

PATIENT CLINICAL HISTORY [SUMMARY]:

The patient is a xx year old female. The mechanism of injury is described as repetitive movements resulting in pain to the bilateral wrists. Electrodiagnostic testing performed 06/19/10 was reported as a normal study with no evidence of carpal tunnel syndrome, no ulnar neuropathy, and no cervical radiculopathy. An MRI of the left wrist performed 07/02/10 revealed mild segment dorsal extensor compartment peritendinitis, mild intercarpal joint effusions without evidence of synovitis, and no mass lesion or cyst formation noted within the carpal tunnel. The ulnar nerve is normal.

A request for repeat EMG/NCV bilateral upper extremities was reviewed on 01/05/11 and the request was denied by physician advisor. Rationale noted that there was documentation that a bilateral upper extremity electrodiagnostic assessment had been accomplished in 06/10 and the study was found to be unremarkable. Specifically, there were no findings worrisome for an active radiculopathy, a peripheral neuropathy, and/or a peripheral nerve entrapment syndrome. The left wrist MRI accomplished on 07/02/10 revealed findings consistent with a mild effusion. At the present time for the described medical situation, medical necessity for this specific request is not established. ODG would not support this request to be one of medical necessity when there is no documentation of any new changes on neurological examination and when past diagnostic testing included electrodiagnostic assessment which was unremarkable.

An appeal request was reviewed on 01/18/11 and the request denied by a physician advisor. The rationale noted the patient already had a bilateral upper extremity EMG/NCV by Dr. on 06/17/10 which showed no carpal tunnel, cubital tunnel or cervical radiculopathy. Dr., an orthopedic surgeon, did a full evaluation on 09/27/10 which showed no CT findings, but that she had symptoms everywhere in the upper extremity for entrapment issues. This is not physiologic and, as noted by Dr., he did not find a surgical lesion/indication. Patient was noted to have more symptoms than findings. The physician advisor determined there was no validated necessity for repeat bilateral upper extremity EMG/NCV. This is an IRO request for Repeat EMG/NCV Bilateral Upper Extremities.

ANALYSIS AND EXPLANATION OF THE DECISION INCLUDE CLINICAL BASIS, FINDINGS AND CONCLUSIONS USED TO SUPPORT THE DECISION:

Based on the clinical information provided, repeat EMG/NCV of bilateral upper extremities is not supported as medically necessary. The patient is noted to have reported a repetitive motion injury to the bilateral wrists due to repetitive. The patient reportedly was treated with active and passive modalities without significant improvement. Electrodiagnostic testing performed on 06/17/10 revealed a normal study, and specifically noted no carpal tunnel syndrome, no ulnar neuropathy, and no cervical radiculopathy. MRI of the left wrist performed on 07/02/10 revealed mild second dorsal extensor compartment peritendinitis and mild intracarpal joint effusion without evidence of synovitis. There was no evidence of mass lesion or cyst formation within carpal tunnel, and the ulnar nerve is normal. There is no evidence of a progressive neurologic deficit or significant changes in clinical condition that would warrant repeat EMG/NCV. The patient was noted to have had an orthopedic evaluation with non physiologic findings, and no evidence of a surgical lesion. The previous reviews correctly determined the request for repeat studies of bilateral upper extremities as not supported as medically necessary, and should be upheld on IRO.

Electromyography (EMG)

Recommended (needle, not surface) as an option in selected cases. The American Association of Electrodiagnostic Medicine conducted a review on electrodiagnosis in relation to cervical radiculopathy and concluded that the test was moderately sensitive (50%-71%) and highly specific (65%-85%). ([AAEM, 1999](#)) EMG findings may not be predictive of surgical outcome in cervical surgery, and patients may still benefit from surgery even in the absence of EMG findings of nerve root impingement. This is in stark contrast to the lumbar spine where EMG findings have been shown to be highly correlative with symptoms.

Positive diagnosis of radiculopathy: Requires the identification of neurogenic abnormalities in two or more muscles that share the same nerve root innervation but differ in their peripheral nerve supply.

Timing: Timing is important as nerve root compression will reflect as positive if active changes are occurring. Changes of denervation develop within the first to third week after compression (fibrillations and positive sharp waves develop first in the paraspinals at 7-10 days and in the limb muscles at 2-3 weeks), and reinnervation is found at about 3-6 months

Acute findings: Identification of fibrillation potentials in denervated muscles with normal motor unit action potentials (usually within 6 months of symptoms: may disappear within 6 weeks in the paraspinals and persist for up to 1-2 years in distal limbs).

Chronic findings: Findings of motor unit action potentials with increased duration and phases that represent reinnervation. With time these become broad, large and polyphasic and may persist for years.

Anatomy: The test primarily evaluates ventral (anterior) root function (motor) and may be negative if there is dorsal root compression (sensory) only. Only C4-8 and T1 in the neck region have limb representation that can be tested electrodiagnostically. The anatomic basis for this lies in the fact that the cervical nerve roots have a motor and a sensory component. It is possible to impinge the sensory component with a herniated disc or bone spur and not affect the motor component. As a result, the patient may report radicular pain that correlates to the MRI without having EMG evidence of motor loss.

Paraspinal fibrillation potentials: May be seen in normal individuals and are nonspecific for etiology. The presence of these alone is insufficient to make a diagnosis of radiculopathy and they may be absent when there is a diagnosis of radiculopathy secondary to sampling error, timing, or because they were spared. They may support a diagnosis of radiculopathy when corresponding abnormalities are present in the limb muscles.

Indications when particularly helpful: EMG may be helpful for patients with double crush phenomenon, in particular, when there is evidence of possible metabolic pathology such as neuropathy secondary to diabetes or thyroid disease, or evidence of peripheral compression such as carpal tunnel syndrome.

H-reflex: Technically difficult to perform in the upper extremity but can be derived from the median nerve. The test is not specific for etiology and may be difficult to obtain in obese patients or those older than 60 years of age.

(Negrin, 1991) (Alrawi, 2006) (Ashkan, 2002) (Nardin, 1999) (Tsoo, 2007) See [Discectomy-laminectomy-laminoplasty](#). (Surface EMG and F-wave tests are not very specific and therefore are not recommended. For more information on surface EMG, see the [Low Back Chapter](#).)

Nerve conduction studies (NCS)

Not recommended. There is minimal justification for performing nerve conduction studies when a patient is presumed to have symptoms on the basis of radiculopathy. (Utah, 2006) See also the [Carpal Tunnel Syndrome Chapter](#) for more details on NCS. Studies have not shown portable nerve conduction devices to be effective.

ODG Carpal Tunnel Syndrome Chapter, online version

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- AMERICAN COLLEGE OF OCCUPATIONAL & ENVIRONMENTAL MEDICINE UM KNOWLEDGBASE
- 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)

TEXAS DEPARTMENT OF INSURANCE COMPLAINT PROCESS: The Texas Department of Insurance requires Independent Review Organizations to be licensed to perform Independent Review in Texas. To contact the Texas Department of Insurance regarding any complaint, you may call or write the Texas Department of Insurance. The telephone number is 1-800-578-4677 or in writing at: Texas Department of Insurance, PO Box 149104 Austin TX, 78714. In accordance with 28 TAC §12.206(d)(19), a copy of this Independent Review Organization (IRO) Decision was sent to the carrier, the requestor and claimant via facsimile or U.S. Postal Service from the office of the IRO on 02/18/2011.