

John Smith, M.D.

100 Any Street  
Samletown, MA 98765

Received: 8/06/2009 4:29:20 PM  
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# NC-stat onCall Report

# Cubital Tunnel Syndrome Sample Report

## Your Practice Information

## Patient Identification

Patient: **01234**  
Age: **<30** Height: **5'2"**

Office use: \_\_\_\_\_

### Left

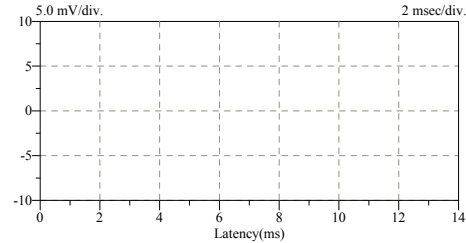
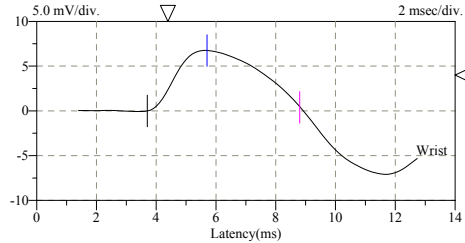
Sensor	Test	Nerve
00100XXXXX	1	Median
00100XXXXX	2	Ulnar

### Right

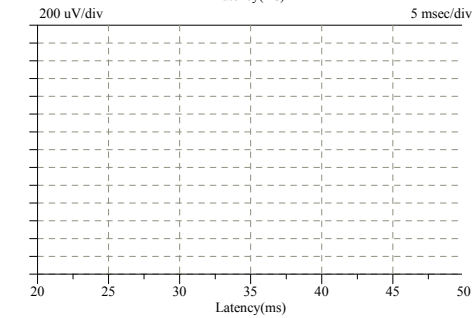
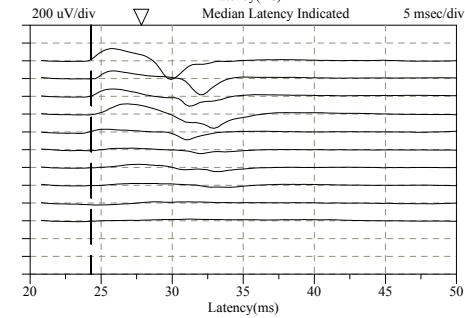
Sensor	Test	Nerve
00100XXXXX	3	Ulnar

## Section 1: Waveform Analysis

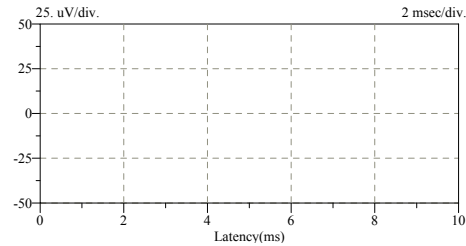
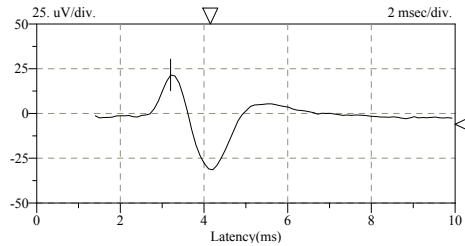
**Median Motor**



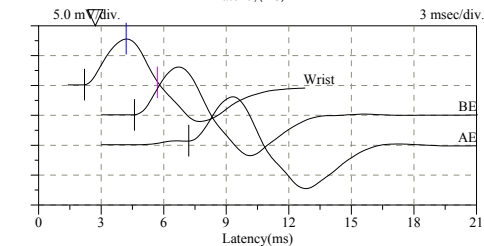
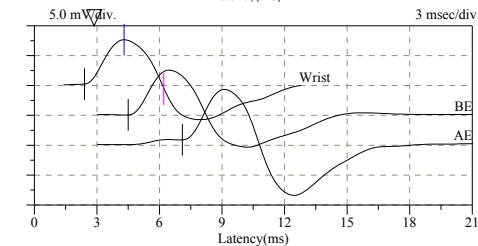
**Median F-Waves**



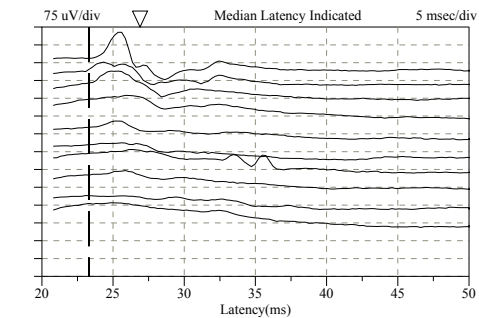
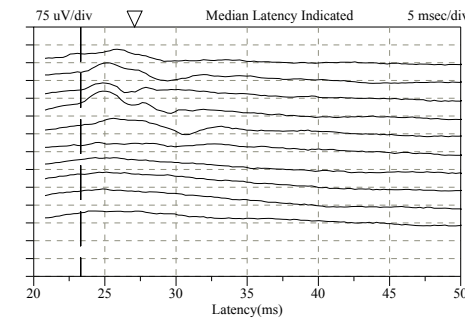
**Median Sensory**



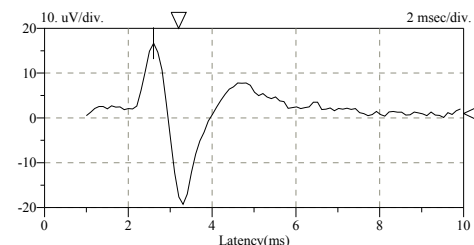
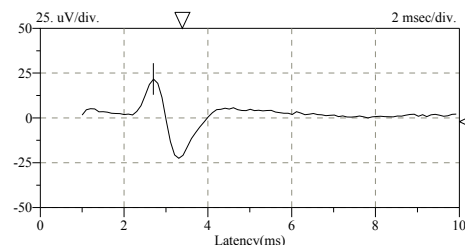
**Ulnar Motor**



**Ulnar F-Waves**



**Ulnar Sensory**



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**Section 2: Results Table & Comparison to Reference Range**

Test	Left			Right			Ref Range
	Result	Flag	Percentile	Result	Flag	Percentile	
<b>Median</b>							
DML	3.67		29.9%				≤ 4.35
CMAP amplitude	6.75		43.7%				≥ 4.01
CMAP duration	5.15		19.4%				≤ 5.66
CMAP area	20.31		73.8%				≥ 9.77
MUD motor	1.30						≤ 2.16
F-wave( mean )	24.17		64.4%				≤ 27.83
F-wave Persistence	0.83						≥ 0.42
DSL	3.13		68.1%				≤ 4.08
SNAP amplitude	52.98						≥ 25.72
MUD sensory	0.50						≤ 1.14
<b>Ulnar</b>							
DML	2.26		59.9%	2.20		70.1%	≤ 2.72
CMAP amplitude	7.43			7.67			≥ 3.61
CMAP duration	3.61			3.20			---
CMAP area	16.07			15.19			---
Lat. (below elbow)	4.25		99.8%	4.60		98.0%	≤ 6.29
CMAP (below elbow)	7.50			7.96			≥ 3.41
Lat. (above elbow)	6.84		77.6%	7.20		51.9%	≤ 8.20
CMAP (above elbow)	8.41			7.40			≥ 3.84
CV (elbow)	43.38	Abnormal		43.38	Abnormal		≥ 50.37
CMAP ratio (elbow)	1.12			0.93			≥ 0.65
F-wave( median )	23.10		80.8%	23.30		76.5%	≤ 26.89
F-wave Persistence	0.50			0.75			---
DSL	2.51		79.1%	2.60		67.6%	≤ 3.20
SNAP amplitude	44.12			35.94			≥ 20.50

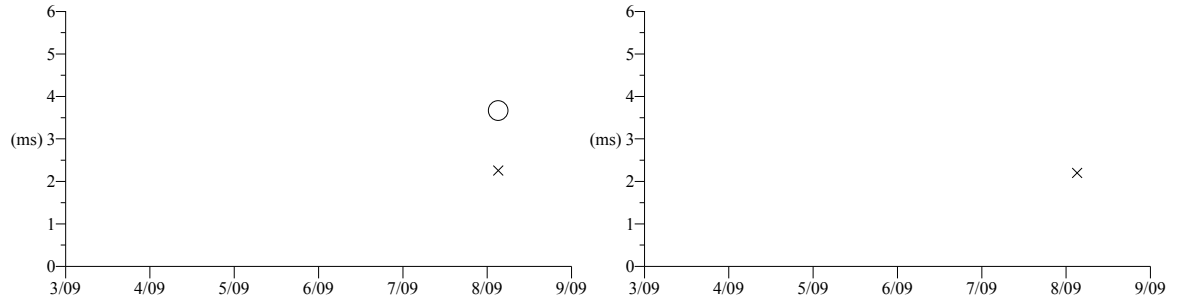
**Notes**

- (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 year old woman. Nerve conduction study performed for evaluation of upper extremity symptoms (possibly suggestive of cubital 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 left median and both ulnar nerves were performed. Upper extremity nerves were supramaximally stimulated 3 cm proximal to wrist crease. The ulnar nerve was also stimulated below and above the elbow, 10.5 cm apart. 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). Conduction velocity and amplitude decrement across elbow also determined. 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 normal on the left. The median CMAP amplitude was normal on the left. The ulnar DML was bilaterally normal. The ulnar CMAP amplitude was bilaterally normal. The ulnar below elbow motor latency was bilaterally normal. The ulnar below elbow CMAP amplitude was bilaterally normal. The ulnar above elbow motor latency was bilaterally normal. The ulnar above elbow CMAP amplitude was bilaterally normal. The ulnar conduction velocity across the elbow was abnormal bilaterally. The ulnar CMAP amplitude ratio across the elbow was bilaterally normal. The median F-wave was normal on the left. The ulnar F-wave was bilaterally normal.

Upper extremity sensory findings: The median DSL was normal on the left. The median SNAP amplitude was normal on the left. The ulnar DSL was bilaterally normal. The ulnar SNAP amplitude was bilaterally normal.

Upper extremity comparisons: The median-ulnar DML difference was normal on the left. The median-ulnar DSL difference was normal on the left.

Wrist skin surface temperature was 31.3 deg-C on the left and 32.0 deg-C on the right. Elbow skin surface temperature was 30.0 deg-C on the left and 30.0 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:

Left median nerve conduction is within normal limits.

Based on the nerve conduction study data, consider a mild left and right ulnar neuropathy at the elbow.

**Physician Signature:** \_\_\_\_\_

# 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

<b>A-waves</b>	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.
<b>Chronodispersion</b>	F-wave chronodispersion denotes the range of latencies that occur within a series of F-waves.
<b>CMAP Amplitude</b>	Reduction in amplitude correlates to loss of motor nerve fibers. In some studies amplitude ratios are utilized.
<b>CMAP Duration</b>	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.
<b>Conduction Velocity (CV)</b>	The fastest speed at which an impulse travels through a nerve.
<b>Distal Motor Latency (DML)</b>	Interval between the stimulus and the onset of the compound muscle action potential (CMAP).
<b>Distal Sensory Latency (DSL)</b>	Interval between the stimulus and the onset of the sensory nerve action potential (SNAP).
<b>F-wave Duration</b>	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.
<b>Flag</b>	Indicates a value outside the normal range (abnormal finding).
<b>F-Wave Latency</b>	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.
<b>MUD Motor</b>	Difference of the median and ulnar distal motor latencies in a limb.
<b>MUD Sensory</b>	Difference of the median and ulnar distal sensory latencies in a limb.
<b>Reference Range</b>	Normal range for individuals of similar age and height. Some parameters are compared to an upper or lower limit.
<b>Percentile</b>	% of reference population (people of similar age and height) with a worse result.
<b>Persistence</b>	% of traces with F-waves. For example, 15/16 = 94% (low is abnormal).
<b>SNAP Amplitude</b>	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.