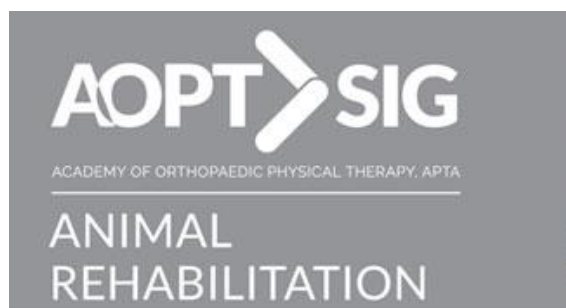


Clinical Practice Standards Physical Therapy on Animals

**Animal Rehabilitation Special Interest Group (ARSIG)
The Academy of Orthopaedic Physical Therapy
American Physical Therapy Association**



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Animal Rehabilitation Clinical Practice Standards

A comprehensive practice analysis (PA) was conducted in 2016 by the Animal Rehabilitation Special Interest Group (ARSIG) of the Academy of Orthopaedic Physical Therapy, APTA. The purpose of the PA was to identify essential post entry-level physical therapy education core clinical competencies for the practice of physical therapy on animals. The Standards in this document result from the current PA now serve as an outline for a foundational description of animal practice, and to formally establish animal rehabilitation as a unique specialization within the profession of physical therapy.

The outline of clinical competencies for animal practice are based on a statistical analysis of data obtained from licensed PTs and PTAs residing in the United States. Data were collected from a nationally distributed PA survey that was developed by members of the ARSIG; an organization recognized by the Academy of Orthopaedic Physical Therapy, American Physical Therapy Association.

The Practice Standards are categorized into six primary areas of clinical care as noted below. Three-hundred and twenty-two (322) individual practice competencies describing forty-four (44) subcategories are represented in the Standards. Of the 322 practice competencies, 289 (89.8%) were found to be statistically significant and therefore comprise the outline of “*essential educational competencies*” for the practice of animal physical therapy.

Practice competencies that failed to achieve statistical significance as part of the PA are included in this document and highlighted in italics under respective categories. *It should be noted that although some items in the PA lacked statistical significance they may still be valued aspects of animal rehabilitation by practitioners in clinical practice.*

Six Categories of Animal Practice Competencies:

- I. Foundational Knowledge of Animal Rehabilitation
- II. Patient/Client Management Model
- III. Interventions and Procedures
- IV. Equine Specific Competencies
- V. Clinical Reasoning
- VI. Professionalism

The Clinical Practice Standards may be of benefit to professional stakeholders such as the American Physical Therapy Association, the World Confederation of Physical Therapy, the Federation of State Boards in Physical Therapy, the Commission on Accreditation in Physical Therapy Education, state and federal governments, research funding agencies, licensed physical therapists, other health professions, and the general public. The Standards also provide an initial foundation for developing a formally recognized educational credential or degree granting program in animal physical therapy.

STANDARDS OF PRACTICE

Part I- Foundational Knowledge of Animal Rehabilitation

Foundational Sciences

1.1 Anatomy and Physiology (species specific)

- A) Veterinary/medical terminology
- B) Skeletal anatomy and physiology
- C) Histology/Pathology
- D) Muscular anatomy and physiology
- E) Joint structure and function
- F) Normal stages of growth and development (e.g. 0-24 months of growth)
- G) Neurology
- H) Integumentary system
- I) Cardiovascular system (including lymphatic system)
- J) Pulmonary system
- K) Hematopoietic system
- L) Endocrine system (including hormonal influences)

Not statistically significant:

- Hepatic and biliary systems

1.2 Veterinary Science: Conditions and Procedures

- A) Normal laboratory values
- B) Neurologic
- C) Orthopedic
- D) Surgical procedures, techniques, and precautions
- E) Developmental or Congenital disorders
- F) Metabolic disorders
- G) Sport-specific injuries
- H) Red flags (knowledge regarding when to refer to a Veterinarian)
- I) Parasitology
- J) Zoonosis/infectious disease medicine (e.g. MRSA, MRSP, Kennel Cough)
- K) Vaccination protocols

Not statistically significant:

- Urine Samples
- Fecal samples

1.3 Biomechanics

- A) Gait Analysis
- B) Conformational observation/assessment between and within breeds
- C) Therapeutic exercise

- D) Functional activities
- E) Job-specific tasks
- F) Sport specific tasks
- G) Pathokinesiology

1.4 Exercise Physiology

- A) Activity tolerance
- B) Physiologic monitoring of normal vital signs (heart rate, blood pressure, respiration)
- C) Responses of vital signs to exercise (normal and pathologic)
- D) Conditional and training interventions to improve cardiopulmonary function

1.5 Nutrition (In collaboration with a veterinarian)

- A) Knowledge of processed diets
- B) Knowledge of raw diets
- C) Application of veterinary prescribed diet specific recommendations for activity level
- D) Knowledge of normal/ideal body composition scores
- E) Application of veterinary prescribed weight management programs
- F) Application of calorie calculations /knowledge of caloric intake

1.6 Diagnostic Imaging / Procedures

(Performed by a veterinarian: results obtained verbally or from medical records)

1.6.1 Imaging procedures

- A) Plain Film Radiography
- B) Diagnostic Ultrasound
- C) Magnetic Resonance Imaging (MRI)
- D) Computerized Tomography (CT Scan)

Not statistically significant:

- Fluoroscopy
- Bone Scan
- Positron Emission Tomography (PET scan)

1.6.2 Cardiopulmonary functional tests

- A) Echo
- B) Ultrasound
- C) EKG

1.7 Handling, Restraint, Biomechanics and Safety

- A) Apply basic animal handling and restraint techniques
- B) Utilize correct body mechanics and safety of self when handling animals
- C) Demonstrate proper fur, hair, grooming and clipping in preparation for treatment
- D) Educate client in safe and proper animal handling and restraint techniques
- E) Proper positioning and handling of animals

2.0 Behavioral Sciences

- A) Recognize normal animal behavior
- B) Recognize abnormal animal behavior
- C) Recognize factors/triggers that impact animal behavior positively or negatively
- D) Identify clinical response to pain during animal care and treatment
- E) Identify client/owner capacity for compliance with animal rehab program

2.1 Professional Communication

- A) Demonstrates written and oral communication with referring veterinarians
- B) Demonstrates written and oral communication with other PT colleagues
- C) Client /owner education on animal pain management
- D) Client/owner education on home exercise programs (HEP)
- E) Support of client/owner during end of life decision making
- F) Demonstrate professional behaviors in all interactions with veterinarians, patients, caregivers, other health care providers, students, payers, policymakers, and consumers.
- G) Demonstrate active listening and empathy with all clients during examination, intervention, and when providing education/ instruction for animal care.
- H) Demonstrates appropriate ethnic and cultural sensitivity when communicating with clients, family members, and professional colleagues.

2.2 Critical Inquiry: Evidence Based Practice

- A) Implementation of appropriate search strategies, and interpretation of results based on findings from authors.
- B) Appraisal of research findings specific for animal rehabilitation
- C) Application of research findings to clinical practice
- E) Dissemination of research findings to other professionals
- F) Use of evidence to support interventions in animal rehab

Not statistically significant:

- Assessment of research design and methods, including statistical concepts

Part II- Patient/ Client Management Model

3.0 Examination

History: Reason for consultation and/or care:

- A) History of injury, illness, or surgical procedure(s)
- B) Animal specific job/activity (sport, police, pet)
- C) Current and prior level of activity
- D) Home environment
- E) Laboratory values (Acquired from medical record or referral)
- F) Medical imaging (Acquired from medical record or referral)
- G) Medications (Acquired from medical record or referral)
- H) Current treatments by other practitioners (e.g. complementary and alternative care)

3.1 Test and Measures: e.g. for the animal client

- A) Behavioral/mental status
- B) Postural/conformational analysis
- C) Pain assessment
- D) Vital signs
- E) Gait analysis – Observational Only
- F) Lameness scale
- G) Ataxia Scale
- H) Functional mobility assessment
- I) Palpation (symmetry, muscle tone, bony landmarks, musculature)
- J) Strength
- K) Range of motion (active and passive)
- L) Joint accessory motion testing (peripheral and spinal)
- M) Goniometry
- N) Girth (as an indirect) assessment of atrophy
- O) Girth (as an indirect) assessment of edema/effusion
- P) Orthotic/prosthetic assessment
- Q) Motor control
- R) Balance
- S) Coordination
- T) Assessment of skin integrity/ nails/ hooves/ or any wounds

Not statistically significant:

Gait analysis –

- Kinematic (phases of gait, joint motion)
- Kinetic (force plates)

3.2 Special Tests

Orthopaedic

- A) Cranial drawer/ Tibial Thrust
- B) Medial Shoulder Instability Test (MSI)
- C) Dermatomes
- D) Biceps tendonitis/retraction test
- E) Rib springing
- F) Cranial nerves
- G) McMurray test for meniscal injury
- H) Ortolani for hip laxity
- I) Patellar Luxation
- J) SIJ special tests
- K) Upper and lower limb tension tests
- L) 1st rib test
- M) Cervical Spine special tests (e.g. Alar ligament, Dens fracture)

3.3 Neurologic Testing

- A) Cranial nerve testing
- B) Peripheral nerve testing
- C) Postural reflexes
- D) Spasticity, Tone, Abnormal neurological movement. Hyperactivity, bradykinesia, or other abnormal movement
- E) Vestibular (Epley/Dix-Hallpike maneuver)

Content to consider:

- These two bullets were not specifically addressed on the PA survey.
 - Deep tendon reflexes, conscious proprioception, sensory testing, deep pain, panniculus response (most important for spine & UMN disease progression with terminal outcome), withdraw, hopping.
 - Iliopsoas evaluation under Special Tests

4.0 Data Interpretation

- A) Identify red flags that require referral (determine appropriate referral)
- B) Interpret data from examination
- C) Correlate history and examination findings
- D) Analyze data for hypothesis development
- E) Develop, verify, and refine working hypothesis
- F) Plan and modify examination procedures
- G) Identify primary problems & strengths for plan of care
- H) Select outcome measures to assess progress
- I) Perform re-evaluation
- J) Assess patient status changes
- K) Modify treatment techniques and procedures
- L) Assess functional outcomes relating to treatment
- M) Assess client (animal owner) adherence & ability to perform home exercise program
- N) Determine need for future intervention
- O) Design plan for future follow-up care
- P) Maintain safety of applied interventions
- Q) Educate to reduce risk of injury (and recurrence) to:
 - 1. Patient
 - 2. Client (animal owner)
 - 3. Support staff
- R) Serve as a coordinator and case manager in rehabilitation of patient

Not statistically significant:

- Rider (equine specific)

4.1 Determine a Neuromusculoskeletal Diagnosis

- A) Utilize clinical problem solving skills to determine diagnosis for rehab
- B) Evaluate and consolidate history, examination, and evaluation information

4.2 Determine Prognosis

- A) Determine prognosis
- B) Communicate prognosis to client (i.e. animal owner)
- C) Communicate prognosis to DVM
- D) Communicate prognosis to other professionals involved in patient's care

4.3 Plan of Care

- A) Develop plan of care/intervention
 - 1. Develop short and long term goals
 - 2. Interventions to be used
 - 3. Duration and frequency of services
 - 4. Establish outcome measures to assess treatment response
 - 5. Anticipated discharge
- B) Appropriately delegate to and supervise support personnel
- C) Refer to other professionals if necessary

Part III- Interventions and Procedures

5.0 Interventions

A) Manual Therapy: Soft Tissue & Joint

1. Stretching
2. Soft tissue mobilization
3. Therapeutic Massage
4. Peripheral Joint mobilization
5. Spinal mobilization
6. Neuro-facilitation and inhibition techniques
7. Lymphatic drainage techniques
8. Neural mobilization techniques
9. Precautions, indications, contraindications related to manual therapy techniques

Not statistically significant:

- Peripheral Joint manipulation
- Spinal manipulation
- Osteopathic mobilization/manipulation techniques
- Postural drainage techniques

B) Therapeutic Exercise

1. Aquatic therapy
2. Strength-focused exercise
3. Stabilization-focused exercise
4. Neuromuscular integration activities
5. Vestibular rehabilitation techniques
6. Cardiovascular conditioning exercise
7. Therapeutic exercise and functional mobility training for patients who have medically complex conditions and are medically fragile
8. Precautions, indications, contraindications related to therapeutic exercise

C) Functional mobility training

1. Guided movement re-education
2. Positioning of recumbent patients
3. Gait training for functional mobility/activity
4. Training and education for required job related activities
5. Training and education for sport-specific skills, behaviors, and body mechanics
6. Precautions, indications, contraindications related to functional mobility training

D) Assistive device prescription/fabrication/fitting/education

1. Sling prescription
2. Sling fitting/modification/instruction
3. Cart prescription
4. Cart fitting/modification/instruction in use
5. LTT splint fitting/instruction in use
6. HTT orthotic fitting/instruction in use
7. Prosthetic fitting/instruction in use
8. Taping techniques
9. Bandaging techniques
10. Precautions, indications, contraindications related to assistive devices

Not statistically significant:

- Sling fabrication
- Cart fabrication
- Low temperature thermoplastic (LTT) splint prescription
- LTT splint fabrication
- High temperature thermoplastic HTT orthotic prescription
- HTT orthotic fabrication
- HTT orthotic fitting/instruction in use
- Prosthetic prescription
- Prosthetic fabrication
- Taping techniques

E) Physical Agents/Modalities

1. Application of heat
2. Application of cold
3. Application of light therapy (LED, SLD, MIRE, LASER)
4. Application of electrical modalities (TENS, NMES, IFC, iontophoresis)
5. Application of hydrotherapy techniques
6. Precautions, indications, contraindications related to physical agents/modalities

Not statistically significant:

- Application of therapeutic ultrasound
- Application of extracorporeal shockwave
- Application of magnetic/electromagnetic modalities

F) Wound management

1. Integumentary protective techniques
2. Bandaging
3. Precautions, indications, contraindications related to wound management

Not statistically significant:

- Debridement
- Pulsed lavage
- Suture/staple removal

G) Client education (i.e. animal owner)

1. Home exercise program development/progression/prescription/instruction
2. Body mechanics instruction
3. Home modification instruction
4. Job/sport/activity modification instruction
5. Equipment (assistive device, orthotic, prosthetic instruction)

H) Documentation

1. Objectively document all interventions and progress towards goals utilizing Established tests and measures throughout plan of care
2. Provide timely and accurate documentation, including communications with primary veterinarian

I) Discharge Planning

1. Plan discharge
2. Perform discharge
3. Review discharge instructions with client (i.e. animal owner), DVM, and other professionals involved in patient/client care

Part IV- Equine Specific Competencies

6.0 Horse & Rider Assessment

- A) Musculoskeletal examination of rider (without horse)
- B) Gait evaluation of the horse (without rider in saddle)

Not statistically significant:

- Musculoskeletal examination of the horse (without human)
 - This item on the PA survey was marked high by 66% of respondents under the ratings of *importance and criticality* therefore it did not achieve statistical significance of 75%. It was not delineated on the survey if a musculoskeletal examination of a horse was intended to be performed by a physical therapist separately from a veterinarian.
- Rider/horse evaluation - static and dynamic interactions (human in saddle)

6.1 Equine Sport-Specific Equipment

- A) Bridle fit/function
- B) Saddle and pad fit
- C) Cart fit
- D) Shoeing & Assessment of farrier work including hoof balance

6.2 Systems Review

- A) Vital signs (Temperature, Pulse, Respiration)

6.3 Perform Examination of

- A) Farrier: shoe fit/function, trim or hooves
- B) Lameness scales/scores
- C) Pain scale/assessment

Not statistically significant:

- Rider/ Equestrian (Static & dynamic assessment of human on & off horse)
- Assistive device, orthotic, or prosthetic
- Discipline-specific equipment (saddle, bridle, cart, harness)
- Prescription to farrier for therapeutic shoeing (consult with vet)
- Fitting of therapeutic shoes

Part V- Clinical Reasoning

7.0 Clinical Reasoning

- A) Demonstrate clinical decision making skills, including clinical reasoning, clinical judgment, and reflective practice
- B) Apply evidence based research to interventions for animal rehab
- C) Use existing, well researched, guidelines or protocols established for animal rehab
- D) Recognize and respond to potentially life-threatening changes in physiological state
- E) Use outcomes data to modify future practice regarding delivery of care to animals with complex rehabilitation needs

Part VI- Professionalism

8.1 Participate in Animal Rehabilitation Professional Development

- A) Participate in support staff education (prevention of decubitus ulcers, prevention of staff injury (body mechanics), proper PROM/heat technique)
- B) Actively contribute as a member of physical therapy professional organization (attend conferences)
- C) Maintain membership in professional organizations (national, international, physical therapy, animal rehabilitation)
- D) Participate as a clinical instructor in PT/PTA student clinical education
- E) Provide mentorship/internship opportunities to licensed physical therapists
- F) Provide mentorship/internship opportunities to licensed veterinarians

- G) Provide mentorship/internship opportunities to licensed/certified Vet Techs
- H) Participate in continuing education coursework for human related rehab
- I) Participate in continuing education coursework for animal related rehab
- J) Remain current with human and animal PT related research
- K) Use evidence based medicine in clinical practice

Not statistically significant:

- Teach animal-related continuing education
- Pursue dual-certification such as DVM
- Pursue dual-certification such as LVT/RVT/CVT
- Participate in research pertaining to animal rehab

8.2 Public and Community Education

- A) Participate in lectures, in-services, health fairs, dog walks, fundraising events
- B) Provide professional education or service at animal athletic events
- D) Contribute to community education by writing articles or offering interviews regarding animal rehabilitation for media (newspapers, public interest magazines, radio, television)

Not statistically significant:

- Provide professional education or service during conformational events (e.g. competitive dog shows)

8.3 Ethical and Legal Considerations

- A) Consult and collaborate with DVM
- B) Referral by DVM
- C) Referral to other professionals (e.g. certified prosthetist/orthotist, acupuncturist, massage therapist, chiropractor, farriers)
- D) Effectively communicate and collaborative with other professionals as appropriate
- E) Effectively document
 - 1) Develop progress reports and summaries
 - 2) Maintain quality control initiative plan (CQI)
 - 3) Keep written documentation of every patient visit
- F) Critique peer reviewed literature pertinent to animal rehabilitation
- G) Maintain responsibility for supervision of animal rehab services delegated to support personnel (PTA, RVT)
- H) Maintain commitment to appropriate billing practices
- I) Maintain appropriate insurance (e.g. liability/malpractice)
- J) Commitment to appropriate use of services (avoiding abuse)
- K) Compliant with PT Practice Act
- L) Compliant with Veterinary Practice Act
- M) Maintain PT licensure

Not statistically significant:

- Supervision by DVM
- Veterinarian owned physical therapy service relationships

8.4 Leadership & Advocacy

- A) Serve as a model for prioritization in patient examination and intervention
- B) Serve as a model for professionalism and maturity in decision making and interpersonal interactions
- C) Identify multiple strategies to resolve a problem
- D) Facilitate conflict resolution by guiding others in identifying appropriate strategies
- E) Use evidence-based practice to shape system policies and procedures and select the most effective methods to build consensus
- F) Participate in community-based activities beyond the immediate scope of responsibilities in order to expand, improve, or define practice or awareness related to animal rehabilitation
- G) Education: clinical and didactic student education
- H) Advocate for patients with health care needs as part of the health care team to ensure that patients receive appropriate care and follow-up
- I) Disseminate information on the practice of animal rehab including such things as general publications, newspaper articles, magazine, and other presentations to the public

8.5 Professional Development

- A) Formulate a personal plan for continuing professional development in acute care physical therapy
- B) Maintain current knowledge and skill in acute care physical therapy by participating in continuing professional development (e.g., residency or fellowship education, continuing education seminars, self-study, journal clubs)
- C) Remain current with national and international developments related to animal rehab practice guidelines

8.6 Social Responsibilities

- A) Provide physical therapy services to underserved and underrepresented populations, including pro bono work
- B) Negotiate barriers to interventions with clients, including cognition, literacy, language, emotional state, socioeconomic status, geographic distance from rehab facility, and scarcity of monetary resources, resulting in improved or optimized adherence

8.7 Evidence-Based Practice

- A) Critically evaluate evolving information associated with the management of patients with medically complex conditions, including techniques and technology, legislation, policy, and environments related to patient care
- B) Use outcomes data to modify future practice regarding delivery of care to patients with complex medical and rehabilitative needs

8.8 Ethics, Legalities, and Business of Animal Rehab

- A) Recognize and apply appropriate fee structure for animal rehab
- B) Understand fair and legal billing practices
- C) Maintain knowledge of pricing differentials for various rehabilitation and mobility equipment to assist client decision making

- D) Maintain professional malpractice insurance to legally cover animal rehab
- E) Maintain business insurance for animal rehab
- F) Knowledge of legal and ethical employment contracts
- G) Utilize appropriate legal and ethical marketing practices for animal rehab
- H) Maintain physical therapy equipment (e.g. therapeutic ultrasound, treadmill, other)

8.9 Risk Management

- A) Use risk management strategies during physical therapy examination and intervention:
 - 1. DVM clearance or referral for evaluation and treatment by rehab therapist
 - 2. Informed consent to evaluate and treat
 - 3. Appropriate and timely documentation of animal care
 - 4. Obtain proper release for media materials (e.g. photos, testimonials, quotations)
 - 5. Maintain documents for professional statute of limitations
- B) Refer to appropriate professional medical specialties when care exceeds physical therapy scope of practice
- C) Legally and ethically utilize support staff (including delegation to PTAs, Techs, Vet Assistants/Techs)