

Unlocking the Mysteries of Muscle Testing: Highlights from My Oxford PhD

Join me on an exciting journey through a series of articles that delve into the key insights I have discovered during my extensive PhD research on the accuracy and precision of muscle testing. During my 10 years at Oxford, I met hundreds of muscle testing practitioners from all over the World, witnessed their techniques and heard their stories, which has given me a broad perspective relevant to the practice of kinesiology.

Within each article of this collection, I will be highlighting specific aspects of my research, with the hope that you, too, will gain useful perspectives. As we navigate the intricacies of muscle testing – exploring its fundamental nature, tracing its evolution, and scrutinising its actual accuracy – I extend an invitation for you to engage in contemplation, ignite discussions, and participate in spirited debates about these subjects with your peers. Likewise, I wholeheartedly encourage an open dialogue, the cornerstone of the scientific method, which can only propel us towards a deeper understanding. Enjoy the ride!

Article 1: Understanding the Evolution of Manual Muscle Testing

Generally speaking, I believe that we must have a clear understanding of where we came from in order to have a deeper appreciation of where we are currently. In terms of muscle testing, this involves investigating its roots and making some specific distinctions.

The term Manual Muscle Testing (MMT) is a general term that refers to a non-invasive method for assessing neuromusculoskeletal integrity used among various healthcare practitioners. Its applications have evolved over time, leading to variations in its usage and interpretation. MMT was initially introduced in the scientific literature in 1915 when it is described as a means of evaluating muscular weakness in polio patients. However, little is known of its early methods. In 1949, Kendall and Kendall established methodologies for isolating and testing individual muscles, forming the basis for contemporary MMT in orthopaedic and neurological contexts.

During the 1960s, chiropractor George Goodheart introduced a novel approach to MMT, giving rise to Applied Kinesiology (AK). This technique shifted the focus of MMT from muscular strength evaluation to assessing the neural control of muscle function. Goodheart's theory was rooted in the belief that aberrant nervous system input weakens a muscle's ability to resist an external force, which may also be connected to abnormal function of other related structures in the body (e.g., organs, meridians, or systems).

Subsequently, Muscle Response Testing (MRT) emerged, distinct from both traditional MMT and AK-MMT. This form of muscle testing often involves testing a single muscle, commonly called the "indicator muscle," which is tested again and again to scan for specific conditions such as stress, allergies, or food intolerances. In MRT, which muscle that is used as the indicator muscle is less significant; the emphasis lies on the *response* to the target condition for which the muscle is tested. Unlike MMT, the interpretations of results and the applications of MRT are not standardised, and can vary from practitioner to practitioner, from technique system to technique system, and even from test to test.

The evolution of MMT highlights the contrasting viewpoints that have arisen over time. Nevertheless, there are clearly three distinct types of MMT being practiced nowadays: (1) traditional MMT, (2) AK-MMT, and (3) MRT. Although the tests may appear similar, the purpose and interpretation of results differ significantly. Traditional MMT focuses on muscular strength, AK-MMT delves into neural control, and MRT targets innumerable conditions using the indicator muscle's response. Because understanding these distinctions is crucial for comprehending the unique contributions and limitations of each MMT approach, I will discuss the differences in detail in coming articles.

Source: Jensen, A. M. (2015). [Estimating the prevalence of use of kinesiology-style manual muscle testing: A survey of educators](#). *Advances in Integrative Medicine*, 2(2), 96-102. doi:10.1016/j.aimed.2015.08.003.

Article 2: Further Distinguishing the 3 Different Types of MMT

As I was investigating the origins of muscle testing, it became clear to me early on that there were three distinct types of Manual Muscle Testing (MMT): (1) Traditional MMT, (2) Applied Kinesiology Manual Muscle Testing (AK-MMT), and (3) Muscle Response Testing (MRT). Each variant offers a unique perspective, reflecting the evolving landscape of holistic health practices. In this exploration, we delve into the core principles and applications of these three types of MMT, shedding light on their significance and their differences.

Same or Different?

Some people might wonder why I am splitting hairs about the differences in MMT, after all, they all look very similar, right? True, but they are indeed different. First, let's take a brief look at what a test is, in medical terms: A diagnostic test is a procedure used to determine the presence or absence of a particular condition, disease, or characteristic within an individual. They also provide valuable information to healthcare professionals that may lead to a diagnosis, course of treatment, and patient management. With this in mind, we can safely say that all 3 types of MMT are diagnostic tests. On the other hand, tests are considered different if they test for different conditions or if their

outcomes are interpreted differently. For example, while the blood test for diabetes and the blood test for high cholesterol look the same to us, they are different tests because they are looking for different conditions. For this reason, it is evident that all three types of MMT can be discerned as separate and distinct tests. See Table 1 for a summary of the differences.

Traditional Manual Muscle Testing (MMT)

Traditional Manual Muscle Testing (MMT) is a non-invasive assessment method widely used in various healthcare fields, including physiotherapy, chiropractic, and osteopathy. In this approach, any muscle can be tested to evaluate its *strength*. During this type of MMT, the examiner applies resistance to a muscle while the patient contracts the muscle, and the degree that the patient is able to resist is graded on a 0 to 5 scale. A grade of 5 is typically interpreted as normal strength, while lower grades indicate varying levels of weakness. It is commonly employed in diagnosing neuromuscular conditions and guiding rehabilitation programs. Traditional MMT aims to assess muscular function and Kendall and Kendall have demonstrated that the strength of any muscle (or muscle group) can be assessed. However, debates persist regarding its reliability and validity in certain clinical contexts.

Applied Kinesiology Manual Muscle Testing (AK-MMT)

Developed by chiropractor George Goodheart, Applied Kinesiology Manual Muscle Testing (AK-MMT) looks identical to traditional MMT. However, unlike traditional MMT, AK-MMT focuses on evaluating *neural control* rather than muscular strength. The premise is that aberrant neurological input can weaken a muscle's ability to resist external force. AK-MMT assesses specific muscles (or groups of muscles) to identify potential neurologic dysfunctions, which may be related to some altered physiological function – such as in organ, endocrine or meridian problems. The outcome of an AK-MMT test is conventionally categorised as “facilitated” (i.e. “strong”) or “inhibited” (i.e. “weak”) – making AK-MMT a *binary test*. However, how a practitioner interprets the outcome of an AK-MMT muscle test can vary considerably. For instance, if a practitioner observes a muscle as “facilitated,” they might consider it an indication of optimal functioning. In contrast, another practitioner might view the same result as an indication of an overactive muscle compensating for weakness elsewhere in the body. Furthermore, while AK-MMT has gained popularity among chiropractors and alternative healthcare practitioners, discussions about its mechanisms and scientific basis are still under contention.

Muscle Response Testing (MRT)

Muscle Response Testing (MRT) is a type of muscle testing that has emerged as a distinct approach from the previous two types of MMT. Unlike traditional MMT, MRT

often involves the use of a single muscle, often referred to as an "indicator muscle," to scan for specific conditions like stress, allergies, or imbalances. To perform this test, the practitioner applies a force to the muscle while the patient resists, and the muscle's response is interpreted as "strong" or "weak," therefore making MRT a *binary test* as well. What the "strong" and "weak" mean (i.e., how they are interpreted) is determined by the practitioner prior to performing the test. MRT techniques, such as HeartSpeak, Psych-K and Total Body Modification (TBM), offer a wide range of applications, including emotional stress assessment, meridian imbalance detection, and identifying nutritional needs.

Table 1. The differences between the 3 types of Manual Muscle Testing (MMT)

	Approx. Time of Origin	Used to Assess	Potential Outcomes	Interpretation	Muscles Tested
Traditional MMT	1910's	Strength	0 to 5 Scale	5=Normal Strength, <5=Abnormal (Weak)	Any / All
AK-MMT	1960's	Neurological Integrity	Binary: "Facilitated" or "Inhibited"	Both outcomes may be normal at times or abnormal at other times	Any / All
MRT	1980's	Many Various Conditions	Binary: "Strong" or "Weak"	The interpretation of the outcome is decided by the Practitioner prior to the test	One, the <i>Indicator Muscle</i>

MMT, Manual Muscle Testing; AK, Applied Kinesiology; MRT, Muscle Response Testing

In this exploration of the three types of MMT, I have highlighted the unique characteristics that set them apart, revealing their distinct nature beyond their surface similarities. As our journey continues, the next article promises an exciting dive into the prevalence of use of MRT around the world.

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Article 3: Prevalence of Use of Muscle Response Testing

Manual muscle testing (MMT) has undergone an intriguing transformation over the years, resulting in the emergence of Muscle Response Testing (MRT). In contrast to traditional MMT, which primarily evaluates muscular strength, and Applied Kinesiology

MMT (AK-MMT), which assesses neural control of muscle function, MRT centres on the utilisation of a single muscle, often referred to as the "indicator muscle," to identify various target conditions such as stress or allergies.

In one of the first studies I completed at Oxford, I attempted to estimate the prevalence of MRT usage. I was able to identify 79 technique systems employing some form of MRT, with 46 of these systems offering estimates of the number of individuals trained in their respective techniques. Using a best guess estimate, I found that over 1 million people worldwide have undergone formal training in MRT.

However, the estimation of prevalence presents challenges and potential sources of error. Some practitioners may have received training in multiple MRT techniques, leading to potential redundancies in the reported figures. Additionally, some trained individuals might not actively incorporate MRT into their practice, potentially contributing to an underestimation of prevalence.

Furthermore, the diversity in applications and interpretations within different MRT technique systems adds complexity to assessing the clinical utility of MRT. The study underscores the necessity for rigorous research to explore the validity, precision, and overall effectiveness of MRT in clinical settings. This involves conducting diagnostic test accuracy studies, evaluating precision, and ultimately conducting randomized controlled trials to assess patient outcomes.

The study's findings emphasise the considerable prevalence of use of MRT, sparking discussions about its legitimacy and the need for evidence-based exploration. As MRT continues to be employed widely, healthcare professionals are challenged to critically evaluate its applications and contribute to the ongoing discourse about its potential advantages and limitations.

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