

Efficacy of MSM in Treatment of Osteoarthritis and Unspecified Musculoskeletal Pain

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INTRODUCTION: Methylsulfonylmethane (MSM) is a naturally occurring compound that exhibits broad anti-inflammatory activity in vitro and supports the synthesis of key sulfur-containing compounds, including the antioxidant glutathione, in vivo. For these reasons, MSM has become increasingly popular as a supplement in the management of inflammation, joint/muscle pain, and oxidative stress. To determine the efficacy of MSM in the treatment of unspecified musculoskeletal pain and arthritis, we reviewed recent clinical literature.

Methods: A systematic review of the literature was performed using the search terms "methylsulfonylmethane," and "musculoskeletal disorders," by interrogating the Pubmed database for the period 2015 to present using filters for human studies and clinical studies. Initially, ten (10) records were retrieved. Inclusion criteria included studies that were blinded, randomized control trials or randomized open-label comparative studies. Reports in languages other than English were excluded. Records were assessed by title and abstract screening, resulting in seven (7) final studies which were subsequently extracted.

Results: Of the seven (7) studies identified, six (6) studies were randomized control trials and one (1) was a randomized open-label comparative study. Two (2) studies found no significant difference between treatment and control groups. Three (3) studies showed significant decrease in pain as measured via VAS pain scale for osteoarthritis. One (1) study showed a significant decrease in pain measured using JCOM questionnaire for unspecified musculoskeletal knee pain. One (1) study was a safety study and found that MSM was in fact safe.

Conclusion: Our systematic literature review of MSM and its impact on treatment of musculoskeletal conditions including osteoarthritis (6) and unspecified musculoskeletal pain (1) indicates that it may be a promising tool for managing pain and joint stiffness. More high-quality blinded, placebo-controlled, randomized trials should be performed to establish the utility of MSM in treating osteoarthritis and musculoskeletal disorders.

SIGNIFICANCE/CLINICAL RELEVANCE: Since 2015, there has been multiple studies that found significant improvement in osteoarthritis and unspecified musculoskeletal pain with supplementation of MSM. Due to the prevalence and chronicity of osteoarthritis, further research into MSM could guide future treatment.