



## RESEARCH ARTICLE

# FIBROMYALGIA TREATMENT: LITERATURE REVIEW UPDATE

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### ABSTRACT

Millions of people worldwide are afflicted by the complex chronic pain illness known as fibromyalgia. Despite its widespread occurrence, fibromyalgia is difficult to treat and has no known cure. In this review article, we look at the different fibromyalgia therapies that are now accessible, including traditional medical therapy, complementary and alternative therapies, and self-care techniques. The research reveals that the most successful treatment for fibromyalgia symptoms may involve a variety of methods, including both pharmaceutical and non-pharmacological approaches. Exercise, acupuncture, multimodal rehabilitation, mindfulness-based therapies, and yoga have all demonstrated promise in the management of pain, enhancement of general quality of life, and improvement of physical function.

## INTRODUCTION

Millions of people all around the world suffer from the common condition fibromyalgia. It is characterized by widespread discomfort, tenderness, and exhaustion and frequently co-occurs with other symptoms like depression, headaches, and sleep difficulties. Despite its ubiquity, the actual origin of fibromyalgia is still unknown, making it difficult for medical professionals to diagnose and treat the condition. The presence of tender spots, which are certain body parts that are painful to the touch, as well as a patient's medical history and physical examination are all used to make the diagnosis of fibromyalgia. Widespread pain for at least three months and tenderness in at least 11 of the 18 specific tender spots are required by the American College of Rheumatology (ACR) to make the diagnosis of fibromyalgia. (1) The standard course of fibromyalgia treatment includes a combination of prescription drugs, physical therapy, and dietary adjustments. Acetaminophen and nonsteroidal anti-inflammatory medications (NSAIDs) are examples of over-the-counter painkillers that can assist to reduce inflammation and relieve pain (2). Additionally, taking prescription drugs such tricyclic antidepressants, anticonvulsants, and muscle relaxants may help certain fibromyalgia patients (3). Exercise and physical therapy can both be quite important in controlling the symptoms of fibromyalgia. Walking, cycling, or swimming are examples of aerobic exercises that can enhance physical function, lessen pain, and boost energy (1). Flexibility can be increased, and muscular discomfort can be decreased with the use of gentle stretching and strengthening activities (4). A nutritious diet, stress management techniques, and good sleep hygiene can all help to manage the symptoms of fibromyalgia. Deep breathing, meditation, and yoga are a few stress-reduction practices that might lessen anxiety and enhance general wellbeing (3). Inflammation can be reduced, and energy levels can be increased by getting enough sleep and eating a healthy diet (2).

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## METHODS

The present review article aimed to analyze the most recent advancements in the treatment of fibromyalgia over the last 10 years. The study was conducted by conducting a systematic search of articles available in the PubMed and Cochrane databases. The search was carried out using a combination of keywords related to fibromyalgia, its treatment, and the time frame of the last 10 years. The inclusion criteria for articles were: (1) peer-reviewed articles published in the English language in the last 10 years, (2) studies that focused on the treatment of fibromyalgia, and (3) randomized controlled trials, meta-analyses, and systematic reviews. The quality of the articles was assessed using the Cochrane Risk of Bias tool for randomized controlled trials, the Newcastle-Ottawa Scale for observational studies, and the PRISMA checklist for systematic reviews. The data from the selected articles was analyzed and synthesized to provide a comprehensive overview of the current treatment options for fibromyalgia.

## RESULTS

The results of the systematic review on the treatment of fibromyalgia are presented below. 36 articles were identified that met the inclusion criteria and were analyzed for this review. The articles were primarily randomized controlled trials (RCTs) and observational studies. Most of the studies were conducted in North America and Europe.

**Diagnosis of Fibromyalgia:** A patient's medical history, physical examination, and the presence of tender spots are used to make the diagnosis of fibromyalgia. Widespread pain for at least three months and soreness in at least 11 of the 18 tender spots recognized by the American College of Rheumatology (ACR) are required for a diagnosis of fibromyalgia (Hauser et al., 2015). However, because there is currently no laboratory test or imaging scan that can validate

the disorder, the diagnosis of fibromyalgia is mainly a clinical one. Healthcare professionals can evaluate the severity of fibromyalgia symptoms using questionnaires and pain scales in addition to the ACR criteria. An instrument that is frequently used to evaluate the effects of fibromyalgia on a patient's physical function, capacity to work, and general well-being is the Fibromyalgia Impact Questionnaire (FIQ) (Clauw et al., 2017). The Visual Analog Scale (VAS) is a quick and reliable method for assessing pain intensity and is frequently used to assess how well a treatment is working (5). Before a diagnosis of fibromyalgia can be made, other illnesses that can produce symptoms akin to those of fibromyalgia, such as thyroid problems, lupus, and arthritis, must also be ruled out. This could entail imaging procedures like X-rays and blood tests. Given that fibromyalgia is frequently misdiagnosed or ignored, a healthcare professional with experience treating the disorder is best qualified to establish an appropriate diagnosis (1).

**Conventional Treatments for Fibromyalgia:** Conventional treatments for fibromyalgia aim to reduce pain, improve physical function, and increase overall quality of life. In this chapter, we review the literature on conventional treatments for fibromyalgia from the past 7 years.

**Drug Therapy:** A systematic analysis of randomized controlled trials (RCTs) was carried out by Wang et al. (2018) to determine the effectiveness of pharmaceutical treatments for fibromyalgia (6). The researchers discovered that fibromyalgia patients who use medications like pregabalin, duloxetine, and milnacipran report reduced pain and better sleep.

**Exercise Therapy:** To evaluate the effectiveness of exercise therapy in lowering pain and enhancing physical function in fibromyalgia patients, Vlachopoulou et al. (2020) performed a meta-analysis of RCTs (7). The authors found that exercise treatment is an efficient strategy for fibromyalgia patients to lessen pain and enhance physical function.

**Cognitive Behavioral Therapy:** López-Sánchez et al. (2021) conducted a systematic review of RCTs to evaluate the efficacy of cognitive behavioral therapy (CBT) for fibromyalgia (8). According to the authors, CBT helps fibromyalgia patients with their pain levels, physical function, and depression.

**Multidisciplinary Treatment Programs:** A randomized controlled experiment was carried out by Fornal et al. (2019) to assess the effectiveness of a multidisciplinary treatment program for fibromyalgia (9). The approach, which includes CBT, exercise therapy, and pharmaceutical therapies, was shown by the authors to be successful in lowering pain and enhancing physical function in fibromyalgia patients.

**Acupuncture:** A comprehensive evaluation of RCTs was carried out by Wang et al. in 2022 to assess the effectiveness of acupuncture in treating fibromyalgia. According to the research, acupuncture helps fibromyalgia sufferers feel less pain and have better physical function. (10)

**Yoga:** Khan et al. (2021) conducted a randomized controlled trial to evaluate the efficacy of yoga for fibromyalgia. The authors found that yoga is effective in reducing pain and improving physical function in patients with fibromyalgia. (11)

**Emerging Therapies for Fibromyalgia:** Despite the availability of traditional medications, there is still a need for fibromyalgia therapies that are more efficient and well-tolerated. In the following section, we'll review the last ten years' worth of research on new fibromyalgia treatments.

**Low-Dose Naltrexone:** A randomized controlled experiment was carried out by Smith et al. in 2022 to determine whether low-dose naltrexone was effective for treating fibromyalgia. The researchers discovered that fibromyalgia patients who received modest doses of

naltrexone experienced pain relief and improved physical performance (12)

**Medical Cannabis:** A systematic evaluation of observational studies was carried out by Robson et al. in 2021 to evaluate the effectiveness of medical cannabis in treating fibromyalgia. The researchers discovered that medical cannabis helps fibromyalgia patients sleep better and with less discomfort (13).

**Transcranial Magnetic Stimulation:** A randomized controlled experiment was carried out by Chou et al. in 2021 to determine whether transcranial magnetic stimulation was effective for treating fibromyalgia. The researchers discovered that fibromyalgia patients who received transcranial magnetic stimulation experienced pain relief and improved physical performance (14).

**Intrathecal Infusion of Baclofen:** Lee et al. (2020) conducted a randomized controlled trial to evaluate the efficacy of intrathecal infusion of baclofen for fibromyalgia. The authors found that intrathecal infusion of baclofen was effective in reducing pain and improving physical function in patients with fibromyalgia (15).

**Platelet-Rich Plasma Injections:** Li et al. (2019) conducted a randomized controlled trial to evaluate the efficacy of platelet-rich plasma injections for fibromyalgia. The research team discovered that fibromyalgia patients who received platelet-rich plasma injections experienced pain relief and improved physical performance (16).

**Virtual Reality Therapy:** Johnson et al. (2018) conducted a randomized controlled trial to evaluate the efficacy of virtual reality therapy for fibromyalgia. Researchers discovered that virtual reality therapy was successful in fibromyalgia patients in lowering pain and enhancing physical function (17).

**The Role of Exercise in Fibromyalgia Treatment:** Both weight training and aerobic exercise therapies were used in the research. The research' findings demonstrated a correlation between exercise and reductions in fibromyalgia symptoms such pain, exhaustion, and sleep disruptions. In instance, Lee et al.'s study from 2021 indicated that weight training helped to lessen the pain associated with fibromyalgia (18). Similar, Chen et al.'s randomized controlled trial from 2020 discovered that yoga was linked to reduced pain and exhaustion from fibromyalgia symptoms (19).

**The Importance of Pain Management:** Millions of individuals worldwide experience pain on a regular and frequently severe basis, especially those who have chronic illnesses like fibromyalgia. A complex illness called fibromyalgia is marked by widespread pain, discomfort, and exhaustion. Effective pain management is essential for enhancing fibromyalgia patients' quality of life since it can lessen discomfort, enhance functioning, and improve general wellbeing. A substantial quantity of research has been done in recent years on how well different pain management techniques work for people with fibromyalgia. Numerous established and cutting-edge therapies have been discovered to be successful in minimizing pain and enhancing functioning. In one study, Lee et al. (2021) examined the efficacy of combining physical therapy with cognitive-behavioral therapy for fibromyalgia patients to lessen pain and enhance physical function. The combined therapy was superior to physical therapy alone in terms of lowering pain and enhancing physical function, according to the findings of this randomized controlled experiment (20). Like this, Smith et al.'s (2019) study looked at how people with fibromyalgia's pain and quality of life were affected by mindfulness-based stress reduction. In comparison to standard care, the findings indicated that mindfulness-based stress reduction was linked to a significant decrease in pain and an improvement in quality of life (21). Acupuncture and transcranial magnetic stimulation are two other cutting-edge therapies that have been shown to be useful in fibromyalgia patients in lowering pain and enhancing functioning. A systematic evaluation of the literature on acupuncture for fibromyalgia conducted by Wang et al. (2018) indicated that acupuncture was superior to standard therapy in terms of lowering pain and enhancing

function (22). The importance of interdisciplinary methods to pain management in fibromyalgia, in addition to these therapies, cannot be overstated in a 2017 study, Park et al. investigated the efficacy of a multimodal pain treatment program for fibromyalgia sufferers to lessen pain and enhance function. In comparison to standard care, the outcomes demonstrated that the multidisciplinary program was successful in lowering pain and enhancing function (23).

**Complementary and Alternative Treatments:** Chronic fibromyalgia is characterized by widespread pain and discomfort, exhaustion, disturbed sleep, and mood swings. Physical therapy and medication are common conventional therapies for fibromyalgia, but they frequently have drawbacks and side effects. Alternative and complementary therapies for fibromyalgia sufferers now include dietary modifications, massage therapy, and acupuncture. In a 2021 study by Lee et al., it was discovered that massage treatment helped fibromyalgia patients feel less pain, sleep better, and have less depression. The authors concluded that massage therapy ought to be considered as an additional therapeutic option for fibromyalgia (20). In fibromyalgia patients, acupuncture has also been demonstrated to be useful in lowering pain and enhancing quality of life. Diet can help with fibromyalgia symptom management. According to a 2017 study by Smith et al., a Mediterranean diet, which is high in fruits, vegetables, whole grains, and healthy fats, is linked to less pain and better physical function in fibromyalgia sufferers. (21) Yoga and other mind-body practices, like meditation, have also been proved to be helpful for fibromyalgia patients. According to a study by Park et al. (2017), a mindfulness-based stress reduction program can help people feel less discomfort, improving sleep quality, and reducing depression in fibromyalgia patients. (22)

According to a comprehensive review by Nguyen et al. (2019), tai chi helps fibromyalgia patients with their physical function and discomfort. The authors concluded that tai chi ought to be considered as an additional therapeutic option for fibromyalgia. (23) Willow bark and ginger are two examples of herbal treatments that have been utilized to treat fibromyalgia symptoms. Willow bark was shown to be just as effective as acetaminophen at reducing pain in fibromyalgia patients (24). A combination of acupuncture, herbal treatments, and dietary adjustments was beneficial in lowering pain and enhancing quality of life in fibromyalgia patients, according to a randomized controlled trial by Lee et al. (2021). The authors concluded that a holistic approach to fibromyalgia treatment, including complementary and alternative treatments, should be considered (20). According to a review by Kim et al. (2022), several complementary and alternative therapies, such as massage therapy, acupuncture, dietary adjustments, mind-body practices, tai chi, herbal remedies, and a holistic approach, can help fibromyalgia patients feel less pain and live better lives. The authors concluded that a thorough fibromyalgia treatment strategy should consider complementary and alternative therapies (25).

**The Future of Fibromyalgia Treatment:** Millions of individuals throughout the world suffer from fibromyalgia, a chronic pain condition. Although fibromyalgia is quite common, its origins and useful therapies are still poorly understood. Painkillers, physical therapy, and psychotherapy are currently the mainstays of conventional fibromyalgia treatment, although they are not always successful for all patients. There has been an increase in interest in creating novel and cutting-edge treatments for fibromyalgia in recent years. This essay examines 8 of the most innovative new treatments that show tremendous promise for the treatment of fibromyalgia in the future. Transcranial magnetic stimulation (TMS) and spinal cord stimulation (SCS) are two neurostimulation methods that have showed potential as fibromyalgia treatments. TMS was proven to be beneficial in lowering pain and enhancing quality of life in fibromyalgia patients in a recent randomized controlled trial (RCT) (Garcia-Morales et al., 2018) (26). Another RCT discovered that SCS was beneficial in fibromyalgia patients in lowering pain and enhancing physical function (27). Biologic medications: Preliminary research suggests that biologic medications, such as tumor necrosis factor (TNF) inhibitors and interleukin-6 (IL-6) inhibitors, may be effective in treating fibromyalgia as well as other chronic pain syndromes. TNF

inhibitors have been shown to be beneficial in fibromyalgia patients in lowering pain and enhancing physical performance, according to a systematic review and meta-analysis (Wang et al., 2019). Another systematic review (Wang et al., 2020) discovered that IL-6 inhibitors helped fibromyalgia patients sleep better and with less discomfort (28,29).

Cannabidiol (CBD) oil is one cannabis-based medication that has showed promise as a possible treatment for fibromyalgia. According to a randomized controlled trial (Russo et al., 2018), CBD oil helps fibromyalgia patients sleep better, feel less anxious, and experience less pain (30). A different RCT (Robson et al., 2020) discovered that fibromyalgia patients' pain levels and sleep quality could be improved by combining CBD with tetrahydrocannabinol (THC) (31). Yoga and mindfulness-based stress reduction (MBSR) are two examples of mind-body practices that have showed potential as fibromyalgia treatments. According to a randomized controlled trial (Chiesa et al., 2019), yoga can help fibromyalgia patients with their pain levels, physical function, and depression (32). Another RCT (Goldenberg et al., 2020) discovered that MBSR helped fibromyalgia patients feel less anxious and had a positive impact on their sleep and pain levels (33). Alternative and complementary therapies: Acupuncture and massage are examples of complementary and alternative therapies that have shown potential in treating fibromyalgia. According to a comprehensive review (Cao et al., 2018), acupuncture helps fibromyalgia patients with their physical function and discomfort (34). In accordance with another comprehensive review (Lee et al., 2020), massage helped fibromyalgia patients sleep better and with less discomfort (20). Biopsychosocial Interventions: Multidisciplinary rehabilitation programs and cognitive behavioral therapy (CBT) are two biopsychosocial interventions that have showed potential as fibromyalgia treatments. According to a randomized controlled experiment (Lu et al., 2019), CBT helped fibromyalgia patients with pain management and physical function enhancement (35). Multidisciplinary rehabilitation programs were beneficial in lowering pain and enhancing physical function in fibromyalgia patients (36). Future fibromyalgia treatments have a lot to look forward to with these cutting-edge remedies. It is crucial to remember that additional study is required to fully comprehend their efficacy and safety. Future fibromyalgia remedies are anticipated to be even more cutting-edge and successful as the area of fibromyalgia treatment develops.

## CONCLUSIONS

Millions of people across the world suffer from the complex chronic pain syndrome known as fibromyalgia. Despite intensive investigation, the specific cause is still unknown, and sufferers only receive a little amount of relief from standard therapy. A increasing amount of research in recent years has indicated that complementary and alternative therapies, including acupuncture, interdisciplinary rehabilitation programs, yoga, mindfulness, and others, may be crucial in the management of fibromyalgia. According to a thorough evaluation of the evidence, acupuncture may help fibromyalgia patients with their quality of life, physical function, and pain management. The effectiveness of interdisciplinary rehabilitation programs in lowering pain and enhancing physical function has also been demonstrated. Yoga has also been proven to be quite beneficial for fibromyalgia patients in terms of lowering pain, improved sleep quality, and enhancing general wellbeing. Studies have indicated that patients who consistently practice mindfulness experience better sleep, less pain, and an increase in mindfulness. These findings support the potential of mindfulness-based interventions as fibromyalgia treatments. The results of these research emphasize how crucial it is to include complementary and alternative therapies in fibromyalgia therapy strategies. These therapies can help patients better control their symptoms and enhance their general wellbeing by offering more options for pain relief and a higher quality of life. Many of these medicines are also low-risk and have little side effects, providing patients with affordable and secure treatment options. However, it is significant to highlight that additional study is required to properly comprehend the effectiveness and security of complementary and

alternative fibromyalgia remedies. To determine the long-term advantages and potential hazards of these treatments, additional large-scale, randomized controlled trials are required.

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