

Electrodiagnostic Report



Patient: M B **ID:** 101 **Date:** 5/5/2011

Presumptive Diagnosis: Cervical plexopathy without motor deficit

Study: Sensory Conduction Study – Class III

Electrode distances: Radial, Median, Ulnar: 60cm; Axillary: 20cm; Medial Cut: 30cm; Suprascapular: 15cm.

Findings suggesting pathology (higher amplitude) rated up to +5:

RIGHT (C6) RADIAL NERVE LATERAL BRANCH +1 MILD
RIGHT (C7) RADIAL NERVE MEDIAL BRANCH +3 MARKED
LEFT (C7) RADIAL NERVE MEDIAL BRANCH +1 MILD

Findings suggesting irritation (low amplitudes): suspect

NO HYPERESTHETIC FINDINGS NOTED.

Diagnostic Summary:

Higher amplitudes identify pathology with statistical sensitivity approaching 100%.* Due to CNS interconnectivity sensory pathology influences conduction in adjacent nerves so correlation of the history and other findings is essential to differentiate secondary lesions, and is necessary before initiating or changing treatment. Below normal amplitudes correlate with irritation and may suggest possible adjacent inflammatory activity, which warrants investigation to rule in or out concomitant pathology. Normal findings do not rule out non-neurogenic etiologies.

Cervical radiculopathy can be objectively confirmed by lateral bending radiographic studies. Proprioceptive disruption causes the spinous processes above and below an affected nerve root to rotate toward the side of head tilt, which is contrary to normal motion away from the side of head tilt.¹ Anterior to posterior radiographs are taken with lateral head tilt to the limit of motion without head rotation.

Sincerely,

Lopez

UNADJUSTED EXAM DATA: (Amplitudes are represented by whole number for ease of comparison)

C2R / C2L -- 20 / 21; C3R / C3L -- 17 / 17; C4R / C4L -- 19 / 20; C5R / C5L -- 25 / 23; C6R / C6L -- 32 / 29; C7R / C7L -- 43 / 37; C8R / C8L -- 22 / 23; T1R / T1L -- 13 / 17; T2R / T2L -- 16 / 17

*Technical Factors:

In 90% of pain cases only small caliber sensory pain fibers are involved so large fiber EDX is not diagnostic.² In a recent peer-reviewed blind study Class III EDX demonstrated 95% sensitivity detecting sensory pathology,³ which is far more sensitivity than symptoms, physical exam⁴ and other electrodiagnostic tests.⁵ The superior sensitivity of Class III fiber NCS is attributed to the unique attenuation of its glutamine neurotransmitter which occurs in these fibers following injury,⁶ and the use of an AMA approved bilateral testing protocol in which the patient is his own control. Amplitude is listed in AMA code 95904 and is the diagnostic marker for Class III fiber pathology. AMA code 95904 requires only one of the listed responses to be within the descriptor.⁷ The sheath of Class III fibers have such negligible myelin that velocity/latency and configuration, which require gross demyelination, is not diagnostic.⁸

¹ Punjabi & White *Clinical Biomechanics of the Spine* Lippincott 1990

² Wiener & Goetz *Neurology for the Non-Neurologist* - Lippincott 2005

³ Cork et al Predicting Nerve-Root Pathology *Journal of Anesthesiology* Vol. 2 No. 6: 2002

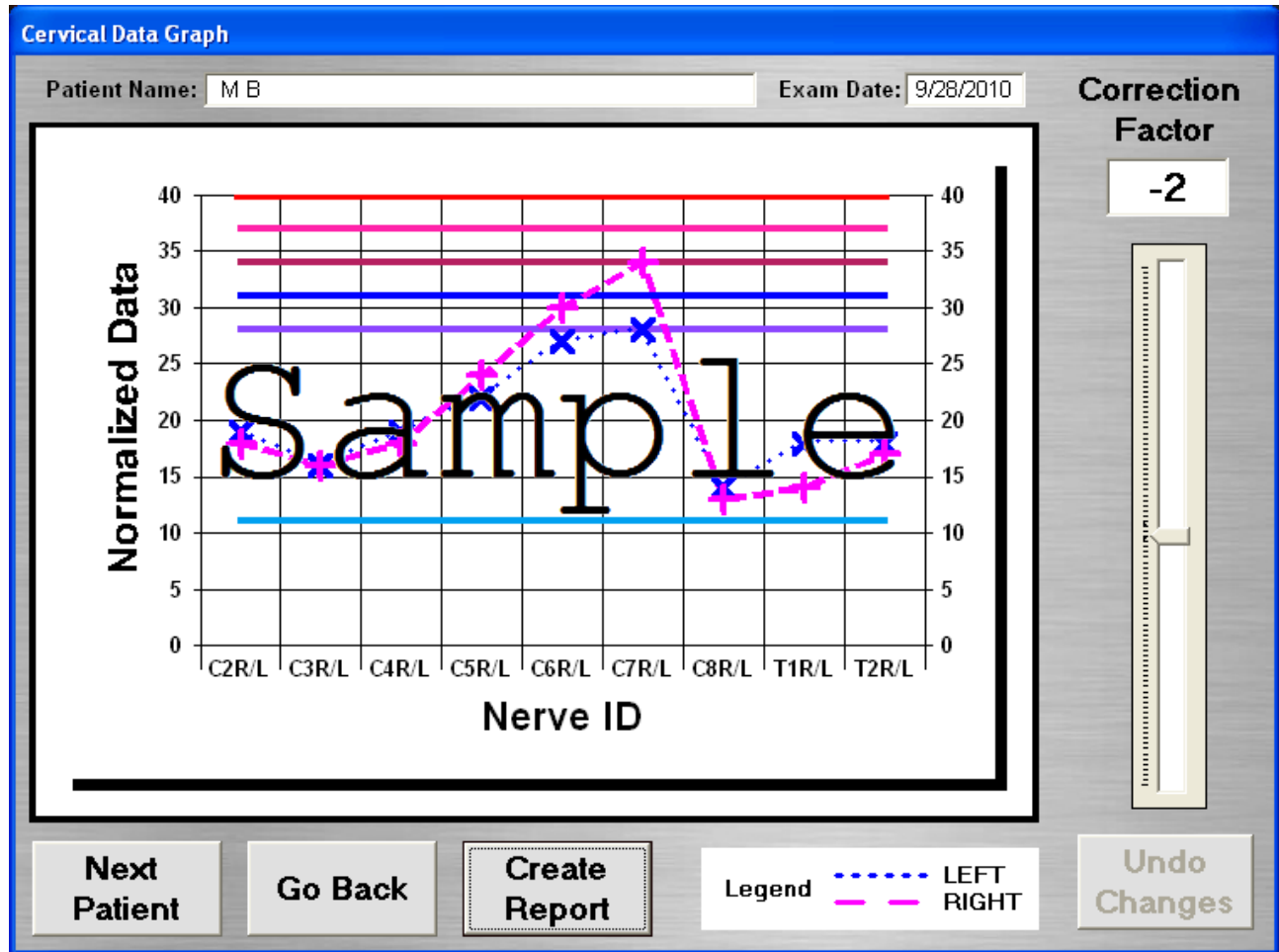
⁴ Ballantyne et al *Massachusetts General Hospital Handbook of Pain Management* 2nd Ed. pg. 382: 2002

⁵ Wiener & Goetz *Neurology for Non-Neurologists* Lippincott: Pg. 23: 2005

⁶ J. Sandkuhler et al *Journal of Neuroscience* Vol. 17 No. 16 Pg. 6483-6491, Aug. 15, 1997

⁷ *AMA EDX Guidelines* Pg. 4, Vol. 12, Issue 4, April 2002

⁸ Guyton & Hall *Textbook of Medical Physiology* 11th Ed. Pg. 576, 577: 2006



855-565-2500

Cervical Plexus Graph
 Patient: MB
 Date: 5/5/2011