

Understanding Fibromyalgia

Jennifer L. Martin

Fibromyalgia is a perplexing condition. Although fibromyalgia is attracting considerable medical attention within the pathophysiology and neuropathology fields of study, it remains obscure.⁸

Fibromyalgia affects six million Americans, four million of which are women.¹⁴ The condition occurs most commonly during midlife, although it may be seen at any age.

Primary fibromyalgia is idiopathic, while secondary fibromyalgia occurs with underlying causes such as ankylosing spondylitis, trauma or surgery.

Typically, the fibromyalgia patient presents with reproducible palpable fibrositic tender points, general muscle weakness, stiffness and fatigue, as well as sleep disturbances.^{1, 11} The constellation of symptoms can also include: widespread muscular pain symptoms; aggravation with stress; tiredness; anxiety; change of symptoms with weather conditions; headaches; irritable bowel syndrome; subjective swelling, and nonradicular and nondermatomal numbness.¹² Follow-up studies of patients diagnosed with fibromyalgia usually show widespread stiffness, pain, fatigue and sleep difficulties to be the most prevalent symptoms.⁶ The patient's perception of severe discomfort, poor function, and difficulty in objectifying their own disability is noted.

Fibromyalgia in comparison with other myofascial pain syndrome has several significant differences. Of interest is the absence of somatic complaints with fibromyalgia, and the presence of referred pain patterns with myofascial pain syndromes.⁴ Well-defined treatments and ideological origin of the condition also exist typically with myofascial pain syndromes, while these findings are absent with fibromyalgia.

Included in the common postulations of pathophysiology is the notion that nociceptors within the muscles, tendons and perivascular sites consist of thin myelinated A-alpha and non-myelinated C-fibers.

Chemical irritation of the nerve endings cause inflammation. Algesic substances such as serotonin, bradykinin, prostaglandins and leukotrienes initiate response at the nociceptive sites. Thus, a vicious cycle of inflammation ensues, which may result in spasms and ultimately ischemia. This hypoxia may account for the pain.¹¹ Fibromyalgia has been linked with autoimmune disease. This speculative theory reveals studies associating fibromyalgia patients with chronic fatigue syndrome and immune dysfunction. This consideration raises the issue of a psychological and psychogenic origin of fibromyalgia. The help-seeking personality type may be more prone to fibromyalgia symptoms.⁹

Depleted serotonin of the central nervous system's neurotransmitters has been implicated as one cause of insomnia. The reduction of non-REM sleep contributes to symptoms of depression.

Complications of amino acid conversion and inhibition of substance P have also been found present in the fibromyalgia patient.³ Additional studies have shown that there is an increase of substance P in the cerebral spinal fluid, although conclusive evidence associating these findings with the condition is lacking.¹³

Although some studies have shown morphological changes in the connective tissue at the pain site, no repeated demonstrations have been found.¹⁵ Moreover, magnetic resonance imaging has failed to detect any primary skeletal-muscle abnormality.⁷ As a result, diagnostic criteria for fibromyalgia have been based entirely on subjective findings as no tissue abnormalities can be consistently demonstrated histologically or physiologically. Classifications of the condition have been based on the patient's illness findings, eliminating the need for exhaustive laboratory tests, and extensive diagnostic procedures.¹¹ Diagnosing the fibromyalgic patient is typically done by using criteria authored by the Fibromyalgia Multi-Center Criteria Committee in conjunction with the American College of Rheumatology Association.

The Fibromyalgia Multi-Center Criteria Committee and the American College of Rheumatology Association have developed a "bedside" specific criteria for the diagnosis of fibromyalgia in an effort to help differentiate fibromyalgia from other myofascial conditions.¹¹ Typically, the patient must have a history of widespread pain in excess of three months. There must be pain on the left and right side of the body, and pain above and below the waist. There must also be axial-skeletal pain. There must be pain present in 11 of the 18 established tender-point sites. The patient must note pain with digital palpation, not just tenderness. These sites include: the occiput; lower cervical spine; trapezius muscles; supraspinatus muscles; second rib; lateral epicondyle; gluteal region; greater trochanter, and knee. The use of the Back Pain Classification Scale 11 is also encouraged to help distinguish between organic and functional disease.²

Treatment has to be individualistic and holistic. Thus, empathy, communication, and interprofessional referral are essential.¹ The doctor should discuss with the patient the expected sequela and the treatment that could be of help. Once fibromyalgia tender-point sites (as per the specific criteria of the American College of Rheumatology Association for the diagnosis of fibromyalgia) have been noted, then a treatment program can be established. Treatment should consist of general vitamin and supplemental support, as well as calcium and a proper healthy diet. Non-medicinal treatment should include a thorough examination and proper diagnosis. Short-term passive treatment for symptomatic relief could be indicated; although long-term passive treatment may foster physician dependence and, therefore, should be discouraged. Aerobic exercises are, by far, considered the most effective treatment and should be included in all treatment programs.¹⁷ The presence of hypermobility precludes the use of manipulation and could complicate remission.⁵ Prognosis is poor for the fibromyalgic patient without early intervention. Therefore, gradual progression into an appropriately designed aerobic and conditioning program as early as possible is considered the most important treatment protocol. A referral for psychological counseling and cognitive treatment should be provided if indicated. Antidepressive medications frequently offer significant symptomatic relief and can create an opportunity in which a cardiovascular fitness program can be utilized.¹⁶ Evidence has shown that electromyographic biofeedback may be an effective treatment modality. Other treatments directed at depleting substance P, the principle neurotransmitter of nociceptive impulses and type-C sensory

neurons, could also be considered.

Usage of capsaicin cream have been piloted as a program to accomplish this goal.¹⁰

In conclusion, fibromyalgia patients are difficult to manage; this is frequently due to noncompliance. A physician-directed program is needed to aid in the remission of this unrelenting and often disabling condition. With a diagnosis of minor fibromyalgia, a physician-directed program and early intervention of the condition can offer an optimistic prognosis. This puzzling condition requires an awareness on the part of the practitioner and a sympathetic, yet directed program.

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Jennifer L. Martin, DC
Sacramento, California

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