



2019 CLINICAL ELECTROPHYSIOLOGIC SPECIALIST CERTIFICATION CANDIDATE GUIDE



SPRING 2018

Dear Fellow Physical Therapist:

Congratulations! By acquiring this Candidate Guide, you have been proactive in your interest in and pursuit of specialist certification. The specialist certification program has been designed to identify and define physical therapy specialty areas and to formally recognize physical therapists who have attained advanced knowledge and skills in those areas.

Certification also assists the public and health care community in identifying therapists with acknowledged expertise in a particular field of practice and demonstrates that physical therapists are devoted to addressing the unique needs of the people with whom we work.

Certification is achieved through successful completion of a standardized online application and examination process. Coordination of this program is provided by the American Board of Physical Therapy Specialties (ABPTS), the governing body for approval of new specialty areas and certification of clinical specialists. Specialty councils representing the 9 recognized specialty areas have been appointed to delineate and describe the advanced knowledge, skills, and abilities of clinical specialists; determine specific requirements for certification; and develop the certification examinations.

The dedicated volunteers currently giving their time and service to the development of this process are listed in the rosters in the beginning of this booklet. APTA established this program in 1978 to provide formal recognition for physical therapists with advanced clinical knowledge, competence, and skills in a special area of practice. The program evolved from the membership of special interest sections of APTA as a way to encourage and facilitate the professional growth of individual members and thereby facilitate growth of the entire profession.

Certified specialists have clearly demonstrated their commitment to service by the variety, depth, and consistency of their professional involvement. Their desire to attain formal recognition of their advanced clinical knowledge, competence, and skills reflects their devotion to their profession and their patients. In these times of dramatic health care reform, dedication to public service by providing high quality physical therapy services is paramount.

If you share these personal and professional principles, then you are in the right place! Please join the growing number of physical therapists who have chosen this pathway of professional development.

Thank you for your interest and I wish you success in this endeavor.

Sincerely,

Ronald Barredo, PD, DPT, EdD

Board-Certified Geriatrics Clinical Specialist
Chair, American Board of Physical Therapy Specialties

ROSTERS

AMERICAN BOARD OF PHYSICAL THERAPY SPECIALTIES

SPECIALTY COUNCIL

AMERICAN BOARD OF PHYSICAL THERAPY SPECIALTIES

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1. GENERAL DEFINITIONS

1.1. American Physical Therapy Association

The American Physical Therapy Association (APTA) is a national professional organization representing more than 100,000 physical therapists, physical therapist assistants, and physical therapy students throughout the United States. Its goals are to serve its members and to serve the public by increasing the understanding of the physical therapist's role in the health care system, and by fostering improvements in physical therapy education, practice, research, and professional development.

APTA established the specialist certification program in 1978 to provide formal recognition for physical therapists with advanced clinical knowledge, experience, and skills in a special area of practice, and to assist consumers and the health care community to identify physical therapy specialists.

1.2. American Board of Physical Therapy Specialties

Coordination and oversight of the specialist certification process is provided by the American Board of Physical Therapy Specialties (ABPTS), which is the governing body for approval of new specialty areas and certification of clinical specialists. ABPTS comprises board-certified physical therapists from different specialty areas; a physical therapist member of the APTA Board of Directors; an individual with expertise in test development, evaluation, and education; and a nonphysical therapist member representing the public.

The American Physical Therapy Association (APTA) prohibits preferential treatment or adverse discrimination on the basis of race, creed, color, gender, age, national or ethnic origin, sexual orientation, disability or health status in all areas including, but not limited to, its qualifications for membership, rights of members, policies, programs, activities, and employment practices.

1.3. Specialty Council

The Specialty Council, representing the area of clinical electrophysiologic physical therapy, has been appointed to delineate the advanced knowledge, skills, and abilities for their specialty area; to determine the academic and clinical requirements for certification; and to develop the certification examinations and oversee the maintenance of specialist certification. The Council comprises 4 board-certified specialists in the practice area.

1.4. Additional Physical Therapy Examinations

Individuals interested in Cardiovascular & Pulmonary, Geriatric, Neurologic, Oncologic, Orthopaedic, Pediatric, Sports, and Women's Health certifications must complete a separate online application, accessible through APTA's Specialist Certification Program website (www.abpts.org).

1.5. National Board of Medical Examiners

The National Board of Medical Examiners® (NBME®) is a nonprofit organization that strives to provide the highest quality testing and research services to organizations involved in the licensure and certification of medical and health science professionals. NBME provides test development, test administration, editorial production, and psychometric services to ABPTS and the specialty councils

1.6. Prometric

NBME currently delivers the specialist certification examinations by computer through Prometric. Prometric administers testing programs for educational institutions, professional associations, corporations, and other organizations. Examinations are delivered in test centers that have secure rooms dedicated to test delivery.

Note: Prometric test center locations are subject to change, and there is no guarantee that a center listed on the Prometric website at the time of application will be available for a future ABPTS administration. The most efficient way for candidates to check for test center locations is to log on to www.prometric.com/ABPTS and select "locate a test center." This provides the most up-to-date information.

1.7. Restriction of the Term Board-Certified Specialist

APTA's House of Delegates adopted a policy that no physical therapist shall purport to be a "Board-Certified Clinical Specialist" unless (s)he has successfully completed the certification process as developed by the American Board of Physical Therapy Specialties (HOD 06- 94-23-39). In addition, ABPTS does not permit applicants for certification to state that they are "board eligible."

2. CERTIFICATION REQUIREMENTS

2.1. General Requirements

Applicants must hold a current permanent/unrestricted license to practice physical therapy in the United States or any of its possessions or territories. In addition, applicants are required to pay the application review and examination fee.

Applicants must meet the minimum eligibility requirements for the 2019 examination by the application deadline of **July 1, 2018**.

Applicants must submit a complete application and review fee for each specialist certification exam. The ABPTS does not permit applicants to use the same direct patient care hours for different specialty areas.

2.2. Other Requirements

Applicants must meet requirements for Option A or Option B.

Option A

1. Direct Patient Care Experience in Electrophysiologic Testing

Applicants must submit evidence of 2,000 hours of direct patient care as a licensed United States physical therapist (temporary license excluded) in the specialty area within the last ten (10) years, 25% (500 hours) of which must have occurred within the last three (3) years. Direct patient care must include activities in each element of patient/client management applicable to the specialty area and included in the *Description of Specialty Practice (DSP)*.

These elements, as defined by the *Guide to Physical Therapist Practice* are examination, evaluation, diagnosis, prognosis, and intervention.

Applicants may not include experience in the specialty area that will occur after the application deadline, July 1, 2018.

2. Clinical Education Experience Documentation

Applicants must submit a list of any individual learning experiences (at least 1, no more than 3) related to the practice of clinical electrophysiologic physical therapy completed within the past 10 years (since July 1, 2008). The experience(s) must be with a physical therapist who is board-certified in clinical electrophysiology or a physician (MD or DO) who is board-certified in electrodiagnostic testing (i.e., a neurologist or physiatrist).

Applicants must submit a letter from the colleague who provided oversight of the educational experience. The letter must describe the interaction between the colleagues, and state that in the opinion of the more experienced colleague the applicant is prepared to practice clinical electrophysiology (electrodiagnostic testing) independently (*see sample letter below*). The Clinical Electrophysiologic Specialty Council will determine whether an experience meets the requirements for this standard."

[Sample letter](#) for Clinical Education Experience.

3. Patient Reports

Three actual patient reports will be submitted and reviewed by a panel of board-certified physical therapists. See Section 11.3 and 11.4 for details of this requirement, and Section 11.5 for sample reports.

4. Testing Logs

Applicants must submit a log of the most recently completed 500 electrodiagnostic examinations conducted within the last ten (10) years (since July 1, 2008). This log should include the date of the study (month and year) and outcome of testing (e.g., polyneuropathic process, proximal compromise or nerve root involvement, focal peripheral nerve compromise, etc.). Any protected health information must be removed from the log.

Option B

Applicants must submit evidence of successful completion of an APTA-accredited postprofessional clinical residency completed within the last 10 years that has a curriculum plan reflective of the *Description of Specialty Practice: Clinical Electrophysiologic* (DSP). Experience from residencies in which the curriculum plan reflects only a portion of the DSP will not be considered.

Applicants applying under Option B must also meet the Patient Reports requirement referenced in Option A.

Applicants must submit evidence of successful completion of an APTA-accredited post professional Clinical Electrophysiologic clinical residency. Applicants who are currently enrolled in an ABPTRFE-accredited clinical residency, or enrolled in a residency program that has been granted candidacy status, may apply for the specialist certification examination in the appropriate specialty area prior to completion of the residency. These applicants will be conditionally approved to sit for the examination, as long as they meet all other eligibility requirements, pending submission of evidence of successful completion of the ABPTRFE-accredited clinical residency to APTA's Specialist Certification Program no later than 1 month before the examination window opens. To verify your residency program's accreditation status, please visit www.abptrfe.org.

2.3. Steps to Complete Certification

Certification as a Physical Therapy Clinical Specialist consists of 2 major steps:

STEP 1. You must submit evidence that you have fulfilled the minimum eligibility requirements as defined by the specialty council. This includes

completion of all required application forms, fees, documentation of the required practice hours, and other requirements specified by the specialty council.

You must meet all requirements by the application deadline, July 1, 2018. The Specialty Council will not consider experience toward the minimum eligibility requirements that was not acquired by the application deadline.

STEP 2. Following completion of Step 1 and approval of the application, the candidate must sit for and receive a passing score on the computer-based certification exam.

Certification is awarded for a period of 10 years. ABPTS has adopted a model of continued competency throughout the years of certification rather than a one-time recertification process as the certification period lapses. This model is titled the "Maintenance of Specialist Certification (MOSC)." Please review details of the MOSC program in Section 2.4.

2.4. Maintenance of Specialist Certification (MOSC)

ABPTS has developed a model for maintaining certification that focuses on continuing competence of the physical therapist specialist. This new model has been titled the "Maintenance of Specialist Certification" and includes the following elements:

- Professional Standing and Direct Patient Care Hours
- Commitment to Lifelong Learning Through Professional Development
- Practice Performance Through Examples of Patient Care and Clinical Reasoning
- Cognitive Expertise Through a Test of Knowledge in the Profession

Requirement 1: Professional Standing and Direct Patient Care Hours

- In years 3, 6, and 9, a specialist must submit evidence of current licensure as a physical therapist in the United States or any of its possessions or territories.
- In years 3, 6, and 9, a specialist must submit evidence of 200 hours of direct patient care acquired in the specialty area within the last 3 years. Direct patient care hours accrued in year 10 may be applied to the year 3 requirements for the next MOSC cycle.

Requirement 2: Commitment to Lifelong Learning Through Professional Development

- Each board-certified specialist is obligated to participate in ongoing professional development, **within his or her designated specialty area**, which leads to a level of practice consistent with acceptable standards. Each specialist may choose to pursue professional development that leads to a level of practice beyond prevailing standards.
- A web-based system to track continuing competence in a specialty area will be developed. This system will provide an individual account tracking mechanism for each specialist to record professional development activities during years 3, 6, and 9 of his or her certification cycle. There is not an hour requirement in this area, but the specialist must show evidence of professional development activities (equivalent to 10 MOSC credits) within 2 of the 3 designated activity categories in years 3, 6, and 9. By year 9, a specialist must have accrued a minimum of 30 MOSC credits and demonstrated professional development in each of the 3 designated

activity categories. These activities include professional services, continuing education coursework, publications, presentations, clinical supervision and consultation, research, clinical instruction, and teaching.

Requirement 3: Practice Performance Through Examples of Clinical Care and Reasoning

- The purpose of this requirement is to document continuing competency in patient/client management in the specialty area.
- The specialist will use an online system to complete 1 reflective portfolio submission in years 3, 6, and 9 of his or her certification cycle. These reflective portfolio submissions will be used to demonstrate the specialist's use of clinical care and reasoning. Each submission must have a reflective component and must have documentation that reflects clinical reasoning.
- These reflective portfolio submissions will not be scored but will be screened for completion of required information and reflection.

Requirement 4: Cognitive Expertise Through a Test of Knowledge in the Profession

- During year 10 of the certification cycle, the specialist will be required to sit for a recertification examination, comprising approximately 100 items. The exam will be specialty specific, assess an individual's cognitive expertise in the specialty area, and **reflect contemporary specialist practice**.
- The exam blueprint breakdown for this exam will mirror that of the initial certification exam, as noted in the various *Descriptions of Specialty Practice*. Items will be coded and pulled from existing specialty item banks.
- Successful completion of requirements 1-3 are prerequisites for sitting for the recertification exam. If a specialist fails to receive a passing score after the first attempt, he or she will be permitted to sit for the exam 1 additional time and will maintain his or her certification during this 1-year grace period.

Any additional questions/concerns should be addressed to staff at spec-recert@apta.org or 800/999-APTA (2782), ext 3390.

2.5. Ineligibility for Certification

Item writers and reviewers are not eligible to sit for the specialist certification examination in their specialty area for 2 years from the date of involvement in the process.

Specialty council members, ABPTS members, and cut-score study participants are prohibited from sitting for the specialist certification exam for a period of 2 years from the date of participation in the certification process.

3. APPLICATION PROCESS

3.1. Application Deadline

Completed applications and application review fees for the 2019 specialist certification examinations must be submitted online to the APTA Specialist Certification Program on or before July 1, 2018. Applications submitted after the deadline may not be reviewed.

3.2. Procedures for Application Review

The Specialist Certification Program staff will conduct the initial review of all submitted documents within approximately 6 weeks. Then your application will be forwarded to the Specialty Council for their expert review. This final review process will take approximately 20 business days from the time the Council receives the documents, and should the council have questions or need clarification about documents submitted the Specialist Certification staff will contact you via email. The applicant must resubmit requested documentation within 10 business days after email notification is received. Only one resubmission is permitted for an exam cycle.

If the applicant does not resubmit by the specified deadline, the record will indicate that he or she has not met the minimum eligibility requirements and is not approved to sit for the 2019 exam.

3.3. Services for Persons With Disabilities

The American Board of Physical Therapy Specialties (ABPTS) provides reasonable and appropriate accommodations in accordance with the Americans with Disabilities Act for individuals with documented disabilities who demonstrate a need for accommodations.

It is the responsibility of the person with a disability to provide advance notice and appropriate documentation of the disability with a request for test accommodations. If an applicant identifies functional limitations or special needs that would prevent him or her from taking the certification exam under standard testing conditions, ABPTS in consultation with its testing agency, will evaluate and respond to that applicant's needs for special arrangements.

Any requests must be submitted to ABPTS, accompanied by the appropriate forms and uploaded at the time of the online application submission for the exam (by July 1, 2018). The request for testing accommodations must include verification of the disabling condition from a professional specializing in the relevant area and a description of the requested accommodation. Applicants will be notified in the fall of the decision regarding the request and the accommodations that will be provided. If accommodation is not requested in advance, availability of accommodation cannot be guaranteed.

Note: Certain testing accommodations may require shared cost with candidate.

3.4. Certification in More Than 1 Specialty Area

Applicants must submit a complete set of online application materials and fees for each specialist certification exam. A certified specialist who applies for certification in a second specialty area is not permitted to submit the same direct patient care hours that he or she submitted for certification in the first specialty area. The Specialist Certification Program staff will review previously submitted applications for duplication of hours.

3.5. Submission of Application

It is the applicant's responsibility to ensure that the application is completed according to instructions.

In addition, it is imperative that you enter your name on the application exactly as it appears on the identification form you intend to present at the test center. Please note that the way your name is entered on the application is also the way your name will appear in the APTA membership database.

Applicants who opt to pay the review fee by check should send the application fee with the appropriate payment form described in Section 3.6 below in a single mailing to:

APTA
Specialist Certification Application
P.O. Box 75701
Baltimore, MD 21275

If applicable, verification of current physical therapy license must be sent separately by your state licensing agency.

3.6. Application Review Fee

The nonrefundable application review fee must be submitted with your online application to the APTA Specialist Certification Program on or before July 1, 2018.

Payment of the review fee may be made by check (payable to APTA) or by credit card (MasterCard, VISA, Discover, or American Express). The Payment Form must accompany your fee. The applicant review fees are listed below:

APTA Member: \$525
Non-APTA Member: \$870
Member/Non-APTA Member Reapplication: \$170

Note: Reapplication fee is due by August 31, 2018

3.7. Time Limit for Active Application/Reapplication

Applicant files will remain active for only 2 consecutive exam administrations. However, eligibility for the second exam administration requires an online reapplication submission by August 31, along with a \$170 reapplication fee, as well as the current examination fee by November 30. This policy applies to those who choose to delay sitting for the exam, those who are not approved to sit for the examination, and those who do not pass the exam. Eligible reapplicants will receive reapplication information by email directly from the Specialist Certification Program. To reapply, you must submit an online reapplication, verification of current licensure to practice physical therapy, updated direct patient care hours, and any other requested documentation. The APTA Specialist Certification Program must receive this documentation by the reapplication deadline for the next scheduled exam. Reapplicants must meet the current practice requirements to be eligible to sit for the exam.

After 2 consecutive exam administrations, you must submit an entirely new application and initial applicant review fee to apply for specialist certification.

3.8. Address Changes

Should your mailing address, email address, or phone number change, please notify the APTA Specialist Certification Program immediately. The Specialist Certification Program maintains separate records from APTA's membership database, so candidates must email (spec-cert@apta.org) or phone (800/999-2782, ext 8520) the department.

4. SCHEDULING THE EXAM

4.1. Examination Fee and Scheduling Permit

The examination fee is submitted after you have been notified that you are eligible to sit for the exam. The fee must be received by the APTA Specialist Certification Program on or before November 30, 2018.

You may pay the examination fee by check (payable to APTA) or by credit card (MasterCard, VISA, DISCOVER or AMEX), by mail or online. Please note that both first-time and repeat test takers must pay the following examination fees:

APTA Member: \$810
Non-APTA Member: \$1,535

If you are planning to sit for the examination in an international location, make sure that you enter that in your online application.

Before the end of December, after your examination fee has been received, APTA's Specialist Certification Program will send you an email with instructions on how to access and download your electronic scheduling permit online. You must print your scheduling permit before you contact Prometric to schedule a test date. Check to make sure that the information on your permit is correct, and that your name (first name, middle initials, last name) exactly matches your name on the identification you will use on the day of the examination. If the name on your permit does not match the name on your identification, you must contact APTA immediately. Name changes or corrections cannot be made within 7 business days of your scheduled testing date. You will be denied admission to the test if the name on the permit does not match the name on your identification.

4.2. Test Dates

The examination will be administered at testing centers worldwide between the dates of **March 2 and March 16, 2019**.

4.3. How to Schedule an Appointment at a Testing Center

The Specialist Certification Program will notify approved candidates when they may begin to schedule a date to sit for the examination. Candidates are not eligible to schedule a session until they have paid their exam fee and have their scheduling permit.

You **must print or download** your scheduling permit before you contact Prometric to schedule a testing appointment. To schedule a testing appointment, you will need to provide Prometric with the scheduling number that is included on your scheduling permit. Appointments are assigned on a first-come, first-served basis; therefore, you should schedule an appointment as soon as possible after you have accessed your scheduling permit. If you delay scheduling you may not be able to make an appointment at your preferred test site or for your preferred test date. You should report any problems in scheduling a testing appointment to the Specialist Certification Program at least 4 weeks before the first day of the testing window to give ABPTS an opportunity to resolve the problem.

Prior to your testing appointment, you can log in at the URL provided by the Specialist Certification Program to access and reprint your permit if necessary.

4.4. Refunds and Cancellations

The Applicant Review Fee is not refundable. You must notify the specialist certification program staff through the on-line application system deferment process if you decide, for any reason, not to sit for the 2019 exam. Upon receipt of written notification, your examination fee will be refunded minus 20% of the fee. **Please allow 6-8 weeks for processing.**

4.5. Rescheduling an Exam

If you are unable to keep a testing appointment and would like to reschedule, you must contact Prometric by 12:00 pm local time of the second business day prior to your appointment. The rescheduled test date must fall within the testing window. Fees from your previously scheduled test will be transferred to the rescheduled exam as follows:

- a. If you contact Prometric by 12:00 pm local time of the second business day prior to your test date, you will be permitted to reschedule without penalty. If you provide less than 2 business days' notice, Prometric will charge a \$101 fee to reschedule your examination (*rescheduling fees vary for international sites*).
- b. If you cancel your appointment within 2 business days or do not appear on your test date, you must contact Prometric Candidate Cares at the phone number listed in the permit and pay a \$101 fee to reinstate your eligibility record in order to reschedule your appointment within the testing window (*rescheduling fees vary for international sites*).

5. PREPARING FOR THE EXAM

5.1. Description of Specialty Practice (DSP)

The *Descriptions of Specialty Practice* (DSP) are documents developed for each specialty area that outline the knowledge, skills, and abilities related to clinical practice in the specialty area. The DSP content is based on a detailed practice analysis conducted by the specialty council. A practice analysis involves extensive research, including survey data and judgments of subject matter experts, of the knowledge, tasks, and roles that describe advanced specialty practice. The specialty council develops the written exam from the DSP and includes a percentage of questions from each of the major content areas identified in the practice analysis. Because applicants will find the DSP for their specialty area helpful in organizing exam preparation, a copy is made available electronically to each new applicant upon submission of their application and payment of the application review fee. If you wish to purchase an advance copy of the DSP, please contact APTA's Member Services at 703/706-3395.

5.2. Exam Content Outline

The content outline for the exam that specifies the percentage of questions in each major content area is found on page 10. The content outline is presented as an approximation of the test construction and should not be interpreted as an exact distribution of test items.

5.3. Preparation for the Exam

You declare your intent to sit for the specialist certification exam at the time of application and are expected to begin preparation for the exam at that time. You are responsible for determining the method and amount of preparation necessary for the exam. Results from candidate surveys suggest that helpful methods of examination preparation include, but are not limited to, advanced level texts, *Physical Therapy*, and other journals containing current physical therapy research. You may also want to review the *Description of Specialty Practice* and the content outline to determine what content will be covered on the exam and to direct your study efforts.

5.4. Review Materials and Courses

A resource guide listing prepared by APTA's Clinical Electrophysiology & Wound Care Management Section can be found on page 20. Some sections hold review courses related to advanced practice in their

specialty area. Applicants should contact their section directly to receive information. Neither ABPTS nor the specialty councils review or endorse the content of review materials and courses.

5.5. Study Groups

The APTA Specialist Certification Program maintains a list of candidates who are interested in participating in study groups. To be included in study group listings, select "participate in study group" and answer "yes" on the online application. Study group lists will be generated and emailed by November 17, 2018, to candidates who have indicated their interest in participating in study groups. **Study group lists are emailed by request only.**

5.6. Exam Development

The specialist certification examinations are developed by specialty councils of ABPTS. APTA has contracted with the NBME to assist in the development, administration, scoring, and reporting of results for the certification examinations. Using the DSP as a basis, the specialty councils make the final determinations regarding the exam content and the number of items in each area.

Questions (items) for the exam are solicited from content area experts currently practicing in the specialty area representing the full range of practice settings and focus in all regions of the country. Item writers attend workshops and receive instruction to enable them to write high-quality, practice-related test items. Test items undergo extensive editing and review by subject matter experts and professional test editors before specialty councils approve them to be placed on the examinations.

5.7. Exam Question Format

Questions (items) are designed to test synthesis and analysis levels of cognitive skills, as well as content knowledge. The exam is composed of objective multiple-choice questions with 4 or 5 answer choices. The questions either stand alone or are part of a series that relates to a presented case study. Beginning on page 10 are sample questions that are representative of the format of questions for each exam, but may not necessarily reflect the ability level or content of the items. There are 200 items on the exam, consisting of 50 questions in each 1½-hour time block.

5.8. Answer Strategy

You should consider answers to each question carefully and eliminate the least likely ones instead of randomly selecting an answer. Please keep in mind that there is no penalty for incorrect responses. Since test scores are based on the actual number of questions answered correctly, it is to the candidate's advantage to select an answer for each question rather than leaving any blank. There is only one best answer for each question.

5.9. Tutorial

After you are approved to sit for the examination, the Specialist Certification Program will make available a tutorial so that you may practice using the testing software prior to your test day. The tutorial can be accessed on the APTA Specialist Certification website (www.abpts.org/SpecCertExamTutorial/). You should acquaint yourself with the testing software well before your test date. Test center staff are not authorized to provide instruction on use of the software.

The tutorial will also be available at the beginning of the examination session. You may use up to 10 minutes before beginning the examination. The test driver is easy to understand and requires little or no prior computer experience.

6. SITTING FOR THE EXAM

6.1. Computer Testing

The specialist certification examinations are administered by computer. The examination questions are presented on computers, and candidates provide their responses using a mouse or keyboard. NBME works with Prometric to deliver these examinations worldwide at more than 300 test centers. Approved candidates should contact Prometric as soon as possible once they have their scheduling permit to schedule a testing appointment. Candidates may take the test on any day that it is offered during the testing window, provided that there is space at the Prometric test center of choice.

6.2. Test Centers and Testing Conditions

Prometric provides computer-based testing services for academic assessment, professional licensure, and certification. Please be aware that there may be test takers from other professions taking examinations during your test administration. Their exam schedule may differ from your schedule, and they may arrive and depart at different times.

These test centers provide the resources necessary for secure administration of the examination, including video and audio monitoring and recording, and use of digital cameras to record the identity of candidates.

6.3. Exam Time

You should arrive 30 minutes before your scheduled testing appointment.

The official exam time begins the moment that you enter your Candidate identification number. There are 200 questions on the exam. The exam is administered during a seven (7) hour testing session, which consists of a brief tutorial (up to 10 minutes), four 1½-hour test-blocks, and 50 minutes of optional break time to be used after any block. Please note that if you finish a section early, you may not use the extra time for a different section of the exam, however, this time will be available as additional break time.

If you have unused time after you complete the examination, you will be given the opportunity to complete an online survey about the test administration. The purpose of the survey is to evaluate the test scheduling and delivery procedures. Your responses will be kept confidential, and the time you take to complete this survey will not detract from your allotted examination time.

6.4. Admission to the Test

You should arrive at the test center at least 30 minutes before your scheduled testing time on your testing day. If you arrive late, the test center administrator may refuse you admission. If you arrive more than 30 minutes after your scheduled testing time, you will not be admitted. In that event, you must pay a \$101 fee to Prometric to reinstate your eligibility record in order to reschedule your appointment within the testing window (*rescheduling fees vary for international sites*).

Upon arrival at the test center, you must present a printed copy of your scheduling permit or present it electronically (e.g. via Smartphone) and an unexpired, government-issued form of identification (such as a current driver's license, valid passport, or military ID) that includes both your photograph and signature. If your identification contains your photograph but not your signature, you may use another form of unexpired identification that contains your signature, such as student/employee identification card or a credit card, to supplement your photo-bearing, government-issued identification.

As a security procedure, you will be photographed before you begin taking the examination. You will also sign a test center log, and store your personal belongings in your assigned locker. You will be scanned with a handheld metal detector and be asked to empty and turn out your pockets prior to entry into the testing room to confirm that you have no prohibited items. You will be required to remove eyeglasses for visual inspection by the test center administrators. Jewelry, except for wedding and engagement rings, is prohibited and hair accessories are subject to inspection. You should not wear ornate clips, combs, barrettes, headbands, and other hair accessories. Any examinee wearing any of these items may be prohibited from wearing them in the testing room, and asked to store such items in their locker. These inspections will take a few seconds, and will be done at check-in and upon return from breaks.

If you brought a printed copy of your scheduling permit, the Test Center Staff will collect it. You will be provided with laminated writing surfaces and markers. You will be instructed to write your name and Candidate Information Number (CIN) on one of the laminated writing surfaces provided. Your scheduling permit will be retained by the Test Center Administrator. You may request access to the permit during the examination if it becomes necessary for you to rewrite the CIN on the laminated writing surface. Test Center Staff will escort you to your assigned testing station and provide brief instructions on use of the computer equipment. Laminated writing surfaces and markers issued are to be used for making notes and/or calculations during the testing session. They should only be used at your assigned testing station, and only after you have begun your examination by entering your CIN. You must enter your CIN to start the examination, which will begin with a brief tutorial prior to the first test block. If you have filled the laminated writing surfaces and need additional space for making notes, you will need to notify test center staff and a replacement will be provided. Laminated writing surfaces must be returned to test center staff at the end of the testing session.

Important Note: You will not be admitted to the testing room without presenting either a printed or electronic copy of your permit and an unexpired, government-issued form of identification (such as a driver's license or passport) that includes **both** your photograph and signature.

The name on your scheduling permit must exactly match the name on your identification form. The only acceptable difference would be the presence of middle name or middle initial, or suffix on one document and its absence on the other. If you do not present your permit and required identification on the exam day, you will be denied admission to test. In that event, you must pay a fee to Prometric to reschedule your test (see section 4.5 for additional instructions).

6.5. Testing Regulations and Rules of Conduct

Test center staff monitor all testing sessions. Candidates must follow instructions of test center staff throughout the examination. Test center staff are not authorized to answer questions from candidates regarding examination content, testing software, or scoring.

If staff observes a candidate violating test administration rules or engaging in other forms of irregular behavior during an examination, the test center staff will not necessarily tell the candidate of the observation at the time of the examination. Test center administrators are required to report such incidents to NBME; each is fully investigated.

Candidates may not bring any personal belongings into the testing area, including but not limited to the following:

- Mechanical or electronic devices, such as cellular telephones, calculators, watches of any type, electronic paging devices, recording or filming devices, radios
- Outerwear such as coats, jackets, head wear, gloves
- Book bags, backpacks, handbags, briefcases, wallets
- Books, notes, study materials, or scratch paper
- Food, candy, gum, or beverages

If you bring any personal belongings to the test center, you must store them in a designated locker outside the testing room. You should keep in mind that the lockers are small and that mechanical or electronic devices stored in lockers must be turned off. Making notes of any kind during an examination, except on the laminated writing surface provided at the test center, is not permitted and removal of those materials from the secure testing area during a testing session or break is prohibited.

Note: Although the site provides noise-reducing headphones, you are encouraged to bring your own cordless soft-foam earplugs (subject to inspection).

6.6. Irregular Behavior During the Examination Process

Irregular behavior includes any action by candidates or others when solicited by a candidate that subverts or attempts to subvert the examination process. Test center administrators are required to report any irregular behavior by a candidate during the examination. Irregular behavior may include, but is not limited to, the following:

- Seeking and/or obtaining access to examination materials
- Impersonating a candidate or engaging another individual to take the examination by proxy
- Giving, receiving, or obtaining unauthorized assistance during the examination or attempting to do so
- Making notes of any kind during an examination except on the erasable writing surface provided at the test center
- Memorizing and/or reproducing examination materials
- Failure to adhere to test center regulations
- Possessing unauthorized materials during an examination administration (eg, recording devices, photographic equipment, electronic paging devices, cellular telephones, reference materials)
- Any other behavior that threatens the integrity of the specialist certification examinations

Looking in the direction of the computer monitor of another candidate during the examination may be construed as evidence of copying or attempting to copy, and a report of such behavior may result in a determination of irregular behavior. Candidates must not discuss the examination while a session is in process. Test center administrators are required to report all suspected incidents of irregular behavior. A candidate who engages in irregular behavior or who violates test administration rules may be subject to invalidation of their examination.

6.7. Canceled or Delayed Exam Administration or Problems at the Testing Center

Every effort is made to administer an examination at the scheduled test time and location. On occasion, however, exam administrations may be delayed or canceled in emergencies such as severe weather, a natural disaster that renders a Prometric Testing Center (PTC) inaccessible or

unsafe, or extreme technical difficulties. If Prometric closes a testing center where you have already scheduled a testing appointment, it will reschedule the examination appointment at no additional charge.

In that event, Prometric will attempt to notify you in advance of your testing appointment to schedule a different time and/or center. Rescheduling an appointment for a different time or center may occur at the last minute due to limited availability of seats in a PTC.

One week prior to testing, you are advised to confirm your appointment with Prometric and maintain flexibility in any travel arrangements you may make.

If you experience an emergency situation on the day of your examination that you feel may jeopardize your ability to perform effectively on the examination, you may be eligible to postpone sitting for the examination until 2020. However, please note that if you opt to still sit for the examination and are not successful, this is not a basis for appealing examination results and your ability to sit again in 2020 at no additional cost may be in jeopardy.

Any candidate once checked in and seated at a test station, who is delayed to take the examination by more than 30 minutes because of technical difficulties, is responsible for reporting the delay to the Specialist Certification Program at 800/999-2782, ext 8520, as soon as possible. For such cases, the candidate may be eligible to choose to reschedule his or her examination at no additional charge. Before deciding to reschedule, you should be sure that there is another appointment available during the testing-block. The test administration will not be considered “irregular” if you choose to remain and test despite the delay. You will receive the maximum number of hours available to candidates to complete the exam even if the test is delayed.

Any candidate, once checked in and seated at a test station, who has a concern or complaint about the test center environment, should immediately report the problem to the test center administrator. If you feel that the problem was not resolved to your satisfaction, you should contact the Specialist Certification Program at 800/999-2782, ext 8520, as soon as possible.

6.8. Exam Deferral

Candidates may defer their examinations through the ABPTS online application system located at www.abpts.org. To access your application click on “Online Application” from the Quick Links menu. Find your current application and click “History.” On the left-hand side of the screen, click on “Applicant Admin.” At the top of the Applicant Admin page is “Submit Deferral.” It is recommended that you review the [deferral guidelines](#) before selecting “Yes” from the drop-down menu. Last, scroll to the bottom of the page, and click “Save” to complete the deferral request. Please note you will not receive an email confirming the deferral, but once you click save that will finalize the process.

6.9. Equipment Malfunction

Should you experience any difficulty with the computer, please notify the test center administrator immediately. Do not wait until you have completed the exam to bring equipment malfunctions to the attention of the test center administrator. Once again, if you feel that the problem was not resolved to your satisfaction, you should contact the Specialist Certification Program at 800/999-2782, ext 8520, as soon as possible.

Please note that, occasionally, a computer at the test center may need to be restarted. Prometric has appropriate safeguards in place to ensure the integrity of candidate examination data. As soon as a candidate

answers a test item, the response is immediately copied and saved on the candidate's directory on the server at a center. If there is a computer restart, the driver locates the results from the directory and picks up where the examinee left off. The system does not change or delete any responses. Thus, examination data are captured at the instant a candidate responds to a question; the computer can be restarted, if necessary, without losing or corrupting examination data.

6.10. Incomplete Examinations

After you start taking an examination, you cannot cancel or reschedule that examination unless a technical problem prevents you from completing your examination. As noted in section 6.9, if you experience a computer problem during the test, notify test center staff immediately. The testing software is designed to allow the test to restart at the point it was interrupted. In most cases, your test can be restarted at the point of interruption with no loss of testing time. If you do not finish the exam for any reason you are not permitted to resume the incomplete sections of the test. You must reapply for the next regularly scheduled administration (see section on "Reapplication" 3.7). The examination fee is nonrefundable for incomplete examinations.

7. EXAM RESULTS

7.1. Exam Results and Notification

After ABPTS meets in May 2019 to make certification decisions, score reports will be prepared for online distribution in mid-June 2019. The score report specifies your examination score, the passing score on the examination, and feedback on your performance in the major competency areas tested. In mid-June 2019, the Specialist Certification Program staff will send you an email notification announcing that score reports are available online, including instructions on how to access and download your score report.

Although there is a time lapse between the close of the examination window and the availability of examination results, much is happening during this period of time. Key validation takes place after the exam window closes in March. Key validation is a process of preliminary scoring and item analysis of the exam data, followed by careful evaluation of the item-level data, to identify potentially flawed or incorrect items prior to final scoring. During April and early May, standard setting committees are convened at the NBME to participate in content-based standard setting studies. The outcome of each committee's standard setting meeting is the recommendation of a passing standard of each of the specialty examinations during their May meeting. NBME then scores the specialist certification examinations and candidates are notified of their exam results as soon as this information is received by the Specialist Certification Program.

7.2. Scaled Scores

While your score is based on the number of questions answered correctly, it is a scaled score. ABPTS requires a scaled score of 500 to pass the examination. Scaling is a procedure that converts raw scores (number of correct responses) to a more easily interpretable scale. The purpose of scaling scores is to simplify things by keeping the passing score at the same number (e.g., 500) for all exam forms, while the raw scores necessary for passing may vary for different forms.

7.3. Passing Scores

The certification examinations assess a clearly defined domain of knowledge and skills. You will be certified upon achievement of a passing

score on the examination. The passing score is based on a detailed analysis of exam data and a recommended performance standard from a panel of clinical subject matter experts. This panel includes physical therapists in the specialty representing diversity in practice setting, years of experience, theoretical perspective, and geographic region.

Upon receiving board-certification, the candidate will:

- receive a certificate recognizing board certification as a specialist in an area of physical therapy
- be entitled to note they are "board-certified" in their specialty
- receive a board certified specialists lapel pin in his or her specialty area
- be recognized by his or her colleagues at APTA's annual Ceremony for Recognition of Clinical Specialists at APTA's Combined Sections Meeting
- be included in the online Directory of Certified Clinical Specialists in Physical Therapy

8. CONFIDENTIALITY

8.1. Confidentiality of Applicant Identity

Applicant names, application documents, and test scores are considered confidential. Only Specialist Certification Program staff, members of the American Board of Physical Therapy Specialties, members of the Specialty Council, and designated staff at the NBME and its subcontractors shall have access to this information. Applicant identity can be released for study group purposes only, with the consent of each applicant. Copies of test scores will be released only at the written request of the candidate.

8.2. Confidentiality of Examination Content

All candidates must sign/acknowledge the Affidavit & Pledge of Confidentiality in their online application for certification. Candidates must not disclose examination content to others or reproduce any portion of the examination in any manner. The examination of any candidate who violates these security rules will not be scored.

9. GROUNDS FOR DISCIPLINARY ACTION

Applicants or candidates who are determined to have engaged in fraud, misrepresentation, or irregular behavior in the application or examination process, to have disclosed examination content to others or reproduced any portion of the examination in any manner, or to have violated the Affidavit & Pledge of Confidentiality will be subject to disciplinary action, to be determined by ABPTS, which may include, without limitation, withdrawal of any certification granted and permanent or temporary exclusion from the certification process. Before taking disciplinary action, ABPTS will give the individual written notice of the evidence against the candidate and an opportunity to respond.

10. PROCEDURES FOR REVIEW OF DECISIONS

10.1. Reconsideration of Decision Regarding Eligibility to Sit for the Exam

An applicant whom the Specialty Council has determined to be ineligible may request the Council to reconsider its denial of eligibility. The request for reconsideration must specify the grounds on which it is based. An applicant may submit new information in support of his or her request for reconsideration. An applicant may challenge the Specialty Council's application of the eligibility requirements to his or her case, but not the requirements themselves. An applicant may not appeal to ABPTS unless he or she has first submitted a request for reconsideration to the Council. An applicant must submit his or her request for reconsideration no later than 2 weeks from the date of the denial letter. For purposes of determining compliance with the foregoing deadline, a request for reconsideration will be deemed submitted on the postmark date. The Specialty Council will notify the applicant in writing of its decision on reconsideration.

10.2. Appeal to ABPTS of Specialty Council's Decision Regarding Eligibility to Sit for the Exam

An applicant who wishes to submit an appeal must contact the Specialist Certification Program for a complete copy of the procedures.

An applicant whom the Council has determined upon reconsideration to be ineligible may appeal the decision to ABPTS. An applicant may challenge the Council's application of the eligibility requirements to his or her case, but not the requirements themselves. The applicant must submit his or her appeal no later than 2 weeks from the date of the Council's decision on reconsideration. The appeal must be in writing and must be addressed to the Chair of ABPTS at the APTA Specialist Certification Program. For purposes of determining compliance with the foregoing deadline, a request for reconsideration will be deemed submitted on the postmark date. The appeal must specify the grounds on which it is based.

The Appeal Committee, a committee of ABPTS, will be responsible for the review and disposition of requests from applicants for appeal of a Specialty Council decision. The Appeal Committee will make its decision no later than 30 days from the date of receipt of the request for appeal. The Appeal Committee will send written notification of its decision to the Chair of the Specialty Council and the applicant by certified mail, return receipt requested, no later than 7 days from the date of its decision.

10.3. Procedures for Review of Certification Actions

A candidate who wishes to request that ABPTS reconsider its decision to deny certification must request a complete copy of procedures from the Specialist Certification Program.

The purpose of the ABPTS reconsideration procedure is to enable a candidate to challenge an ABPTS decision denying certification and to seek relief from untoward circumstances associated with the onsite administration of the examination and errors in the transmission of examination responses due to technical malfunction. To be considered, the request must include supporting evidence of technical malfunction.

Candidates must submit a request for reconsideration in writing and address the request to the Chair of ABPTS at the APTA Specialist Certification Program. To request reconsideration, the candidate must submit a written request no later than 2 weeks after the date of the letter notifying the candidate of exam results. For purposes of

determining compliance with the foregoing deadline, a request for reconsideration will be deemed submitted on the postmark date. The request for reconsideration must specify the grounds on which it is based and the corrective action sought. Within 7 days of the receipt of a request for consideration ABPTS will acknowledge in writing the receipt of the request, including the date on which the request was received.

10.4. Appeal to APTA Board of Directors of ABPTS Decision to Deny Certification

A person may not appeal to the APTA Board of Directors unless he or she has submitted a request for reconsideration to ABPTS. A candidate who wishes to submit an appeal must request a complete copy of procedures from the Specialist Certification Program. Any candidate adversely affected by the ABPTS decision on reconsideration may appeal to the APTA Board of Directors within 14 days of receipt of the ABPTS notification of the Appeal Committee's decision. A candidate must submit this appeal in writing, and the candidate must address it to the President of the APTA at the APTA Governance Department. The candidate must also send a copy of the written appeal to the Chair of ABPTS at the APTA Specialist Certification Program. The appeal must set forth arguments in support of the candidate's position. ABPTS will send written acknowledgment of receipt of the appeal to the candidate within 7 days after ABPTS receives the candidate's written appeal request.

11. EXAM CONTENT OUTLINE & SAMPLE QUESTIONS

11.1. Examination Content Outline

- Approximately 200 questions
- No questions with negative stems (e.g., “Which of the following is not correct?”)
- Questions may include graphics and video
- Examination time limit is 7 hours

The following is an outline summarizing the approximate examination percentages for each content domain from the *Clinical Electrophysiologic Physical Therapy: Description of Specialty Practice* (DSP). The outline also contains information on the content based on patient/client conditions. Examination questions can represent knowledge areas, professional roles and responsibilities, and patient/client management.

Topic	% of Exam
Anatomy	7%
Neuroscience	7%
Physiology	7%
Clinical Science	9%
Critical Inquiry	9%
Professional Roles & Responsibilities	4%
Examination	
History, Systems Review & Re-examination	5%
Tests & Measures	13%
Evaluation	
Normal & Abnormal Electrophysiologic Characteristics	12.5%
Interpretation of Abnormal Electrophysiologic Findings	12.5%
Diagnosis	5%
Prognosis	5%
Coordination, Communication & Documentation and Patient/Client-Related Instruction	4%
Total	100%

Patient/Client Conditions

The various clinical impressions (diagnoses) that may be identified in the patient report include (but are not limited to):

- Focal Peripheral Neuropathy (e.g., carpal tunnel syndrome, cubital tunnel syndrome)
- Radiculopathy
- Polyneuropathy (e.g., demyelinating, axonal, hereditary)
- Motor Neuron Disease
- Myopathy (e.g., muscular dystrophy, myositis)
- Neuromuscular Junction Defect (e.g., myasthenia gravis, botulism)

11.2. Sample Questions

Candidates for the specialist certification examination in clinical electrophysiologic physical therapy are encouraged to review the sample questions below to become familiar with the examination format. Please note that the questions listed below reflect the format but not necessarily the complexity of the actual examination questions.

1. With a complete neuropraxic lesion of 2 days duration of the ulnar nerve at the elbow, what is the most likely EMG change observed in the abductor digiti minimi?
 - A. No motor unit potentials
 - B. Normal motor unit potentials
 - C. Polyphasic motor unit potentials
 - D. Small amplitude highly polyphasic potentials

2. Given the following data, what is the conduction velocity (m/sec) from the axilla to above elbow?

Right ulnar		Latency		Distance
wrist		3.5 ms		8 cm
below elbow		7.5 ms		28 cm
above elbow		9.5 ms		12 cm
axilla		11.5 ms		12 cm

- A. 60
- B. 65
- C. 70
- D. 75

3. The left triceps reflex is absent. There are positive sharp waves in the left cervical paraspinals. There are fibrillation potentials in the left extensor indicis and pronator teres, and the left superficial radial nerve response is normal. Which nerve root is involved?

- A. C5
- B. C6
- C. C7
- D. C8

Key: 1-A, 2-A, 3-C

Case 1

A 55-year-old woman is referred for NCS/EMG testing to rule-out a polyneuropathic process. Her symptoms include pain, numbness/tingling, and a sensation of coldness in both feet from the tips of the toes to the distal leg, gradually progressing from the toes to the distal leg over the past 3 years, especially over the past 6 months. Her history includes type I diabetes mellitus diagnosed at age 13 years, and her HbA1c has consistently been over 8.0 for the past 5 years. The NCS data are shown in the following table.

Case 1 Data

Sensory Nerves									
Site	Peak (ms)	Norm Peak (ms)	P-T Amp (μ V)	Norm Amp (μ V)	Segment Name	Delta-P (ms)	Dist (cm)	Vel (m/s)	Norm Vel (m/s)
Left Sural Antidromic (ankle)									
Distal calf	4.7	<4.0	3.0	>5.0	Calf-Ankle	4.7	14	29.8	>35.0
Mid calf	8.0		2.0	>5.0	Mid-distal calf	3.3	10	30.3	>35.0
Right Sural Antidromic (ankle)									
Distal calf	4.2	<4.0	2.0	>5.0	Calf-Ankle	4.2	14	33.3	>35.0
Mid calf	7.1		1.5	>5.0	Mid-distal calf	2.9	10	34.5	>35.0
Left Median Antidromic (D3)									
Palm	2.0	<1.8	5.0	>10.0	Palm-D3	2.0	7	35.0	>37.0
Wrist	4.0		2.0	>10.0	Wrist-Palm	2.0	7	35.0	>37.0
Elbow	9.5		4.0	>10.0	Elbow-Wrist	5.5	22	40.0	>37.0
Motor Nerves									
Site	Onset (ms)	Norm Onset (ms)	O-P Amp (mV)	Norm Amp (mV)	Segment Name	Delta-O (ms)	Dist (cm)	Vel (m/s)	Norm Vel (m/s)
Left Tibial Nerve (AH)									
Ankle	7.0	<6.1	1.2	>3.0	Ankle-AH	7.0	8		
Popliteal Fossa	18.2		1.0	>3.0	Pop Fossa-Ankle	11.2	37	33.0	>35.0
Right Tibial Nerve (AH)									
Ankle	6.8	<6.1	1.4	>3.0	Ankle-AH	6.8	8		
Popliteal Fossa	17.7		1.2	>3.0	Pop Fossa-Ankle	10.9	37	33.9	>35.0
Left Median (APB)									
Palm			3.0	>5.0					
Wrist	4.6	<4.2	2.5	>5.0			14		
Elbow	8.9		2.1	>5.0	Elbow-Wrist	4.3	21	48.8	>50.0

Sural and superficial peroneal (fibular) distance is 14 cm, median sensory distance below wrist is 8 cm and above wrist distance is 14cm. All motor latencies were recorded over an 8 cm distance.

Case 1 Question

Which of the following impressions is *most* appropriate for this distal process:

- A. Diffuse symmetric sensorimotor axonopathy/myelinopathy
- B. Diabetic motor/sensory polyneuropathic process
- C. Demyelinating sensorimotor neuropathy
- D. Symmetric sensorimotor axonopathy

Case 2

A 49-year-old right-handed roofer reports the onset of pain in the left wrist with ill-defined numbness/tingling in the digits of the left hand about 4 months ago following several days of working longer than normal days. He does not recall any specific injury, does not have neck pain, is generally healthy except for mild hypertension and being "pre-diabetic". He wakes at night, notes increased numbness with holding a telephone with the left hand, and shakes his hand frequently during the day. He has been referred to rule-out carpal tunnel syndrome. The EMG/NCS data are in the following table.

Case 2 Data

Sensory Nerves									
Site	Peak (ms)	Norm Peak (ms)	P-T Amp (μ V)	Norm Amp (μ V)	Segment Name	Delta-P (ms)	Dist (cm)	Vel (m/s)	Norm Vel (m/s)
Left Median Antidromic (D3)									
Palm	1.7	<1.8	22.0	>10.0	Palm-D3	1.7	7	41.2	>37.0
Wrist	4.4	<4.2	18.0	>10.0	Wrist-Palm	2.7	7	25.9	>37.0
Elbow	8.9		14	>10.0	Elbow-Wrist	4.5	21	46.7	>37.0
Right Median Antidromic (D3)									
Palm	1.6	<1.8	25.0	>10.0	Palm-D3	4.2	7	43.8	>37.0
Wrist	3.2	<4.2	22.0	>10.0	Wrist-Palm	1.6	7	46.7	>37.0
Elbow	7.4		17.0	>10.0	Elbow-Wrist	4.2	21	50.0	>37.0
Left Ulnar Antidromic (D5)									
Wrist	3.2	<3.8	25.0	>10.0	Wrist-D5	3.4	14	43.8	>37.0
Right Ulnar Antidromic (D5)									
Wrist	3.3	<3.8	29.0	>10.0	Wrist-D5	3.3	14	42.4	>37.0
Motor Nerves									
Site	Onset (ms)	Norm Onset (ms)	O-P Amp (mV)	Norm Amp (mV)	Segment Name	Delta-O (ms)	Dist (cm)	Vel (m/s)	Norm Vel (m/s)
Left Median (APB)									
Wrist	4.6	<4.2	6.1	>5.0	Wrist-APB		14		
Elbow	8.9		11.0*	>5.0	Elbow-Wrist	4.3	24	55.8	>50.0
Right Median (APB)									
Wrist	3.8	<4.2	10.7	>5.0	Wrist-APB		14		
Elbow	8.0		10.2	>5.0	Elbow-Wrist	4.2	24	57.1	>50.0
Left Ulnar (APB)									
Wrist	3.2	<3.5	9.4	>5.0					
B-Elbow	7.2		9.0	>5.0	B-Elbow-Wrist	4.0	22	55.0	>50.0
A-Elbow	9.2		8.7	>5.0	A-B Elbow	2.0	12	60.0	>50.0
Right Ulnar (APB)									
Wrist	3.1	<3.5	9.0	>5.0					
B-Elbow	7.3		8.5	>5.0	B-Elbow-Wrist	4.2	22	52.4	>50.0
A-Elbow	9.5		8.2	>5.0	A-B Elbow	2.2	12	54.5	>50.0

*Initial positive wave

EMG results: Bilateral cervical paraspinals, deltoid, triceps, brachialis, pronator teres, flexor carpi ulnaris, extensor digitorum, first dorsal interosseous and right opponens pollicis demonstrate no membrane instability, motor units of normal shape, amplitude & duration, and normal recruitment with a full interference pattern. Left opponens pollicis demonstrates increased insertional activity with 1+ fibrillations and positive sharp waves, motor units of normal shape, amplitude & duration, and normal recruitment with a full interference pattern. All motor latencies are measured at 8 cm, palmar sensory latencies were recorded at 8 cm and wrist to digit latencies were recorded at a 14 cm distance.

Case 2 Question

1. What is your assessment given the clinical exam, history and EMG/NCV findings? See page 12 for Nerve Conduction Studies table.
- Focal demyelination and axonopathy of the left Median nerve at or near the wrist
 - Focal demyelination and axonopathy of the left Median nerve at or near the wrist with a Martin-Gruber anastomosis
 - Ulnar to median crossover in the forearm
 - Ulnar nerve entrapment at the wrist

Key:

Case 1. A, Case 2. B

11.3. Other Documentation Instructions

Patient Reports: Applicants are required to submit three (3) actual patient reports the applicant has completed independently within the last 3 years (since July 1, 2015) to include the formal report and accompanying data tables and waveforms from the nerve conduction study. Applicants are responsible for assuring the authenticity of the testing conducted and confidentiality of the data and reports submitted. The report must not be one provided to the applicant by another practitioner and must not be one that another applicant could submit. The specialty council may request a copy of the referral from another provider that resulted in the electrophysiologic testing or the billing information to verify the report's authenticity.

See sample patient reports in section 11.5 of this guide. One report is required for each of the following types of pathology:

- A patient with a spinal nerve root lesion;
- A patient demonstrating a focal demyelination and/or axonopathy of a peripheral nerve (e.g., median nerve at the wrist, tibial nerve at the ankle, etc.), and
- A patient demonstrating a diffuse, symmetric demyelination and/or axonopathy (e.g., diabetic polyneuropathy, Hereditary Motor Sensory Neuropathy, etc.).

For information on scoring, see *Section 11.4, Patient Report Evaluation*.

The report submitted for review must be identical to the report provided to the referring practitioner (or included in the patient's medical record if there is no referring practitioner), unedited except to remove information that would permit identification of the patient and the applicant. Critical aspects (sections 1 and 3, "history and systems review" and "evaluation/diagnosis") are based on APTA's Guide to Physical Therapy Practice, and competency areas will be weighted similarly to the percentages noted within the exam content outline section of this candidate guide and chapter 4 of the Clinical Electrophysiologic Description of Specialty Practice.

If a submitted report does not pass, the applicant may submit another report from the examination of another patient with similar pathology. If the second report does not meet the minimum criteria, the application will not be approved. If an application is not approved due to one or more reports not meeting the minimum criteria or the applicant does not pass the examination, any reports that were acceptable with the initial application do not need to be submitted with a reapplication.

HIPAA Criteria

All submitted documents must meet the criteria of the Health Insurance Portability and Accountability Act of 1996 (HIPAA), which requires the protection of health information. The Act defines 18 specific items that must be removed to release patient information without patient authorization or approval from the Research Privacy Board.

These 18 items are:

- Names.
- All geographic subdivisions smaller than a state, including street address, city, county, precinct, ZIP Code, and their equivalent geographical codes, except for the initial three digits of a ZIP Code if, according to the current publicly available data from the Bureau of the Census:
 - The geographic unit formed by combining all ZIP Codes with the same three initial digits contains more than 20,000 people.
 - The initial three digits of a ZIP Code for all such geographic units containing 20,000 or fewer people are changed to 000.
- All elements of dates (except year) for dates directly related to an individual, including birth date, admission date, discharge date, date of death; and all ages over 89 and all elements of dates (including year) indicative of such age, except that such ages and elements may be aggregated into a single category of age 90 or older.
- Telephone numbers.
- Facsimile numbers.
- Electronic mail addresses.
- Social security numbers.

8. Medical record numbers.
9. Health plan beneficiary numbers.
10. Account numbers.
11. Certificate/license numbers.
12. Vehicle identifiers and serial numbers, including license plate numbers.
13. Device identifiers and serial numbers.
14. Web universal resource locators (URLs).
15. Internet protocol (IP) address numbers.
16. Biometric identifiers, including fingerprints and voiceprints.
17. Full-face photographic images and any comparable images.
18. Any other unique identifying number, characteristic, or code, unless otherwise permitted by the Privacy Rule for re-identification.

11.4. Patient Report Evaluation

The report must include abnormalities identified during electrophysiologic testing (i.e., “normal studies” are not acceptable). Each patient report must earn a passing score of 80% overall in addition to 80% for both Sections 1 and 3 (described below). For example, if the report earns 85 points overall but receives fewer than 8 points for section 1 or fewer than 16 points for section 3, the report does not pass. The score assigned to each report is the mean of the scores from each scorer. The rubrics used for scoring the electrophysiologic testing and patient reports were adapted from guidelines from the American Congress for Electroneuromyography (http://enmgcongress.org/Resources/Guidelines/ACE_SCEWM%20Minimum%20Standards%20Policy.pdf) and the American Association of Neuromuscular and Electrodiagnostic Medicine (<http://www.aanem.org/getmedia/670b50d3-bb67-4d22-85f5-517b7221ca25/RptResultsEMGNCS.pdf.aspx> and <http://www.aanem.org/Practice/Practice-Guidelines.aspx>). The rubric includes the following three sections:

Section 1. History, Physical Examination and Systems Review (10 points). Conducts appropriate history, physical examination, systems review and identifies the reason for testing.

Section 2. Electrophysiologic Testing (70 points).

1. Conducts appropriate nerve conduction and needle electromyographic testing with summary findings.
2. Demonstrates appropriate testing rigor and methods.
3. Appropriate motor and sensory testing for involved and comparative nerves.
4. Includes data tables, normal values and waveforms.

Section 3. Impression (20 points). Formulates appropriate electrophysiologic impression.

11.5. Sample Electrophysiologic Patient Reports

NCS/EMG REPORT

Date: August 2007

Reason for Electrophysiologic Referral: Bilateral upper extremity pain and numbness, rule-out carpal tunnel syndrome.

History: 59-year-old female right-handed nurse complaining of numbness and tingling in both hands extending proximally to the elbow bilaterally for more than 2 years. Symptoms are worse when sleeping or driving the car.

Patient is 5'6" tall and weighs 150 pounds. She does not smoke and consumes minimal alcohol. There is no reported heart disease, hypertension, or diabetes. She takes medicine for hypothyroidism.

Systems Review: Manual muscle test: trace weakness in right thumb abduction. Sensation is equal right to left. Tinel sign: (+) both wrists. DTR's +2 and symmetric.

Summary: The median nerve motor latency is 12ms on the right and 7.4 ms on the left. The median nerve sensory latency is 7.4 ms on the right and 6.0 ms on the left.

Impression: The electrical studies are consistent with bilateral carpal tunnel syndrome worse on the right. Findings are not suggestive of right cervical radiculopathy.

NCS Tables (Skin Temperature 30.5°C):

Motor

Nerve Site	Latency (ms)	Amplitude (mV)	Distance (mm)	Conduction Velocity (m/s)
R Median				
Wrist	12.0	4.7	80	
Elbow	16.1	4.2	210	51
L Median				
Wrist	7.4	8.1	80	
Elbow	11.6	8.2	220	52
R Ulnar				
Wrist	3.4	10.4	80	
Below Elbow	6.0	9.7	160	62
Above Elbow	7.7	9.2	100	59

Sensory

Nerve Site	Latency (ms)	Amplitude (mV)	Distance (mm)	Conduction Velocity (m/s)
R Median	7.4	7	140	19
Wrist	6.0	10	140	23
Elbow	3.5	42	140	38

EMG Table

Muscle	Side	Insert	PSW	Fibs	Poly	Amp	Dur	Recruit
Biceps Br	R	Norm	None	None	<15%	Norm	Norm	Full
Triceps Br	R	Norm	None	None	<15%	Norm	Norm	Full
FCR	R	Norm	None	None	<15%	Norm	Norm	Full
APB	R	Norm	None	None	<15%	Norm	Norm	Full

Score: Overall = 71

Critical Level 1 (History and Systems Review) = 57%

Critical Level 2 (Examination/tests and measurements) = 83%

Critical Level 3 (Evaluation/diagnosis) = 35%

Comments: Failed Peripheral Nerve Entrapment Case Report

Points deducted for the following:

1. History and Systems Review: Incompletely written neuromuscular screening exam (missing a number of details, including but not limited to): (1) extent of manual muscle testing performed (only mentioned thumb abduction, was the entire upper quarter screened bilaterally?); (2) what type of sensation was assessed (e.g., light touch, pin-prick, etc?), and where was sensation assessed (e.g., hands only, upper extremities, etc?); (3) No mention of other elements normally found in a neuromuscular screen, such as pathological reflexes assessed, or range of motion, etc. It is hoped that the neuromuscular screening exam provides the foundational basis for designing and implementing the electrophysiologic examination and that enough detail is provided to understand and replicate (if so desired) what was done.

Note: From a terminology standpoint, DTR may be an outdated acronym. Since the sensory receptor evoked in this reflex is the muscle spindle, it is suggested that the term 'muscle stretch reflex' (MSR) be employed (This is only a suggestion, since it is recognized that DTR remains in current use today and no points were deducted).

2. Examinations, tests and measurements: Left median sensory nerve study not conducted. Lacks normal ipsi- and contra-lateral motor and sensory comparative studies. EMG table with limited sampling. Lack of peak or onset latency designation, no recording site designations, lack of normal values, skin temperature not maintained at >32°C or adjustments made for lower temperature, no late responses, and only four limb muscles tested.

3. Evaluation/diagnosis: Weak summary presentation, impression discussed in medical diagnostic terms, no signature. Results should be described in pathophysiologic terms, not a clinical syndrome. In this case, an appropriate impression would state that there was a demyelination of the sensory and motor fibers in the right median nerve at or near the wrist, and of the motor fibers of the left median nerve at or near the wrist.

4. Based on the above: Failed to meet both Critical Levels 1 and 3 and failed to meet the overall passing score.

NCS/EMG REPORT

Date: October 2007

Reason for Electrophysiologic Referral: Left lower extremity paresthesia and pain, rule-out lumbosacral radiculopathy.

History: 19-year-old right-handed male student. He runs 40-50 miles/week. In the past few days he has difficulty finishing races. For 3 weeks he describes decreased sensation in the lateral aspect of his left leg. He occasionally limps, favoring the left leg.

5'6", 145 pound individual who does not smoke or consume alcohol. There is no report of heart disease, hypertension, stroke, thyroid, or kidney problems, hepatitis, blood problems, or diabetes. He is not on medication. No complaints of bowel or bladder problems.

Systems Review: Manual muscle test: 4/5 left dorsiflexion, toe extension, toe flexion, and great toe extension; others 5/5. Sensation to light touch: decreased left dorsum of the foot. Tinel's: (-) both fibular heads. Monosynaptic reflexes lower extremities: +2 and symmetrical knee and ankles. Straight leg raise: (+) left.

Summary: The left deep fibular nerve motor conduction velocity is normal across the fibular head segment. The left sural nerve sensory distal latency, amplitude, and conduction velocity are within normal ranges. Both H Reflex latencies and amplitudes are similar side-to-side and within predicted ranges for age and leg length.

Evidence of acute muscle cell membrane instability (increased insertional activity, positive sharp waves and fibrillation potentials present at rest) is seen on needle EMG exam in the left lower level lumbosacral paraspinals, tensor fascia lata, tibialis anterior, extensor hallucis longus muscles. Interference patterns are reduced in these muscles.

Impression: Findings are consistent with an acute left L5 mixed spinal nerve root axonopathy.

Signature:

J. Therapist, PT

Date _____

NCS Tables:

Motor/F-wave

Nerve Site	Latency (ms)	Amplitude (mV)	Distance (mm)	Conduction Velocity (m/s)
L Deep Fibular/EDB				
Ankle	3.3	8.0	80	
Below Fib Head	11.6	6.3	305	48
Above Fib Head	9.7	5.3	100	53
F wave	45.4			

L Tibial/AH				
Ankle	5.7	6.8	100	
Popliteal Fossa	14.2	6.4	400	47
F-wave	47.3			

Sensory

Nerve/site	Latency (ms)	Amplitude (mV)	Distance (mm)	Conduction Velocity (m/s)
L Sural/Ankle				
Lower leg	4.4	8.0	140	32
L Medial Plantar/Ankle				
Sole	3.9	7.8	140	36

H-Reflex

Nerve	Latency (ms)	Amplitude (mV)
L Tibial/Gast	29.6	5.0
R Tibial/Gast	28.8	3.9

EMG Table

Muscle	Side	Insert	PSW	Fibs	Poly	Amp	Dur	Pattern
R Fem	L	Norm	None	None	<15%	Norm	Norm	Full
V Lat	L	Norm	None	None	<15%	Norm	Norm	Full
TFL	L	Incr.	+2	+2	<15%	Norm	Norm	Partial
LH Biceps F	L	Norm	None	None	<15%	Norm	Norm	Full
Tib Ant	L	Incr.	+2	+2	<15%	Norm	Norm	Partial
EHL	L	Incr.	+2	+2	<15%	Norm	Norm	Partial
Gast M	L	Norm	None	None	<15%	Norm	Norm	Full
Soleus	L	Norm	None	None	<15%	Norm	Norm	Full
Mid-Lumbar Paraspinals	L	Norm	None	None	<15%	Norm	Norm	Not tested
Lower Lumbar Paraspinals	L	Incr.	+2	+2	<15%	Norm	Norm	Not tested

Score Overall = 87

Critical Level 1 (History and Systems Review) = 86%

Critical Level 2 (Examination/tests and measurements) = 87%

Critical Level 3 (Evaluation/diagnosis) = 87%

Comments: Passing Radiculopathy Case Report

Points deducted for the following:

1. History and Systems Review: Abbreviated neuromuscular screening exam (missing some clarifying data but not limited to): (1) with the MMT, what does 'others' mean? (e.g., other extremity, lower quarter screen, etc.?), (2) Type of sensation assessed (e.g., light touch, pin-prick, etc.?), and was it assessed anywhere other than the foot, and (3) No mention of other elements normally found in a neuromuscular screen, such as pathological reflexes assessed, range of motion, or gait (could the patient toe-walk or heel-walk?).

Note: while listing a 'Straight-leg raise (+) left', is commonly done, it is not particularly clear if the positive refers to pain, radicular symptoms, or at what range of motion the positive findings were elicited. Any additional clarification would make this finding stronger.

2. Examinations, tests and measurements: Lack of skin temperature recording, no peak or onset latency designation, no basis for normal values given, only one motor and one sensory peripheral nerve tested.

3. Evaluation/diagnosis: Partial explanation of findings.

4. Based on the above: Passing electrophysiologic case report representing a radiculopathy.

NCS/ EMG REPORT

Date: July 2007

Reason for Electrophysiologic Referral: Bilateral lower extremity pain, rule out polyneuropathy.

History: 69-year-old right-handed man with pain in both feet and lower legs, especially at bedtime. He also complains of frequent cramping in the calf muscles.

The patient is 6'1" and weighs 245 pounds. He is diabetic and takes metformin, but does not check his blood sugar levels regularly. He does not know his most recent HbA1c value. He has a long history of low back pain, which limits his walking distances. He drinks alcohol and smokes.

Systems Review: Manual muscle test: 4/5 bilateral toe extension and toe flexion; others 5/5. Sensation to light touch: decreased both feet and ankles. Monosynaptic reflexes lower extremities: absent bilateral knee and ankles. Straight leg raise: (+) right.

Summary: Both deep fibular and the right tibial nerve motor distal latencies are prolonged and conduction velocities are slow. F-waves are prolonged. Both sural and the right superficial fibular nerve sensory evoked responses are absent. Both H-Reflex responses are absent. The right median nerve motor and sensory distal latencies, amplitudes, and conduction velocities are within normal ranges.

Needle EMG examination show evidence of acute muscle cell membrane instability (positive sharp waves and fibrillation potentials at rest) in the distal muscles checked in both lower extremities. All of the lower extremity muscles checked had many polyphasic motor units present, some distal muscles with larger-than-normal amplitudes and durations suggesting evidence of chronic denervation. Both lumbosacral paraspinal muscle examinations are normal, suggesting a distal process.

Impression: Findings are consistent with a mixed-type sensory-motor demyelination and axonopathy polyneuropathic process affecting the distal lower extremities symmetrically.

Signature:

J. Therapist, PT

Date _____

NCS Tables: (Skin Temperature >32°C):

Motor/F wave

Nerve Site	Latency (ms) (Normal)	Amplitude (mV) (Normal)	Distance (mm)	Conduction Velocity m/s (Normal)
L Deep Fibular/EDB				
Ankle	6.3 (<5.0)	1.1 (>2)	80	
Below Fib Head	14.2	1.3	295	37.3 (>40)
Above Fib Head	16.5	1.1	100	43
F-wave	65.2 (<56)			
R Deep Fibular/EDB				
Ankle	6.0 (<5.0)	2.0 (>2)	80	
Below Fib Head	14.2	2.3	290	35.4 (>40)
Above Fib Head	16.7	2.3	100	40
F-wave	68.4 (<56)			
R Tibial/AH				
Ankle	5.9 (<5.0)	4.4 (>2)	80	
Pop Space	16.2	4.3	400	38.8 (>40)
F wave	61.2 (<4.2)	8.4 (>4)	80	
R Median/APB				
Wrist	5.9 (<4.2)	8.4 (>4)	80	
Elbow	16.2	8.3	200	38.8 (>48)
F-wave	31.2(<31)			

Sensory

Nerve/site	Peak Latency (ms)	Amplitude (mV)	Distance	Conduction Velocity (m/s)
L Sural/ankle				
Lower leg	NO (<4.0)	NO (>8)	140	NO (>35)
R Sural/ankle				
Lower leg	NO (<4.0)	NO (>8)	140	NO (>35)
R Super Fib/dorsum foot				
Lateral leg	NO (<4.0)	NO (>8)	140	NO (>35)
R Median/Dig II				
Wrist	3.4 (<3.5)	12 (>10)	140	41.2 (>40)

H Reflex

Nerve	Latency (ms) (N<34.4 ± 5.5)	Amplitude (mV)
L Tibial/Gast	NO	NO
R Tibial/Gast	NO	NO

NO = not obtainable

EMG Table

Muscle	Side	Insert	PSW	Fibs	Poly	Amp	Dur	Pattern
R Fem	L	Norm	None	None	>50%	Norm	Norm	Full
V Lat	L	Norm	None	None	>50%	Norm	Norm	Full
LH Biceps F	L	Norm	None	None	>50%	Norm	Norm	Full
Tib Ant	L	Norm	+2	+2	>50%	Norm	Norm	Partial
EHL	L	Norm	+2	+2	>50%	>5 mV	>16 ms	Partial
Gast M	L	Norm	+2	+2	>50%	>5 mV	Norm	Partial
Soleus	L	Norm	+2	+2	>50%	>5 mV	Norm	Partial
Upper lumbar paraspinals	L	Norm	None	None	<15%	None	Norm	Not tested
Mid-lumbar paraspinals	L	Norm	None	None	<15%	Norm	Norm	Not tested
Lower lumbar paraspinals	L	Norm	None	None	<15%	Norm	Norm	Not tested
R Fem	R	Norm	None	None	>50%	Norm	Norm	Full
V Lat	R	Norm	None	None	>50%	Norm	Norm	Full
LH Biceps F	R	Norm	None	None	>50%	Norm	Norm	Full
Tib Ant	R	Norm	+2	+2	>50%	Norm	Norm	Partial
EHL	R	Norm	+2	+2	>50%	>5 mV	>16 ms	Partial
Gast M	R	Norm	+2	+2	>50%	Norm	Norm	Partial
Soleus	R	Norm	+2	+2	>50%	>5 mV	Norm	Partial
Upper lumbar paraspinals	R	Norm	None	None	<15%	Norm	Norm	Not tested
Mid-lumbar Paraspinals	R	Norm	None	None	<15%	Norm	Norm	Not tested
Lower lumbar Paraspinals	R	Norm	None	None	<15%	Norm	Norm	Not tested

Score Overall = 91

Critical Level 1 (History and Systems Review) = 90%

Critical Level 2 (Examination/tests and measurements) = 90%

Critical Level 3 (Evaluation/Diagnosis) = 100%

Comments: Passing Peripheral Neuropathy Case Report

Point deducted for the following:

1. History and Systems Review: Abbreviated neuromuscular screening exam (missing some clarifying data but not limited to): (1) with the MMT, what does 'others' mean? (e.g., other extremity, lower quarter screen, etc.?), (2) While type of sensation was listed (sensation to light touch), no reference was made to areas other than 'feet and ankles' where it was assessed, and (3) No mention of other elements normally found in a neuromuscular screen, such as pathological reflexes assessed, range of motion or gait (could the patient toe-walk or heel-walk?).

Note: while listing a Straight-leg raise (+) right', is commonly done, it is not particularly clear if the positive refers to pain, radicular symptoms, or at what range of motion the positive findings were elicited. Any additional clarification would make this finding stronger.

2. Examination, tests and measurements: Lack of upper extremity needle study.

3. Evaluation/diagnosis: Appropriate

4. Based on the above: Passing electrophysiologic case report representing a peripheral neuropathy.

12. RESOURCE GUIDE INFORMATION

Resource guides are compiled by APTA sections and board-certified specialists to reflect current literature in the specialty area. They are provided for your information only. Neither the ABPTS nor the specialty councils has reviewed or endorsed the content of these lists. In addition, reviewing these resources does not guarantee that a candidate will receive a passing score on the specialist certification examination.

Clinical Electrophysiologic Physical Therapy Resource Information

Clinical Electrophysiology and Wound Management Section—APTA
Muna Addus
1055 North Fairfax Street, Suite 205
Alexandria, VA 22314-1484
Phone: 800/765-7848, ext. 7103
Email: clinelectrowm@apta.org
Website: <https://acewm.org/>



Specialist Certification Program

American Physical Therapy Association

1111 North Fairfax Street, Alexandria, VA 22314-1488

1-800/999-2782, ext. 8520

www.abpts.org

Email: spec-cert@apta.org