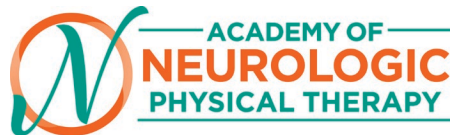


## **Preparing for the Neurologic Certified Specialist Exam Resource List 2019 Update**

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.

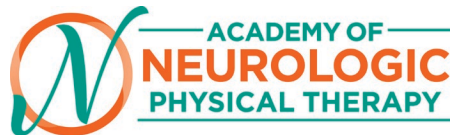
This list was prepared by the NCS Committee as a service to therapists taking the NCS exam and reflects not only its work but also feedback of those who have taken the exam previously. Its content covers key areas outlined in the Description of Specialty Practice – Neurologic Physical Therapy. According 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 (ANPT) 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 ANPT, 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.  
<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 November 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. Acquire and study materials developed by the Neurology Section/Members, available from the APTA Learning Center (<http://learningcenter.apta.org/default.aspx>) and the ANPT Synapse Center (<https://www.anptsynapsecenter.com/>). These provide education covering the breadth and depth of a variety of settings and diagnoses in which NCS Physical Therapists currently work.
12. 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 links (under the Clinical Toolbox Heading) to the Center for Outcome Measurement in Brain Injury and The Internet Stroke Center.
13. Check out the Academy of Neurologic Physical Therapy outcome measures recommendations: <http://www.neuropt.org/professional-resources/neurology-section-outcome-measures-recommendations>
14. 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 (2019)

### Web-based resources

#### Diagnosis-Specific Evidence-based Resources

##### **Brain Injury:**

- <https://erabi.ca/> (Evidence-Based Review of moderate to severe Acquired Brain Injury)
- <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)
- <https://onf.org/> (Ontario Neurotrauma Foundation)

##### **CVA:**

- <http://strokengine.ca> (evidence-based information about stroke for clinicians, patients, and families)
- [www.ebrsr.com](http://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)
- <https://hdsa.org/> (Huntington's Disease Society of America)

##### **Parkinson's Disease:**

- [www.appde.eu](http://www.appde.eu) (Royal Dutch Society for Physiotherapy Guidelines for physical therapy in patients with Parkinson's disease)
- <https://www.apdaparkinson.org/> (American Parkinson's Disease Association)

##### **Multiple Sclerosis:**

- <https://www.nationalmssociety.org/Chapters/MNM/Stay-Informed/MS-Resource-Guide> (Resource Guide for Clinicians by the NMSS)

##### **Spinal Cord Injury:**

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

##### **Vestibular Disorders:**

- <https://vestibular.org/educational-resources> (Vestibular Disorders Association)
- <http://www.dizziness-and-balance.com/index.html>

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

- [www.ptnow.org](http://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)
- <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 Tutorials.)
- <http://www.cebm.net/> (Centre for Evidence-Based Medicine, University of Oxford, United Kingdom)

#### Outcome Measures

- <https://www.sralab.org/rehabilitation-measures> (Access to measures, psychometric properties)
- [www.neuropt.org/professional-resources/neurology-section-outcome-measures-recommendations](http://www.neuropt.org/professional-resources/neurology-section-outcome-measures-recommendations) (APTA EDGE task force recommendations)

#### Journals (free full-text after one-year embargo)

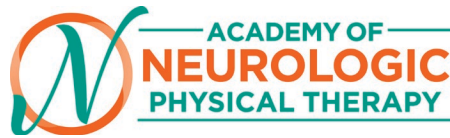
- <https://academic.oup.com/ptj?navID=47244640522> (Physical Therapy Journal)
- [www.jnpt.org](http://www.jnpt.org) (Journal of Neurologic Physical Therapy)
- <http://stroke.ahajournals.org/> (Stroke, published by the American Heart Association)
- <https://www.archives-pmr.org/> Archives of Physical Medicine and Rehabilitation

#### Web sites with a variety of diagnosis-specific resources

- <http://www.neuropt.org> (ANPT)
- <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](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](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

- <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.aptaaha.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)
- <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](http://www.zotero.org). **Login: NCSList2019 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, outdated.

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	
<b>I. KNOWLEDGE AREAS</b>	<p>Available APTA learning center resources <a href="http://learningcenter.apta.org/Courses.aspx">http://learningcenter.apta.org/Courses.aspx</a></p> <p>Academy of Neurologic Physical Therapy Synapse Center courses <a href="https://www.anptsynapsecenter.com/public/page-courses/">https://www.anptsynapsecenter.com/public/page-courses/</a></p>
<b>A. Foundation Sciences</b>	
<p><b>Human Anatomy and Physiology in healthy and neurologic populations</b></p> <ul style="list-style-type: none"> <li>• <i>Musculoskeletal system</i></li> <li>• <i>Cardiovascular and pulmonary systems</i></li> <li>• <i>Integumentary system</i></li> <li>• <i>Exercise Physiology</i></li> <li>• <i>Electrophysiology</i></li> </ul>	<p><b>APTA Learning Center:</b> Concussion: Evidence-Informed Rehabilitation on the C-Spine and Vestibular System</p> <p>Defining Dizziness: A Home Healthcare Approach to Vestibular Disorders</p> <p><b>ANPT Synapse Center:</b> Huntington’s Disease Module 1-Overview of Huntington’s Disease</p> <p><b>Texts:</b> Blumenfeld H. <u>Neuroanatomy through Clinical Cases</u>. Second Edition. Sunderland, MA: Sinauer Associates, Inc, 2010.</p> <p>Goldberg, S. <u>Clinical Neuroanatomy Made Ridiculously Simple</u> (5th ed). Interactive Edition. Miami, Florida: MedMaster, 2014.</p> <p>Haines DE, Mihailoff GA. <u>Fundamental Neuroscience for Basic and Clinical Applications</u> (5<sup>th</sup> ed). Philadelphia: Churchill Livingstone, 2017.</p> <p>Lundy-Ekman L. <u>Neuroscience Fundamentals for Rehabilitation</u> (5th ed). Philadelphia: W.B. Saunders Company, 2017.</p> <p>Goodman CC, Fuller KS. <u>Pathology: Implications for the Physical Therapist</u>-4th ed. Philadelphia PA: Saunders, 2014.</p> <p>Simon RP, Greenberg D, Aminoff MA, eds. <u>Lange Clinical Neurology</u> – 10<sup>th</sup> Edition. McGraw Hill Co, Inc., 2017</p>
<b>Neuroanatomy and Neurophysiology</b>	<b>APTA Learning Center:</b>



<ul style="list-style-type: none"> <li>• <i>Anatomical organization and functional specialization</i></li> <li>• <i>Age-related changes across the life span, including developmental neuroanatomy</i></li> <li>• <i>Neural growth and plasticity, such as cortical remodeling, activity-dependent changes</i></li> <li>• <i>Neurotransmission and neurotransmitters</i></li> <li>• <i>Perception and sensory systems</i></li> <li>• <i>Motor systems</i></li> <li>• <i>Neural control of locomotion, such as central pattern generators</i></li> <li>• <i>Neural control of balance and postural control</i></li> <li>• <i>Regulation and modulation of reflexes</i></li> <li>• <i>Regulation and modulation of autonomic function</i></li> <li>• <i>Pain, including neurogenic and nonneurogenic</i></li> </ul>	<p>Neuromuscular Changes with Aging (part of Geriatrics Focus for the Physical Therapist – 2016)</p> <p>Concussion: Evidence-Informed Rehabilitation on the C-Spine and Vestibular System</p> <p>Defining Dizziness: A Home Healthcare Approach to Vestibular Disorders</p> <p>A Primer on Pain for the Practicing Physical Therapist</p> <p>Pain, Plasticity and Physical Therapy: Applications of Graded Motor Imagery</p> <p>New Directions and Considerations in Neurorehabilitation</p> <p><b>Texts:</b> Blumenfeld H. <u>Neuroanatomy through Clinical Cases</u>. Second Edition. Sunderland, MA: Sinauer Associates, Inc, 2010.</p> <p>Goldberg, S. <u>Clinical Neuroanatomy Made Ridiculously Simple</u> (5th ed). Interactive Edition. Miami, Florida: MedMaster, 2014.</p>
<p><b>Movement sciences</b></p> <ul style="list-style-type: none"> <li>• <i>Biomechanics and kinesiology of movement systems</i></li> <li>• <i>Kinematic and kinetic analysis of functional movements, postural control, and gait</i></li> <li>• <i>Pathokinesiology of functional movement, such as gait, posture, and reaching</i></li> <li>• <i>Theories and principles of motor control</i></li> <li>• <i>Theories and principles of skill acquisition and motor learning</i></li> <li>• <i>Theories and principles of motor development</i></li> <li>• <i>Interrelationships among social, cognitive, and movement systems</i></li> <li>• <i>Effects of movement dysfunctions on multiple body systems, including immediate and long-term</i></li> </ul>	<p><b>APTA Learning Center:</b> Moving Forward with the Movement System Summit Outcomes</p> <p><b>ANPT Synapse Center:</b> Movement System 1 – Diagnoses in Neurologic Physical Therapy</p> <p>Movement System 2 – Task Analysis in Neurologic Physical Therapy</p> <p>Movement System 3 – Balance Diagnoses in Neurologic Physical Therapy</p> <p><b>Texts:</b> 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>-6<sup>th</sup> edition. St. Louis, MO: Saunders, 2017.</p>



	<p>Neumann DA. <u>Kinesiology of the Musculoskeletal System: Foundations for Rehabilitation</u>. 3<sup>rd</sup> edition. St. Louis, MO: Mosby Elsevier, 2016.</p> <p>Schmidt RA, et al. <u>Motor Control and Learning: A Behavioral Emphasis</u> (6<sup>th</sup> ed). Champaign, Illinois: Human Kinetics, 2018.</p> <p>Shumway-Cook A, Woollacott MH. <u>Motor Control: Translating Research into Clinical Practice</u>. 5<sup>th</sup> edition. Baltimore, MD; Lippincott Williams &amp; Wilkins, 2016.</p>
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B. Behavioral Sciences	
<b>Psychology and neuropsychology, including knowledge of:</b>	<b>Texts:</b>
<ul style="list-style-type: none"> <li>• <i>Cognitive processes (attention, memory, and executive dysfunction)</i></li> <li>• <i>Cognitive, language, and learning disorders</i></li> <li>• <i>Affective and behavioral disorders</i></li> <li>• <i>Expected emotional and behavioral responses, and individualized coping strategies to illness and recovery</i></li> <li>• <i>Influence of motivational factors and adherence strategies to facilitate behavioral change on illness and recovery</i></li> <li>• <i>Impact of cultural and social systems on illness and recovery</i></li> </ul>	<p>Ropper A. Disorders of the Nervous System Caused by Alcohol, Drugs, Toxins, and Other Chemical Agents in <u>Adams and Victor’s Principles of Neurology</u>. 11th ed. McGraw-Hill Companies, Inc; 2019:1209-1256.</p> <p>Gillen G. Managing Attention Deficits to Optimize Function in <u>Cognitive and Perceptual Rehabilitation Optimizing Function</u>. St Louis, MO: Mosby Elsevier; 2009: 184-209.</p>
<b>Psychiatry including knowledge of:</b>	<b>Texts:</b>
<ul style="list-style-type: none"> <li>• <i>Common psychiatric symptoms, syndromes, and classifications</i></li> <li>• <i>Effect of psychiatric disease and treatment on cognition, learning, and function</i></li> <li>• <i>Aphysiologic presentation, such as conversion disorder</i></li> </ul>	<p>Ropper A. Part 6: Psychiatric Disorders in <u>Adams and Victor’s Principles of Neurology</u>. 11th ed. McGraw-Hill Companies, Inc; 2019:1505-1558.</p>
<b>Teaching and learning theory</b>	<b>Texts:</b>
<ul style="list-style-type: none"> <li>• <i>Principles of teaching and learning</i></li> <li>• <i>Development and implementation of educational planning process</i></li> </ul>	<p>Bastable S, Gramet P, Jacobs K, Sopczyk D. <u>Health Professional as Educator: Principles of Teaching and Learning</u>. 2<sup>nd</sup> ed. Sudbury MA; Jones &amp; Bartlett Learning, 2019.</p>

	<p>Jensen GM and Mostrom E. <u>Handbook of Teaching and Learning for Physical Therapists</u>. 3<sup>rd</sup> ed. Elsevier Health Sciences, 2012.</p> <p>Plack M, Driscoll M (eds). <u>Teaching and Learning in Physical Therapy: From Classroom to Clinic</u>. 2<sup>nd</sup> ed. Thorofare, NJ: Slack, Inc, 2017.</p>
<b>C. Clinical Sciences</b>	
<p><b>Pathology</b>, including congenital and acquired pathology/pathophysiology of:</p> <ul style="list-style-type: none"> <li>• <i>Neuromuscular system</i></li> <li>• <i>Musculoskeletal system</i></li> <li>• <i>Cardiovascular and pulmonary system</i></li> <li>• <i>Physiologic response to trauma and stress</i></li> <li>• <i>Impact of neurologic conditions on other body systems</i></li> </ul>	<p><b>APTA Learning Center:</b> Neuromuscular Changes with Aging (Part of Geriatrics Focus for the Physical Therapist – 2016)</p> <p><b>Text:</b> Goodman CC, Fuller KS. <u>Pathology: Implications for the Physical Therapist</u>-4th ed. Philadelphia PA: Saunders, 2014.</p>
<p><b>Epidemiology</b>, including knowledge of:</p> <ul style="list-style-type: none"> <li>• <i>Incidence and prevalence</i></li> <li>• <i>Prognostic factors</i></li> <li>• <i>Risk factors relevant to health status across the lifespan</i></li> <li>• <i>Natural history, morbidity, and mortality</i></li> </ul>	<p><b>Texts:</b> Goodman CC, Fuller KS. <u>Pathology: Implications for the Physical Therapist</u>-4th ed. Philadelphia PA: Saunders, 2014.</p> <p>Haynes RB, Sackett DL, Guyatt et al. <u>Clinical Epidemiology: How to Do Clinical Practice Research</u>. 3<sup>rd</sup> edition. Philadelphia, PA: Lippincott Williams &amp; Wilkins, 2006.</p>
<p><b>Medical management</b>, including knowledge of:</p> <ul style="list-style-type: none"> <li>• <i>Imaging, such as MRI, f-MRI, CT Scans, and PET Scans</i></li> <li>• <i>Clinical diagnostic procedures, such as EMG, NCV, and evoked potential exam</i></li> <li>• <i>Laboratory tests, including normal and abnormal findings</i></li> <li>• <i>Surgical and nonsurgical interventions performed for neurologic conditions</i></li> </ul>	<p><b>APTA Learning Center:</b> Imaging: A Primer for Physical Therapist Practice</p> <p>Neurology: Treating CVA, TBI, and MS in the Home Health Setting</p> <p><b>Text:</b> Goodman CC, Fuller KS. <u>Pathology: Implications for the Physical Therapist</u>-4th ed. Philadelphia PA: Saunders, 2014.</p>

<ul style="list-style-type: none"> <li>• <i>Assessment, monitoring, and activity modifications related to medical procedures</i></li> </ul>	
<p><b>Pharmacology</b>, including knowledge of:</p> <ul style="list-style-type: none"> <li>• <i>Pharmacokinetics and pharmacodynamics</i></li> <li>• <i>Abnormal drug reactions, interactions, and adverse dosage effects</i></li> </ul>	<p><b>APTA Learning Center:</b> Pharmacology in Rehabilitation: Neuromuscular Medications</p> <p>Pharmacology for the Home Health Physical Therapist</p> <p><b>Text:</b> Ciccone CD. <u>Pharmacology in Rehabilitation</u> -5<sup>th</sup> ed. FA Davis, 2016</p>
<p><b>D. Clinical Reasoning and Critical Inquiry</b></p>	
<ul style="list-style-type: none"> <li>• <i>Application of decision-making algorithms and models to clinical practice</i></li> <li>• <i>Integration of the ICF framework to inform clinical decisions and prioritize plan of care</i></li> <li>• <i>Clinical research methodology appraisal</i></li> <li>• <i>Critical evaluation of test psychometrics and application of principles of measurement in clinical practice</i></li> <li>• <i>Judicious evaluation of components and merit of published evidence</i></li> </ul>	<p><b>APTA Learning Center:</b> Clinical Decision Making in Diverse Populations</p> <p>The International Classification of Functioning, Disability, and Health: Overview</p> <p><b>ANPT Synapse Center:</b> Clinical Decision Making</p> <p><b>Texts:</b> How to use the ICF: A practice manual <a href="http://www.who.int/classifications/drafticfpracticalmanual.pdf">http://www.who.int/classifications/drafticfpracticalmanual.pdf</a></p> <p>International Classification of Functioning, Disability and Health (ICF) <a href="http://www.apta.org/ICF/">http://www.apta.org/ICF/</a></p> <p>Carter R, Lubinsky J, Domholdt E. Section Six: Measurement in <u>Rehabilitation Research Principles and Application</u>. 5th ed. St. Louis, MO: Elsevier Saunders; 2015: 231-258.</p> <p>Law M and MacDermid J (eds.) <u>Evidence-Based Rehabilitation: A Guide to Practice</u>. 3rd Ed. Thorofare, NJ. SLACK Incorporated; 2013; 121-139.</p>
<p><b>II. Professional Roles, Responsibilities, and Values of Neurologic Clinical Specialists</b></p>	

<p><b>A. Communication</b></p>	
<ul style="list-style-type: none"> <li>• <i>Employs effective communication strategies in individuals with neurologic conditions, including verbal, nonverbal, and assistive technologies</i></li> <li>• <i>Empowers individuals in the management of their own health</i></li> <li>• <i>Facilitates collaborative team management and transitions of care for individuals with neurologic conditions</i></li> <li>• <i>Addresses cultural or social issues that affect the plan of care</i></li> </ul>	<p><b>APTA Learning Center:</b> Rehabilitation of Individuals with Dementia</p> <p>Professionalism Module 1: Introduction to Professionalism</p> <p>Professionalism Module 2: History of Professionalism in Physical Therapy</p> <p>Professionalism Module 3: Ethical Compass</p> <p>Clinical Decision Making in Diverse Populations</p>
<p><b>B. Education</b></p>	
<ul style="list-style-type: none"> <li>• <i>Performs a needs assessment, including determining the educational needs and unique characteristics of the learners and group of learners</i></li> <li>• <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></li> <li>• <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></li> <li>• <i>Implements an educational plan that includes explanation, demonstration,</i></li> </ul>	<p><b>Texts:</b> Bastable S, Gramet P, Jacobs K, Sopczyk D. <u>Health Professional as Educator: Principles of Teaching and Learning</u>. 2<sup>nd</sup> ed. Sudbury MA; Jones &amp; Bartlett Learning, 2019.</p> <p>Jensen GM and Mostrom E. <u>Handbook of Teaching and Learning for Physical Therapists</u>. 3<sup>rd</sup> ed. Elsevier Health Sciences, 2012.</p> <p>Jensen GM, Gwyer JM, Hack LM, Shepard KF. <u>Expertise in Physical Therapy Practice</u>. 2<sup>nd</sup> ed. Philadelphia: W.B. Saunders Company, 2006</p> <p>Plack M, Driscoll M (eds). <u>Teaching and Learning in Physical Therapy: From Classroom to Clinic</u>. 2<sup>nd</sup> ed. Thorofare, NJ: Slack, Inc, 2017.</p>

<p><i>practice, and effective use of feedback as appropriate</i></p> <ul style="list-style-type: none"> <li>• <i>Accurately and objectively assesses learning outcomes of teaching strategies and modifies strategies based on outcomes</i></li> <li>• <i>Educates physical therapy students and colleagues to enhance knowledge and skills in neurologic physical therapy</i></li> <li>• <i>Educates health care professionals outside of physical therapy and outside agencies about neurologic physical therapy</i></li> <li>• <i>Educates community groups in primary, secondary, and tertiary prevention</i></li> </ul>	
<p><b>C. Consultation</b></p>	
<ul style="list-style-type: none"> <li>• <i>Synthesizes information from a wide variety of sources when providing consultative services to colleagues</i></li> <li>• <i>Effectively contributes to multidisciplinary team decision-making to maximize patient and client outcomes</i></li> <li>• <i>Renders specialist opinion about patients and clients with neurological dysfunction to other health professionals and external organizations</i></li> <li>• <i>Provides peer and utilization review</i></li> </ul>	<p><b>Texts:</b></p> <p><u>Guide to Physical Therapist Practice 3.0</u>. Alexandria, VA: American Physical Therapy Association; 2014. Available at: <a href="http://guidetoptpractice.apta.org/">http://guidetoptpractice.apta.org/</a></p>
<p><b>D. Evidence-Based Practice</b></p>	
<ul style="list-style-type: none"> <li>• <i>Evaluates the efficacy and effectiveness of new and established</i></li> </ul>	<p><b>APTA Learning Center:</b> New Directions and Considerations in Neurorehabilitation</p>

<p><i>examination tools, interventions, and technologies</i></p> <ul style="list-style-type: none"> <li>• <i>Critically appraises peer-reviewed evidence and judiciously translates evidence into practice</i></li> <li>• <i>Participates in conducting and disseminating clinical research following ethical guidelines</i></li> <li>• <i>Participates in collecting and interpreting patient and client outcomes data, such as programmatic assessment</i></li> <li>• <i>Synthesizes information from a variety of sources, such as clinical practice guidelines, to develop evidence-based clinical practice</i></li> </ul>	<p>Dosing and Rehabilitation: Balance and Vestibular Related Impairments (pediatrics based course)</p> <p><b>ANPT Synapse Center:</b> Multiple Sclerosis Outcome Measure Case Study</p> <p>Contraversive Pushing: Physical Therapy</p> <p>Decision Making for Patient Prognosis Post-Stroke: Navigating the continuum of care</p> <p><b>Texts:</b> Jewell, D. <u>Guide to Evidence-Based Physical Therapy Practice</u>. 4<sup>th</sup> edition. Sudbury MA, Jones &amp; Bartlett Learning, 2017.</p>
<p><b>E. Prevention, Wellness, and Health Promotion</b></p>	
<ul style="list-style-type: none"> <li>• <i>Develops and implements programs to promote health and fitness at the individual and societal level</i></li> <li>• <i>Promotes health and quality of life for individuals with and without neurologic conditions</i></li> <li>• <i>Establishes screening programs for neurologic problems and uses screening programs to identify at-risk populations</i></li> </ul>	<p><b>APTA Learning Center:</b> Physical Fitness Training After Stroke</p> <p><b>ANPT Synapse Center:</b> Health Promotion &amp; Wellness Strategies Applied to Neurorehabilitation</p> <p>IV STEP: Prevention from a IV STEP Perspective</p> <p><b>Texts:</b> Rush Thompson C. Prevention Practice for Neuromuscular Conditions in <u>Prevention Practice: A Physical Therapist Guide to Health, Fitness and Wellness</u>. 1st ed. Thorofare, NJ. SLACK Incorporated; 2007:185-200.</p>
<p><b>F. Social Responsibility and Advocacy</b></p>	
<ul style="list-style-type: none"> <li>• <i>Seeks unique solutions to challenging problems for the individual patient or client, such as access to health</i></li> </ul>	<p><b>APTA Learning Center:</b> Ethics and Rehabilitation of Those Diagnosed with a Brain Tumor</p>



<p><i>services, equipment, and community resources</i></p> <ul style="list-style-type: none"> <li>• <i>Advocates for neurologically impaired individuals with policy- and lawmaking bodies</i></li> <li>• <i>Promotes advanced neurologic practice at the local, regional, national, and/or international levels</i></li> <li>• <i>Represents neurologic physical therapy to other professionals and professional organizations</i></li> </ul>	<p>Social Responsibility in PT: Promoting Equity Through Community and Global Health</p> <p>Professionalism Module 1: Introduction to Professionalism</p> <p>Professionalism Module 2: History of Professionalism in Physical Therapy</p> <p>Professionalism Module 3: Ethical Compass</p> <p><b>ANPT Synapse Center:</b> Huntington’s Disease Module 5 – Reimbursement Issues</p> <p>Health Promotion &amp; Wellness Strategies Applied to Neurorehabilitation</p> <p>IV STEP: Integrating Participation into PT</p> <p><b>Texts:</b> Other professional Roles. Consultation. <u>Guide to Physical Therapist Practice 3.0</u>. Alexandria, VA: American Physical Therapy Association; 2014. Available at: <a href="http://guidetoptpractice.apta.org/">http://guidetoptpractice.apta.org/</a></p>
<p><b>G. Leadership</b></p>	
<ul style="list-style-type: none"> <li>• <i>Models and facilitates ethical principles in decision-making and interpersonal interactions</i></li> <li>• <i>Pursues opportunities to mentor others and seeks mentors to expand own knowledge, skills and abilities</i></li> <li>• <i>Resolves conflicts or challenging situations using multiple strategies</i></li> <li>• <i>Models and facilitates the translation of evidence into clinical practice</i></li> <li>• <i>Facilitates the use of evidence to shape system policies and procedural change</i></li> </ul>	<p><b>APTA Learning Center:</b> Professionalism Module 1: Introduction to Professionalism</p> <p>Professionalism Module 2: History of Professionalism in Physical Therapy</p> <p>Professionalism Module 3: Ethical Compass</p> <p><b>Other Resources:</b> <a href="http://www.apta.org/Ethics/Core/">http://www.apta.org/Ethics/Core/</a> Information on APTA's Ethics Documents</p> <p><a href="https://www.aptahpa.org/page/LAMP">https://www.aptahpa.org/page/LAMP</a> (APTA Section on Health Policy and Administration including information about LAMP Leadership Program)</p> <p><a href="http://www.apta.org/CareerManagement/SelfAssessments/">http://www.apta.org/CareerManagement/SelfAssessments/</a> (APTA Self-Assessment Tools including Core Values)</p>



	<a href="http://www.abpts.org/Certification/About/Process/">http://www.abpts.org/Certification/About/Process/</a> (ABPTS Self-Assessment for Neurologic Specialty)
<b>H. Professional Development</b>	
<ul style="list-style-type: none"> <li>• <i>Practices active reflection and self-evaluation</i></li> <li>• <i>Models and facilitates a continued pursuit of additional and advanced knowledge, skills, and competencies</i></li> <li>• <i>Maintains current knowledge of regional, national, and international developments that impact neurologic physical therapist practice</i></li> </ul>	<p><b>APTA Learning Center:</b></p> <p>Professionalism Module 1: Introduction to Professionalism</p> <p>Professionalism Module 2: History of Professionalism in Physical Therapy</p> <p>Professionalism Module 3: Ethical Compass</p> <p><b>Other Resources:</b></p> <p><a href="http://www.apta.org/CareerManagement/SelfAssessments/">http://www.apta.org/CareerManagement/SelfAssessments/</a> (APTA Self-Assessment Tools including Core Values)</p> <p><a href="http://www.abpts.org/Certification/About/Process/">http://www.abpts.org/Certification/About/Process/</a> (ABPTS Self-Assessment for Neurologic Specialty)</p>
<b>III. Patient and Client Management</b>	
<b>A. Patient and Client Examination</b>	
<p><b>Examination</b> (<i>includes history, systems review, tests and measures-- large section of DSP</i>)</p> <p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>• <i>Skillfully interprets observed movement and function, particularly when objective measures are not available or cannot be applied</i></li> <li>• <i>Differentiates examination findings across ICF domains that require remediation versus compensatory strategies</i></li> <li>• <i>Links examination findings, personal modifiers, and environmental factors, with the individual's and caregiver's expressed goal(s)</i></li> </ul>	<p><b>APTA Learning Center:</b></p> <p>Concussion: Evidence-Informed Rehabilitation on the C-Spine and Vestibular System</p> <p>Defining Dizziness: A Home Healthcare Approach to Vestibular Disorders</p> <p><b>ANPT Synapse Center:</b></p> <p>Huntington's Disease Module 2- Physical Therapy Evaluation of Individuals with Huntington's Disease Across Disease Stages</p> <p>Real-time decision making for patient prognosis post-stroke: navigating the continuum of care</p> <p>IV STEP: Movement System Diagnosis &amp; Prediction</p> <p><b>Texts:</b></p> <p>Palisano RJ, Orlin M, Schreiber J. <u>Campbell's Physical Therapy for Children</u> 5<sup>th</sup> ed. St. Louis, MO: Elsevier Saunders, 2016.</p>

• *Integrates examination findings obtained by other health care professionals*

• *Develops sound clinical judgments based on data collected from the examination*

**Diagnosis**

• *Differentially diagnoses emergent versus nonemergent neurologic signs and symptoms*

• *Differentially diagnoses body function, body structures, and functional performance findings consistent or inconsistent with health condition, and if amenable to intervention*

• *Confers with other professionals regarding examination needs that are beyond the scope of physical therapy and refers as appropriate*

**Prognosis**

• *Analyzes barriers, such as resources and psychosocial barriers, that limit the individual in achieving optimal outcomes based on neurologic condition*

• *Predicts potential for recovery and time to achieve optimal level of improvement across the ICF domains*

• *Collaborates with individuals and their families, significant others, and caregivers in setting goals*

• *Develops a plan of care that prioritizes interventions related to the*

Herdman SJ, Clendaniel R. Vestibular Rehabilitation 4th ed. Philadelphia: F.A. Davis, 2014.

O’Sullivan SB and Schmitz TJ. Physical Rehabilitation 7<sup>th</sup> ed. Philadelphia: F.A. Davis, 2019.

Umphred DA, Lazaro RT, Roller M, Burton G. Neurological Rehabilitation 6th ed. St. Louis: Mosby, 2012.

<p><i>recovery process, patient and client goals, and resources</i></p> <ul style="list-style-type: none"> <li>• <i>Develops a plan of care that prioritizes interventions related to all levels of prevention, health, and wellness.</i></li> </ul>	
<p><b>B. Intervention</b></p>	
<p><b>Clinical Decision-Making and Prioritization of Interventions</b></p> <ul style="list-style-type: none"> <li>• <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></li> <li>• <i>Selects and, if needed, modifies interventions based on physiological or behavioral changes across the lifespan</i></li> <li>• <i>Prioritizes optimal interventions based on type and severity of impairments in body function and structures, activity limitations, and participation restrictions</i></li> <li>• <i>Analyzes risk versus benefit when selecting interventions</i></li> <li>• <i>Negotiates interventions with the patient or client and family, significant others, and caregivers</i></li> <li>• <i>Modifies or continues intervention based on ongoing evaluation</i></li> </ul>	<p><b>APTA Learning Center:</b> Physical Therapy and the Aging Adult: Vestibular Therapy for the Aging Adult</p> <p>Concussion: Evidence-Informed Rehabilitation on the C-Spine and Vestibular System</p> <p>Defining Dizziness: A Home Healthcare Approach to Vestibular Disorders</p> <p>Dosing and Rehabilitation: Balance and Vestibular Related Impairments (pediatrics based course)</p> <p>Rehabilitation and Dosing for Children with Cerebral Palsy</p> <p>Neurology: Treating CVA, TBI, and MS in the Home Health Setting</p> <p><b>ANPT Synapse Center:</b></p> <p>Huntington’s Disease Module 3- Physical Therapy Management of Individuals in Early to Middle Stages of Huntington’s Disease</p> <p>Huntington’s Disease Module 4- Physical Therapy Management of Individuals in Late Stages of Huntington’s Disease</p> <p><b>Texts:</b></p> <p>O’Sullivan SB and Schmitz TJ. <u>Physical Rehabilitation</u> 7<sup>th</sup> ed. Philadelphia: F.A. Davis, 2019.</p> <p>Umphred DA, Lazaro RT, Roller M, Burton G. <u>Neurological Rehabilitation</u> 6th ed. St. Louis: Mosby, 2013.</p>

<p><b>Coordination, Communication, Documentation</b></p> <ul style="list-style-type: none"> <li>• <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></li> <li>• <i>Adapts communication to meet the health literacy needs of the patient or client and family, significant others, and caregivers.</i></li> <li>• <i>Asks questions which help to determine an in-depth understanding of the patient's or client's problems.</i></li> <li>• <i>Coordinates patient and client management across care settings, disciplines, and community and funding resources.</i></li> </ul>	<p><b>Texts:</b>  <i>Guide to Physical Therapist Practice 3.0.</i> Alexandria, VA: American Physical Therapy Association; 2014.  <a href="http://guidetoptpractice.apta.org/">http://guidetoptpractice.apta.org/</a></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.</p> <p><b>Other Resources:</b>  <a href="http://www.apta.org/Documentation/">http://www.apta.org/Documentation/</a></p>
<p><b>Patient and Client Instruction</b></p> <ul style="list-style-type: none"> <li>• <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></li> <li>• <i>Provides instruction aimed at risk reduction, prevention, and health promotion</i></li> <li>• <i>Provides instruction using advances in technology, such as web-based resources</i></li> </ul>	<p><b>Texts:</b></p> <p>O'Sullivan SB and Schmitz TJ. <u>Physical Rehabilitation</u> 7<sup>th</sup> ed. Philadelphia: F.A. Davis, 2019.</p> <p>Umphred DA, Lazaro RT, Roller M, Burton G. <u>Neurological Rehabilitation</u> 6th ed. St. Louis: Mosby, 2013.</p>
<p><b>Procedural Interventions</b></p> <ul style="list-style-type: none"> <li>• <i>Therapeutic exercises</i></li> <li>• <i>Functional training in self-care and in domestic, education, work, community, social and civic life</i></li> </ul>	<p><b>APTA Learning Center:</b>          Physical Therapy and the Aging Adult: Vestibular Therapy for the Aging Adult</p> <p>Concussion: Evidence-Informed Rehabilitation on the C-Spine and Vestibular System</p>

<ul style="list-style-type: none"> <li>• <i>Manual therapy techniques</i></li> <li>• <i>Prescription, application, and, as appropriate,, fabrication of devices and equipment, including assistive, adaptive, orthotic, protective, supportive, or prosthetic</i></li> <li>• <i>Airway clearance techniques</i></li> <li>• <i>Integumentary repair and protective techniques</i></li> <li>• <i>Electrotherapeutic modalities</i></li> </ul>	<p>Defining Dizziness: A Home Healthcare Approach to Vestibular Disorders</p> <p>Dosing and Rehabilitation: Balance and Vestibular Related Impairments (pediatrics based course)</p> <p>Rehabilitation and Dosing for Children with Cerebral Palsy</p> <p>Neurology: Treating CVA, TBI, and MS in the Home Health Setting</p>
<p><b>C. Outcomes Assessment</b></p>	
<ul style="list-style-type: none"> <li>• <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></li> <li>• <i>Adjusts the plan of care within and across episodes based on interpretation of outcome measure results</i></li> <li>• <i>Analyzes and interprets patient and client outcomes to modify own future practice and perform programmatic assessments</i></li> </ul>	<p><b>APTA Learning Center:</b></p> <p>New Directions and Considerations in Neurorehabilitation</p>

Reference:

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