

Myofascial Pain Mechanisms to Management



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KEYWORDS

- Pain • Muscles • Spasm • Myofascial pain • Trigger point • Soft tissue • Chronic pain
- Tender muscles

KEY POINTS

- Chronic pain is the main reason for seeking health care, the most common reason for disability and addiction, and the highest driver of health care costs, and it is most often caused by myopain conditions.
- Myofascial pain (MFP) is the most common cause of persistent regional pain such as back pain, headaches, and facial pain.
- MFP is readily diagnosed through identifying differential clinical characteristics and soft tissue palpation.
- Treatments of myopain conditions include:
 - Stretching, postural, relaxation, strengthening, and conditioning exercises
 - Reduction of all contributing factors that strain the muscles and heighten peripheral and central sensitization
 - Counterstimulation treatments to desensitize soft tissues
- Use of a transformative care model that integrates patient training in reducing risk factors and enhancing protective factors with evidence-based treatments using an integrative team of health professionals enhances long-term outcomes.

INTRODUCTION

More than 100 million adults in the United States are affected by chronic pain conditions, costing more than \$500 billion annually in medical care and lost productivity.¹⁻⁴ Several studies have found that myopain conditions such as myofascial pain (MFP) and fibromyalgia (FBM) are the most common chronic pain condition leading to nearly all chronic pain conditions, including back pain, headaches, neck pain, and jaw pain.⁵⁻¹⁰ This finding makes them one of the top reasons for seeking health care, the most common reason for disability and addiction, and the highest driver of health care costs, costing more than cancer, heart disease, dementia, and diabetes. The personal impact

of chronic pain in terms of suffering, disability, drug use, depression, and conflict is incalculable. In hopes of improving the condition, medical care often involves expensive and high-risk passive interventions, such as polypharmacy, opioid analgesics, high-tech imaging, implantable stimulators, and surgery. However, more than half of the persons seeking care for pain conditions still have pain 5 years later and many develop long-term disability.¹¹⁻¹⁹ Because nearly one-third of the population has chronic pain to some extent, most people assume chronic pain is intractable. However, that is not the case. Myopain conditions can be successfully managed in most patients and any poor long-term outcomes are often caused by the lack of recognition and adequate care.²⁰⁻²⁶ Thus,

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the principals of cause, diagnosis, and management of myopain conditions are relevant for all health care professionals.

Most Common Chronic Pain Conditions

Everyone, at some point in their lives, has experienced acute muscle pain associated with muscle spasm or repetitive strain. However, when acute pain becomes chronic, patients and their health care professionals often become confused and overlook the muscle in favor of treating other conditions, such as depression, osteoarthritis, or neuropathic conditions. This lack of understanding leads to misdiagnosis, inadequate care, mistreatment, and progression of an acute problem to chronic pain. When behavioral and psychological factors are evident, myopain conditions often become misunderstood, assuming the patient's experience of pain is imagined or exaggerated or caused by the psychosocial issues. However, MFP is a physical pain condition that can be successfully managed.

MFP is the most common cause of persistent regional pain such as back pain, shoulder pain, tension-type headaches, and facial pain, whereas FBM is the most common widespread pain.²⁰ MFP is a regional muscle pain disorder characterized by localized muscle tenderness, limited range of motion, and regional pain, whereas FBM is associated with soft tissue tenderness, fatigue, stiffness, nonrefreshed sleep, and widespread physical pain.²⁴ Two prior studies of clinic populations found that MFP conditions were cited as the most common cause of pain, responsible for 54.6% of chronic head and neck pain⁶ and 85% of back pain.⁷ Another study, in a general internal medicine practice, found that, among those patients who presented with pain, MFP was present in 29.6% of the population and was the most common cause of pain.⁸ Symptoms of FBM also seem to be prevalent in the general population, with up to 5% having FBM, and are more prevalent in patients with chronic fatigue (estimated as at least 20%).^{4,5,27}

CLINICAL PRESENTATION

Clinical Characteristics

The clinical characteristics of MFP include hard, palpable, discrete, localized nodules, called trigger points (TrPs), which are located within taut bands of skeletal muscle (**Box 1**). TrPs are painful on compression and associated with pain in predictable regional patterns within a referral zone. The pain in the zone of reference is usually located over the tender point (TeP) or spreads out in a referral pattern to distant sites (**Fig. 1**). This tenderness is often referred to as a TrP because palpation

Box 1

Clinical characteristics of MFP

TrPs in taut band of muscle

Tenderness on palpation

Consistent points of tenderness

Palpation alters pain locally or distally

Associated symptoms

Otologic

Paresthesias

Gastrointestinal distress

Visual disturbances

Dermatographia

Pain in zone of reference

Constant dull ache

Fluctuates in intensity

Consistent patterns of referral

Alleviation with extinction of TrP

Contributing factors

Traumatic and whiplash injuries

Occupational and repetitive strain injuries

Physical disorders

Parafunctional muscle tension producing habits

Postural and repetitive strains

Disuse

Metabolic/nutritional

Sleep disturbance

Psychosocial and emotional stressors (direct)

of the TeP in the muscle alters the pain in the zone of reference, and, if treated, it resolves the resultant pain.²⁴ MTrPs can be either active or latent.²⁴ An active TrP is associated with spontaneous pain in which pain is present without palpation. This spontaneous pain can be at the site of the TrP or referred to more distant sites. However, firm palpation of the active TrP (A-TrP) increases pain locally and usually reproduces the patient's remote pain. A latent MTrP (L-TrP) is not associated with spontaneous pain, although pain can often be elicited in an asymptomatic patient by a mechanical stimulus such as finger pressure over the L-TrP. There are generally no neurologic deficits associated with the disorder unless a nerve entrapment syndrome with weakness and diminished sensation coincides with the muscle TrPs.⁶ Blood and urine studies are generally normal unless the pain is caused by a concomitant disorder.⁷ Imaging studies, including radiographs

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