

**Preparing for the Neurologic Certified Specialist Exam
Resource List
2016 Update**

The Neurologic Certified Specialist (NCS) Exam is a certification process for physical therapists that are committed to providing the best evidenced-based care to neurologically-impaired adults. Preparation for the NCS exam requires a commitment of time, energy and focus to the entire process in order to be successful. This outline is designed to help you only in your preparation for the specialist exam. It does not attempt to provide an exhaustive list of resources nor a foolproof way of studying. Neither the American Board of Physical Therapy Specialties, nor the Neurologic Specialty Council has reviewed or endorsed the content of this list. In addition, reviewing these resources does not guarantee that a candidate will receive a passing score on the specialist certification examination.

This list was prepared by the NCS Committee as a service to therapists taking the NCS exam and reflects not only its work but also feedback of those who have taken the exam previously. Its content covers key areas outlined in the Description of Specialty Practice – Neurologic Physical Therapy. According to ABPTS, “specialization is the process by which a physical therapist builds on a broad base of professional education and practice to develop a greater depth of knowledge and skills related to a particular area of practice.” Neurologic Certified Specialists treat in a wide variety of settings (e.g. acute hospital, rehabilitation units, home care, private practice, skilled nursing facilities, assisted living units) and to a diverse clientele. Preparation for the exam must take into account the management of patients over a large age and with complex acute and chronic medical histories. To begin your application process:

1. Review all application materials from American Board of Physical Therapy Specialties (ABPTS) at <http://www.abpts.org/Certification/>
2. Review requirements thoroughly and ensure that you have enough clinical hours in the specialty to sit for the exam or that you have satisfied the requirements to sit based on completion of a credentialed residency program in neurology.
3. Create a timeline for yourself that includes time to complete the application process, gather resources, talk and collaborate with others, and thoroughly study for all the elements of the exam.

Suggestions for Studying for the NCS Exam

1. Evaluate the time you will need to prepare for the certification exam. Six months is most likely the minimum one should consider, though everyone learns at different paces. This is a recommendation only.
2. Schedule a set number of hours each day or week to specifically study evidenced-based literature and recommended texts.
3. Become a member of the Academy of Neurologic Physical Therapy to begin to receive the peer reviewed Journal of Neurologic Physical Therapy (JNPT) and other resources that are produced by the Section. JNPT for the iPad is available on the Apple app store for free. Dissemination of information to members is made through email blast.
4. Join Neurologic Special Interest Groups: <http://www.neuropt.org/special-interest-groups>. There are six special interest groups within the Section, including Balance and Falls, Brain Injury, Degenerative Diseases, Spinal Cord Injury, Stroke, and Vestibular Rehabilitation. Each group has posted resources and current documents relevant to that specific health condition. If you lack clinical experience within one of these practice areas of neurorehabilitation, you may find these Special Interest Group documents to be helpful in guiding your studying.
5. The Description of Specialty Practice on the APTA online store includes a free self-assessment tool so you can determine areas to focus your review. You <http://www.abpts.org/Resources/ExamPreparationMaterials/>
*Note to Specialist Applicants: As part of your application fee for board certification, you will receive the DSP: Neurologic and Self-Assessment Tool-so there is no need to order this separately!
6. Sample questions are available in the information booklet provided by ABPTS. Review the practice questions provided and consider how to study for questions that are worded in multiple choice style where there aren't necessarily wrong answers but best/better answers.
<http://www.abpts.org/SpecCertExamTutorial/>
7. Participate in the NCS Discussion Board which will be online beginning January through March. Information, guidance, and assistance in developing study groups is provided on this site.
8. Participate in the Academy of Neurologic Physical Therapy mentor/mentee program.
<http://www.neuropt.org/professional-resources/mentorship>
9. Join the Neuropt listserve: <http://www.neuropt.org/join/neuropt-listserve>
10. Join or form study groups. When completing the Specialist Certification application to take the NCS examination, you have an option to request participation in an exam study group. Contact information of other applicants within your geographic region will be provided to you as a service run through the APTA Specialist Certification Program / American Board of Physical Therapy Specialties.
11. If you'd like to take a course to get more exposure to advanced practice in neurology, consider attending Academy of Neurologic Physical Therapy developed courses. Although these are not specifically NCS-prep courses, they can be a useful part of your review. Information about dates and locations of upcoming offerings can be found on the Academy of Neurologic Physical Therapy website: <http://www.neuropt.org/education/neurology-section-developed-courses>. Examples of these include:

Neurologic Practice Essentials: A Measurement Toolbox
Neurologic Practice Essentials: Clinical Decision Making as a Foundation for Expert Practice
Neurologic Practice Essentials: Clinical Application of the Principles of Neuroplasticity to Maximize Patient Outcomes
Expanding Neurologic Expertise: Introduction to Vestibular Rehabilitation
Expanding Neurologic Expertise: Advancing Clinical Practice in Acute Stroke Rehabilitation
Expanding Neurologic Expertise: Advanced Practice in Vestibular Physical Therapy

12. Acquire and study materials developed by the Neurology Section/Members, available from the APTA Learning Center. These provide education covering the breadth and depth of a variety of settings and diagnoses in which NCS Physical Therapists currently work.
13. Take advantage of the Section's website links to review outside resources and research specifically related to neurologic physical therapy. <http://www.neuropt.org/professional-resources/resources>. Here you will find a link to the NCS exam content outline as well as the 2011 Neurologic Entry-Level Curriculum Content Guidelines.
14. Check out the Academy of Neurologic Physical Therapy outcome measures recommendations: <http://www.neuropt.org/professional-resources/neurology-section-outcome-measures-recommendations>
15. Attend the APTA Combined Sections Meetings to become immersed in the field attending courses, studying posters, visiting the booth, talking to authors and authorities in the field, and receive first-hand experience with the many therapists who have successfully attained certification.

NCS Resource List (2016)

Web-based resources

Diagnosis-Specific Evidence-based Resources

Brain Injury:

- <http://www.abiebr.com/> (Acquired brain evidence-based review)
- <http://tbims.org/combi/> (Center for outcome measurement in brain injury)
- <https://www.impacttest.com/>
- <http://www.cdc.gov/headsup/index.html> (Heads Up Concussion)

CVA:

- <http://strokengine.ca> (evidence-based information about stroke for clinicians, patients, and families)
- www.ebrsr.com (Evidence-Based Review of Stroke Rehabilitation)

Huntington's Disease

- <http://www.euro-hd.net/html/network/groups/physio> (European Huntington's Disease Physiotherapy Working Group Guidelines for Physiotherapists)
- <http://healthcarestudies.cf.ac.uk/ActiveHD/> (Active-HD website with resources on HD)

Parkinson's Disease

- www.appde.eu (Royal Dutch Society for Physiotherapy Guidelines for physical therapy in patients with Parkinson's disease)

Spinal Cord Injury:

- www.scireproject.com/home (Spinal Cord Injury Rehabilitation Evidence)
- www.elearnsoci.org (web-based teaching and educational resource by the International Spinal Cord Society)
- <http://www.asia-spinalinjury.org/>
- <http://www.aci.health.nsw.gov.au/networks/spinal-cord-injury/spinal-seating>

Vestibular Disorders:

- <https://vestibular.org/educational-resources>
- <http://www.dizziness-and-balance.com/index.html>

Evidence-based Resources (general, covers variety of diagnoses)

- <http://www.apta.org/EvidenceResearch/ImplementingEBP/> (APTA guide to implementing EBP)
- www.ptnow.org (PT Now; access to Clinical Practice Guidelines, cases and clinical summaries)
- <http://www.neuropt.org/professional-resources/evidence-based-neurologic-practice> (This link provides a list of sources to access search engines and databases containing current literature relevant to neurorehabilitation)

<ul style="list-style-type: none"> • http://www.cochrane.org/ (Cochrane library) • http://www.pedro.org.au/ (Physiotherapy Evidence Database (PEDro); wonderful resource to find critically-appraised RCTs) • http://guides.mclibrary.duke.edu/ebmtutorial (Introduction to Evidence-Based Practice. Fifth Edition. Duke University Medical Center Library and Health Sciences Library, UNC-Chapel Hill, 2010) • http://www.cebm.net/ (Centre for Evidence-Based Medicine, University of Oxford, United Kingdom)
Outcome Measures
<ul style="list-style-type: none"> • www.rehabmeasures.org (Access to measures, psychometric properties) • www.neuropt.org/professional-resources/neurology-section-outcome-measures-recommendations (APTA EDGE task force recommendations)
Journals (free full-text after one-year embargo)
<ul style="list-style-type: none"> • www.ptjournal.org (Physical Therapy Journal) • www.jnpt.org (Journal of Neurologic Physical Therapy) • www.stroke.ahajournals.org (Stroke, published by the American Heart Association)
Web sites with a variety of diagnosis-specific resources
<ul style="list-style-type: none"> • http://www.neuropt.org • http://www.bcm.edu/neurology/case.cfm (Baylor College of Medicine-Department of Neurology: Case of the Month) • http://library.med.utah.edu/neurologicexam/html/home_exam.html (NeuroLogic Examination Videos and Descriptions: An Anatomical Approach (University of Utah) • http://library.med.utah.edu/neurologicexam/cases/home_cases.html (NeuroLogic - companion website to the above site. Designed to lead participants through a systematic decision making process on four separate clinical cases. University of Utah)
Professional Issues
<ul style="list-style-type: none"> • http://www.apta.org/CulturalCompetence/ (Cultural Competence in Physical Therapy) • http://www.apta.org/EthicsProfessionalism/ (Ethics and Professionalism) • https://healthliteracy.osu.edu/ (Health literacy modules) • http://www.aptahpa.org/ (APTA Section on Health Policy and Administration including information about LAMP Leadership Program) • http://www.apta.org/CareerManagement/SelfAssessments/ (APTA Self-Assessment Tools including Core Values and Neurologic Specialty) • http://www.apta.org/Documentation/ (APTA Guidelines for Documentation)

*The following pages provide resources to assist in preparing for the NCS exam. These include continuing education courses, online courses, as well as textbooks. The courses listed can be found at: <http://learningcenter.apta.org/default.aspx>.

Access to journal articles can be obtained at www.zotero.org. **Login: NCSList2016 Password: NCSList**. Best accessed with Firefox browser. Free access papers are provided in this database, with citations provided for others. This database consists primarily of systematic reviews, meta-analyses, and clinical practice guidelines roughly organized by health condition.

Textbook recommendations are based on previous test-taker feedback about how they prepared for the exam. They may provide a nice review of information in areas you feel less comfortable, but we encourage you not to rely solely on texts for your preparation. The information is generally too basic a level and at times, out-dated.

The NCS committee acknowledges that this is not an all-inclusive list of web-based resources or APTA Learning Center courses to support individuals preparing for the NCS exam. Rather, we have attempted to select those resources and courses that were: 1) sponsored by APTA, 2) directly applicable to Neurologic Description of Specialty Practice topics, and/or 3) had been used by task force members and were deemed beneficial for neurologic physical therapy learning. Therapists are encouraged to select web-based resources and APTA Learning Center courses to best meet their individual study needs. **Use of these resources does not ensure that the therapist will pass the NCS exam.**

Neurologic Description of Specialty Practice Curricular Topics linked with resources	
	<p>Available APTA learning center resources http://learningcenter.apta.org/Courses.aspx</p> <p>Academy of Neurologic Physical Therapy sponsored courses http://www.neuropt.org/education/neurology-section-developed-courses</p>
I. KNOWLEDGE AREAS	
A. Foundation Sciences	
<p>Human Anatomy and Physiology in healthy and neurologic populations</p> <ul style="list-style-type: none"> • <i>Musculoskeletal system</i> • <i>Cardiovascular and pulmonary systems</i> • <i>Integumentary system</i> • <i>Exercise Physiology</i> • <i>Electrophysiology</i> 	<p>APTA Learning Center: Amyotrophic Lateral Sclerosis: Update on Anatomy, Physiology, Pharmacology, and Management, 2nd Ed</p> <p>Texts: Blumenfeld H. <u>Neuroanatomy through Clinical Cases</u>. Second Edition. Sunderland, MA: Sinauer Associates, Inc, 2010.</p> <p>Goldberg, Stephen. <u>Clinical Neuroanatomy Made Ridiculously Simple</u> (5th ed). Interactive Edition. Miami, Florida: MedMaster, 2014.</p> <p>Greenberg DA, Aminoff MJ, Simon RP eds. <u>Clinical Neurology</u> - 8th Edition. McGraw Hill Co, Inc., 2012</p> <p>Haines DE. <u>Fundamental Neuroscience for Basic and Clinical Applications</u> (4th ed). Philadelphia: Churchill Livingstone, 2012.</p> <p>Lundy-Ekman L. <u>Neuroscience Fundamentals for Rehabilitation</u> (4th ed). Philadelphia: W.B. Saunders Company, 2013.</p> <p>Goodman CC, Fuller KS. <u>Pathology: Implications for the Physical Therapist</u>-4th ed. Philadelphia PA: Saunders, 2014.</p>
<p>Neuroanatomy and Neurophysiology</p> <ul style="list-style-type: none"> • <i>Anatomical organization and functional specialization</i> • <i>Age-related changes across the life span, including developmental neuroanatomy</i> • <i>Neural growth and plasticity, such as cortical remodeling, activity-dependent changes</i> • <i>Neurotransmission and neurotransmitters</i> • <i>Perception and sensory systems</i> • <i>Motor systems</i> 	<p>APTA Learning Center: Focus 2011: Issue 2: The Aging Neuromuscular System</p> <p>PT09: Balance and Falls: The Physiology of Aging</p> <p>A Learning Module for Neurorehabilitation Curriculum: Walking Recovery, Locomotor Training, and Incomplete Spinal Cord Injury (CSM 2010)</p> <p>Module 3: Evidence-Based Physical Therapy Intervention for Persons with Parkinson's Disease (Farley, Albers, Cianci)</p>

<ul style="list-style-type: none"> • <i>Neural control of locomotion, such as central pattern generators</i> • <i>Neural control of balance and postural control</i> • <i>Regulation and modulation of reflexes</i> • <i>Regulation and modulation of autonomic function</i> • <i>Pain, including neurogenic and nonneurogenic</i> 	<p>Geriatrics Section: Topics: Vol 6: Alzheimer Disease in Physical Therapist Practice: Integrating Principles of Neurophysiology and Neuropsychology Into Comprehensive Patient Care</p>
<p>Movement sciences</p> <ul style="list-style-type: none"> • <i>Biomechanics and kinesiology of movement systems</i> • <i>Kinematic and kinetic analysis of functional movements, postural control, and gait</i> • <i>Pathokinesiology of functional movement, such as gait, posture, and reaching</i> • <i>Theories and principles of motor control</i> • <i>Theories and principles of skill acquisition and motor learning</i> • <i>Theories and principles of motor development</i> • <i>Interrelationships among social, cognitive, and movement systems</i> • <i>Effects of movement dysfunctions on multiple body systems, including immediate and long-term</i> 	<p>APTA Learning Center: Focus 2011: Issue 2: The Aging Neuromuscular System</p> <p>CSM11: Poor Balance Control: Evaluation and Treatment Based On Contributing Systems</p> <p>Motor Learning, 2nd Ed (Authors: Patricia S. Pohl, PT, PhD)</p> <p>Texts: Goodman CC, Fuller KS. <u>Pathology: Implications for the Physical Therapist</u>-4th ed. Philadelphia PA: Saunders, 2014.</p> <p>Goodman CC, Snyder TK. <u>Differential Diagnosis for Physical Therapists: Screening for Referral</u>-5th edition. St. Louis, MO: Saunders, 2012.</p> <p>Neumann DA. <u>Kinesiology of the Musculoskeletal System: Foundations for Rehabilitation</u>. 2nd edition. St. Louis, MO: Mosby Elsevier, 2009.</p> <p>Schmidt RA, Lee TD. <u>Motor Control and Learning: A Behavioral Emphasis</u> (5th ed). Champaign, Illinois: Human Kinetics, 2011.</p> <p>Shumway-Cook A, Woollacott MH. <u>Motor Control: Translating Research into Clinical Practice</u>. 4th edition. Baltimore, MD; Lippincott Williams & Wilkins, 2011.</p>

B. Behavioral Sciences	Resources available
<p>Psychology and neuropsychology, including knowledge of:</p> <ul style="list-style-type: none"> • <i>Cognitive processes (attention, memory, and executive dysfunction)</i> • <i>Cognitive, language, and learning disorders</i> • <i>Affective and behavioral disorders</i> • <i>Expected emotional and behavioral responses, and individualized coping strategies to illness and recovery</i> • <i>Influence of motivational factors and adherence strategies to facilitate behavioral change on illness and recovery</i> • <i>Impact of cultural and social systems on illness and recovery</i> 	<p>APTA learning center: Testing Cognition & Attention: Kicking the “Alert & Oriented X 3 Habit!</p> <p>Texts: Ropper A. Disorders of the Nervous System Caused by Drugs, Toxins, and Other Chemical Agents. <u>Adams and Victor’s Principles of Neurology</u>. 9th ed. McGraw-Hill Companies, Inc;2009:1145-1178.</p> <p>Gillen G. Managing Attention Deficits to Optimize Function. <u>Cognitive and Perceptual Rehabilitation Optimizing Function</u>. St Louis, MO: Mosby Elsevier; 2009: 184-209.</p>
<p>Psychiatry including knowledge of:</p> <ul style="list-style-type: none"> • <i>Common psychiatric symptoms, syndromes, and classifications</i> • <i>Effect of psychiatric disease and treatment on cognition, learning, and function</i> • <i>Aphysiologic presentation, such as conversion disorder</i> 	<p>Ropper A. Psychiatric Disorders. <u>Adams and Victor’s Principles of Neurology</u>. 9th ed. McGraw-Hill Companies, Inc;2009:1445-1493.</p>
<p>Teaching and learning theory</p> <ul style="list-style-type: none"> • <i>Principles of teaching and learning</i> • <i>Development and implementation of educational planning process</i> 	<p>Texts: Bastable S, Gramet P, Jacobs K, Sopczyk D. Health Professional as Educator: Principles of Teaching and Learning. Sudbury MA; Jones & Bartlett Learning, 2011</p> <p>Jensen GM and Mostrom E. <u>Handbook of Teaching and Learning for Physical Therapists</u>. Edition 3. Elsevier Health Sciences, 2013.</p> <p>Plack M, Driscoll M (eds). Teaching and Learning in Physical Therapy: From Classroom to Clinic. Thorofare, NJ: Slack, Inc, 2011</p>
C. Clinical Sciences	
<p>Pathology, including congenital and acquired pathology/pathophysiology of:</p> <ul style="list-style-type: none"> • <i>Neuromucular system</i> • <i>Musculoskeletal system</i> • <i>Cardiovascular and pulmonary system</i> • <i>Physiologic response to trauma and stress</i> 	<p>APTA Learning Center: Amyotrophic Lateral Sclerosis: Update on Anatomy, Physiology, Pharmacology, and Management, 2nd Ed CSM10: Evidence-Based Medicine: Multiple Sclerosis Drugs and Exercise Implications</p> <p>Module 1: Understanding Parkinson’s Disease and the Growth of Physical Therapy as a Viable Treatment Option</p>

<ul style="list-style-type: none"> • <i>Impact of neurologic conditions on other body systems</i> 	
<p>Epidemiology, including knowledge of:</p> <ul style="list-style-type: none"> • <i>Incidence and prevalence</i> • <i>Prognostic factors</i> • <i>Risk factors relevant to health status across the lifespan</i> • <i>Natural history, morbidity, and mortality</i> 	<p>APTA Learning Center: Amyotrophic Lateral Sclerosis: Update on Anatomy, Physiology, Pharmacology, and Management, 2nd Ed</p> <p>Text: Goodman CC, Fuller KS. <u>Pathology: Implications for the Physical Therapist</u>-4th ed. Philadelphia PA: Saunders, 2014. Haynes RB, Sackett DL, Guyatt et al. <u>Clinical Epidemiology: How to Do Clinical Practice Research</u>. 3rd edition. Philadelphia, PA: Lippincott Williams & Wilkins, 2006.</p>
<p>Medical management, including knowledge of:</p> <ul style="list-style-type: none"> • <i>Imaging, such as MRI, f-MRI, CT Scans, and PET Scans</i> • <i>Clinical diagnostic procedures, such as EMG, NCV, and evoked potential exam</i> • <i>Laboratory tests, including normal and abnormal findings</i> • <i>Surgical and nonsurgical interventions performed for neurologic conditions</i> • <i>Assessment, monitoring, and activity modifications related to medical procedures</i> 	<p>Text: Goodman CC, Fuller KS. <u>Pathology: Implications for the Physical Therapist</u>-4th ed. Philadelphia PA: Saunders, 2014.</p>
<p>Pharmacology, including knowledge of:</p> <ul style="list-style-type: none"> • <i>Pharmacokinetics and pharmacodynamics</i> • <i>Abnormal drug reactions, interactions, and adverse dosage effects</i> 	<p>APTA Learning Center: Pharmacology in Rehabilitation: Neuromuscular Medications</p> <p>Text: Ciccone CD. <u>Pharmacology in Rehabilitation</u> -5th ed. FA Davis, 2016</p>
<p>D. Clinical Reasoning and Critical Inquiry</p>	
<ul style="list-style-type: none"> • <i>Application of decision-making algorithms and models to clinical practice</i> • <i>Integration of the ICF framework to inform clinical decisions and prioritize plan of care</i> 	<p>Texts: How to use the ICF: A practice manual http://www.who.int/classifications/drafticfpracticalmanual.pdf http://www.apta.org/ICF/</p>

<ul style="list-style-type: none"> • <i>Clinical research methodology appraisal</i> • <i>Critical evaluation of test psychometrics and application of principles of measurement in clinical practice</i> • <i>Judicious evaluation of components and merit of published evidence</i> 	<p>Carter R, Lubinsky J, Domholdt E. Measurement. <u>Rehabilitation Research Principles and Application</u>. 4th ed. St. Louis, MO: Elsevier Saunders; 2011: 229-252.</p> <p>MacDermid J, Law M. Evaluating the Evidence <u>Evidence-Based Rehabilitation</u>. 2nd Ed. Thorofare, NJ. SLACK Incorporated;2008; 121-139.</p>
<p>II. Professional Roles, Responsibilities, and Values of Neurologic Clinical Specialists</p>	
<p>A. Communication</p>	
<ul style="list-style-type: none"> • <i>Employs effective communication strategies in individuals with neurologic conditions, including verbal, nonverbal, and assistive technologies</i> • <i>Empowers individuals in the management of their own health</i> • <i>Facilitates collaborative team management and transitions of care for individuals with neurologic conditions</i> • <i>Addresses cultural or social issues that affect the plan of care</i> 	<p>APTA Learning Center: Geriatrics Section: Topics: Vol 6: Alzheimer Disease in Physical Therapist Practice: Integrating Principles of Neurophysiology and Neuropsychology Into Comprehensive Patient Care</p> <p>Module 4: Maximizing Patient Outcomes For Patients with Parkinson's: Exploring Options and Creating Connections between Patient, Family, Health Care, and Community</p> <p>Professionalism Module 5: Emotional Intelligence</p> <p>Professionalism Module 6: Developing the Patient-Therapist Partnership</p> <p>Professionalism Module 10: Continuing Competence and Lifelong Learning</p>
<p>B. Education</p>	
<ul style="list-style-type: none"> • <i>Performs a needs assessment, including determining the educational needs and unique characteristics of the learners and group of learners</i> • <i>Develops educational objectives based on the learning needs of individuals and their families, significant others, and caregivers; colleagues; and/or the public with consideration of learning domains and level of expected outcomes for learners and groups of learners</i> 	<p>Texts: Bastable S, Gramet P, Jacobs K, Sopczyk D. Health Professional as Educator: Principles of Teaching and Learning. Sudbury MA; Jones & Bartlett Learning, 2011</p> <p>Jensen GM, Gwyer JM, Hack LM, Shepard KF. <u>Expertise in Physical Therapy Practice</u> (2nd ed). Philadelphia: W.B. Saunders Company, 2006</p> <p>Jensen GM and Mostrom E. <u>Handbook of Teaching and Learning for Physical Therapists</u>. Edition 3. Elsevier Health Sciences, 2013.</p> <p>Plack M, Driscoll M (eds). Teaching and Learning in Physical Therapy: From Classroom to Clinic. Thorofare, NJ: Slack, Inc, 2011</p>

<ul style="list-style-type: none"> • <i>Develops and customizes appropriate teaching strategies and methods based on learning objectives and identified learning style preferences of individuals and their families, significant others, and caregivers</i> • <i>Implements an educational plan that includes explanation, demonstration, practice, and effective use of feedback as appropriate</i> • <i>Accurately and objectively assesses learning outcomes of teaching strategies and modifies strategies based on outcomes</i> • <i>Educates physical therapy students and colleagues to enhance knowledge and skills in neurologic physical therapy</i> • <i>Educates health care professionals outside of physical therapy and outside agencies about neurologic physical therapy</i> • <i>Educates community groups in primary, secondary, and tertiary prevention</i> 	
<p>C. Consultation</p>	
<ul style="list-style-type: none"> • <i>Synthesizes information from a wide variety of sources when providing consultative services to colleagues</i> • <i>Effectively contributes to multidisciplinary team decision-making to maximize patient and client outcomes</i> • <i>Renders specialist opinion about patients and clients with neurological dysfunction to other health professionals and external organizations</i> • <i>Provides peer and utilization review</i> 	<p>Other professional Roles. Consultation. <u>Guide to Physical Therapist Practice 3.0</u>. Alexandria, VA: American Physical Therapy Association; 2014. Available at: http://guidetoptpractice.apta.org/</p>

D. Evidence-Based Practice	
<ul style="list-style-type: none"> • <i>Evaluates the efficacy and effectiveness of new and established examination tools, interventions, and technologies</i> • <i>Critically appraises peer-reviewed evidence and judiciously translates evidence into practice</i> • <i>Participates in conducting and disseminating clinical research following ethical guidelines</i> • <i>Participates in collecting and interpreting patient and client outcomes data, such as programmatic assessment</i> • <i>Synthesizes information from a variety of sources, such as clinical practice guidelines, to develop evidence-based clinical practice</i> 	<p>APTA Learning Center: Neurologic Practice Essentials: An Outcome Measures Toolbox</p> <p>Texts: Jewell, D. Guide to Evidence-Based Physical Therapy Practice. 2nd edition. Sudbury MA, Jones & Bartlett Learning, 2011.</p>
E. Prevention, Wellness, and Health Promotion	
<ul style="list-style-type: none"> • <i>Develops and implements programs to promote health and fitness at the individual and societal level</i> • <i>Promotes health and quality of life for individuals with and without neurologic conditions</i> • <i>Establishes screening programs for neurologic problems and uses screening programs to identify at-risk populations</i> 	<p>Hansen, P. Thompson C. Prevention Practice for Neuromuscular Conditions. In: Thompson C. <u>Prevention Practice: A Physical Therapist Guide to Health, Fitness and Wellness</u>. 1st ed. Thorofare, NJ. SLACK Incorporated; 2007:185-200.</p>
F. Social Responsibility and Advocacy	
<ul style="list-style-type: none"> • <i>Seeks unique solutions to challenging problems for the individual patient or client, such as access to health services, equipment, and community resources</i> 	<p>Other professional Roles. Consultation. <u>Guide to Physical Therapist Practice 3.0</u>. Alexandria, VA: American Physical Therapy Association; 2014. Available at: http://guidetoptpractice.apta.org/</p>

<ul style="list-style-type: none"> • <i>Advocates for neurologically impaired individuals with policy- and lawmaking bodies</i> • <i>Promotes advanced neurologic practice at the local, regional, national, and/or international levels</i> • <i>Represents neurologic physical therapy to other professionals and professional organizations</i> 	
<p>G. Leadership</p>	
<ul style="list-style-type: none"> • <i>Models and facilitates ethical principles in decision-making and interpersonal interactions</i> • <i>Pursues opportunities to mentor others and seeks mentors to expand own knowledge, skills and abilities</i> • <i>Resolves conflicts or challenging situations using multiple strategies</i> • <i>Models and facilitates the translation of evidence into clinical practice</i> • <i>Facilitates the use of evidence to shape system policies and procedural change</i> 	<p>APTA Learning Center: Professionalism Module 3: Ethical Compass</p> <p>Information on APTA's Revised Code of Ethics for the Physical Therapist and Standards of Ethical Conduct for the Physical Therapist Assistant</p> <p>http://www.aptahpa.org/ (APTA Section on Health Policy and Administration including information about LAMP Leadership Program)</p> <p>http://www.apta.org/CareerManagement/SelfAssessments/ (APTA Self-Assessment Tools including Core Values and Neurologic Specialty)</p>
<p>H. Professional Development</p>	
<ul style="list-style-type: none"> • <i>Practices active reflection and self-evaluation</i> • <i>Models and facilitates a continued pursuit of additional and advanced knowledge, skills, and competencies</i> • <i>Maintains current knowledge of regional, national, and international developments that impact neurologic physical therapist practice</i> 	<p>APTA Learning Center:</p> <p>Professionalism Module 10: Continuing Competence and Lifelong Learning</p> <p>http://www.apta.org/CareerManagement/SelfAssessments/ (APTA Self-Assessment Tools including Core Values and Neurologic Specialty)</p>

III. Patient and Client Management	
A. Patient and Client Examination	
<p>Examination (<i>includes history, systems review, tests and measures-- large section of DSP</i>)</p> <p>Evaluation</p> <ul style="list-style-type: none"> • <i>Skillfully interprets observed movement and function, particularly when objective measures are not available or cannot be applied</i> • <i>Differentiates examination findings across ICF domains that require remediation versus compensatory strategies</i> • <i>Links examination findings, personal modifiers, and environmental factors, with the individual's and caregiver's expressed goal(s)</i> • <i>Integrates examination findings obtained by other health care professionals</i> • <i>Develops sound clinical judgments based on data collected from the examination</i> <p>Diagnosis</p> <ul style="list-style-type: none"> • <i>Differentially diagnoses emergent versus nonemergent neurologic signs and symptoms</i> • <i>Differentially diagnoses body function, body structures, and functional performance findings consistent or inconsistent with health condition, and if amenable to intervention</i> • <i>Confers with other professionals regarding examination needs that are beyond the scope of physical therapy and refers as appropriate</i> 	<p>APTA Learning Center:</p> <p>Balance and Falls: The Physiology of Aging</p> <p>Neurologic Practice Essentials: An Outcome Measures Toolbox</p> <p>Neurologic Practice Essentials: Choosing Outcome Measures for a Patient with Stroke</p> <p>PT10: Testing Cognition and Attention: Kicking the "Alert and Oriented X 3" Habit</p> <p>Amyotrophic Lateral Sclerosis: Update on Anatomy, Physiology, Pharmacology, and Management, 2nd Ed</p> <p>Geriatrics Section: Topics: Vol 6: The Differential Diagnosis of Dizziness in the Older Adult</p> <p>PT09: Geriatrics: Fear of Falling in Older Adults: Evidence-Based Strategies for Examination and Intervention Management</p> <p>Current Concepts in Rehabilitation of Individuals With Parkinson Disease</p> <p>Parkinson's Disease: A Practical Approach to Evaluation & Treatment for the Physical Therapist; Module 1: Understanding Parkinson's Disease and the Growth of Physical Therapy as a Viable Option</p> <p>Physical Therapy Management for Individuals With Acute Traumatic Spinal Cord Injury, 2nd Ed</p> <p>Current Concepts in the Management of Patients With Traumatic Brain Injury, 2nd Ed</p> <p>PT09: Sports-Related Mild Traumatic Brain Injury</p> <p>Concussion and Postconcussive Syndrome: When to Rest, Exercise, or Return to Sport</p> <p>Current Concepts in the Management of Individuals With Vestibular Dysfunction, 2nd Ed</p>

<p>Prognosis</p> <ul style="list-style-type: none"> • <i>Analyzes barriers, such as resources and psychosocial barriers, that limit the individual in achieving optimal outcomes based on neurologic condition</i> • <i>Predicts potential for recovery and time to achieve optimal level of improvement across the ICF domains</i> • <i>Collaborates with individuals and their families, significant others, and caregivers in setting goals</i> • <i>Develops a plan of care that prioritizes interventions related to the recovery process, patient and client goals, and resources</i> • <i>Develops a plan of care that prioritizes interventions related to all levels of prevention, health, and wellness.</i> 	<p>Physical Therapy Management of Children with Neurological Disorders</p> <p>Evaluation and Intervention for Postural Control Disorders in Children, 2nd Ed</p> <p>Texts: Campbell SK, Palisano RJ, Orlin M. <u>Physical Therapy for Children</u> (4th ed). St. Louis, MO: Elsevier Saunders, 2012.</p> <p>Herdman SJ, Clendaniel R. <u>Vestibular Rehabilitation</u> (4th ed). Philadelphia: F.A. Davis, 2014.</p> <p>O’Sullivan SB and Schmitz TJ. <u>Physical Rehabilitation</u> (6th ed). Philadelphia: F.A. Davis, 2014.</p> <p>Umphred DA, Lazaro RT, Roller M, Burton G. <u>Neurological Rehabilitation</u> (6TH ed). St. Louis: Mosby, 2013.</p>
<p>B. Intervention</p>	
<p>Clinical Decision-Making and Prioritization of Interventions</p> <ul style="list-style-type: none"> • <i>Selects and, if needed, modifies interventions based on potential short-term impact and secondary prevention benefits with consideration of the individual’s body function and structure, activity limitations, and participation restrictions</i> • <i>Selects and, if needed, modifies interventions based on physiological or behavioral changes across the lifespan</i> • <i>Prioritizes optimal interventions based on type and severity of impairments in body function and structures, activity limitations, and participation restrictions</i> • <i>Analyzes risk versus benefit when selecting interventions</i> 	<p>Texts:</p> <p>O’Sullivan SB and Schmitz TJ. <u>Physical Rehabilitation</u> (6th ed). Philadelphia: F.A. Davis, 2014.</p> <p>Umphred DA, Lazaro RT, Roller M, Burton G. <u>Neurological Rehabilitation</u> (6TH ed). St. Louis: Mosby, 2013.</p>

<ul style="list-style-type: none"> • <i>Negotiates interventions with the patient or client and family, significant others, and caregivers</i> • <i>Modifies or continues intervention based on ongoing evaluation</i> 	
<p>Coordination, Communication, Documentation</p> <ul style="list-style-type: none"> • <i>Adapts communication to meet the diverse needs of the patient or client and family, significant others, and caregivers, such as cultural, age-specific, educational, and cognitive needs.</i> • <i>Adapts communication to meet the health literacy needs of the patient or client and family, significant others, and caregivers.</i> • <i>Asks questions which help to determine an in-depth understanding of the patient's or client's problems.</i> • <i>Coordinates patient and client management across care settings, disciplines, and community and funding resources.</i> 	<p>Texts:</p> <p><i>Guide to Physical Therapist Practice 3.0.</i> Alexandria, VA: American Physical Therapy Association; 2014. http://guidetoptpractice.apta.org/</p> <p>Quinn L, Gordon J. <u>Documentation for Rehabilitation: A Guide to Clinical Decision Making in Physical Therapy.</u> 3rd Edition. Saunders/Elsevier, 2015. http://www.apta.org/Documentation/</p>
<p>Patient and Client Instruction</p> <ul style="list-style-type: none"> • <i>Educates patient or client and family, significant others, and caregivers on diagnosis, prognosis, treatment, responsibility, and self-management within the plan of care</i> • <i>Provides instruction aimed at risk reduction, prevention, and health promotion</i> • <i>Provides instruction using advances in technology, such as web-based resources</i> 	<p>Texts:</p> <p>O'Sullivan SB and Schmitz TJ. <u>Physical Rehabilitation</u> (6th ed). Philadelphia: F.A. Davis, 2014.</p> <p>Umphred DA, Lazaro RT, Roller M, Burton G. <u>Neurological Rehabilitation</u> (6TH ed). St. Louis: Mosby, 2013.</p>

Procedural Interventions	
<ul style="list-style-type: none"> • <i>Therapeutic exercises</i> • <i>Functional training in self-care and in domestic, education, work, community, social and civic life</i> • <i>Manual therapy techniques</i> • <i>Prescription, application, and, as appropriate,, fabrication of devices and equipment, including assistive, adaptive, orthotic, protective, supportive, or prosthetic</i> • <i>Airway clearance techniques</i> • <i>Integumentary repair and protective techniques</i> • <i>Electrotherapeutic modalities</i> 	<p>APTA Learning Center: Focus 2011: Issue 2: The Aging Neuromuscular System</p> <p>Balance and Falls: The Physiology of Aging</p> <p>Poor Balance Control: Evaluation and Treatment Based On Contributing Systems PT09: Balance and Falls: Intervention Strategies</p> <p>PT09: Geriatrics: Fear of Falling in Older Adults: Evidence-Based Strategies for Examination and Intervention Management</p> <p>Geriatrics Section: ExPAAC: The Role of Exercise in the Promotion of Cognition and Functional Ability among those with Cognitive Impairment</p> <p>Geriatrics Section: ExPAAC: Evidence-Based Exercise Prescription: Balance and Fall Prevention</p> <p>Geriatrics Section: ExPAAC: Exercise and Physical Activity Effects on Brain and Cognition</p> <p>CSM11: Structuring clinical interventions to maximize motor recovery after stroke and spinal cord injury: the importance of amount, intensity and type of practice</p> <p>Geriatrics Section: ExPAAC: The Role of Physical Activity for those with Disabilities: An Example from Stroke</p> <p>Evidence-Based Medicine: Multiple Sclerosis Drugs and Exercise Implications</p> <p>Module 3: Evidence-Based Physical Therapy Intervention for Persons with Parkinson’s Disease</p> <p>Module 4: Maximizing Patient Outcomes For Patients with Parkinson’s: Exploring Options and Creating Connections between Patient, Family, Health Care, and Community</p> <p>Geriatrics Section: Topics: Vol 6: Alzheimer Disease in Physical Therapist Practice: Integrating Principles of Neurophysiology and Neuropsychology Into Comprehensive Patient Care</p> <p>PT09: Sports: Sports-Related Mild Traumatic Brain Injury</p> <p>PT10: Concussion and Postconcussive Syndrome: When to Rest, Exercise, or Return to Sport</p>

	<p>Geriatrics Section: Topics: Vol 6: The Differential Diagnosis of Dizziness in the Older Adult</p> <p>PT09: Benign Paroxysmal Positional Vertigo (BPPV)</p> <p>CSM10: A Learning Module for Neurorehabilitation Curriculum: Walking Recovery, Locomotor Training, and Incomplete Spinal Cord Injury</p> <p>CSM11: Walking and Talking: Implications of Dual Task Balance and Walking Research for Physical Therapy Practice</p>
<p>C. Outcomes Assessment</p>	
<ul style="list-style-type: none"> • <i>Selects appropriate outcome measures, such as sensitive and responsive, across the ICF domains, based on patient or client acuity, diagnosis, prognosis, and practice setting</i> • <i>Adjusts the plan of care within and across episodes based on interpretation of outcome measure results</i> • <i>Analyzes and interprets patient and client outcomes to modify own future practice and perform programmatic assessments</i> 	<p>APTA Learning Center:</p> <p>Neurologic Practice Essentials: Choosing Outcome Measures for a Patient with Stroke</p> <p>Neurologic Practice Essentials: An Outcome Measures Toolbox</p> <p>Module 2: Understanding the Impact of Exercise on the Brain and Choosing Outcome Measures to Capture Change Following Exercise</p>

Reference:

ABPTS and the Specialty Council on Neurologic Physical Therapy. Description of Specialty Practice: Neurologic. 2016