad Alfonso X el Sabio
- Publications in the area of Equine Internal Medicine
- Direction of Final Degree Projects, U.A.X.

Dr. Martín Cuervo, María

- Doctor of Veterinary Medicine, University of Extremadura, DVM, PhD, MSc, Dipl. ECEIM
- Degree in Veterinary Medicine from the University of Córdoba
- Master's Degree in Veterinary Science from the University of Extremadura
- Graduate of the European College of Equine Internal Medicine (ECEIM)
- Associate Professor in the Department of Animal Medicine and Surgery at the University of Extremadura, teaching equine internal medicine, since 2016
- Professor of advanced courses at the UEx: Theoretical-Practical Course in Clinical Analysis in Veterinary Medicine Methodology and interpretation (2010, 2011, 2012 and 2013)
- Professor for the Professional Master's Degree-Internship in Medicine and Surgery of Horses, University of Extremadura (2012-present)
- Professor on the International Master's Degree in Equine Reproduction, University of Extremadura (2013, 2014 and 2015)
- Professor on the Master's Degree in Equine Therapy, University of Extremadura (2015)
- Head of the Internal Medicine Department, Veterinary Clinic Hospital, University of Extremadura
- Associate Professor, Department of Animal Medicine and Surgery, University of Extremadura
- Professor on the Master's Degree / Internship in Medicine and Surgery of Companion Animals (Equidae), University of Extremadura

Dr. Rodríguez Hurtado, Isabel

- Specialist in Internal Medicine of Horses, DVM, PhD, Dipl. ACVIM
- Veterinary Degree from the Complutense University of Madrid
- PhD in Veterinary Medicine (2012)
- Diploma from the American College of Veterinary Internal Medicine (ACVIM) (2007)
- Internship and Residency in Equine Internal Medicine, Auburn University (USA)
- Master's Degree in Biomedical Sciences
- Master's Degree in Research Methodology in Health Sciences
- Professor and Coordinator of Medical Pathology and Nutrition, Veterinary Degree (Universidad Alfonso X el Sabio, UAX, Madrid)
- Professor of the Postgraduate Master's Degree in Equine Internal Medicine, University Alfonso X el Sabio
- Head of the Equine Internal Medicine Service (UAX)
- Head of the Large Animal Area, Clinical Veterinary Hospital (UAX)

Dr. Santiago Llorente, Isabel

- Professional Career in Equine Clinical Practice and Research, DVM, PhD, CertESpCEq
- Head of the Internal Equine Medicine Service of the Complutense Clinical Veterinary Hospital (HCVC UCM)
- PhD in Veterinary Medicine from the UCM (2016), obtaining the specialty CertEspCEq
- Degree in Veterinary Medicine from the Complutense University of Madrid, 1999
- Rotating Internship at UCM
- Teacher training on various undergraduate, postgraduate and several university specialization programs and master's degrees

- Lecturer, Lusófona University of Lisbon (Portugal), Department of Medical Clinical Pathology II (2019-present)
- Private Practice in areas of Equine Internal Medicine, Reproduction and Lameness Diagnosis
- Hired Veterinarian in the Large Animal Area, Hospital Clínico Veterinario Complutense (HCVC UCM), performing main professional duties in the fields of equine anesthesia, equine internal medicine and hospitalization and intensive care (2005-present)
- Founding partner of Compluvet S.L., company manager of the assistance and anti-doping control in horse races in Spain (2010-present)

Dr. Gutiérrez Cepeda, Luna

- Doctorate in Veterinary from the Complutense University of Madrid.
- Degree in Veterinary Medicine, Complutense University Madrid
- Official Professional Master's Degree in Veterinary Science Research, Complutense University of Madrid
- Master's Degree in Physiotherapy, Autonomous University of Barcelona
- Diploma in Acupuntura Veterinaria, International Veterinary Acupuncture Society (IVAS)
- Postgraduate in Physiotherapy of Large Animals (Horses), Autonomous University of Barcelona
- Kinesiotaping Instructor for horses by the International Kinesiotaping Society
- Associate Professor, Department of Animal Medicine and Surgery, Faculty of Veterinary Medicine, Complutense University of Madrid (2014)

Mr. García de Brigard, Juan Carlos

- Licensed as a Veterinarian Doctor by the Universidad Nacional de Colombia. Bogotá, Colombia
- Certified Equine Rehabilitation Clinician University of Tennessee at Knoxville Knoxville, TN, USA
- Certificate in Equine Sports Massage Therapy Equine Sports Massage and Saddle-fitting School Camden, SC, USA
- Certificate in Animal Chiropractic American Veterinary Chiropractic Association Parker University - Dallas, TX, USA
- Certified Kinesio Taping Instructor - Equine KinesioTaping Internationl Association Albuquerque, NM, USA
- Certified Manual Lymphatic Drainage Therapist Seminar House Schildbachhof - WIFI-Lower Austria Baden, Austria
- Certified Equine KinesioTaping Therapist KinesioTaping Internationl Association Baden, Austria
- HIPPO-Training E.U. Manager and founder Private practice for high-performance sport horses (2006-present)

- International Equestrian Federation President of the Veterinary Commission of the 2017 Bolivarian Games and the 2018 Central American and Caribbean Games (2017-present)

Ms. Dreyer, Cristina

- Degree in Veterinary Medicine from the ULPGC
- Internship in Sports Medicine and Lameness, Lameness Referral Center, N.W.E.P, Northwest Equine Performance, Oregon, USA
- Postgraduate Diploma in Equine Science, Veterinary University in Edinburgh
- Proper Expert Title in Bases of Physiotherapy and Animal Rehabilitation, UCM
- Proper Expert Title in Equine Physiotherapy and Rehabilitation, UCM
- Quiropraxia Veterinaria por IAVC International Academy of Veterinary Chiropractic
- Acupuntura Veterinaria por IVAS International Veterinary Acupuncture Society
- Applied Kinesiology and Veterinary Holistic by EMVI and the Spanish Association of Kinesiology
- Spanish Certificate in Equine Clinic
- Practical clinical experience of more than 1000 hours in several European and American Referral Hospitals
- Clinical Manager for two years of the Equine Department at the Large Animal Clinic Los Molinos, Madrid
- More than 10 years as veterinarian of the Sotogrande International Polo Tournament
- More than 10 years working as a self-employed Clinical Veterinarian

Ms. Boado Lama, Ana

- Graduated from the Complutense University of Madrid.
- Internship at the Animal Health Trust, Newmarket
- Residency in Orthopedics at the University of Edinburgh, UK
- Certificate in Equine Surgery (Orthopedics) from the Royal College of Veterinary Surgeons, Uk.
- Advanced Practitioner of Equine Surgery (Orth) (RCVS)
- Diploma in Sports Medicine and Rehabilitation (American and European)
- Member of the British Veterinary Association (BEVA) and the Spanish Association of Equine
- Speaker at international and national congresses and courses
- Teaching during residency fourth- and fifth-year students at the University of Edinburgh and postgraduate Master's students
- Teaching in CPD courses to veterinarians in the field of equine traumatology
- Teaching in Physiotherapy Master's Degree, Complutense University of Madrid
- Specialized Equine Sports Medicine and Rehabilitation Service (2008-present)

05

Structure and Content

The contents of this Advanced Master's Degree have been developed by the different experts on this course, with a clear purpose: to ensure that our students acquire each and every one of the necessary skills to become true experts in this field. The content of this program enables you to learn all aspects in the different disciplines involved in this field. A complete and well-structured program will take you to the highest standards of quality and success.

Through a very well-organized program, you will be able to access the most advanced knowledge in Equine Medicine and Rehabilitation"

Module 1. Digestive System

1.1. Approach to Acute Abdominal Syndrome Evaluation. Treatment Decision
- 1.1.1. Introduction
  - 1.1.1.1. Epidemiology of Colic and Predisposing Factors
  - 1.1.1.2. Categorization of Diseases Causing Colicky Conditions
- 1.1.2. General Screening Methods
  - 1.1.2.1. Medical History
  - 1.1.2.2. Assessment of General Condition and Degree of Pain
  - 1.1.2.3. Measurement of Vital Signs, Degree of Dehydration, Degree of Tissue Perfusion and Mucous Membranes Status
  - 1.1.2.4. Auscultation, Palpation and Percussion of the Abdomen
  - 1.1.2.5. Rectal Examination
  - 1.1.2.6. Nasogastric Catheterization
- 1.1.3. Advanced Diagnostic Methods
  - 1.1.3.1. Blood Biopathology in the Diagnosis of Colic
  - 1.1.3.2. Abdominocentesis
  - 1.1.3.3. Ultrasound, Radiology, Endoscopy
- 1.1.4. Treatment Decision: Medical or Surgical? When to Refer

1.2. Diagnostic Imaging of the Digestive System in the Field
- 1.2.1. Introduction to Diagnostic Imaging in the Field
- 1.2.2. Technical Basis
  - 1.2.2.1. Radiology
  - 1.2.2.2. Ultrasound
- 1.2.3. Oral Pathology
- 1.2.4. Esophageal Pathology
- 1.2.5. Abdominal Pathology
  - 1.2.5.1. Digestive system
    - 1.2.5.1.1. Stomach.
    - 1.2.5.1.2. Small Intestine
    - 1.2.5.1.3. Large Intestine
  - 1.2.5.2. Peritoneal Cavity

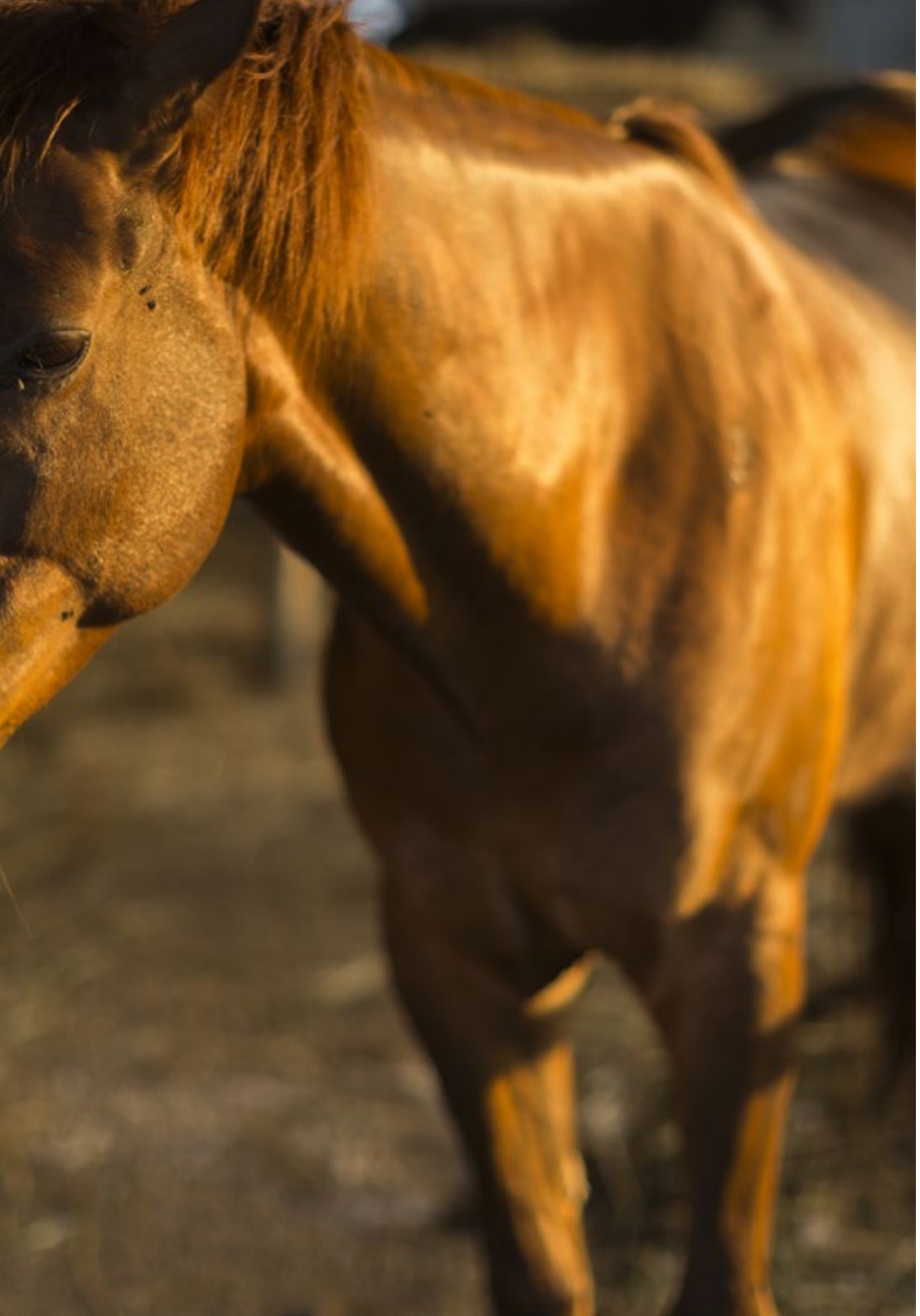
1.3. Oral Cavity Examination Exodontia
- 1.3.1. Exploration of the Head
- 1.3.2. Oral Cavity Examination
- 1.3.3. Regional Nerve Blocks for Surgery and Dental Extractions
  - 1.3.3.1. Maxillary Nerve
  - 1.3.3.2. Mandibular Nerve
  - 1.3.3.3. Infraorbital Nerve
  - 1.3.3.4. Mental Nerve
- 1.3.4. Exodontia: Indications and Techniques

1.4. Malocclusions: Tumors Maxillary and Mandibular Fractures Temporomandibular Joint Pathology
- 1.4.1. Malocclusions: Filing
  - 1.4.1.1. Wear Alterations
- 1.4.2. Tumors. Classification
- 1.4.3. Maxillary and Mandibular Fractures Reparation
- 1.4.4. Temporomandibular Joint Pathology
  - 1.4.4.1. Alterations and Clinical Signs
  - 1.4.4.2. Examination and Diagnosis
  - 1.4.4.3. Treatment and Prognosis

1.5. Diseases of the Esophagus and Stomach
- 1.5.1. Oesophageal
  - 1.5.1.1. Esophageal Obstruction
  - 1.5.1.2. Oesophagitis
  - 1.5.1.3. Other Esophageal Alterations
- 1.5.2. Stomach.
  - 1.5.2.1. Gastric Ulcers
  - 1.5.2.2. Gastric Impaction
  - 1.5.2.3. Squamous Cell Carcinoma
  - 1.5.2.4. Other Stomach Alterations

1.6. Small Intestine Diseases
- 1.6.1. Simple Obstruction
- 1.6.2. Proximal Enteritis
- 1.6.3. Inflammatory Bowel Disease
- 1.6.4. Intestinal Lymphoma
- 1.6.5. Strangulating Alterations
- 1.6.6. Small Intestinal Alterations

1.7. Large Intestinal Diseases



1.7.1. Impactions
1.7.1.1. Large Colon
1.7.1.2. Cecum
1.7.1.3. Minor Colon
1.7.2. Large Colon Displacement
1.7.3. Colitis
1.7.4. Peritonitis
1.7.5. Enterolithiasis
1.7.6. Other Large Intestinal Alterations
1.8. Liver and Biliary Tract Diseases
1.8.1. Approach to the Patient with Liver Disease
1.8.2. Acute Liver Failure
1.8.3. Cholangiohepatitis
1.8.4. Chronic Hepatitis
1.8.5. Neoplasms
1.8.6. Other Liver and Biliary Tract Alterations
1.9. Infectious and Parasitic Diseases of the Digestive Tract
1.9.1. Infectious Diseases of the Digestive Tract
1.9.1.1. Salmonellosis
1.9.1.2. Proliferative Enteropathy
1.9.1.3. Clostridiosis
1.9.1.4. Rotavirus
1.9.1.5. Potomac Equine Fever
1.9.1.6. Equine Coronavirus
1.9.2. Parasitic Diseases of the Digestive Tract
1.9.2.1. Gastrointestinal Myiasis
1.9.2.2. Intestinal Protozoa
1.9.2.3. Intestinal Cestodes
1.9.2.4. Intestinal Nematodes
1.10. Treatment of Medical Colic in the Field
1.10.1. Management of the Patient with Colicky Pain
1.10.2. Pain Control in Colicky Patients
1.10.3. Fluid Therapy and Cardiovascular Support
1.10.4. Treatment for Endotoxemia

Module 2. Cardio-Respiratory and Vascular System

2.1. Clinical Assessment of the Respiratory System and Diagnostic Methods
- 2.1.1. Examination of the Respiratory System
- 2.1.2. Respiratory Tract Sampling
  - 2.1.2.1. Samples from Nasal Cavity, Pharynx and Guttural Pouches
  - 2.1.2.2. Tracheal Aspirate and Bronchoalveolar Lavage
  - 2.1.2.3. Thoracentesis
- 2.1.3. Endoscopy
  - 2.1.3.1. Static and Dynamic Endoscopy of Upper Airways
  - 2.1.3.2. Sinuscopy
- 2.1.4. Radiology
  - 2.1.4.1. Nasal Cavity, Sinuses and Guttural Pouches
  - 2.1.4.2. Larynx and Trachea
- 2.1.5. Ultrasound:
  - 2.1.5.1. Ultrasound Techniques
  - 2.1.5.2. Pleural Effusion
  - 2.1.5.3. Atelectasis, Consolidation and Masses
  - 2.1.5.4. Pneumothorax

2.2. Diseases of the Upper Respiratory Tract I (Nose, Nasal Cavity and Paranasal Sinuses)
- 2.2.1. Diseases and Pathologies Affecting the Rostral/Larynxes Area
  - 2.2.1.1. Clinical Introduction and Diagnosis
  - 2.2.1.2. Atheroma: Epidermal Inclusion Cyst
    - 2.2.1.2.1. Treatment
  - 2.2.1.3 Redundant Wing Fold
    - 2.2.1.3.1. Treatment
- 2.2.2. Diseases and Pathologies Affecting the Nasal Cavity
  - 2.2.2.1. Diagnostic Techniques
  - 2.2.2.2. Nasal Septum Pathologies
  - 2.2.2.3. Ethmoidal Hematoma
- 2.2.3. Diseases and Pathologies Affecting the Paranasal Sinuses
  - 2.2.3.1. Clinical Presentation and Diagnostic Techniques
  - 2.2.3.2. Sinusitis
    - 2.2.3.2.1. Primary Sinusitis
    - 2.2.3.2.2. Secondary Sinusitis
  - 2.2.3.3. Paranasal Sinus Cyst
  - 2.2.3.4. Paranasal Sinus Neoplasia
- 2.2.4. Approaches to the Paranasal Sinus
  - 2.2.4.1. Trepanation: Anatomical References and Technique
  - 2.2.4.2. Synocentesis
  - 2.2.4.3. Sinuscopy
  - 2.2.4.4. Flaps or Bone Flaps of the Paranasal Sinuses
  - 2.2.4.5. Associated Complications

2.3. Diseases of the Upper Tract II (Larynx and Pharynx)
- 2.3.1. Diseases and Pathologies affecting the Pharynx-Nasopharynx
  - 2.3.1.1. Anatomical Pathologies
    - 2.3.1.1.1. Nasopharyngeal Scar Tissue
    - 2.3.1.1.2. Nasopharyngeal Masses
    - 2.3.1.1.3. Treatment
  - 2.3.1.2. Functional Pathologies
    - 2.3.1.2.1. Dorsal Displacement of the Soft Palate (DDSP)
      - 2.3.1.2.1.1. Intermittent DDSP
      - 2.3.1.2.1.2. Permanent DDSP
      - 2.3.1.2.1.3. Surgical and Non-Surgical Treatments
    - 2.3.1.2.2. Rostral Pharyngeal Collapse
    - 2.3.1.2.3. Dorsal/Lateral Nasopharyngeal Collapse
  - 2.3.1.3. Nasopharyngeal Pathologies in Foals
    - 2.3.1.3.1. Choanal Atresia
    - 2.3.1.3.2. Cleft Palate
    - 2.3.1.3.3. Nasopharyngeal Dysfunction

2.3.2. Diseases and Pathologies Affecting the Larynx
2.3.2.1. Recurrent Laryngeal Neuropathy (Laryngeal Hemiplegia)
2.3.2.1.1. Diagnosis
2.3.2.1.2. Gradation
2.3.2.1.3. Treatment and Associated Complications
2.3.2.2. Vocal Cord Collapse
2.3.2.3. Bilateral Laryngeal Paralysis
2.3.2.4. Cricopharyngeal-Laryngeal Dysplasia (Fourth Branchial Arch Defects)
2.3.2.5. Collapse of the Apex of the Corniculate Process
2.3.2.6. Medial Deviation of the Aryepiglottic Folds
2.3.2.7. Chondropathy of the Arytenoid Cartilage
2.3.2.8. Pathologies in the Mucosa of the Arytenoid Cartilages
2.3.2.9. Pathologies Affecting the Epiglottis
2.3.2.9.1. Epiglottic Entrapment
2.3.2.9.2. Acute Epiglottitis
2.3.2.9.3. Subepiglottic Cyst
2.3.2.9.4. Subepiglottic Granuloma
2.3.2.9.5. Dorsal Epiglottic Abscess
2.3.2.9.6. Hypoplasia, Flaccidity, Deformity of Epiglottis
2.3.2.9.7. Epiglottic Retroversion

2.4. Diseases of Guttural Pouches and Trachea Tracheostomy
2.4.1. Diseases and Pathologies Affecting the Guttural Pouches
2.4.1.1. Tympanism
2.4.1.1.1. Functional Nasopharyngeal Obstruction in Adults
2.4.1.2. Empyema
2.4.1.3. Mycosis
2.4.1.4. Trauma Ruptured Ventral Rectus Muscles
2.4.1.5. Osteoarthropathy of the Temporohyoid Joint
2.4.1.6. Other Pathologies
2.4.2. Diseases and Pathologies Affecting the Trachea
2.4.2.1. Trauma
2.4.2.2. Tracheal Collapse
2.4.2.3. Tracheal Stenosis.
2.4.2.4. Foreign Bodies.
2.4.2.5. Intraluminal Masses
2.4.3. Tracheal Surgeries
2.4.3.1. Tracheostomy and Tracheostomy (Temporary)
2.4.3.2. Permanent Tracheostomy
2.4.3.3. Other Tracheal Surgeries

2.5. Inflammatory Diseases of the Lower Respiratory Tract
2.5.1. Introduction: Functionality of the Lower Respiratory Tract
2.5.2. Equine Asthma
2.5.2.1. Etiology and Classification
2.5.2.2. Epidemiology
2.5.2.3. Classification
2.5.2.4. Pathophysiology
2.5.2.5. Clinical Signs
2.5.2.6. Diagnostic Techniques
2.5.2.7. Therapy Options
2.5.2.8. Prognosis
2.5.2.9. Prevention
2.5.3. Exercise-Induced Pulmonary Hemorrhage
2.5.3.1. Etiology
2.5.3.2. Epidemiology
2.5.3.3. Pathophysiology
2.5.3.4. Clinical Signs
2.5.3.5. Diagnostic Techniques
2.5.3.6. Therapy Options
2.5.3.7. Prognosis

2.6. Bacterial and Fungal Infectious Diseases of the Respiratory Tract
- 2.6.1. Equine Mumps Equine Streptococcus Infection
- 2.6.2. Bacterial Pneumonia and Pleuropneumonia
- 2.6.3. Fungal Pneumonia

2.7. Pneumonias of Mixed Origin Viral Infectious Diseases of the Respiratory Tract and Tumors
- 2.7.1. Interstitial Pneumonia and Pulmonary Fibrosis
- 2.7.2. Equine Herpesvirus I, IV and V
- 2.7.3. Equine Influenza
- 2.7.4. Tumors of the Respiratory System

2.8. Exploration of the Cardiovascular System, Electrocardiography and Echocardiography
- 2.8.1. Anamnesis and Clinical Examination
- 2.8.2. Basic Principles of Electrocardiography
- 2.8.3. Electrocardiography Types
- 2.8.4. Electrocardiogram Interpretation
- 2.8.5. Basic Principles of Echocardiography
- 2.8.6. Echocardiographic Planes

2.9. Structural Cardiac Alterations
- 2.9.1. Congenital
  - 2.9.1.1. Ventricular Septal Defect
- 2.9.2. Acquired
  - 2.9.2.1. Aortic Insufficiency
  - 2.9.2.2. Mitral Insufficiency
  - 2.9.2.3. Tricuspid Regurgitation
  - 2.9.2.4. Aorto-Cardiac Fistula

2.10. Arrhythmias
- 2.10.1. Supraventricular Arrhythmias
- 2.10.2. Ventricular Arrhythmias
- 2.10.3. Conduction Disturbances

Module 3. Hematopoietic System, Immunology and Nutrition

3.1. Analytical Interpretation: Blood Count and Serum Biochemistry
- 3.1.1. General Considerations for the Interpretation of Analytical Reports
  - 3.1.1.1. Essential Patient Data
  - 3.1.1.2. Sample Collection and Handling
- 3.1.2. Blood Count Interpretation:
  - 3.1.2.1. Red Blood Cells
  - 3.1.2.2. White Blood Cells
  - 3.1.2.3. Platelet Cells
  - 3.1.2.4. Smears
- 3.1.3. Interpretation of Serum or Plasma Biochemistry
  - 3.1.3.1. Electrolytes
  - 3.1.3.2. Bilirubin
  - 3.1.3.3. Creatinine, Blood Urea Nitrogen (BUN), Urea and Symmetrical Dimethylarginine (SDMA)
  - 3.1.3.4. Proteins: Albumin and Globulins
  - 3.1.3.5. Acute-Phase Proteins: Fibrinogen, Serum Amyloid A
  - 3.1.3.6. Enzymes
  - 3.1.3.7. Glucose
  - 3.1.3.8. Bicarbonate
  - 3.1.3.9. Lactate
  - 3.1.3.10. Triglycerides and Bile Acids

3.2. Hematopoietic System Pathologies
- 3.2.1. Hemolytic anemia
  - 3.2.1.1. Immune-Mediated Hemolytic Anemia
  - 3.2.1.2. Equine Infectious Anemia
  - 3.2.1.3. Piroplasmosis
  - 3.2.1.4. Other Causes
- 3.2.2. Hemorrhagic Anemia
  - 3.2.2.1. Hemoperitoneum and Hemothorax
  - 3.2.2.2. Gastrointestinal Losses
  - 3.2.2 3. Losses From Other Origin

3.2.3. Non-Regenerative Anemias
3.2.3.1. Iron Deficiency Anemia
3.2.3.2. Anemia due to Chronic Inflammation/Infection
3.2.3.3. Aplastic Anemia
3.2.4. Coagulation Alterations
3.2.4.1. Platelet Alterations
3.2.4.1.1. Thrombocytopenia
3.2.4.1.2. Platelet Functional Alterations
3.2.4.2. Alterations of Secondary Hemostasis
3.2.4.2.1. Hereditary
3.2.4.2.2. Acquired
3.2.4.3. Thrombocytosis
3.2.4.4. Lymphoproliferative Disorders
3.2.4.5. Disseminated Intravascular Coagulation (DIC)

3.3. Endotoxic Shock
3.3.1. Systemic Inflammation and Systemic Inflammatory Response Syndrome (SIRS)
3.3.2. Causes of Endotoxemia in Horses
3.3.3. Pathophysiological Mechanisms
3.3.4. Endotoxic Shock
3.3.4.1. Hemodynamic Changes
3.3.4.2. Multiorgan Dysfunction
3.3.5. Clinical Signs of Endotoxemia and Endotoxic Shock.
3.3.6. Diagnosis
3.3.7. Management
3.3.7.1. Endotoxin Release Inhibitors
3.3.7.2. Endotoxin Uptake and Inhibition
3.3.7.3. Cell Activation Inhibition
3.3.7.4. Inhibition of the Synthesis of Inflammatory Mediators
3.3.7.5. Other Specific Therapies
3.3.7.6. Support Treatments

3.4. Treatment of Hematopoietic Alterations Transfusion Therapy
3.4.1. Indications for Transfusion of Whole Blood
3.4.2. Indications for Plasma Transfusion
3.4.3. Indications for Transfusion of Platelet Products
3.4.4. Donor Selection and Compatibility Testing
3.4.5. Technique for Whole Blood Collection and Processing of Plasma
3.4.6. Administration of Blood Products
3.4.6.1. Volume of Administration
3.4.6.2. Administration Techniques
3.4.6.3. Adverse Reaction Monitoring

3.5. Immune System Alterations Allergies.
3.5.1. Hypersensitivity Types
3.5.2. Pathologies Associated with Hypersensitivity
3.5.2.1. Anaphylactic Reaction
3.5.2.2. Hemorrhagic Purpura
3.5.3. Autoimmunity
3.5.4. Most Important Immunodeficiencies in Equines
3.5.4.1. Diagnostic Tests
3.5.4.2. Primary Immunodeficiencies
3.5.4.3. Secondary Immunodeficiencies
3.5.5. Immunomodulators
3.5.5.1. Immunostimulants
3.5.5.2. Immunosuppressants

3.6. Nutrition Basic Principles I
3.6.1. Physiology of Gastrointestinal Tract
3.6.1.1. Oral cavity, Esophagus, Stomach
3.6.1.2. Small Intestine
3.6.1.3. Large Intestine
3.6.2. Diet Components, Nutrients
3.6.2.1. Water
3.6.2.2. Proteins and Amino Acids
3.6.2.3. Carbohydrates
3.6.2.4. Fats and Fatty Acids
3.6.2.5. Minerals and Vitamins
3.6.3. Estimation of Horse Weight and Body Condition

3.7. Nutrition Basic Principles (II)
- 3.7.1. Energy and Available Energy Sources
  - 3.7.1.1. Forage
  - 3.7.1.2. Starches
  - 3.7.1.3. Fats
- 3.7.2. Metabolic Pathways of Energy Production
- 3.7.3. Energy Needs of the Horse
  - 3.7.3.1. In Maintenance
  - 3.7.3.2. For Breeding and Growth
  - 3.7.3.3. For the Showhorse/Racehorse

3.8. Cachectic Horse Nutrition
- 3.8.1. Metabolic Response
- 3.8.2. Physical Examination and Clinical Signs
- 3.8.3. Blood Analysis
- 3.8.4. Differential Diagnoses
- 3.8.5. Nutritional Requirements

3.9. Use of Probiotics, Prebiotics and Medicinal Plants
- 3.9.1. Role of the Microbiota in the Large Intestine
- 3.9.2. Probiotics, Prebiotics, and Symbiotics
- 3.9.3. Medicinal Plants Use

3.10. Rational Use of Antibiotics. Bacterial Resistance
- 3.10.1. Responsible Antibiotic Use
- 3.10.2. New Antibiotic Therapies
- 3.10.3. Resistance Mechanisms
- 3.10.4. Main Multi-resistant Pathogens

Module 4. Locomotor System.

4.1. Examination and Diagnosis of Lameness
- 4.1.1. Introduction
  - 4.1.1.1. Definition of Lameness
  - 4.1.1.2. Causes and Types of Lameness
  - 4.1.1.3. Symptoms of Lameness

4.1.2. Static Examination of Lameness
4.1.2.1. Medical History
4.1.2.2. Approach to Horses and General Examinations
4.1.2.2.1. Visual Examination: General Condition and Conformation
4.1.2.2.2. Static Physical Examination, Palpation, Percussion and Flexion
4.1.3. Dynamic Examination of Lameness
4.1.3.1. Examination in Motion
4.1.3.2. Flexion Test
4.1.3.3. Assessment and Quantification of Lameness: Objective and Subjective Methods
4.1.3.4. Introduction to Nerve Anesthetic Blocks
4.1.4. Introduction to Complementary Diagnostic Methods
4.2. Anesthetic Nerve Blocks
4.2.1. Diagnostic Loco-Regional Analgesia: Introduction
4.2.1.1. General Considerations and Pre-Diagnostic Requirements
4.2.1.2. Types of Blockages and Injection Techniques
4.2.1.3. Drugs to be Used
4.2.1.4. Election of Blockages
4.2.1.5. Approach to the Patient
4.2.1.5.1. Patient Management and Preparation
4.2.1.5.2. Chemical Containment
4.2.1.6. Evaluation of Results
4.2.1.6.1. Subjective Assessment
4.2.1.6.2. Objective Assessment
4.2.1.7. Complications
4.2.2. Perineural Anesthetic Blocks
4.2.2.1. Perineural Analgesia in the Forelimb
4.2.2.2. Perineural Analgesia in the Hindlimb
4.2.3. Regional Anesthetic Blocks
4.2.4. Intrasynovial Anesthetic Blocks
4.2.4.1. Intra-Articular Blocks
4.2.4.2. Bursa and Tendon Sheath Blocks
4.3. Diagnostic Imaging of Lameness
4.3.1. Introduction to Diagnostic Imaging in the Field
4.3.2. Technical Basis
4.3.2.1. Radiology
4.3.2.2. Ultrasound
4.3.2.3. Advanced Techniques.
4.3.2.3.1. Gammagraphy.
4.3.2.3.2. Magnetic Resonance
4.3.2.3.3. Computerized Tomography
4.3.3. Bone Pathology Diagnosis
4.3.4. Joint Pathology Diagnosis
4.3.5. Diagnosis of Tendon and Ligament Pathology
4.4. Pathologies of the Axial Skeleton Diagnosis and Treatment
4.4.1. Introduction to Axial Skeletal Pathology
4.4.2. Axial Skeleton Exploration
4.4.3. Cervical Spine Diagnosis
4.4.4. Diagnosis of the Thoracolumbar and Sacroiliac Spine
4.4.5. Axial Skeleton Pathology Treatment
4.5. Degenerative Joint Disease (DJD): Traumatic Arthritis and Post-Traumatic Osteoarthritis Etiology, Diagnosis and Treatment
4.5.1. Anatomy and Physiology of the Joints
4.5.2. Definition of EDA
4.5.3. Cartilage Lubrication and Repair
4.5.4. DJD Manifestations
4.5.4.1. Acute Injuries
4.5.4.2. Chronic Fatigue Injuries
4.5.5. DJD Diagnosis
4.5.5.1. Clinical Examination
4.5.5.2. Objective and Subjective Examination of Lameness
4.5.5.3. Diagnostic Anesthesia
4.5.5.4. Diagnostic Imaging
4.5.5.4.1. Radiology
4.5.5.4.2. Ultrasound
4.5.5.4.3. Magnetic Resonance Imaging and Tomography Axial Tomography
4.5.5.4.4. New Technologies

4.5.6. Treatment of DJD
4.5.6.1. Nonsteroidal Anti-Inflammatories
4.5.6.2. Steroid Anti-Inflammatories
4.5.6.3. Hyaluronic Acid
4.5.6.4. Glucosaminoglycans
4.5.6.5. Pentosan
4.5.6.6. Biological Therapies
4.5.6.6.1. Autologous Conditioned Serum
4.5.6.6.2. Platelet Rich Plasma
4.5.6.6.3. Stem Cells
4.5.6.7. Oral Supplements

4.6. Tendinitis, Desmitis and Adjacent Structures Pathologies
4.6.1. Applied Anatomy and Tendon Damage Pathophysiology
4.6.2. Alterations of Tendons, Ligaments and Associated Structures
4.6.2.1. Soft Tissues of the Pastern
4.6.2.2. Superficial Digital Flexor Tendon (SDFT)
4.6.2.3. Deep Digital Flexor Tendon (DDFT)
4.6.2.4. Inferior Accessory Ligament of the TFDSP
4.6.2.5. Suspensory Ligament of the Fetlock (SL)
4.6.2.5.1. Proximal part of the SL
4.6.2.5.2. SL Body
4.6.2.5.3. SL Branches
4.6.2.6. Carpal Canal and Carpal Synovial Sheath
4.6.2.7. Tarsal Sheath
4.6.2.8. Plantar Fasciitis
4.6.2.9. Bursitis
4.6.3. Management of Tendon and Ligament Injuries
4.6.3.1. Medical Therapy
4.6.3.2. Regenerative Therapies
4.6.3.2.1. Stem Cell and Bone Marrow Therapies
4.6.3.2.2. Platelet Rich Plasma Therapy
4.6.3.3. Shock Waves and Other Physical Therapies
4.6.3.4. Surgical Therapies
4.6.3.5. Rehabilitation and Return to Work Guidelines

4.7. Fractures: Bone Sequestration
4.7.1. First Approach to Fractures, General Considerations Bone Sequestration
4.7.1.1. Introduction
4.7.1.1.1. First Aid for Fractures in Horses
4.7.1.1.2. Case Selection, General Considerations
4.7.1.1.3. Immobilization of Fractures by Location
4.7.1.2. Transport
4.7.1.2.1. Transporting an Equine Patient for Fracture Treatment
4.7.1.3. Prognosis
4.7.1.4. Bone Sequestration
4.7.2. Rehabilitation and Return to Work Guidelines
4.7.2.1. In Fractures
4.7.2.2. In Bone Sequestration

4.8. Laminitis
4.8.1. Pathophysiology of Laminitis
4.8.2. Clinical of Laminitis
4.8.3. Diagnosis of Laminitis
4.8.3.1. Physical Examination
4.8.3.2. Diagnostic Imaging
4.8.3.3. Endocrine and Metabolic Assessment
4.8.4. Medical Treatment of Laminitis
4.8.4.1. Anti-Inflammatories
4.8.4.2. Vasoactive Drugs
4.8.4.3. Analgesia
4.8.4.4. Hypothermia.
4.8.4.5. Sepsis
4.8.4.6. Pars Intermedia Pituitary Dysfunction (PPID) and Equine Metabolic Syndrome (EMS)
4.8.5. Stabilization of the Third Phalanx
4.8.5.1. Sole Support Techniques
4.8.5.2. Therapeutic Horseshoeing

4.8.6. Treatment of Laminitis
4.8.6.1. Use of Casts
4.8.6.2. Fexor Digitorum Superficialis Tenotomy
4.8.6.3. Dorsal Wall Resection
4.8.6.4. Complications
4.8.7. Chronic Laminitis
4.8.8. Laminitis Prevention
4.9. Orthopedic Field Surgery
4.9.1. Fractures of Rudimentary Metacarpals/Metatarsals
4.9.1.1. Clinical History, Symptomatology, Different Presentations
4.9.1.2. Diagnostic Techniques
4.9.1.3. Decision-Making: Optimal Treatment
4.9.1.4. Surgical Management
4.9.1.5. Complications to Surgery
4.9.1.6. Post-Operative Care
4.9.1.7. Rehabilitation and Return to Work Guidelines
4.9.2. Desmotomies
4.9.2.1. Indications: Medical History
4.9.2.2. Decision Making
4.9.2.3. Surgical Management
4.9.2.4. Complications to Desmotomies
4.9.2.5. Post-Operative Care
4.9.2.6. Rehabilitation and Return to Work Guidelines
4.9.3. Neurectomies
4.9.3.1. Indications
4.9.3.2. Pre-Surgical Considerations and Implications
4.9.3.3. Surgical Technique
4.9.3.4. Complications
4.9.3.5. Post-Operative Care
4.9.3.6. Rehabilitation and Return to Work Guidelines
4.10. Myopathies in the Horse
4.10.1. Genetic and Congenital Diseases
4.10.1.1. Myotonia
4.10.1.2. Myopathy due to Polysaccharide Storage
4.10.1.3. Malignant Hyperthermia
4.10.1.4. Hyperkalemic Periodic Paralysis
4.10.2. Traumatic and Irritative Alterations
4.10.2.1. Fibrotic Myopathy
4.10.2.2. Bruises and Tears
4.10.2.3. Intramuscular Irritant Injections
4.10.3. Infectious Diseases
4.10.3.1. Abscesses.
4.10.3.2. Clostridial Myositis
4.10.4. Ischemic Diseases
4.10.4.1. Post-Anesthetic Myositis
4.10.5. Nutritional Diseases
4.10.5.1. Malnutrition
4.10.5.2. Vitamin E and Selenium Alterations
4.10.5.3. Cachectic Atrophy
4.10.6. Pathologies Associated with Exercise
4.10.6.1. Acute Exertional Rhabdomyolysis
4.10.6.2. Recurrent Exertional Rhabdomyolysis
4.10.6.3. Hypokinetic Atrophy

Module 5. Surgical Pathologies of the Skin and Related Structures

5.1. Exploration and Wound Types
5.1.1. Anatomy
5.1.2. Initial Assessment: Emergency Treatments
5.1.3. Wound Classification
5.1.4. Wound Healing Process
5.1.5. Factors Influencing Wound Infection and Wound Healing
5.1.6. Primary and Secondary Intention Wound Healing

5.2. Tissue Management, Hemostasis and Suture Techniques
- 5.2.1. Incision and Tissue Dissection
- 5.2.2. Hemostasis
  - 5.2.2.1. Mechanical Hemostasis
  - 5.2.2.2. Ligatures
  - 5.2.2.3. Tourniquet
  - 5.2.2.4. Electrocoagulation
  - 5.2.2.5. Chemical Hemostasis
- 5.2.3. Tissue Management, Irrigation and Suctioning
- 5.2.4. Suture Materials Used
  - 5.2.4.1. Instruments
  - 5.2.4.2. Suture Material Selection
  - 5.2.4.3. Needles
  - 5.2.3.4. Drainages
- 5.2.5. Approaches to Wound Suturing
- 5.2.6. Suture Patterns

5.3. Bandages
- 5.3.1. Materials and Bandage Types
- 5.3.2. Hoof Bandage
- 5.3.3. Distal Extremity Bandage
- 5.3.4. Full Limb Bandage
- 5.3.5. Fiberglass Cast: Application and Peculiarities in Young Animals

5.4. Acute Wound Repair
- 5.4.1. Wound Treatment Medication
- 5.4.2. Debriding
- 5.4.3. Emphysema Secondary to Wounds
- 5.4.4. Negative Pressure Therapy
- 5.4.5. Topical Treatment Types

5.5. Repair and Management of Chronic and/or Infected Wounds
- 5.5.1. Particularities of Chronic and Infected Wounds
- 5.5.2. Causes of Chronic Wounds
- 5.5.3. Management of Severely Contaminated Wounds
- 5.5.4. Laser Benefits
- 5.5.5. Larvotherapy
- 5.5.6. Cutaneous Fistulas Treatment

5.6. Hoof Wound Treatment Regional and Intraosseous Perfusion of Antibiotics
- 5.6.1. Hoof Wounds
  - 5.6.1.1. Coronary Buckle Wounds
  - 5.6.1.2. Heel Wounds
  - 5.6.1.3. Puncture Wounds on the Palm
- 5.6.2. Antibiotic Perfusion
  - 5.6.2.1. Regional Perfusion
  - 5.6.2.2. Intraosseous Perfusion

5.7. Management and Repair of Synovial Wounds and Joint Lavage
- 5.7.1. Pathophysiology of Synovial Infection
- 5.7.2. Epidemiology and Diagnosis of Synovial Wound Infections
- 5.7.3. Synovial Wound Treatment Joint Lavage
- 5.7.4. Synovial Wound Prognosis

5.8. Tendon Lacerations Management and Repair
- 5.8.1. Introduction, Anatomy, Anatomical Implications
- 5.8.2. Primary care, Examination of the Injury, Immobilization
- 5.8.3. Case Selection: Surgical or Conservative Treatment
- 5.8.4. Tendon Lacerations Surgical Repair
- 5.8.5. Rehabilitation and Return to Work Guidelines after Tenorrhaphy

5.9. Reconstructive Surgery and Skin Grafting
- 5.9.1. Principles of Basic and Reconstructive Surgery
  - 5.9.1.1. Skin Tension Lines
  - 5.9.1.2. Incision Orientation, Suture Patterns
  - 5.9.1.3. Tension Release Techniques and Plasties
- 5.9.2. Closure of Skin Defects of Different Shapes
- 5.9.3. Skin Grafts

5.10. Treatment of Exuberant Granulation Tissue Sarcoid Burns
- 5.10.1. Causes of the Appearance of Exuberant Granulation Tissue
- 5.10.2. Treatment of Exuberant Granulation Tissue
- 5.10.3. Sarcoid Appearance in Wounds
  - 5.10.3.1. Wound-Associated Sarcoid Type

Module 6. Medical Pathologies of the Skin Endocrine System

6.1. Clinical Approach and Diagnostic Tests in Equine Dermatology
- 6.1.1. Medical History
- 6.1.2. Sampling and Main Diagnostic Methods
- 6.1.3. Other Specific Diagnostic Techniques

6.2. Bacterial and Viral Skin Diseases
- 6.2.1. Bacterial diseases
- 6.2.2. Viral Diseases

6.3. Fungal and Parasitic Skin Diseases
- 6.3.1. Fungal Diseases
- 6.3.2. Parasitic Diseases

6.4. Allergic, Immune-Mediated and Irritative Skin Diseases
- 6.4.1. Hypersensitivity: Types
- 6.4.2. Insect Sting Allergy
- 6.4.3. Vasculitis and other Immune-Mediated Reactions
- 6.4.4. Other Skin Tumors

6.5. Congenital Diseases and Syndromes in Equine Dermatology
- 6.5.1. Hereditary Equine Regional Dermal Asthenia (HERDA), Epidermolysis Bullosa, and Other Congenital Diseases
- 6.5.2. Miscellaneous

6.6. Cutaneous Neoplasms
- 6.6.1. Sarcoids
- 6.6.2. Melanocytic Tumors
- 6.6.3. Squamous Cell Carcinomas
- 6.6.4. Mastocytomas
- 6.6.5. Lymphomas

6.7. Alternatives in the Medical Treatment of Neoplasms
- 6.7.1. Electroporation and Electrochemotherapy
- 6.7.2. Immunotherapy
- 6.7.3. Radiotherapy
- 6.7.4. Dynamic Phototherapy
- 6.7.5. Cryotherapy
- 6.7.6. Other Therapies

6.8. Endocrine System I
- 6.8.1. Dysfunction of the Intermediate Portion of the Pituitary Gland
- 6.8.2. Equine Metabolic Syndrome
- 6.8.3. Endocrine Pancreas
- 6.8.4. Adrenal Insufficiency

6.9. Endocrine System II
- 6.9.1. Thyroid Gland
- 6.9.2. Calcium Disorders
- 6.9.3. Magnesium Disorders
- 6.9.4. Phosphorus Disorders

6.10. Nutritional Management of the Obese Horse
- 6.10.1. Body Condition Assessment
- 6.10.2. Weight Reduction and Caloric Restriction
- 6.10.3. Pharmacological Intervention
- 6.10.4. Exercise
- 6.10.5. Maintenance

Module 7. Nervous System and Ophthalmology

7.1. Neuroanatomical Localization of Neurological Injuries in the Horse
- 7.1.1. Neuroanatomical Peculiarities of the Horse
- 7.1.2. Medical History
- 7.1.3. Neurological Examination Protocol
  - 7.1.3.1. Head Assessment: Behavior, Consciousness, Positioning and Cranial Nerves
  - 7.1.3.2. Posture and Motor Function Assessment: Gradation of Alterations
  - 7.1.3.3. Neck and Thoracic Limb Evaluation
  - 7.1.3.4. Evaluation of the Trunk and Pelvic Limb
  - 7.1.3.5. Evaluation of Tail and Anus
- 7.1.4. Complementary Methods of Diagnostic

7.2. Disorders Affecting the Cerebral Cortex and Brainstem
- 7.2.1. Consciousness State Regulation
- 7.2.2. Cranial Trauma
  - 7.2.2.1. Etiopathogenesis
  - 7.2.2.2. Symptoms and Syndromes
  - 7.2.2.3. Diagnosis
  - 7.2.2.4. Treatment
  - 7.2.2.5. Prognosis
- 7.2.3. Metabolic Encephalopathy
  - 7.2.3.1. Hepatic Encephalopathy
- 7.2.4. Seizures and Epilepsy
  - 7.2.4.1. Types of Seizure Disorders
  - 7.2.4.2. Types of Epilepsy: ILAE (International League Against Epilepsy) Classification
  - 7.2.4.3. Treatment
- 7.2.5. Narcolepsy

7.3. Cerebellar or Vestibular Alterations
- 7.3.1. Coordination and Balance
- 7.3.2. Cerebellar Syndrome
  - 7.3.2.1. Cerebellar Abiotrophy
- 7.3.3. Vestibular Syndrome
  - 7.3.3.1. Peripheral Vestibular Syndrome
  - 7.3.3.2. Central Vestibular Syndrome
  - 7.3.3.3. Head Trauma and Vestibular Syndrome
  - 7.3.3.4. Osteoarthropathy Temporoiohidea

7.4. Spinal Alterations
- 7.4.1. Cervical Stenotic Myelopathy
  - 7.4.1.1. Etiopathogenesis
  - 7.4.1.2. Symptomatology and Neurological Examination
  - 7.4.1.3. Diagnosis
  - 7.4.1.4. Radiology
  - 7.4.1.5. Myelography
  - 7.4.1.6. Magnetic Resonance Imaging, Computerized Axial Tomography, Gammagraphy
  - 7.4.1.7. Treatment
- 7.4.2. Equine Degenerative Myeloencephalopathy (EDM)
- 7.4.3. Spinal Trauma

7.5. Bacterial, Fungal and Parasitic Infections of the Nervous System
- 7.5.1. Bacterial Encephalitis or Encephalomyelitis
  - 7.5.1.1. Etiological Agents
  - 7.5.1.2. Symptoms
  - 7.5.1.3. Diagnosis
  - 7.5.1.4. Treatment
- 7.5.2. Fungal Encephalitis
- 7.5.3. Equine Protozoal Encephalomyelitis (EPM)
  - 7.5.3.1. Etiopathogenesis
  - 7.5.3.2. Symptoms
  - 7.5.3.3. Diagnosis
  - 7.5.3.4. Treatment
- 7.5.4. Meningoencefalomielitis Verminosa
  - 7.5.4.1. Etiopathogenesis
  - 7.5.4.2. Symptoms
  - 7.5.4.3. Diagnosis and Treatment

7.6. Viral Infections of the Nervous System
- 7.6.1. Equine Encephalomyelitis due to Herpesvirus Type -1 (EHV-1)
  - 7.6.1.1. Etiopathogenesis
  - 7.6.1.2. Clinical Picture
  - 7.6.1.3. Diagnosis
  - 7.6.1.4. Treatment
- 7.6.2. West Nile Virus Encephalomyelitis
  - 7.6.2.1. Aetiopathogenesis
  - 7.6.2.2. Clinical Picture
  - 7.6.2.3. Diagnosis
  - 7.6.2.4. Treatment
- 7.6.3. Rabies
  - 7.6.3.1. Aetiopathogenesis
  - 7.6.3.2. Clinical Picture
  - 7.6.3.3. Diagnosis
  - 7.6.3.4. Treatment
- 7.6.4. Borna, Hendra and other Viral Encephalitis Viruses

7.7. Ocular Examination: Ocular Nerve Blocks and Sub-palpebral Catheter Placement
- 7.7.1. Anatomy and Physiology of the Eyeball
- 7.7.2. Optic Nerve Blocks
- 7.7.3. Ophthalmologic examination
- 7.7.4. Basic Diagnostic Tests
- 7.7.5. Advanced Diagnostic Tests
- 7.7.6. Sub-palpebral Catheter Placement

7.8. Palpebral Pathologies Ocular Perforations Entropion Correction
- 7.8.1. Anatomy of Adnexal Tissues
- 7.8.2. Eyelid Alterations
- 7.8.3. Entropion Correction
- 7.8.4. Ocular Perforations

7.9. Corneal Ulcers
- 7.9.1. General Aspects and Classification of Corneal Ulcers
- 7.9.2. Simple, Complex and Severe Ulcers
- 7.9.3. Indolent Ulcer
- 7.9.4. Infectious Keratitis
- 7.9.5. Corneal Surgery

7.10. Uveitis and Ocular Medical Pathologies
- 7.10.1. Immune-Mediated Keratitis
- 7.10.2. Stromal Abscess
- 7.10.3. Equine Recurrent Uveitis
- 7.10.4. Crystalline Lens Alterations
- 7.10.5. Posterior Segment Alterations and Glaucoma
- 7.10.6. Neoplasms

Module 8. Reproductive and Urinary System

8.1. Urinary System Assessment
- 8.1.1. Hematological and Biochemical Parameters Related to the Renal System
- 8.1.2. Urinalysis
- 8.1.3. Diagnostic Methods in the Urinary System
  - 8.1.3.1. Urinary System Ultrasound
  - 8.1.3.2. Endoscopy of the Urinary System
  - 8.1.3.3. Renal Biopsy
  - 8.1.3.4. Water Deprivation Test

8.2. Urinary System Pathologies
- 8.2.1. Acute Renal Failure
  - 8.2.1.1. Causes of Acute Renal Insufficiency
  - 8.2.1.2. Treatment of Acute Renal Insufficiency
- 8.2.2. Chronic Renal Failure
  - 8.2.2.1. Causes of Chronic Renal Insufficiency
  - 8.2.2.2. Treatment of Chronic Renal Insufficiency
- 8.2.3. Urinary Tract Infections
  - 8.2.3.1. Urethritis, Cystitis and Pyelonephritis and their Treatment
  - 8.2.3.2. Treatment of Urinary Tract Infections
- 8.2.4. Obstructive Pathology of the Urinary Tract
  - 8.2.4.1. Types of Obstructive Pathologies
  - 8.2.4.2. Treatment
- 8.2.5. Polyuria and Polydipsia
- 8.2.6. Urinary Incontinence and Bladder Dysfunction
- 8.2.7. Urinary Tract Tumors

8.3. Medical Pathologies of the Male Genitalia
- 8.3.1. Introduction to Stallion Medical Pathology
- 8.3.2. Stallion Testicular Pathology
  - 8.3.2.1. Management and Treatment of Cryptorchid Stallions
  - 8.3.2.2. Testicular Inflammatory Disorders
  - 8.3.2.3. Management of Testicular Degeneration in Stallions
  - 8.3.2.4. Hydrocele Management
  - 8.3.2.5. Testicular Neoplasms in Stallions
  - 8.3.2.6. Testicular Torsion in Stallions
- 8.3.3. Penile Pathologies
  - 8.3.3.1. Penile Trauma Management
  - 8.3.3.2. Penile Tumor Developments
  - 8.3.3.3. Paraphimosis
  - 8.3.3.4. Priapism
- 8.3.4. Adnexal Gland Pathology
  - 8.3.4.1. Ultrasound and Assessment of Appendages Glands
  - 8.3.4.2. Vesiculitis, Management and Treatment
  - 8.3.4.3. Appendages Gland Obstruction
- 8.3.5. Ejaculate Alterations
  - 8.3.5.1. Seminal Assessment
  - 8.3.5.2. Factors Affecting Fertility
  - 8.3.5.3. Sub-fertile Semen Management
    - 8.3.5.3.1. Semen Centrifugation for Quality Improvement
    - 8.3.5.3.2. Seminal Plasma Substitution
    - 8.3.5.3.3. Semen Filtration to Improve Quality
    - 8.3.5.3.4. Low-Quality Semen Cooling Protocols

8.3.6. Alterations in Stallion Behavior and Mating Management
8.3.7. Advances in Assisted Reproduction in Stallions
8.3.7.1. Seminal Freezing
8.3.7.2. Epididymal Sperm Retrieval after Death or Castration
8.4. Male Field Surgical Procedures
8.4.1. Castration
8.4.1.1. Introduction and Considerations of Castration in Males
8.4.1.1.1. Patient Selection
8.4.1.2. Castration Surgical Techniques
8.4.1.2.1. Open Castration
8.4.1.2.2. Closed Castration
8.4.1.2.3. Semi-Closed or Semi-Open Castration
8.4.1.3. Variations in Surgical Technique
8.4.1.3.1. Different Hemostasis Options
8.4.1.3.2. Primary Skin Closure
8.4.1.4. On-Station Castration Considerations
8.4.1.4.1. Sedation
8.4.1.5. Considerations for Castration under General Anesthetic
8.4.1.6. Inguinal Cryptorchidism
8.4.1.6.1. Presurgical Diagnosis
8.4.1.6.2. Surgical Technique
8.4.2. Penile Amputation
8.4.2.1. Indications
8.4.2.2. Procedure and Postoperative Considerations
8.5. Medical and Surgical Pathologies of the Female Genitalia I
8.5.1. Medical Pathologies I
8.5.1.1. Ovarian Pathology
8.5.1.1.1. Ovulation Disorders
8.5.1.1.2. Ovarian Tumors.
8.5.1.2. Fallopian Tubes Disorders
8.5.1.3. Medical Uterine Pathology
8.5.1.3.1. Preparation and Procedure for Sample Collection
8.5.1.3.1.1. Cytology
8.5.1.3.1.2. Biopsy
8.5.1.3.2. Types of Endometritis
8.5.1.3.3. Management of the Mare with Uterine Fluid
8.5.1.3.4. Management of Mares with Uterine Cysts
8.6. Medical and Surgical Genital Pathologies of the Mare II
8.6.1. Medical Pathologies II
8.6.1.1. Cervix Pathology
8.6.1.1.1. Cervical Lacerations
8.6.1.1.2. Cervical Adherences
8.6.1.2. Medical Pathology of the Vagina
8.6.1.3. Reproductive Management of the Geriatric Mare
8.6.1.4. Update on Assisted Reproduction in the Mare
8.6.2. Surgical Pathologies of the Mare
8.6.2.1. Normal Vulvar Conformation of the Mare
8.6.2.1.1. Vulvar Examination of the Mare
8.6.2.1.2. Caslick Index
8.6.2.2. Vulvoplasty
8.6.2.2.1. Caslick Surgery Procedure
8.7. Pregnant Mare and Care at Foaling
8.7.1. Mare Gestation
8.7.1.1. Diagnosis of Pregnancy in the Mare
8.7.1.2. Management of Early and Late Multiple Gestation New Techniques
8.7.1.3. Embryo Sexing
8.7.2. Complications During Gestation in the Mare
8.7.2.1. Abortion
8.7.2.1.1. Early Abortion
8.7.2.1.2. Late Abortion
8.7.2.2. Uterine Torsion
8.7.2.3. Management and Treatment of Placentitis
8.7.2.4. Management of Placental Abruption

8.7.3. Nutritional Needs of the Pregnant Mare
8.7.4. Ultrasound Evaluation of the Fetus
8.7.4.1. Ultrasound Evaluation at Different Stages of Gestation
8.7.4.2. Fetal Biometry
8.7.5. Methods for Predicting Foaling in the Full-Term Mare
8.7.6. Euthyroid Labor and Delivery
8.7.6.1. Phases of Euthyroid Labor and Delivery
8.8. Complications of Labor and Delivery and Postpartum Care
8.8.1. Dystocic Labor and Delivery
8.8.1.1. Material Necessary for the Resolution of Dystocia
8.8.1.2. Types of Dystocia and Management of Different Fetal Presentations
8.8.2. Peripartum Surgical Emergencies
8.8.2.1. Fetotomy
8.8.2.1.1. Fetotome
8.8.2.1.2. Preparation of the Mare for the Procedure
8.8.2.1.3. Fetotomy in the Field vs. in the Hospital
8.8.2.2. Cesarean Section
8.8.2.3. Hemorrhage of the Ankle Ligament
8.8.2.4. Uterine Laceration
8.8.2.5. Prepubic Tendon Rupture
8.8.2.6. Rectovaginal Fistula
8.8.3. Postpartum Care
8.8.3.1. Control of Uterine Involution and Establishment of the Postpartum Cycle
8.8.4. Postpartum Complications
8.8.4.1. Placenta Retention
8.8.4.2. Vaginal Lacerations
8.8.4.3. Uterine Bleeding
8.8.4.4. Uterine Prolapse
8.8.4.5. Rectal Prolapse
8.8.4.6. Vulvar Hematoma
8.8.4.7. Uterine Horn Invagination
8.9. Repair of Tears and Lacerations during Labor and Delivery
8.9.1. Management of Vulvar Tears and Lacerations during Labor and Delivery
8.9.2. Classification of Perineal Lacerations
8.9.3. Reconstruction of the Perineal Body
8.9.3.1. Surgical Preparation of Mares
8.9.3.2. Vaginal Vestibule Sphincter Insufficiency
8.9.3.2.1. Perineal Body Reconstruction, Vestibuloplasty
8.9.3.2.2. Cross Section of the Perineal Body, Perineoplasty
8.9.3.2.2.1. Pouret's Surgery
8.9.3.3. Postoperative Care
8.9.3.4. Perineal Surgery Complications
8.9.4. Surgical Management of Third-Degree Rectovaginal Tearing
8.9.5. Surgical Management of Rectovaginal Fistulas
8.10. Infectious and Parasitic Diseases of the Reproductive System in Equines
8.10.1. Introduction to Infectious and Parasitic Diseases of the Reproductive System in Equines
8.10.2. Economic and Productive Significance of Infectious and Parasitic Diseases
8.10.3. Infectious Diseases of the Reproductive Tract
8.10.3.1. Mycoplasmas
8.10.3.2. Contagious Equine Metritis: Procedure of Sample Collection for the Determination of Contagious Equine Metritis
8.10.3.3. Equine Viral Arteritis
8.10.3.4. Equine Rhinopneumonitis
8.10.3.5. Leptospirosis
8.10.3.6. Brucellosis
8.10.4. Parasitic Diseases of the Reproductive Tract
8.10.4.1. Habronemiasis
8.10.4.2. Durina

Module 9. Foal Medicine and Surgery

9.1. Neonatal Screening
- 9.1.1. Normal Clinical Parameters in Foals during the First Days of Life
- 9.1.2. Onset of Organ Systems Functioning at Birth and During the First Months of Life
  - 9.1.2.1. Gastric System
  - 9.1.2.2. Respiratory System
  - 9.1.2.3. Endocrine System
  - 9.1.2.4. Muscular and Neurological System
  - 9.1.2.5. Ophthalmic System

9.2. Immature Foal: Failure in the Passive Transfer of Immunity Isoerythrolysis Septicemia
- 9.2.1. Premature, Immature and Stunted Foals
- 9.2.2. Cardiopulmonary Resuscitation
- 9.2.3. Failure of Passive Transfer of Immunity
- 9.2.4. Isoerythrolysis
- 9.2.5. Neonatal Sepsis

9.3. Neonatal Respiratory, Cardiac, Neurological and Musculoskeletal Pathologies
- 9.3.1. Neonatal Respiratory Pathologies
  - 9.3.1.1. Bacterial Respiratory Pathologies
  - 9.3.1.2. Viral Respiratory Pathologies
  - 9.3.1.3. Rib Fractures
- 9.3.2. Neonatal Cardiac Pathologies
  - 9.3.2.1. Patent Ductus Arteriosus
  - 9.3.2.2. Foramen Ovale
  - 9.3.2.3. Tetralogy of Fallot
- 9.3.3. Neonatal Neurological Pathologies
  - 9.3.3.1. Hypoxic Ischemic Encephalopathy
  - 9.3.3.2. Septic Encephalitis, Meningitis and Metabolic Encephalopathies
  - 9.3.3.3. Congenital Neurological Pathologies
- 9.3.4. Neonatal Musculoskeletal Pathologies
  - 9.3.4.1. Vitamin E and Selenium Deficiency

9.4. Neonatal Gastrointestinal, Genitourinary and Endocrine Pathologies
- 9.4.1 Neonatal Gastrointestinal Pathologies
  - 9.4.1.1. Bacterial and Viral Diarrhea
  - 9.4.1.2. Meconium Impaction
  - 9.4.1.3. Congenital Gastrointestinal Pathologies
  - 9.4.1.4. Gastric and Duodenal Ulcers
- 9.4.2. Neonatal Genitourinary Pathologies
  - 9.4.2.1. Omphalophlebitis and Omphaloarteritis
  - 9.4.2.2. Patent Urachus
  - 9.4.2.3. Bladder Rupture
- 9.4.3. Neonatal Endocrine Pathologies
  - 9.4.3.1. Thyroid Alterations
  - 9.4.3.2. Hypoglycemia, Hyperglycemia and Lack of Maturation of the Endocrine System

9.5. Identification and Stabilization of the Patient with Ruptured Bladder or Persistent Urachus
- 9.5.1. Omphalophlebitis, Omphaloarteritis and Patent Urachus
- 9.5.2. Bladder Rupture
- 9.5.3. Diagnostic Assessment and Stabilization Treatments
- 9.5.4. Medical Treatment and Surgical Options

9.6. Diagnostic Imaging of the Chest and Abdominal Cavity of the Foal
- 9.6.1. Diagnostic Imaging the Chest
  - 9.6.1.1. Technical Basis
    - 9.6.1.1.1. Radiology
    - 9.6.1.1.2. Ultrasound
    - 9.6.1.1.3. Computerized Tomography
  - 9.6.1.2. Thoracic Pathology
- 9.6.2. Diagnostic Imaging of the Abdomen
  - 9.6.2.1. Technical Basis
    - 9.6.2.1.1. Radiology
    - 9.6.2.1.2. Ultrasound
  - 9.6.2.2. Abdominal Pathology

9.7. Treatment of Septic Arthritis: Umbilical Herniorrhaphy
- 9.7.1. Pathophysiology and Diagnosis of Synovial Infections in Foals
- 9.7.2. Treatment of Septic Arthritis in Foals
- 9.7.3. Etiopathogenesis and Diagnosis of Umbilical Hernias
- 9.7.4. Umbilical Herniorrhaphy: Surgical Techniques

9.8. Angular Deformities Treatment
- 9.8.1. Etiopathogenesis
- 9.8.2. Diagnosis
- 9.8.3. Conservative Treatment
- 9.8.4. Surgical Management

9.9. Flexural Deformities Treatment
- 9.9.1. Etiopathogenesis
- 9.9.2. Diagnosis
- 9.9.3. Conservative Treatment
- 9.9.4. Surgical Management

9.10. Diagnosis of Developmental Diseases in the Foal Treatment of Physitis, Epiphysitis and Hoof Management Guidelines for Healthy Foals
- 9.10.1. Etiopathogenesis, Diagnosis and Treatment of different forms of Physitis, Epiphysitis, Osteochondrosis and Subchondral Cysts
- 9.10.2. Evaluation of Poise in the Healthy Foal
- 9.10.3. Hoof Trimming Guideline in the Healthy Foal

Module 10. Advanced Therapeutic Protocols and Toxicology

10.1. Sedation and Total Intravenous Anesthesia
- 10.1.1. Total Intravenous Anesthesia
  - 10.1.1.1. General Considerations
  - 10.1.1.2. Patient and Procedure Preparation
  - 10.1.1.3. Pharmacology
  - 10.1.1.4. Total Intravenous Anesthesia in Short-Term Procedures
  - 10.1.1.5. Total Intravenous Anesthesia in Procedures of Medium Duration
  - 10.1.1.6. Total Intravenous Anesthesia in Long-Term Procedures

10.1.2. Sedation for On-Station Procedures
10.1.2.1. General Considerations
10.1.2.2. Patient Preparation/Procedure
10.1.2.3. Technique: Bolus and Continuous Intravenous Infusions
10.1.2.4. Pharmacology
10.1.2.5. Drug Combinations
10.2. Pain Relief in Horses
10.2.1. Detection of Pain in Hospitalized Patients and Multimodal Analgesia
10.2.2. Types of NSAIDs
10.2.3. Alpha-2-Agonists and Opioids
10.2.4. Local Anesthetics
10.2.5. Other Drugs Used for Pain Control in Equines
10.2.6. Complementary Therapies: Acupuncture, Shockwaves, Chiropractic, Laser
10.3. Correction of the Hydro-Electrolytic Balance
10.3.1. General Considerations on Fluid Therapy
10.3.1.1. Objective and Key Concepts
10.3.1.2. Organic Fluid Distribution
10.3.1.3. Assessment of Patient Needs
10.3.2. Types of Fluid
10.3.2.1. Crystalloids
10.3.2.2. Colloids
10.3.2.3. Supplements
10.3.3. Routes of Administration
10.3.3.1. Intravenous
10.3.3.2. Oral
10.3.4. Practical Principles of Fluid Therapy Calculation
10.3.5. Associated Complications
10.4. Specific Considerations of Acid-Base Equilibrium in Horses
10.4.1. Specific Considerations of Acid-Base Equilibrium in Horses
10.4.1.1. Assessment of the Patient's Acid-Base Status
10.4.1.2. Role of Bicarbonate, Chloride and Anion Gap
10.4.2. Metabolic Acidosis and Alkalosis
10.4.3. Respiratory Acidosis and Alkalosis
10.4.4. Compensatory Mechanisms
10.4.5. Base Excess
10.5. Pharmacological Considerations in the Sport Horse
10.5.1. Equestrian Sports Regulation
10.5.2. Doping
10.5.2.1. Definition
10.5.2.2. Medication Control Objectives
10.5.2.3. Sampling and Accredited Laboratories
10.5.2.4. Classification of Substances
10.5.3. Types of Doping
10.5.4. Withdrawal Time
10.5.4.1. Factors Affecting Withdrawal Time
10.5.4.1.1. Detection Time
10.5.4.1.2. Regulatory Policies
10.5.4.1.3. Animal Disposal Rate
10.5.4.2. Factors to Consider in Determining Withdrawal Time
10.5.4.2.1. Dose Administered
10.5.4.2.2. Formulation
10.5.4.2.3. Route of Administration
10.5.4.2.4. Individual Pharmacokinetics
10.5.4.2.5. Sensitivity of Analytical Procedures
10.5.4.2.6. Sample Behavior Matrix
10.5.4.2.7. Environmental Persistence of Substances and Environmental Contaminants
10.6. Intensive Care of the Neonatal Foal
10.6.1. Types of Catheters, Infusion Sets, Nasogastric and Urinary Probes for the Maintenance of Intensive Care in the Foal
10.6.2. Types of Fluids, Colloids, Plasmotherapy and Hemotherapy
10.6.3. Total and Partial Parenteral Feeding
10.6.4. Antibiotic Therapy, Analgesia and Other Important Medications
10.6.5. Cardiopulmonary Resuscitation

10.7. Adult Intensive Care
- 10.7.1. General Intensive Care Considerations
- 10.7.2. Intensive Care Procedures and Techniques
  - 10.7.2.1. Vascular Access: Maintenance and Care
  - 10.7.2.2. Arterial and Venous Pressure Monitoring
- 10.7.3. Cardiovascular Support
  - 10.7.3.1. Shock.
  - 10.7.3.2. Supportive Drugs: Inotropes and Vasopressors
  - 10.7.3.3. Support Strategies
- 10.7. 4. Respiratory Support
  - 10.7.4.1. Management of Respiratory Distress
- 10.7.5. Critically Ill Patient Nutrition
- 10.7.6. Neurological Patient Care
  - 10.7.6.1. Medical and Supportive Management of the Neurological Horse
    - 10.7.6.1.1. Trauma
    - 10.7.6.1.2. Encephalopathies and Myeloencephalopathies
  - 10.7.6.2. Specific Management of the Recumbent Horse

10.8. Toxicology I
- 10.8.1. Digestive System Toxicology
- 10.8.2. Liver Toxicology
- 10.8.3. Toxicology Affecting the Central Nervous System

10.9. Toxicology II
- 10.9.1. Toxicology Producing Clinical Signs Related to the Cardiovascular and Hemolymphatic Systems
- 10.9.2. Toxicology Producing Clinical Signs related to the Skin, Musculoskeletal System and General Condition
- 10.9.3. Toxicology Producing Clinical Signs Related to the Urinary System
- 10.9.4. Toxicological Problems Causing Sudden Death

10.10. Euthanasia Procedures
- 10.10.1. General Considerations
  - 10.10.1.1. Geriatric Horse
- 10.10.2. Mechanisms of action for Hypothermia.
- 10.10.3. Chemical Euthanasia Methods
- 10.10.4. Physical Euthanasia Methods
- 10.10.5. Euthanasia Protocol
- 10.10.6. Confirmation of Death

Module 11. Applied Anatomy and Biomechanics of Horses

11.1. Introduction to the Biomechanics of horses
- 11.1.1. Kinematic Analysis
- 11.1.2. Kinetic Analysis
- 11.1.3. Other Methods of Analysis

11.2. Biomechanics of Natural Airs
- 11.2.1. Step
- 11.2.2. Trot
- 11.2.3. Gallop

11.3. Thoracic Limb
- 11.3.1. Functional Anatomy
- 11.3.2. Biomechanics of the Proximal Third
- 11.3.3. Biomechanics of the Distal Third and the Digit

11.4. Pelvic Limb
- 11.4.1. Functional Anatomy
- 11.4.2. Reciprocal Apparatus
- 11.4.3. Biomechanical Considerations

11.5. Head, Neck, Dorsum and Pelvis
- 11.5.1. Functional Anatomy of the Head and Neck
- 11.5.2. Functional Anatomy of the Dorsum and Pelvis
- 11.5.3. Position of the Neck and Influence on the Mobility of the Dorsum

11.6. Variations of the Locomotor Pattern I
- 11.6.1. Age
- 11.6.2. Speed
- 11.6.3. Training
- 11.6.4. Genetics

11.7. Variations of the Locomotor Pattern II
- 11.7.1. Thoracic Limb Claudication
- 11.7.2. Pelvic Limb Claudication
- 11.7.3. Compensatory Clauses
- 11.7.4. Modifications Associated With Neck and Dorsal Pathologies

11.8. Variations of the Locomotor Pattern III
- 11.8.1. Hoof Trimming and Rebalancing
- 11.8.2. Horseshoeing

11.9. Biomechanical Considerations Associated with Equestrian Disciplines
- 11.9.1. Jump
- 11.9.2. Dressage
- 11.9.3. Races and Speed

11.10. Applied Biomechanics
- 11.10.1. Rider Influence
- 11.10.2. Effect of the Frame
- 11.10.3. Working Tracks and Floors
- 11.10.4. Auxiliary Aids: Mouthpieces and Yields

Module 12. Functional Assessment, Examination and Rehabilitation Planning

12.1. Introduction to Functional Assessment, Global Approach and Clinical History
- 12.1.1. Introduction to Functional Assessment
- 12.1.2. Objectives and Structure of Functional Assessment
- 12.1.3. Global Approach and Importance of Teamwork
- 12.1.4. Medical History

12.2. Static Physical Examination: General and Regional Static Examination
- 12.2.1. Considerations of the Static Physical Evaluation
- 12.2.2. General Static Evaluation
  - 12.2.2.1. Importance of the General Physical Evaluation
  - 12.2.2.2. Body Condition Assessment
  - 12.2.2.3. Conformation Assessment and Poise
- 12.2.3. Regional Static Evaluation
  - 12.2.3.1. Palpitation
  - 12.2.3.2. Evaluation of Muscle Mass and Joint Range of Motion
  - 12.2.3.3. Mobilization and Functional Tests

12.3. Regional Static Evaluation I
- 12.3.1. Exploration of the Head and the Temporomandibular Joint
  - 12.3.1.1. Inspection and Palpation and Special Considerations
  - 12.3.1.2. Mobility Tests
- 12.3.2. Neck Exploration
  - 12.3.2.1. Inspection-Palpation
  - 12.3.2.2. Mobility Tests
- 12.3.3. Examination of the Thoracic and Thoracolumbar Region
  - 12.3.3.1. Inspection-Palpation
  - 12.3.3.2. Mobility Tests
- 12.3.4. Exploration of the Lumbopelvic and Sacroiliac Region
  - 12.3.4.1. Inspection-Palpation
  - 12.3.4.2. Mobility Tests

12.4. Regional Static Evaluation II
- 12.4.1. Exploration of the Forelimb
  - 12.4.1.1. Back Region
  - 12.4.1.2. Shoulder Region
  - 12.4.1.3. Elbow and Arm Region
  - 12.4.1.4. Carpus and Forearm Region
  - 12.4.1.5. Fetlock Region
  - 12.4.1.6. Quadrilateral and Crown Region
  - 12.4.1.7. The Hoof
- 12.4.2. Exploration of the Posterior Extremity
  - 12.4.2.1. Hip and Rump Region
  - 12.4.2.2. Stifle and Leg Region
  - 12.4.2.3. Hock Region
  - 12.4.2.4. Distal Regions of the Hind Limb
- 12.4.3. Complementary Diagnostic Methods

12.5. Dynamic Examination I
- 12.5.1. General Considerations
- 12.5.2. Examination of Lameness
  - 12.5.2.1. General Information and Considerations
  - 12.5.2.2. Forelimb Lameness
  - 12.5.2.3. Hind Limb Lameness

12.5.3. Functional Dynamic Examination
12.5.3.1. Evaluation at Pace
12.5.3.2. Evaluation at a Trot
12.5.3.3. Evaluation at a Galop
12.6. Dynamic Examination II
12.6.1. Evaluation of the Ridden Horse
12.6.2. Functional Considerations by Discipline
12.6.3. Importance of the Rider-Horse Pairing and Evaluation of the Rider
12.7. Pain Evaluation and Assessment
12.7.1. Basis of Pain Physiology
12.7.2. Evaluation and Pain Recognition
12.7.3. Importance of Pain and its Impact on Performance Non-musculoskeletal Causes of Pain that Induce Performance Loss
12.8. Neurological Examination Complementary to Functional Assessment
12.8.1. Need to Perform a Complementary Neurological Examination
12.8.2. Neurological Examination
12.8.2.1. Exploration of the Head
12.8.2.2. Posture and Gait
12.8.2.3. Neck and Thoracic Limb Evaluation
12.8.2.4. Evaluation of the Trunk and Pelvic Limb
12.8.2.5. Evaluation of Tail and Anus
12.8.2.6. Complementary Diagnostic Methods
12.9. Joint Blocks
12.9.1. Introduction to Joint Blocks
12.9.2. Joint Mobilization in Search of Blockages
12.9.2.1. Sacropelvic Area
12.9.2.1.1. Sacro
12.9.2.1.2. Pelvis
12.9.2.2. Lumbar and Thoracolumbar Zone
12.9.2.2.1. Lumbar Region
12.9.2.2.2. Thoracic Region
12.9.2.3. Head and Cervical Region
12.9.2.3.1. Atlanto-Occipital and Atlanto-Axial Region
12.9.2.3.2. Lower Cervicals
12.9.2.3.3. Temporomandibular Joint TMJ
12.9.2.4. Extremities
12.9.2.4.1. Forelimbs
12.9.2.4.2. Hind Limbs
12.9.2.4.3. Appendicular System
12.10. Saddle Evaluation
12.10.1. Introduction
12.10.2. Part of the Saddle
12.10.2.1. Armor
12.10.2.2. Panels
12.10.2.3. Channel or Gullet
12.10.3. Adjustment and Placement of the Saddle on the Horse
12.10.4. Individualized Evaluation of the Frame
12.10.4.1. Regarding the Horse
12.10.4.2. Regarding the Rider
12.10.5. Common Problems
12.10.6. General Considerations

Module 13. Exercise Physiology and Training

13.1. Systemic Adaptations to Physical Exercises of Different Intensity and Duration
13.1.1. Introduction to Exercise Physiology and Comparative Exercise Physiology: What Makes the Horse the Ultimate Athlete and What Are Consequences for the Horse?
13.1.2. Respiratory Adaptations to Exercise
13.1.2.1. Airway Mechanics
13.1.2.2. Physiological Adjustments During Exercise
13.1.3. Cardiovascular Adaptations to Exercise
13.1.3.1. Importance of the Cardiovascular System in Aerobic Capacity
13.1.3.2. Interpretation of Heart Rate in Exercises of Different Intensity
13.1.4. Metabolic Response to Exercise
13.1.5. Thermoregulation During and After Exercise

13.2. Systemic Adaptations to Training
- 13.2.1. Response of Respiratory Function to Training
- 13.2.2. Cardiovascular Changes Associated with Training and their Consequences
- 13.2.3. Metabolic Responses to Training and Associated Mechanisms Intervention of Muscle Modifications Associated Training
- 13.2.4. Adaptive Response of Thermoregulatory Mechanisms to Training and Implications for the Equine Athlete
- 13.2.5. Adaptations of Musculoskeletal Tissues to Training: Tendons, Ligaments, Bones, Joints

13.3. Design of an Exercise Test or Stress Test to Assess Physical Fitness Level
- 13.3.1. Types of Stress Tests
  - 13.3.1.1. Treadmill and Field Stress Tests
  - 13.3.1.2. Maximum and Submaximal Intensity Tests
- 13.3.2. Variables to Consider in the Design of a Stress Test
- 13.3.3. Characteristics of Stress Tests for Speed, Jumping, Dressage and Endurance Horses

13.4. Physiological Parameters to Be Monitored During and After a Stress Test and Interpretation
- 13.4.1. Respiratory Measures
  - 13.4.1.1. Ventilatory Measurements: Minute Ventilation, Tidal Volume
  - 13.4.1.2. Measurements of Pulmonary Mechanics
  - 13.4.1.3. Arterial Blood Gas Concentration
  - 13.4.1.4. Oxygen Consumption (VO2), Peak Consumption and Peak Consumption
- 13.4.2. Cardiovascular Measures
  - 13.4.2.1. Heart Rate
  - 13.4.2.2. ECG
- 13.4.3. Metabolic Measurements
- 13.4.4. Gait Analysis
- 13.4.5. Calculation and Interpretation of Functionality Indices Derived from Heart Rate and Lactate Response to Stress Testing: V2, V4, HR2, HR4, V150, V200

13.5. Diagnostic Approach to Loss/Lack of Performance Use of Stress Tests for the Diagnosis of Reduced Performance
- 13.5.1. Factors Limiting Sports Performance According to Competition
- 13.5.2. Diagnostic Approach to the Horse with Loss of Performance: Evaluation at Rest
- 13.5.3. Diagnostic Approach to the Horse with Loss of Performance: Evaluation at Exercise
- 13.5.4. Stress Tests for the Diagnosis of Loss of Performance
- 13.5.5. Usefulness of Serial Stress Testing and Calculation of Functional Indices for Early Diagnosis of Performance Loss

13.6. General Basis of Training Training of the Three Essential Capacities: Endurance, Speed and Strength
- 13.6.1. Basic Principles of Sports Training
- 13.6.2. Capacity Training
  - 13.6.2.1. Resistance Training
  - 13.6.2.2. Speed Training
  - 13.6.2.3. Strength Training
- 13.6.3. Periodization of Training Programming From Data Obtained in a Stress Test

13.7. Specific Training for Dressage, Show Jumping and Eventing
- 13.7.1. Dressage
  - 13.7.1.1. Systemic Adaptations to Exercise during Dressage Testing
  - 13.7.1.2. Stress Tests Specific to the Dressage Horse
  - 13.7.1.3. Training for Dressage Horses
- 13.7.2. Show Jumping
  - 13.7.2.1. Systemic Adaptations to Exercise during Show Jumping Trials
  - 13.7.2.2. Specific Stress Tests for Dressage Horses
  - 13.7.2.3. Training for Show Jumping Horses
- 13.7.3. Complete Horseback Riding Competition
  - 13.7.3.1. Systemic Adaptations to Exercise During a Full Competition
  - 13.7.3.2. Specific Stress Tests for the All-Round Horse
  - 13.7.3.3. Training for All-Round Horses

13.8. Specific Training for Endurance and Speed
- 13.8.1. Resistance or Endurance
  - 13.8.1.1. Systemic Adaptations to Exercise during Endurance Tests of Different Durations
  - 13.8.1.2. Specific Stress Tests for Resistance Horses
  - 13.8.1.3. Training for Resistance Horses
- 13.8.2. Training for Racehorses
  - 13.8.2.1. Systemic Adaptations to Exercise During Speed Testing
  - 13.8.2.2. Specific Stress Tests for Racehorses
  - 13.8.2.3. Training for Racehorses

13.9. Overtraining Syndrome
- 13.9.1. Definition and Types of Overtraining Syndrome
- 13.9.2. Etiology and Pathophysiology
- 13.9.3. Hematological, Endocrine, Muscular and Behavioral Changes Compatible with Overtraining

13.10. Excessive Fatigue or Exhaustion: Diagnosis, Treatment and Prevention Pathologies Associated Physical Exercise
- 13.10.1. Definition of Exhaustion vs. Fatigue Pathophysiology of the Exhaustion and Post-Exhaustion Syndrome
- 13.10.2. Pathophysiological Mechanisms Associated With Water-Electrolyte Imbalances and Energy Substrate Depletion
- 13.10.3. Specific Pathologies Within the Exhaustion Syndrome: Exercise Hyperthermia/ Heat Stroke, Flutter or Synchronous Diaphragmatic Flutter, Colic, Diarrhea, Laminitis, Metabolic Encephalopathy, Renal Failure
- 13.10.4. Medical Management of the Exhausted Horse
- 13.10.5. Exhaustion Prevention Strategies: Before, During and After Competition

Module 14. Manual Therapy

14.1. Introduction to Manual Therapy and Kinesiotherapy
- 14.1.1. Definition of Manual Therapy and Kinesiotherapy
- 14.1.2. Types of Kinesiotherapy
- 14.1.3. Technical Aspects
- 14.1.4. Horse Application

14.2. Joint Mobilizations of the Extremities
- 14.2.1. Mobilization of the Distal Portion of the Forelimb
- 14.2.2. Mobilization of the Proximal Portion of the Forelimb
- 14.2.3. Mobilization of the Distal Portion of the Forelimb
- 14.2.4. Mobilization of the Proximal Portion of the Forelimb

14.3. Joint Mobilizations of the Axial Skeleton
- 14.3.1. TMJ Mobilization
- 14.3.2. Cervical Mobilization
- 14.3.3. Thoracolumbar Mobilization
- 14.3.4. Lumbosacral Mobilization
- 14.3.5. Sacroiliac Mobilization
- 14.3.6. Tail Mobilization

14.4. Musculoskeletal Stretching
- 14.4.1. Introduction
- 14.4.2. Types of Musculoskeletal Stretching
- 14.4.3. Osteoarticular Postures
- 14.4.4. Forelimb Stretches
- 14.4.5. Hind Limb Stretches
- 14.4.6. Axial Structure Stretching
- 14.4.7. Horse Application

14.5. Massage Therapy
- 14.5.1. Introduction and Types of Massage Therapy
- 14.5.2. Massage Therapy Techniques
- 14.5.3. Massage Effects and Applications
- 14.5.4. Horse Application

14.6. Myofascial Manual Therapy
- 14.6.1. Introduction, Concept of Fascia and Fascial System in the Horse
- 14.6.2. Techniques of Myofascial Therapy
- 14.6.3. Horse Application

14.7. Trigger Points: Definition and Implications
- 14.7.1. Definition and Classification of Trigger Points
- 14.7.2. Effects and Characteristics of Trigger Points
- 14.7.3. Origin and Causes of Trigger Points
- 14.7.4. Implications of Chronic Pain
- 14.7.5. Implications of Myofascial Pain in Sports

14.8. Trigger Point Treatment
- 14.8.1. Manual Techniques
- 14.8.2. Dry Needling
- 14.8.3. Cryotherapy and Application of Electro-- Physical Agents
- 14.8.4. Horse Application

14.9. Manipulative Therapy I
- 14.9.1. Introduction
- 14.9.2. Terminology.
  - 14.9.2.1. Joint Locking or Fixation
  - 14.9.2.2. Handling and Adjustment
  - 14.9.2.3. Joint Range of Motion (ROM)
- 14.9.3. Description of the Manual Handling Technique
  - 14.9.3.1. Hand Posture
  - 14.9.3.2. Body Posture
  - 14.9.3.3. Description of Settings
- 14.9.4. Security Considerations
- 14.9.5. Sacropelvic Area
  - 14.9.5.1. Sacro
  - 14.9.5.2. Pelvis
- 14.9.6. Lumbar Region

14.10. Manipulative Therapy II
- 14.10.1. Thoracic Region
  - 14.10.1.1. Thoracic Region
  - 14.10.1.2. Rib Region
- 14.10.2. Head and Cervical Region
  - 14.10.2.1. Atlanto-Occipital and Atlanto-Axial Region
  - 14.10.2.2. Lower Cervicals
  - 14.10.2.3. Temporomandibular Joint TMJ
- 14.10.3. Extremities
  - 14.10.3.1. Forelimbs
    - 14.10.3.1.1. Scapula
    - 14.10.3.1.2. Shoulder
    - 14.10.3.1.3. Carpus

Module 15. Electrophysical Agents in Equine Physiotherapy

15.1. Electrotherapy
- 15.1.1. Physiological Basis of Electrostimulation
- 15.1.2. Electrotherapy Parameters
- 15.1.3. Electrotherapy Classification
- 15.1.4. Equipment
- 15.1.5. Precautions
- 15.1.6. General Contraindications to Electrotherapy

15.2. Analgesic Electrotherapy
- 15.2.1. Therapeutic Effects of Electricity
- 15.2.2. TENS
  - 15.2.2.1. Endorphin TENS
  - 15.2.2.2. Conventional TENS
  - 15.2.2.3. Burst Type TENS
  - 15.2.2.4. Modulated TENS
  - 15.2.2.5. Invasive TENS
- 15.2.3. Other Types of Analgesic Electrotherapy
- 15.2.4. Precautions and Contraindications

15.3. Muscle Electrostimulation
- 15.3.1. Preliminary Considerations
- 15.3.2. Electrostimulation Parameters
- 15.3.3. Effects of Electrostimulation on Musculature
- 15.3.4. Stimulation in Denervated Muscle
- 15.3.5. Horse Application
- 15.3.6. Precautions and Contraindications

15.4. Interferential Currents and Other Currents of Clinical Interest
- 15.4.1. Interferential Currents
- 15.4.2. Diadynamic Currents
- 15.4.3. Russian Currents
- 15.4.4. Other Currents That the Equine Physiotherapist Should Know About

15.5. Microcurrents, Iontophoresis and Magnetotherapy
- 15.5.1. Microcurrents
- 15.5.2. Iontophoresis
- 15.5.3. Magnetotherapy

15.6. Percutaneous Electrolysis
- 15.6.1. Physiological Fundamentals and Scientific Basis
- 15.6.2. Procedure and Methodology
- 15.6.3. Applications in Equine Sports Medicine
- 15.6.4. Precautions and Contraindications

15.7. Diathermy
- 15.7.1. Therapeutic Effects of Heat
- 15.7.2. Types of Diathermy
- 15.7.3. Radiofrequency Diathermy or Tecartherapy
- 15.7.4. Indications and Horse Application
- 15.7.5. Precautions and Contraindications

15.8. Ultrasound
- 15.8.1. Definition, Physiological Basis and Therapeutic Effects
- 15.8.2. Ultrasound Types and Parameter Selection
- 15.8.3. Indications and Horse Application
- 15.8.4. Precautions and Contraindications

15.9. Laser
- 15.9.1. Concept of Photobiomodulation, Physical and Biological Basis
- 15.9.2. Laser Types
- 15.9.3. Physiological Effects
- 15.9.4. Indications and Horse Application
- 15.9.5. Precautions and Contraindications

15.10. Shock Waves
- 15.10.1. Definition, Physiological Fundamentals and Scientific Basis
- 15.10.2. Indications and Horse Application
- 15.10.3. Precautions and Contraindications

Module 16. Therapeutic Exercise and Active Kinesitherapy

16.1. Physiological Basis of Motor Control I
- 16.1.1. Sensory Physiology
  - 16.1.1.1. What It Is and Why It Is Important Sensation vs. Perception
  - 16.1.1.2. Interconnection Between the Sensory and Motor System
- 16.1.2. Sensory Afferent Fibers
- 16.1.3. Sensory Receptors
  - 16.1.3.1. Definition, Types and Characteristics
  - 16.1.3.2. Cutaneous Sensory Receptors
  - 16.1.3.3. Muscle Proprioceptors

16.2. Physiological Basis of Motor Control II
- 16.2.1. Afferent Sensory Tracts
  - 16.2.1.1. Dorsal Spine
  - 16.2.1.2. Spinothalamic Tracts
  - 16.2.1.3. Spinocerebellar Tracts
  - 16.2.1.4. Other Afferent Sensory Tracts
- 16.2.2. Efferent Motor Tracts
  - 16.2.2.1. Corticospinal Tract
  - 16.2.2.2. Rubrospinal Tract
  - 16.2.2.3. Reticulospinal Tract
  - 16.2.2.4. Vestibulospinal Tract
  - 16.2.2.5. Tectospinal Tract
  - 16.2.2.6. Importance of the Pyramidal and Extrapyramidal System in Animals
- 16.2.3. Neuromotor Control, Proprioception and Dynamic Stability
- 16.2.4. Fascia, Proprioception and Neuromuscular Control

16.3. Motor Control: Operation and Alteration
- 16.3.1. Motor Patterns
- 16.3.2. Levels of Motor Control
- 16.3.3. Theories of Motor Control
- 16.3.4. How Motor Control is Altered
- 16.3.5. Dysfunctional Patterns
- 16.3.6. Pain and Motor Control
- 16.3.7. Fatigue and Motor Control
- 16.3.8. The Gamma Circuit

16.4. Motor Control: Alteration and Re-Education
- 16.4.1. Consequences of Altered Motor Control
- 16.4.2. Neuromuscular Re-Education
- 16.4.3. Learning Principles and Other Theoretical Considerations in Motor Control Re-Education
- 16.4.4. Assessment and Goals in Motor Control Re-Education
- 16.4.5. Importance of Rider-Horse Communication in the Neuromotor System

16.5. Motor Control Re-Education II: Core Training
- 16.5.1. Basis of Application
- 16.5.2. Core Anatomy of Horses
- 16.5.3. Dynamic Mobilizations
- 16.5.4. Facilitation or Strengthening Exercises
- 16.5.5. Imbalance or Destabilization Exercises

16.6. Motor Control: Re-Education II: Proprioceptive Facilitation Techniques
- 16.6.1. Basis of Application
- 16.6.2. Environmental Stimulation Techniques
- 16.6.3. Use of Proprioceptive or Tactile Stimulators and Wristbands
- 16.6.4. Use of Unstable Surfaces
- 16.6.5. Use of Neuromuscular Taping
- 16.6.6. Use of Resistive Elastic Bands

16.7. Training and Active Rehabilitation Programs I
- 16.7.1. Initial Considerations
- 16.7.2. The Natural Gaits of the Horse: Biomechanical Aspects to be Considered in Re-Education
  - 16.7.2.1. Step
  - 16.7.2.2. Trot
  - 16.7.2.3. Canter
- 16.7.3. Working With the Neck in a Low and Elongated Position: Biomechanical Aspects to Be Considered in Reeducation
- 16.7.4. Working in Circles: Biomechanical Aspects to Consider in Re-Education

16.8. Training and Active Rehabilitation Programs II
- 16.8.1. The Backward Step: Biomechanical Aspects to Be Considered in Re-Education
  - 16.8.1.1. Initial Considerations
  - 16.8.1.2. Effects From a Biomechanics Perspective
  - 16.8.1.3. Effects From a Neurological Perspective
- 16.8.2. Two-Track Work: Biomechanical Aspects to Be Considered in Re-Education
- 16.8.3. Work With Bars and Cavalettis: Biomechanical Aspects to Be Considered in Re-Education
- 16.8.4. Slope Work: Biomechanical Aspects to Be Considered in Re-Education
- 16.8.5. Footwork and Use of Auxiliary Renderings: Biomechanical Aspects to be Considered in Re-Education

16.9. Training and Active Rehabilitation Programs III
- 16.9.1. Considerations and Objectives in the Design of an Active Rehabilitation Program
- 16.9.2. Considerations of the Effect of Training on Muscle Physiology
- 16.9.3. Consideration of the Effect of Training on the Cardiorespiratory System
- 16.9.4. Considerations of Specific Active Rehabilitation Programs
- 16.9.5. Effect of the Rider on Posture and Movement

16.10. Hydrotherapy
- 16.10.1. Therapeutic Properties of Water
- 16.10.2. Resting and Exercise Hydrotherapy Modalities
- 16.10.3. Physiological Adaptations to Exercise in Water, With Special Emphasis on Locomotor Adaptations
- 16.10.4. Use of Water Exercise in the Rehabilitation of Tendon Ligament Injuries
- 16.10.5. Use of Water Exercise in the Rehabilitation of pathologies of Dorsal Pathologies
- 16.10.6. Use of Water Exercise in the Rehabilitation of Joint Pathologies
- 16.10.7. Precautions and General Considerations When Designing a Water-Based Exercise Protocol in Musculoskeletal Rehabilitation

Module 17. Complementary Modalities: Neuromuscular Taping and Acupuncture

17.1. Proprioceptive Elastic Bandage (Neuromuscular or Kinesiotape)
- 17.1.1. Introduction and History
- 17.1.2. Description and Characteristics
- 17.1.3. Physiological Basis
- 17.1.4. Types of Applications

17.2. Application Techniques I: General Considerations and Muscular Techniques
- 17.2.1. General Application Considerations and Animal Specific Considerations
- 17.2.2. Effects on the Muscular System
- 17.2.3. Muscular Techniques

17.3. Application Techniques II: Tendinoligament and Fascial Techniques
- 17.3.1. Effects on the Tendinoligamentous System
- 17.3.2. Tendinoligament Techniques
- 17.3.3. Effects on the Fascial System
- 17.3.4. Fascial Techniques

17.4. Application Techniques III: Lymphatic Techniques
- 17.4.1. Lymphatic System
- 17.4.2. Effects on the Lymphatic System
- 17.4.3. Lymphatic Techniques

17.5. Incorporation of Proprioceptive Elastic Taping in Rehabilitation Programs
- 17.5.1. Integration of Exercise and Taping Techniques
- 17.5.2. Precautions and Contraindications
- 17.5.3. Regulation of Sporting Events
- 17.5.4. Scientific Evidence for the Use of Bandaging

17.6. Acupuncture and Traditional Chinese Medicine (TCM) Bases
- 17.6.1. Definition and Historical Background of Acupuncture
- 17.6.2. Scientific Foundations of Acupuncture
  - 17.6.2.1. 24 Hour Clock
    - 17.6.2.1.1. Physiological Mechanisms and Their Effects
    - 17.6.2.1.2. Basic Theories of TCM

17.7. Acupuncture Points and Meridians
- 17.7.1. The Meridian System
- 17.7.2. Acupuncture Points in Horses
- 17.7.3. General Rules of Acupuncture

17.8. Acupuncture Techniques
- 17.8.1. Dry Needling
- 17.8.2. Electroacupuncture
- 17.8.3. Aquapuncture
- 17.8.4. Other Techniques of Acupuncture

17.9. Pre-treatment Diagnosis
- 17.9.1. How to Make a Diagnosis According to Veterinary TCM
- 17.9.2. Four Diagnostic Methods
- 17.9.3. Inspection
- 17.9.4. Perception of Body Sounds and Smells
- 17.9.5. Research
- 17.9.6. Palpitation
- 17.9.7. General Physical Examination and Pre-treatment Scanning in Horses

17.10. Acupuncture in Horses
- 17.10.1. Acupuncture Point Selection Based on a Conventional Diagnosis
- 17.10.2. Orthopedic Problems
- 17.10.3. Musculoskeletal Pain
- 17.10.4. Neurological Problems
- 17.10.5. Respiratory Problems
- 17.10.6. Other Pathologies

Module 18. Diagnostic Imaging Oriented to the Diagnosis of Problems Susceptible to Physiotherapy Treatment

18.1. Radiology. Radiology of the Phalanges I
- 18.1.1. Introduction
- 18.1.2. Radiographic Technique
- 18.1.3. Radiology of the Phalanges II
  - 18.1.3.1. Radiographic Technique and Normal Anatomy
  - 18.1.3.2. Incidental Findings
  - 18.1.3.3. Significant Findings

18.2. Radiology of the Phalanges II: Navicular Disease and Laminitis
- 18.2.1. Radiology of the Third Phalanx in Cases of Navicular
  - 18.2.1.1. Radiologic Changes in Navicular Disease
- 18.2.2. Radiology of the Third Phalanx in Cases of Laminitis
  - 18.2.2.1. How to Measure Changes in the Third Phalanx with Good Radiographs
  - 18.2.2.2. Evaluation of Radiographic Alterations
  - 18.2.2.3. Assessment of Corrective Hardware

18.3. Radiology of the Fetlock and Metacarpus/Metatarsus
- 18.3.1. Radiology the Fetlock
  - 18.3.1.1. Radiographic Technique and Normal Anatomy
  - 18.3.1.2. Incidental Findings
  - 18.3.1.3. Significant Findings
- 18.3.2. Radiology of the Metacarpus/Metatarsus
  - 18.3.2.1. Radiographic Technique and Normal Anatomy
  - 18.3.2.2. Incidental Findings
  - 18.3.2.3. Significant Findings

18.4. Radiology of the Carpus and Proximal Area (Elbow and Shoulder)
- 18.4.1. Carpus Radiology
  - 18.4.1.1. Radiographic Technique and Normal Anatomy
  - 18.4.1.2. Incidental Findings
  - 18.4.1.3. Significant Findings
- 18.4.2. Radiology of the Proximal Area (Elbow and Shoulder)
  - 18.4.2.1. Radiographic Technique and Normal Anatomy
  - 18.4.2.2. Incidental Findings
  - 18.4.2.3. Significant Findings

18.5. Hock and Stifle Radiology
- 18.5.1. Radiology of the Hock
  - 18.5.1.1. Radiographic Technique and Normal Anatomy
  - 18.5.1.2. Incidental Findings
  - 18.5.1.3. Significant Findings
- 18.5.2. Stifle Radiology
  - 18.5.2.1. Radiographic Technique and Normal Anatomy
  - 18.5.2.2. Incidental Findings
  - 18.5.2.3. Significant Findings

18.6. Spine Radiology
- 18.6.1. Neck Radiology
  - 18.6.1.1. Radiographic Technique and Normal Anatomy
  - 18.6.1.2. Incidental Findings
  - 18.6.1.3. Significant Findings
- 18.6.2. Dorsum Radiology
  - 18.6.2.1. Radiographic Technique and Normal Anatomy
  - 18.6.2.2. Incidental Findings
  - 18.6.2.3. Significant Findings

18.7. Musculoskeletal Ultrasound General Aspects
- 18.7.1. Obtaining and Interpreting Ultrasound Images
- 18.7.2. Tendons and Ligaments Ultrasound
- 18.7.3. Joints, Muscles and Bone Surfaces Ultrasound

18.8. Thoracic Limb Ultrasound
- 18.8.1. Normal and Pathologic Images in the Thoracic Limb
  - 18.8.1.1. Hoof, Pastern and Fetlock
  - 18.8.1.2. Metacarpus
  - 18.8.1.3. Carpus, Elbow and Shoulder

18.9. Pelvic Limb, Neck and Dorsum Ultrasound
- 18.9.1. Normal and Pathological Images in the Pelvic Limb and Axial Skeleton
  - 18.9.1.1. Metatarsus and Tarsus
  - 18.9.1.2. Stifle, Thigh and Hip
  - 18.9.1.3 Neck, Dorsum and Pelvis

18.10. Other Diagnostic Imaging Techniques: Magnetic Resonance Imaging, Computed Axial Tomography, Scintimammography, PET, etc.
- 18.10.1. Description and Uses of Different Techniques
- 18.10.2. Magnetic Resonance
  - 18.10.2.1. Acquisition Technique Cuts and Sequences
  - 18.10.2.2. Image Interpretation
  - 18.10.2.3. Artifacts in Interpretation
  - 18.10.2.4. Significant Findings
- 18.10.3. CAT
  - 18.10.3.1. Uses of CT in the Diagnosis of Musculoskeletal System Injuries
- 18.10.4. Gammagraphy
  - 18.10.4.1. Uses of Gammagraphy in the Diagnosis of Musculoskeletal System Injuries
- 18.10.5. Gammagraphy
  - 18.10.5.1. Uses of Gammagraphy in the Diagnosis of Musculoskeletal System Injuries

Module 19. Common Injuries in Sport Horses: Diagnosis, Conventional Treatment, Rehabilitation Programs and Physiotherapy Thoracic Limb Part I

19.1. Introduction
19.2. Hoof
  19.2.1. Capsule: Laminitis, Quarters, Cancker
  19.2.2. Arthrosis
  19.2.3. Collateral
  19.2.4. Deep Flexor
  19.2.5. Podotrochlear Apparatus
  19.2.6. Phalanges
19.3. Metacarpo-Phalangeal Joint
19.4. Digital Sheath
19.5. Metacarpal Region
  19.5.1. Superficial Digital Flexor
  19.5.2. Deep Digital Flexor
  19.5.3. Ligament Check
  19.5.4. Suspensory Ligament
19.6. Pathology of the Carpus
19.7. Carpal Sheath
19.8. Radius, Elbow and Shoulder Pathology
19.9. Conventional Treatments of the Most Frequent Pathologies of the Thoracic Limb and Their Monitoring
19.10. Physiotherapeutic Treatments, Rehabilitation Protocols and Physiotherapy Treatment of the Most Frequent Pathologies of the Thoracic Limb

Module 20. Common Injuries in Sport Horses: Diagnosis, Conventional Treatment, Rehabilitation Programs and Physiotherapy Pelvic Limb Part II

20.1. Introduction
20.2. Common Pathologies Distal to the Tarsus in the Pelvic Limb
  20.2.1. Hoof
  20.2.2. Metacarpo-Phalangeal Joint
  20.2.3. Sheath and Tendons
20.3. Suspensory Ligament of the Fetlock
20.4. Tarsal Pathology
20.5. Tibia and Stifle Pathology
20.6. Hip and Pelvis Pathology
20.7. Spine Pathology
  20.7.1. Cervical Pathology
  20.7.2. Thoracic Pathology
    20.7.2.1. Spinal Processes
    20.7.2.2. Joint Facets
    20.7.2.3. Vertebral Bodies
  20.7.3. Lumbosacral Iliac
20.8. Conventional Treatments of the Most Frequent Pathologies of the pelvic Limb and Spine
  20.8.1. Arthrosis
  20.8.2. Bone Tissue
  20.8.3. Soft Tissues
20.9. Physiotherapeutic Treatments, Rehabilitation Protocols of the Most Frequent Pathologies of the Pelvic Limb and Spine
  20.9.1. Particularities According to Sports Discipline
20.10. Monitoring of Pelvic Limb and Spine Injuries

06

Methodology

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

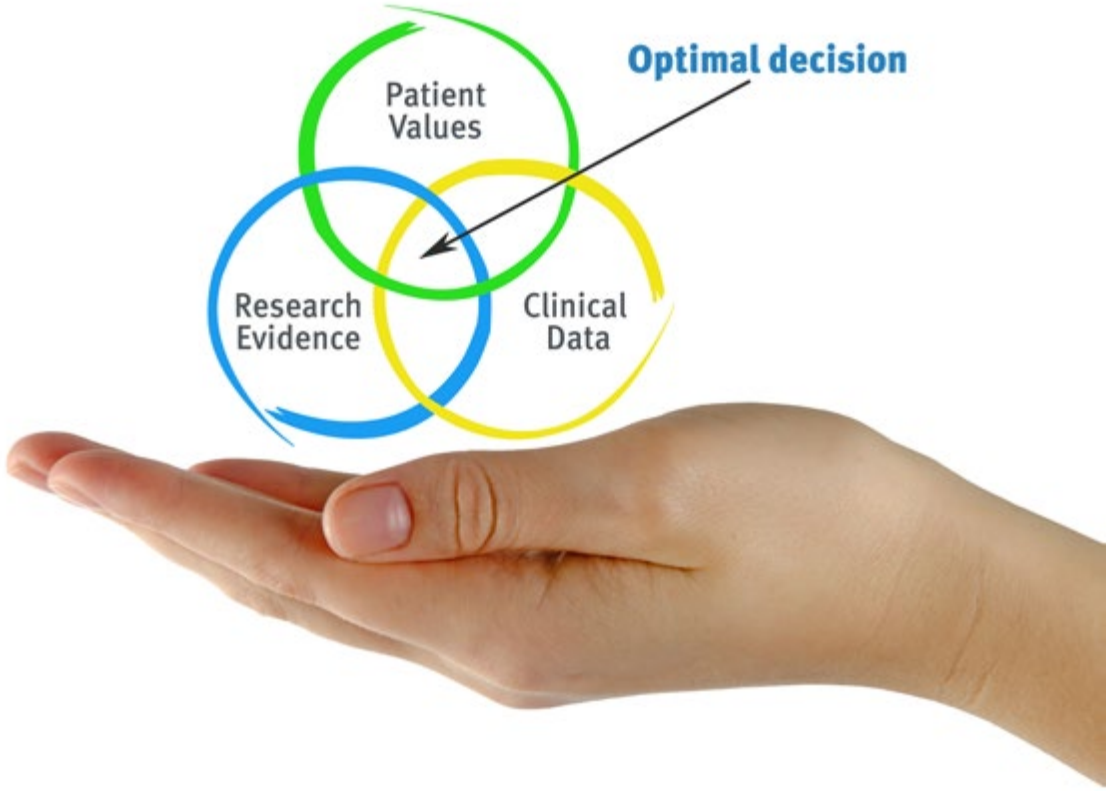
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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.

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:

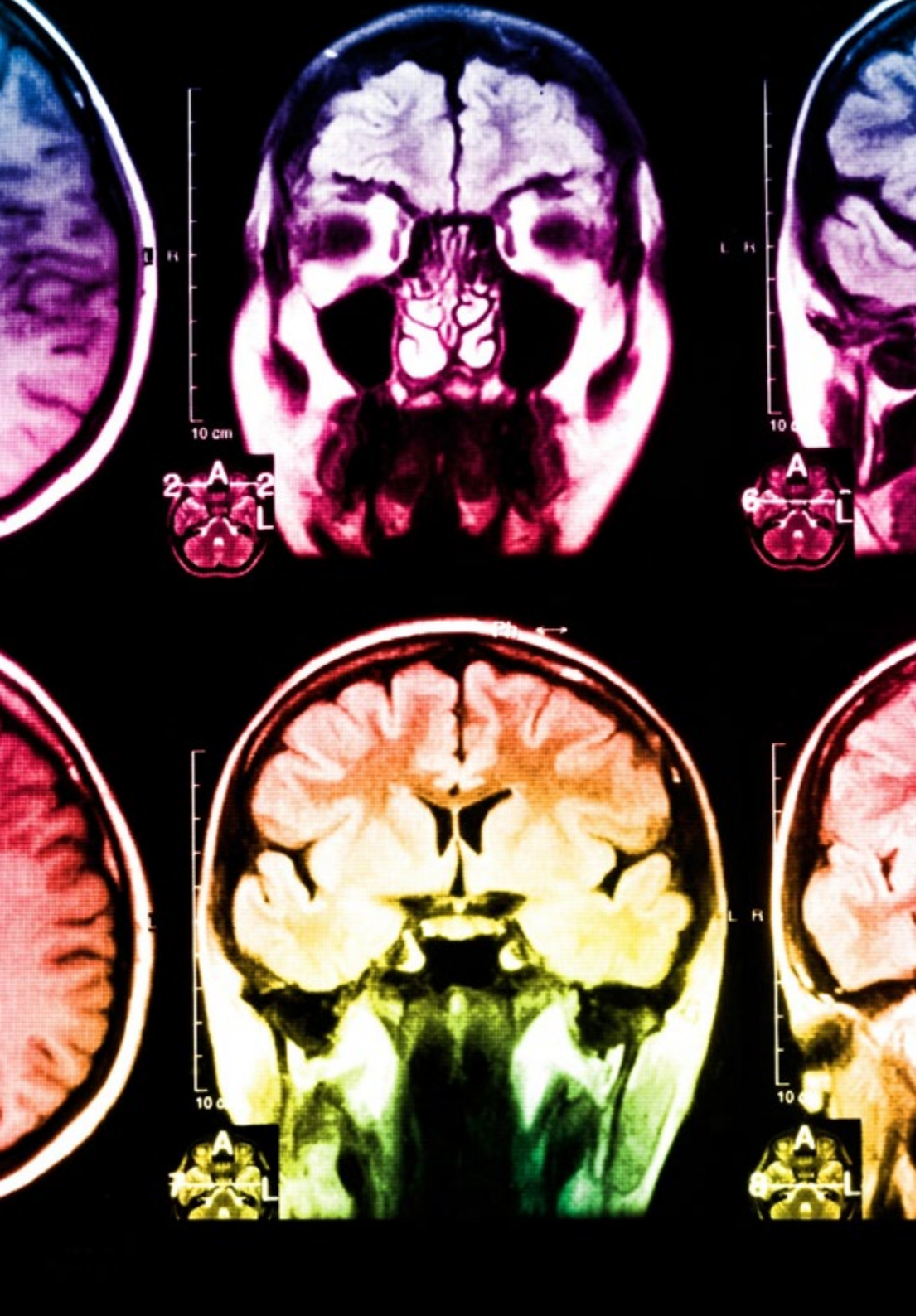
1. Veterinarians who follow this method not only manage to assimilate concepts, but also develop their mental capacity through exercises to evaluate real situations and knowledge application
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real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

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

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.

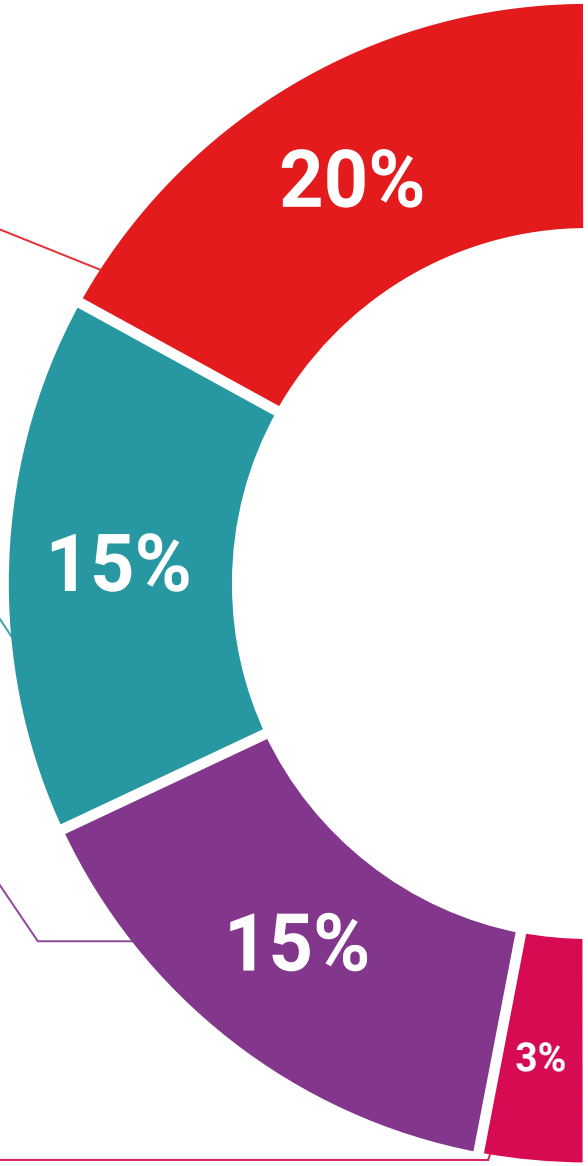
Interactive Summaries

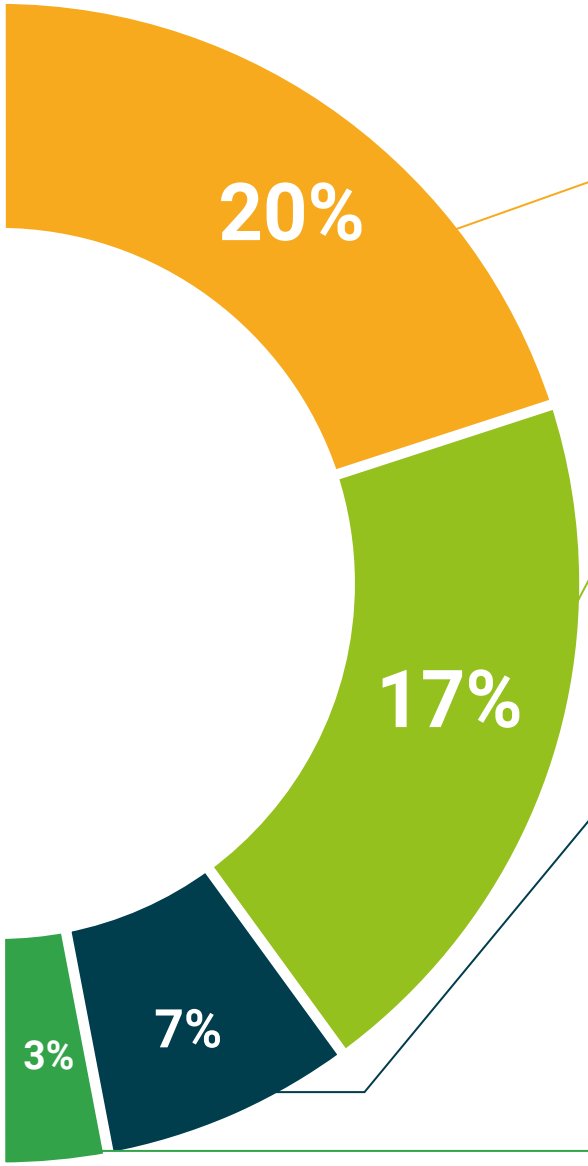
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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.

07

Certificate

The Advanced Master's Degree in Equine Medicine and Rehabilitation guarantees students, in addition to the most rigorous and up-to-date education, access to an Advanced Master's Degree's issued by TECH Technological University.

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

This **Advanced Master's Degree in Equine Medicine and Rehabilitation** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Advanced Master's Degree** diploma issued by **TECH Technological University** via tracked delivery*.

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

Title: **Advanced Master's Degree in Equine Medicine and Rehabilitation**

Official Number of Hours: **3,000 h.**


tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having successfully passed and accredited the following program

ADVANCED MASTER'S DEGREE

in

Equine Medicine and Rehabilitation

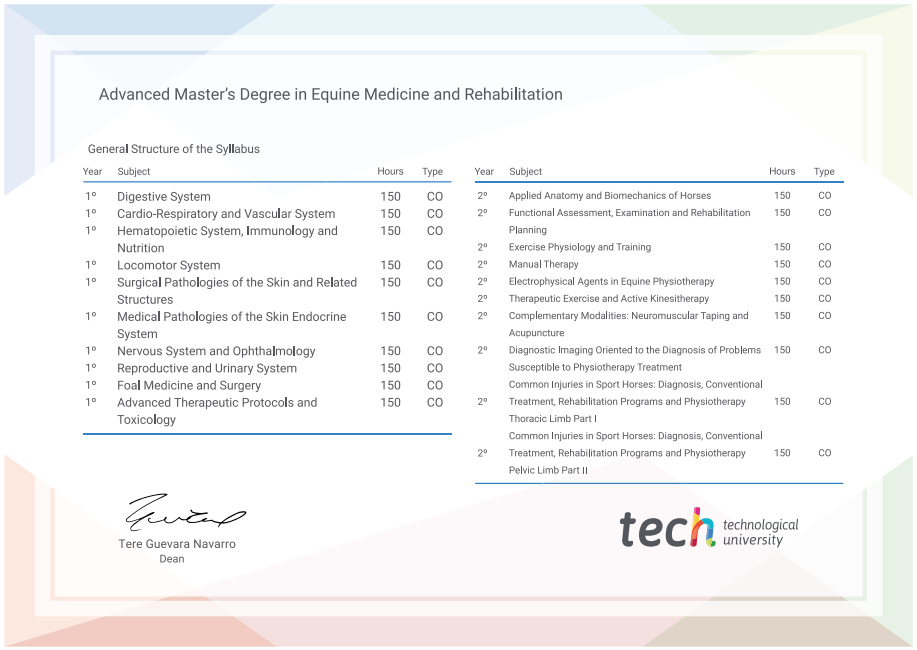
This is a qualification awarded by this University, equivalent to 3,000 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates


Advanced Master's Degree in Equine Medicine and Rehabilitation

General Structure of the Syllabus

Year	Subject	Hours	Type
1º	Digestive System	150	CO
1º	Cardio-Respiratory and Vascular System	150	CO
1º	Hematopoietic System, Immunology and Nutrition	150	CO
1º	Locomotor System	150	CO
1º	Surgical Pathologies of the Skin and Related Structures	150	CO
1º	Medical Pathologies of the Skin Endocrine System	150	CO
1º	Nervous System and Ophthalmology	150	CO
1º	Reproductive and Urinary System	150	CO
1º	Foal Medicine and Surgery	150	CO
1º	Advanced Therapeutic Protocols and Toxicology	150	CO
2º	Applied Anatomy and Biomechanics of Horses	150	CO
2º	Functional Assessment, Examination and Rehabilitation Planning	150	CO
2º	Exercise Physiology and Training	150	CO
2º	Manual Therapy	150	CO
2º	Electrophysical Agents in Equine Physiotherapy	150	CO
2º	Therapeutic Exercise and Active Kinesitherapy	150	CO
2º	Complementary Modalities: Neuromuscular Taping and Acupuncture	150	CO
2º	Diagnostic Imaging Oriented to the Diagnosis of Problems Susceptible to Physiotherapy Treatment	150	CO
2º	Common Injuries in Sport Horses: Diagnosis, Conventional Treatment, Rehabilitation Programs and Physiotherapy Thoracic Limb Part I	150	CO
2º	Common Injuries in Sport Horses: Diagnosis, Conventional Treatment, Rehabilitation Programs and Physiotherapy Pelvic Limb Part II	150	CO

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*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.

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Advanced Master's Degree
Equine Medicine and Rehabilitation

- Modality: **online**
- Duration: **2 years**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Advanced Master's Degree

Equine Medicine and Rehabilitation

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