



COMMON REFERRAL INDICATIONS FOR ELECTRODIAGNOSTIC MEDICINE EVALUATIONS

INTRODUCTION

These guidelines are designed to help physicians determine if a referral for an electrodiagnostic medicine (EDX) evaluation could be useful for a particular patient. During an EDX evaluation, a qualified EDX physician and/or supervised associates perform nerve conduction studies (NCSs) and needle electromyography (EMG). During NCSs, recording and analysis of electric waveforms of biological origin in response to applied electric stimuli are performed. During a needle EMG study, spontaneous or voluntary electrical activities originating from muscle fibers are analyzed in real time using a narrow-gauge sterile needle electrode. A quality EDX study performed by a specially trained physician (specifically, a neurologist or physical medicine and rehabilitation [PMR] physician) should include both a NCS and a needle EMG in most cases. Both studies should be conducted and interpreted on site in real time. (See AANEM's position paper *What Does 'On Site' and 'Real Time' Mean?*)

INDICATIONS

EDX examination is a direct extension of the clinical neuromuscular examination. The EDX examination provides helpful information in the following scenarios:

1. Evaluation of function of motor and sensory neurons (motor neuron disease, sensory neuronopathy), nerve roots (radiculopathy), brachial and lumbar plexi (plexopathy), peripheral nerves (mononeuropathy, mononeuropathy multiplex or polyneuropathy), neuromuscular junction, and muscles (myopathy). EDX studies can help establish or eliminate above diagnoses, define the severity and chronicity of the disorder, and provide information useful for treatment and prognosis. EDX studies may provide specific diagnoses under certain circumstances.
2. Analysis of etiologies for a variety of clinical symptoms and signs including weakness, involuntary movement, atrophy, fatigability,

pain, numbness, paresthesia, dysphagia or urinary and anal sphincter dysfunction.

3. With specialized expertise, EDX studies can be helpful for the evaluation of speech difficulties due to paresis of laryngeal muscles and disorders of movement and tone due to disorders of the central nervous system.
4. Needle EMG examination may be helpful for guiding botulinum toxin therapy, as well as for following the effect of this treatment.

It is hoped that these guidelines will be helpful for making clinical decisions. If there are questions, discussion with the physician performing the EDX examination is recommended.

LIMITATIONS

EDX studies are a supplement to, rather than a replacement for, a careful history and physical examination. EDX studies will not be helpful where pain results from joint disease. However, EDX studies can provide evidence for relevant nerve injury where pain clinically seems musculoskeletal in origin. EDX studies are also generally not helpful when weakness or sensory loss is known to be due to disorders of central nervous system including disorders of brain and spinal cord. Clinically this is manifested by such symptoms as hemiparesis, hemisensory loss, or upper motor neuron manifestations such as hyperreflexia and a Babinski sign. However, EDX studies can help distinguish central from peripheral symptomatology. EDX studies may not provide clear-cut diagnosis in symptoms of short duration (less than 2 weeks) or mild degree. Despite its excellent localization value, EDX is limited in providing specific diagnosis under certain circumstances. EDX studies should not be obtained if the information will not potentially enhance the patient's care.

REFERRING TO QUALIFIED EDX PHYSICIANS

In order to derive maximum benefit from an EDX evaluation, it is AANEM's position that EDX evaluations should be performed by a specially trained physician (specifically, a neurologist or PMR physician) who has had special training in the diagnosis and treatment of neuromuscular diseases and in the application of particular neurophysiologic techniques to study these disorders. For a more detailed definition of a qualified EDX physician, please see AANEM's position statement *Who is Qualified to Practice Electrodiagnostic Medicine*.

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