

National Registry Examination for Nerve Conduction Studies



Candidate Handbook 2025

Application Deadline*	Testing Period
December 23, 2024	January 25 – February 8, 2025
April 16, 2025	May 17 – May 31, 2025
July 16, 2025	August 16 – August 30, 2025

***Applications will not be accepted after this deadline**

Administered by:



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www.ptcny.com/contact

TABLE OF CONTENTS

CONTACT INFORMATION.....	ii
ATTENTION CANDIDATES.....	ii
REGISTRATION	3
OBJECTIVES OF AAET	3
THE REGISTRATION PROCESS.....	5
COMPLETION OF APPLICATION	6
EXAMINATION ADMINISTRATION AND SCHEDULING.....	7
EXAMINATION FEES	9
TEST ACCOMMODATIONS	10
PREPARING FOR THE EXAMINATION	11
WHAT TO EXPECT AT THE TESTING CENTER	12
RULES FOR THE EXAMINATION.....	13
TESTING CONDITIONS OR EXAMINATION FEEDBACK	13
REPORT OF RESULTS	14
EXAMINATION SECURITY	14
ATTAINMENT OF REGISTRATION	15
REVOCATION OF REGISTRATION.....	15
RECERTIFICATION.....	15
CONTENT OF THE EXAMINATION	16
CODE OF ETHICS	20
SAMPLE EXAMINATION QUESTIONS.....	21
REFERENCES.....	23

This Handbook contains necessary information about the National Registry Examination for Nerve Conduction Studies. Retain it for future reference. Candidates are responsible for reading these instructions carefully. This Handbook is subject to change.

CONTACT INFORMATION

Professional Testing Corporation (PTC) www.ptcny.com (212) 356-0660	<ul style="list-style-type: none">• Apply for examination• Obtain general application information• Obtain information about testing policies• Transfer to a new testing period• Request Test Accommodations• Request Score Verification• Question about score reports• Miscellaneous inquiries
Prometric www.prometric.com/AAET (800) 741-0934	<ul style="list-style-type: none">• Schedule test appointment• Reschedule test appointment (within a testing period)• Cancel test appointment• Find directions to test site• Questions regarding testing sites and appointments
The Nerve Conduction Association (AAET) www.aaet.info	<ul style="list-style-type: none">• Study materials• Recertification information

ATTENTION CANDIDATES

This handbook contains necessary information about the AAET National Registry Examination for Nerve Conduction Studies. It is required reading for those applying and taking the Examination. All individuals applying for these examinations must comply with the policies, procedures, and deadlines in this Handbook and attest to this by signing the Candidate Attestation found on the application. Retain this handbook for future reference. This handbook is subject to change. See www.ptcny.com for handbook updates.

ACCESSING CELL PHONES AND ELECTRONIC DEVICES AT ANY TIME WHILE YOU ARE TAKING THE EXAM IS PROHIBITED. YOU CAN ONLY REMOVE SNACKS, DRINKS, MEDICINE OR PERSONAL HEALTHCARE ITEMS FROM YOUR LOCKER- NO BACKPACKS, BAGS, POCKETBOOKS OR CLOTHING CAN BE REMOVED WHILE YOUR EXAM IS IN SESSION.

REGISTRATION

The Nerve Conduction Association (AAET) supports the concept of voluntary registration by examination for health care professionals in nerve conduction studies. Registration focuses specifically on the individual and is an indication of current knowledge in electrodiagnostic nerve conduction studies technology.

OBJECTIVES OF AAET

AAET aims to establish standards for registration of electrodiagnostic technologists by:

- Providing a standard of knowledge in nerve conduction studies required for registration.
- Establishing and measuring the level of knowledge required for registration in nerve conduction studies by means of an objective written examination.
- Recognizing formally those individuals who meet the eligibility requirements of AAET and pass the National Registry Examination for Nerve Conduction Studies.
- Encouraging continued professional growth in nerve conduction studies

NON-DISCRIMINATION STATEMENT

The Nerve Conduction Association (AAET) does not discriminate on the basis of age, sex, race, religion, national origin, marital status or handicapped condition.

ELIGIBILITY REQUIREMENTS

In addition to the eligibility requirements listed below it is recommended that the candidate:

- Has received education through an Accredited Neurodiagnostic Technology program and/or have at least six months experience involving training in both practical applications and theory directly related to Nerve Conduction Studies (NCS).
- Download and study from the AAET Handbook for Candidates.

Candidates are required to provide the following supporting documentation with submission of the AAET National Registry Examination for Nerve Conduction Studies. The application will allow for uploading of the necessary files:

1. AAET Attestation Statement signed by the supervising physician attesting that the technologist is not performing invasive (needle) examinations that the physician is responsible for interpreting data.

OR
2. A copy of the certificate for the superseding active board certification which allows EMG and interpretation as stated by your state and regional guidelines.

Along with:

Pathway 1:

One year experience and proof of performance of 100 patient encounters **OR** one year of experience and 30 AAET CEUs. For purposes of AAET registration, a patient encounter is defined at an individual patient visit. Use the AAET Patient Encounter form to submit documentation of patients or upload proof of the 30 AAET CEUs.

Pathway 2:

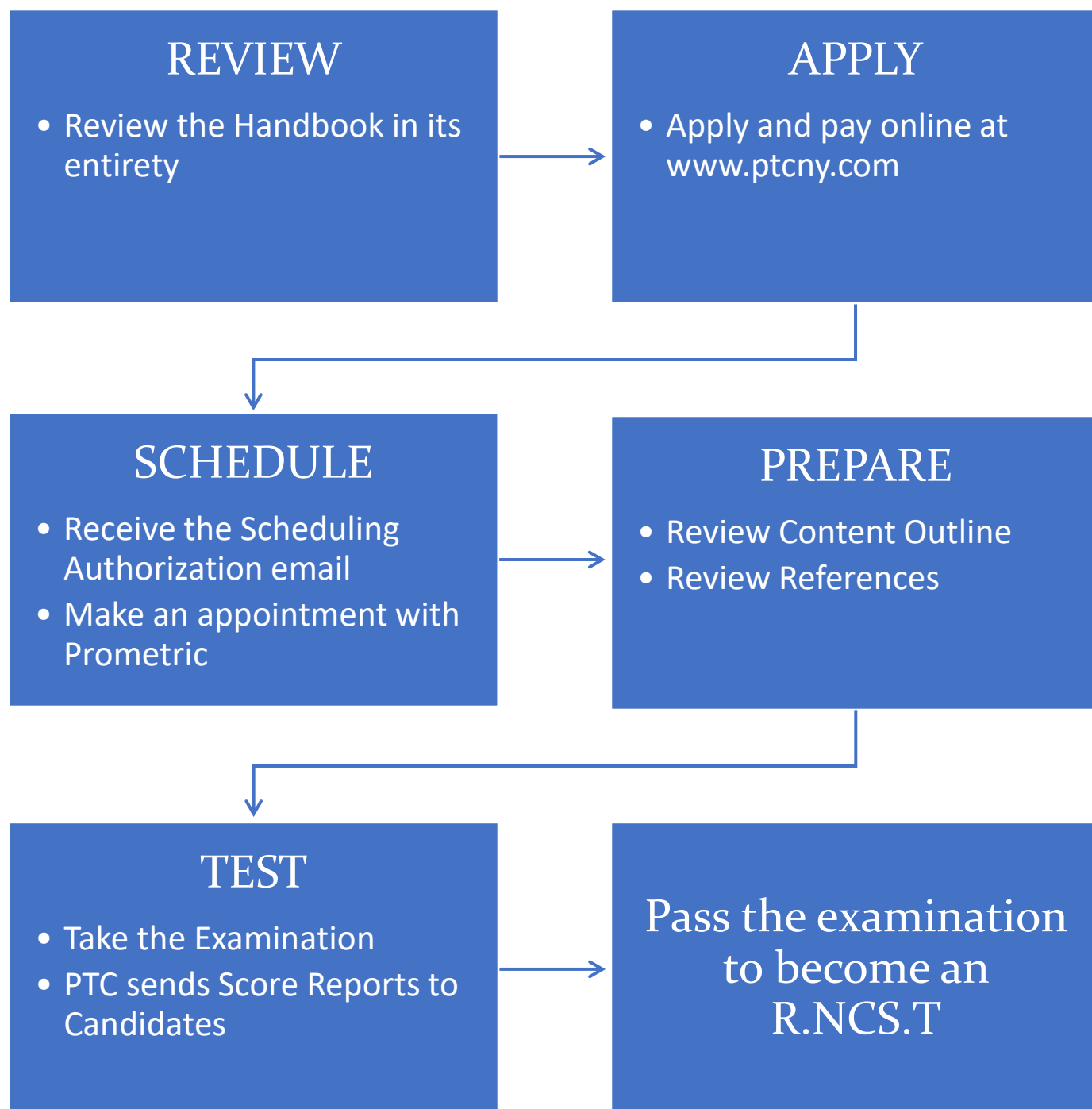
NDT CAAHEP graduate and proof of performance of 100 patient encounters **OR** NDT CAAHEP graduate and 30 AAET CEUs. Use the AAET Patient Encounter form to submit documentation of patients or upload proof of the 30 AAET CEUs.

Additional required documentation for all pathways:

- A copy of certification card for Basic Life Support (BLS) for the Healthcare Provider under the American Heart Association.
- Complete and file the application for AAET National Registry Examination for Nerve Conduction Studies.
- Pay \$650 by credit card

A candidate may sit for the AAET R.NCS.T. examination after receiving confirmation of supporting documentation and payment.

THE REGISTRATION PROCESS



COMPLETION OF APPLICATION

Step 1 – Fill Out the Application

- Go to <http://www.ptcny.com/test-sponsors/AAET>
 - View testing periods and application deadlines
 - Fill out online application completely and upload supporting documentation.
 - Use your first and last name exactly as it appears on your current driver's license, passport, state issued non-driver ID or military ID.
 - Applications are not complete until all information, documentation, and payment has been provided.
 - When you start a new application, you will be asked to create a user account and password. This account will be used to access your score report after the exam, so keep the information for later use.

Step 2 – Submit Exam Fee and Application for Review

PTC will send you an email that says that your payment and application have been received and are being reviewed. Allow up to 10 business days for review.

Step 3 – Receive Application Status Update

- After your application is reviewed PTC will update you with another email.
 - **REOPENED FOR MORE DOCUMENTS**
 - This means we are missing the required documentation. Follow the directions in the email.
 - Applications that are incomplete as of 14 days before the start of the testing period will be refunded minus the administration fee (see fees page 10).
 - **REJECTED**
 - This means you are not eligible to take the exam. The reason will be explained in the email.
 - Rejected applications will be refunded minus the administration fee (see fees page 10).
 - **APPROVED**
 - This means your application is approved. You will move on to Step 4.

Step 4 – Receive Scheduling Authorization and Schedule Testing Appointment

- Approved candidates will receive an email with their Scheduling Authorization, within 11 weeks before the start of the testing period. Scheduling Authorization emails come from notices@ptcny.com. Do not lose this email.
- If you don't receive your Scheduling Authorization email 3 weeks before the start of your testing period, contact PTC.

The Scheduling Authorization includes important information including:

- Your PTC Candidate ID number
- Instructions on how to make your Exam appointment with Prometric.

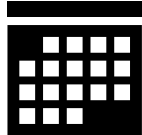
Applicants who are not approved to sit for the examination or whose applications are incomplete 14 days prior to the first day of the testing period will receive a refund of their application fee minus the \$75 administrative fee. Refunds will be processed approximately 30 days after the end of the testing period.

EXAMINATION ADMINISTRATION AND SCHEDULING

The National Registration Examination for Nerve Conduction Studies is administered during an established two-week testing period on a daily basis, excluding holidays, at computer-based testing facilities managed by Prometric.

Scheduling Examination Appointments

Follow the steps on your Scheduling Authorization to schedule your examination appointment with Prometric.



- Appointment times are first-come, first-served, so schedule your appointment as soon as you receive your Scheduling Authorization.
- **Candidates who wait until the last minute run the risk of missing out on their preferred date, time, and/or testing center. Candidates unable to schedule an appointment will forfeit their fees.**

After you make your test appointment, Prometric will send you a confirmation email with the date, time, and location of your exam. Check this confirmation carefully and contact Prometric at (800) 741-0934 if you do not receive this email confirmation or if there is a mistake with your appointment.

Note: International candidates may also schedule, reschedule, or cancel an appointment online at www.prometric.com/AAET.

IMPORTANT!

You **MUST** present your current driver's license, passport, or U.S. military ID at the test center. Expired, temporary, or paper driver's licenses will **NOT** be accepted.

The first and last name on your Scheduling Authorization **MUST** exactly match the first and last name on your photo ID.

Fees will not be refunded for exams missed because of invalid ID.

Rescheduling Examination Appointments within a Testing Period

Candidates can reschedule their examination appointments within the same testing period as long as the request is submitted within the timeframe described below. Reschedule within the permitted time frame by calling or going to the Prometric website: www.prometric.com/AAET.

Time Frame	Reschedule Permitted?	Stipulations
Requests submitted 30 days or more before the original appointment	Yes	None
Requests submitted 29 to 5 days before the original appointment	Yes	Candidate must pay Prometric a rescheduling fee of \$50.
Requests submitted less than 5 days before the original appointment	No	Candidates who do not arrive to test for their appointment will be considered a no-show and all their examinations fees will be forfeited. Candidates will need to reapply and pay full examination fees for a future testing period.

Transferring to a New Testing Period

Candidates unable to take the examination during their scheduled testing period may request a **ONE-TIME** transfer to a future testing period. **There is a transfer fee of \$226.00.** After you have transferred once by paying the \$226.00 fee, you will need to pay the examination fee of \$650.00 in order to transfer a second time; so, ***plan carefully***.

Note: requests to transfer to a new testing period must be received within 30 days of your originally scheduled testing period.

Candidates wishing to transfer to a new testing period need to follow the steps below.

1. Go to apply.ptcny.com
2. Click "Transfer Existing Application."
3. PTC Support will send you an email letting you know your transfer application was approved and that you can log back into your application and pay the one-time \$226.00 transfer fee.

Contact PTC (www.ptcny.com/contact) if you have any questions regarding the transfer process.

If candidates are unable to attend the examination on the date for which they registered and elect not to transfer to another testing period, the application will be closed and all fees will be forfeited. There will be no refund of fees.

The transfer fee is based on costs and is not punitive in nature. The transfer fee must be paid at the time the request is approved.

Note: Transferring your Examination only refers to instances when a candidate is unable to take their exam during a testing period for which they have already applied. Candidates who did not pass their examination and are retaking the examination need to pay the full Examination Fee.

Failing to Report for an Examination



If you fail to report for an examination, you will forfeit all fees paid to take the examination. A completed application form and examination fee are required to reapply for the examination.

EXAMINATION FEES

Fee Type	Amount	Details
Application Fee	US \$650.00	<ul style="list-style-type: none">• Non-refundable• Non-transferable• Includes testing center fees• Includes non-refundable \$75 administrative fee
Rescheduling Fee (29-5 days prior to scheduled appointment; see page 8)	US \$50.00	<ul style="list-style-type: none">• Applies to candidates who need to move their appointment within their current testing period• Payable directly to Prometric• Reschedule with Prometric online or over the phone
Transfer Fee (Moving to a new testing period; see page 8)	US \$226.00	<ul style="list-style-type: none">• Applies to candidates who need to move to a new testing period• Must submit new application & fee to PTC

There will be no refund of fees unless applicants are ineligible for the examination.

Ineligible candidates will be refunded their fees minus an administrative fee.

No refunds will be issued for applying for the incorrect examination or testing period, for failing to make an examination appointment, or for failing to appear at your scheduled appointment.

Be advised: Prometric does not have the authority to grant transfers to another testing period or refunds.

TEST ACCOMMODATIONS

AAET and PTC support the intent of and comply with the Americans with Disabilities Act (ADA) and will take steps reasonably necessary to make testing accessible to persons with disabilities covered under the ADA. According to the ADA, an individual with a disability is a person who has a physical or mental impairment that substantially limits a major life activity (such as seeing, hearing, learning, reading, concentrating, or walking) or a major bodily function (such as neurological, endocrine, or digestive system).

The information you provide and any documentation regarding your disability and test accommodations is confidential and is not included in scoring or reporting.

All approved testing accommodations must maintain the psychometric nature and security of the examination. Accommodations that fundamentally alter the nature or security of the exam will not be granted. Note that accommodations for an examination (test accommodations) may not be the same as accommodations provided by your employer for your job. You can find more information about testing accommodations under the Americans with Disabilities Act (www.ada.gov).

Requests for Test Accommodations must be uploaded with the candidate's application and fees at least 8 weeks before the start of your testing period. You must complete and upload both Part 1 and Part 2 of this Form at the same time. Missing information or incomplete Forms will result in a delay in processing. **If your Form is incomplete and/or not received at least 8 weeks before the start of the testing period, we cannot guarantee that we can make these test accommodations in time for you to test and you may need to transfer to another testing period and pay the transfer fee.**

To request test accommodations, follow these 3 steps:

1. Download the Request for Test Accommodations Form, available from www.ptcnyc.com or by calling PTC at (212) 356-0660.
2. Complete Test Accommodations Form with your doctor/healthcare professional.
3. Upload the completed and signed Request for Test Accommodations Form with the online exam application. Submit your application at least 8 weeks prior to the start of your chosen testing period.

NOTES:

- Only those requests made and received on the official Request for Test Accommodations Form will be reviewed.
- All requests must be made at the time of application. Accommodations cannot be added to an existing exam appointment.
- Do not go to www.prometric.com or contact Prometric to request test accommodations as they are not authorized to approve accommodations. All requests for test accommodations must be submitted on the PTC Request Form.

- If you need to use your cell phone or another electronic device to monitor a medical condition, such as diabetes, please be sure to include this on Part 1 of the Request for Test Accommodations Form so that we can notify Prometric in advance.
- If you are a nursing parent and will need to use a breast pump during your exam, please complete Part 1 of the Request for Test Accommodations Form and submit it at least 8 weeks before your testing period to allow time to make suitable arrangements at the test center.
- Only pre-approved test accommodations will be permitted on the day of the examination. Test center personnel are not authorized to make any changes to the test accommodations on the day of the testing session and any such change may result in your examination score being canceled.

PREPARING FOR THE EXAMINATION

- Check your driver's license, passport, non-driver state issued ID or U.S. Military ID.
 - Is it expired?
 - Does the first and last name on your ID match the first and last name on your Scheduling Authorization email?
 - Proctors at the Prometric testing center will refuse admission to candidates with expired ID, IDs with names that do not match their records, and temporary paper IDs. Candidates will be marked as no-shows and will forfeit their exam fees.
- Check your PTC Scheduling Authorization email and Prometric Appointment Confirmation email to make sure everything is accurate (i.e., your first and last name, exam name, appointment date, time and location).
- Make yourself familiar with the location of your test center and parking options and check the weather and traffic conditions before you leave for the test center. Allow plenty of time as late arrival may prevent you from testing.
- In the event of inclement weather, check the Prometric website for site closures: <https://www.prometric.com/closures>
- Prometric's website provides information on what you can expect on your test day, including a walkthrough of check in and security procedures: <https://www.prometric.com/test-center-security>.
- This Handbook provides the Content Outline for the Examination (see appendix). Use this to help you start studying for the examination.
- Review What to Expect at the Test Center and Rules for the Examination on the next pages before your appointment.
- Review the Prometric exam software tutorial here: <https://ptcny.com/pdf/prometricsoftwaretutorial.pdf>

WHAT TO EXPECT AT THE TESTING CENTER

- Candidate Check-In
 - Candidates will be asked to:
 - present their IDs.
 - empty and turn out their pockets.
 - walk through a metal detector or get “wanded”.
 - Eyeglasses, jewelry, and other accessories will be inspected.
 - Jewelry other than wedding and engagement rings is prohibited.
 - Leave these at home or place them in your locker.
 - Religious headwear may be worn into the testing room; however, it is subject to inspection by test center staff.
 - Prometric provides lockers to store purses, backpacks, mobile phones, jackets, food, drinks and medical supplies.
 - Water in a clear plastic containers (no labels) may be brought into the testing room.
- During the Exam
 - No breaks are scheduled during the exam.
 - Candidates are only permitted to leave the testing room to use the restroom or access food, drink, or medicine from their assigned locker. The exam timer will NOT be paused.
 - Smoking is prohibited at the testing center.
 - All examinations are monitored and may be recorded in both audio and video format.
- Keep in mind:
 - Other exams will be administered at the same time as your examination.
 - You may hear ambient noises such as typing, coughing, or people entering and exiting the testing room that cannot be avoided.
 - Prometric is unable to provide a completely noise-free environment.
 - Headphones may be requested to minimize the impact of ambient noise.
 - Proctors will periodically walk through the testing room as part of their monitoring process.

See [Prometric's website](#) for more information about what to expect on testing day.

RULES FOR THE EXAMINATION

Read the information below carefully. You are responsible for adhering to the examination rules while at the testing center.

⇒ **DO NOT BRING**

These items are strictly prohibited at the testing center. Leave these items in your car or your assigned locker.

- Cell phones and all other electronic devices
- Watches
- Jackets/coats/bulky clothing such as sweatshirts
- Hats (except hats worn for religious reasons)
- Jewelry, including watches and wearable technology.



- ⇒ You may NOT access the following at any time during your exam or breaks: papers, books, any reference materials; electronic devices including your cell phone. Candidates may access the following items from their locker: snacks, drinks, medicine, or other personal healthcare items.
- ⇒ No questions concerning content of the examination may be asked during the examination session. Read carefully the directions that are provided on screen at the beginning of the examination session.
- ⇒ You are prohibited from leaving the testing room while your examination is in session, except for going to the restroom. Candidates who do go to their lockers or the restroom will need to repeat the security screening before being permitted to reenter the testing room. **Candidates who leave the center will have their examinations terminated.**
- ⇒ See [Prometric's statement on Test Center Security](#) for more information.

Contact PTC at (212) 356-0660 or www.ptcny.com/contact with any questions about the Examination Rules.

Irregular or improper behavior that is observed, made apparent by statistical analysis, or uncovered by other means before, during or after the examination will be considered a violation of these rules and may constitute grounds for invalidation of a candidate's examination. AAET will initiate an investigation and request suitable analyses and appropriate documentation.

TESTING CONDITIONS OR EXAMINATION FEEDBACK

Any candidate who feels that the examination effort was negatively impacted by the test center conditions should notify the proctor immediately. The situation should also be reported to PTC at www.ptcny.com/contact within 15 business days of the test appointment. Any comments about the test itself should also be reported to PTC at www.ptcny.com/contact within 15 business days of the test appointment.

REPORT OF RESULTS

At the end of the examination, candidates will receive information on how to receive their unofficial test score report. Candidates are not eligible to use the R.NCS.T. credential until their official score is received. Candidates will be notified via email by PTC approximately four weeks after the end of the examination period whether they have officially passed or failed the examination. This is necessary to allow for the psychometric review and administrative time required to ensure accurate and reliable scores. Scores on the major areas of the examination and on the total examination will also be reported. Successful candidates will also receive certificates from AAET.

Setting the Passing Score

The passing score for the AAET National Registry Examination for Nerve Conduction Studies has been reviewed and approved by AAET and has been determined using a criterion-referenced methodology.

Confidentiality of Examination Scores

AAET will release the individual test scores ONLY to the individual candidate. Any questions concerning test results should be referred to AAET or PTC.

Requesting a Exam Score Verification

Candidates who fail the examination may request a verification of their data file. Score verification is a manual check of the data file by the testing service to determine if there have been any errors in scoring. Although the probability of such an error is extremely remote, this service is available. Requests for score verification must be received by PTC no later than 90 days after the date of the examination by completing and returning the Exam Score Verification Request form on www.ptcny.com with payment of \$35. Candidates who fail the examination will not be permitted to see the examination questions. For reasons of test security, no candidate is allowed to review the examination or any of its items.

To ensure correct reporting of results, PTC automatically performs verifications of examinations of candidates who score within 3 points of passing as a quality control measure. Thus, it is extremely doubtful that any examination results will change from “fail” to “pass” through score verification.

Reexamination

The National Registry Examination for Nerve Conduction Studies may be taken as often as desired, upon filing of a new Application and fee. There is no limit to the number of times the examination may be repeated.

EXAMINATION SECURITY

Candidates seeking admission to take the examination do so for the purpose of pursuing registration, and for no other purpose. Because of the confidential nature of the examination, candidates may not make or keep copies, excerpts, or notes of examination materials, and to not use or divulge information learned from the examination. The examination is the exclusive property of AAET and candidates may not use examination information in any way without the express prior written consent of AAET.

The National Registry Examination for Nerve Conduction Studies is confidential. Candidates are required to sign a confidentiality agreement prior to the start of the examination.

Candidates agree to abide by the testing rules in effect at the time of their test appointment. AAET, PTC, and/or Prometric staff may refuse a candidate admission to the examination if they do not have the proper identification as detailed in the Candidate Handbook. Candidates who do not abide by the testing rules may have their exam terminated during the exam administration in order to maintain a secure and proper exam administration and/or exam scores invalidated.

ATTAINMENT OF REGISTRATION

Candidates who pass the Registry Examination for Nerve Conduction Studies will be authorized to use the designation R.NCS.T.

REVOCATION OF REGISTRATION

Registration will be revoked for either of the following reasons:

1. Falsification of Application.
2. Misrepresentation of certification status.
3. Failure to complete and submit the required continuing education for recertification.

AAET provides an appeal mechanism for any action taken in this regard. It is the responsibility of the individual to initiate this process.

RECERTIFICATION

Each R.NCS. T. must either retake and pass the written examination or submit documentation of continuing education totaling a minimum of 30 hours directly related to NCS or neuromuscular diseases over the five (5) year period. Technologists must keep records with proof of attendance. When a technologist fails to renew his/her credential, the credential expires and the technologist is unable to legally claim certification. Recertification policies can be found by navigating to the recertification tab at www.aaet.info or e-mailing aaet-cerc@aaet.info.

CONTENT OF THE EXAMINATION

The AAET National Registry Examination for Nerve Conduction Studies is a computer-based examination composed of a maximum of 250 multiple-choice, objective questions with a total testing time of four (4) hours. The content for the examination is described in the Content Outline on the next page.

The questions for the examination are obtained from individuals with expertise in electrodiagnostic technology and are reviewed for construction, accuracy, and appropriateness by the AAET.

AAET, with the advice and assistance of the Professional Testing Corporation, prepares the examination.

The AAET National Registry Examination for Nerve Conduction Studies will be weighted in approximately the following manner:

I.	Physiology and Anatomy	20%
PRINCIPLES OF NCS		
II.	Basic Electronics, Instrumentation and Stimulation	5%
III.	Nerve Conduction Velocity Concepts and Wallerian Degeneration	10%
STIMULATION & RECORDING PRINCIPLES		
IV.	Late Responses and Blink Reflex	5%
V.	Neuromuscular Junction Transmission & Repetitive Nerve Stimulation Studies	13%
VI.	Peripheral Nerves, Case Studies & Electrode Placement/Practical Application	35%
VII.	Technical Considerations, Anomalies and Safety	12%

I. PHYSIOLOGY AND ANATOMY

- A. Basic Physiology
 - 1. Basics
 - 2. Physiologic Principles of Resting Potentials and Action Potentials
 - a. Resting Potentials
 - 1. Cell Membrane Physiology
 - 2. All or None Response
 - 3. Depolarization
 - 4. Repolarization
 - 5. Hyperpolarization
 - 6. Refractory Period
 - b. Propagation of Action Potentials
 - 1. Saltatory Conduction
 - a. Schwann Cells
 - b. Node of Ranvier—Internodal Length
 - c. Sodium Potassium Pump
 - 2. Myelinated Axons—Degree of Myelination
 - 3. Unmyelinated Axons
- B. Nerve Physiology
 - 1. Peripheral Nerve Anatomy
 - a. Fascicles
 - b. Connective Tissues (epineurium, perineurium, endoneurium)
 - c. Fiber Types
 - 2. Cell Body Location of Motor and Sensory Axons
 - a. Dorsal Root Ganglion
 - b. Anterior Horn Cell
- C. Muscle Physiology
 - 1. Structure
 - a. Myofibril
 - b. Sarcomere
 - c. H, A, I, and Z Bands
 - 2. Mechanism of Contraction
 - a. Myosin Filaments
 - b. Actin Filaments
 - c. Calcium
 - d. Sarcoplasmic Reticulum—T Tubules
- D. Plexus
 - 1. Spinal Roots
 - 2. Dorsal and Ventral Roots/Rami
 - 3. Plexus
 - a. Brachial Plexus
 - b. Lumbosacral Plexus

PRINCIPLES OF NCS

II. BASIC ELECTRONICS, INSTRUMENTATION, & STIMULATION

- A. Basic Electronics
 - 1. Ohm's Law
 - 2. Circuit Theory—AC&DC Current & Resistors
- B. Instrumentation
 - 1. Averaging
 - 2. Filtering Effects
 - 3. Phase Cancellation
 - 4. Amplifiers (CMRR—Input Impedance—Differential Amplifier)
- C. Equipment Parameters
 - 1. Filters
 - 2. Sweep Speed/Timebase
 - 3. Gain/Sensitivity
 - 4. Cursor Placement
- D. Stimulation
 - 1. Stimulators—Constant Current/Voltage
 - 2. Parameters
 - a. Intensity
 - b. Duration
 - c. Polarity
 - 1. Cathode
 - 2. Anode
 - 3. Concepts and Pitfalls
 - a. Anodal Black
 - b. Volume Conduction
 - c. Artifact
 - d. Supramaximal Stimulation

III. NERVE CONDUCTION VELOCITY CONCEPTS AND WALLERIAN DEGENERATION

- A. Nerve Conduction
 - 1. Anatomy
 - a. Pre and Post Ganglionic Lesions
 - 1. Localization
 - 2. Effects
 - b. Nerve Conduction Studies
 - 1. Focal Lesions
 - 2. Conduction Block
 - 3. Diffuse Processes
 - 4. Multifocal Disorders
 - 5. Demyelination
 - 6. Axonal Loss
 - 7. Temporal Dispersion

2. Waveform Evaluation
 - a. Nerve Conduction Parameters
 1. Latency
 2. Amplitude
 3. Conduction Velocity
 4. Area
 5. Duration
 6. Rise Time
 - b. Normal Values
3. Pediatric Nerve Conduction
- B. Wallerian Degeneration
 1. Neurapraxia
 2. Axonotmesis
 3. Neurotmesis

STIMULATION & RECORDING PRINCIPLES

IV. LATE RESPONSES AND BLINK REFLEX

- A. F Waves
 1. Origin
 2. Technical and Clinical Applications
 3. Relationship to M wave and Habituation
- B. H Reflexes
 1. Origin
 2. Technical and Clinical Applications
 3. Relationship to M wave and Habituation
- C. A Waves
- D. Blink Reflex
 1. Origin
 2. Technical and Clinical Applications
 3. R1, R2, Contralateral R2

V. NEUROMUSCULAR JUNCTION

TRANSMISSION AND REPETITIVE NERVE STIMULATIONS STUDIES

- A. Neuromuscular Junction
 1. Physiology/Anatomy
 2. Presynaptic Disorders
 - a. Lambert-Eaton Syndrome
 - b. Botulism
 3. Postsynaptic Disorders—Myasthenia Gravis
- B. Performing Repetitive Nerve Stimulation Studies
 1. Technical Setup
 - a. Electrode Stabilization
 - b. Stimulation Parameters
 2. Post Activation Evaluation

- a. Facilitation
- b. Exhaustion
- c. Pseudofacilitation

VI. PERIPHERAL NERVES, CASE STUDIES, & ELECTRODE PLACEMENT/PRACTICAL APPLICATION

- A. Neuroanatomy
 1. Upper Extremity
 - a. Median Nerve
 1. Median Motor Nerve
 2. Median Sensory Nerve
 3. Anterior Interosseous
 4. Palmar Cutaneous Branch
 - b. Ulnar Nerve
 1. Ulnar Motor Nerve
 2. Ulnar Sensory Nerve
 3. Dorsal Ulnar Cutaneous
 4. Medial Antebrachial Cutaneous
 5. Palmar Cutaneous Branch
 - c. Radial Nerve
 1. Radial Motor Nerve
 2. Posterior Interosseous Nerve
 3. Superficial Radial Nerve
 2. Lower Extremity
 - a. Saphenous Nerve
 - b. Femoral Nerve
 - c. Lateral Femoral Cutaneous
 - d. Sciatic Nerve
 1. Common Peroneal (Fibular)
 - a. Deep
 - b. Superficial
 2. Tibial Nerve
 - a. Medial Plantar Nerve
 - b. Lateral Plantar Nerve
 3. Sural Nerve
 3. Cranial Nerves I—XII
 - a. Innervations
 - b. Cutaneous Sensation
 - c. Facial Nerve
 - d. Trigeminal Nerve
 - e. Accessory Nerve
 4. Other Nerves
 - a. Phrenic
 - b. Suprascapular
 - c. Long Thoracic
 - d. Axillary

B. Clinical Syndromes

1. Motor Neuron
 - a. Multifocal Motor Neuropathy with Conduction Block
 - b. Amyotrophic Lateral Sclerosis
 - c. Other (Poliomyelitis, Spinal Muscular Atrophy)
2. Dorsal Root Ganglion Disorders/Sensory Neuropathies
3. Root
 - a. Radiculopathy
 - b. Polyradiculopathy
 - c. Root Avulsion
4. Plexus Lesions
 - a. Erb's Palsy
 - b. Neurogenic Thoracic Outlet Syndrome
 - c. Parsonage Turner
5. Mononeuropathies
 - a. Median at the Wrist (Carpel Tunnel)
 - b. Ulnar at the Elbow
 - c. Ulnar of Guyons Canal
 - d. Radial Nerve (Saturday Night Palsy)
 - e. Mononeuropathy Multiplex
 - f. Tibial at the Ankle (Tarsal Tunnel)
 - g. Peroneal at Fibular Head
6. Polyneuropathies
 - a. Hereditary (Charcot Marie Tooth)
 - b. Acquired
 1. Acute Inflammatory Demyelinating Polyneuropathy (AIDP)
 2. Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)
 3. Other (Toxic, Metabolic, Infectious, etc.)
7. Muscle Disorders

VII. TECHNICAL CONSIDERATIONS, ANOMALIES, AND SAFETY

A. Physiologic Factors

1. Temperature
 - a. Effects on Latency, Velocity, and Amplitude
 - b. Effects on Repetitive Stimulation Factors
 - c. Warming Methods
2. Age
3. Height
4. Anomalous Innervation
 - a. Martin Gruber Anastomosis
 1. Hypothenar (ADM)
 2. First Dorsal Interosseous
 3. Thenar (APB)
 - b. Richie Cannieu Anastomosis
 - c. Accessory Peroneal

B. Technical Factors

1. Electrode Size
2. Electrode Polarity
3. Distance of Reference
4. Electrode Placement
5. Electrode Impedance
6. Measuring Errors
7. Limb Position
8. Antidromic vs. Orthodromic
9. Troubleshooting Abnormal NCS Findings

C. Safety Factors

1. Infection Control Guidelines
 - a. Transmissible Disease/Standard (Universal) Precautions
 - b. Disinfection
2. Electrical Safety
 - a. Equipment
 - b. Leakage Current
 - c. Electrically Sensitive Patients
3. Practice Compliance
 - a. HIPAA
 - b. OSHA

CODE OF ETHICS

The Code of Ethics of The Nerve Conduction Association

As a Member of The Nerve Conduction Association, I subscribe to this Code of Ethics.

1. In my work I will act in a manner so as to merit the respect of my patients, my colleagues, and/or my fellow AAET Members.
2. I will not work outside my scope of practice and will adhere to the state or regulatory guidelines for which I am employed.
3. I will maintain confidentiality as defined by Health Insurance Portability and Accountability Act (HIPAA) regarding any patient information.
4. I will treat all patients with the utmost respect and courtesy, regardless of their sex, race, creed, or the nature of their presenting disease.
5. I will strive to achieve excellence and maintain competence in my work, and to assist and encourage other technologists to do the same.

I understand that by becoming a R.NCS.T. and/or member of AAET I am bound by this Code of Ethics. I will abide by the rules and regulations as set forth by the Board of Directors of The Nerve Conduction Association. I understand that my membership may be revoked if I am found to be in violation of this code.

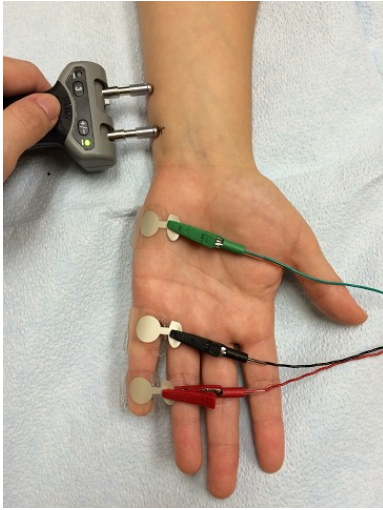
SAMPLE EXAMINATION QUESTIONS

In the following questions, choose the one best answer.

1. If a patient presents with possible upper trunk plexopathy, changes in which of the following diagnostic studies would most likely support a diagnosis of a lesion at this level?
 1. Median and ulnar sensory studies
 2. Median motor and ulnar sensory studies
 3. Ulnar and radial sensory studies and ulnar F wave studies
 4. Radial, median, and lateral antebrachial cutaneous sensory studies
2. The ulnar nerve is derived from which of the following roots and brachial plexus components?
 1. C6, 7; lower trunk; medial cord
 2. C7, 8, T1; lower trunk; posterior cord
 3. C8, T1; lower trunk; medial cord
 4. C8, T1; lower trunk; lateral cord
3. Preganglionic injury (proximal to the dorsal root ganglion) results in Wallerian degeneration to the
 1. motor axons only.
 2. sensory axons only.
 3. both motor and sensory axons.
 4. neither motor nor sensory axons.
4. If an individual referred for nerve conduction studies has a complete lesion of the femoral nerve immediately distal to the dorsal root ganglion, the H reflex studies would be expected to be
 1. absent.
 2. delayed.
 3. reduced.
 4. unaffected.
5. The distal onset latency on a median motor study is 3.4ms and the proximal latency is 7.4ms. If the distance between the two sites is 226mm, what is the conduction velocity of this segment?
 1. 32m/sec
 2. 57m/sec
 3. 66m/sec
 4. 77m/sec

(Continued on the next page)

6. What nerve conduction study is being performed in the photograph below?



1. Median sensory antidromic
2. Ulnar sensory antidromic
3. Median sensory orthodromic
4. Ulnar sensory orthodromic

ANSWER KEY	
Q	A
1	4
2	3
3	1
4	4
5	2
6	2

REFERENCES

The following references may be of some help in preparing for the examination. The list does not attempt to include all acceptable references nor is it suggested that the examination questions are necessarily based on these references.

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PTC24051



R. NCS.T. EXAMINATION ATTESTATION STATEMENT

Candidate Name: _____

Address: _____

E-mail Address _____

● **SUPERVISING PHYSICIAN**

- I attest that the above named candidate: (check all that apply)

- ☐ has undergone on-the-job training in NCS under my direction.
- ☐ is not performing invasive (needle) examination and that as the supervising physician, I am responsible for interpreting the data obtained in NCS and needle EMG testing.
- ☐ has satisfactorily completed the 100 patient encounters documented on the 'submitted cases sheet'.
- ☐ is competent in NCS testing and ready to sit for the R. NCS. T board examination.
- ☐ has graduated from a CAAHEP accredited neurodiagnostics/END program
OR has one year experience

Signature: _____ Name: _____

Email: _____ Date: _____
(for use by AAET to confirm or clarify candidate information.)



R.NCS.T. APPLICATION

NCS Patient Encounter Documentation Form

A patient encounter is defined as an individual patient visit. No more than 12 encounter per day; only encounters within three (3) years of application date will be accepted. Present cases in chronological order.

Candidate: _____ **Employer:** _____

Dates of studies: _____ **through** _____

#	DATE	PATIENT Referral (Mononeuropathy, Radiculopathy, MND, NMJD, Plexopathy, etc.)	SUPERVISING MD	NORMAL OR ABNORMAL?