

# I-Decisions Inc.

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## NOTICE OF INDEPENDENT REVIEW DECISION

**DATE OF REVIEW:**

Jun/15/2010

**IRO CASE #:**

**DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE:**

1 Electromyography (EMG)/Nerve Conduction Velocity (NCV) of the Bilateral Upper Extremities

**DESCRIPTION OF THE QUALIFICATIONS FOR EACH PHYSICIAN OR OTHER HEALTH CARE PROVIDER WHO REVIEWED THE DECISION:**

MD, Board Certified in Physical Medicine and Rehabilitation and Electrodiagnostic Medicine

**REVIEW OUTCOME:**

Upon independent review, the reviewer finds that the previous adverse determination/adverse determinations should be:

- Upheld (Agree)
- Overturned (Disagree)
- Partially Overturned (Agree in part/Disagree in part)

**INFORMATION PROVIDED TO THE IRO FOR REVIEW**

Adverse Determination Letters, 5/5/10, 3/26/10  
DC, Request for IRO, 5/24/10  
Pain and Injury Relief Clinic 3/4/10, 3/22/10, 4/28/10, 3/31/10,  
4/14/10  
Medical Health 3/23/09, 5/17/10  
MRI 12/10/08  
South Loop MRI 1/14/09  
FOCUS 4/29/09  
, M.D. 3/26/10  
Medical Rehabilitation & Pain Center 3/4/10  
Clinic 4/16/10  
4/23/10  
, M.D. 4/23/10  
Concentra 5/6/10  
ODG Guidelines

**PATIENT CLINICAL HISTORY SUMMARY**

This is a right-handed woman who developed right hand and wrist pain after moving pipes in xx/xx/xx. She was felt to have DeQuervain's tenosynovitis, but did not improve. She had an MRI in 12/08 that was suggestive of mild CTS by the radiologist, due to bulging of the flexor retinaculum. The electrodiagnostic studies in 4/09 failed to demonstrate any evidence of a radiculopathy or CTS. She remains with hand pain that worsens with movement. Dr. noted that she cannot make a fist without pain. Dr. noted wrist numbness and pain that extended to the thumb. Dr.'s note from 2009 described tingling in her hand with pain and paresthesias to the wrist and forearm. He noted thenar atrophy. Dr. noted wrist pain and reduced grasp, but did not describe any atrophy or abnormal neurological signs, although she had a diagnosis of

mononeuritis. Dr. performed the EDX and described bilateral Phalen and Tinel signs, and reduced sensation in the right median and ulnar distribution with weakness of the abductor pollicis brevis.

Dr. found the Tinel signs in the right ulnar groove and hypesthesias in the small and ring fingers with some weakness in the adductors. The thenar muscles were normal. Dr. reported he previously advised electrodiagnostic studies for the numbness and tingling in her right wrist. He did not note any finger symptoms. His exam described hand pain. He found no atrophy and no neurological loss.

#### **ANALYSIS AND EXPLANATION OF THE DECISION INCLUDING CLINICAL BASIS, FINDINGS AND CONCLUSIONS USED TO SUPPORT THE DECISION**

The only common finding is her complaint of wrist pain. The numbness varies and different findings exist regarding any median or ulnar neurological loss. The elbow problem described by Dr. would not likely be related to a wrist injury as described. It appears no one has an established diagnosis and the request for the electrodiagnostic studies are to help determine an answer. The ODG notes that initial studies may be normal in a mild case and require a second or repeat nerve conduction study at a later date. Since Dr. found bilateral Tinel and Phalen signs not found by other physicians, this reviewer agrees that bilateral studies should be performed. The outcome will either show the presence of right CTS that can be treated, or show no abnormality. Therefore, based on the information and the ODG, the reviewer finds that medical necessity does exist in this patient's case for 1 Electromyography (EMG)/Nerve Conduction Velocity (NCV) of the Bilateral Upper Extremities.

#### **CTS**

##### **Electrodiagnostic studies (EDS)**

Recommended in patients with clinical signs of CTS who may be candidates for surgery. Electrodiagnostic testing includes testing for nerve conduction velocities (NCV), but the addition of electromyography (EMG) is not generally necessary. See also Nerve conduction studies (NCS) and Electromyography (EMG). In general, carpal tunnel syndrome should be proved by positive findings on clinical examination and should be supported by nerve conduction tests before surgery is undertaken. Mild CTS with normal electrodiagnostic studies (EDS) exists, but moderate or severe CTS with normal EDS is very rare. Positive EDS in asymptomatic individuals is not CTS. Studies have not shown portable nerve conduction devices to be effective. Appropriate electrodiagnostic studies (EDS) include nerve conduction studies (NCS). In more difficult cases, electromyography (EMG) may be helpful. NCS and EMG may confirm the diagnosis of carpal tunnel syndrome but may be normal in early or mild cases of CTS. If the EDS are negative, tests may be repeated later in the course of treatment. (Various references listed under "Detection of Neurologic Abnormalities") (Smith, 2002) (Jablecki, 2002) (AHRQ, 2003) (Podnar, 2005) (Lew, 2005) (Schrijver, 2005) (Sheu, 2006) Poor overlap between various screening procedures warns against the use of electrodiagnostic findings alone without also considering the symptom presentation. (Homan, 1999) A large cohort study showed that over one third of patients undergoing CTR may have had an inappropriate electrodiagnostic workup before the surgery. (Storm, 2005) Despite the fact that electrodiagnostic testing is considered by many to be the "gold standard" for the diagnosis of CTS, some studies have suggested that it not be a requirement. According to one systematic review, "in cases of clear-cut clinical CTS, electrodiagnosis is not warranted either as a diagnostic test, where clinical symptoms are well defined, or as a predictive indicator of surgical outcome, but it may still be useful in cases where the clinical diagnosis is not clear." (Jordan, 2002) Regarding preplacement nerve testing for CTS, not hiring workers with abnormal post-offer preplacement median nerve tests to reduce costs of work-related CTS is not a cost-effective strategy for employers. (Franzblau, 2004) NC-stat technology cannot be recommended for screening or diagnosis of CTS in an industrial population. (Katz, 2006) For more information see NC-stat nerve conduction studies. There is concordance between the results of EDS and the initial diagnostic hypothesis only 40% of the time, confirming the usefulness of EDS. (Cocito, 2006)

In using demographic and clinical data to identify the clinical pattern that predicts the diagnosis of CTS, the best pattern associated with the diagnosis was the presence of

paresthesias or pain in at least 2 of the first 4 digits in association with one of the following: female gender, symptoms worsening at night or on awakening, a BMI  $\geq 30$ , thenar atrophy, or other sign (Tinel's, Phalen's, or Reversed Phalen's signs). However, the clinical picture alone in the workers' compensation case, without neurophysiologic studies, may not be sufficient to correctly predict the diagnosis of CTS. (Gomes, 2006) This study used the CTS-6 assessment tool along with a comprehensive history and physical examination in diagnosing CTS, and concluded that in unambiguous cases of CTS, electrodiagnostic testing would not be warranted if its sole purpose is to confirm the diagnosis of CTS. As such, its value in this situation is not only to confirm a physician's suspicion of CTS, but also to quantify and stratify the severity of the condition. (Graham, 2008) See also Multiple extremity testing. Note: ODG recommends that NCS should be done to support the diagnosis of CTS prior to surgery in workers' compensation cases. If an individual has appropriate responses to treatment (i.e. injections, modification of activities, meds) but still has symptoms with normal NCS, surgery may be appropriate on a case-by-case basis and reasonable documentation by the treating physician

Protocols for electrodiagnostic studies: The American Association of Electrodiagnostic Medicine, American Academy of Neurology, and the American Academy of Physical Medicine and Rehabilitation have jointly published their practice parameter for electrodiagnostic studies in carpal tunnel syndrome. In patients with suspected CTS, the following EDX studies are recommended

- (1) Perform a median sensory NCS across the wrist with a conduction distance of 13 to 14 cm. If the result is abnormal, compare the result of the median sensory NCS to the result of a sensory NCS of one other adjacent sensory nerve in the symptomatic limb
- (2) If the initial median sensory NCS across the wrist has a conduction distance greater than 8 cm and the result is normal, one of the following additional studies is recommended
  - (a) Comparison of median sensory or mixed nerve conduction across the wrist over a short (7 to 8 cm) conduction distance with ulnar sensory nerve conduction across the wrist over the same short (7 to 8 cm) conduction distance, or
  - (b) Comparison of median sensory conduction across the wrist with radial or ulnar sensory conduction across the wrist in the same limb, or
  - (c) Comparison of median sensory or mixed nerve conduction through the carpal tunnel to sensory or mixed NCSs of proximal (forearm) or distal (digit) segments of the median nerve in the same limb. (Jablecki, 2002) (Chang, 2006)

Minimum Standards for electrodiagnostic studies: The American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM) recommends the following minimum standards

- (1) EDX testing should be medically indicated.
- (2) Testing should be performed using EDX equipment that provides assessment of all parameters of the recorded signals. Studies performed with devices designed only for "screening purposes" rather than diagnosis are not acceptable.
- (3) The number of tests performed should be the minimum needed to establish an accurate diagnosis.
- (4) NCSs (Nerve conduction studies) should be either (a) performed directly by a physician or (b) performed by a trained individual under the direct supervision of a physician. Direct supervision means that the physician is in close physical proximity to the EDX laboratory while testing is underway, is immediately available to provide the trained individual with assistance and direction, and is responsible for selecting the appropriate NCSs to be performed.
- (5) EMGs (Electromyography - needle not surface) must be performed by a physician specially trained in electrodiagnostic medicine, as these tests are simultaneously performed and interpreted.
- (6) It is appropriate for only 1 attending physician to perform or supervise all of the components of the electrodiagnostic testing (e.g., history taking, physical evaluation, supervision and/or performance of the electrodiagnostic test, and interpretation) for a given

patient and for all the testing to occur on the same date of service. The reporting of NCS and EMG study results should be integrated into a unifying diagnostic impression.

(7) In contrast, dissociation of NCS and EMG results into separate reports is inappropriate unless specifically explained by the physician. Performance and/or interpretation of NCSs separately from that of the needle EMG component of the test should clearly be the exception (e.g. when testing an acute nerve injury) rather than an established practice pattern for a given practitioner. (AANEM, 2009)

#### Electromyography (EMG)

Recommended only in cases where diagnosis is difficult with nerve conduction studies (NCS). In more difficult cases, needle electromyography (EMG) may be helpful as part of electrodiagnostic studies which include nerve conduction studies (NCS). There are situations in which both electromyography and nerve conduction studies need to be accomplished, such as when defining whether neuropathy is of demyelinating or axonal type. Seldom is it required that both studies be accomplished in straightforward condition of median and ulnar neuropathies or peroneal nerve compression neuropathies. Electromyographic examinations should be done by physicians. (Utah, 2006) Surface EMG is not recommended. See Electrodiagnostic studies.

#### Nerve conduction studies (NCS)

Recommended in patients with clinical signs of CTS who may be candidates for surgery. Appropriate electrodiagnostic studies (EDS) include nerve conduction studies (NCS). Carpal tunnel syndrome must be proved by positive findings on clinical examination and should be supported by nerve conduction tests before surgery is undertaken. Mild CTS with normal electrodiagnostic studies (EDS) exists, but moderate or severe CTS with normal EDS is very rare. Positive EDS in asymptomatic individuals is not CTS. There is minimal justification for performing nerve conduction studies when a patient is presumed to have symptoms on the basis of radiculopathy. Nerve conduction studies should be done by a qualified technician working directly under the supervision of a physician. (Utah, 2006) See Electrodiagnostic studies; and Portable nerve conduction devices.

#### **A DESCRIPTION AND THE SOURCE OF THE SCREENING CRITERIA OR OTHER CLINICAL BASIS USED TO MAKE THE DECISION**

- ACOEM-AMERICA COLLEGE OF OCCUPATIONAL & ENVIRONMENTAL MEDICINE UM KNOWLEDGEBASE
- AHCPR-AGENCY FOR HEALTHCARE RESEARCH & QUALITY GUIDELINES
- DWC-DIVISION OF WORKERS COMPENSATION POLICIES OR GUIDELINES
- EUROPEAN GUIDELINES FOR MANAGEMENT OF CHRONIC LOW BACK PAIN
- INTERQUAL CRITERIA
- MEDICAL JUDGEMENT, CLINICAL EXPERIENCE AND EXPERTISE IN ACCORDANCE WITH ACCEPTED MEDICAL STANDARDS
- MERCY CENTER CONSENSUS CONFERENCE GUIDELINES
- MILLIMAN CARE GUIDELINES
- ODG-OFFICIAL DISABILITY GUIDELINES & TREATMENT GUIDELINES
- PRESSLEY REED, THE MEDICAL DISABILITY ADVISOR
- TEXAS GUIDELINES FOR CHIROPRACTIC QUALITY ASSURANCE & PRACTICE PARAMETERS
- TEXAS TACADA GUIDELINES
- TMF SCREENING CRITERIA MANUAL
- PEER REVIEWED NATIONALLY ACCEPTED MEDICAL LITERATURE (PROVIDE A DESCRIPTION)
- OTHER EVIDENCE BASED, SCIENTIFICALLY VALID, OUTCOME FOCUSED GUIDELINES (PROVIDE A DESCRIPTION)