

# MYOFASCIAL PAIN

## Due To Trigger Points

This fact sheet is designed to provide a concise overview of the medical condition known as myofascial pain which is caused by hyper-irritable spots called “trigger points” that develop in skeletal muscle or its surrounding fascia. (Note: These trigger points are not synonymous with the diagnostic tender points of fibromyalgia!)

Despite the fact that an estimated 44 million Americans struggle with the condition,<sup>1</sup> myofascial pain is arguably one of the better kept secrets of modern medicine. Relatively little is known about it in the medical community which makes it difficult for medical professionals to distinguish it from other forms of soft-tissue rheumatism (i.e., bursitis, tendonitis, fibromyalgia, hypermobility syndromes, etc.) or to understand how it can undermine or interact with other illnesses. Also unfortunate is that training in manual palpation skills and the practical experience required to accurately diagnose myofascial pain are simply not available in many medical schools.

It is not difficult, however, to realize the potential devastation caused by myofascial pain once one realizes how prevalent it can be in the human body. In 1987, David Simons, M.D., a pioneer in the field of myofascial pain, wrote:

*Skeletal muscle is the largest organ of the body. It makes up nearly half of body weight. Muscles are the motors of the body. They work with and against the ubiquitous spring of gravity. Together with cartilage, ligaments, and intervertebral discs, they serve as the body's mechanical shock absorbers. Each one of the approximately 500 skeletal muscles is subject to acute and chronic strain. Each muscle can develop myofascial trigger points and has its own characteristic pattern of referred pain.<sup>2</sup>*

## Physical Findings & Characteristics

A number of important physical findings have been reported in muscle that plays host to trigger points.<sup>3</sup> For example, there is usually limited range-of-motion in the muscle which is caused by pain. Loss of strength and stamina frequently occurs as well. During clinical examination, the actual trigger point can be recognized as a localized spot of tenderness which occurs in a nodule or a palpable taut band of muscle fibers. These changes can be caused by a massive increase of the neurotransmitter acetylcholine.<sup>4</sup>

Drs. Siegfried Mense and David Simons have noted that “by gently rubbing across the direction of the muscle fibers of a superficial muscle, the examiner can feel a nodule at the trigger point and a rope-like induration that extends from this nodule to the attachment at each end of the involved muscle fibers. The taut band can be snapped or rolled under the finger in accessible muscles...Snapping palpation of the trigger point frequently evokes a transient twitch response of the taut band fibers.”<sup>5</sup> This is often referred to as a *local twitch response* or LTR.

One of the more interesting characteristics of myofascial trigger points (MTPs) is that they don't just hurt at their “home base.” They also refer pain outward in a predictable pattern—sometimes in the vicinity of the trigger point, sometimes quite far away, or even in both areas. (See sample reference zones above.) MTPs can also cause a wide variety of non-pain symptoms, including stiffness, shortness of breath, trouble swallowing, nasal congestion, dizziness, diarrhea, impotence, irritable bladder, and many others.

It is also important to realize that myofascial trigger points don't function in isolation. For example, researcher Roland Staud, M.D., notes that focal tissue abnormalities like MTPs, ligamentous trigger points, and osteoarthritis also exist in many with fibromyalgia and “represent important pain generators that may initiate or perpetuate chronic pain.”<sup>6</sup>

Janet Travell, M.D., who published more than 40 papers on myofascial trigger points between 1942 and 1990, as well as the much acclaimed *Trigger Point Manual* co-authored with Dr. David Simons, felt that referred pain resulted from trigger points bombarding the central nervous system with impulses. She added: “High-intensity discharges from a trigger area may be accompanied by vasoconstriction and other autonomic effects limited to the reference zone of pain. A trigger area at a particular spot [usually] gives rise to a similar distribution of referred pain in one person as another...This known reference pattern allows one to locate the myofascial source of pain.”<sup>7</sup> It should be

noted that trigger points located in skin, fat pads, tendons, ligaments, and joint capsules are not considered myofascial and do not produce referred pain patterns as consistent and site-specific as those in muscle, and they may cause different types of pain.<sup>8</sup>

### Causes Of Myofascial Trigger Points

Neurologist and pain specialist Robert Gerwin, M.D., divides conditions known to cause MTPs into two categories: *mechanical* causes (ergonomic, structural, and postural) and *medical* causes.<sup>9</sup> Mechanical causes include:

- ▶ Unaccustomed eccentric exercise, maximal exercise, or repetitive exercise syndromes
- ▶ Hypermobility syndromes
- ▶ Forward head posture
- ▶ Pelvic torsion-related pain
- ▶ Sacroiliac joint dysfunction
- ▶ Somatic (muscle-joint) dysfunction
- ▶ Static overload (stressful positions held for prolonged periods of time)
- ▶ Nerve root compression
- ▶ Muscle imbalance (mechanical asymmetries)

Possible medical causes include:

- ▶ Autoimmune disorders
- ▶ Infectious diseases (Lyme, parasitic)
- ▶ Untreated allergies
- ▶ Viscero-somatic pain (IBS, endometriosis, interstitial cystitis, liver disease)
- ▶ Nutritional deficiencies (vitamin D, B<sub>12</sub>, iron)
- ▶ Drug-induced myalgia (statins, etc.)

### Symptoms & Treatment

Myofascial pain due to trigger points appears to affect both genders at a similar rate. It is also known to play a role in the symptoms of a wide variety of different pain conditions. In rheumatic conditions, myofascial trigger points are often “untreated components of pain in osteoarthritis, rheumatoid arthritis, lupus, and more.”<sup>10</sup>

Pain resulting from myofascial trigger points is typically steady, dull, deep, and aching, but its intensity can range from mild to extremely severe. If a nerve happens to become trapped by a muscle’s tight myofascial tissue, then the pain can become burning, sharp, or lightening-like.<sup>11</sup>

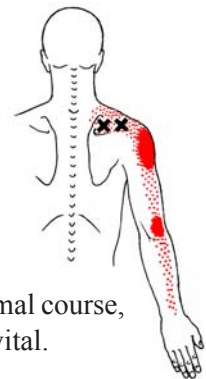
There are also different categories of myofascial trigger points. As myofascial pain expert Devin Starlanyl points out, anyone can get trigger points, but if nothing pesters them and makes them remain *active*

and painful, they will become *latent* and will not hurt unless pressure is applied to them, though they do continue to cause increased muscle tension, movement restriction, and other problems. She adds that trigger points will become active if the muscle in which they lie is overloaded. This can be extremely dramatic if an individual has accumulated many latent trigger points over time and all of them suddenly become activated.<sup>12</sup>

It is also possible for *satellite* trigger points to form in a muscle if that muscle is located in the referred pain area of a key trigger point. Also, a satellite trigger point can show up in a muscle that is providing backup support for the muscle which contains the key trigger point.<sup>13</sup> It’s not hard to see how a single injury might cause a chain reaction of pain over time and how overlapping patterns of pain might develop. In this vein, it is crucial for prompt and effective treatment to occur while myofascial trigger point problems are still relatively minor and uncomplicated. If left untreated, the result can be widespread, complex, difficult-to-treat, chronic myofascial pain.

Once myofascial trigger points have formed, they can be treated in a variety of ways:

- ▶ manual trigger point therapy
- ▶ MTP injections with stretching
- ▶ spray-and-stretch therapy with vapocoolants or ice stroking
- ▶ galvanic stimulation
- ▶ microstimulation
- ▶ specific frequency microcurrent



Of course, prevention is still the optimal course, and avoiding perpetuating factors is vital.

### References

1. Bennett R, Myofascial Pain Syndromes And Their Evaluation. *Best Practice & Research Clinical Rheumatology* 2007;21(3):428.
2. Simons DG, *Myofascial Pain Syndrome Due to Trigger Points*. International Rehabilitation Medicine Association, IRMA Monograph Series Number 1, November 1987.
3. Mense S and Simons DG, *Muscle Pain: Understanding Its Nature, Diagnosis, and Treatment*. New York, Lippincott Williams & Wilkins, 2001:215-216.
4. Starlanyl D and Copeland ME, *Fibromyalgia & Chronic Myofascial Pain: A Survival Manual*. Oakland (CA): Harbinger Publications, 2001.
5. Ibid, Mense & Simons.
6. Staud R. The Role of Peripheral Input for Chronic Pain Syndromes like Fibromyalgia. *JMP*; 15 (supp 13):7--Item 8.
7. Travell J and Rinzler SH, The Myofascial Genesis of Pain. *Post-graduate Magazine* 1952;11(5):425.
8. Ibid, Simons and Starlanyl & Copeland.
9. Gerwin R. Differential Diagnosis of Trigger Points. *Soft Tissue Pain Syndromes: Clinical Diagnosis And Pathogenesis*, DE Pongratz, S Mense, and M Spaeth, Eds. Binghamton (NY): The Haworth Medical Press, 2004:23-28.
10. Ibid, Bennett.
- 11-13. Ibid, Starlanyl & Copeland.

# Additional Resources For Myofascial Pain Due To Trigger Points

## BOOKS

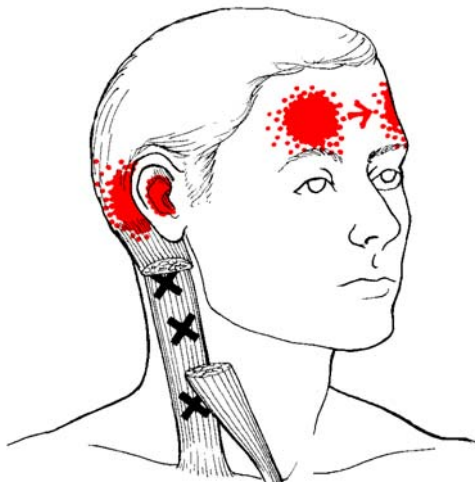
Davies C, *The Trigger Point Therapy Workbook: Your Self-Treatment Guide For Pain Relief*. Oakland (CA): Harbinger Publications, 2001.

Mense S and Simons DG, *Muscle Pain: Understanding Its Nature, Diagnosis, and Treatment*. New York, Lippincott Williams & Wilkins, 2001. [For more advanced readers]

*Soft Tissue Pain Syndromes: Clinical Diagnosis And Pathogenesis*, DE Pongratz, S Mense, and M Spaeth, Eds. Binghamton (NY): The Haworth Medical Press, 2004. (See especially articles by Simons and Gerwin.)

Starlanyl DJ and Copeland ME, *Fibromyalgia & Chronic Myofascial Pain: A Survival Manual*. Oakland (CA): Harbinger Publications, 2001.

Travell J, Simons DG, Simons LS, Cummings BD. *Myofascial Pain and Dysfunction: The Trigger Point Manual*. Baltimore (MD): Lippincott Williams & Wilkins, November 1998. Website: [www.lww.com](http://www.lww.com). Phone: (800) 638-0672. Available from the publisher and from other bookstores.



LifeArt ©Copyright, 2008, Lippincott Williams & Wilkins. All rights reserved.

## ARTICLES

Bennett R, Myofascial Pain Syndromes And Their Evaluation. *Best Practice & Research Clinical Rheumatology* 2007;21(3):427-445.

Simons DG, *Myofascial Pain Syndrome Due to Trigger Points*. International Rehabilitation Medicine Association, IRMA Monograph Series Number 1, November 1987.

Travell J and Rinzler SH, The Myofascial Genesis of Pain. *Postgraduate Magazine* 1952;11(5).

## OTHER RESOURCES

*Travell & Simons' Trigger Point Flip Charts*. Spiral bound chart book containing 12" x 15" drawings by Barbara D. Cummings with the anatomical locations of trigger points throughout the body and their corresponding pain patterns. These drawings originated in *Travell & Simons' The Trigger Point Manual*. Available from the publishers, Lippincott Williams & Wilkins. Website: [www.lww.com](http://www.lww.com). Phone: (800) 638-0672. Also available from Anatomical Chart Co. — [www.Anatomical.com](http://www.Anatomical.com). Phone: (800) 621-7500.

## WEBSITES

[www.rovers.net/~devstar/](http://www.rovers.net/~devstar/) — Website of Devin J. Starlanyl

[www.painpoints.com](http://www.painpoints.com) — Pain and Rehabilitation Medicine (Robert Gerwin, M.D., Director)

[www.myopain.org](http://www.myopain.org) — International Myopain Society (website for health care professionals)

[www.myofascialtherapy.org](http://www.myofascialtherapy.org) — National Association of Myofascial Trigger Point Therapists

[www.myalgia.com](http://www.myalgia.com) (click on "myofascial pain" on main menu)—Fibromyalgia Information Foundation

[www.blatmanpainclinic.com/](http://www.blatmanpainclinic.com/) —Website of Hal Blatman, M.D., author of *Winner's Guide To Pain Relief*