

**ReviewTex. Inc.**  
**1818 Mountjoy Drive**  
**San Antonio, TX 78232**  
**(phone) 210-598-9381 (fax) 210-598-9382**  
**reviewtex@hotmail.com**

**Notice of Independent Review Decision**

**Date notice sent to all parties:**

August 26, 2013

**IRO CASE #:**

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

1 Electromyography (EMG) and Nerve Conduction Velocity (NCV) of the Bilateral Upper Extremities between 7/26/2013 and 9/24/2013.

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

Board Certified Orthopedic Surgeon

**REVIEW OUTCOME:**

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

Upheld (Agree)

Provide a description of the review outcome that clearly states whether medical necessity exists for each of the health care services in dispute.

**INFORMATION PROVIDED TO THE IRO FOR REVIEW:**

Clinical notes dated 09/06/06 – 07/18/13  
MRI of the cervical spine dated 01/11/05  
X-ray of the lumbar spine dated 10/08/08  
X-ray of the lumbar spine dated 01/06/10  
Dexa bone scan dated 05/11/10  
X-rays of the cervical spine dated 09/12/11

**PATIENT CLINICAL HISTORY [SUMMARY]:**

The patient is a female who reported an injury regarding her cervical region. The

MRI of the cervical spine dated 01/11/05 revealed multi-level degenerative disc disease with no evidence of any disc herniation at that time. The clinical note dated 10/28/10 details the patient complaining of cervical region pain. Upon exam, no strength deficits were noted throughout the extremities. The clinical note dated 02/08/12 details the patient having previously undergone x-rays of the cervical spine which revealed a significant anterior traction spur at C3-4. X-rays of the cervical spine dated 09/12/11 revealed a mild narrowing at the C3-4 disc. The designated doctor exam dated 01/31/13 details the patient stating the initial injury occurred when she was sweeping a floor and an aluminum panel weighing approximately 40 lbs. fell onto her back and neck. The clinical note dated 06/05/13 details the patient continuing with neck and arm pain. The patient was also noted to have complaints of occasional headaches. The note does detail the patient having undergone an MRI of the cervical spine on 02/21/12 which revealed a cervical spondylosis at C3-4 without cord compression or stenosis.

The previous utilization review dated 06/27/13 details the request for an EMG/NCV study of the bilateral upper extremities resulting in a denial as no information was submitted regarding the patient's motor/sensory changes or progressive neurologic compromise were noted in the documentation.

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

The documentation submitted for review elaborates the patient complaining of cervical region pain. An EMG study would be indicated provided the patient meets specific criteria to include the patient demonstrating neurogenic abnormalities in 2 or more muscles that share the same nerve root enervation but different in peripheral nerve supply. However, nerve conduction studies are not specifically recommended if the patient is noted to have a radiculopathy component noted by clinical exam. The documentation does detail the patient having specific complaints of paresthesia in the right upper extremity. Given the significant clinical findings indicating a radiculopathy component noted in the upper extremities, this request is not indicated. As such, it is the opinion of this reviewer that the request for electromyography and nerve conduction velocity studies of the bilateral upper extremities between 07/26/13 and 09/24/13 are recommended as not medically necessary.

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

**MEDICAL JUDGEMENT, CLINICAL EXPERIENCE, AND EXPERTISE IN ACCORDANCE WITH ACCEPTED MEDICAL STANDARDS**

**ODG- OFFICIAL DISABILITY GUIDELINES & TREATMENT GUIDELINES**

### 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) (Tsao, 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.)

While cervical electrodiagnostic studies are not necessary to demonstrate a cervical radiculopathy, they have been suggested to confirm a brachial plexus abnormality or some problem other than a cervical radiculopathy, but these studies can result in unnecessary over treatment. (Plastaras, 2011) (Lo, 2011) (Fuglsang-Frederiksen, 2011)

Nerve conduction studies (NCS)

Not recommended to demonstrate radiculopathy if radiculopathy has already been clearly identified by EMG and obvious clinical signs, but recommended if the EMG is not clearly radiculopathy or clearly negative, or to differentiate radiculopathy from other neuropathies or non-neuropathic processes if other diagnoses may be likely based on the clinical exam. There is minimal justification for performing nerve conduction studies when a patient is already presumed to have symptoms on the basis of radiculopathy. (Utah, 2006) (Lin, 2013) While cervical electrodiagnostic studies are not necessary to demonstrate a cervical radiculopathy, they have been suggested to confirm a brachial plexus abnormality, diabetic neuropathy, or some problem other than a cervical radiculopathy, with caution that these studies can result in unnecessary over treatment. (Emad, 2010) (Plastaras, 2011) (Lo, 2011) (Fuglsang-Frederiksen, 2011) See also the Shoulder Chapter, where nerve conduction studies are recommended for the diagnosis of TOS (thoracic outlet syndrome). Also see the Carpal Tunnel Syndrome Chapter for more details on NCS. Studies have not shown portable nerve conduction devices to be effective