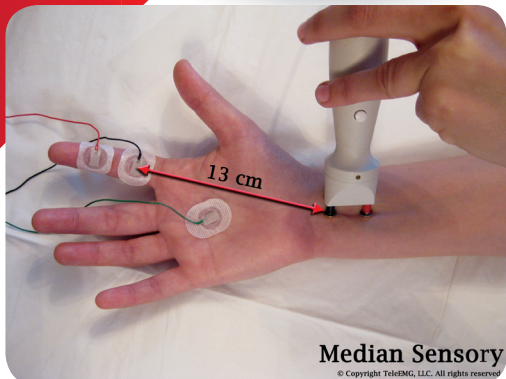
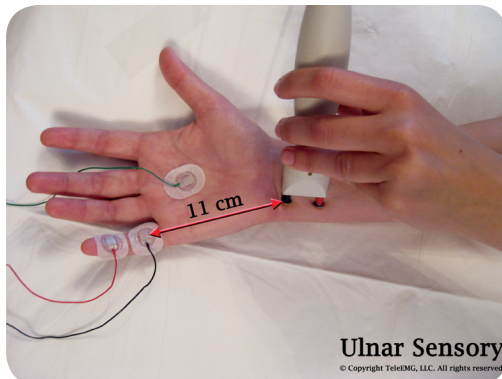




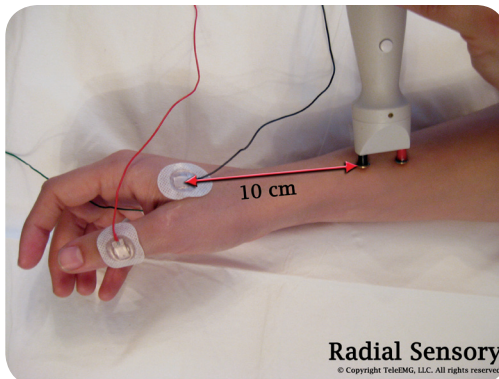
UPPER AND LOWER EXTREMITY NERVE CONDUCTION STUDIES



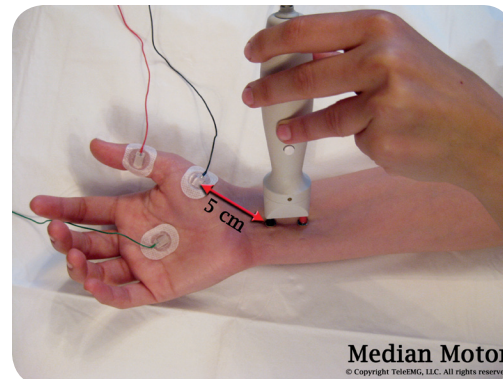
Median Sensory



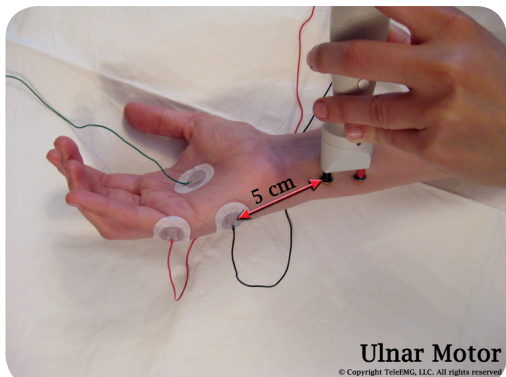
Ulnar Sensory



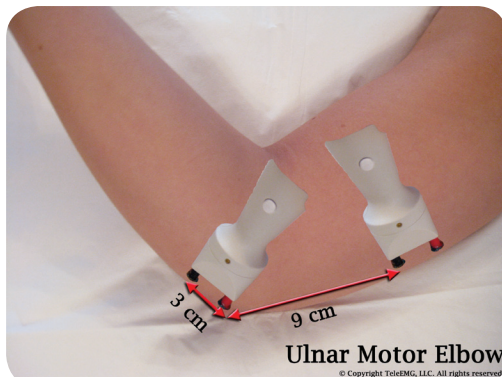
Radial Sensory



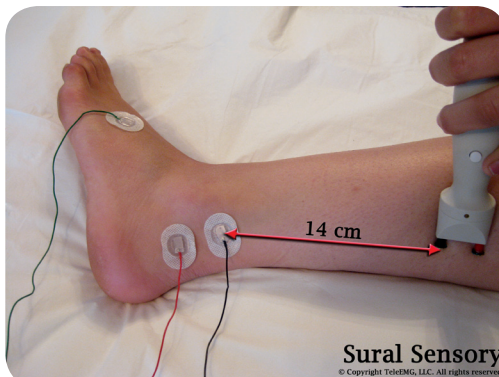
Median Motor



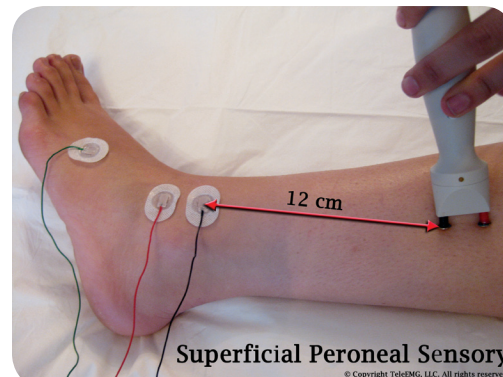
Ulnar Motor



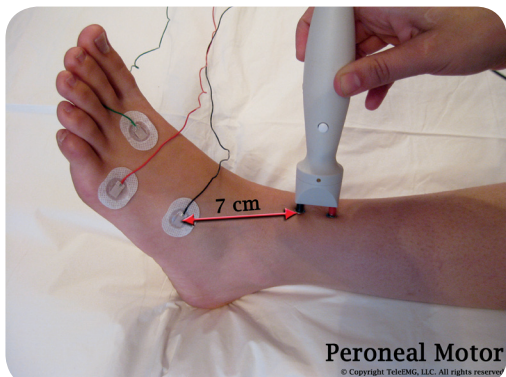
Ulnar Motor Elbow



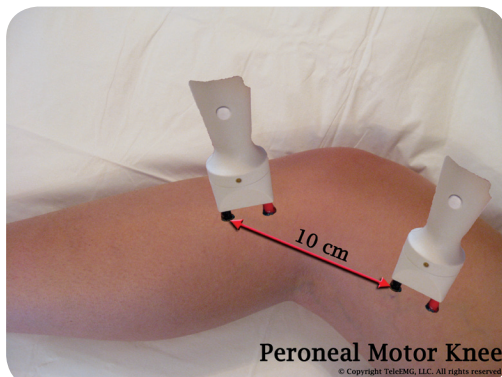
Sural Sensory



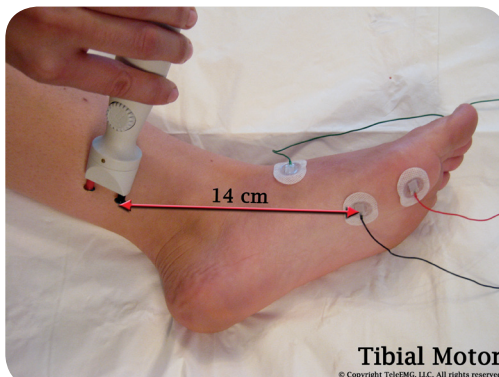
Superficial Peroneal Sensory



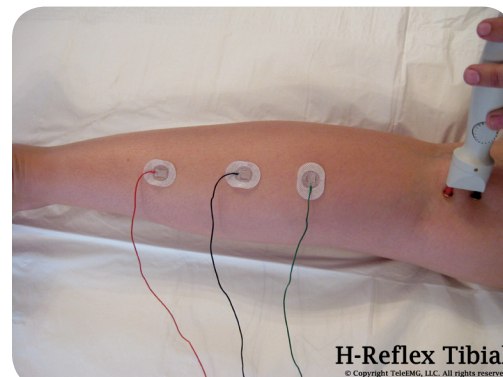
Peroneal Motor



Peroneal Motor Knee



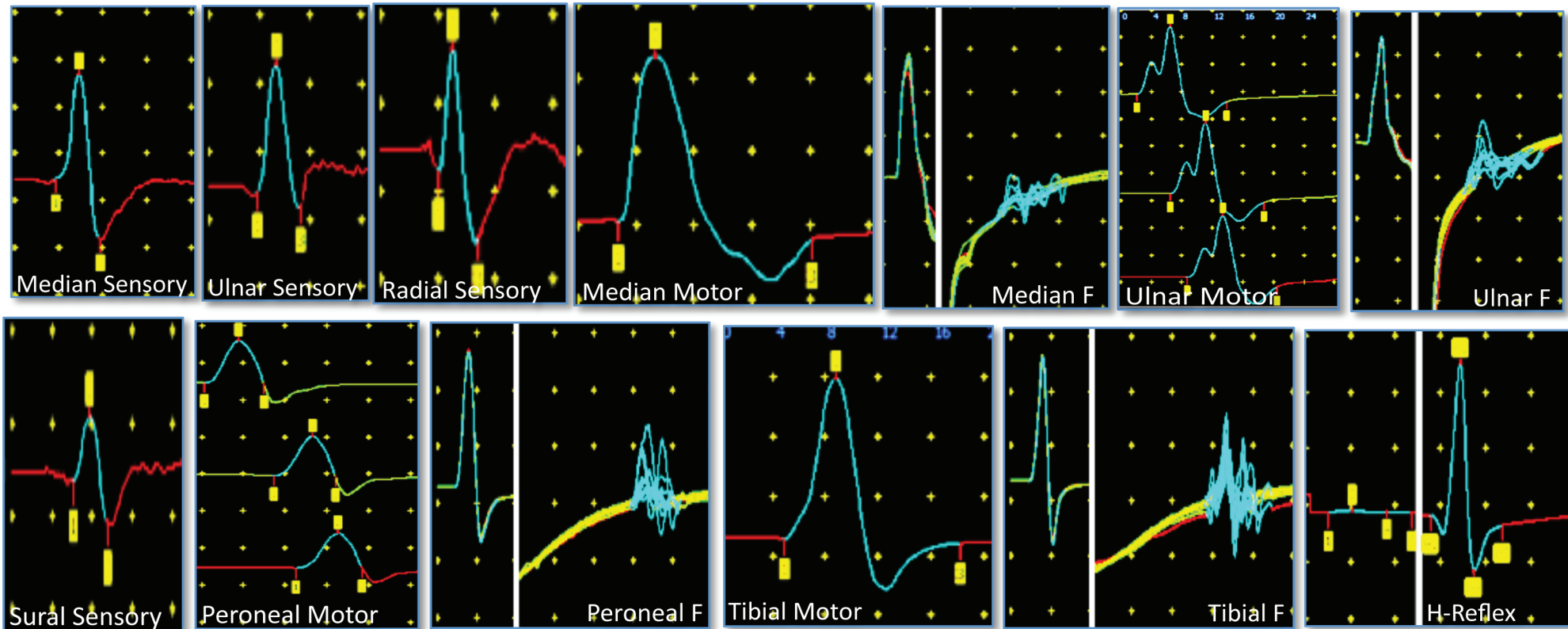
Tibial Motor



H-Reflex Tibial

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Upper & Lower Extremity NCV Potentials & Norms



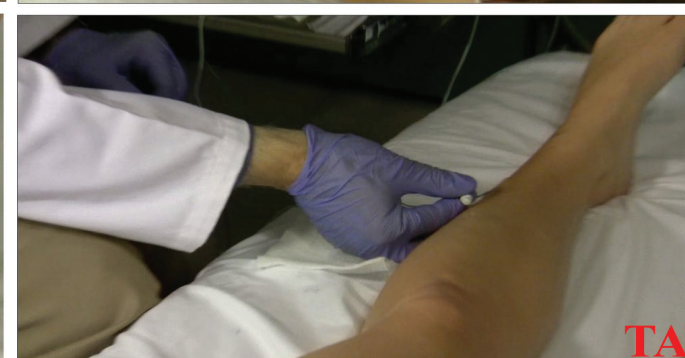
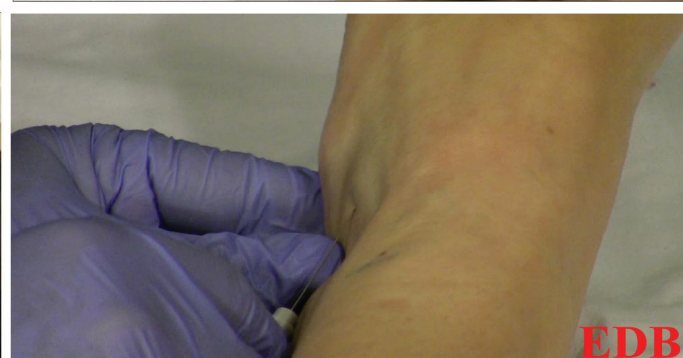
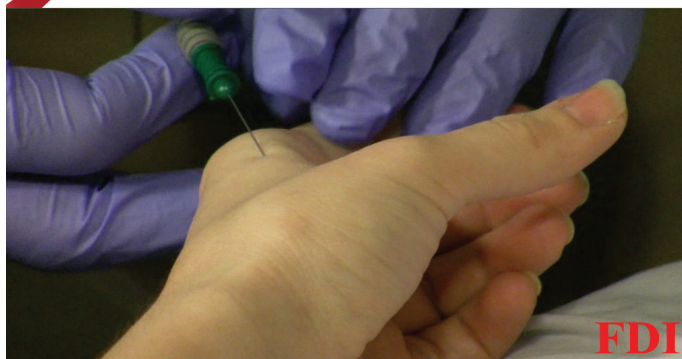
Amplitudes and Conduction Velocities, are Lower limits of Normal. Distal, Peak, F and H Latencies are Upper limits of Normal. F-Wave and H-Reflex Latencies depend on Height. The Reference Values below are provided FOR INFORMATIONAL PURPOSES ONLY. TeleEMG, LLC does not guarantee and is not responsible for their accuracy or their applicability in the user's patient population)

Sex	Age	MedM A	DL	CV	FW	MedS A	DL	PL	CV	UlnM A	DL	CV	FW	UlnS A	DL	PL	CV	RadS A	DL	PL	CV
M	20-39	5.01	3.32	49.98	31.40	15.49	2.74	3.70	44.82	4.02	3.40	38.86	32.40	11.70	2.43	3.48	47.81	10.91	2.02	2.67	49.07
M	40-59	5.11	3.34	49.29	32.10	11.47	3.00	3.72	40.85	4.47	3.48	40.45	33.20	8.33	2.58	3.62	45.78	8.67	2.03	2.72	49.83
M	60-99	5.17	3.36	48.07	32.80	8.00	3.09	3.78	38.30	4.08	3.49	38.47	34.10	4.85	2.63	3.75	41.58	8.08	2.04	2.76	47.60
F	20-39	6.80	3.26	53.36	31.40	31.50	2.60	3.25	51.99	6.20	2.56	48.91	32.40	32.14	2.35	3.42	51.64	20.91	1.91	2.35	56.02
F	40-59	6.70	3.28	52.75	32.10	29.08	2.66	3.35	49.06	6.10	2.66	46.06	33.20	27.11	2.51	3.58	49.32	17.05	1.93	2.38	52.63
F	60-99	6.60	3.30	51.05	32.80	23.10	2.76	3.41	47.26	6.00	2.73	46.06	34.10	17.81	2.57	3.68	48.88	14.01	1.94	2.48	51.80
Sex	Age	PerM A	DL	CV	FW	PerS A	DL	PL	CV	TibM A	DL	CV	FW	Sur A	DL	PL	CV	HR A	HR Lat		
M	20-39	2.27	4.59	36.60	56.00	6.82	2.89	3.72	41.27	3.09	5.30	40.34	59.30	8.85	3.54	4.39	37.61	0.70	32.60		
M	40-59	1.51	4.76	35.52	60.80	6.23	2.96	3.90	40.40	2.66	5.42	39.49	62.70	8.08	3.70	4.57	36.78	0.50	35.40		
M	60-99	0.46	5.00	34.81	62.40	2.92	3.04	3.93	38.89	2.16	5.58	38.71	64.70	3.03	3.86	4.62	35.80	0.30	35.60		
F	20-39	2.64	4.55	36.60	56.00	9.12	2.79	3.60	45.42	3.50	5.11	42.12	59.30	11.13	3.10	4.00	45.16	0.80	32.60		
F	40-59	2.60	4.74	35.87	60.80	7.03	2.84	3.88	44.00	3.30	5.27	40.26	62.70	9.97	3.32	4.24	41.61	0.70	35.40		
F	60-99	2.00	4.97	35.16	62.40	3.00	2.94	3.90	42.50	2.80	5.43	39.00	64.70	8.02	3.38	4.38	40.00	0.50	35.60		

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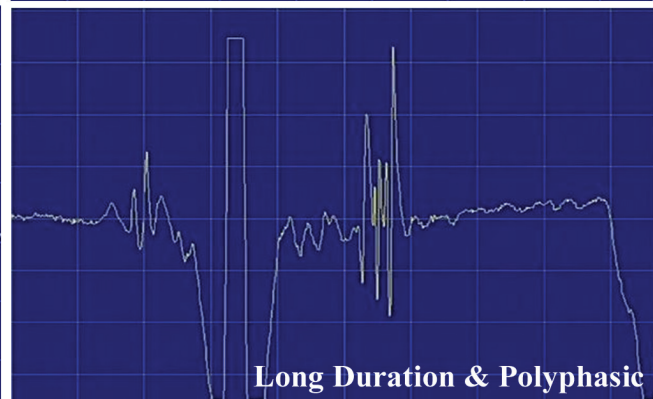
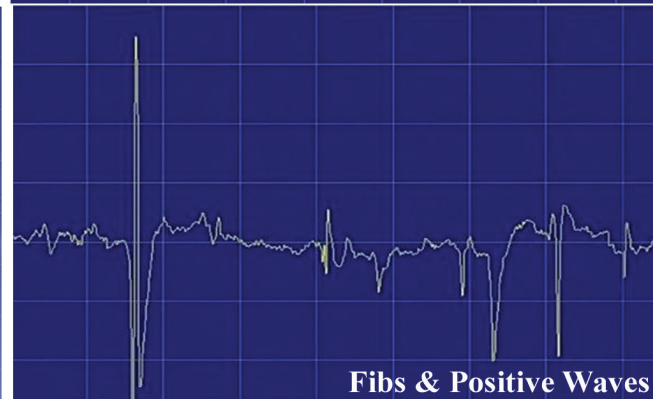
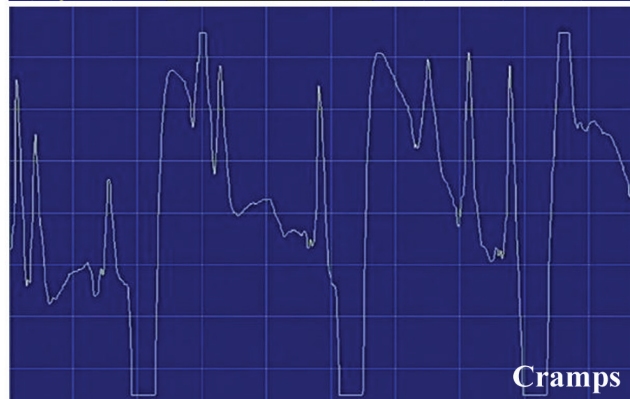
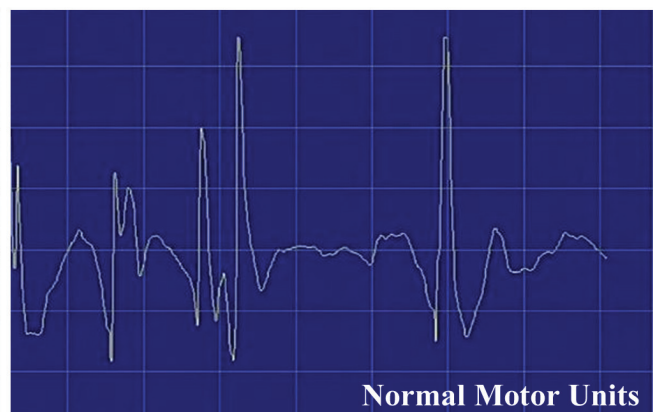
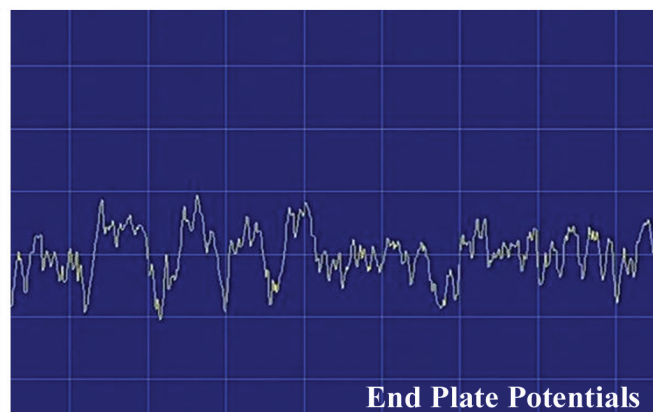
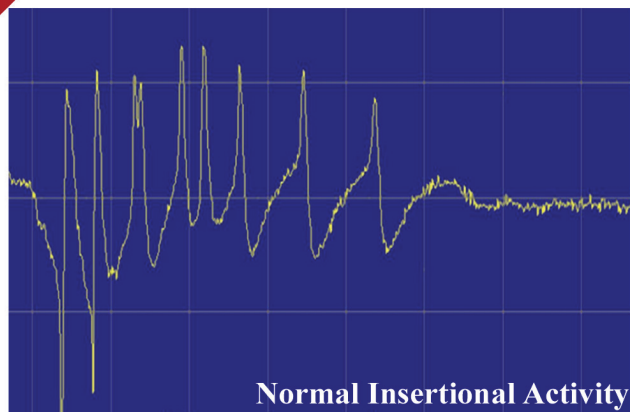
Upper and Lower Extremity Needle EMG Anatomy



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Upper and Lower Extremity EMG Potentials



	APB	FDI	FCR	BR	TRI	DEL	C6	C7	C8
Carpal Tunnel	+	-	-	-	-	-	N/A	N/A	N/A
Ulnar Neuro	N/A	+	-	-	-	-	N/A	N/A	N/A
C6 Radic	N/A	-	+/-	+	-	+	+	-	-
C7 Radic	N/A	-	+	-	+	-	-	+	-
C8 Radic	+	+	-	-	+	-	-	-	+
	EDB	AT	MG	VL	L4	L5	S1		
Periph Neuro	+	+/-	-	-	N/A	N/A	N/A		
Tarsal Tunnel	-	-	-	-	N/A	N/A	N/A		
L4 Radic	-	+	-	+	+	-	-		
L5 Radic	+	+	-	-	-	+	-		
S1 Radic	+	-	+	-	-	-	+		

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Ulnar / Median Motor (50mm)

Radial S (100mm)

Ulnar S (110mm)

Ulnar M across elbow (120mm)

Median S (130mm)



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UPPER EXTREMITY





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Peroneal Motor (70mm)

10

Peroneal M across FH (100mm)

12

Sup Peroneal S (120mm)

14

Sural S / Tibial M (140mm)



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LOWER EXTREMITY



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WHAT ARE SOME PROBLEMS FOR WHICH NERVE CONDUCTION VELOCITIES (NCVs) ARE ORDERED?

NCV'S ARE USUALLY ORDERED WHEN PATIENTS ARE HAVING PROBLEMS WITH THEIR MUSCLES OR NERVES. SOME OF THE MOST COMMON PROBLEMS FOR WHICH AN NCV TEST IS REQUESTED INCLUDE, CARPAL TUNNEL, PERIPHERAL NEUROPATHY, ULNAR NEUROPATHY, LOW BACK AND NECK PAIN, TARSAL TUNNEL, SCIATICA, AND DISK DISEASE AMONG OTHERS.

WHAT NERVES ARE TESTED DURING AN NCV?

IN ORDER TO PROPERLY ASSESS THE DIFFERENT NERVES AND MUSCLES IN THE BODY, A ROUTINE SET OF STUDIES ARE PERFORMED IN A PATIENTS ARM AND LEG. IN THE ARM, ROUTINE STUDIES INCLUDE THE MEDIAN, ULNAR AND RADIAL NERVES. IN THE LEG ROUTINE STUDIES INCLUDE THE SURAL, SUPERFICIAL PERONEAL, TIBIAL AND PERONEAL NERVES AS WELL AS A REFLEX STUDY, THE H-REFLEX. SOME NERVES CONTAIN BOTH SENSORY AND MOTOR FIBERS, SOME ARE PURE SENSORY. IN THE NERVES THAT CONTAIN MOTOR FIBERS, AN ADDITIONAL STUDY IS PERFORMED, THE F-WAVE. IN THE PAGES WITHIN , EACH ONE OF THESE STUDIES WILL BE COVERED IN DETAIL.

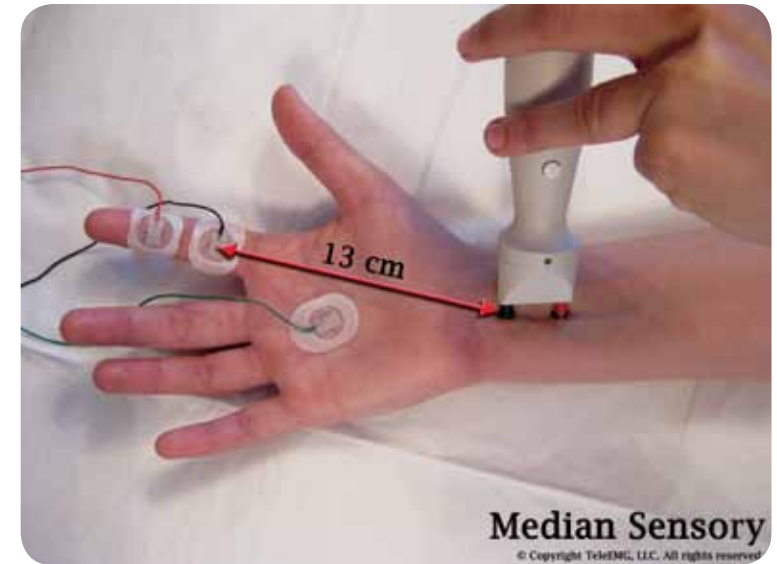


WHAT HAPPENS DURING AN NCV?

DURING AN NCV, BRIEF ELECTRICAL SHOCKS ARE DELIVERED TO THE ARM OR LEG IN AN EFFORT TO DETERMINE HOW FAST OR SLOWLY THE NERVES ARE CONDUCTING AN ELECTRICAL CURRENT, OR IF THEY ARE CONDUCTING AT ALL. IN OTHER WORDS, THE NERVE WORKS SOMETHING LIKE AN ELECTRICAL WIRE. IF THE WIRE IS FUNCTIONING PROPERLY THE EASIEST THING TO DO IS RUN ELECTRICITY THROUGH IT. IF THERE ARE ANY PROBLEMS ALONG ITS LENGTH, IT WILL BE FOUND BY A FAILURE OR SLOWING DOWN OF THE CURRENT TO GO THROUGH IT. LIKewise IF THE NERVE IS FUNCTIONING PROPERLY THEN THERE WILL BE NO INTERRUPTIONS IN THE ELECTRICAL CURRENT BEING SENT VIA THE NERVE. HOWEVER, IF THERE IS DISRUPTION THEN A NCV TEST WILL BE ABLE TO SHED LIGHT ON ITS NATURE AND DETERMINE WHERE THE DISRUPTION IS OCCURRING TO ASSIST THE HEALTHCARE PROFESSIONAL IN DETERMINING THE CAUSE OF THE PROBLEM.

MEDIAN SENSORY SETUP

- PLACE THE ACTIVE (BLACK) ELECTRODE OVER THE BASE OF THE INDEX FINGER
- PLACE THE REFERENCE (RED) ELECTRODE OVER THE MIDDLE OF THE INDEX FINGER
- MEASURE 13 CMS FROM THE BLACK ELECTRODE TO THE MIDDLE OF THE WRIST
- STIMULATE THE NERVE AT THE WRIST AS SEEN IN THE PICTURE AT THE RIGHT
- INCREASE STIMULUS STRENGTH UNTIL A MAXIMAL NERVE RESPONSE IS OBTAINED (PATIENT WILL FEEL TINGLING AND EXPERIENCE MUSCLE CONTRACTION)
- BE SURE TO LOOK AT THE NORMAL VALUES IN THE TABLE AND AT THE WAVEFORM TO THE RIGHT TO PROPERLY IDENTIFY THE RESPONSE



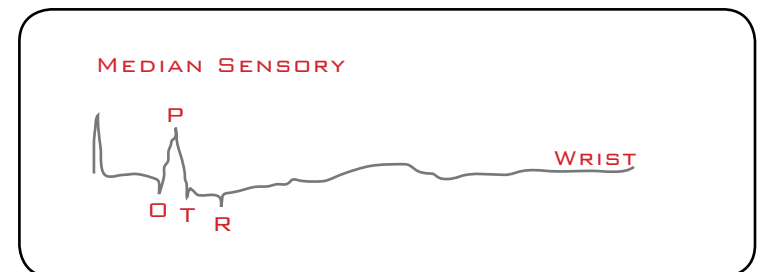
COMMON SYMPTOMS OF MEDIAN NEUROPATHY

- WORSE IN DOMINANT HAND
- DROPPING OBJECTS
- NUMBNESS, TINGLING, HAND/WRIST - THUMB, INDEX AND/OR MIDDLE FINGER
- MAY RADIATE UP THE ARM, OCCASIONALLY TO THE SHOULDER
- SYMPTOMS PRIMARILY AT NIGHT
- PATIENT WAKES UP AND SHAKE THEIR HANDS TO OBTAIN RELIEF
- FREQUENTLY BILATERAL, ALTHOUGH MAY ONLY BE SYMPTOMATIC ON ONE SIDE

MEDIAN SENSORY (INDEX - 13 CM)

DISTAL LATENCY	1.93 MS	2.68 MS
AMPLITUDE	18 μ V	88 μ V
DISTAL VELOCITY	49 M/S	66 M/S
PEAK LATENCY	2.61 MS	3.46 MS
PEAK VELOCITY	37 M/S	50 M/S

THE NORMAL VALUES ABOVE SHOULD BE USED AS A REFERENCE ONLY AND NOT FOR DATA ANALYSIS AS YOUR VALUES MAY DIFFER.

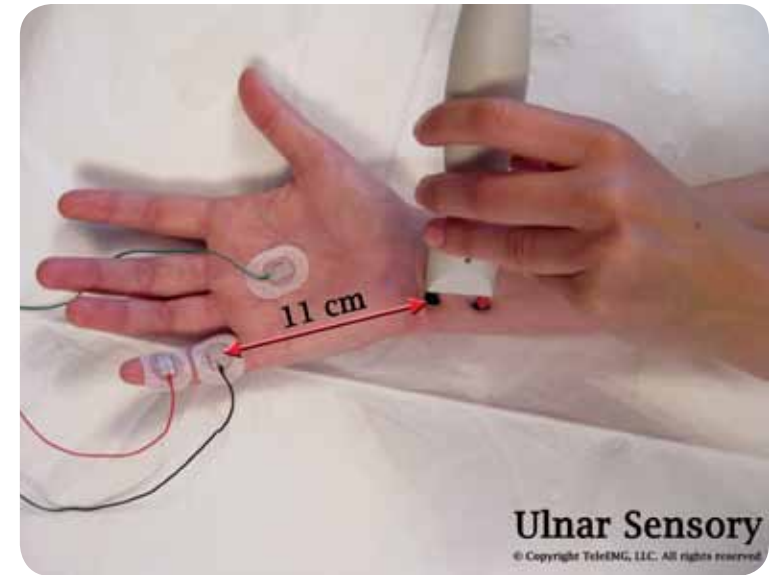


LEGEND:

O: ONSET - P: PEAK - T: TROUGH - R: RETURN (TO BASELINE)

ULNAR SENSORY SETUP

- PLACE THE ACTIVE (BLACK) ELECTRODE OVER THE BASE OF THE LITTLE FINGER
- PLACE THE REFERENCE (RED) ELECTRODE OVER THE MIDDLE OF THE LITTLE FINGER
- MEASURE 11 CMS FROM THE BLACK ELECTRODE TO THE SIDE OF THE WRIST
- STIMULATE THE NERVE AT THE WRIST AS SEEN IN THE PICTURE AT THE RIGHT
- INCREASE STIMULUS STRENGTH UNTIL A MAXIMAL NERVE RESPONSE IS OBTAINED (PATIENT WILL FEEL TINGLING AND EXPERIENCE MUSCLE CONTRACTION)
- BE SURE TO LOOK AT THE NORMAL VALUES IN THE TABLE AND AT THE WAVEFORM TO THE RIGHT TO PROPERLY IDENTIFY THE RESPONSE



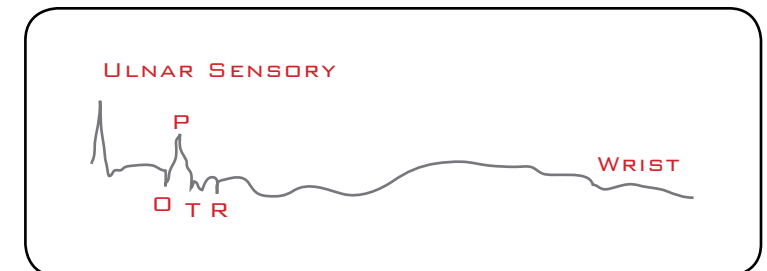
COMMON SYMPTOMS OF ULNAR NEUROPATHY

- WEAK HAND, DROPPING OBJECTS
- NUMBNESS/TINGLING FOURTH AND/OR FIFTH FINGER
- OCCASIONAL ELBOW SORENESS
- SYMPTOMS NOT RELATED TO NIGHT/DAYTIME
- FREQUENTLY ON BOTH SIDES

ULNAR SENSORY (VTH - 11 CM)

DISTAL LATENCY	1.58 MS	2.23 MS
AMPLITUDE	13 μ V	104 μ V
DISTAL VELOCITY	46 M/S	66 M/S
PEAK LATENCY	2.10 MS	3.05 MS
PEAK VELOCITY	33 M/S	50 M/S

THE NORMAL VALUES ABOVE SHOULD BE USED AS A REFERENCE ONLY AND NOT FOR DATA ANALYSIS AS YOUR VALUES MAY DIFFER.

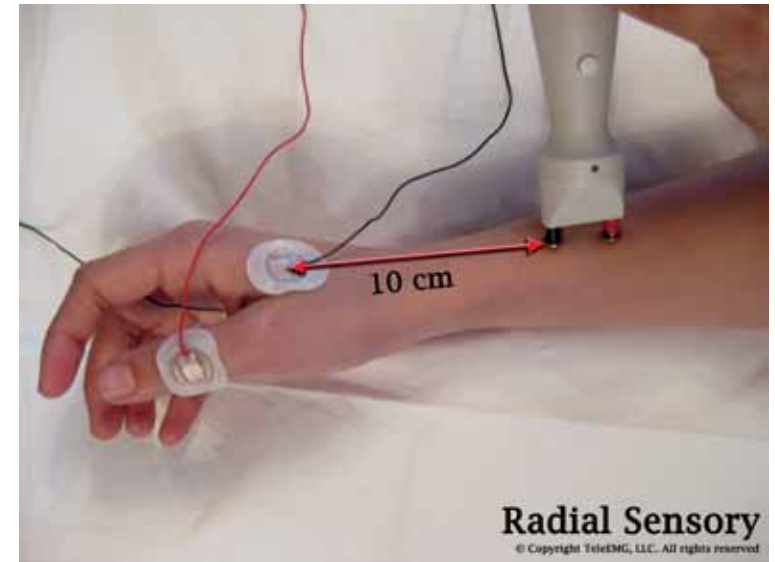


LEGEND:

O: ONSET - P: PEAK - T: TROUGH - R: RETURN (TO BASELINE)

RADIAL SENSORY SETUP

- PLACE THE ACTIVE (BLACK) ELECTRODE BETWEEN THE INDEX FINGER AND THE THUMB (SEE PICTURE AT RIGHT)
- PLACE THE REFERENCE (RED) ELECTRODE OVER THE THUMB
- MEASURE 10 CMS FROM THE BLACK ELECTRODE TO THE FOREARM (SEE PICTURE AT RIGHT)
- STIMULATE THE NERVE AT THE 10 CMS POINT AS SEEN IN THE PICTURE AT THE RIGHT
- INCREASE STIMULUS STRENGTH UNTIL A MAXIMAL NERVE RESPONSE IS OBTAINED (PATIENT WILL FEEL TINGLING)
- BE SURE TO LOOK AT THE NORMAL VALUES IN THE TABLE AND AT THE WAVEFORM TO THE RIGHT TO PROPERLY IDENTIFY THE RESPONSE

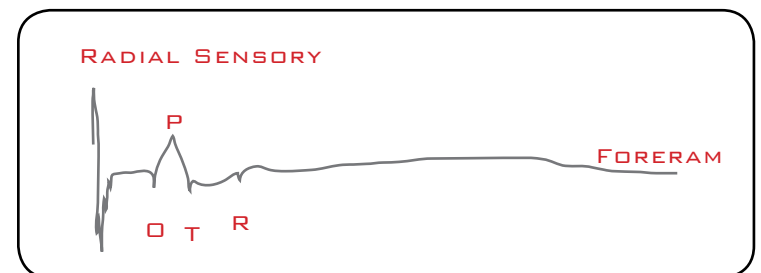


COMMON SYMPTOMS OF RADIAL NEUROPATHY

- WRIST DROP
- ALMOST ALWAYS UNILATERAL
- NO ASSOCIATED PAIN
- OCCASIONAL FOREARM/HAND NUMBNESS
- SYMPTOMS ALWAYS PRESENT

RADIAL SENSORY (DORS HAND - 10 CM)		
DISTAL LATENCY	1.29 MS	1.83 MS
AMPLITUDE	15 μ V	136 μ V
DISTAL VELOCITY	50 M/S	67 M/S
PEAK LATENCY	1.84 MS	2.54 MS
PEAK VELOCITY	35 M/S	49 M/S

THE NORMAL VALUES ABOVE SHOULD BE USED AS A REFERENCE ONLY AND NOT FOR DATA ANALYSIS AS YOUR VALUES MAY DIFFER.

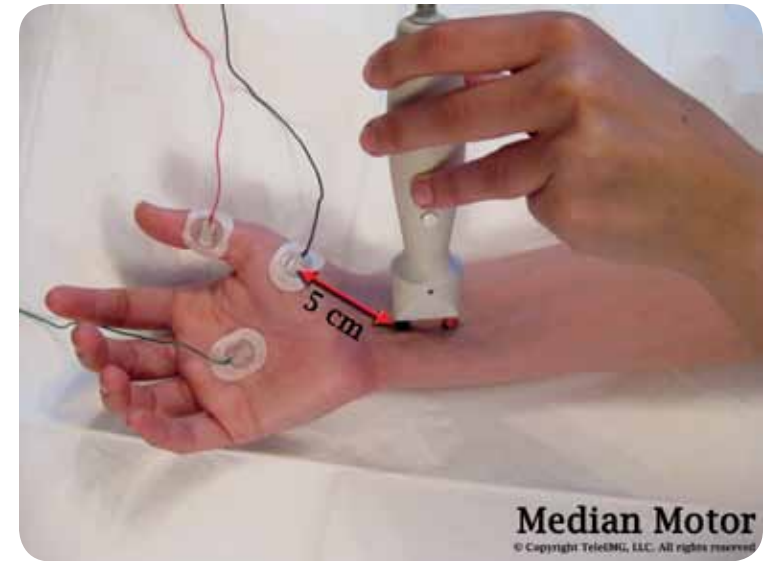


LEGEND:

O: ONSET - P: PEAK - T: TROUGH - R: RETURN (TO BASELINE)

MEDIAN MOTOR SETUP

- PLACE THE ACTIVE (BLACK) ELECTRODE ON THE APB BELOW THE BASE OF THE THUMB (SEE PICTURE AT RIGHT)
- PLACE THE REFERENCE (RED) ELECTRODE AT THE BASE OF THE THUMB
- MEASURE 5 CMS FROM THE BLACK ELECTRODE TO THE MIDDLE OF THE WRIST (SEE PICTURE AT RIGHT)
- STIMULATE THE NERVE AT THE WRIST AS SEEN IN THE PICTURE AT THE RIGHT
- INCREASE STIMULUS STRENGTH UNTIL A MAXIMAL RESPONSE IS OBTAINED (PATIENT WILL FEEL TINGLING AND EXPERIENCE MUSCLE CONTRACTION)
- BE SURE TO LOOK AT THE NORMAL VALUES IN THE TABLE AND AT THE WAVEFORM TO THE RIGHT TO PROPERLY IDENTIFY THE RESPONSE
- REVERSE THE STIMULATOR AND DO THE F-WAVE. DELIVER 10 MAXIMAL STIMULI AND MEASURE THE SHORTEST LATENCY F-WAVE (SEE PICTURE AT BOTTOM)

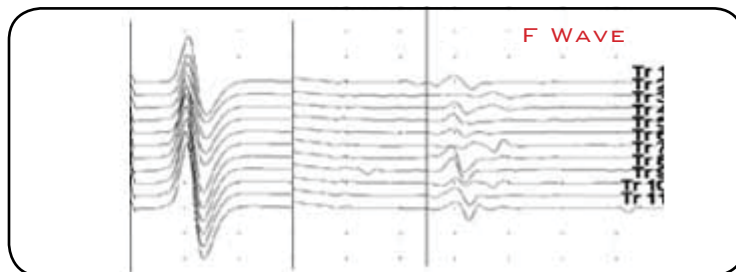


MEDIAN MOTOR (APB - 5 CM)

DISTAL LATENCY	2.30 MS	3.90 MS
AMPLITUDE	6 MV	20 MV
ELB-WRIST VELOCITY	53 M/S	66 M/S
F LATENCY*	25 MS	35 MS

* HEIGHT DEPENDENT

THE NORMAL VALUES ABOVE SHOULD BE USED AS A REFERENCE ONLY AND NOT FOR DATA ANALYSIS AS YOUR VALUES MAY DIFFER.

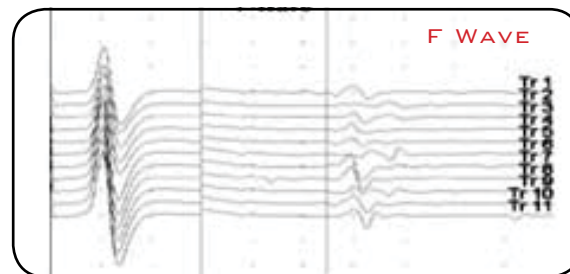
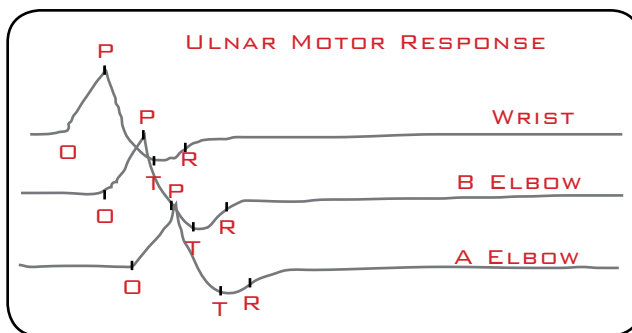
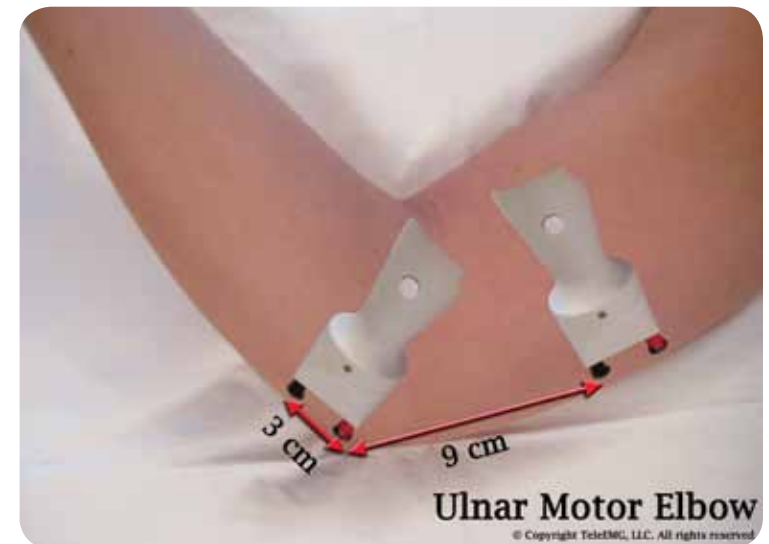
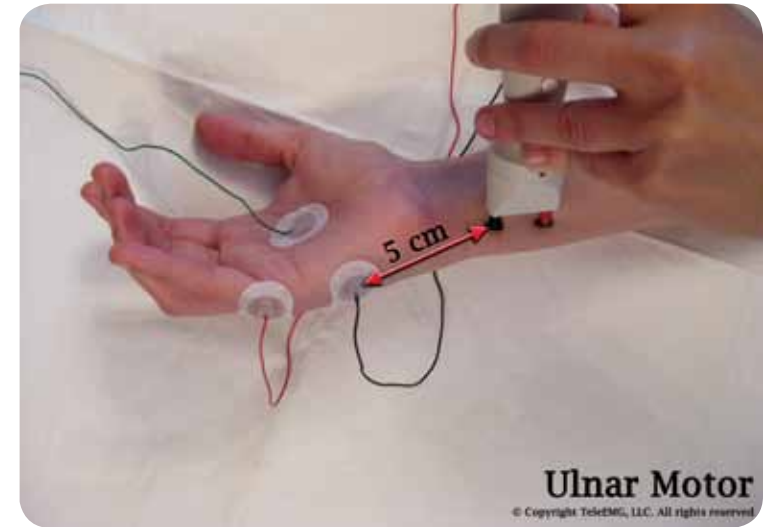


LEGEND:

O: ONSET - P: PEAK - T: TROUGH - R: RETURN (TO BASELINE)

ULNAR MOTOR SETUP

- PLACE THE ACTIVE (BLACK) ELECTRODE ON THE ADM HALFWAY BETWEEN THE WRIST AND THE BASE OF THE LITTLE FINGER (SEE PICTURE AT RIGHT)
- PLACE THE REFERENCE (RED) ELECTRODE AT THE BASE OF THE LITTLE FINGER
- MEASURE 5 CMS FROM THE BLACK ELECTRODE TO THE SIDE OF THE WRIST (SEE PICTURE AT RIGHT)
- STIMULATE THE NERVE AT THE WRIST AS SEEN IN THE PICTURES INCREASING STIMULUS STRENGTH UNTIL A MAXIMAL RESPONSE IS OBTAINED (SEE PICTURE AT RIGHT)
- STIMULATE THE NERVE 3 CMS BELOW THE ELBOW INCREASING STIMULUS STRENGTH UNTIL A MAXIMAL RESPONSE IS OBTAINED (SEE PICTURE AT RIGHT)
- STIMULATE THE NERVE 9 CMS ABOVE THE ELBOW INCREASING STIMULUS STRENGTH UNTIL A MAXIMAL RESPONSE IS OBTAINED (SEE PICTURE AT RIGHT)
- REVERSE THE STIMULATOR AND DO THE F-WAVE. DELIVER 10 MAXIMAL STIMULI AND MEASURE THE SHORTEST LATENCY F-WAVE (SEE PICTURE AT BOTTOM)



LEGEND:

O: ONSET - P: PEAK - T: TROUGH - R: RETURN (TO BASELINE)

ULNAR MOTOR (ADM - 5 CM)

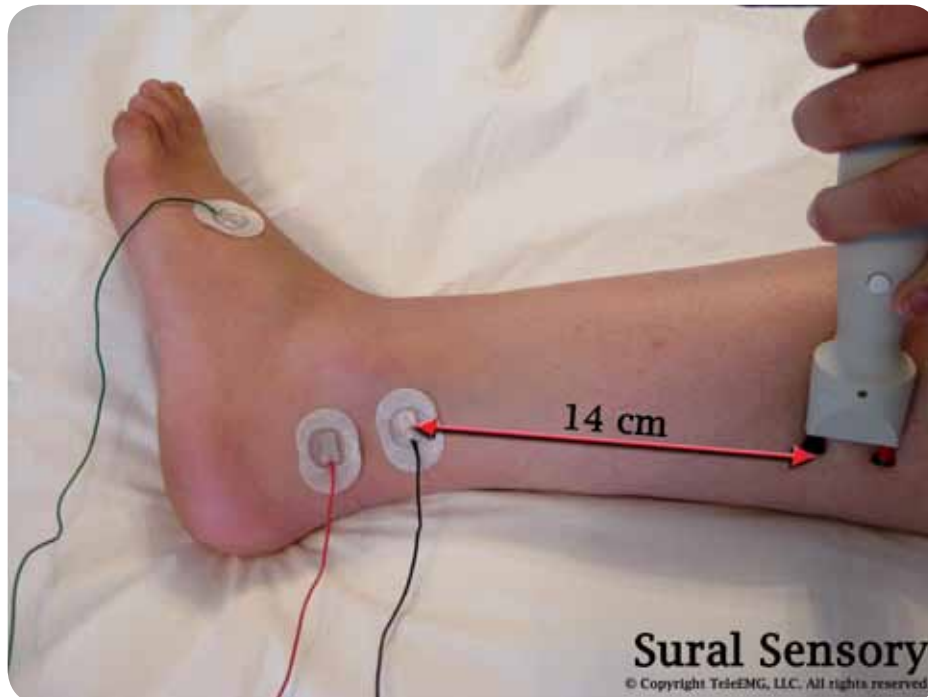
DISTAL LATENCY	1.75 MS	3.50 MS
AMPLITUDE	7 MV	17 MV
BEL EIB VELOCITY	52 M/S	73 M/S
AB-BEL EIB VELOCITY	48 M/S	68 M/S
F LATENCY*	25 MS	36 MS

* HEIGHT DEPENDENT

THE NORMAL VALUES ABOVE SHOULD BE USED AS A REFERENCE ONLY AND NOT FOR DATA ANALYSIS AS YOUR VALUES MAY DIFFER.

SURAL SENSORY SETUP

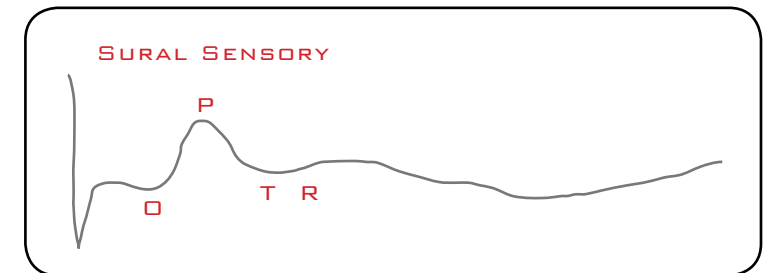
- PLACE THE ACTIVE (BLACK) ELECTRODE BETWEEN THE LATERAL MALLEOLUS AND THE ACHILLES TENDON (SEE PICTURE)
- PLACE THE REFERENCE (RED) ELECTRODE BELOW IT
- MEASURE 14 CMS FROM THE BLACK ELECTRODE TO THE MIDDLE OF THE CALF
- STIMULATE THE NERVE OVER THE MIDDLE OF THE CALF AS SEEN IN THE PICTURE
- INCREASE STIMULUS STRENGTH UNTIL A MAXIMAL NERVE RESPONSE IS OBTAINED (PATIENT WILL FEEL TINGLING DOWN THE ANKLE)
- BE SURE TO LOOK AT THE NORMAL VALUES IN THE TABLE AND AT THE WAVEFORM TO THE RIGHT TO PROPERLY IDENTIFY THE RESPONSE



SURAL SENSORY (BELOW MALLEOLUS - 14 CM)

DISTAL LATENCY	2.18 MS	3.66 MS
AMPLITUDE	6 μ V	42 μ V
DISTAL VELOCITY	37 M/S	58 M/S
PEAK LATENCY	2.82 MS	4.57 MS
PEAK VELOCITY	30 M/S	45 M/S

THE NORMAL VALUES ABOVE SHOULD BE USED AS A REFERENCE ONLY AND NOT FOR DATA ANALYSIS AS YOUR VALUES MAY DIFFER.



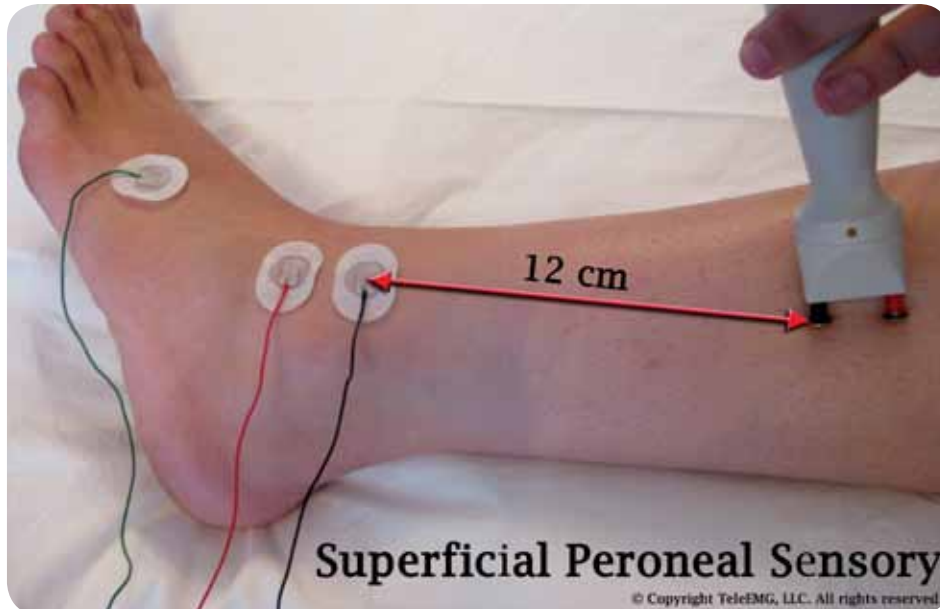
LEGEND:

O: ONSET - P: PEAK - T: TROUGH - R: RETURN (TO BASELINE)

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SUPERFICIAL PERONEAL SENSORY SETUP

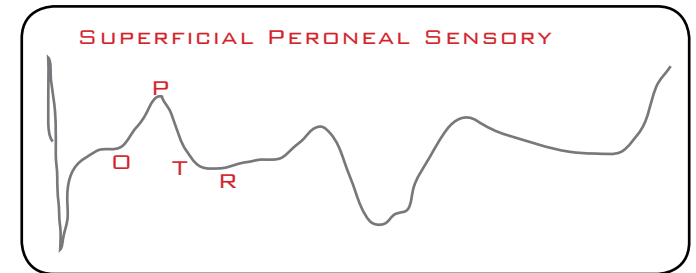
- PLACE THE ACTIVE (BLACK) ELECTRODE ABOVE THE LATERAL MALLEOLUS
- PLACE THE REFERENCE (RED) ELECTRODE BELOW IT
- MEASURE 12 CMS FROM THE BLACK ELECTRODE TO THE MIDDLE OF THE LEG
- STIMULATE THE NERVE OVER THE MIDDLE OF THE LEG AS SEEN IN THE PICTURE
- INCREASE STIMULUS STRENGTH UNTIL A MAXIMAL NERVE RESPONSE IS OBTAINED (PATIENT WILL FEEL TINGLING DOWN TO THE DORSUM OF THE FOOT)
- BE SURE TO LOOK AT THE NORMAL VALUES IN THE TABLE AND AT THE WAVEFORM TO THE RIGHT TO PROPERLY IDENTIFY THE RESPONSE



SUP PER SENS (ABOVE MALLEOLOUS - 12 CM)

DISTAL LATENCY	2.01 MS	3.11 MS
AMPLITUDE	4 μ V	58 μ V
DISTAL VELOCITY	35 M/S	61 M/S
PEAK LATENCY	2.89 MS	3.94 MS
PEAK VELOCITY	25 MS	41 MS

THE NORMAL VALUES ABOVE SHOULD BE USED AS A REFERENCE ONLY AND NOT FOR DATA ANALYSIS AS YOUR VALUES MAY DIFFER.



LEGEND:

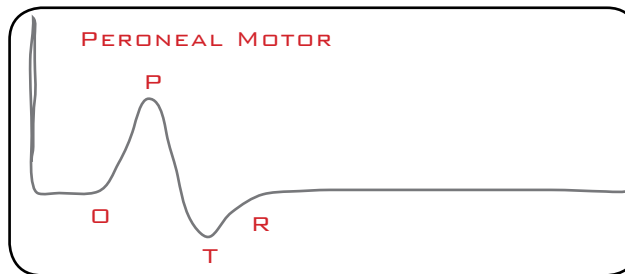
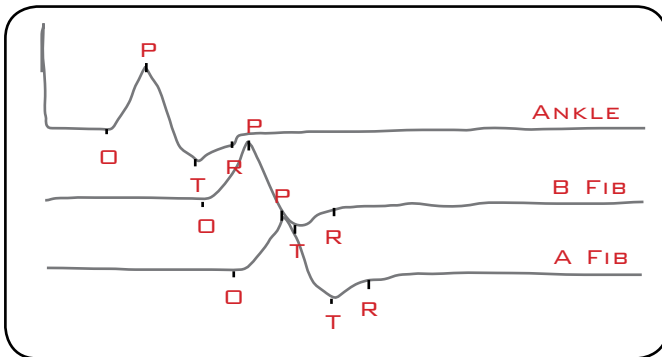
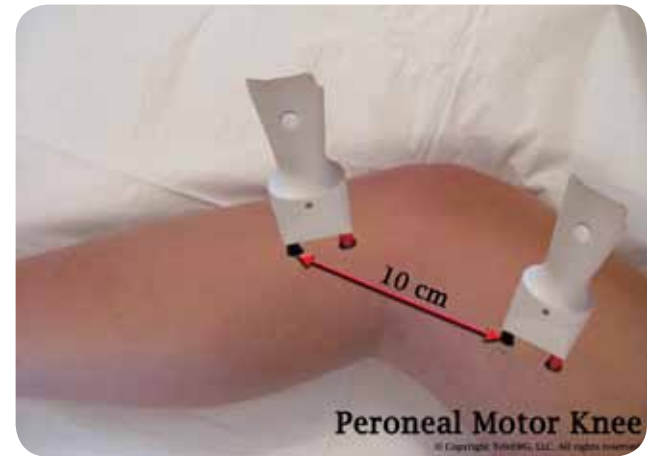
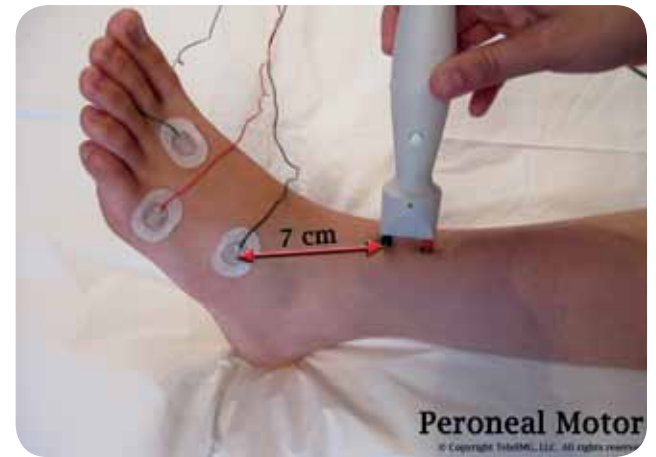
O: ONSET - P: PEAK - T: TROUGH - R: RETURN (TO BASELINE)

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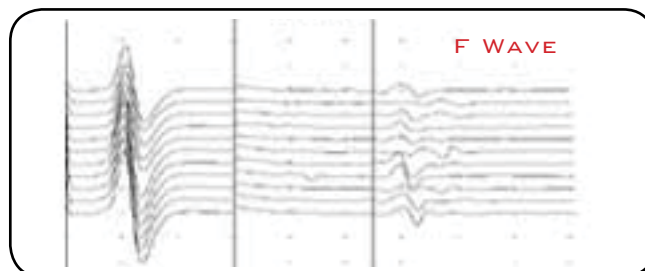
PERONEAL MOTOR SETUP

- PLACE THE ACTIVE (BLACK) ELECTRODE ON THE EDB OVER THE DORSUM OF THE FOOT (ASK THE PATIENT TO BEND TOES BACKWARD AS IN THE PHOTO)
- PLACE THE REFERENCE (RED) ELECTRODE HALFWAY BETWEEN EDB AND LITTLE TOE
- MEASURE 7 CMS FROM THE BLACK ELECTRODE TO THE MIDDLE OF THE ANKLE
- STIMULATE THE NERVE AT THE ANKLE INCREASING STIMULUS STRENGTH UNTIL A MAXIMAL RESPONSE IS OBTAINED (SEE PICTURE AT RIGHT)
- STIMULATE THE NERVE 2 CMS BELOW THE FIBULAR HEAD INCREASING STIMULUS STRENGTH UNTIL A MAXIMAL RESPONSE IS OBTAINED (SEE PICTURE AT RIGHT) - WATCH FOR FOOT DORSIFLEXION
- STIMULATE THE NERVE 8 CMS ABOVE THE FIBULAR HEAD INCREASING STIMULUS STRENGTH UNTIL A MAXIMAL RESPONSE IS OBTAINED (SEE PICTURE AT RIGHT) - WATCH FOR FOOT DORSIFLEXION
- REVERSE THE STIMULATOR AND DO THE F-WAVE. DELIVER 10 MAXIMAL STIMULI AND MEASURE THE SHORTEST LATENCY F-WAVE



LEGEND:

O: ONSET - P: PEAK - T: TROUGH - R: RETURN (TO BASELINE)



PERONEAL MOTOR (EDB - 7 CM)

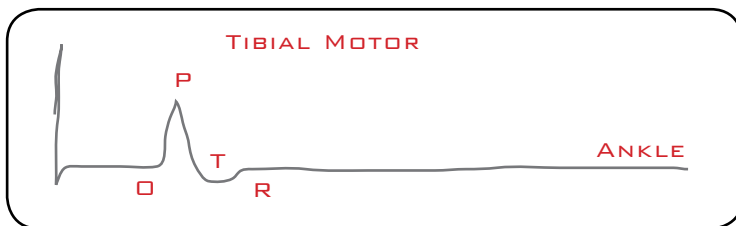
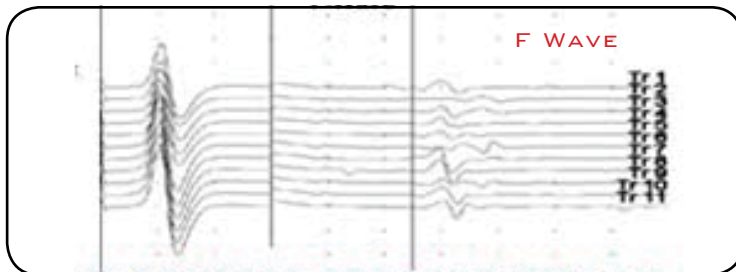
DISTAL LATENCY	2.20 MS	3.81 MS
AMPLITUDE	1.40 MV	10.10 MV
BEL FH VELOCITY	44 M/S	61 M/S
ABV BEL FH VEL	38 M/S	59 M/S
F-LATENCY*	40 MS	74 MS

* HEIGHT DEPENDENT

THE NORMAL VALUES ABOVE SHOULD BE USED AS A REFERENCE ONLY AND NOT FOR DATA ANALYSIS AS YOUR VALUES MAY DIFFER.

TIBIAL MOTOR SETUP

- PLACE THE ACTIVE (BLACK) ELECTRODE BELOW THE BALL OF THE FOOT AS IN PHOTO
- PLACE THE REFERENCE (RED) ELECTRODE OVER THE BALL OF THE FOOT
- MEASURE 14 CMS FROM THE BLACK ELECTRODE TO THE AREA BETWEEN THE MEDIAL MALLEOLUS AND THE ACHILLES TENDON
- STIMULATE THE NERVE BEHIND THE MEDIAL MALLEOLUS AS SEEN IN THE PHOTO
- INCREASE STIMULUS STRENGTH UNTIL A MAXIMAL RESPONSE IS OBTAINED (PATIENT WILL FEEL TINGLING AND EXPERIENCE TOE FLEXION)
- REVERSE THE STIMULATOR AND DO THE F-WAVE. DELIVER 10 MAXIMAL STIMULI AND MEASURE THE SHORTEST LATENCY F-WAVE



LEGEND:

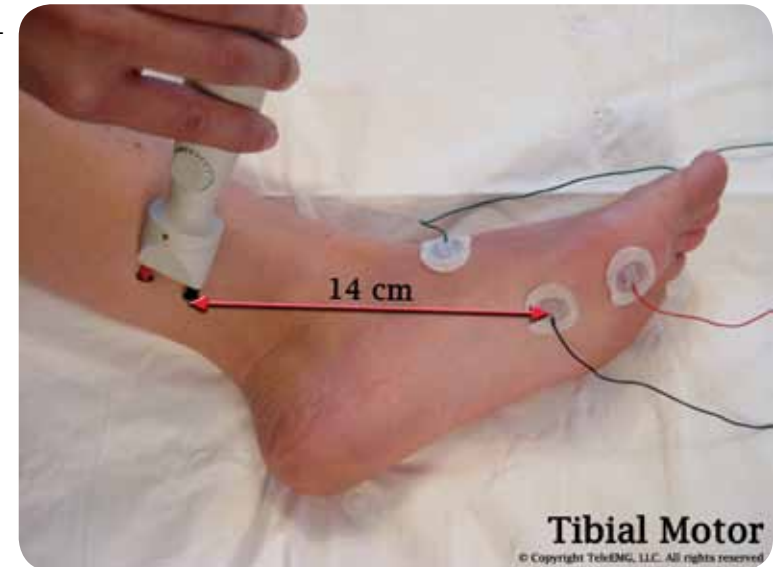
O: ONSET - P: PEAK - T: TROUGH - R: RETURN (TO BASELINE)

TIBIAL MOTOR (AH - 14 CM)

DISTAL LATENCY	3.00 MS	6.00 MS
AMPLITUDE	1 MV	16 MV
VELOCITY	31 M/S	59 M/S
F-LATENCY*	44 MS	77 MS

* HEIGHT DEPENDENT

THE NORMAL VALUES ABOVE SHOULD BE USED AS A REFERENCE ONLY AND NOT FOR DATA ANALYSIS AS YOUR VALUES MAY DIFFER.

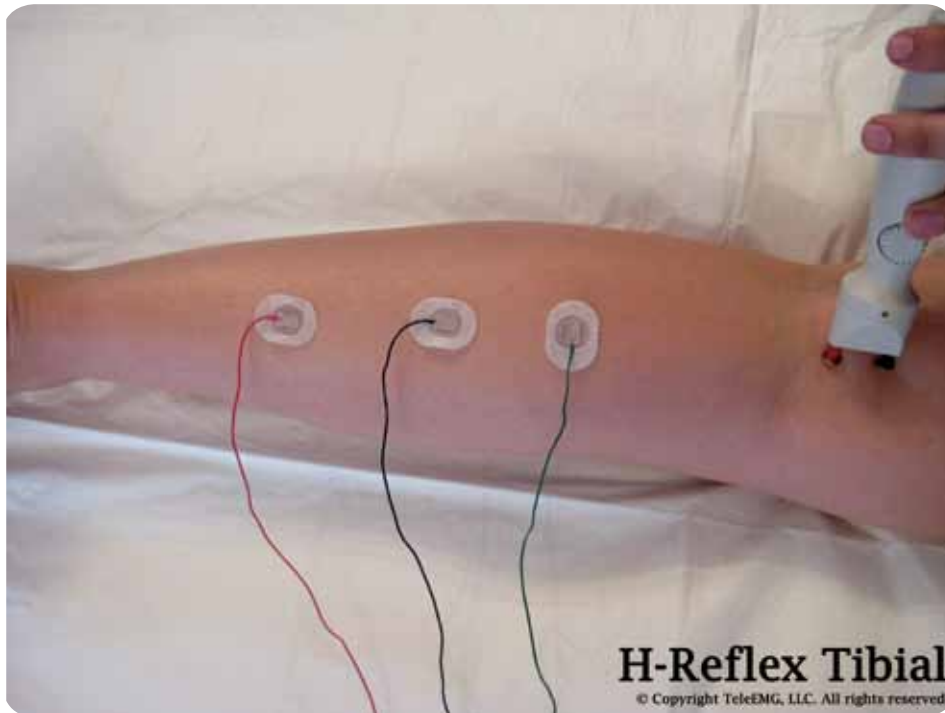


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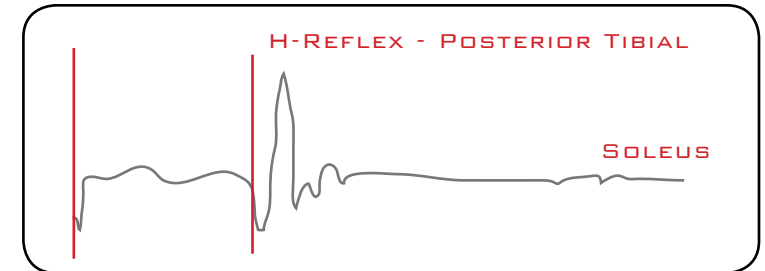
TIBIAL H-REFLEX (SOLEUS) SETUP

- ASK THE PATIENT TO FLEX THE FOOT AND PLACE THE ACTIVE (BLACK) ELECTRODE OVER THE INVERTED V BETWEEN THE CALF MUSCLES (SEE PICTURE)
- PLACE THE REFERENCE (RED) ELECTRODE BELOW IT
- STIMULATE THE TIBIAL NERVE BEHIND THE KNEE (SEE PICTURE) - WATCH FOR FOOT PLANTAR FLEXION
- START WITH LOW STIMULATION INTENSITY AND GRADUALLY BUILD UP
- THE H-REFLEX WILL APPEAR BEFORE A MOTOR RESPONSE IS SEEN AND WILL BE FURTHER AWAY FROM IT



H-REFLEX (SOLEUS - POSTERIOR TIBIAL)		
AMPLITUDE	0.81 MV	10.54 MV
LATENCY*	26 MS	42 MS
* HEIGHT DEPENDENT		

THE NORMAL VALUES ABOVE SHOULD BE USED AS A REFERENCE ONLY AND NOT FOR DATA ANALYSIS AS YOUR VALUES MAY DIFFER.

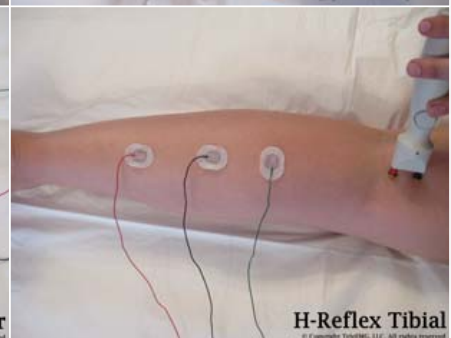
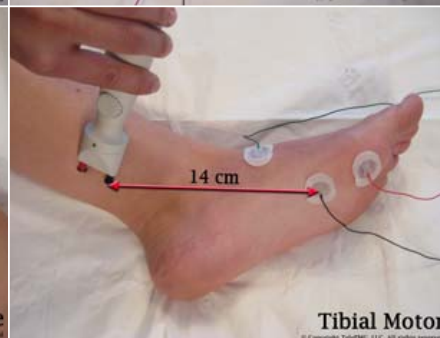
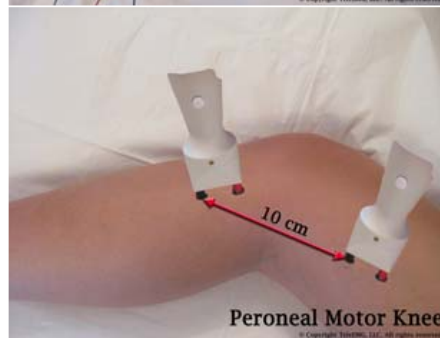
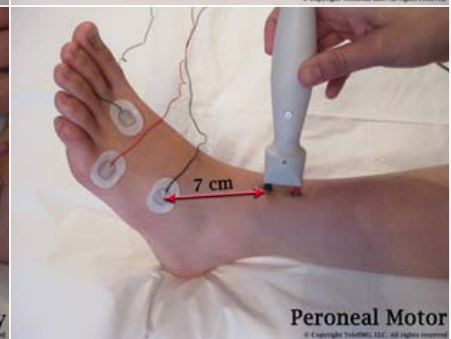
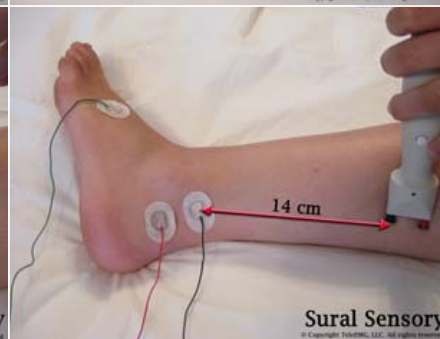
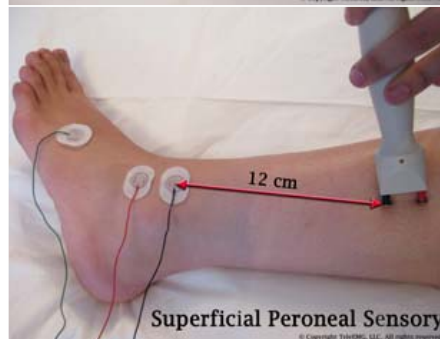
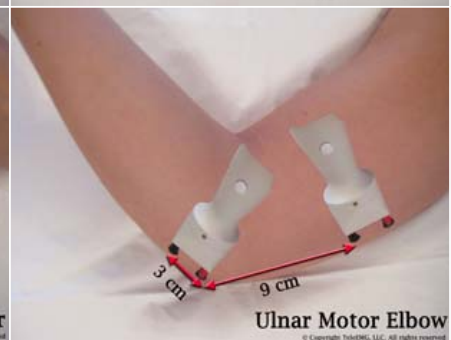
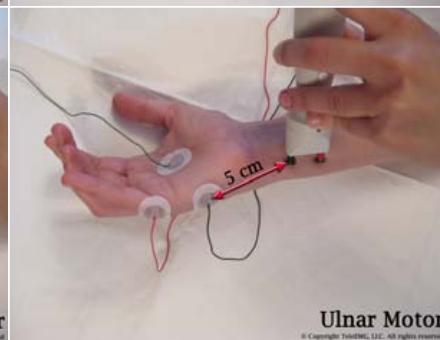
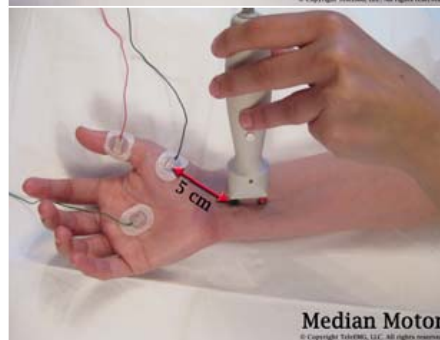
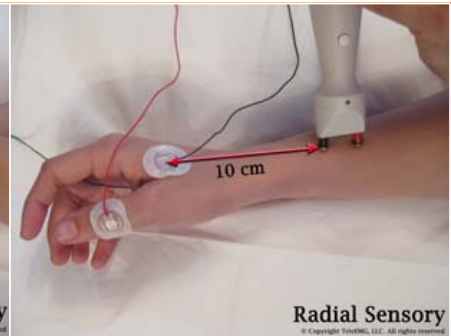
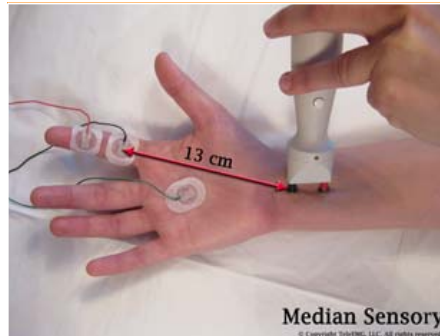


UPPER AND LOWER EXTREMITY NERVE CONDUCTION STUDIES

NCV EXPERT SET-UP

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USE OF STANDARD DISTANCES IS REQUIRED TO ENSURE PROPER COMPARISON TO NORMAL VALUES. SENSORY STIMULATIONS ARE ALL PERFORMED IN ONE SPOT, MOTORS IN 1 (MEDIAN AND TIBIAL) OR 3 (ULNAR AND PERONEAL) SPOTS. FOR SENSORY AND MOTOR STUDIES, STIMULATIONS ARE PERFORMED WITH THE STIMULATOR BLACK (CATHODE) ELECTRODE POINTING TO THE BLACK (ACTIVE) RECORDING ELECTRODE. H-REFLEX AND F-WAVE STUDIES ARE PERFORMED WITH THE STIMULATOR RED (ANODE) ELECTRODE POINTING TO THE BLACK (ACTIVE) RECORDING ELECTRODE. CAREFUL SKIN PREPARATION PRIOR TO THE TEST IS REQUIRED TO ENSURE PROPER RECORDING OF ACTION POTENTIALS.



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