

The accuracy of kinesiology-style manual muscle testing to distinguish congruent from incongruent statements under varying levels of blinding:

Results from a study of diagnostic test accuracy

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BACKGROUND

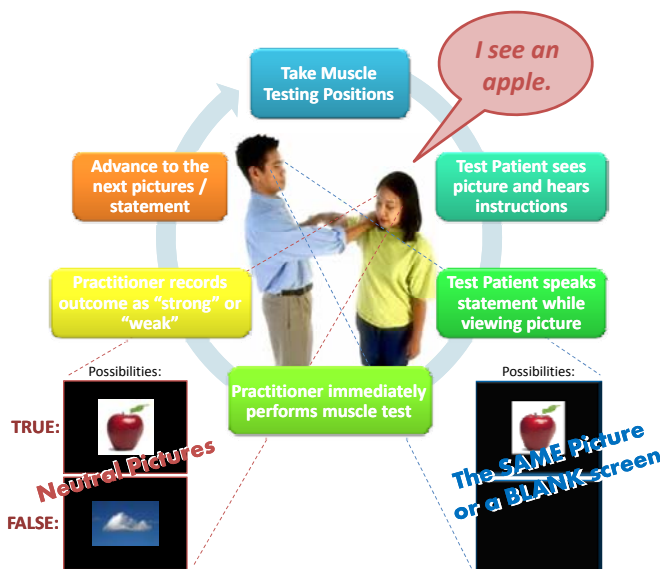
Healthcare practitioners have been using muscular strength testing to assess the integrity of the neuromusculoskeletal system since early last century.¹ In the 1970's another application of manual muscle testing (MMT), called Applied Kinesiology (AK), was developed by Dr. George Goodheart.² Its premise is that a muscle will be less able to resist a force when there is aberrant nervous input,³ and muscles are labeled as either "strong" or "weak" accordingly. Since then other MMT techniques have been developed that assess a patient's response to semantic stimuli.²⁻⁴ Monti et al. found that following the speaking of congruent statements, a muscle was able to resist significantly more force compared to after speaking incongruent statements.⁵ A congruent statement is defined as one which the speaker believes to be true, whether or not their belief reflects actual reality. It was found that congruent statements usually result in a "strong" MMTs, while incongruent statements usually result in "weak" muscle tests.⁵

While the reproducibility of this assessment tool has been investigated,^{6, 7} its accuracy has not yet been firmly established. The aim of this study was to estimate the accuracy of MMT to distinguish congruent from incongruent spoken statements.

METHODS

Twenty-five healthcare practitioners who routinely perform MMT in response to spoken statements were recruited. Additionally, 25 healthy test patients (TPs) were recruited who had little/no prior experience with MMT. The practitioners tested the anterior or lateral deltoid on one side only. On a computer monitor, TPs were shown pictures of common, emotionally neutral items, and were instructed to make a simple true statement or a simple false statement about the identity of the object. In the first testing scenario, practitioners also viewed a computer monitor showing either the same picture as the TP or a blank screen. Immediately following the TP's statement, the practitioner performed a MMT, and recorded the result as weak or strong. Each practitioner performed 40 MMTs broken up into 4 blocks of 10 statements each. In between each testing block a second scenario was enacted in which the practitioner guessed the verity of the statement without performing MMT. The primary outcome was the percent correct in the first testing scenario when the practitioner's screen was blank. The secondary outcome was the percent correct in the second testing scenario when the practitioner guessed the verity of the TP's statement without MMT. See Figure 1.

Figure 1 – Summary of methodology for MMT testing condition



RESULTS

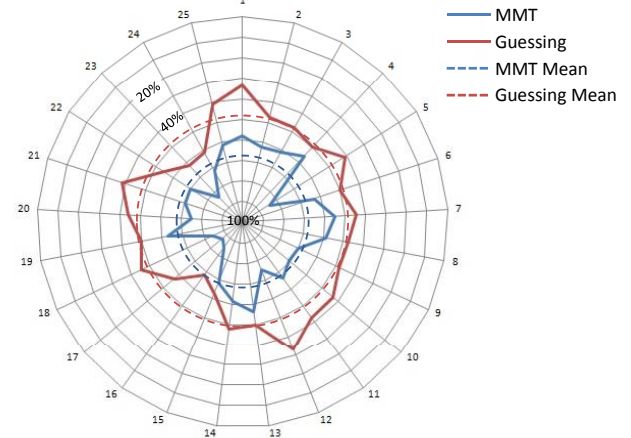
A total of 25 unique practitioner-TP pairs were included in the study. The mean accuracy (1^o outcome) was 68.8% with 95% confidence interval (CI) of 64.9-72.7%, and with a range of 55.0% to 87.5%. The mean accuracy for the guessing/control condition (2^o outcome) was 48.4% (95% CI 45.0-51.8%) with a range of 33.3% to 68.2%. See Table 1 for a summary. See Figure 2 for a graphic representation of the accuracies of each of the 25 individual practitioners. The years of a practitioner's MMT experience and self-ranked MMT expertise did not significantly correlate with a practitioner's MMT accuracy.

Table 1 - Mean Accuracy (% Correct) of MMT vs. Guessing

MMT			Guessing		
Mean Accuracy*	95% CI	Range (%)	Mean Accuracy*	95% CI	Range (%)
68.8	64.9 - 72.7	55.0 - 87.5	48.4	45.0-51.8	33.3 - 68.2

MMT, Manual Muscle Testing; CI, Confidence Interval; *% Correct

Figure 2 – MMT and Guessing accuracies for each Practitioner (N=25) and Mean Accuracies



CONCLUSION

Manual muscle testing used to distinguish congruent from incongruent spoken statements is significantly more accurate than guessing and chance, and therefore, its use may have merit in the management of specific cases. The broad range of MMT accuracies (55.0 to 87.5%) suggests there is much yet to be learned about the skills involved and possible influencing factors.

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**MMT and Guessing accuracies for each
Practitioner (N=25) and Mean**

