MUSCLE ACTIVATION TECHNIQUES (MAT) FOR DUMMIES

A new exercise modality called Muscle Activation Techniques (MAT) is proving beneficial to athletes that want to improve performance and people wanting to live with more flexibility, increased strength and without pain.

The key attribute that separates MAT from other exercise and therapeutic modalities is how it targets muscles to improve their ability to function (contract). Part of the MAT process specifically corrects the most important area of muscle function generally assumed to be working correctly by other practitioners (physical therapy, Pilates, yoga, personal trainers, exercise physiologists, chiropractors, etc.). MAT testing allows the practitioner to isolate an individual muscle and determine if that muscle is communicating properly with the brain. Other modalities cannot do this critical assessment.

It is important to understand that each muscle gets its ability to function (contract) by sending a signal to the brain AND receiving a response from the brain. One muscle is made up of a multitude of muscle fibers (see Structure or Skeletal Muscle, right). Within each muscle fiber, for simplicity sake, there are two wires that communicate directly with the brain (see diagram below). MAT identifies whether the first wire is functioning. If it doesn’t, a muscle can’t respond properly during physical activities resulting in discomfort, tightness, strain or pain to surrounding muscles and joints.
The following diagram explains a properly functioning muscle.

In the above scenario, you will have good flexibility, strength and pain free movement in that muscle. An athlete would be able to perform the skills of their sport with ease. You will experience occasional soreness, but nothing that feels strained.

The diagram below explains a muscle that is not functioning properly.

This is a frequently seen scenario. A weak signal to the brain results in a poor response back to the muscle causing inefficient function. You can
experience muscle tightness which you stretch, foam roll, heat or massage with little or no change in tightness over a period of time. Low back, upper trapezius (shoulder), iliotibial bands (ITBs), hamstrings and calf muscles are the most common areas that remain tight. The MAT process pinpoints the muscle or muscle groups where the wires are sending a weak signal and “resets” the wire so the signal to and from the brain produce efficient muscle function.

The diagram below explains a muscle that is not functioning at all.

When the muscle fiber wire is unable to send a signal, the brain will formulate the best set of muscles to accomplish the desired movement. Depending on how long this state lasts, you can see a variety of physical problems due to chronic compensation and the brain restricting joint movement to prevent injury. You can experience muscle trigger points, strains, arthritis, anterior knee pain, rotator cuff tears, tennis or golfer’s elbow, bulging or herniated discs, sciatica, hip labrum tears, hamstring tears, Achilles tendon tears, plantar fasciitis, hammer toes and require joint replacements. This list is
not all inclusive due to the many problems that result due to numerous compensations that occur during activity over extended periods of time (years).

This is a summary of the Muscle Activation Techniques (MAT) process:

1. Investigate: Review medical history and gather information concerning current condition. Compare right body movements versus left body movements. For example, how do specific movements of the right hip compare to those of the left hip.

2. Information gathered in the investigative phase is used to test specific muscles that are suspected to be deficient due to restricted movements. A major premise of MAT is that limited range of motion (ROM) is secondary to weakness.

3. MAT “Strength” Testing: MAT uses isometric testing to determine muscles not functioning properly. The muscle is put into a position where it has the most emphasis during the test. Unlike other modalities, MAT’s testing determines if the muscle fiber is communicating properly with the two wires found in the muscle fiber (see diagrams above). If the test is “strong”, the communication is considered good and the muscle functions properly. If the muscle is “weak” and fails the test, communication is poor and the muscle functions poorly.

4. “Reset”: A failed muscle test is treated by applying finger pressure at each end of the muscle where it attaches to the bone (tendon). The pressure resets and activates the two wires found in the muscle fiber.
5. Retesting: The treated muscle is retested in the same position to assess if the communication has been restored from muscle fiber to the brain. A strong test means the muscle is activated and communication reestablished with the brain. This results in improved range of motion (ROM) secondary to improved muscle strength.

6. Once all limited range of motion movements are addressed using the MAT process, you will experience greater flexibility, strength improvement, feel “looser” and pain elimination as a byproduct of better muscle function. MAT must be experienced to appreciate its real value.

Actual Client Experiences

1. 45 year old male runner experiencing left hip pain and hamstring pain while running. After runs, the areas felt tightness with certain movements. Client was evaluated and determined to have limited left foot and right trunk rotation motions due to muscle weakness. Performed muscle activation techniques to improve foot, trunk and also left shoulder blade motions. After three visits, client is ready to run the ½ Miami Marathon completely pain free.

2. 36 year old female runner experiencing left lateral knee pain that starts after 3 miles of running. She was evaluated and determined to have limited right trunk rotation due to both oblique muscle weakness and shoulder right shoulder blade muscle weakness. Performed muscle activation techniques to improve right trunk rotation and shoulder blade motions. After 3 visits, client was able to run pain free and typical of competitive runners, pushed it to 5 miles without any problems.