

Methyl Sulfonyl Methane (MSM)

MSM (methyl sulfonyl methane) is a sulfur-containing compound normally found in many of the foods we eat. It is chemically related to DMSO (dimethyl sulfoxide), a popular (although unproven) treatment for arthritis. When DMSO is applied on the skin or taken orally, about 15% of it breaks down in the body to form MSM.

Some researchers have suggested that the resulting MSM could be responsible for the benefits attributed to DMSO. MSM might be preferable as a treatment, because it does not cause some of the unpleasant side effects associated with DMSO treatment, such as body odor and bad breath. In addition, as a natural substance found in food, MSM would be expected to have a good safety profile. However, there is as yet no more than preliminary evidence that MSM is useful for any medical condition.

There is no dietary requirement for MSM. However, it occurs naturally in cow's milk, most meat, fish and seafood, poultry and eggs, vegetables, fruits, and even coffee, tea, and chocolate.

MSM supplies sulfur. Some advertisements for MSM claim that sulfur deficiency is widespread, and that for this reason alone MSM will improve the health of most everybody who takes it. However, there are numerous other dietary sources of sulfur, including, most prominently, many forms of ordinary protein.

The fourth most abundant substance in our bodies, Methyl-sulfonyl-methane is necessary for collagen synthesis: skin, hair and nail health. For this reason it is referred to by many as "the beauty mineral." But MSM's benefits go far deeper. It also helps relieve stress, asthma, allergies, arthritis, inflammation, constipation and candida. It helps detoxify our bodies while increasing blood circulation, reduces muscle cramps and back pain, increases our energy and alertness, mental calmness, and consequently our ability to concentrate. MSM scavenges free radicals, aids the liver in its

production of choline, controls acidity in the stomach – coating the intestinal tract so that parasites lose their ability to hang on, mitigates our hypersensitivity to drugs, increases our ability to produce insulin, plays a part in carbohydrate metabolism, helps speed up wound healing.

MSM provides an essential sulfur foundation that the body needs to form proteins and collagen (connective tissue), synthesize and activate vitamins, produce enzymes and immunoglobulin, and maintain the immune system.

MSM relieves swelling, inflammation and pain because it allows the harmful substances that have accumulated to flow out and nutrients to flow in. It also contributes sulfur to the body needed to make vitamins such as B1 and the antioxidant amino acid glutathione. It also helps the liver excrete toxins. Additionally, it provides structure to the glucosamine needed for healthy ligaments, tendons, heart valves, etc. It has been found to help in dissolving scar tissue, decrease inflammation, and increases elasticity in the body.

MSM has also been proposed as a treatment for interstitial cystitis, an inflammation in the wall of the bladder that causes frequent and painful urination. When prescribed for this condition, MSM is usually instilled directly into the bladder, although oral use has also been suggested. However, no clinical studies on this use have been performed: the only evidence for this treatment comes from case studies and anecdotal reports. Since interstitial cystitis is known to respond very positively to placebo, these reports mean little.

MSM has also been advocated for allergies (including drug allergies), scleroderma, excess stomach acid, and constipation, but there is no meaningful evidence whatsoever to support these proposed uses.

While MSM cannot cure fibromyalgia, this nutritional supplement is often used as a treatment of fibromyalgia symptoms, helping relieve some of the discomfort that is associated with the disease and

improve overall health. MSM is one of the latest treatments of fibromyalgia and relies on naturally occurring substances that can be found in many foods. This alternative fibromyalgia treatment has been shown to have beneficial properties for individuals living with fibromyalgia since it helps restore some of the deficiencies associated with fibromyalgia. Some of the fibromyalgia symptoms that may be improved by MSM supplements include the following:

- helping restore sulfur deficiencies that can lead to cells that are impermeable by sugar, which causes blood glucose level imbalance
- reducing muscle soreness and cramps
- reducing the symptoms of arthritis and controlling degeneration
- allowing toxins and allergens to be cleansed from the body by increasing cell permeability and reducing water pressure in cells
- inhibits pain impulses due to anti-inflammatory properties
- improving and balancing the immune system
- increasing blood supply and circulation in the body

In addition, if taken in combination with other supplements, particularly amino acids, benefits of MSM for fibromyalgia treatment have been shown to increase. When combined with glucosamine and chondroitin, MSM helps transport nutrients to damaged cartilage and tissue. When combined with enzymes such as Serrapeptase, MSM helps to aid digestion.

Fibromyalgia is a highly individualized condition, and MSM does not work in every case

In a double-blind, placebo-controlled study performed in India, 118 people with osteoarthritis of the knee were given one of the following four treatments: glucosamine (500 mg, 3 times daily), MSM (500 mg, 3 times daily), a combination of glucosamine and MSM, or placebo. The study ran for 12 weeks. The results showed that both MSM and glucosamine improved arthritis symptoms as compared to

placebo, and that the combination of MSM and glucosamine was more effective than either one alone. Benefits were also seen in a 12-week, double-blind, placebo-controlled trial of 50 people with osteoarthritis, utilizing MSM at a dose of 3 g twice daily.

However, in a comprehensive review of 6 studies involving 681 patients with osteoarthritis of knee, researchers concluded it is not yet possible to convincingly determine whether or not either DMSO or MSM is beneficial.

Therapeutic Dosages of oral MSM used for therapeutic purposes range from 1,500 to 10,000 mg daily, usually divided up into 3 daily doses.

MSM is a natural component of the foods we normally eat and is not believed to be toxic. A laboratory study examining doses up to 8 g per kilogram of body weight per day (about 250 times the highest dose normally used by humans) reported that no toxic effects were seen.

MSM is rated as one of the least toxic substances in biology, similar in toxicity to water and much less toxic than common table salt, for example. It has been widely tested as a food ingredient without any reports of allergic reactions.

Maximum safe doses for young children, pregnant or nursing women, or people with liver or kidney disease are not known. Possible drug interactions are also not known.

It is recommended that first time users start at a low level, taking it with meals and increasing the dose gradually. Later, it can be taken without food. A typical starting recommendation is 250mg per day, increasing to an average therapeutic dose of about 2gm per day.

People take as much as 100gm of MSM daily. Some suggest starting with 2gm (2000mg) and, every week, increasing by 1000mg to a total of 8gm per day.

A single dose of MSM will not usually provide any benefit: MSM needs to be taken for at least 1-2 weeks or even up to 2 months before any results will be seen.

No recommended intake levels have been established for sulfur.

MSM has been used alone, or in combination with other nutrients, to help with the conditions of osteoarthritis, chronic joint pain and ligament damage.

Although creams and lotions containing MSM are also available, it is hard to see the purpose of these topical products since MSM, unlike DMSO, is not absorbed through the skin.