

## The Role of a Specialized Diet for Management of Fibromyalgia Symptoms: A Systematic Review

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**Abstract :** Background and significance: Fibromyalgia (FM) is a chronic pain disorder also characterized by chronic fatigue, morning stiffness, sleep, and cognitive symptoms, psychological disturbances (anxiety, depression), and is comorbid with multiple medical and psychiatric conditions. It has an incidence of 2-4% in the general population and is reported more commonly in women. Oxidative stress and inflammation are thought to contribute to pain in patients with FM, and the adoption of an antioxidant/anti-inflammatory diet has been suggested as a modality to alleviate symptoms. The aim of this systematic review was to evaluate the efficacy of specialized diets (ketogenic, gluten free, Mediterranean, and low carbohydrate) in improving FM symptoms. Methodology: A comprehensive search of the following databases from inception to July 15th, 2021, was conducted: Ovid MEDLINE and Epub ahead of print, in-process and other non-indexed citations and daily, Ovid Embase, Ovid EBM reviews, Cochrane central register of controlled trials, EBSCO host CINAHL with full text, Elsevier Scopus, website and citation index, web of science emerging sources citation and clinicaltrials.gov. We included randomized controlled trials, non-randomized experimental studies, cross-sectional studies, cohort studies, case series, and case reports in adults with fibromyalgia. The risk of bias was assessed with the Agency for Health Care Research and Quality designed, specific recommended criteria (AHRQ). Results: Thirteen studies were eligible for inclusion. This included a total of 761 participants. Twelve out of the 13 studies reported improvement in widespread body pain, joint stiffness, sleeping pattern, mood, and gastrointestinal symptoms, and one study reported no changes in symptomatology in patients with FM on specialized diets. None of the studies showed the worsening of symptoms associated with a specific diet. Most of the patient population was female, with the mean age at which fibromyalgia was diagnosed being 48.12 years. Improvement in symptoms was reported by the patient's adhering to a gluten-free diet, raw vegan diet, tryptophan- and magnesium-enriched Mediterranean diet, aspartame- and msg- elimination diet, and specifically a Khorasan wheat diet. Risk of bias assessment noted that 6 studies had a low risk of bias (5 clinical trials and 1 case series), four studies had a moderate risk of bias, and 3 had a high risk of bias. In many of the studies, the allocation of treatment (diets) was not adequately concealed, and the researchers did not rule out any potential impact from a concurrent intervention or an unintended exposure that might have biased the results. On the other hand, there was a low risk of attrition bias in all the trials; all were conducted with an intention-to-treat, and the inclusion/exclusion criteria, exposures/interventions, and primary outcomes were valid, reliable, and implemented consistently across all study participants. Concluding statement: Patients with fibromyalgia who followed specialized diets experienced a variable degree of improvement in their widespread body pain. Improvement was also seen in stiffness, fatigue, moods, sleeping patterns, and gastrointestinal symptoms. Additionally, the majority of the patients also reported improvement in overall quality of life.

**Keywords :** fibromyalgia, specialized diet, vegan, gluten free, Mediterranean, systematic review

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