T'ai Chi and Musculoskeletal Pain

By Devin J. Starlanyl

Health care providers recognize and treat joint dysfunction but often don't recognize or understand the other two most common causes of musculoskeletal pain: fibromyalgia syndrome (FMS) and myofascial trigger points (TrPs) (1). More patients with these (often undiagnosed) conditions are being sent to learn T'ai Chi Ch'uan for health benefits.

Teachers of T'ai Chi need to understand the impact these illnesses can have on the ability to perform T'ai Chi. All students of T'ai Chi may benefit from a general understanding of myofascia. Many Chinese healers view FMS and TrPs as a disturbance of qi (ch'i) energy. I have heard FMS described as "jangled qi" and TrPs referred to as "blockages of qi."

Myofascia is that sticky white film you see covering some chicken parts. Myofascia wraps around muscle cells, bundles of cells, and forms a casing around the muscles themselves.

Myofascia has electrical, magnetic and crystalline qualities. The crystalline structures may store memory as cellular tissue memory, which must be released before the tissue can become functional again.

As people age, sheets of fibrous myofascial adhesion can form anywhere and constrict normal function. Healthy myofascia allows for tension and relaxation of muscle.

A small change in the suppleness of the myofascia can cause great stress to other parts of your body. Restriction of one major joint in a lower extremity can increase the amount of energy used in walking up to 40 percent. If two major joints are restricted in the same extremity, energy use can increase up to 300 percent (2).

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Multiple minor restrictions of movement can affect body function. Much of the stiffness and loss of muscle function often attributed to "old age" may be due to myofascial TrPs (1).

TrPs are painful areas in the myofascia that are associated with a painful nodule and a taut, ropy band. Pain from TrPs is usually steady, dull, deep and aching. The intensity can range from mild discomfort to incapacitating torture.

If a nerve is trapped in tightened, inflexible myofascia, the pain can be burning, sharp and lightning-like. The cause of TrPs appears to involve serious disturbances of the nerve endings (1). TrPs cause referred pain in recognized patterns. They also cause muscle weakness and dysfunction.

For example, tibialis anterior TrPs occur in the lower leg, but refer pain down to the top of the foot and big toe. They often cause loss of "foot clearance" when stepping. The foot hits the ground instead of moving forward.

Other TrPs can cause loss of balance, buckling ankle or knee, and other symptoms that may interfere with T'ai Chi practice. This makes it exceedingly difficult to move smoothly through transitional postures of the form.

Some forms use a more upright posture that I find easier when chronic pain is involved. If you have myofascial TrPs, it is painful to sustain a position for any length of time.

When you relax tense muscles, you can reduce the number of nerve signals transmitted by that muscle. If the muscle is contractured by TrPs, it will stay tight until the TrP is successfully treated.

You cannot achieve sung, the state of alert looseness and softness desired in T'ai Chi practice, if your muscles are constricted by myofascial TrPs. Myofascial TrPs can even pull bones out of alignment, causing or increasing the chance of osteoarthritis (1). If you keep using the muscle and push it to work harder, the pain may remain even when the muscle is at rest.

Health care providers often recommend strengthening exercises without understanding that the TrP is inhibiting the muscle. You cannot strengthen a muscle with a TrP (4). Post standing (Zhan Zhuang) must be avoided until TrPs are gone.

It is important that one posture not be held or repeated more than a few times. Sequences of forms that vary the stress on muscles can be repeated.

TrPs may also cause proprioceptive disturbances. Proprioceptors are receptors concerned with your spatial awareness, including the positions of one part of the body in relation to another.

Proprioceptor dysfunctions can include imbalance, dizziness and a distorted weight perception of objects picked up. They may make it difficult to sense how each foot is weighted. If you can't sense where you are in relation to the world around you, your movement is instinctively inhibited.

Proprioception gives you clues about posture and balance. Proprioceptor dysfunction may be associated with any TrP, but are especially linked to TrPs in the sternocleidomastoid muscles on the sides of the neck.

These TrPs can also cause many symptoms besides referred pain, including imbalance, blurred or double vision, spatial disorientation, postural dizziness, vertigo, staggering walk and disturbed weight perception.

TrPs in this muscle add considerably to the complexity of learning T'ai Chi, but the student should not be discouraged. Research has shown that T'ai Chi practice results in better postural stability, even in patients with complicated disturbance (5).

T'ai Chi is teaching me the ability to keep the balance of Yin and Yang as I move. This allows me to test my foot-

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ing as I step before committing to a step and transferring my weight. I am regaining balance and body alignment. I fall less often, because my root is becoming more secure.

Fibromyalgia causes musculoskeletal discomfort and many kinds of systemic symptoms, such as exercise intolerance (4). It is a central nervous system dysfunction, and not of musculoskeletal origin. There is a disturbance of the way pain is processed by the body (6). Normally nonpainful sensations, such as touch or noise, can cause pain.

Students with FMS may be sensitive to odors, sounds, lights and vibrations that others don't even notice. Something that can cause a mild discomfort for one person may cause intolerable pain for someone with FMS. In FMS, there are also specific tender points, which do not have the same qualities as myofascial TrPs (1).

Many FMS patients cannot maintain any other position for long without becoming stiff, even sitting or standing. Nearly everyone with FMS exhibits reduced coordination skills and decreased endurance abilities.

Students of T'ai Chi with FMS have difficulty multitasking. It can be a challenge to remember to keep the head balanced in proper suspension, the back flat, the T'ai Chi tuck position in the groin area, the hands in specific positions and to breathe properly, for example.

There is also difficulty remembering sequences of movements, which can cause frustration in learning forms. The T'ai Chi student with FMS can be helped by placing him or her in the center of a practicing group so that there are visual cues to help with the sequencing.

Over time, once the patterns are set with practice, the body will remember the form without needing to access the central nervous system.

At this point, muscles that are not needed will automatically be inhibited, so that the form can be practiced with efficient use of muscle function groups. This can be accomplished by practicing slow, precise patterns, such as the forms (7).

Biochemicals that are released when there is trauma promote the formation of micro-adhesions during immobility. These adhesions become progressively more fibrotic with increased length of immobilization (3). This can also happen if you have biochemical irritants in your system causing microtrauma, as happens in FMS.

If you can get moving again in a short period of time, this effect will reverse. If you don't get moving, your muscle can become increasingly firm and tight, so that muscle definition and mobility are lost and the muscle appears to be cast in concrete.

The teacher must understand that this condition is not something that the student can voluntarily relax. Muscle fibrosis occurs as a change in the texture of the whole muscle tissue and is not the same as myofascial TrPs.

T'ai Chi Ch'uan is a harmonious blend of Essence (Jing), Spirit (Shen) and Energy (Qi). I believe that when T'ai Chi is taught for health, it must also be taught as a martial art, and also as a spiritual form.

People with chronic illness are often fragmented, and the mind and body no longer function as a unit. Total T'ai Chi helps with body/mind integration.

T'ai Chi strengthens muscles and improves endurance, coordination and balance. It increases flexibility, improves posture and promotes relaxation and focus and improves breathing. It helps develop a sense of postural awareness, which allows you to know when you are in a strained position.

For me, the most important aspect of T'ai Chi training is the development of the T'ai Chi life. T'ai Chi helps me to deal with life, and enables me to focus my intent.

I use animal frolics to help me cope, for example. When I need determination and perseverance, my shoulders are bear and my walk is bear. If I want to keep it light, I am crane walking. If I need agility and cunning, I am fox with quick steps.

T'ai Chi for me began as an essay in body mechanics and then developed into a braiding of mind/body poetry. As one learns T'ai chi, one develops a steady and dependable connection to the flow of qi, and this has helped banish fatigue.

Symptoms can vary tremendously from hour to hour and day to day with both of FMS and TrPs, and reactions to a specific stimuli may be delayed. Developing a T'ai Chi mindset can help cope with the uncertainties that this can create.

T'ai Chi teaches how to yield without losing. It teaches you the importance of mental intention. Master T. T. Liang says it is harder to move a mountain than to change your temperament (8).

People with FMS often have exaggerated mood swings and other emotional dysfunctions. Emotions and attitude can influence and even create nerve impulses.

These nerve impulses can in turn create biochemical substances that further affect the body.

Chinese texts state that qigong exercise, which we do as part of our practice, can produce tranquility by a calming of the cerebral cortex, producing changes in neurotransmitters and endocrine secretion (9).

Research has shown that T'ai Chi can improve the quality of life and maximize independence of people with chronic disability (10).

There was a significant improvement in pain perception and elevation of mood with the study of T'ai Chi in elderly students (11).

If you are a student of T'ai Chi with one or both of these conditions, be patient and find a teacher who is patient. An informed teacher may be able to adjust some teaching methods and may be able to emphasize the opening of qi channels rather than building of qi.

Some students with chronic pain become frustrated or depressed if they can't do T'ai Chi right away. T'ai Chi is a process that never ends.

At first, movements may be restricted and choppy, and balance may be uneven. There may be trouble in shifting weight from one foot to another.

Slowly, there will be an improvement in range of motion. As you will become more aware of your body, you will feel where you have weakness. You will notice the restrictions.

You will learn how to move all parts of your body in unison; as the myofascia lets go, the qi flows freely and directs your motions. There are no time limits for learning. Patience is the art of T'ai Chi Ch'uan.

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