

## Manual Resistive Tests

By Whitney Lowe, LMT

Many practitioners learned how to perform simple assessment procedures, such as active or passive range-of-motion, in their basic training. However, despite their exposure to these concepts, many massage practitioners don't realize the tremendous amount of information that can be derived from these simple procedures when they are performed correctly.

In this article, let us focus our attention on the manual resistive test (MRT) and the valuable information we can derive from this procedure.

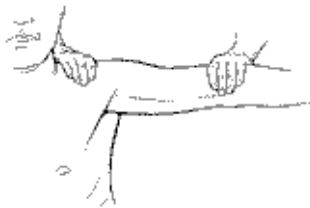


Figure 1: MRT for abduction of the shoulder The MRT may also be referred to as a resisted isometric contraction, or simply as muscle testing. The primary purpose of this procedure is to investigate the nature of problems with muscles and tendons, those tissues that are actively involved in the contraction process. A MRT is performed by having the client attempt to engage in a muscle contraction against some resistance (usually offered by the practitioner). **Figure 1** shows an example of a MRT for abduction of the shoulder. The practitioner offers resistance to the client's attempt to abduct the shoulder. This is accomplished by placing a hand near the client's elbow and preventing the client from abducting any farther.

The most valuable information in MRTs comes from combining information derived from the test with that derived from the other procedures. For example, if a client has pain during active motion and no pain during passive motion, you might suspect a problem with the muscle tendon unit. We can validate our suspicion with a MRT. It is likely that the client will have the same pain when a MRT is done, because it is also using the muscle tendon unit. Since a MRT consists of restricting motion at the joint, it is unlikely that the pain is

originating from a joint pathology that involves tissues such as the joint capsule, ligaments, bursa, or any of the other inert tissues of the joint. An inert tissue is one that does not actively cause a contraction, such as the joint capsule or nerve.

Often a client will describe a motion that hurts, such as lifting the arm out to the side of the body while carrying a weight. For example, the client may describe that carrying a heavy briefcase causes shoulder pain. In an effort to hold the briefcase away from the legs, the shoulder is attempting to abduct slightly. When you perform an active range of motion in abduction, the client reports that it does not hurt. When you perform a passive motion in abduction, the client also reports that it doesn't hurt. This seems puzzling.

Why does it hurt when the client attempts to abduct the arm with the briefcase, but not in your office during the evaluation? The difference is the absence of weight (resistance) in the arm. The briefcase is acting as an additional resistance when the client is holding it away from the body. This is a perfect chance to use a manual resistive test to validate your suspicions. If you have this client attempt to abduct the arm against resistance, the client will describe the same pain as when lifting the briefcase.

What we see here is a common pattern. The muscle injury is not severe enough to be perceived when the client is only lifting up the weight of the arm. However, when overcoming additional resistance (applied by the therapist or the briefcase), the pain is evident. This indicates a lower level of injury to the muscle tendon unit. The pain can be felt when there is greater demand on the muscle fibers, but not when the demand is low, such as lifting the arm by itself.

Another factor that is very important to consider when using MRTs is what the information from the test actually means. For example, what might be the problem if your client reports pain during a manual resistive test? A frequent error of many practitioners is misinterpreting the results of a MRT. If there is pain during a manual resistive test, it is likely that there is a problem with the muscle tendon unit. However, the nature of that problem still needs to be identified. Practitioners like massage therapists who spend a great deal of time dealing with myofascial trigger points and muscular tension may jump to the conclusion that a myofascial trigger point is the cause of pain during a MRT. Myofascial trigger points often do not cause pain with a MRT. They are much more likely to be painful when you press directly on the trigger point itself.

The primary causes of pain with a MRT usually involve a disruption in the fibers of a muscle-tendon unit, such as a muscle strain, tendinitis, or tenosynovitis. Information that is derived during the client history and palpation of the primary region of pain will help verify suspicions as to the cause of the pain. While the manual resistive test is a simple procedure to perform, its value in identifying numerous musculoskeletal problems should not be underestimated.

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