

Single Fibre EMG and Fibre Density Values

Muscle	MCD10	MCD20	MCD30	MCD40	MCD50	MCD60	MCD70	MCD80	MCD90
Frontalis	33.6/49.7	33.9/50.1	34.4/51.3	35.5/53.5	37.3/57.5	40.0/63.9	43.8/74.1		
Orbicularis oculi	39.8/54.6	39.8/54.7	40.0/54.7	40.4/54.8	40.9/55.0	41.8/55.3	43.0/55.8		
Orbicularis oris	34.7/52.5	34.7/52.7	34.9/53.2	35.3/54.1	36.0/55.7	37.0/58.2	38.3/61.8	40.2/67.0	42.5/74.2
Tongue	32.8/48.6	33.0/49.0	33.6/50.2	34.8/52.5	36.8/56.3	39.8/62.0	44.0/70.0		
Sternocleidomastoid	29.1/45.4	29.3/45.8	29.8/46.8	30.8/48.8	32.5/52.4	34.9/58.2	38.4/62.3		
Deltoid	32.9/44.4	32.9/44.5	32.9/44.5	32.9/44.6	33.0/44.8	33.0/45.1	33.1/45.6	33.2/46.1	33.3/46.9
Biceps	29.5/45.2	29.6/45.2	29.6/45.4	29.8/45.7	30.1/46.2	30.5/46.9	31.0/48.0		
Ext dig communis (EDC)	34.9/50.0	34.9/50.1	35.1/50.5	35.4/51.3	35.9/52.5	36.6/54.4	37.7/57.2	39.1/61.1	40.9/66.5
Abd digiti V (ADM)	44.4/63.5	44.7/64.0	45.2/65.5	46.4/68.6	48.2/73.9	51.0/82.7	54.8/96.6		
Quadriceps	35.9/47.9	36.0/48.0	36.5/48.2	37.5/48.5	39.0/49.1	41.3/50.0	44.6/51.2		
Tibialis Ant (TA)	49.4/80.0	49.3/79.8	49.2/79.3	48.9/78.3	48.5/76.8	47.9/74.5	47.0/71.4	45.8/67.5	44.3/62.9
Soleus									
Muscle	FD10	FD20	FD30	FD40	FD50	FD60	FD70	FD80	FD90
Frontalis	1.67	1.67	1.68	1.69	1.7	1.73	1.76		
Orbicularis oculi	N/A								
Orbicularis oris	N/A								
Tongue	N/A								
Sternocleidomastoid	1.89	1.89	1.9	1.92	1.96	2.01	2.08		
Deltoid	1.56	1.56	1.57	1.57	1.58	1.59	1.6	1.62	1.65
Biceps	1.52	1.52	1.53	1.54	1.57	1.6	1.65	1.72	1.8
Ext dig communis (EDC)	1.77	1.78	1.8	1.83	1.9	1.99	2.12	2.29	2.51
Abd digiti V (ADM)	1.99	2	2.03	2.08	2.16	2.28	2.46		
Quadriceps	1.93	1.94	1.96	1.99	2.05	2.14	2.26	2.43	
Tibialis Ant (TA)	1.94	1.94	1.96	1.98	2.02	2.07	2.15	2.26	
Soleus	1.56	1.56	1.56	1.57	1.59	1.62	1.66	1.71	

MCD: Mean Consecutive Difference

FD: Fibre Density

N/A: Not Available

E.g. MCD10: Mean Consecutive Difference for 10 years of age.

Jitter Value (μ sec): mean MCD 95% upper confidence limit of normal / 95% upper confidence limit of normal for single fibre pairs.

Abnormal if:

1. Mean MCD of 20 fibre pairs is more than 95% upper confidence limit

OR

2. Jitter in more than 10% of pairs is >95% upper limit for pairs. E.g. >2 abnormal pairs for 20 fibre pair samples.

Fibre Density is abnormal if mean of 20 observations for fibre density is >95% upper confidence limit.

Notes: With stimulated single fibre EMG, normal values are 0.707 of values listed above. Value of 0.707 is derived from the inverse of square root of 2. Fibre potential should be more than 150 μ sec and less than 4 msec from the stimulus trigger; otherwise, there is a risk that there is direct muscle stimulation. Jitter less than 3 μ sec also suggests that there is direct muscle stimulation.

REFERENCE:

Bromberg MB, Scott DM: **Single fibre EMG reference values: reformatted in tabular form.** Muscle Nerve 1994;17:820-821.