

John Smith, M.D.

100 Any Street
Samletown, MA 98765

Received: 9/10/2009 10:13:52 AM
Generated: 9/10/2009 10:16:09 PM

**Your Practice
Information**

NC-stat onCall Report

Carpal Tunnel Syndrome Sample Report

**Patient
Identification**

Patient: **01234**
Age: **30-34** Height: **5'5"**

Office use: _____

Left

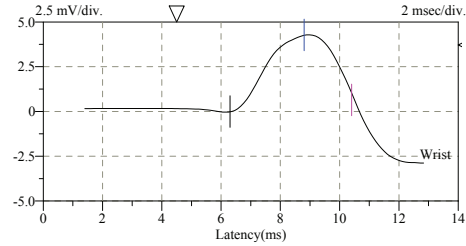
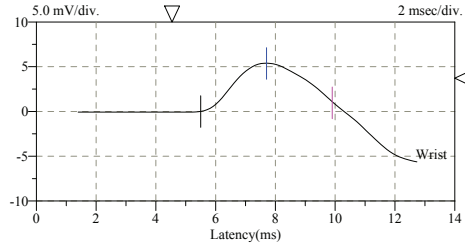
| Sensor | Test | Nerve |
|------------|------|--------|
| 00100XXXXX | 3 | Median |
| 00100XXXXX | 1 | Ulnar |

Right

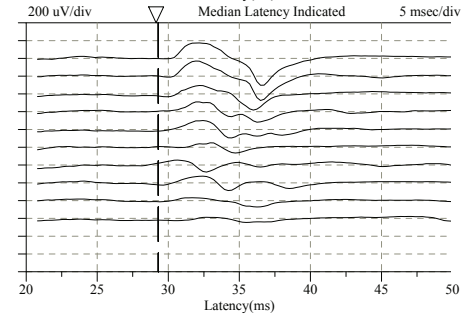
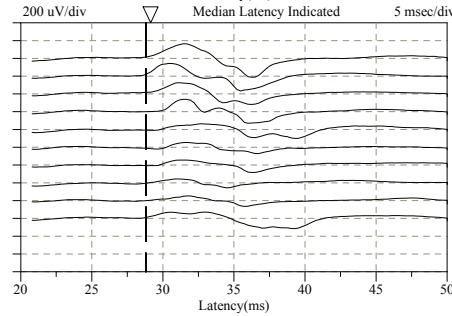
| Sensor | Test | Nerve |
|------------|------|--------|
| 00100XXXXX | 4 | Median |
| 00100XXXXX | 2 | Ulnar |

Section 1: Waveform Analysis

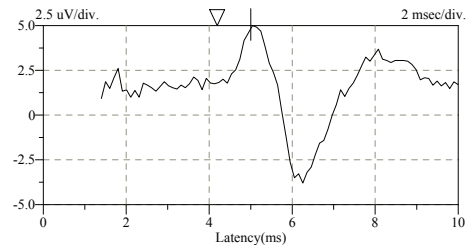
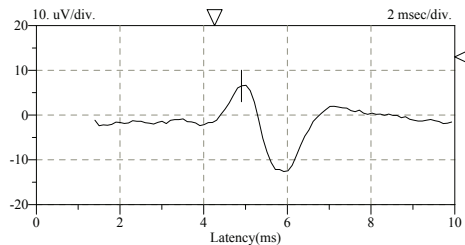
**Median
Motor**



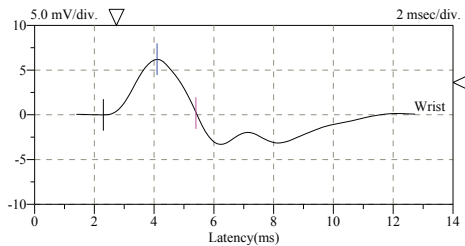
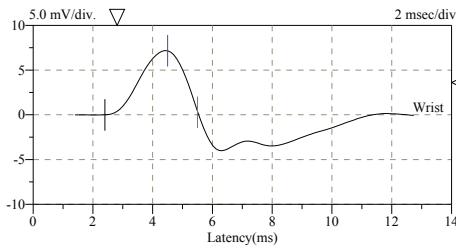
**Median
F-Waves**



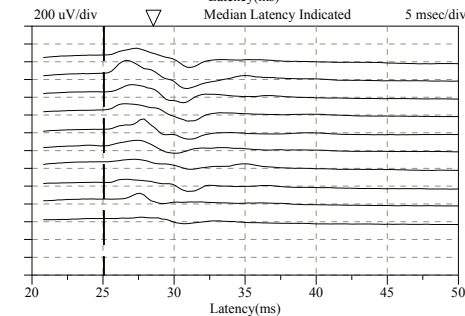
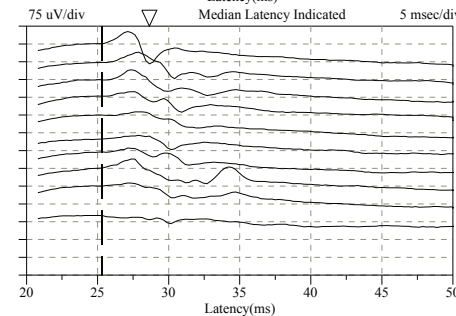
**Median
Sensory**



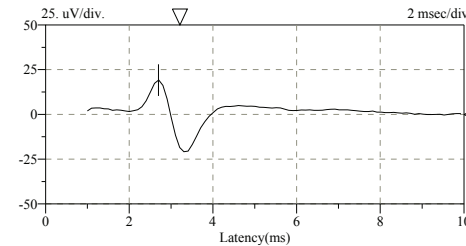
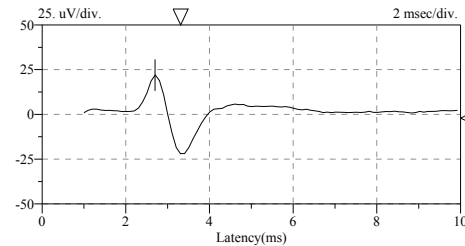
**Ulnar
Motor**



**Ulnar
F-Waves**



**Ulnar
Sensory**



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Office use: _____

Section 2: Results Table & Comparison to Reference Range

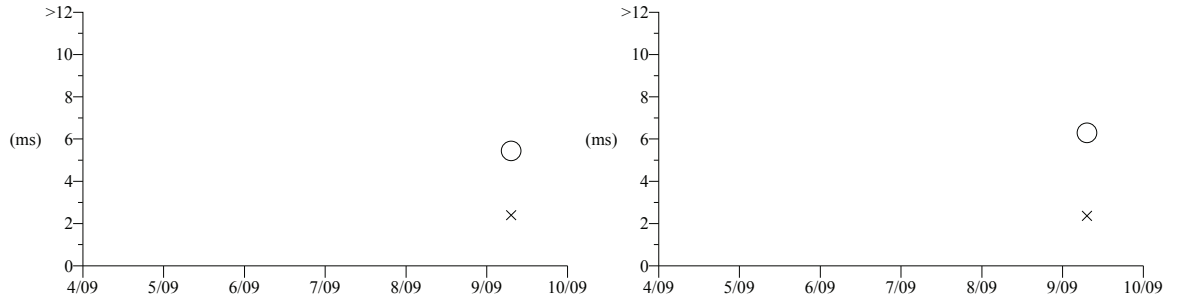
| Test | Left | | | Right | | | Ref Range |
|--------------------|--------|----------|------------|--------|----------|------------|-----------|
| | Result | Flag | Percentile | Result | Flag | Percentile | |
| Median | | | | | | | |
| DML | 5.44 | Abnormal | 0.0% | 6.30 | Abnormal | 0.0% | ≤ 4.50 |
| CMAP amplitude | 5.37 | | 22.7% | 4.28 | | 6.4% | ≥ 3.72 |
| CMAP duration | 4.45 | | 52.4% | 4.33 | | 63.3% | ≤ 5.34 |
| CMAP area | 13.65 | | 14.8% | 10.64 | | 3.3% | ≥ 10.22 |
| MUD motor | 3.10 | Abnormal | | 4.00 | Abnormal | | ≤ 2.16 |
| F-wave(mean) | 28.87 | | 3.4% | 29.41 | Abnormal | 1.8% | ≤ 29.14 |
| F-wave Persistence | 0.83 | | | 0.92 | | | ≥ 0.42 |
| DSL | 4.83 | Abnormal | 0.0% | 5.00 | Abnormal | 0.0% | ≤ 4.19 |
| SNAP amplitude | 19.16 | Abnormal | | 8.82 | Abnormal | | ≥ 25.72 |
| MUD sensory | 2.20 | Abnormal | | 2.30 | Abnormal | | ≤ 1.14 |
| Ulnar | | | | | | | |
| DML | 2.40 | | 49.8% | 2.37 | | 55.3% | ≤ 2.81 |
| CMAP amplitude | 7.19 | | | 6.21 | | | ≥ 3.61 |
| CMAP duration | 3.06 | | | 2.93 | | | --- |
| CMAP area | 11.99 | | | 10.12 | | | --- |
| F-wave(median) | 25.30 | | 70.3% | 25.15 | | 74.1% | ≤ 28.64 |
| F-wave Persistence | 0.75 | | | 1.00 | | | --- |
| DSL | 2.70 | | 67.9% | 2.79 | | 53.5% | ≤ 3.31 |
| SNAP amplitude | 43.97 | | | 39.99 | | | ≥ 20.50 |

Notes

- (1) DML (distal motor latency), DSL (distal sensory latency), MUD (median-ulnar difference), CV (conduction velocity).
- (2) All latencies measured in milliseconds. CMAP measured in millivolts. SNAP measured in microvolts.
- (3) CMAP duration measured from onset of first negative deflection to first baseline crossing
- (4) Tibial motor responses recorded using validated volume conduction methodology.
- (5) Median, Ulnar and Peroneal responses recorded directly over muscle.
- (6) Median and Ulnar sensory responses recorded using bipolar electrode configuration.

Section 3: Longitudinal Tracking

Longitudinal (DML)
 O Median
 X Ulnar



**Section 4:
Study Methodology**

Patient History:

Patient is a 30-34 year old woman. Nerve conduction study performed for evaluation of upper extremity symptoms (possibly suggestive of carpal tunnel syndrome).

Study Methodology:

Nerve conduction study performed with instrumentation having the following technical specifications. Constant current stimulator: duration 50-500 usec, magnitude 0-100 mamps, compliance 400 volts. Amplifier: gain to x100,000 (automatically set by control software), filter high pass 15/175 Hz (motor/sensory), filter low pass 3 kHz. Stimulus artifact reduction circuit ties amplifier outputs to reference voltage for 1.4-2 msec following stimulus. All acquired waveforms stored digitally.

Nerve conduction studies of both median and both ulnar nerves were performed. Upper extremity nerves were supramaximally stimulated 3 cm proximal to wrist crease. Motor parameters include the DML (latency to initial negative deflection), CMAP amplitude (baseline to negative peak), and F-wave (median latency from at least 10 F-responses). Upper extremity sensory parameters measured include the DSL (latency to negative peak, median: wrist to digit-3 proximal interphalangeal joint, ulnar: wrist to digit-5 proximal interphalangeal joint) and the SNAP amplitude (measured from negative peak to positive peak). Skin surface temperature was measured and nerve conduction values were normalized to 32 deg-C. All nerve conduction parameters corrected for patient age (five year increments) and height (one inch increments) prior to determination of abnormalities.

**Section 5:
Study Results**

Study Results:

Upper extremity motor findings: The median DML was abnormal bilaterally. The median CMAP amplitude was bilaterally normal. The ulnar DML was bilaterally normal. The ulnar CMAP amplitude was bilaterally normal. The median F-wave was normal on the left and abnormal on the right. The ulnar F-wave was bilaterally normal.

Upper extremity sensory findings: The median DSL was abnormal bilaterally. The median SNAP amplitude was abnormal bilaterally. The ulnar DSL was bilaterally normal. The ulnar SNAP amplitude was bilaterally normal.

Upper extremity comparisons: The median-ulnar DML difference was bilaterally abnormal. The median-ulnar D difference was bilaterally abnormal.

Wrist skin surface temperature was 31.8 deg-C on the left and 32.3 deg-C on the right.

Computer Analysis:

The computer generated list of statements below is not a diagnosis and must be utilized by a physician in conjunction with patient history and clinical findings. Some of the listed neuropathies may not be clinically relevant in this patient. Neuropathies with very low prevalence may not be listed.

Upper Extremity:

Based on the nerve conduction study data, consider a severe right median neuropathy at the wrist.

In addition, consider a moderate left median neuropathy at the wrist.

Left and right ulnar nerve conduction is within normal limits.

Physician Signature: _____

The onCall report provides an objective measurement of nerve function. Electrodiagnostic results supplement the patient examination; a clinical diagnosis must be made by a physician in the context of all available information.

onCall Report Road Map

onCall Report Overview

The onCall Information System provides hardcopy or electronic documentation of study results. Reports are returned to your office via fax or email in a matter of minutes. The report is divided into 5 key sections each providing clear, concise data to help you diagnose and manage your patients.

Section 1: Waveform Analysis

Documentation of Nerve Response Waveforms, Latencies and Skin Surface Temperature are provided here.

Section 2: Results Tabulation & Comparison to Reference Range

Study parameters are documented for each nerve tested. The patient's results are compared to a normal range (individuals of similar height and age) and percentiles for all latencies are determined. Abnormal results are clearly identified in the Flag field.

Glossary of Terms

| | |
|-------------------------------------|---|
| A-waves | A-waves are abnormal findings that generally indicate pathology. They are evoked responses that usually occur between the M-wave and the F-wave, or (less commonly) after the F-wave. |
| Chronodispersion | F-wave chronodispersion denotes the range of latencies that occur within a series of F-waves. |
| CMAP Amplitude | Reduction in amplitude correlates to loss of motor nerve fibers. In some studies amplitude ratios are utilized. |
| CMAP Duration | The duration of a CMAP waveform is measured from the first waveform deflection from the baseline to the return of the signal back to the baseline (in milliseconds). CMAPs with high duration may be indicative of demyelination. |
| Conduction Velocity (CV) | The fastest speed at which an impulse travels through a nerve. |
| Distal Motor Latency (DML) | Interval between the stimulus and the onset of the compound muscle action potential (CMAP). |
| Distal Sensory Latency (DSL) | Interval between the stimulus and the onset of the sensory nerve action potential (SNAP). |
| F-wave Duration | F-wave duration represents the median duration of a series of F-waves. The duration of a single F-wave is measured from the first waveform deflection from the baseline to the return of the signal back to the baseline. |
| Flag | Indicates a value outside the normal range (abnormal finding). |
| F-Wave Latency | The interval between the stimulus and the onset of an action potential resulting from antidromic activation of motor neurons in the spinal cord. Usually reported as the median or mean duration of a series. |
| MUD Motor | Difference of the median and ulnar distal motor latencies in a limb. |
| MUD Sensory | Difference of the median and ulnar distal sensory latencies in a limb. |
| Reference Range | Normal range for individuals of similar age and height. Some parameters are compared to an upper or lower limit. |
| Percentile | % of reference population (people of similar age and height) with a worse result. |
| Persistence | % of traces with F-waves. For example, 15/16 = 94% (low is abnormal). |
| SNAP Amplitude | Reduction in amplitude correlates to loss of sensory nerve fibers. In some studies amplitude ratios are utilized. |

Section 3: Longitudinal Tracking

The onCall Information System archives all studies performed. Through centralized data management, onCall is able to generate longitudinal tracking to help you monitor disease progression and/or response to therapy over time.

Section 4: Study Methodology

Documents patient demographics and type of study performed. Provides the technical specifications of the NC-stat System. Identifies what nerves were tested and how the measurements were recorded.

Section 5: Study Results

The study findings are documented. The onCall Information System analyzes each nerve parameter measured with advanced algorithms and provides a clear, concise summary of the results of the Nerve Conduction Study.