

ABPTRFE

American Board of Physical Therapy
Residency & Fellowship Education

Description of Fellowship Practice: Spine

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DFP Spine

Preamble

The American Board of Physical Therapy Residency & Fellowship Education, a board-appointed group of the American Physical Therapy Association, has created the following “Description of Fellowship Practice” to reduce unwarranted curriculum variability; provide fellows minimum consistency in learning experiences for that area of practice; and streamline the accreditation process for reporting.

This DFP is the product of collaborative work by ABPTRFE and the American Board of Physical Therapist Specialties through the practice analysis for subspecialty validation.

While all programs are required to meet the comprehensive curriculum and program requirements as outlined within “ABPTRFE Quality Standards for Clinical Physical Therapist Residency and Fellowship Programs,” the purpose of the DFP is to 1. Establish a consistent curriculum expectation for fellowship programs within the same area of practice. 2. Provide consistency in program reporting for accreditation processes. The DFP allows flexibility for programs to incorporate additional learning experiences unique to the program’s environment that are beyond the minimum standard expectations.

The DFP for each fellowship area will undergo revalidation at least once every 10 years. The process for revalidation will be a collaborative process with ABPTS.

I. Type of Program

Spine is a clinical area of practice.

II. Required Qualifications for Admissions

The related areas of practice for spine is orthopaedics and sports.

III. Learning Domain Expectations

A fellowship program must have a curriculum inclusive of the learning domains identified within that area’s current validated analysis of practice.

A. Knowledge Areas of Spine Practice

1. Human Anatomy and Physiology as Related to Orthopaedic Spine Conditions
 - Musculoskeletal system
 - Neuromuscular system
 - Cardiovascular and pulmonary systems
 - Integumentary system
 - Human growth and development across the lifespan
 - Histology (e.g., connective tissue, muscle fiber type, immunity)

- Other systems (e.g., endocrine, digestive, genitourinary)
2. Movement Science as Related to Orthopaedic Spine Conditions
 - Kinesiology/biomechanics
 - Neural control of movement
 - Ergonomics
 - Locomotion
 3. Pathology/Pathophysiology as Related to Orthopaedic Spine Conditions
 - Signs and symptoms of disease/injury
 - Progression of disease/injury processes
 - Pathokinesiology
 - Tissue inflammation, healing, and repair
 4. Pain Science as Related to Orthopaedic Spine Conditions
 - Peripheral nociceptive pain physiology
 - Peripheral neurogenic/neuropathic pain physiology
 - Central nervous system/nociplastic pain physiology
 - Output mechanisms and expressions (e.g., immune, endocrine, sympathetic, behavioral)
 5. Medical and Surgical Considerations as Related to Orthopaedic Spine Conditions
 - Imaging studies
 - Pharmacology
 - Ancillary tests (e.g., lab studies, EKG, electrophysiological exams).
 - Nonsurgical interventional spine procedures and the indications, contraindications, and precautions for orthopaedic spine physical therapy (e.g., injections, radial ablation, denervation procedures)
 - Spine surgical interventions and their implications (i.e., indications, contraindications, and precautions) for orthopaedic spine physical therapy.
 - Developments in genetics/regenerative medicine (e.g., genetic markers, stem cell applications, genetic-based alterations to pharmacological interventions, immunity).
 6. Orthopaedic Spine Physical Therapy Theory and Practice
 - Biopsychosocial model
 - Complementary interventions including:
 - Meditation
 - Mindfulness
 - Dry-needling
 - Exercise physiology across the lifespan
 - Manual therapy techniques
 - Movement systems impairments
 - Motor control and motor learning
 - Nutritional education
 - Theory and application of orthotic, protective, and supportive devices
 - Therapeutic exercise
 - Models of differential diagnosis and clinical reasoning (e.g., hypothesis-oriented algorithm for clinicians (HOAC) model, prospect theory)
 - Principles of teaching and learning
 - Principles of prevention and wellness

7. Behavioral Science as Related to Orthopaedic Spine Conditions
 - External environmental factors (e.g., expected behaviors and social pressures).
 - Personal factors (e.g., compliance, body awareness, pain perception, and related psychosocial factors).
 - Psychological/emotional conditions (e.g., anxiety, depression, catastrophization).
 - Impact of behavioral health risk factors (e.g., smoking effects on healing rates).
8. Critical Inquiry for Evidence-Based Practice
 - Critical interpretation of research findings on orthopaedic spine physical therapy practice.
 - Application of research findings to orthopaedic spine physical therapy practice.

B. Professional Competencies of Spine Physical Therapists

1. Professional Behavior

The Orthopaedic Spine Physical Therapist acts as a role model of professional behavior in all interactions and in accordance with the APTA Code of Ethics. The Orthopaedic Spine Physical Therapist demonstrates professional behavior by:

- Consulting with and/or educating peers, colleagues, other health care professionals, community, agencies, legislative and/or regulatory organizations regarding issues of orthopaedic spine physical therapy practice.
- Using patient-centered ethics and values in complex clinical decision making.
- Maintaining active participation in professional organizations that address issues related to orthopaedic spine care.
- Maintaining state-of-the-art knowledge and skills by seeking own mentors and participating in continuing professional development (e.g., seminars, structured study, journal clubs, etc.).

2. Leadership

The Orthopaedic Spine Physical Therapist demonstrates leadership by:

- Representing orthopaedic spine physical therapy and interacting with other professionals and organizations (e.g., inter-professional interaction and mentoring).
- Planning, directing, organizing, and managing human, technical, environmental, and financial resources effectively and efficiently.
- Modeling and facilitating the translation of evidence into clinical practice as it relates to orthopaedic spine care.
- Acting as an expert resource for peers in the clinic and community for guidance on complex cases and problem solving/clinical reasoning as it relates to orthopaedic spine care.

3. Communication

The Orthopaedic Spine Physical Therapist demonstrates effective communication by:

- Empowering patients with orthopaedic spine conditions in the management of their own health (e.g., providing patients confidence to manage future occurrences of spine-related pain).
- Facilitating collaborative and multidisciplinary team management and transition of care for individuals with orthopaedic spine conditions.

4. Advocacy

The Orthopaedic Spine Physical Therapist demonstrates advocacy by:

- Promoting the orthopaedic spine physical therapist as the first contact provider in musculoskeletal spine pathology.
- Advocating for orthopaedic spine physical therapy practice with national organizations, healthcare systems or law-making bodies.

5. Education

The Orthopaedic Spine Physical Therapist demonstrates the ability to educate others by:

- Contributing to the professional development of other physical therapists by teaching/mentoring.
- Promoting awareness and benefits of fellowship programs in orthopaedic spine physical therapy.
- Educating the public regarding spine conditions, the role of orthopaedic spine physical therapists, and addressing common misconceptions.
- Educating other health care professionals and administrators as to the scope and role of orthopaedic spine physical therapists.

6. Critical Inquiry and Evidence-Based Practice

The Orthopaedic Spine Physical Therapist demonstrates critical inquiry and evidence-based practice by:

- Applying principles of evidence-based practice in patient/client management.
- Contributing to the body of evidence in orthopaedic spine physical therapy (e.g., peer-reviewed and non-peer-reviewed presentations, publications, and activities).
- Evaluating the efficacy and effectiveness of examination tools, interventions, and technologies based upon available evidence.
- Identifying research needs within the field of orthopaedic spine physical therapy, evaluating outcomes data, and assessing new concepts and technologies.

C. Psychomotor Skills of Spine Physical Therapists in the Patient/Client Management Model**Examination****1. History**

- Obtaining work/performance place and status data that includes, but is not limited to:
 - Current and prior work
 - Activity requirements/occupational demands
 - Ergonomic considerations
 - Utilization of adaptive and supportive devices (e.g., taping, bracing, assistive devices, orthotics)
- Obtaining data regarding current condition(s)/chief complaint(s) by identifying areas of primary and secondary symptoms that includes, but is not limited to:
 - Recognition of contributions from multiple body regions
 - Quality and behavior of symptoms
 - Symptom irritability (onset, offset, and overall baseline)
 - Onset of condition (e.g., mechanism of injury, insidious onset, potential contributing factors)
 - Current and previous therapeutic interventions
 - Readiness for change
 - Goals of the patient, family, and caregiver
- Obtaining data regarding functional status and activity level of daily living
- Obtaining data regarding general health status via self-report, family report, or caregiver report that includes, but is not limited to:
 - Physical function
 - Psychosocial factors (e.g., anxiety, depression, catastrophizing)
- Obtaining data regarding social/health habits (past and current), including behavioral health risks (e.g., nutrition, smoking, substance use, sleep) and fitness level
- Obtaining medical/surgical history data
- Obtaining data regarding medication usage patterns and effects of medications currently and previously taken (for chief complaint and for other conditions)
- Obtaining data regarding social history (e.g., cultural beliefs and support systems)
- Obtaining general demographic information

- Obtaining data on living environment and community characteristics
- Interpreting data from history in order to assist in planning physical therapy exam by:
 - Developing a working hypothesis of the physical therapy diagnosis that includes, nature and severity of problem(s), probable cause(s) of problem(s), anatomical structures involved, stage of condition, possible contraindications to physical therapy examination.
 - Assessing "red flags" and determining need based upon whether patient demonstrates neuromusculoskeletal problems responsive to physical therapy intervention or condition(s) requiring referral to another health care provider.
 - Identifying chief and secondary problems.

2. Systems Review

- Identify the impaired or unimpaired status of the cardiovascular/pulmonary system, musculoskeletal system, neuromotor system, integumentary system, and/or communication ability.

3. Tests and Measures

- Ergonomics and body mechanics
- Gait, locomotion and balance
- Work (job/school/play), community and leisure integration or reintegration (including IADL)
- Adaptive and supportive devices (e.g., taping, bracing, assistive devices, orthotics)
- Pain
- Anthropometric characteristics (e.g., edema, body dimensions and composition)
- Circulation (e.g., vertebral artery examination, skin condition, thoracic outlet tests, and peripheral pulses)
- Aerobic capacity and endurance (e.g., dyspnea perceived exertion, heart rate)
- Neurodynamics
- Sensory integrity (e.g., assessment of superficial sensation, dermatomes, myotomes, proprioception and kinesthesia, 2-point discrimination, quantitative sensory testing)
- Reflex integrity (e.g., assessment of normal and pathological reflexes)
- Motor control and coordination (e.g., assessment of timing of movements across segments, capability of acquiring new movement strategies)
- Biopsychosocial functioning (e.g., depression, impaired motivation, FABQ, STarT Back, Tampa Kinesiophobia)
- Joint integrity (i.e., mobility assessment of joint hypermobility and hypomobility to include passive range of motion, passive accessory motions, response to manual provocation)
- Community, home, and work barriers
- Integumentary integrity
- Muscle performance (e.g., strength, power, and endurance)
- Neuromotor development and sensory integration (e.g., assessment of appropriate development, dexterity, coordination, and integration of the somatosensory system)
- Posture (e.g., assessment of body or body segment(s) structure, alignment, changes in different positions, body contours)
- Tissue-specific diagnostic tests (i.e., special tests)
- Flexibility (e.g., length, stiffness)
- Soft tissue quality (e.g., mobility, provocation)
- Task-specific activities (e.g., lifting, bending, reaching)

Evaluation

- Planning a physical exam that:
 - Includes examination techniques with a high probability of changing (reproducing or relieving) the chief concern and contributing to the development and refinement of the working hypothesis(es).
 - Is comprehensive but has the focus and detail appropriate to the working hypothesis and the patient's problems.
 - Considers the nature, severity and irritability of the symptoms/problems.
 - Prioritizes areas, movements and functional activities to be examined as well as examination procedures and examination sequence.
- Using the International Classification of Functioning, Disability and Health (ICF) model to synthesize data from history, systems review, and physical examination (e.g., identify relevant, consistent, accurate data, prioritize impairments, assess patient's/client's needs, motivations and goals).
- Incorporating data from ancillary testing (e.g., imaging, labs, electrophysiological studies).
- Referring patient/client to other health care professionals for further examination as appropriate.
- Considering implications of exam findings on activity, quality of life, and wellness as established by the ICF.

Diagnosis

- Organizing examination findings into clusters, syndromes, or categories to which physical therapy interventions will be directed and to determine prognosis.
- Developing a working diagnosis, including nature of complaint, probable cause, anatomical structures involved, stage of condition, pain mechanisms, psychosocial factors, and possible contraindications for physical therapy intervention.

Prognosis

- Accounting for the complexity of the patient/client's dysfunctions/conditions, the predicted optimal level of improvement in function, and the amount of time needed to reach that level.

Intervention

- Ergonomics (influences of environment and occupation on posture and movement)
- Education/training of functional activities
- Education/training of activities of daily living (e.g., hygiene, stair climbing, sleeping postures)
- Education:
 - Concerning diagnosis, prognosis, treatment, responsibility, and self-management within plan of care
 - Using the biopsychosocial/biomedical models
 - Addressing pain physiology and dose response
 - Addressing prevention and wellness
- Injury prevention and wellness promotion (e.g., task adaptation, behavior modification, body mechanics)
- Sleep hygiene education (e.g., sleep schedules, technology usage, sleep habits, relationship between sleep and medication usage)
- Pain neuroscience education
- Graded exposure
- Graded motor imagery
- Graded activity/exercise
- Protective, adaptive or supportive device or equipment (e.g., orthotics, taping)

- Neural mobilization (e.g., nerve gliding)
- Non-thrust mobilization/manipulation
- Thrust mobilization/manipulation
- Soft tissue mobilization (e.g., connective tissue, deep friction, cross friction massage, instrument-assisted)
- Mobilization with movement
- Muscle energy techniques
- Traction/distraction
- Directional preference exercises/activities
- Aerobic capacity and endurance exercises
- Motor coordination
- Muscle performance exercises (e.g., strength, muscle endurance)

Outcomes

- Assessing remediation of activity and participation limitations
- Assessing patient satisfaction
- Assessing promotion of prevention
- Assessing improvement of patient's/client's activities and participation based on best available evidence and patient/client-specific variables (i.e., benchmarking)
- Using applicable, evidence-based outcomes measurement tools/questionnaires/scales (e.g., Oswestry, Fear Avoidance Behavior Questionnaire)

IV. Practice Settings

The clinical curriculum of all accredited fellowship programs must include a variety of practice settings, as noted below. A fellow should experience a minimum of 5% of patient-care practice hours within each setting based on the minimum patient-care practice hours outlined within "ABPTRFE Quality Standards for Clinical Physical Therapist Residency and Fellowship Programs."

If a fellowship program is unable to provide each participant with an opportunity to engage in patient care activities within these settings, the program must provide additional learning opportunities (e.g., observation, didactic, journal club, research) related to patient care within these settings for the minimum required hours noted above.

The minimum required practice settings for spine fellowship programs is:

- Outpatient facility.

V. Patient Populations

The clinical curriculum of all accredited fellowship programs must include a variety of patient populations, as noted below, specific to age. A fellow should experience a minimum of 5% of time in each patient population based on the minimum patient-care practice hours outlined within "ABPTRFE Quality Standards for Clinical Physical Therapist Residency and Fellowship Programs."

If a fellowship program is unable to provide each fellow with an opportunity to engage in patient care activities within these populations, the program must provide additional learning opportunities (e.g., observation, didactic, journal club, research) related to patient care within these populations for the minimum required hours noted above."

The minimum required patient populations for spine fellowship programs are:

- Pediatrics (0-21 years of age).
- Adults (22-59 years of age).
- Geriatrics (60 years of age to end of life).

VI. Medical Conditions

The clinical curriculum of all accredited fellowship programs must include a variety of medical conditions associated with the program's area of practice (see list below).

If a fellowship program is unable to provide each fellow with an opportunity to engage in patient care activities within most of these conditions, the program must provide additional learning opportunities (e.g., observation, didactic, journal club, research) related to patient care within these conditions.

Programs must use the ABPTRFE template located on the [ABPTRFE website](#) when submitting documentation to ABPTRFE.

Nervous System

- Cervical Myelopathy
- Cervical Radiculopathy
- Lumbar Radiculopathy
- Meralgia Paresthetica
- Thoracic Outlet Syndrome
- Other peripheral neural impingements NOT including thoracic outlet syndrome (e.g., double crush syndrome, other neurodynamic disorders)

Musculoskeletal System

- Facet dysfunction (cervical, thoracic, lumbar)
- Pediatric Spine Disorders (e.g., torticollis, atlanto-axial rotary displacement, congenital muscular torticollis, Klippel-Feil syndrome, Scheuermann's disease)
- Cervical Disc Pathologies (e.g., degenerative disc disease, protrusion, herniation)
- Cervical Instability
- Cervical Sprain/Strain
- Cervicogenic Headache
- Other Disorders of Cervical Spine
- Temporomandibular Dysfunction
- Curvature of the spine (e.g., adolescent idiopathic scoliosis, congenital muscular scoliosis, pathologic scoliosis, adult idiopathic scoliosis, degenerative scoliosis, kyphosis, lordosis)
- Diastasis Recti
- Lumbar Disc Pathologies (e.g., degenerative disc disease, protrusion, herniation)
- Lumbar Instability
- Lumbar Spondylosis / Spondylolisthesis
- Lumbar Strain
- Spinal Stenosis
- Other Disorders of the Lumbar Spine
- Operative procedure on spinal structure

- Piriformis Syndrome
- Sacroiliac Dysfunction
- Other Disorders of the Pelvic Girdle
- Disorders of the Hip
- Rib Dysfunction
- Thoracic Sprain/Strain
- Thoracic Disc Pathologies (e.g., thoracic disc herniation, thoracic radiculopathy)
- Other Disorders of the Thoracic Spine

Involvement of Multiple Systems

- Chronic Pain Syndromes (e.g., central sensitization and/or nociplastic pain, other persistent pain conditions)
- Inflammatory Conditions (e.g., spondyloarthropathies such as ankylosing spondylitis, rheumatoid arthritis)
- Oncological Disorders (e.g., tumor, spine metastases)

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