

## Case studies in MAT

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The following case studies are representative of actual clients treated with Muscle Activation Techniques (MAT). In some cases, clients continued with Personal Training to further enhance their restored function. These cases generally yield the longest lasting results. In all but a few cases, clients were instructed in and sent home with a home exercise program to maintain positional strength and muscle function. The home program consisted of isometric (no movement) exercise with the muscle in a shortened position. Ironically, a few of these clients returned for treatment with the same problems after not continuing their programs.

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### **The cases:**

M.A. is a 22 y/o college student suffering from the effects of Thoracic Outlet Syndrome. His goal was to become more active and be able to get through a full day without the “tell-tale” tingling sensation in his hands or the noticeable loss of grip strength. These symptoms were often aggravated by shoulder stretching or fatigue leading to poor neck posture. When tested, M.A. had normal range of motion (ROM) on both sides of his upper body. Strength testing, however, revealed something completely different. The strength needed to stabilize both scapula to the ribcage was compromised. Specifically, the Serratus Anterior, Rhomboid Major, Rhomboid Minor and the Upper Trapezius tested weak bilaterally (on both sides). Each of these muscle groups was not able to hold their positions when approximately 30 pounds of pressure was applied to the muscle in a mechanically disadvantaged (shortened) position. The result of these weaknesses may have been the key to his forward, shoulder rounded posture. This posture may have led to increased pressure throughout the thoracic opening. This opening contains major blood vessels and the brachial plexus which is responsible for innervating both arms. Pressure on these nerves would cause pain and tingling in his hands. Initial treatment focused on increasing the proprioceptive input to the scapular stabilizing muscles (as listed above) through precise palpation. The resulting increased strength not only dramatically improved posture but relieved symptoms. Further sessions were used to reinforce these improvements through exercise. Each of these sessions began with range of motion (ROM) and specific muscle testing to insure that the restoration of strength had not changed. In addition, post-session testing was used to verify that the effects of weight training did not decrease proprioceptive input, which would weaken or inhibit the scapula stabilizing musculature. Interestingly enough, it was found that full range chest presses aggravated symptoms so the recommendation was made to limit any possible over-stretching of the shoulder joint. M.A. continues to exercise symptom free with only a few adjustments to his regular routine.

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G.G. is a 56 y/o employee from a local zoo who had read an article about MAT in Experience Life magazine. She had already tried several forms of treatment for her Fibromyalgia and was excited to try this technique. Initial concerns were poor posture at the end of a workday leading to fatigue. This was considered to be a case of – what came first ? the chicken or the egg. Was workday fatigue causing her poor posture or was poor posture causing her end-of-day fatigue. Muscle testing revealed generalized weakness in her core . The most obvious of

these were her Transverse Abdominis, External Oblique and Multifidus muscles. Hour-long sessions actually made symptoms worse as she was very sensitive to the palpation technique and would actually react negatively after a certain point. Treatment commenced at a slower pace utilizing primarily graded-intensity isometrics. She progressed rapidly in strength but was tired after a session. After only 6 sessions, G.G. noticed a dramatic improvement as her posture improved and “held” throughout the day. “This has helped me better than most things I have tried”.

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K.M. had also read a magazine article about MAT and was willing to try it as an alternative to further surgery for a previous ACL repair. K.M. is a 32 y/o traveling salesman who is very active in local basketball leagues. His (R) knee pain was aggravated by jumping but of greater concern was the fact that he often felt like he didn’t have full control of the motion. In fact, he reported that it sometimes felt like his knee was going to “give out”. He was first evaluated with a functional movement test, he was unable to control single leg squats on both sides. Range of motion testing revealed limitations that would involve his ( R ) Vastus Lateralis, ( R ) Popliteus and also his ( L ) Gluteus Medius, ( L ) External Oblique and ( L ) Quadratus Lumborum. When this data is combed over with a fine biomechanical comb it reveals that patellar motion is not very well controlled because of an inhibited Quadriceps muscle (Vastus Lateralis). Additionally, because of all of the left sided weakness, the suspension system for supporting the pelvis was also poorly controlled. In fact, whenever K.M. lifted his right leg in normal gait or running, it’s possible that the resulting pelvic shift increased the amount of ground force transmitted through his knee when he placed it back on the ground. This is a term known as footstrike. Because of his athletic background and high level of conditioning, K.M. received long-term relief after only 3 MAT sessions. He has since returned to competitive basketball and continues to pay special attention to the muscles that require maintenance strength.

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C.C. is a 26 y/o Personal Trainer and future Real Estate Professional diagnosed with Scoliosis. She apparently has had the condition for some time but it had recently become a problem following an unrelated abdominal surgery. C.C. also complains of a Sacroiliac joint problem that frequently feels like it “locks”. This causes her pain when arising from prolonged sitting positions and can even affect her gait pattern. Chiropractic treatment did not relieve the problem adequately. In fact, she recalled feeling more discomfort post-treatment. This was an interesting case to learn from, C.C. would often gain nearly 2 inches in height after MAT treatment. Within hours of treatment though, she would return to normal height and often have a full return of symptoms within days. Session length was often limited due to her busy schedule. However, when a full hour was devoted to treatment, better results ensued. In her case, every muscle that was associated with a given movement needed to be tested and treated if weak. Often, this was not possible due to time constraints. It also became obvious early on that corrective exercise was going to be needed to resist the effects of gravity on the spine.

Scoliosis results not only in lateral curvature but in significant rotation as well. The more the lateral curvature the more the rotational component. The muscles that control rotation would need to be balanced in order for the other treatments to “hold”.

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N.H. is a 36 y/o school teacher suffering from the effects of Low Back Pain and poor dynamic balance. She was unable to participate in a number of exercises and was referred to M.A.T. to look for muscular imbalances to rectify this problem. Testing revealed a number of trunk and spine weaknesses, most pertaining to the left side. Several weeks of treatment and reinforcement exercises made her back pain disappear but not before she experienced some mild discomfort in her left knee and finally in the left lateral side of her foot. "I didn't realize what a mess I was".

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S.N. is a 33 y/o also suffering from Fibromyalgia. In the past, she has tried alternative therapies and refuses to let this diagnosis affect her daily activities. She is a avid runner and would like to play in a Volleyball league. Initially, S.N. complained of lower back pain that was triggered by her running workouts. This back pain was centralized, neither side hurt more than the other. Subsequent range of motion and muscle testing revealed significant weakness and inhibition in the following muscles: ( L ) external oblique, ( L ) multifidus, ( L ) tensor fascia latae and ( L ) gluteus medius. Several sessions of the MAT palpation technique followed by graded intensity isometrics corrected this imbalance. As her back pain resolved, her running workouts began to trigger ( R ) "hamstring pain". This pain was usually not a problem until the day after running, when it could fairly intense after a period of prolonged activity. A more in-depth analysis of her activities at his point led to some interesting discoveries. S.N. appeared to be frequently dehydrated, her preworkout warm-up routine consisted of a lot of prolonged, static stretching and she always ran on the same side of the road (against traffic). Her choice of running surface caused her left foot to strike lower than right foot because of the drainage slope built into the road surface. Several suggestions were made at this point before further MAT treatment continued.

- 1 – consume more water, a minimum of 1 ounce per kilogram of bodyweight
- 2 – only follow an active warmup prior to running. A suitable program was provided. Static stretching could still be done but only post-workout. Static stretches were not to exceed 10 seconds.
- 3 – vary running surfaces (i.e. both sides of the road, sidewalks, grass and track).

After 2 weeks of following these suggestions, S.N. reported less hamstring pain.

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