

# DIAGNOSIS OF LUMBAR RADICULOPATHY

## BY EMG, NERVE CONDUCTION AND LATE WAVE TESTING

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### Introduction:

Electrophysiologic testing, including nerve conduction studies (NCS), late wave, and needle EMG, is frequently used for the diagnosis of radiculopathy. AANEM's recent position statement, "Proper Performance and Interpretation of Electrodiagnostic Studies", commented upon the importance of needle EMG testing for the diagnosis of radiculopathy.

### Objectives:

To determine the relative importance of each of the parts of the electrodiagnostic testing in the diagnosis of lumbosacral radiculopathy.

### Methods:

A retrospective review of 1,116 reports from One Call Medical's Neurodiagnostic Network was performed in reports where physician electromyographers offered definitive diagnosis of radiculopathy. Sample represents 471 physician electromyographers in 31 states. Data was organized by various combinations of electrodiagnostic testing part(s) (NCS, late waves, and/or needle EMG). There were 126 reports excluded because they contained a diagnosis in addition to radiculopathy.

### Results:

Most frequent category used for diagnosis of lumbosacral radiculopathy was abnormal needle EMG in 65.66% of cases. Abnormal needle EMG and abnormal H-wave were seen in 13.84% of cases and isolated abnormal H-waves in 4.85% of cases. Abnormalities seen on both needle EMG & F-wave testing in a study or abnormal F-waves as the sole abnormality on the test were seen in only 3.43% and .62% of cases respectively.

### Conclusions:

Needle EMG is imperative for the diagnosis of radiculopathy. Despite articles suggesting the importance of F-wave testing, the utilization of F-wave was of limited assistance in the diagnosis of radiculopathy.

## Needle EMG versus Late Wave Testing

Combinations of electrodiagnostic testing to diagnosis radiculopathy  
(Needle only = 66% and F waves only =0.6%)

