

The Importance of Muscular Conditioning with Manual
Osteopathic Therapy

By Morgan Donaldson

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Manual osteopathy has been defined as “a safe and effective approach to health care which works in combination with the individuals own homeostatic mechanisms to help restore homeostasis and optimal health. It understands the relationship between structure and function within the body and that all aspects of the body must work together to maintain health” (1). Hence, one area of weakness can affect the whole body. “The study of ‘biomechanics’ – how each part of the musculoskeletal system interacts with and influences every other part – is central to osteopathy. Any joint or muscle injury must be treated as part of the whole body, since other parts of the musculoskeletal system will also be affected” (2). Fallen arches in the feet can cause an abnormal gait leading to pain in the feet, knees, hips, lower back, upper back and even neck. Manual osteopaths aim to treat the root of the problem, not just the symptom(s).

Manual osteopaths use a variety of techniques to encourage the body to return to a state of optimal functioning. These techniques include gentle mobilizations, soft tissue work, muscle energy techniques, cranial-sacral therapy and visceral therapy. All are important in addressing the body as a whole. For example, a patient with back pain could have a cranial issue, such as a shear, preventing them from healing. It could also be a problem with a ligament in the visceral area connecting an organ to the spine. It could be that their sacrum is rotated causing a slew of chain reactions throughout the body including a change in gait. The sacrum can be released with a manual osteopathic technique but will very likely return to the rotated state if the muscles responsible for holding it in place are not strengthened. In this case, it would be imperative to stretch and strengthen the hip flexors (psoas), piriformis and gluteal muscles to help hold the sacrum in its correct place paired with ongoing manual releases of the sacrum. We, as manual osteopathic practitioners, must educate our patients on how to strengthen their bodies and why this is important in conjunction with manual osteopathic therapy.

There is a connection between low back pain and weak core muscles. Most people do not realize that in order to keep low back pain at bay, strong abdominal, back and leg muscles are required. It is important to convey the message to patients that they must strengthen all muscles involved along with manual osteopathic therapy. Mobilizations and soft tissue treatments will help relieve pain and loosen tight muscles and joints but the pain will persist if the body is not strengthened appropriately. Muscles help hold joints in their proper anatomical position and alignment. Muscles work in pairs with one being the agonist and the other the antagonist meaning while one is contracting the other is relaxing or stretching. With the example of low back pain, one has to condition the muscles of the lower back and lower abdominals. When the lower back muscles are targeted and contracting, the spine is in extension and the abdominals are stretching. When the lower abdominals are contracting, the pelvis is rotated superiorly to the anterior which flattens the curve of the lumbar spine and stretches the lower back muscles. To strengthen the core it is necessary to work on rectus abdominus, internal and external obliques, quadratus lumborum, erector spinae, and lumbar paraspinals. It is also necessary to strengthen hamstrings, gluteals, hip abductors and adductors. From my experience treating patients with low

back pain, the most common attributing factor is weak lower abdominal muscles which facilitate lumbar lordosis and often a protruding belly even when the patient is not overweight.

I once treated a patient with chronic low back pain from a car accident. The patient had previous lumbar surgery to fuse the affected vertebrae. The patient was fit, had seemingly good muscle tone and exercised frequently. Still, the lumbar pain persisted. As a Kinesiologist, I discussed with the patient what exercises were being performed at the gym. I then assigned specific exercises to strengthen the lumbar paraspinals, erector spinae, gluteals and abdominal obliques which were not being addressed well enough. I also assigned stretches for the same muscles and exercises to loosen tension in the sacroiliac joints. The patient began improving. One day, the patient, whom I was treating three times per week, had returned to an acute state of lumbar pain. I was baffled as to how this could have happened as the patient reported that they were only performing the exercises I had assigned. I was sure that this was not true as the assigned exercises could not have elicited the acute pain state. After many questions about what exercises had been performed at the gym the patient attended outside the clinic, the patient stated that they had followed some advice from someone at the gym. They had performed a heavy weighted cable abdominal exercise that put enormous strain on the low back. This particular exercise was quite advanced and required the primary movers to be very strong in order to maintain correct form and avoid injury. I advised the patient not to do any exercises besides the ones I assigned and to rest from the gym. The pain subsided with rest and the patient improved immensely with the assigned exercises and the addition of weighted hip abduction and adduction. This is a good example of why it is essential to educate patients about our techniques and how and why they need controlled muscle conditioning.

We have all heard the saying “if you don’t use it, you’ll lose it” referring to many circumstances. This is definitely the case when it comes to muscle mass and joint mobility. If we sit all the time; at work, in the car, on the couch, our muscles atrophy and our joints lose range of motion from lack of use. It is a key reason as to why adults are so susceptible to injuries when they take up sport after a period of time of inactivity. Muscles that were once strong lose power and endurance and atrophy when they are not used as much as they once were. Humans also lose muscle mass with age making it even more important to build and maintain muscle.

I’ve learned from personal experience with injuries just how important it is to build muscle for injury recovery. Treatment is just as important but without muscle building the injury will perpetuate. I dislocated my shoulder as a teenager playing volleyball in gym class. We were practicing over hand spiking of the ball. This must have been a repetitive strain injury as I was playing on two baseball teams and throwing over hand repeatedly as I was the catcher. I went to a medical doctor a day or two after the injury who assured me my shoulder would be better in a week and prescribed anti-inflammatory medication. It was not better in a week. After three weeks and no improvement, I began treatment with a chiropractor. During the initial examination he stated that I had already lost a significant amount of muscle from not using my arm. He treated the injury mostly with electrotherapy and assigned some exercises for me to do at home.

The exercises were to strengthen the shoulder girdle, rhomboids and trapezius muscles once the injury started to heal. I did the exercises a few times but was not consistent. At that time I did not understand how important it was to do the exercises he assigned. All I wanted was to play baseball again. The treatments I received relieved enough of the pain that I could start playing again with modifications so I would not irritate the injury. It is more than fifteen years since my injury and I still have trouble with my shoulder. It seems that because my shoulder sat in an inferiorly rotated anterior position, the pectoral muscle took up the slack that ensued. The pectoral muscle became tight and held the shoulder in an inferiorly rotated anterior position. This in turn, caused pain between the shoulder blade and the spine on the affected side. It also caused the muscles on the other side to become strained. This pain began about two years after the injury. I believe if I had consistently performed the exercises to strengthen the postural muscles helping to hold the shoulder in the correct place, I would not have pain in my upper back on a daily basis.

Many years later, I suffered a severe ankle sprain, inversion and eversion at the same time. It's amazing how much damage can come from high heels and a slippery floor. It was very swollen and bruised for many months. It took a long time for it to heal enough that I could exercise it. I noticed during a yoga class that certain postures were intensely stretching my ankle. I paid close attention when I felt the stretch to let go of the tension and not stretch too far. I noticed by chance that sitting and holding a deep squat challenged the tibialis anterior as well as other muscles in the ankle. It took a lot of dedication but I sat in a deep squat as often as possible and held it for as long as I could. As the muscles strengthened, the pain in the ankle decreased eventually to a point of no pain. I have not had any problems with the ankle since. No pain and full range of motion.

Muscle energy techniques used by manual osteopaths are another way that muscular conditioning is important in manual osteopathic therapy. "Theoretically, the active contraction performed by the client against the resistance produced by the therapist is an isometric contraction and may therefore be helpful in strengthening muscles" (3). Isometric contractions are helpful for acute pain as very little movement is required yet when the contraction ends, the muscle is able to relax a little more than before. Contracting the muscle brings fresh blood to the area supplying nutrients. Muscular contractions also encourage the lymphatic system to work removing waste products like inflammatory fluid and toxins. "Unlike manipulative therapies, which presume joints are stuck out of place by some physiologic glue, Muscle Energy is based on evidence-based neuro-physiological principles that the joints are held out of place by muscles which have too much tone" (4). A hypertonic muscle is too rigid which can pull joints out of their usual anatomical position causing pain and changes in range of motion at the joint. The gentle contraction followed by stretching that is used in muscle energy techniques improves range of motion significantly and quickly. An improvement in range of motion can be noticed after the muscle energy technique is performed only once or twice. The practitioner can actually measure the difference in range of motion from before the technique to after in degrees or any

other suitable measurement to reinforce the improvement to the patient. This is not to say that the patient will be cured right away, but that there will be improvements from the first visit using muscle energy techniques. This will encourage the patient to believe in manual osteopathy and to continue treatment.

I believe muscular conditioning is essential to manual osteopathic therapy. Really, it is essential to all types of pain management therapy. In acute cases, concentric and eccentric contraction of the muscle may not be conducive to treatment but isometric contractions used in muscle energy techniques could be. Once the condition is no longer acute, a muscle conditioning program can be intensified to strengthen the body. The gentle mobilization techniques used by manual osteopaths will compliment muscle conditioning to help the patient return to optimal functioning and a pain free state. I plan to incorporate muscle conditioning into my treatment plans for my patients when I become a manual osteopath. I hope to work along with my patients' personal trainers to help them achieve their health goals.

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