

## Trigger and Tender Points (Definitions, Similarities, Differences, Treatments)

### ARTICLE INFO

#### Article Type Editorial

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#### How to cite this article

Motaqi M., Ghanjal A. Trigger and Tender Points (Definitions, Similarities, Differences, Treatments). IJMPP. 2020; 5(4): 393-395.

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#### Article History

Received: Dec 7, 2020

Accepted: Dec 14, 2020

ePublished: Dec 31, 2020

### Trigger points

Areas of muscle that are painful to the touch and have stiff (short) muscle fibers that create a pattern of pain referrals are called trigger points <sup>[1]</sup>. These spots are usually felt as nodules in the muscles that can be caused by repetitive use or trauma <sup>[2]</sup>. They may present as tinnitus, temporomandibular joint pain, tension headaches, and decreased range of motion in the legs and back pain. Touching a very sensitive node (a hard-fiber muscle node) is a physical finding that is typically associated with a trigger point <sup>[3]</sup>.

When pressing the stimulus points, many people have no pain or discomfort. Sometimes, trigger points become very sensitive and some people in areas where they have stimulation points feel significant pain and stretching <sup>[3]</sup>. These spots are more common in people with myofascial pain syndrome. These spots have a wide range of effects on pain and body movement. Simons and Travell define this syndrome as the result of the effects of "sensory, motor, and autonomic symptoms of these points <sup>[2]</sup>. These points may be caused by muscle injuries, overuse of the muscle, repeated and partial stress, and Emotional stress. Partial stress may be due to poor posture and sleep position <sup>[4]</sup>.

Major symptoms of involvement in Myofascial Trigger Points include deep pain, general numbness, tingling, and a feeling of pain that may be present, such as neuralgia or nerve pain. Trigger points can also reduce the Range Of Motion (ROM) in damaged muscles<sup>[3 ,4]</sup>. Nodes from trigger points can be visualized by ultrasound and MRI. The researchers found that MRI provided a consistent map of myofascial trigger points that were different from their physical touch by physicians <sup>[1,5]</sup>.

### Tender points

Tender points are pain-sensitive points in the muscles, the junction of muscles - tendons, bursae or fat pads. In fact, tender points are painful points around the joints (they do not exist inside the joints) and become painful when we press on these places (due to the reduction of the pain threshold). These areas are not painful, are mostly deep (located below the skin surface) and are mainly scattered on the neck, back, chest, elbows, buttocks, and knees <sup>[6]</sup>. Sensitive spots are common in people with fibromyalgia <sup>[7]</sup>. These points are located in specific areas of the body and make it possible to distinguish between healthy people and people with

fibromyalgia. Researchers do not know exactly what causes these sensitivities in specific areas of the body, but they believe it is linked to muscle spasms. Involuntary muscle contractions cause a lack of oxygen and blood and the accumulation of lactic acid and carbon dioxide in them, which causes more pain in the muscles and more spasm in them (creating a vicious cycle) [8]. In other words, if the pain is felt only when pressing the position, it is considered a tender point. But if there is pain without pressing the position and it spreads when pressed to another area, there is likely to be a trigger point [2]. Although there is a pathophysiological difference between trigger points and tender points, the two syndromes are often mistaken with each other (due to their high similarity). In scientific articles, these two terms are sometimes used incorrectly as equivalent to each other. Sometimes this similarity leads to misdiagnosis and consequent treatment failure [9,10].

### Trigger point treatment

It often happens that the recovery time and relief of symptoms at the newly created trigger points (not long after that) is within minutes. Most acute problems can be treated within 3 to 10 days. But there is a response to treatment in chronic, long-term and complex cases, and less likely to be an appropriate response to treatment. If trigger point pain starts immediately after activity, an ice pack can be used to reduce inflammation. But if the pain persists over a period of time, it is best to use a warm pad to reduce the pain [3]. Injections into the trigger points, along with massage and application of heat to the tissue, help to relax the muscles and restore its function. Because trigger points can complicate pain relief by affecting muscle fiber, injecting relief from any trigger point can lead to an overall reduction in pain in affected

individuals [2]. Trigger Point Pressure Release is another way to reduce pain and stretch in the affected tissue. This is usually done by pressing a finger or special tools on the painful spot or by stretching the affected tissue (to release and soften the affected spot). They are usually removed by manipulating the affected tissue. Other methods of treating trigger points include electroacupuncture, Transcutaneous Electrical Nerve Stimulation (TENS), dry needling, high-intensity focused Ultra sound (US), and anesthetic sprays. but sometimes, despite all efforts (such as stretching and massage), it is impossible to remove them, and they may not go away on their own [1,3,5]. In general, all of the above can be effective in reducing pain and inactivating trigger points, but correcting trigger point stimuli is a vital principle [3,5].

### Tender points treatment

Injection is usually not used for tender points [2]. Treatment for sensitive areas generally includes the treatment of fibromyalgia, which may include some recommendations for lifestyle modification, exercise, and stretching (on the sore spot and affected tissue). Researchers may use a variety of medications to treat this condition, such as antidepressants, anticonvulsants, nonsteroidal anticoagulants, and injections of steroids or other medications. Doing regular aerobic exercise, strengthening muscles, and controlling stressors are very important and decisive factors in reducing stress in people with fibromyalgia. Other alternative treatments include: physiotherapy, cognitive behavioral therapy, acupuncture, acupressure, massage, yoga [11].

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