

## American College of Veterinary Sports Medicine and Rehabilitation

### Topic Rubric for the 2020 Core Knowledge Board-certification Examination

The following table provides a detailed outline of the topics and estimated percentage distribution of material to be covered in the 2020 Core Knowledge Examination.

| Percentage Distribution | CORE KNOWLEDGE EXAMINATION   |
|-------------------------|--|
| 9%-13%                  | <p><b>1. Tissue-based Pathophysiology</b></p> <ul style="list-style-type: none"> <li>• Addresses the anatomy, physiology, biomechanics, pathology, mechanisms of injury, and principles of wound and tissue healing</li> <li>• Includes the following tissue types: Integument, connective tissue, muscle, tendon, ligament, bone, articular cartilage, and synovium</li> </ul>                |
| 6%-10%                  | <p><b>2. General Medical Issues of Animal Athletes</b></p> <ul style="list-style-type: none"> <li>• Addresses the anatomy, physiology, pathology, and medical diagnosis and management of muscular, nervous, respiratory, cardiovascular, gastrointestinal, and lymphatic disorders associated with sports medicine and rehabilitation issues across species</li> </ul>                        |
| 10%-15%                 | <p><b>3. Kinesiology</b></p> <ul style="list-style-type: none"> <li>• Addresses topics related to physical examination, gait analysis and lameness evaluation</li> <li>• Includes neurophysiology of proprioception, motor control, and gait mechanisms</li> <li>• Includes the following methodologies: Motion analysis, force plate analysis, pressure mats, and inertial sensors</li> </ul> |
| 6%-10%                  | <p><b>4. Exercise Physiology</b></p> <ul style="list-style-type: none"> <li>• Addresses general conditioning and training principles, energetics, thermoregulation, electrolytes, fluid balance, and nutrition related to exercise and performance across species</li> </ul>   |
| 14%-19%                 | <p><b>5. Diagnostic Imaging</b></p> <ul style="list-style-type: none"> <li>• Basic principles and applications of radiology, ultrasonography, nuclear scintigraphy, computed tomography (CT), magnetic resonance imaging (MRI), and thermography</li> </ul>  |
| 7%-11%                  | <p><b>6. Diagnostic Methods</b></p> <ul style="list-style-type: none"> <li>• Addresses topics related to clinical and laboratory measures of musculoskeletal and neurologic function and dysfunction</li> <li>• Includes the following methodologies: Diagnostic local analgesia, clinical pathology, electromyography, goniometry, pain scales, and pressure algometry</li> </ul>             |

|                |   |
|----------------|---|
| <p>8%-11%</p>  | <p><b>7. Nociception and Pain Mechanisms, Pharmacology</b><br/> Addresses general concepts and foundational knowledge related to:</p> <ul style="list-style-type: none"> <li>• Neurophysiology of nociception and pathophysiology of pain</li> <li>• Pain management, anti-inflammatories, analgesia</li> <li>• Performance-enhancing drugs, ergogenic substances, nutraceuticals</li> </ul>  |
| <p>12%-18%</p> | <p><b>8. Physical Rehabilitation</b><br/> Addresses general concepts and foundational knowledge related to:</p> <ul style="list-style-type: none"> <li>• Manual therapy (e.g., massage, stretching, mobilization)</li> <li>• Physical modalities (e.g., thermal, mechanical, electromagnetic, photic)</li> <li>• Therapeutic exercises (e.g., flexibility, proprioception, motor control, strength, endurance)</li> </ul>   |
| <p>6%-8%</p>   | <p><b>9. Intra-articular Medications and Biological Therapies</b><br/> Addresses general concepts and foundational knowledge related to:</p> <ul style="list-style-type: none"> <li>• Intra-articular medications: hyaluronic acid, corticosteroids</li> <li>• Gene therapy, stem cell therapy, platelet-rich plasma (PRP), and interleukin-1 receptor antagonist protein (IRAP)</li> </ul>   |
| <p>4%-7%</p>   | <p><b>10. Surgical Considerations in Veterinary Sports Medicine and Rehabilitation</b><br/> Covers foundational concepts of the biological and biomechanical aspects of general, orthopaedic, and neurologic surgery:</p> <ul style="list-style-type: none"> <li>• Biomechanical features of orthopedic injuries</li> <li>• Fundamental issues related to joint immobilization</li> <li>• General principles of fracture fixation and soft tissue repair</li> <li>• Biological features of upper airway surgery</li> <li>• Biological and neurophysiologic outcomes of neurosurgery and related procedures</li> </ul> |
| <p>3%-6%</p>   | <p><b>11. Integrative Veterinary Medicine</b></p> <ul style="list-style-type: none"> <li>• Addresses general principles and practice of acupuncture, chiropractic, botanicals, and homeopathy as these fields relate to veterinary sports medicine and rehabilitation</li> </ul>  |

## Reading List for the 2020 Core Knowledge Board-certification Examination

Please note that this is a guideline for a reading list of textbooks suggested for preparation for the 2020 Core Knowledge examination with the American College of Veterinary Sports Medicine and Rehabilitation.

Each of the selected textbooks contain chapters with core material pertinent to the development of a working knowledge within the field of veterinary sports medicine and rehabilitation. The applicant will be responsible for material within relevant (or included) chapters related to the basic science and clinical practice of veterinary sports medicine and rehabilitation.

*Disclaimer: Due to the very diverse knowledge base required of sports medicine and rehabilitation, this reading list is suggested, but not all inclusive. Candidates should use the American College of Veterinary Sports Medicine and Rehabilitation examination rubric for identification of examination topics and the percentage distribution of examination questions within in each topic area as the basis for preparation for the respective examinations.*

### Selected Core Knowledge Textbooks

1. Animal Physiotherapy - Assessment, Treatment and Rehabilitation of Animals 2016, 2<sup>nd</sup> Ed. McGowan C, Goff L. 2016. Blackwell Publishing. ISBN: 978-1-118-85232-3
2. Atlas of Equine Ultrasonography. Jessica A. Kidd, Kristina G. Lu, Michele L. Frazer. 2014. Wiley & Sons. ISBN: 978-0-470-65813-0  
**INCLUDING** the following chapters: 1-10
3. Atlas of Small Animal Wound Management and Reconstructive Surgery. Pavletic MM. 2018, 4<sup>th</sup> edition. John Wiley & Sons. ISBN: 9781119267508.  
**INCLUDING** the following chapters: 2-3.
4. Canine Rehabilitation and Physical Therapy. Millis D and Levine D. 2014, 2<sup>nd</sup> edition. Saunders. ISBN: 978-1437703092.  
**INCLUDING** the following chapters: 1-3, 6-31.
5. Equine Sports Medicine and Surgery. Hinchcliff K, Kaneps A, and Geor R. 2014, 2<sup>nd</sup> edition. Saunders. ISBN 978-0702047718.  
**INCLUDING** the following chapters: 6-13, 31-32, 38-39, 42-46, 62-64.
6. Equine Surgery. Auer JA and Stick JA. 2018, 5<sup>th</sup> edition. Elsevier Saunders. ISBN: 9780323484206.  
**INCLUDING** the following chapters: 1-2, 4, 7-12, 16-17.

7. Exercise Physiology: Nutrition, Energy and Human Performance. McArdle WD, Katch FI, and Katch VL. 2014, 8<sup>th</sup> edition. Lippincott Williams & Wilkins. ISBN: 978-1451191554.
8. Fluid, Electrolyte and Acid Base Disorders in Small Animal Practice. DiBartola SP. 2012, 4<sup>th</sup> edition. Elsevier Saunders. ISBN: 978-1437706543.  
**INCLUDING** the following chapters: 1-17.
9. Guyton and Hall Textbook of Medical Physiology. Guyton A and Hall J. 2016, 13<sup>th</sup> edition. Elsevier. ISBN 978-1455770052.  
**INCLUDING** the following chapters: 2-8, 45, 49.
10. Handbook of Veterinary Neurology. Lorenz M, Coates J, and Kent M. 2011, 5<sup>th</sup> edition. Elsevier: Saunders. ISBN: 978-1437706512.
11. Handbook of Veterinary Pain Management. Gaynor J and Muir W. 2015, 3<sup>rd</sup> edition. Mosby Elsevier. ISBN: 978-0-323-08935-7.
12. Joint Disease in the Horse, McIlwraith, CW, Frisbie, DD. Kawcak CE, van Weeren PR. 2<sup>nd</sup> edition, 2016. Elsevier. ISBN 978-1-4557-5969-9.  
**INCLUDING** the following chapters: 8, 10-17, 19
13. Joint Structure and Function: A Comprehensive Analysis. Levangie P and Norkin C. 2011, 5<sup>th</sup> edition. FA Davis Company. ISBN: 978-0803623620.  
**INCLUDING** the following chapters: 1-3, 13, 14
14. Orthopaedic Basic Science: Foundations of Clinical Practice. Einhorn TA, O'Keefe , RJ, and Buckwalter JA (editors). 2013, 4<sup>th</sup> edition. American Academy of Orthopaedic Surgeons. ISBN: 978-0892038435.  
**INCLUDING** the following chapters: 1-25
15. Textbook of Veterinary Anatomy. Dyce KM, Sack WO, and Wensing CJG. 2017, 5<sup>th</sup> edition. Saunders, **Hardcover ISBN:** 9780323442640 **eBook ISBN:** 9780323442619
16. Textbook of Veterinary Diagnostic Radiology. Thrall DE. 2018, 7<sup>th</sup> edition. Elsevier. ISBN 978-0-323-48247-9
17. Diagnostic Radiology. Marolf AJ, 2016. Veterinary Clinics of North America-Small Animal Practice. Volume 46, Issue 3, Elsevier. ISSN: 0195-5616, ISBN-13: 978-0-323-44488-0  
**INCLUDING** the following chapters: 1-3

18. Veterinary Surgery: Small Animal. Johnston SA, Tobias KM 2<sup>nd</sup> edition. Saunders 2017.. **Hardcover**  
**ISBN:** 978-0323320658 **eBook ISBN:** 978-0323320658  
**INCLUDING** the following chapters: 1, 3, 4, 6, 7, 10, 13-15, 18, 19, 39-45, 48