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## Nerve Conduction Study of Lateral Dorsal Cutaneous Branch of Sural Nerve

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The Lateral dorsal cutaneous branch of sural nerve (LDCB) is a terminal sensory branch of lower extremities. It can be injured frequently in peripheral nerves. However, the normal data of each component of nerve conduction study (NCS) of were not studied at this time. The Nerve Conduction Study of LDCB adults were assessed for amplitude, area, duration and nerve conduction velocity (NCV) in normal fifty. We also evaluated how age, sex and dexterity affect the various components of NCS. The Mean amplitude of LDCB was  $9.45 \pm 1.93 \mu V$ , area was  $4.05 \pm 0.55 \mu V/s$ , duration was  $1.50 \pm 0.13 s$ , and NCV was  $37.9 \pm 3.09 m/s$ , respectively. The amplitude of right was  $10.1 \mu V$  in men,  $8.65 \mu V$  in women. The area of right was  $3.83 \mu V/s$  in less than 40 years and  $4.24 \mu V/s$  in older than 40 years. The areas of left was  $3.86 \mu V/s$  in less than 40 years and  $4.30 \mu V/s$  in older than 40 years. The NCV was  $39.0 m/s$  in less than 40 years and  $36.7 m/s$  in older than 40 years. All of above differences were statistically significant. There were no statistically significant differences between right and left NCS. Normal data of LDCB could be applicable in peripheral neuropathy or nerve injury.

**Key Words :** Lateral dorsal cutaneous branch of sural nerve, Nerve conduction study

(lateral dorsal cutaneous branch of sural nerve, LDCB)

LDCB

LDCB study, NCS)

(lateral malleolus)

(nerve conduction study, NCS)

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**Table 1.** The nerve conduction study of lateral dorsal cutaneous branch of sural nerve

NCS	mean	SD
amplitude( $\mu\text{V}$ )	9.45	1.93
area( $\mu\text{V/s}$ )	4.05	0.55
duration(s)	1.5	0.13
NCV(m/s)	37.9	3.09

NCS; nerve conduction study NCV; nerve conduction velocity

**Table 2.** NCS of less than 40 years and more than 40 years (right side)

NCS	numbers	mean	SD	t	p	
amplitude( $\mu\text{V}$ )	<40 years	26	9.54	2.75	0.574	0.568
	40 years	24	9.17	1.59	0.586	0.561
area( $\mu\text{V/s}$ )	<40 years	26	3.83	0.19	-3.113	0.003
	40 years	24	4.24	0.64	-3.008	0.006
duration(s)	<40 years	26	1.49	0.16	0.09	0.928
	40 years	24	1.49	0.11	0.092	0.927
NCV(m/s)	<40 years	26	39	3.02	2.786	0.008
	40 years	24	36.7	2.98	2.787	0.008

**Table 3.** NCS of less than 40 years and more than 40 years (left side)

NCS	numbers	mean	SD	t	p	
amplitude( $\mu\text{V}$ )	<40 years	26	9.65	1.33	0.546	0.587
	40 years	24	9.41	1.77	0.54	0.592
area( $\mu\text{V/s}$ )	<40 years	26	3.86	0.38	-2.734	0.009
	40 years	24	4.3	0.7	-2.674	0.011
duration(s)	<40 years	26	1.51	0.14	-0.094	0.925
	40 years	24	1.51	6.36	-0.097	0.923
NCV(m/s)	<40 years	26	38.6	3.21	1.836	0.073
	40 years	24	37.1	2.62	1.851	0.07

**Table 4.** NCS of men and women (right side)

NCS	numbers	mean	SD	t	p	
amplitude( $\mu\text{V}$ )	men	25	10.1	1.41	2.326	0.024
	women	25	8.65	2.71		0.026
area( $\mu\text{V/s}$ )	men	25	3.98	0.39	-0.647	0.52
	women	25	4.08	0.6		0.521
duration(s)	men	25	1.48	0.16	-0.626	0.534
	women	25	1.5	0.12		0.535
NCV(m/s)	men	25	37.9	2.96	-0.039	0.969
	women	25	37.9	3.49		0.969

**Table 5.** NCS of men and women (left side)

NCS	numbers	mean	SD	t	p	
amplitude( $\mu\text{V}$ )	men	25	9.75	1.31	0.963	0.34
	women	25	9.33	1.76		0.341
area( $\mu\text{V/s}$ )	men	25	4.01	0.54	-0.781	0.439
	women	25	4.14	0.66		0.439
duration(s)	men	25	1.5	0.13	-0.605	0.548
	women	25	1.52	8.7		0.549
NCV(m/s)	men	25	38.3	2.86	1.001	0.322
	women	25	37.5	3.15		0.322

**Table 6.** NCS of right and left side

NCS		numbers	mean	SD	t	p
amplitude( $\mu V$ )	right	50	9.36	2.25	-0.67	0.506
	left	50	9.54	1.54		
area( $\mu V/s$ )	right	50	4.03	0.5	-0.838	0.406
	left	50	4.07	0.6		
duration(s)	right	50	1.49	0.14	-1.224	0.227
	left	50	1.51	0.11		
NCV(m/s)	right	50	37.9	3.2	0.05	0.96
	left	50	37.9	3.01		

1. 40 40 (Table 2, 3)

50 LDCB NCS 40 40 NCS t-

24 60 25 25 40 3.83  $\mu V/s$ , 40 4.24  $\mu$

40 24 40 26 V/s 40 가

26 4.30  $\mu V/s$  40 3.86  $\mu V/s$ , 40

32 Medelec Sapphire 39.0 m/s, 40 36.7 m/s 40 NCV

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NCS 5 (Table 4, 5)

5 (extensor digitorum brevis) 2. 25 25 NCS t-

12 10.1  $\mu V$ , 8.65  $\mu V$

cm 가

area) (negative peak NCV

(positive peak area) (duration) (nega-

3. (Table 6) paired t-test

NCV NCS

SAS 6.12

40 40

t

paired t-test NCS 10-11

가 가

12-14 가

50 100 (limbs)

LDCB 9.45  $\mu V$  (hyalinization) (granulation), (stria-

4.05  $\mu V/s$  1.50 tion) (pyknotic nucleus), NCV

NCV 37.9 m/s (Table 1). 가 가

10 가 10

(wallerian degeneration) 가  
 , 60  
 (segmental demyelination)가 NCS Bolton <sup>19</sup>  
 , NCS 가  
 , 가 가  
 , NCS가 Michael <sup>15</sup> 가 NCS  
 , 가 가 LCDB  
 , 65 가 NCS  
 , 가 <sup>16</sup> NCV  
 , 60 가 NCV <sup>20-21</sup>  
 , NCV 가 NCV  
 , 40 <sup>17-18</sup> 40 가  
 , 40 NCS 가 NCV가 40 가  
 , 40 NCV가 Soudmand <sup>22</sup> NCV  
 , 40 가 Truong <sup>23</sup>  
 , NCV NCV가  
 , 60 NCV  
 , NCS 가  
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 , 가 NCV  
 , NCS 34 가  
 Bolton <sup>19</sup> 가 가 가  
 , 가 Feibel <sup>24</sup> 30  
 , NCV가 가 가  
 , 가 30 가  
 , Lang <sup>25</sup>  
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