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Veterinary Sports Medicine and Rehabilitation

(2017)

Policies and Procedures

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1. OBJECTIVES OF THE ECVSMR

The objectives of the college are to

1. advance veterinary sports medicine and rehabilitation in Europe to the benefit of animal health and welfare
2. establish and maintain standards for veterinary practitioners who excel in sports medicine and rehabilitation and who shall be titled Diplomates.
3. identify, develop, foster, and maintain veterinary sports medicine and rehabilitation speciality credentialing and ethical standards.
4. promote the improvement of scientific and professional standards and the advancement of professional knowledge and competency, by self-assessment and examination, and to facilitate the continuing education of veterinary practitioners in the discipline of veterinary sports medicine and rehabilitation.
5. identify Diplomates to the public, other professionals, professional organisations, government agencies and representatives, and other appropriate individuals and bodies.
6. seek and foster cooperation and contacts with other organisations that relate to veterinary medicine, and to collaborate in matters of common interest, including the advancement of high standards and methods in the art and science of veterinary practice.
7. collaborate with universities and other educational institutions to encourage and promote the development of graduate veterinary science programmes, with particular emphasis on residency training for clinical practice in the discipline of veterinary sports medicine and rehabilitation.

This shall be achieved by:

1. establishing guidelines for postgraduate education and training for acquiring and maintaining specialist status in veterinary sports medicine and rehabilitation, including
 - a. encouraging the development, supervision and assessment of continuing education programmes in veterinary sports medicine and rehabilitation
 - b. training, examining and certifying veterinarians as qualified specialists veterinary sports medicine and rehabilitation;
2. enhancing the scientific evidence in the field of veterinary sports medicine and rehabilitation through promoting conduction and dissemination of scientific research

2. TRAINING IN SPORTS MEDICINE AND REHABILITATION

2.1 General Aims and Objectives

Veterinary sports medicine and rehabilitation is defined as a multidisciplinary speciality that encompasses the in depth physical and clinical examination, diagnosis, treatment and prevention of sport and work related injuries/disorders and rehabilitation of animals' health through a holistic approach at the core of which is controlled exercise, functional training manual therapy techniques, therapeutic exercises and physical modalities.

A Standard Veterinary Sports Medicine and Rehabilitation Programme (Standard VSMR) is a training programme allowing a graduate veterinarian to acquire in-depth knowledge of veterinary sports medicine and rehabilitation and its supporting disciplines under the supervision and guidance of a EBVS recognised specialist in the field. The training can be completed in small animal (SA track) or equine (EQ track) sports medicine and rehabilitation.

The objectives of the training programme are to:

- a. instruct the resident in the science and practice of sports medicine and rehabilitation and its supporting disciplines.
- b. provide the resident with the generic and specific skills to embark on a career in this field including clinical practice, research and teaching
- c. promote the welfare of animals used in sport
- d. enhance quality of service to the public.

2.2 Knowledge, Skills and Competences of the Diplomates of the College of Veterinary Sports Medicine and Rehabilitation

2.2.1 Training of Veterinary specialists:

The minimum 4-year Training Programme allows graduate veterinarians, who have completed a minimum one year internship programme or its equivalent, as defined by the ECVSMR Credentials Committee, and a minimum of a 3-year College-approved Residency Training Programme to acquire in-depth knowledge of Veterinary Sports Medicine and Rehabilitation and its supporting disciplines under the supervision and guidance of a Diplomat of the College at specialist level.

This programme will distinguish the specialist from a veterinarian who is at the first clinical degree (Masters) level, and the "middle tier" or the "Advanced Practitioner".

Overall specialists will have the intellectual qualities, professional (including transferable) and technical skills necessary for succeeding in professional environments requiring responsibility, largely autonomous initiative and reflection.

By his/her expertise, the specialist should have developed the self-confidence, self-criticism and sense of responsibility that are essential for the practice of the speciality at the highest level.

A. In particular in relation to knowledge, specialists will be veterinarians who have demonstrated:

1. a systematic acquisition and understanding of a substantial body of facts, principles, theories and practices, which are at the forefront of their area of professional practice;
2. a high moral and ethical standard with regard to his/her contribution to the protection of animal health and welfare, human health and the environment;
3. the willingness and ability to keep up to date with knowledge and skills in the subject area
4. the ability to be acquainted with the structure, objectives, approaches and problems of the veterinary profession and specifically with regards to Veterinary Sports Medicine and Rehabilitation
5. the ability to keep abreast of new developments in the speciality and become familiar with new methods, before applying these in practice
6. understanding of the limitations of the speciality of Veterinary Sports Medicine and Rehabilitation
7. understanding of the possibilities that other specialties may have to offer
8. familiarity with the potential of multidisciplinary cooperation and the benefits of a transdisciplinary approach
9. awareness of current national and international rules and regulations with regard to all aspects of Veterinary Sports Medicine and Rehabilitation
10. the ability to conceptualise, design, implement and conduct research projects relevant to their own professional practice for the generation of new knowledge, applications or understanding at the forefront of Veterinary Sports Medicine and Rehabilitation

B. In particular in relation to skills, specialists will be veterinarians who have demonstrated ability to:

1. perform at a high level of professional expertise in the speciality area of Veterinary Sports Medicine and Rehabilitation including the ability to make informed judgements on non-routine and complex issues in specialist fields, often in the absence of complete data
2. use a full range of investigative procedures and techniques to define and refine problems in a way that renders them amenable to the application of evidence-based approaches to their solution
3. use patient safety knowledge to reduce harm and complications to clinicians, helping personnel and patient

4. communicate their ideas and conclusions clearly and effectively to specialist and non-specialist clients and audiences
5. act professionally in the provision of customised and optimal solutions to problems with regard to animals, clients, colleagues, public health and the environment
6. apply high level knowledge and skills at the forefront of the specialist area of Veterinary Sports Medicine and Rehabilitation to their own professional work
7. approach problems in an analytic, scientific way and attempt to find solutions
8. assign priorities to identified problems
9. use modern standards of skills and equipment
10. find required information quickly
11. organise all aspects of his/her work efficiently and effectively.

C. In particular in relation to competences, specialists will be veterinarians who have demonstrated ability to:

1. perform at a high level of competency through teaching, research and practice in the speciality of Veterinary Sports Medicine and Rehabilitation
2. carry out their responsibilities safely and ethically;
3. create, evaluate, interpret and apply, through clinical studies or original research, new knowledge at the forefront of their professional area, of a quality to satisfy peer review, and merit publication and presentation to professional audiences;
4. promote, within academic and professional contexts, technological, social or cultural advancement in a knowledge based society;
5. promote aptitude and proficiency in the field of Veterinary Sports Medicine and Rehabilitation
6. continue to undertake research and/or clinical studies in the field of Veterinary Sports Medicine and Rehabilitation at an advanced level, contributing substantially to the development of new techniques, ideas or approaches in the speciality;
7. develop their professional practice and produce a contribution to professional knowledge;
8. maintain both professional expertise and research through advanced scholarship;
9. develop applied research relevant to their professional area and other scientific activities in order to contribute to the quality of the speciality of Veterinary Sports Medicine and Rehabilitation

2.3 Subject-specific knowledge and skills

This chapter is a general description of the knowledge gained out of the training in sports medicine and rehabilitation with respect to both specialties (SA, EQ), for specific information regarding the small animal and equine specialities please read chapters 3 and 4.

2.3.1 Objective assessment of the animal

After completion of the training the resident is expected to demonstrate in depth knowledge and effective use of motor and cognitive skills. She/he will

1. demonstrate in depth knowledge of basic science needed for objective assessments such as
 - anatomy, exercise physiology and pathology in relation to different types of sport/work and rehabilitation with reference to
 - the locomotor system
 - the respiratory- and cardiovascular systems
 - biomechanics of sound and diseased animals as well as biomechanics of different types of sport and activities and functional training including compensating movements and their potentially associated lesions
 - the influence of muscle and tissue physiology and pathophysiology on performance, health and rehabilitation
2. perform diagnostic and therapeutic procedures as needed with respect to sports medicine and rehabilitation
3. demonstrate the ability to understand the potential interference between the physical, functional and pathological data of the patient and to make a synthesis of these data using her/his knowledge of techniques regarding clinical, physical and diagnostic examinations and the indications and limitations of the used diagnostic techniques
4. apply and interpret the results of objective measures of both qualitative and quantitative characteristics of functional impairment and perform and interpret focused functional assessments and outcome measurements, for example:
 - in exercise physiology and pathology: e.g. assessment of aerobic and anaerobic capacity
 - in gait analysis: use and interpretation of kinetics, kinematics, electromyography
 - assessment muscle development, tone, function and strength of muscle groups across each appendicular articulation and within regions of the axial skeleton
 - assessment of signs of acute, sub-acute, and chronic pain
 - assessment function as it relates to daily activities and sporting activities

2.3.2 Issues influencing athletic performance, health and animal welfare in specific athletic disciplines

After completion of training the resident will demonstrate the ability to recall and apply knowledge. He/she will be able to

1. express how preventative measures and daily environment influence performance and health
2. identify the impact of behaviour, cognitive demands and environmental factors on performance and health
3. express how factors like ageing, breeding and genetics influence performance and health
4. describe sport-specific nutritional programmes for animal athletes and rehabilitation patients and the roles of nutrients in various athletic disciplines
5. describe indications for and efficacy of nutritional supplements
6. describe the types of sports and work in accordance with relevant rules and regulations (including Fédération Cynologique Internationale (FCI) and Fédération Equestre Internationale (FEI))
7. describe training techniques and their associated equipment
8. identify the known injury risk factors and sport-related stress factors in relation to the physiology, pathology and biomechanics of the musculoskeletal system as well as the cardiovascular and respiratory systems and exercises physiology
9. identify ongoing controversies within different sports and concerning training techniques
10. identify welfare-related issues in animal sports and work
11. describe issues as they relate to various sporting events and types of work like FCI and FEI rules, veterinary care, rules and regulations at sporting events
12. describe the mechanism behind performance-enhancing drugs and their legality, including anti-doping rules in different sports
13. identify and describe issues specifically linked to hostile environments (heat, altitude, hygrometry) in the working animal

After completion of the training the resident is expected to demonstrate effective use of motor and cognitive skills and he/she will

1. demonstrate the ability to create and justify physiologically, anatomically and biomechanically sound strategies to prevent injuries and improve performance. The specialist will be able to
 - design training programmes for animal athletes considering the scientific literature on exercise physiology; these programmes are to fit the special needs of their sporting/working field and are in accordance with known risk factors and sport-related stress factors concerning
 - the musculoskeletal system
 - biomechanics
 - the cardiovascular and respiratory systems

- design preventative strategies for sport and working animals to protect them against sport-/work related problems working in close collaboration with allied manual therapy professionals
 - implement and readily modify logical and progressive sports medicine strategies taking into account factors like ageing, breeding and environment
2. design and implement podiatric strategies to optimise foot health in collaboration with farriers
 3. analyse and design sport-specific nutritional programmes for animal athletes, including nutritional supplements when appropriate
 4. investigate and improve sport- and work-related equipment like harnesses and saddles
 5. identify, and protect sporting animals from adverse welfare-related issues in animal sports (e.g. management and husbandry issues)
 6. identify and interpret sporting, training and work-related behavioural and environmental issues, e.g. in relation to transport and housing
 7. advise breeders regarding the genetics of disorders related to the speciality
 8. advise on the effect and legality use of performance-enhancing drugs
 9. take an integrative approach together with other veterinary specialists and non-veterinarians (e.g. trainers, allied veterinary professionals) in order to achieve the best possible health care outcomes

2.3.3 Principles and techniques of rehabilitation including physical modalities

After completion of the training the resident will demonstrate the ability to recall and apply knowledge. He/she will be able to

1. describe the principles and techniques of rehabilitation of physical modalities (like low level laser therapy, pulsed high intensity laser therapy, extracorporeal shockwave therapy, radial pressure wave therapy, therapeutic ultrasound, electrotherapy),
2. describe the principles and techniques of various therapeutic modalities including Underwater Therapy (UWT), pulsed magnet field, assistive devices, orthotics and prosthetics, etc. to address functional or structural impairments with appropriate outcome measures for monitoring the response to treatment.
3. describe specific therapeutic exercise equipment to meet individual-based needs and to facilitate the achievement of desired treatment or rehabilitation goals.
4. determine the value of physical modalities for different purpose such as pain control or muscle education and recall the scientific evidence for the methods
5. identify the indications and contraindications of therapeutic techniques

6. describe and determine the value of soft tissue and joint mobilisation techniques to skin, fascia, muscle, tendon and ligaments and at each appendicular articulation and within regions of the axial skeleton
7. describe adjunctive therapies, for example different method of manipulative therapies
8. apply and interpret functional assessments and outcome measures of both qualitative and quantitative characteristics of functional impairment related to sports medicine and rehabilitation issues. The successful resident will be able to
 - assess and apply measures of proprioception and balance
 - assess and apply measures of active and passive joint range of motion at each appendicular articulation and within regions of the axial skeleton
 - apply and assess the response to primary, secondary, and tertiary directions and types of joint motion at each appendicular articulation and within regions of the axial skeleton
 - apply and assess the response to different grades of joint mobilization at each appendicular articulation and within regions of the axial skeleton
 - assess and characterize types of joint end-feel at each appendicular articulation and within regions of the axial skeleton

After completion of the training the resident is expected to demonstrate effective use of motor and cognitive skills and he/she will be able to

1. create appropriate therapeutic and rehabilitation management strategies for patients with common conditions within the speciality, involving both surgically and conservatively-treated patients. He/she will be able to
 - perform soft tissue and joint mobilization techniques to skin, fascia, muscle, tendon and ligaments
 - apply species-specific physical modalities for example cryotherapy, heat therapy, neuromuscular electrical stimulation, transcutaneous electrical nerve stimulation (TENS), direct current (iontophoresis), therapeutic ultrasound (including phonophoresis), low level laser therapy and extracorporeal shockwave therapy
 - apply species-specific therapeutic exercises and use appropriately specific therapeutic exercise equipment for example proprioceptive training, development of motor timing skills, functional balance exercises, including proprioceptive neuromuscular facilitation patterns, active and passive stretching exercises, core stability exercises, development of motor control skills, strengthening exercises, plyometric exercises, aerobic exercises and endurance training, anaerobic exercise and endurance training, aquatic therapy: e.g. underwater treadmill exercise, swimming;
2. apply exercise and physical therapy programmes in an integrative approach, for example

- for young animals, to ensure adequate development of the musculoskeletal system, especially in animals with developmental disorders in a team approach with other specialists from surgery and diagnostic imaging
 - for ageing animals to prevent or improve age-related musculoskeletal disorders
 - develop and perform nutrition and exercise programmes for e.g. overweight patients
3. design rehabilitation programmes for sport- and working animals after illness and injury to bring them back to work/sports as quick as possible;
 4. effectively work in integrative approach with other veterinary specialists and non-veterinarians (e.g. trainers, non-veterinarian physiotherapists/manipulative therapists, farriers) in order to achieve the best possible health care outcomes, for example
 - referral to specialists in other disciplines, e.g. surgeons for surgery, radiologist for advanced imaging, anaesthetists for pain management
 - develop and perform conservative (non-surgical) pain-controlling programmes including medication and physical therapeutic modalities

2.3.4 General veterinary knowledge in adjunct topics relevant to sports medicine and rehabilitation

To be able to acquire the knowledge, understanding and skills described under chapter 2, the resident will need knowledge and understanding of veterinary medicine and adjunct disciplines with a working knowledge, but not specialist level. He/she will be able to

1. identify the altered structure and function (pathology and pathophysiology) of the body and its major organ systems that are seen in various diseases and conditions related to the speciality, for example
 - internal medical disorders, emergencies, musculoskeletal or neurological disorders, commonly-seen ophthalmological, oral and dental problems (for specific examples please refer to chapter 3 (SA) and 4 (EQ).
 - the effects of nutrition-, training-, behaviour-, breeding-, genetics-, ageing- and environmental factors
2. distinguish the causes of disease (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, behavioural, environmental, traumatic, etc.) and recognize the ways in which they affect the pathogenesis of disease and influence performance;
3. express how the evolving concepts in the sciences bound to veterinary medicine inform the clinical practice of VSMR;
4. interpret diagnostic tests as related to common clinical, laboratory, imaging and pathologic findings in common disease and poor performance states;
5. determine the value of scientific findings in advancing medical knowledge and patient care;

6. describe the epidemiology of common disorders/problems within the field of VSMR, and the systematic approaches useful in reducing the incidence and prevalence of those disorders/problems;
7. identify problems that need referral to a specialist of another discipline.

After completion of the training the resident is expected to demonstrate effective use of motor and cognitive skills to:

1. demonstrate the ability to elicit, synthesize and interpret both a thorough and appropriately focused history and a list of owner's concerns in a professional, logical and organized manner;
2. demonstrate the ability to perform complete and appropriately focused physical exams in a professional, logical and organised manner at an advanced practitioner, but not specialist level:
 - perform and interpret musculoskeletal, lameness, clinical and neurological examinations,
 - perform and interpret biomechanical analysis, including the use of force plate and pressure plate, video and sensor based kinematics and electromyography analysis
 - perform and interpret cardiac and respiratory examinations
 - have a working knowledge of ophthalmological, oral and dental examinations;
3. appropriate diagnostic management strategies for patients with common issues arising in the speciality:
 - have a knowledge in haematology and serum biochemistry, arterial blood gases (resting and exercising), cystocentesis: cytology and biochemistry, synovial fluid collection and analysis, cerebrospinal fluid analysis, electrocardiography, muscle biopsy, radiography and ultrasonography
 - have a working knowledge of advanced examination procedures such as nuclear scintigraphy, magnetic resonance imaging, computed tomography, arthroscopy, endoscopy: including gastroscopy and the upper respiratory tract;
4. perform routine technical procedures at advanced practitioner level
 - Stabilization and emergency care of musculoskeletal, ocular and dental injuries
 - Treatment of hyperthermia, dehydration and possible toxin exposure
 - Acute, sub-acute, and chronic pain management
 - Development of dietary management plans and use of nutritional supplements
 - Conservative treatment of muscle, tendon and ligament injuries

3. SMALL ANIMAL TRACK

This chapter has to be read in addition to the general information in chapter 2.

3.1 Education in basic knowledge and skills

To achieve the skills described in chapter 2, the resident must undertake the following external rotations within the first 18 months of the training period. To achieve the objectives described in chapter 2, the resident must undertake the following external rotations within the first 18 months of the training period. In these adjacent subjects we expect the resident to gain knowledge and understanding that allows him/her to recognise problems and refer them to other specialists for appropriate diagnosis and treatment, and to take these disorders into account either during rehabilitation, or when the disorder cannot be permanently treated and will affect athletic performance in the long term.

Surgery: During the residency, the Resident must spend the equivalent of at least 5 weeks (i.e. 200 hours) under the supervision of an ECVS or ACVS Diplomate learning and evaluating the results of orthopaedic and neurological examinations and treatments, no direct surgical training is expected, but the resident is encouraged to observe different surgical procedures relevant to the speciality. The resident should receive direct training in neurological and orthopaedic examination techniques.

Internal Medicine: During the residency the Resident must spend the equivalent of at least 4 weeks (i.e. 160 hours) under the supervision of a Diplomate in Veterinary Internal Medicine (ECVIM or ACVIM) with exposure to nutritional issues (ideally in cooperation with a DECVCN), gastrointestinal disorders, upper and lower respiratory diseases, the practical application of exercise physiology, neurological and cardiological investigations.

Neurology: During the residency the Resident must spend the equivalent of at least 1 week (i.e. 40 hours) under supervision of an ECVN/ACVIM Diplomate with exposure to neurological conditions. The resident should receive direct training in neurological examination and diagnostic techniques.

Radiology: During the residency the Resident must spend the equivalent of at least 3 weeks (i.e. 120 hours) under supervision of an ECVDI/ACVR Diplomate in Veterinary Diagnostic Imaging, learning and evaluating the results of special imaging techniques, and attending imaging rounds and/or seminars. To prove the learning outcomes, the resident must report in a clinical case log during the surgical, internal medicine and radiology rotations.

3.2 Education in special knowledge and skills

To achieve the skills described in chapter 2 during the special education of 97 weeks the resident is expected to present a case log of at least 300 cases. The emphasis has to be on the sporting and/or rehabilitation aspect of each case. The case log is to include a representative number of cases for disorders/diseases that impair physical activity with an emphasis on the locomotor system but also including problems of other body system that influence performance. The resident will have supervised skills training in applied clinical reasoning in patients with clinical signs of conditions with

primary or secondary involvement of the tissues and structures of the locomotor system, of functional performance or other impairment affecting physical activity. This will be proven via the case log. The case log is to contain a representative number of disorders/diseases that have in common that the recognition, correct analysis and interpretation of *clinical signs* of tissues and structures of the locomotor system, of functional performance or other impairment affecting physical activity, are of importance for the recognition of an evidence based practice approach to the assessment and the treatment plan, to achieve an optimal functional treatment outcome, in each individual patient.

1. The resident must prove that she/he is able to handle typical problems of rehabilitation in animals and typical disorders in sporting and working dogs. The list below displays specified disorders, which must be included in the case log, and the minimum number of cases required. The resident must demonstrate that he/she is able to handle the cases in a multidisciplinary approach

The expected level of knowledge is described in chapter 2.3.

Musculoskeletal disorders

I. Joint disorders including

a. Osteoarthritis, including spondylarthritis

This occurs frequently in small animals presented for rehabilitation, but it is also frequently seen in sporting and working dogs. Whilst in rehabilitation the focus is on the treatment of clinical symptoms, in sports medicine the focus is on prevention, by providing dog handlers and trainers with suitable training programmes and regular health checks.

b. Developmental disorders (HD, ED, OCD)

These are common disorders of small animals presented both for rehabilitation after surgical intervention, but also for the development of suitable ongoing exercise plans. Such disorders are of special interest for animals intended for sporting and working purposes, e.g. regarding suitability of certain sport/working types, development of adapted training plans, regular health checks

c. Stifle disorders (for example cruciate disease, patella luxation, OCD)

These disorders are frequently seen in small animals presented for rehabilitation after surgical intervention, further they are common disorders in certain breeds used for sport/working purposes (for example cruciate disease in Rottweilers)

d. Hip disorders (for example disorders leading to THR, LCP, luxation)

These are common disorders of small animals presented for rehabilitation after surgery

II. Muscle and tendon disorders and injuries

These are commonly seen in small animals presented for rehabilitation after surgical intervention or for conservative treatment. With respect to sports medicine, they represent frequently-seen

disorders of sporting dogs, e.g. tendinitis of the bicipital tendon, iliopsoas strain or contracture of the semitendinosus/gracilis muscle

III. Fractures

These are commonly-seen disorders of small animals presented for rehabilitation after surgical intervention

IV. Intervertebral disc disease, Degenerative lumbosacral stenosis, Fibrocartilaginous embolic myelopathy, Degenerative myelopathy

These are commonly-seen disorders of small animals presented for rehabilitation after surgical intervention or for conservative treatment.

V. Trauma resulting in head and spinal lesions, Peripheral nerve injury

These disorders are frequently-seen in small animals presented for rehabilitation after surgical intervention or for conservative treatment.

Non-musculoskeletal disorders

I. Emergency cases (for example after intoxication, heat stroke)

Intoxications are known emergency cases for example in detection dogs; disorders like heat strokes are sometimes seen not only due to environment (hot car) but also in working dogs, for example in search and rescue or hunting dogs during work in hot weather conditions.

II. Neurology (for example polyradiculitis, epilepsy)

In addition to the neurological component of the disorders mentioned below, patients with neurological disorders such as polyradiculitis are frequently seen in rehabilitation. A working knowledge of conditions such as epilepsy is necessary as some working breeds have a predisposition to it (for example, Labradors). Furthermore, the specialist must be able to distinguish disorders such as exercise-induced collapse from other causes of seizures (for example, epilepsy). The EVCSMR specialist should therefore have a basic knowledge of neurology, such that he/she can recognize neurologic cases and refer to a specialist to establish a diagnosis and treatment plan.

	Minimum
Musculoskeletal disorders	
Joint disorders including	80
Osteoarthritis, including spondylarthritis	20
Developmental disorders (HD, ED, OCD)	20
Stifle disorders (for example cruciate disease, patella luxation, OCD)	10
Hip disorders (for example disorders leading to THR, LCP, luxation)	10
Muscle and tendon disorders and injuries	20
Fractures	10

Intervertebral disc disease, Degenerative lumbosacral stenosis, Fibrocartilaginous embolic myelopathy, Degenerative myelopathy	20
Trauma resulting in head and spinal lesions, Peripheral nerve injury	5
Non-musculoskeletal disorders	
Emergency cases (for example after intoxication, heat stroke)	5
Neurology (for example polyradiculitis, epilepsy)	5

At least 30% of these cases should include post-surgical rehabilitation. Rehabilitation of feline patients can be included with a maximum number of 20 cases. A small degree of compensation between sub-areas is allowed and will be assessed by the supervisor. For all these cases, basic bullet points must be listed, highlighting how the development of the condition may be associated with the animal's lifestyle and/or sport/work, as well as how the prognosis for return to an adequate quality of life and/or sport/work is evaluated.

Rehabilitation cases are expected to be presented with bullet points detailing the rehabilitation techniques and measures used, the outcomes expected, as well as potential alternative techniques.

2. The case log must contain cases in which animals have been treated with either an additional disorder to a musculoskeletal problem or solely other disorders. The list below displays typical disorders, which must be included in the case log and the minimum number of cases required. The resident must demonstrate that he/she is able to handle the cases in a multidisciplinary approach. The expected level of knowledge is described in chapter 2.3.

Cardiology (for example cardiac insufficiencies, dysrhythmias)

Patients with cardiac insufficiencies are frequently seen in rehabilitation in their own right. They also occur in animals presented because of other diseases such as osteoarthritis, where their presence may necessitate adjustments to normal rehabilitation programmes. A working knowledge of cardiology is necessary to develop suitable training and rehabilitation programs. In the field of sports medicine cardiological expertise is necessary to investigate cardiac causes of poor performance. The EVCSMR specialist should therefore have a basic knowledge of cardiology, such that he/she can recognise cardiac problems and refer to a specialist to establish a diagnosis and treatment plan.

Gastroenterology (for example gastritis, diarrhoea)

Disorders of the gastrointestinal system must be recognised by the specialist for many reasons, for example, to allow analgesic medication regimens to be adapted due to their presence. In sports medicine this knowledge is necessary as some gastrointestinal disorders are specific for sporting/working dogs (for example, gastritis in sled dogs). The EVCSMR specialist should therefore have a basic knowledge of gastroenterology, such that he/she can recognise such problems and refer to a specialist to establish a diagnosis and treatment plan.

Endocrinology (for example Cushing's Syndrome, hypothyroidism)

Hormonal disorders are sometimes concurrent problems in rehabilitation cases and they are occasionally the reason for referral to rehabilitation. For example, in Cushing's Syndrome, patients may be referred due to the muscle atrophy seen in this disease, which may not necessarily have been recognised by the referring clinician. The EVCSMR specialist should therefore have a basic knowledge of endocrinology, such that he/she can endocrine problems and refer to a specialist to establish a diagnosis and treatment plan.

Obesity

This is a frequently seen condition in rehabilitation cases.

Geriatrics

A considerable proportion of the patients in rehabilitation are older animals. A knowledge of age-related issues such as cardiac insufficiency, renal disorders and special nutritional demands of the older animal is necessary to develop suitable rehabilitation programs. The EVCSMR specialist should therefore have a basic knowledge of geriatrics, such that he/she can recognize related problems and refer to a specialist to establish a diagnosis and treatment plan.

Genitourinary diseases (for example cystitis, incontinence)

Genitourinary diseases are frequently-seen as concurrent disorders of patients in rehabilitation. The specialist must be able to recognise such conditions and take appropriate action to manage them. The EVCSMR specialist should therefore have a basic knowledge of genitourinary disorders, such that he/she can recognize related problems and refer to a specialist to establish a diagnosis and treatment plan.

Dermatology (for example mycosis),

Skin disorders are usually not a major issue in rehabilitation or sports medicine, but they may be contraindications for rehabilitation approaches such as water treadmill exercise. The EVCSMR specialist should therefore have a basic knowledge of dermatology, such that he/she can recognize related problems and refer to a specialist to establish a diagnosis and treatment plan.

Parasitology (for example borreliosis, babesiosis)

Disorders such as borreliosis are sometimes the underlying reasons for lameness and must be recognized by the specialist. Babesiosis is a serious problem in certain European areas, affecting especially dogs working in the field, e.g. hunting dogs. The specialist must be able to recognize this disorder and take appropriate therapeutic action. The EVCSMR specialist should therefore have a basic knowledge of parasitology, such that he/she can recognize related problems and refer to a specialist to establish a diagnosis and treatment plan.

Ophthalmology (for example cornea injuries, typical eye diseases of working dogs), commonly seen oral and dental problems (for example teeth fractures in military dogs)

The clinician must be able to identify dental/eye disorders that must be referred to another specialist. The EVCSMR specialist should therefore have a basic knowledge of ophthalmology, such that he/she can recognize related problems and refer to a specialist to establish a diagnosis and treatment plan.

Behavioural problems

Behavioural problems are sometimes caused by pain due to an underlying orthopaedic or neurological disease. In such cases, a multidisciplinary approach with experts in behavioural medicine is necessary for a successful treatment approach. In sports medicine, behavioural problems can be a cause of difficulties in training animals; again a multidisciplinary approach, with experts in behavioural medicine, is necessary to deal with these cases. The EVCSMR specialist should therefore have a basic knowledge of behavioural problems, such that he/she can recognize related problems and refer to a specialist to establish a diagnosis and treatment plan.

	Minimum
Cardiology (for example cardiac insufficiencies, dysrhythmias)	5
Gastroenterology (for example gastritis, diarrhoea)	5
Endocrinology (for example Cushing’s Syndrome, hypothyroidism)	5
Obesity	10
Genitourinary diseases (for example cystitis, incontinence), Dermatology (for example mycosis), Parasitology (for example borreliosis, babesiosis)	10
Ophthalmology (for example cornea injuries, typical eye diseases of working dogs), commonly seen oral and dental problems (for example teeth fractures in military dogs)	5
Geriatrics	10
Behavioural problems	5

For all these cases, basic bullet points must be listed, highlighting how the development of the condition may be associated with the animal’s lifestyle and/or sport/work, as well as how the prognosis for return to an adequate quality of life and/or sport/work is evaluated.

3. The resident must prove that he/she gained knowledge in sport and working dog disciplines, including agility, fly ball, obedience, disk dogging, dog dancing, hunting, racing, sled-dogs, guide and assistance dogs, search and rescue dogs, police and military dogs, herding, gun dogs, assistance and signal dogs.

This will be indicated in the case logs and the resident should ensure that there is a balanced distribution between the different types of sport and work. The resident is expected to present at least 50 of the cases logged under the special knowledge and skills category.

4. As the speciality not only focuses on the treatment of diseased animals but also puts emphasis on preventive medicine, including the development of suitable training programmes, the resident is expected to present at least 30 of the cases logged under the special knowledge and skills category.

The following table shows examples of **typical sports-related topics**, which should be covered during the period of training, but these are not exclusive:

Sport and working dog issues in typical sports and working areas:

Types of sports/work	agility, fly ball, obedience, disk dogging, dog dancing, hunting, racing, sled-dogs, guide and assistance dogs, search and rescue dogs, police and military dogs, herding, assistance and signal dogs
Training techniques and associated equipment	harnesses, obstacles, dummies, games the effects of obedience training on search dog performance the influence of training methods and the behaviour of handlers on the performance of dog handler teams and the welfare of the animals
Injury risk-factors, sport-related stress factors with particular respect to the musculoskeletal system, biomechanics and exercise physiology	toxin exposure in detection dogs injuries commonly seen in sporting dogs, e.g. injuries caused by A-frames in agility dogs, fractures in the racing dog the effect of fence height on joint angles and muscle function and kinetics in jumping dogs fluid and electrolyte shifts, thermoregulation during and after competitions explosives detection by sniffer dogs following strenuous physical activity the effects of superimposing endurance exercise on seasonal acclimatization to environmental heat stress
Behaviour, cognitive demands and environmental factors	stress-dependent behavioural changes before, during, and after competition transport and housing
Ongoing controversies within different sports and to training techniques	shock collars, tail amputation
Welfare related issues	shock collars, tail amputation misuse of drugs
Issues as they relate to various sporting events	FCI rules Veterinary care, rules and regulations at sporting events

5. For subject areas that are important for the training of the ECVMR resident but are not covered by dedicated weeks spent on the respective service learning opportunities will be provided by exposing the resident to these subjects through conference talks, webinars, journal club contributions and case

discussions involving specialist in these subjects. For example we will include sessions on ethics or nutrition in our teaching offer.

3.3 Case log

The resident is expected to present a case log of 400 cases; at least 90 cases must be dedicated to the education in basic knowledge and skills, at least 300 cases to special knowledge and skills (see chapter 2), the remaining 20 cases can be distributed between the both areas.

3.3.1 Primary or assistant responsibility

Each case should be designated as referred or first opinion, and the responsibility of the Resident as assistant or primary clinician. The Resident may be considered to be the primary clinician when he or she can document a significant role in all of the following aspects of case management: determination or confirmation of the diagnosis (including specialised work ups), selection and (when appropriate) performance of appropriate treatment, and obtaining sufficient follow up to be acquainted with the course of the disease and the outcome of any treatment. At least 60% of the 300 cases during the special education must be managed as primary clinician.

3.3.2 Case reports

The resident must submit two high-quality clinical case reports as first author to the credentials committee. These reports must describe the diagnosis and treatment of medical and surgical conditions in sports animals and rehabilitation, following injury, of performance or non-performance animals. The case reports must be written in English to the standard format acceptable for publication by appropriate journals such as *Equine Veterinary Education*, but will also need to include a reflection on what the resident learnt from this case. Case reports will be evaluated on satisfactory case management with attention to logical thought processes, clinical knowledge and appropriate management. These case reports must include a reflective component outlining what the resident has learned from this case and how it influenced his/her future approach to cases.

4. EQUINE TRACK

This chapter has to be read in addition to the general information in chapter.

4.1 Education in basic knowledge and skills

The resident is expected to present a case log of a total of 300 cases; at least 65 cases must be dedicated to the education in basic knowledge and skills. The case log is to include a representative

number of cases for disorders/diseases that impair physical activity with an emphasis on the locomotor system but also including problems of other body system that influence performance.

To achieve the objectives described in chapter 2, the resident must undertake the following external rotations within the first 18 months of the training period. In these adjacent subjects we expect the resident to gain knowledge and understanding that allows him/her to recognise problems and refer them to other specialists for appropriate diagnosis and treatment, and to take these disorders into account either during rehabilitation, or when the disorder cannot be permanently treated and will affect athletic performance in the long term.

Surgery: During the residency, the Resident must spend the equivalent of at least 5 weeks (i.e. 200 hours) under the supervision of an ECVS/ACVS Diplomate learning and evaluating the results of orthopaedic examinations and treatments, no direct surgical training is expected, but the resident is encouraged to observe different surgical procedures relevant to the speciality. The resident should receive direct training in orthopaedic examination techniques.

Internal Medicine: During the residency the Resident must spend the equivalent of at least 5 weeks (i.e. 200 hours) under the supervision of a ECVIM/ACVIM Diplomate with exposure to nutritional issues (ideally in cooperation with a DECVCN), gastrointestinal disorders, upper and lower respiratory diseases, the practical application of exercise physiology, neurological and cardiological investigations.

Radiology: During the residency the Resident must spend the equivalent of at least 3 weeks (i.e. 120 hours) under supervision of a LA track ECVDI diplomate, ECVDI LA Associate or ACVR/ECVDI diplomate with considerable horse experience in Veterinary Diagnostic Imaging, learning and evaluating the results of special imaging techniques and attending imaging rounds and/or seminars.

The resident must report their experience in a clinical case log during the surgical, internal medicine and radiology rotations.

4.2 Education in special knowledge and skills

To achieve the objectives described in chapter 2 the resident is expected to present a case log of at least 200 cases during the special education of 97 weeks. The emphasis has to be on the sporting and/or rehabilitation aspect of each case. The resident will have supervised skills training in applied clinical reasoning in patients with clinical signs of conditions with primary or secondary involvement of the tissues and structures of the locomotor system, of functional performance or other impairment affecting physical activity. This will be proven via the case log. The case log is to contain a representative number of disorders/diseases that have in common that the recognition, correct analysis and interpretation of *clinical signs* of tissues and structures of the locomotor system, of functional performance or other impairment affecting physical activity, are of importance for the

recognition of an evidence based practice approach to the assessment and the treatment plan, to achieve an optimal functional treatment outcome, in each individual patient.

1. The resident must prove that she/he is able to handle typical problems of rehabilitating animals and typical disorders in sports horses. The list below displays specified disorders which must be included in the case log and the minimum number of cases required:

Osteoarthritis, affecting a range of joints

Osteoarthritis occurs very frequently in working and sports horses. With increasing awareness of owners and trainers, more and more animals are presented for preventative measures for this condition, as well as for treatment and rehabilitation. Osteoarthritis is the most frequent reason for early retirement of sports horses. It is, therefore, of extreme importance in equine sports medicine and rehabilitation.

Developmental orthopaedic disease

Developmental orthopaedic diseases occur frequently in young horses. It is important that those that require treatment are identified as early as possible and appropriate therapy carried out. The causes of these conditions are still poorly-understood and further work is necessary to identify significant aetiological factors for them. In human athletes development of key support muscles is integral for successful rehabilitation. The role of physiotherapy in rehabilitation of equine athletes requires further investigation.

Muscle, tendon and ligament disorders and injuries

A variety of conditions of these tissues are seen in the horse. Tendon injuries are common both in horses used for high speed activities such as racing and eventing (e.g. superficial digital flexor tendinitis) and in horses used for other sports such as dressage and endurance (e.g., suspensory ligament) and show jumping (e.g. accessory ligament of the deep digital flexor tendon). A very high recurrence rate of these lesions highlights the importance of rehabilitation after initial treatment, in order to increase the working life of the athlete post -injury. Much needs to be learned about ideal rehabilitation with respect to duration, type and intensity of work, work surfaces, gradients on which horses are worked, and the use of non-ridden exercise (e.g. over ground treadmills, water treadmills). Primary muscle injuries in human athletes are common, but may be under-recognised in equine athletes.

Fractures, including a range of bones and treatment options

In high speed equestrian sports such as racing limb fractures occur all too commonly. The first response of the treating veterinarians at sports events (which in the future may often be Diplomates of this College) for the administration of appropriate first aid, as well as the initial assessment of the severity of the injury, are vital. The need for appropriate rehabilitation after successful treatment must be stressed. A special issue is posed by fractures that are the consequence of remodelling of bone due to

cumulative stress; this is of special relevance to the field of sports medicine because selected training programmes and the judicious use of different surfaces have been shown to reduce the incidence of such fractures. Monitoring of early remodelling is an excellent pointer towards the effectiveness of the prevention of such fractures.

Back disorders including different treatment options

The thoracolumbar-sacral vertebral column experiences variable and often severe forces depending on the sport a horse is used for; a major obvious difference being ridden and unriden exercise and the gait and head and neck posture required for the different equestrian disciplines. Many athletes undergo periods of back pain, either primary or secondary, and the correct integration of physiotherapy in association with bespoke exercise routines and other treatment modalities including drug administration and surgery can only be successful if the individual case is fully assessed. Knowledge of the horse-saddle-rider interaction is key; the effects of an ill-fitting saddle on the horse, a saddle which does not permit a rider to be in balance with the horse and the influence of a crooked rider on the horse require further investigation. Much is still to be learned about the optimal way to rehabilitate key core muscle groups which frequently atrophy in the presence of back pain \pm hindlimb lameness.

Head problems affecting sporting performance

Factors such as vision abnormalities, dental and sinus disease, other oral pain, tack-related pain, joint problems and trigeminal sensitivity (the latter often leading to head shaking) may severely affect an athlete's performance. Whilst the diagnosis and treatment of these disorders frequently requires a multidisciplinary approach. A sports medicine clinician will contribute by determining whether abnormal head posture when a horse is ridden reflects a primary head problem or is a manifestation of musculoskeletal pain elsewhere.

Neck problems

Some clinically very important conditions of the horse affect the neck. These may be either a developmental orthopaedic disease or the consequence of trauma and/or degeneration and they may lead to impairment of the cervical spinal cord and/or the cervical spinal nerves. Alternatively the horse may present with neck pain or stiffness, an abnormal neck posture or unexplained forelimb lameness \pm stumbling. Much more needs to be learned about these conditions which can be challenging to diagnose, particularly because radiological abnormalities do not necessarily correlate with clinical signs. Early recognition of these conditions, their optimal management and an appropriate prognosis are important because affected animals may show ataxia or a propensity to stumble and may have an increased risk of falling during exercise.

Neurological disorders affecting performance: central and peripheral problems

As well as the case of the cervical vertebral column addressed above, all neurological disorders can compromise the safe and successful use of the horse as an athlete. These include peripheral nerve injuries after traumatic incidents, shivering associated with lesions in the cerebellum, stringhalt (which is currently poorly understood) and neuroaxonal dystrophy. Infectious neurological disorders, such as Equine Herpes Virus, are strictly the realm of internal medicine, but they are relevant to sports medicine in the context of the identification of cases and the prevention of spread of disease at equestrian events. The EVCSMR specialist should therefore have sufficient knowledge of neurological problems, such that he/she can recognise problems and refer to a specialist if appropriate.

Respiratory problems affecting performance affecting upper and lower respiratory tract

Equine athletic performance is frequently compromised by respiratory problems that may be amenable to surgical (upper respiratory tract obstructions) and medical (lower respiratory tract disease) interventions. As well as in diagnosis and treatment, the role of the Diplomate in Veterinary Sports Medicine and Rehabilitation involves the establishment of ongoing management, treatment and training regimens that obviate or minimise the effects of respiratory disorders, optimising both performance and welfare, without risk of horses infringing equine anti-doping and controlled medication regulations in collaboration with an internal specialist if required. The EVCSMR specialist should therefore have sufficient knowledge of respiratory problems, such that he/she can recognise problems and refer to a specialist if appropriate.

Emergency cases (for example multiple trauma, exertional rhabdomyolysis)

Efficient diagnosis, first aid treatment and management of emergency cases forms an essential part of the veterinary services at equestrian events. A wide range of traumatic injuries occur in competition, as well as a spectrum of medical conditions including exertional rhabdomyolysis, heat exhaustion, dehydration and other metabolic disorders.

Cardiovascular problems affecting performance

The EVCSMR specialist should therefore have sufficient knowledge of cardiovascular problems, such that he/she can recognise problems and refer to a specialist if appropriate.

Systemic problems affecting performance, e.g. infectious diseases and metabolic problems

Many sports horses travel frequently and over long distances. During these times they are exposed to different environments and to challenge by a range of bacterial and viral agents. These animals are therefore at increased risk of infection. The affected individual must be diagnosed early and treated properly, but it is also imperative that outbreaks of infectious diseases are dealt with in the wider setting of the prevention of spread of disease at equestrian competitions. The effects of the stresses of travel and competition and their attendant changes to feeding and management must be recognised and disorders associated with them, for example, shipping fever, diagnosed rapidly and treated

efficiently. The EVCSMR specialist should therefore have sufficient knowledge of internal medicine disorders, such that he/she can recognise problems and refer to a specialist if appropriate.

	Minimum
Osteoarthritis, affecting a range of joints	20
Developmental orthopaedic disease	10
Muscle, tendon and ligament disorders and injuries	20
Neck including neurological and musculoskeletal disorders	5
Fractures, including a range of bones and treatment option	10
Back disorders including different treatment options	10
Head problems affecting sporting performance	5
Neurological disorders affecting performance: central and peripheral problems	5
Respiratory problems affecting performance affecting upper as well a lower respiratory tract	10
Emergency cases (for example multiple trauma, exertional rhabdomyolysis)	5
Cardiovascular problems affecting performance	5
Systemic problems affecting performance, e.g. infectious diseases and metabolic problems	5

At least 20% of these cases should include rehabilitation and re-training programmes. Some degree of compensation between sub-areas is allowed, assessed by the Supervisor. Rehabilitation cases are expected to be presented with bullet points detailing the rehabilitative techniques and measures used, the outcomes expected, as well as potential alternative techniques.

2. The case log must contain cases in which animals have been treated with either an additional disorder to a musculoskeletal problem or solely other types of disorders. The EVCSMR specialist should have sufficient knowledge of problems, such that he/she can recognise problems and refer to the appropriate specialist. The list below displays typical disorders which must be included in the case log and the minimum number of cases required. Focus must be on the sporting and/or rehabilitation aspects of each case but the resident must demonstrate basic knowledge in these areas:

- Cardiology (see above) important examples include atrial fibrillation, other cardiac dysrhythmias and valvular insufficiency)
- Gastroenterology (gastric ulcers occur in a high proportion of racehorses and sports horses, diarrhoea may be a sequela to alterations in feeding associated with transportation to equestrian events)

- Endocrinology (with increasing numbers of horses competing to a greater age, horses with conditions such as pituitary pars intermedia dysfunction and equine metabolic syndrome are likely to be encountered in increasing numbers.)
- Respiratory diseases (recurrent airway obstruction, upper airway disorders – see above)
- Dermatology (skin hypersensitivities occur commonly in horses and are often precipitated by changes in management at competitions; infectious skin conditions, e.g. dermatophytosis, must be identified at an early stage to prevent them spreading at event venues).
- Specialised shoeing and foot trimming form an important part of the treatment and management of a number of orthopaedic conditions and the Diplomat must be knowledgeable concerning the role of farriery in sports horse management.
- Age specific challenges: e.g. ethical career prolonging measures in ageing athletes and the management of juvenile careers to minimise the risk of future injury
- Behavioural problems occur frequently in athletic horses. Stereotypic behaviour is common and is associated with compromise to welfare. Behavioural issues may also form part of the differential diagnosis for cases of poor performance. Recognition of changes in behaviour can also be key to recognising the presence of underlying musculoskeletal pain.

	Minimum
Cardiology (for example, atrial fibrillation, dysrhythmia, valvular disorders)	5
Gastroenterology (for example gastric ulcers, diarrhoea)	5
Endocrinology (for example pituitary pars intermedia dysfunction)	5
Metabolic diseases (e.g. EMS)	3
Respiratory diseases (recurrent airway obstruction, upper airway disorders)	10
Dermatology	5
Specialised shoeing and foot trimming - for locomotor system disorders such as foot problems, osteoarthritis, ligament and tendon disorders; but also for achieving gait characteristics necessary for the athletic discipline	20
Age specific challenges: e.g. Career prolonging measures in ageing athletes and management of juvenile careers	5
Behavioural problems	5

For all these cases, bullet points must be listed to show how the development of the problem is, or may be, associated with the athletic work of the animal, and how future performance may be affected after treatment. A small degree of compensation between sub-areas is allowed.

3. The resident must prove that he has gained knowledge in horse sport disciplines. This will be indicated in the case logs and the resident should ensure that there is a balanced distribution between the different types of sport and training. However, there may be European countries in which the case load of horses working in certain types of sports is low, and this must be taken into account in judging the caseloads of the resident. Externships should be selected to provide an adequate variety of equine sport disciplines as far as possible. The resident is expected to present at least at least 50 of the cases logged under the special knowledge and skills category.

4. As the speciality does not only focus on the treatment of diseased animals but also puts emphasis on preventative medicine, including the development of training programmes, the resident is expected to present at least 50 of the cases logged under the special knowledge and skills category in which there is a focus on training and prevention of injury.

The following table shows examples of typical sports-related topics which should be covered during the period of training, but these are not exclusive:

Sport and working horse issues in typical sports and working areas:	
Types of sports	Thoroughbred Racing (flat racing and racing over obstacles), Standardbred Trotting, Driving, Dressage, Show Jumping, Eventing, Endurance, Horsemanship Riding, Western Riding Disciplines, Vaulting and Para-equestrianism
Training techniques and associated equipment	Saddles, bits, harness, sulkies, coaches, obstacles, courses, surfaces; influence of training methods used on the performances and the welfare of the animals
Injury risk-factors, sport-related stress factors with particular respect to exercise, the musculoskeletal system, Biomechanics and exercise physiology	Physiological stresses imposed on the animal by the logistics of athletic performances – for example frequent transportation (by road, sea and air), new environments Injuries and diseases commonly seen in athletic equids of the above disciplines Biomechanics e.g. the effect of fence height and ground surfaces on biomechanics Discipline specific farriery Fluid and electrolyte shifts Thermoregulation before, during and after competitions

	The effects of superimposing endurance exercise on seasonal acclimatization to environmental heat stress
Behaviour, cognitive demands and environmental factors	Stress-dependent behavioural changes before, during, and after training and competition Transport Housing and management
Ongoing controversies within different sports and to training techniques	Training methods Use of medication during training and competition
Welfare related issues	Wastage in the respective disciplines Training methods for horses, negative reinforcements used versus positive reinforcements, Misuse of drugs
Issues as they relate to various sporting events	FEI rules and regulations, rules and regulations of the other international bodies governing aspects of equine sports (such as Horse Racing Authorities)

The following table shows examples for typical disorders related to the speciality which should be covered during the period of training, but they are not exclusive:

Issues related to VSMR such as poor performance and disabilities	
	For example
Internal disorders	Gastric ulceration, pulmonary disorders, cardiomyopathies, cardiac arrhythmias, metabolic disorders
Emergencies	Traumatic injuries, heat stroke, collapse, infectious diseases
Musculoskeletal or neurological diseases	Trauma, foot pain, osteoarthritis, developmental orthopaedic disease, muscle, ligament and tendon disorders and injuries, fractures, wounds, trauma resulting in head and spinal lesions, peripheral nerve injury
Commonly seen oral and dental problems	Bleeding from the mouth, fractures of the mandible, teeth fractures/infections, lesions associated with the use of tongue ties
Commonly seen ophthalmological problems	Periocular wounds and fractures, corneal injuries

Nutritional, training, behavioural , breeding, genetic, ageing or environmental factors	Inadequate body condition scores for the specific sport, ageing of athletes, adaptation of nutritional needs, re-introduction of mares into sport after foaling, monitoring breed specific and/or inherited limiting factors for the sport, monitoring the influence of new developments in horse husbandry (e.g. horse management in larger groups on non-grass paddocks)
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5. For subject areas that are important for the training of the ECVSMR resident but are not covered by dedicated weeks spent on the respective service learning opportunities will be provided by exposing the resident to these subjects through conference talks, webinars, journal club contributions and case discussions involving specialist in these subjects. For example we will include sessions on ethics or nutrition in our teaching offer.

4.3 Case log

The resident is expected to present a case log of a total of 300 cases; at least 65 cases must be dedicated to the education in basic knowledge and skills, at least 200 cases to special knowledge and skills the remaining 35 cases can be distributed between the both areas.

4.3.1 Primary or assistant responsibility

Each case should be designated as referred or first opinion, and the responsibility of the resident as assistant or primary clinician. The resident may be considered to be the primary clinician when that individual can document a significant role in all of the following aspects of management: determination or confirmation of the diagnosis (including specialised work-up), selection and (when appropriate) performance of appropriate treatment and obtaining sufficient follow-up to be acquainted with the course of the disease and the outcome of any treatment. At least 60% of the 200 cases during the special education must be managed as primary clinician.

4.3.2 Case reports

The resident must submit two high-quality clinical case reports as first author to the credentials committee. These reports must describe the diagnosis and treatment of medical and surgical conditions in sports animals and rehabilitation, following injury, of performance or non-performance animals. The case reports must be written in English to the standard format acceptable for publication by appropriate journals such as *Equine Veterinary Education*, but will also need to include a reflection on what the resident learnt from this case. Case reports will be evaluated on satisfactory case management with attention to logical thought processes, clinical knowledge and appropriate

management. These case reports must include a reflective component outlining what the resident has learned from this case and how it influenced his/her future approach to cases.

5. STANDARD RESIDENCY TRAINING PROGRAMME

This chapter describes the general rules of the training in sports medicine and rehabilitation with respect to both specialities (small animal and equine), the specific requirements for the small animal and equine specialities are described in chapter 3 and 4.

5.1 Approval of veterinary residency programmes

The Residency Training Programme must be approved by the Education Committee and ratified by the EC before the commencement of the programme. The specific forms required for the approval are given in the Appendix.

5.2 Official recognition of ECVSMR training centres

All institutions willing to contribute to training of residents must be approved by the Education Committee and ratified by the EC prior to commencement of the training programme.

5.2.1 Approved Training Centre

Training centres that fulfil all requirements to run a full Standard Residency Programme will be designated as an 'Approved Training Centre' (ATC). Re-accreditation is required every five years.

5.2.2 Satellite Training Centre

Training centres which fulfil only specific aspects of EVSMR (e.g. residents will have access to only specific equipment/expertise) are allowed to contribute to residents' training by offering rotations under diplomate supervision and will be designated as 'Satellite Training Centre' (STC). These centres need to be re-accredited every five years.

All other centres where residents may rotate occasionally or where supervision is provided by a specialist who is not an ECVSMR specialist will be approved on a case-by-case basis. The approval is granted only under the conditions of the application (location, duration) and a new application is required for each resident.

5.2.3 Facilities, services, and equipment required for an approved Residency Programme

An institution seeking for recognition for an EVSMR residency programme must ensure that the following infrastructure, including facilities, service and equipment are available for the resident.

1. Veterinary medical library containing the relevant textbooks and current journals related to the speciality

2. Medical records that are adequately maintained for each case and easily retrievable
3. Diagnostic facilities to perform routine diagnostics relevant to the speciality (including for example radiographic, ultrasonography, endoscopy, laboratory diagnostics). Access to computerised tomography (CT) and magnetic resonance imaging (MRI) are recommended.
4. Adequate caseload for the acquisition of competencies described in section 3 and 4. If the institution does not have sufficient case material for the resident to satisfy the recommended case log numbers, the resident's training can be supplemented with externships at another specialist practice or academic institution. Diplomat supervision of the cases treated at the alternative specialist practice or academic institution is an absolute requirement. Every out-rotation must be approved by the Education Committee unless accredited as Satellite center (5.2.2).
5. Species-specific equipment for rehabilitative treatment must be available for example equipment for cryotherapy, heat therapy, neuromuscular electrical stimulation, extracorporeal shockwave therapy or aquatic therapy.
6. Equipment for objective locomotor assessment, such as pressure mats, force plates, objective video and/or sensor based gait analysis are recommended. If this equipment is not available at the institution, the residents must gain experience by spending time at satellite centers.

5.2.4 Application to Register as an ECVSMR Training Centre

ECVSMR Diplomates seeking accreditation for their institution to become an ATC or STC training centre must provide satisfactory evidence proving that they offer sufficient facilities and caseload. Applications should be completed using a standard format provided by the College (see Appendix Form "Accreditation as training center" and "Accreditation as satellite training center"), signed and returned electronically (in a format that may not be altered, e.g. as password protected pdf) to the Secretary of the College and the Chairperson of the Education Committee. It is important to state clearly who is taking the roles of the Residency Programme Director and Resident Supervisor(s).

Upon approval by the Education Committee, the Executive Committee (EC) will consider the application. Once the proposed programme is ratified by the EC, the Centre will be designated as an Approved Training Centre to run Standard Residency Programmes or, if applicable, a Satellite Training Centre to contribute to resident training in respect of some specific aspects of veterinary sports medicine and rehabilitation.

Approval is granted for a five-year period, and re-approval is necessary every five years thereafter.

5.2.5 Re-approval of an ECVSMR Training Centre

Re-approval of training centres and programmes are necessary every five years (see Appendix Form "Re-accreditation as training center"). Any changes to the programme that may impact the quality of the resident's experience, e.g. structure of the programme, or diplomates working at the institution

must be reported to the Secretary of the College as soon as possible. The approval of the programme ceases immediately if the above-mentioned changes are not communicated to the College within one month of occurring.

5.3 Requirements for entry to the programme

Only applicants who are eligible to practise veterinary medicine will be accepted for the programme if they have successfully undertaken a one-year internship or have spent a minimum of two years in practice gaining clinical experience and skills equivalent to an internship in accordance with EBVS guidelines.

5.4 Length of training

The Standard Residency Training Programme must consist of a consecutive period of **at least three years (=156 weeks)** of supervised training, postgraduate education and clinical experience in the science and practice of equine or small animal sports medicine and rehabilitation and its supporting disciplines under the supervision of a EBVS recognised specialist in the field who participates actively in that programme. It is important to recognise that in order to fulfil all the requirements listed in chapter 2, 3 and 4 some institutes may have to extend their programmes to a maximum of five years. The programme will usually be conducted at one institute but institutes are entitled to submit proposals for programmes conducted in more than one site, provided that all the requirements - especially Diplomate supervision - can be fulfilled.

Institutes are encouraged to ensure that their residents spend some time visiting other institutes to gain insights into different approaches. Residents enrolled in standard programmes are expected to work full time and must spend at least 60 per cent of their time on clinics practising the speciality, based on a normal working week of 40 hours. Residents must spend their off-clinics time on activities related to the speciality including research, teaching and studying (e.g. data collection, analysis, preparation of scientific manuscripts, graduate degree studies, teaching of under and postgraduate students, attendance of conferences and “in house” or external seminars and meetings and exam preparation). The resident is entitled to holidays according to the rules of the individual’s country and institution.

5.4.1 Clinical rotations and externships

5.4.2 Clinical rotation

The training rotations in equine or small animal sports medicine and rehabilitation (minimum 97 weeks) must contain four weeks clinical rotation with the ‘alternate’ species (i.e. an equine resident spending time with a small animal rehabilitation practice and vice versa) with the approval of the

resident's supervisor. It is mandatory that the residency programme foresees the participation of Residents at equine or canine sporting events.

5.4.3 External rotation

Clinical External rotations in related disciplines (surgery, internal medicine, diagnostic imaging) must be completed in the space of thirteen weeks. For detailed information see for SA chapter 3 and for EQ chapter 4.

5.4.4 Externships

If a programme does not provide adequate case exposure or equipment (e.g. for objective locomotor assessment, such as pressure mats, force plates, objective video and/or sensor based gait analysis), externships may be required.

1. Essential externships must be for a minimum of two (2) weeks at a time to ensure case continuity and should not exceed more than 12 weeks in total.
2. Approval of residency programmes requires an indication of where externships will be carried out. They must be supervised by a Diplomate or other similarly qualified person in the relevant discipline.
3. Any changes (e.g. staffing, equipment, case load) affecting the quality of resident experience must be reported as soon as possible to the Education Committee.
4. Experiential externships like rotations with a human sports medicine/rehabilitation facility are encouraged, but are not obligatory, to broaden experience. They may be undertaken in other disciplines, in medical or research facilities, or in other schools with an approved programme. These should be for a minimum of two weeks and not exceed four weeks.

5.4.5 Research, self-directed studies, conferences, vacations, teaching

Residents may spend the remainder of their programme in any or all of the following ways:

1. Research (minimum 4 weeks per year) and preparation of scientific manuscripts for publication
2. Self-directed study, attendance at conferences and meetings
3. Vacation periods (typically 4 – 5 weeks per year) in accordance with the individual resident's country and institution.

5.4.6 Overview of the training periods

	Weeks
Sports medicine and rehabilitation clinics	97
Clinical rotation with the alternate species	4
External rotation	13
Research	12

Self-directed study, conference attendance	15
Vacation	15
Total	156

5.4.7 Graduate degree studies

Postgraduate degree studies, e.g. for Masters or PhD, may be included in the residency programmes; however, the requirements for training in sports medicine and rehabilitation and related disciplines described in chapters 2, 3 and 4 must be fulfilled during a combined graduate degree and residency programme. At least 60% of the time in a combined postgraduate degree-residency programme must be allocated to clinical case responsibility and residency training. If a combination of a residency programme and postgraduate study is planned, the supervisor of the resident and the PhD supervisor (if not the same person) must send a proposal to the Education Committee. This proposal need to clearly outline how the residency requirements will be fulfilled when integrated with a postgraduate programme and in what time frame. It is necessary to be aware that the length of the training will markedly exceed the length of the standard residency programme of 156 weeks, making the combined training period no less than four years.

5.5 Study and education

1. Formal course work

During the training period and before sitting the examination, the resident must have delivered two presentations, at least one of which has to be at an international conference, both have to be in the subject area. Should the resident have not already delivered those two presentations by the time he/she applies to sit the exam, he/she needs to provide evidence (e.g. in form of an invitation letter) that he/she is scheduled to do so and he/she needs to confirm that this has happened before the exam. Residents must have two scientific papers accepted for publication in a peer-reviewed journal; the resident needs to provide evidence of this.

The resident must have written two reflective case reports and logged the required number of cases in a digital case log.

In certain extraordinary events and exceptions (e.g. ill health, bereavements, parental leave), the Credentials Committee reserves the right to examine the case individually and may grant an extension.

2. Course description

The resident must receive training in all aspect of Veterinary Sports Medicine and Rehabilitation as outlined in the Syllabus. Certain aspects of the programme may have to be delivered in house by Diplomates of other disciplines or during externships in other institutions. Residents must be given the opportunity to perform investigative studies; this includes time, access to facilities and appropriate

supervision. This can be in the form of experimental research or clinical research and supervision must be provided.

3. Independent study

Residents must have access to relevant literature in the form of textbooks, journals and other resources through on-site and online libraries. Appropriate computer equipment and IT support needs to be made available to the resident. The resident should have access to clinical records and a picture archiving and communication system; case studies as hardcopies or as part of the virtual learning environment should be available to allow self-study.

4. Other requirements:

In addition to clinical facilities, the resident should have the opportunity to benefit from non-clinical services, e.g. pathology, to deepen their understanding.

Residents must be given the opportunity to teach in their subject area, however this is to promote their own communication abilities and the teaching commitment should not be excessive and should not impinge on resident development.

5.6 Supervision and documentation of the residency training

5.6.1 Residency Programme Director

Each Standard Residency Programme shall have a Residency Programme Director who shall be a Diplomate of the ECVSMR and a senior member of staff at the institution hosting the residency. The Residency Programme Director is responsible for:

1. the application for approval of the Standard Residency Programme to the ECVSMR Education Committee and for ensuring that it continues to meet the requirements of the ECVSMR (see Appendix Form "Approval of the Standard Residency Programme");
2. the application for formal re-approval of the training centre and programme every five years;
3. recording of the presence of visiting residents (externships).

5.6.2 Supervisor

The standard Residency Training Programme must be supervised by an EBVS recognised specialist in the field. The supervisor cannot supervise more than two residents at a time; in exceptional cases three such residents can be allowed, for a restricted time period.

The supervisor is responsible for:

- administration and supervision of the candidate's progress through the programme; this will require frequent contact and at least two formal, recorded meetings per year to assess progress and performance, and to review the activity portfolio

- completion of an annual report for each supervised resident, which is sent to the Education Committee (see Appendix form “ Annual report”)
- ensuring that all facilities and case material required are available to the resident

Supervised training implies interaction between trainee and supervisor during the diagnosis and treatment of patients as well as during case-related discussions, etc. Such supervision requires the simultaneous physical presence of both trainee and supervisor at the clinic where patients are treated. The amount of supervision required will vary with the experience, skill and knowledge of the trainee. The degree of responsibility assumed by the resident will be proportional to his/her expertise and knowledge level and appropriate to the training experience. During the last year of training, the resident is expected to make primary decisions for most cases. Diplomates may only be 'off site' (e.g. attending a congress, vacations) for at most three weeks continuously without arranging for another diplomate to act as a supervisor in their place. Diplomates of one specialty can temporarily supervise residents of another specialty to provide short term cover for their colleagues. If the supervisor leaves the training institution and there is no immediate internal replacement, other diplomates shall act in their place. This should be communicated by the Residency Programme Director to the Education Committee. If no Diplomate is left at the institution the situation is considered by the Education committee on an individual basis. For example the programme may be changed to an alternate programme supervised by a diplomate in another center, however any such change needs to be approved by the Educational committee and ratified by the EC.

5.6.3 Resident

The resident is responsible for:

- enrolment as a resident using the appropriate enrolment form and timeframe (see Appendix “Enrolment form”)
- maintenance of an Activity Log Book which documents:
 - training activities undertaken (including dates, objectives, outcome, reflection) (see Appendix form “Activity portfolio form”);
 - clinical cases (including history, methods, intervention, outcome, reflection) see Appendix form “Case log”);
 - presentations, seminars, conferences, continuing education both given and attended (including details of dates, title, objectives, reflection) (see Appendix form “Education”);
 - publications.
- ensuring documentation of external training (externship) in their activity portfolio and certification of the external training by the specialist supervising using a standardised form (see Appendix form “Externship certification form”)

- ensuring timely submission of the Annual Supervisor Report.
- submitting the application for approval of credentials within eighteen months of the completion date of the residency. Credentials must be submitted even if the required publications have not been accepted and/or the resident does not wish to take the examinations in that year.
- application to sit the Diploma examinations so as to enable him/her to pass the examinations within eight years of completion of the residency.

5.6.4 Policy on the use of non-EBVS recognised Diplomates as residency programme co-supervisors

ECVSMR recognises that, in some non-European countries there are nationally recognised specialists who could contribute to training. In circumstances where there are insufficient European Diplomates, a non-EBVS recognised Diplomat may co-supervise a European Residency programme under the condition that the EC responsible for the residency programmes approves the curriculum vitae of the non-EBVS recognised specialist who is co-supervising the programme. The minimal requirements will be that:

1. the person's training and expertise in the area in which they are supervising should be equivalent to a European Diplomat, and they should also have contributed to the discipline in terms of publications, presentations, etc.
2. the person passes the College's re-certification process.
3. the Committee of the College responsible for the residency programmes approves the training programme and ensures that it conforms to the requirements of the College for a specified residency programme in a designated training institute.
4. the programme is supervised by an EBVS-recognised Diplomat (i.e. they do not have to provide day to day direct supervision but will monitor the progress of the resident to ensure that the training is of an adequate standard throughout).
5. after 5 years both the training programme and the co-supervisors will be re-evaluated. For each residency programme the ultimate goal should be that an EBVS-recognised Diplomat would become the programme director and direct supervisor.
6. for accreditation use the form given in the Appendix (form "Use of non-EBVS recognised Diplomates")

5.7 Evaluation of the resident progress

Residents must meet formally with their Resident Supervisor at least two times yearly for critical evaluation of performance and progress. The Resident Supervisor should keep written reports of these meetings that have been signed by both the Supervisor and the Resident. The Supervisor is responsible

for verification of the Activity portfolio detailing clinical case experience, presentations, conference attendance, journal clubs, participation in rounds, publications and teaching involvement. It is the responsibility of the resident to ensure that an annual report is submitted to the Education Committee by the end of each year of candidature using a standard form (Appendix form "Annual report").

5.8 Requirements for conference attendance, journal clubs and rounds

Residents are required to attend a minimum of three conferences relevant to the speciality during the Residency Programme. Additionally, the resident is required to attend "in house" or online residents' conferences, journal clubs and ward rounds. A total of two hours per week is recommended. Additional attendance above the formal requirements outlined here is recommended.

5.9 Requirements for presentations and publications

The resident must deliver a minimum of 2 presentations during the programme. This is defined as a scientific presentation made to a specialist audience (for example diplomates of the speciality or related disciplines, approved members of associations relevant to the speciality such as BEVA or IAVRPT), followed by a discussion period. The resident must receive feedback on his presentation by a specialist (supervisor or others). Seminars given for teaching purposes to students are not included. A minimum of 1 presentation should be for a professional audience from outside the resident's own training centre. The presentations can be either held as live presentations or via online conference tools.

The resident has to fulfil at least the following publication requirements:

- A. one first author original research paper or large case series (≥ 20 cases)
- B. one first author case report, small case series (< 20 cases) or an additional paper as in A.

An original paper is defined as a manuscript that describes a hypothesis-driven experimental study utilizing *in vivo*, *ex vivo* or *in vitro* techniques to address an objective relevant to the speciality. A prospective or retrospective clinical study addressing a question relevant to the speciality that includes at least 20 cases will also be acceptable as an (A) publication. Articles that consist of reviews of the literature with no original data are not acceptable. Papers published during a period of two years prior to the start date of the residency programme are acceptable as long as they are in the field of veterinary sports medicine and rehabilitation.

The paper must be published

1. in a peer-reviewed journal of international standing relevant to the speciality or with an impact factor of at least 0.5 at the time of the first submission of the manuscript to the journal. The resident is responsible to submit an actual copy of its citation index page available from the

editor of the journal or the ISI Web of Knowledge Journal Citation Report at the time of submission.

2. as an electronic copy of the published manuscript or the resident must submit a written confirmation from the editor of an approved journal that the paper is “in press”.
3. it is expected that the papers are published in an English-speaking journal. In individual cases where a paper has been published in a peer-reviewed journal in a language other than English the resident may apply to the credentials committee to have this recognised. The application must be accompanied by an English translation or at least an extensive English summary.

Examples of relevant journals:

American Journal of Veterinary Research

BMC Veterinary Research

Comparative Exercise Physiology

Equine Veterinary Journal

International Journal of Sports Medicine

Journal of the American Veterinary Medical Association

Journal of Veterinary Internal Medicine

Medicine and Science in Sports and Exercise

The Veterinary Journal

Veterinary and Comparative Orthopaedics and Traumatology

Veterinary Clinics of North America: Equine Practice

Veterinary Clinics of North America: Small Animal Practice

Veterinary Record

Veterinary Surgery

These are only examples and publications in other journals will be evaluated by the Credentials Committee.

6. ALTERNATE RESIDENCY TRAINING PROGRAMME

A veterinarian whose circumstances do not permit enrolment in a standard residency programme may submit an **alternate programme** to the College. In practice alternate residency programmes are designed to fulfil all requirements outlined for a standard residency programme in part-time study resulting in a longer overall length of the programme. Applications for an alternate residency programme are developed by the resident in collaboration with his/her supervisor, who needs to fulfil all requirements of a supervisor of a standard programme. The application needs to outline which resources are available and how the resident will access those (e.g. skype access to journal clubs, online

access to journals). The alternate programme is not approved for anyone other than the resident in question. Similar to a standard programme, the alternate programme must be approved by the Education committee and ratified by the EC before the resident embarks on it. The total time of an alternate programme must not be less than a standard programme and must not exceed six years. Similar to the standard programme residents can apply for an extension should there be extenuating circumstances (e.g. illness), which will be considered by the Education Committee and ratified by the EC on an individual basis.

Direct supervision may be provided by the supervisor or another diplomate of the College, either in the center where the supervisor or the diplomate work or in the resident's work-place (which needs to be accredited). These visits must be scheduled in advance and the schedule included in the application. The resident is expected to work at least 60% of their time in the subject area. The total duration can be shortened accordingly if during the time of direct supervision the resident works 100%, instead of the minimum 60%.

Alternate residency programmes exist specifically to allow individuals to undertake training in a non-consecutive manner. However, these programmes must incorporate all of the training, conference attendances, professional presentations, publication and case log requirements listed in chapters 3 (SA track), 4 (EQ track) and 5. Alternate programmes are, by their nature, individualised and so it is envisaged that the resident will liaise closely with the Education throughout the programme.

An alternate residency training programme must be preceded by a rotating internship or equivalent and must be comparable to a consecutive Standard Residency Training programme in duration, supervision, quality, and case numbers and type. The residency phase of an alternate programme (97 weeks of direct supervised training in veterinary sports medicine and rehabilitation and 13 weeks in related disciplines (as in a standard programme) and must be completed within six years. The resident must accumulate the required weeks of direct supervised training in sports medicine and rehabilitation in blocks of no less than three weeks at a time and weeks of training in related disciplines in blocks of at least two weeks at a time. All cases included in the resident's case log must have been seen in direct conjunction with an EBVS recognised specialist in the requested field and the case log must contain signatures testifying to this. For accreditation use the form given in the Appendix (form "Approval of an Alternate residency programme").

7. EXTENSION OF THE RESIDENCY PROGRAMME

In individual cases, it might be necessary to adapt or prolong the length of the training programme due to extenuating circumstances, for example in the case of parental leave or illness on the part of the resident. The resident must inform the Education committee when the interruption of the programme

is longer than 6 weeks and/or affects the learning experience significantly. The resident must provide evidence of the extenuating circumstances (e.g. medical certificate). The Education committee will consider each case on an individual basis and will work with the resident and his/her supervisor to come up with a workable solution while still fulfilling the residency requirements.

8. VALIDATION OF CREDENTIALS AND APPLICATION TO SIT THE EXAM

8.1 Timeframe and procedure

The resident must submit his/her credentials to the Credentials Committee **within eighteen months** of completion of the residency (see Bylaws). The minimum number of training programme months must have been completed before (the candidate sits the examination. Credentials documenting completion of residency training must be submitted even if some aspects have not been completed, e.g. the required publications have not been accepted and/or the resident does not wish to take the examinations in that year. If the candidate knows in advance that he/she does not intend to sit the qualifying examination in the same year, this should be noted in the appropriate form (See Appendix "Not-sit form")

All candidates intending to submit their credentials for approval and/or to sit the qualifying examinations (see Appendix "Application to sit exam form") **MUST** send this form and all required documentation no later than 6 months before the exam they wish to sit. A signed copy in PDF format (either with an electronic signature or hand-signed and scanned in) needs to be sent by e-mail to the Secretary of the College. Reception of the form will be acknowledged by the Secretary within five working days. If reception of the document is not acknowledged by the secretary within three working days after submission, it is the resident's responsibility to contact the Secretary immediately and keep a copy of all communications. Late, incomplete applications (even if received prior to the deadline) or applications not using the appropriate forms will be rejected. A list of all documents required is provided in the "credential checklist" (see Appendix). This includes evidence of accepted papers either in the form of a pdf of the publication or in the case of accepted but not yet published papers the acceptance letter/e-mail from the editor of an internationally refereed scientific journal certifying their FINAL acceptance (subject to minor editorial modifications before printing).

The secretary of the college will inform the applicant of the outcome of his application to sit the exam a minimum of three months before the next exam date. It is the resident's responsibility to contact the secretary of the College should he/she not have received the information in this time frame.

If the credentials receive approval by the Credentials and Education Committee but the candidate decides later not to sit the qualifying examination on the same year, withdrawal of attendance to the examinations must be communicated to the Secretary of the College (electronic mail, describing briefly

the main reason) no later than one month before the exam. The paid examination fee can be refunded at the candidate's request (with charges for bank transfer paid by the candidate and an additional administrative fee), or it can be rolled over until the following year (no interest will be refunded).

8.2 Failure to submit in the required time frame

Those who fail to submit their credentials within the required time may apply to the credentials committee for an extension. This application need to outline the reasons for the delay and evidence of their continuing practice in the subject area). The Credentials Committee may also require them to undergo further training before their credentials can be resubmitted;

The credentials deadline may be extended by one year at the discretion of the Credentials Committee if the resident can prove extenuating circumstances. If further extension is required the request should be made annually to the Credentials Committee. It is the responsibility of the resident to keep copies of all material submitted to, and correspondence with, the College. Such material may be required as evidence of completion of credentials. The College is not responsible for any material not received or not acknowledged. The responsibility for accuracy and availability of all required credentials rests with the applicant.

8.3 Credential Refusal

If any of the submitted documentation is incomplete, not been submitted using the appropriate forms, has not been received in time or if the submitted work is considered to be of inadequate standard, the applicant will not be allowed to proceed to the examination. The secretary will send unsuccessful applicants a notification letter no later than 3 months before the candidate wishes to sit the examination explaining the deficiencies in the credentials. A subsequent reapplication must include resubmission of the credentials found deficient, a written outline of the actions taken to correct these deficiencies, a new application form, updated curriculum vitae, pertinent correspondence, and any further application fee required. The application material must be presented as previously described.

9. QUALIFYING EXAMINATION

9.1 Policy on Examination Procedure

Fulfilment of objectives of the residency training as outlined at the beginning of this document is monitored by several means: Assessment of candidate performance is continuous with informal feedback provided by the supervisor and other diplomates the resident works with and other requirements incorporated in the residency programme such as case reports, publications and presentation for which the resident will also receive feedback and lastly by a summative written examination after the resident's credentials have been approved.

This examination will be carried out in accordance with the policy of the EBVS on examination procedures (see EBVS Policies and Procedures).

Candidates who apply to sit the exam are automatically declaring themselves "fit to sit". Candidates may withdraw based on extenuating circumstances by informing the college secretary. If a candidate feels unwell during the examination process, he/she should immediately notify the Chairperson of the Examination Committee. Failure to appear at an exam or aborting an exam without extenuating circumstances count as exam attempt.

9.1.1 General Format of the Examination

The exam comprises three parts and candidates are required to satisfactorily complete all parts of the examination.

These three parts are:

- (1) Written exam part 1: core knowledge. This part will comprise up to 100 multiple-choice questions to allow the candidate to demonstrate his/her understanding of the concepts and principles behind sports medicine and rehabilitation and the newest scientific findings in the field. Each question has three (3) distractors and one (1) correct answer. The duration of this examination is up to 3 hours. This part of the exam will contribute 25% to the final pass mark.
- (2) Written exam part 2: In this part the candidate will be presented with up to 20 clinical case scenarios including video and picture material and are expected to answer questions related to the aetiopathogenesis, diagnostic process, prognosis and treatment options of the cases. This part will be specific to the small animal or equine subspecialty according to the chosen track. This will give the candidate the opportunity to demonstrate how he/she will apply their knowledge to approach cases. The duration of this examination is up to six hours. This part of the exam will contribute 50% to the final pass mark.
- (3) Review of a scientific manuscript. Candidates will be presented with a scientific manuscript and are expected to write a critical review evaluating the scientific merit and discuss if and how the findings of this study may influence clinical practice. This part will focus on the candidate's ability to critically evaluate scientific studies and assess its merit in the light of clinical practice and existing scientific literature. The duration of this examination is up to three hours. This part of the exam will contribute 25% to the final pass mark.

The language of correspondence and examination shall be English. The use of dictionaries during the examination is allowed.

The exact dates and location of the examinations will be announced on the College's website a minimum of 10 months before the next exam. Precise details of the format of the examinations and pass marks will be provided each year by the Examination Committee, and can be found in the Appendix ("Exam Format and Pass Marks") of this document, which will be updated annually and made

available to the candidate. Candidates will be informed prior to the examination of the pass mark, or, if this is not determined in advance, the method of setting the pass mark. The marking scheme and the passmark or method of how the passmark will be determined will be communicated to the candidate prior to the exam; the passmark will be determined through a standard setting process by peers. The candidate has to pass each part of the exam separately. If the candidate passes one or more of the parts and fails one or more, he/she has to resit the parts that he/she failed.

The candidates will be provided with examples of case reports and questions for each section prior to the exam via the College's webpage (see Appendix "Example Review", "Example Questions").

9.1.2 Results of the Examination

The Chair of the Examination Committee shall forward the results of the examination to the EC for ratification. Following ratification the secretary of the College shall inform candidates of the outcome electronically and in addition by registered mail in case of failure. Results shall be communicated to the candidates as soon as is practicable, but no longer than **20 working days** following the completion of the examination. In case a candidate fails to demonstrate that he/she has reached the required level of expertise, a brief written examiners' report (describing which components of the exams are below or above the pass rate) will also be provided to the candidate to aid his/her preparation for future examination attempts.

9.1.3 Appeals Process

Any appeal against any College decision e.g. relating to credentials submission or a candidate's examination outcome follows the rules outlined in the College's bylaws. The appeal must be submitted within 3 weeks after announcement of the results.

9.1.4 Procedure to Re-Sit the Qualifying Examinations

Candidates must be informed that they may apply to re-take all parts of the examination three times and that all parts of the examination must be passed within 8 years of completion of the residency programme. A candidate who takes the examination and passes one of the three parts, retains credit for the parts passed for the next four years. Candidates must apply for a re-sit using the appropriate form (see Appendix "Re-sit form") a minimum of six months before the exam date together with the appropriate fee and evidence (e.g. acceptance email) of having passed the credentials. Failure to appear at an exam without extenuating circumstances or aborting an exam count as attempt to sit the exam.

10. **QUALITY ASSURANCE AND CONTINUOUS ADAPTATION OF THE EDUCATIONAL PROGRAMMES**

*The **mission** of the College is to contribute significantly to the maintenance and enhancement of the quality of European Veterinary Specialists in Veterinary Sports Medicine and Rehabilitation across all European countries at the highest possible level so as to ensure that improved optimal veterinary medical services will be provided to the public.*

Towards achieving this goal, ECVSMR imposes special training beyond the professional veterinary degree to enhance the ability of candidates to meet certification requirements and to update the competence of specialists, and has:

1. established a policy and associated formal mechanisms for the approval, periodic review and monitoring for the assurance of the standards and quality of the programmes and awards is offering;
2. established a system of collection, analysis and use of up to date, impartial and objective, relevant information for the effective management of the training programmes and other activities of the College, to be regularly submitted to the EBVS;
3. established a clear policy and the procedures, including a re-evaluation form, for re-certification of the Diplomates for membership of the Colleges every five years;
4. conflict of interest avoidance mechanisms in place on all levels, e.g. applications for enrolment as a resident, approval of residency programmes, approval of credentials, examinations, appeals procedures and so on;
5. established a policy and the procedures for complaints or appeals, and disciplinary actions against Diplomates or Residents/Candidates.

Moreover, working under the umbrella of the European Board of Veterinary Specialisation, ECVSMR also contributes to its goals by ensuring that:

1. the College commits itself to the development of a culture, which recognises the importance of quality, and quality assurance, in its activities, and to achieve this, it develops and implement a strategy for the continuous enhancement of quality;
2. the interests of society and veterinary profession in the quality and standards of specialist education and training are safeguarded;
3. any specified experience requirement is clearly defined, relevant to the objectives of the speciality, and amenable to evaluation;
4. a strategic plan must be developed every ten years;

5. the strategy, constitution/bylaws, policy and procedures, and all major documents of the College are publicly available;
6. residents are assessed using published criteria, regulations and procedures which are applied consistently;
7. staff involved with the training of residents are qualified and competent to do so;
8. the resources available for the support of resident learning are adequate and appropriate for each programme offered;

Accountability procedures

ECVSMR has in place its own procedures which include the following:

1. a published policy for the assurance of the quality of the College itself, made available on its website
2. documentation which demonstrates that:
 - a. the processes and results reflect its mission and goals of quality assurance;
 - b. it enforces a no-conflict-of-interest mechanism in its own activities or in the activities of its Diplomates and Residents/Candidates;
 - c. has reliable mechanisms that ensure the quality of any of its activities and material produced;

In accordance with its objective to function as an Organisation developing and enhancing standards and guidelines on quality assurance in the area of Veterinary Sports Medicine and Rehabilitation and to maintain and develop co-operation with other appropriate European stakeholder organisations, ECVSMR is committed to a continuing cooperation with partner organisations in Europe and beyond. These mainly include the other EBVS-recognised Colleges, the respective Associations in Europe and specialist Colleges in other parts of the world (e.g. North America, and Australasia).

Based on the yearly feedback of the Diplomates, the participants of the training programmes, and as the programme supervisors and mentors, the Training Committee of the ECVSMR will present a yearly report on the achieved training outcomes detailed as

1. knowledge and skills achieved
2. feasibility of the programme for the participants
3. development of the relevant scientific literature in the field
4. reception of the new speciality in the field of veterinary care in hospital and ambulatory settings.

The report will be part of the yearly agenda of the meeting of the ECVSMR delegates, and the Training Committee will make suggestions for possible improvements and/or will consider points raised for this subject at the meeting of the delegates.

APPENDIX

I. Forms - all necessary forms can be downloaded from the homepage of the ECVSMR (<https://www.ecvsmr.org/documents-forms/>)

I.I Training Centers

1. Accreditation as training center
2. Accreditation as satellite training center
3. Re-accreditation as training center

I.II Residency Programmes Approvals

1. Approval of the Standard Residency Programme
2. Approval of an Alternate residency programme
3. Use of non-EBVS recognised Diplomates

I.III Resident forms

1. Annual Report
2. Enrolment form
3. Activity Log Book
 - a. Activity portfolio form
 - b. Case log
 - c. Education
 - d. Externship certification form

I.IV Validation of credentials and application to sit and re-sit the exam

1. Credentials check list
2. Application to sit exam form
3. Not-sit form
4. Re-Sit exam
5. Example reflective case report

II. Exam

1. Exam Format and Pass Marks
2. Marking scheme for scientific manuscript review
3. Example scientific manuscript review
4. Example questions for part 1 and 2 written exam

III. Re-Certification

III.I Credit point System template

III.II Reference letter

Diplomates should ask two senior colleagues or authorities to send to the College a letter of reference certifying that the Diplomate in question has been active in practising his/her speciality for the last 5 years at the specialist level (see EBVS Policies & Procedures Appendix 8)