



## IMED, INC.

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### Notice of Independent Review Decision

**DATE OF REVIEW:** 07/14/11

**IRO CASE NO.:**

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

Item in dispute: Electromyography and Nerve Conduction  
Dates of Service from 05/06/2011 to 05/06/2011

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

Texas Board Certified Orthopedic Surgeon

**REVIEW OUTCOME**

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

Denial Upheld

**INFORMATION PROVIDED TO THE IRO FOR REVIEW**

1. MRI of the cervical spine dated 12/16/2010.
2. Clinic note dated 01/06/2011, MD.
3. X-ray interpretation dated 01/06/2011, MD.
4. Clinic note dated 04/28/2011, MD.
5. Designated Doctor Evaluation dated 03/18/2011, DO.
6. Physical therapy notes dated 05/26/2010 and 11/01/2010.
7. DWC Form 69 dated 12/21/2010.
8. Clinic note dated 12/21/2010, MD.
9. Operative report dated 03/08/2010.
10. Radiology report dated 01/21/2010.
11. Prior review dated 05/09/2011, MD.
12. Utilization review report dated 05/17/2011 by MD.

13. Utilization review letter dated 05/29/2011.
14. Determination letter dated 05/16/2011.
15. Determination letter dated 05/18/2011,
- 16. *Official Disability Guidelines***

### **PATIENT CLINICAL HISTORY (SUMMARY):**

The patient is a male whose date of injury is listed as xx/xx/xx. Notes indicated that the injured worker alleges a neck and right shoulder injury as the result of an occupational injury. The injured worker reports he was carrying an 80lb object and fell onto his right shoulder and neck, causing him to have pain and discomfort.

Notes indicate that the patient underwent right shoulder surgery on 03/08/2010 for arthroscopic rotator cuff repair and SLAP repair.

Cervical spine MRI carried out on 12/16/2010 indicated that the injured worker was noted to have abnormal signal which was worrisome for "metastatic disease," essentially involving the entire C6 and C7 vertebral bodies and was recommended for nuclear bone scanning to that area. He was also noted to have a 2mm anterolisthesis at C3-4 with severe right facet hypertrophy and right unciniate hypertrophy producing severe right neuroforaminal stenosis. At C4-5, there was severe right facet hypertrophy with mild right unciniate hypertrophy producing pronounced and severe right neuroforaminal stenosis. At C5-6, there was a 1-2mm central disc bulge with mild left unciniate hypertrophy and minimal left neuroforaminal stenosis. At C6-7, there was a 1-2mm broad based central disc protrusion with annular tearing and at C7-T1, there was a less than 1mm disc bulge.

Clinic note dated 01/06/2011 by MD indicated that the patient was advised to undergo bone scan to determine whether or not metastatic disease was present.

The injured worker underwent a designated doctor evaluation on 03/30/2011, which indicated complaints of neck pain and shoulder pain. The DDE indicated that the injured worker did receive some relief from his right shoulder condition post-operatively. The prior review indicated that a denial was issued due to the lack of documented radicular complaints within a specific dermatome as well as specific clinical findings on examination.

On follow-up dated 04/28/2011, the injured worker was noted to have a negative nuclear study per the note and was recommended for electrodiagnostic studies and injections. The clinic notes indicate that the injured worker described his pain as being in the neck area with popping and grinding of the neck, headaches, and reduced motion. Physical examination at that time revealed normal reflexes and normal strength.

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

Electrodiagnostic studies are used specifically when there is clinical confusion or potential overlapping pathology. They may also be used for confirmation of a radiculopathy when the clinical picture is obscure. In this case, the injured worker did not have detailed documentation by Dr. to support electrodiagnostic studies of the bilateral upper extremities, which would include physical examination findings indicating a possible radicular pattern or dermatomal findings. Imaging studies indicate the presence of significant degenerative findings without evidence of acute injury. While cervical electrodiagnostic studies are not necessary to demonstrate a cervical radiculopathy, the test is both sufficiently sensitive and specific to confirm the presence of a cervical radiculopathy. In this case, there is no detail of specific physical examination findings or complaints noted on Dr. clinic notes, which would support the necessity for EMG/NCV of the bilateral upper extremities. It should be noted, however, that the only place where significant findings were noted was on the designated doctor evaluation, where a positive Spurling's sign was present. The remainder of the findings throughout the clinical documentation referred to shoulder pain as being related to primary shoulder pathology and not from possible cervical radiculopathy. Therefore, the request is not supported by the documentation submitted for prior review.

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

#### **Reference:**

Official Disability Guidelines, Neck and Upper Back Chapter  
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. There is minimal justification for performing nerve conduction studies when a patient is presumed to have symptoms on the basis of radiculopathy.

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