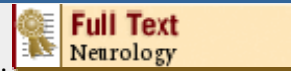


[Neurology](#). 2003 Dec 9; 61(11): 1503-7.



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**A comparison of muscle strength testing techniques in amyotrophic lateral sclerosis.**

- [Great Lakes ALS Study Group](#).

OBJECTIVE: To assess the reliability of strength testing techniques among centers investigating patients with amyotrophic lateral sclerosis. METHODS: The authors compared test reliability in manual muscle testing (MMT) and maximal voluntary isometric contraction (MVIC) scores among institutions and test validity by comparing change over time between MMT and MVIC. The authors examined 63 subjects at 3-month intervals for 12 months. At enrollment and at 6 months, two physical therapists each examined the subjects twice. MMT scores were calculated as modifications of the Medical Research Council scale. MVIC scores were generated as standardized megascores. Intraclass correlation coefficients and coefficients of variation compared reproducibility, and Pearson correlation coefficients compared change over time. The power of each measure to detect disease progression over time was assessed by estimating coefficients of variation for the average change. RESULTS: Reproducibility between MVIC and MMT was equivalent. Sensitivity to detect progressive weakness and power to detect this change, however, favored MMT, an effect largely accounted for by the number of muscles sampled. CONCLUSIONS: In multicentered trials, uniformly trained physical therapists reproducibly and accurately measure strength by both MMT and MVIC. The authors found MMT to be the preferred measure of global strength because of its better Pearson correlation coefficients, essentially equivalent reproducibility, and more favorable coefficient of variation.

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**\*\*NOTICE \*\*** As a result of this study, hand held myometry input equipment was developed for QMA – [www.qmasystem.com/HHM.htm](http://www.qmasystem.com/HHM.htm)