MSM 900

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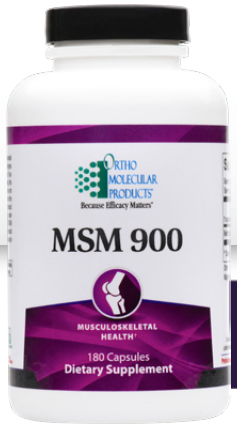
Because Efficacy Matters®



CLINICAL APPLICATIONS

- *Provides Natural Elemental Sulfur (34% by Weight)*
- *Supports Connective Tissue Health Including Cartilage and Collagen Production*
- *Supports Healthy Immune and Respiratory Function*
- *Maintains Normal Inflammatory Balance and Exercise Recovery*
- *Maintains Healthy Skin and Hair*

MUSCULOSKELETAL HEALTH

Methylsulfonylmethane (MSM) is a naturally occurring compound that provides a high concentration of elemental sulfur. Sulfur is a key mineral with numerous health-promoting properties, which include boosting the body's antioxidant mechanisms, supporting detoxification pathways, and supporting immune response. Each high-concentration capsule contains 900 mg of MSM for multidimensional soft tissue and immune support.

Overview

Sulfur is an essential element for all of life and is naturally found in foods such as garlic and onions, as well as protein-containing foods, such as poultry, fish and eggs. Sulfur ranks as the third-highest substance by weight in the body's chemistry, behind water and gases, and plays a major role in maintaining the body's overall health. In recent years, the typical American diet has progressively declined in sulfur content, leaving many susceptible to depletion. The concentration of MSM in the body also decreases with age, making it difficult for the body to generate new cells. MSM contains about 34% sulfur by weight, making it an ideal supplement for those that want to naturally increase their sulfur levels and obtain its significant health benefits.

Sulfur plays a major role in the body's detoxification and antioxidant pathways. Without sulfur, the body's major antioxidant, glutathione, cannot work. Supporting glutathione production is crucial for protecting against oxidative damage secondary to free radical activity and maintaining healthy liver detoxification. Research has shown that supplementation with MSM significantly supports connective tissue health and promotes normal levels of inflammation, which is crucial for maintaining healthy joints, skin and hair.

Connective Tissue and Joint Health†

Several studies have examined the effects of MSM on joint and connective tissue health. A recent study confirmed that oral administration of MSM modulated immune responses in joint tissues in mice drinking MSM compared to controls.[1] A randomized study of 118 patients provided subjects with either 500 mg of glucosamine, 500 mg of MSM, both glucosamine and MSM, or placebo capsules, three times daily for 12 weeks. The researchers found that glucosamine, MSM, and the combination of the two helped to maintain connective tissue and joint health, compared to placebo. MSM was particularly helpful in supporting joint comfort and maintaining healthy fluid levels.[2] An additional randomized, double-blind, placebo-controlled trial including 49 men and women, 40 to 76 years of age, examined the effects of 3 g MSM given twice per day, or placebo, for 12 weeks. In this study, MSM was also shown to support joint comfort and physical function, compared to placebo.[3]

Respiratory and Immune Function†

Studies have also found that MSM supports general immune function and respiratory health during seasonal challenges. In a mouse study, MSM administration (5 weeks, 80 mg/100 ml drinking water) produced a statistically significant increase in liver GSH (mean increase of 78%) and showed a hepatoprotective effect after chemical injection of a liver toxin.[4] A human clinical trial involved 50 subjects who consumed 2600mg/day MSM orally for 30 days. Clinical respiratory symptoms, energy levels, and immune and inflammatory reactions were determined. After one week, the frequency of upper respiratory symptoms was significantly improved. At three weeks, participants also had significant improvements in lower respiratory symptoms.

† These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

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All respiratory improvements were maintained through day 30. Energy levels improved significantly by day 14 and were maintained through day 30.[5]

Normal Inflammatory Balance and Exercise Recovery†

Recent studies have found that MSM maintains normal inflammatory balance and supports exercise recovery. Double-blind, placebo-controlled study. In a small clinical study, 40 healthy, resistance trained males received 3g of MSM or placebo for 28 days before eccentric knee exercise. In-vivo cytokine analysis was performed before and through 72 hours post-exercise. Additional cytokine analysis was performed in-vitro and ex-vivo on whole blood and isolated single blood cells from a subset of subjects, with and without lipopolysaccharide stimulation. Results indicate MSM dampens inflammatory expression following exercise and reduces post-exercise immunosuppression.[6] A double-blind, placebo-controlled study of 40 healthy resistance-trained men were given 3 g/day of MSM for 28 days before eccentric knee exercise. Testing occurred before exercise (baseline) then at zero hours, 24 hours, 48 hours and 72 hours post-exercise. At 72 hours, Maximum Isometric Force (MIF) was normal in the MSM group but still 8% below baseline for the placebo group. Absolute change in muscle soreness during passive knee flexion was smaller in MSM group. Some findings of this study suggest individuals may be able to return to regular training more quickly following knee extensor damage with MSM supplementation.[7] Another double-blind, placebo-controlled study enrolled 22 healthy adults who were randomly assigned to take either 3 g of MSM per day or placebo for 21 days before running a half marathon. MSM was found to attenuate post-exercise induced muscle and joint pain at clinically significant levels compared to placebo.[8] A smaller double-blind, placebo-controlled study with 24 healthy adult males randomly assigned subjects to receive either treatment or placebo for 14 days. The intervention of 3 g of MSM per day for the 14-day period resulted in significantly lower pain and discomfort two hours following a leg extension exercise to muscle failure when compared to the placebo group.[9] Finally, in another small clinical study, eight subjects were randomly assigned to receive either 1.5 or 3 g of MSM per day for 30 days. Leg extension exercises were performed to exhaustion. The intracellular antioxidant score (TEAC) increased in a dose-dependent manner, while fatigue and homocysteine decreased in dose dependent manner. MSM may favorably influence selected markers of exercise recovery, especially at 3 g/day.[10]

Skin and Hair Health†

As a source of bioavailable sulfur, MSM helps maintain disulfide bonds that keep collagen strands strong and preserves connective tissue pliancy, which is crucial for supporting healthy skin. MSM has been shown to significantly increase plasma glutathione levels, an additional benefit in maintaining skin's defensive mechanisms against oxidative stress.[11] A recent two-part study also showed skin benefits as well. Part one was a pre-clinical evaluation of gene expression in a 3D skin model, and results supported the continuation of the second clinical portion. Part two was a double-blind placebo-controlled study where 20 healthy females were randomized to take 3 g of MSM per day or placebo for 16 weeks. Significant improvements in skin appearance and condition were found in the treatment group when evaluated by expert grading, instrumental analysis, and participant self-assessment. [12]

Directions

1 capsule three times per day or as recommended by your health care professional.

Does Not Contain

Gluten, corn, yeast, artificial colors and flavors.

Cautions

If you are pregnant or nursing, consult your physician before taking this product.

Supplement Facts V1

Serving Size 1 Capsule
Servings Per Container 180

1 capsule contains	Amount Per Serving	% Daily Value
Methylsulfonylmethane (MSM) (OptiMSM®)	900 mg	*

* Daily Value not established

ID# 581180 180 Capsules

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