Table 2 – Peroneal Method Table/Utility of Specific Studies

Motor Nerve Conduction Studies

Ref	Number of Subjects	Proximal Stimulation Site	Inter-mediate Stimulation Site	Distal Stimulation Site	Recording Site	Normal Values	Criteria for Abnormal Value	Comparison Standard	Sensitivity %	Specificity %
1	34 normal 11 abnorma	80-100 mm proximal to the FH	20-30 mm distal to the FH	Ankle	AT, EDB	AT: FH 37.1 ± 10.0 mVms PF 35.8 ± 9.7 mVms EDB: ankle 24.3 ± 5.8 mVms PF 23.3 ± 5.8 mVms	MCV through calf < 33.9 m/s Any amplitude drop side to side, AL recording Any amplitude drop side to side, EDB recording	Clinical features of PN	9.1 91 91	100
3	25 normal 27 abnorma	Mid PF and above knee	Below knee	Ankle	EDB	CV: Below Knee-Above Knee 48.0 ± 5.0 AK-BK 31.5 ± 7.4	MCV slowing > controls in the above knee to below knee segment EDB amplitude drop greater than or equal to 50% drop in amplitude at above knee compared to below knee segment	Physical examination	100 100	
5	28 normal 18 abnormal	2, 4, 6 cm proximal to FH	2, 4 cm distal to FH	Ankle	EDB	Across knee: Right: 58.4 ± 9.2 m/s Left: 58.6 ± 9.9 m/s Conduction time per 2 cm segment: .55 ms ± .1(range .3 .65)Distal/Proximal percent changeR:1.6 ± -7.4L:1.8 ± 11.4	*Amplitude drop ± 3 SD from mean* Conduction time ± 3 SD from mean <u>2 cm segment:</u> Amplitude drop Conduction time <u>10 cm segment</u>: Amplitude drop Conduction time	Clinical features of PN	77.8 94.4 38.9 38.9	
6	103	PF	FH	Ankle	AT EDB		Decrease in amplitude of = or > to 50% from distal to proximal stimulation sites to either EDB or AT Absent response recording at EDB Absent response recording at the AT	Included patients with abnormal EDX studies		
9	186 normal 36 abnorma	9 cm proximal to FH	FH	Ankle	EDB	PF to ankle 49.0 ± 3.9 m/s FH to ankle 48.0 ± 4.2 PF to FH 52 ± 9.6 Side to side difference -1.2 ± 5.3	MCV PF to ankle<36 m/s MCV FH to ankle <32 m/s MCV PF to FH <29 m/s Drop in CV PF to Ankle segment - FH to ankle segment > 6 m/s Drop in CV PF to FH segment –FH to ankle segment > 30 m/s Motor amplitude drop distal to	Abnormal electro-myography consistent with peroneal lesion at the knee	12.9 0.0 29.0 16.1 3.2 60.6	100 100 100 100 100 100

							proximal >20% -PF to FH			
10	39/10	Lateral popliteal space, level of midpatella	Immediately distal to FH	Ankle	AT EDB	AT 62.6 ± 3.4 (46-78) m/s EDB - proximal segment: 53.8 ± 3.4 m/s EDB - distal segment: 50.3 ± 2.4 m/s	MCV <45 m/s: PF to AT PF to EDB	Abnormal EMG	90 60	
11	74/23	PF	FH	Ankle	AT, PL, EDB		Conduction slowing >10m/s proximal to distal segment or absent response across FH segment Drop in EDB amplitude Distal latency to EDB	Clinical features	33 18.8 27.8	
12	6 with normal clinical findings at follow-up /14	9.5-11.5 cm proximal to the FH	1-2 cm distal to the FH	Ankle	EDB			Clinical features at follow up		
13	12/22	8 or 5 cm proximal to FH	2 cm distal to FH	Ankle	AT, PB, EDB	AT 5.1 (2.5 - 7.0) mV EDB 8.8 (2.0 - 17.0) mV PB 7.4 (4.0 - 11.0) mV	Reduced CMAPs (>lowest limits of control or not obtained) Conduction block - AT Conduction block – EDB Conduction block – PB (Conduction block: Greater than 30% drop in amplitude from distal to proximal recording site) MCV to EDB <40m/s	Clinical features	50 70 70 80 100	

SENSORY NERVE CONDUCTION STUDIES

	Limb Temperature	Number of Abnormal Subjects	Number of Control Subjects	Proximal Stimulation Site	Distal Stimulation Site	Recording Site	Normal Values			Technique	Comparison Standard	Sensitivity %	Specificity %
							Amplitude (μV)	Latency (ms)	CV (m/s)				
1	Not Reported	6	25	80-100 mm proximal to distal stimulation site	Medial to lateral malleolus	Dorsum of foot	Not Reported		53.8 ± 4.56	Superficial peroneal amplitude decreased, or absent response	Physical examination	83	
3	Not Reported	27, 3 additional with HNPP	25	Not Reported	Not Reported	Not Reported	21.3 ± 6.9		50.2 ± 3.26		Physical examination	Not Reported	

7	30.0	11	35	14 cm proximal to the active electrode, anterior to the fibula	3 cm proximal the mid bimalleolar line	2 cm proximal to the FH	Ankle: 13.8 (0-45) Knee: 6.9 (0-32)	Ankle latency: Onset: 2.7 (2.1-3.4) Peak: 3.4 (2.9-4.0) Knee latency: Peak: 4.5 (3.4 - 6.5)		Superficial peroneal NCS Ankle recording FH recording	Clinical diagnosis	36.4 63.6	
8	>32	7	21	10 cm proximal to recording electrodes, anterior ankle **		Interdigital nerves on foot dorsum**	* 5.96 6.46 7.55 6.58	Onset * 2.17 2.16 2.36 2.43 Peak * 2.84 2.81 3.08 3.10	46.87 46.87 42.84 41.76	* Digital nerve recordings of the two branches of the intermediate dorsal and medial dorsal cutaneous branches >2 SD from control Superficial peroneal nerve > 2 SD from controls	Physical examination	***	*
11	36-37	23 definite 24 suggestive			Anterior ankle	1-2 cm distal to the FH 9.5 cm - 11.5 cm proximal to the FH	FH 3 µV PF 3 µV (LLN .5 - .1)		>47m/s 54m/s at age 50 (95% confidence limit) Conduction slowing <10m/s proximal to distal segments	Sensory conduction abnormality across FH defined as CV drop greater >10m/s across FH segment compared to distal segment, or slowed across FH segment with normal distal conduction	History, clinical examination laboratory and radiologic studies to rule out other causes	81	
12	35-36	14 with abnormal EDX studies at the FH on initial study	6 with normal clinical findings at follow-up		Superior extensor retinaculum	9.5 cm 11.5 cm proximal to the FH and 1-2 cm distal to the FH							

ELECTROMYOGRAPHY

Ref #	Comparison Standard	Criteria for Abnormal Muscle	Sensitivity %	Sensitivity %	Sensitivity %	Sensitivity %	Sensitivity %	Sensitivity %
			SH of biceps femoris	AT	EHL	EDB	PL	PB
1	Clinical findings of PN	Abnormal spontaneous single muscle fiber discharges	Not Reported	100	Not Reported	91	82	Not Reported
3	Clinical findings of PN	Abnormal spontaneous single muscle fiber discharges Decreased voluntary recruitment	0	*57% had fibrillation potentials in some muscles innervated by the common peroneal nerve (not specified)* 100% in muscles some muscles innervated by the common peroneal nerve (not specified)				
11	Clinical findings of PN	Abnormal spontaneous single muscle fiber discharges Absent voluntary activity Increased duration Polyphasia >12%	Not reported	79 9 17 54	Not Reported	77 26	72 13	Not Reported
13	Clinical findings of PN	Abnormal spontaneous single muscle fiber discharges	0	90	90	90	60	75

AT = Anterior Tibialis; CV = Conduction Velocity; EDX = Electrodiagnostic; EHL = Extensor Hallicus Longus; EDB = Extensor Digitorum Brevis; FH= Fibular Head; HNPP = Hereditary Neuropathy with Increased Liability to Pressure Palsies; MCV = Motor Conduction Velocity; NCS = Nerve Conduction Studies; PB = Peroneus Brevis; PF = Popliteal Fossa PL = Peroneus Longus; PN = Peroneal Neuropathy; SD = Standard Deviation; SH = Short Head

*Values given for interdigital nerves 1, 3, 4, 5 respectively ** Sites reversed for antidromic recordings *** Not calculated due to indeterminate inclusion criteria