

Your expert for minerals and nutraceuticals.



OptiMSM®

Deep Dive into

Joint Health



Sulphur as a Critical Component of Joints & Connective Tissue

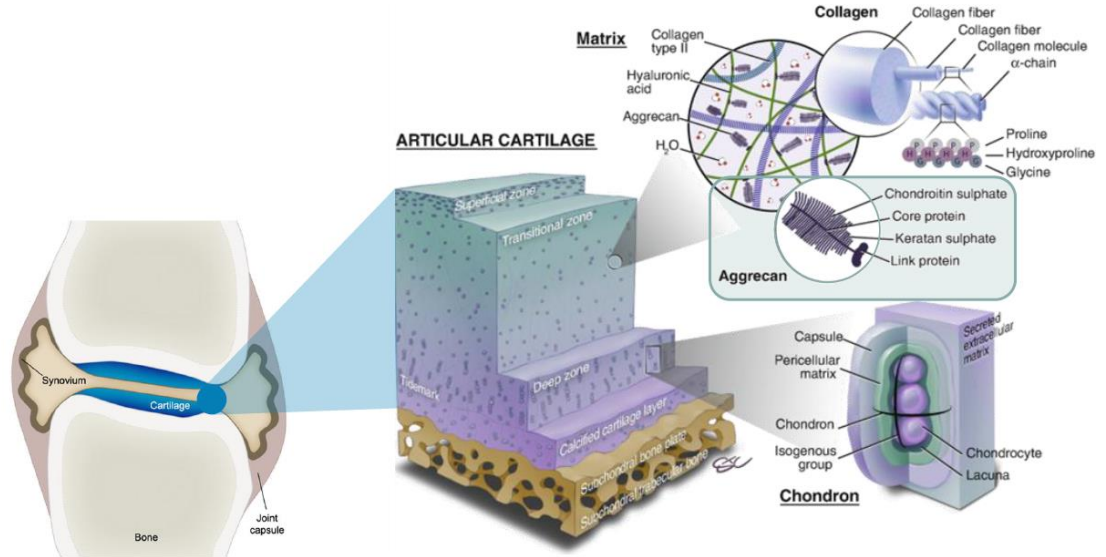
Sulphur is a key component of the building blocks of joints and connective tissue.

Dermatan Sulfate → Skin

Chondroitin Sulfate → Cartilage

Keratan Sulfate → Cartilage & Bone

Healthy joints rely on sulphur for proper structure and function



What do MSM & Sulphate do for Joint Health?

Sulphur acts as a key component of healthy joints¹

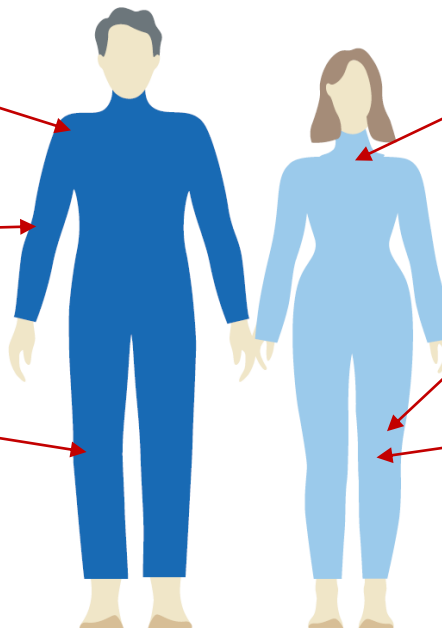
Sulphur maintains healthy joint function¹

Sulphur supports joint health¹

Maintains quality of life measures²

Maintains joint comfort²

Maintains physical function and joint function²



Sources

1) Food and Nutrition Board, Institute of Medicine, 2005

2) Debbi EM, et al., BMC Comp Alt Med 2011; 11:50

MSM has Proven Advantages for Joint Health

Author/Publication	Study Design & Subject Population	Duration/Dosage	Outcome Measures	Conclusions
Toguchi A, et al., Nutrients 2023; 15: 2995.	Randomized, double-blind, placebo-controlled trial N=88 M/F w/mild knee pain, age 20y+	12 weeks - Placebo 2000 mg/day OptiMSM 	JKOM score	OptiMSM significantly improved overall joint health and comfort relative to placebo
Debbi EM, et al., BMC Comp Alt Med 2011; 11:50	Randomized, double-blind, placebo-controlled trial N=49 M/F w/ OA, age 45-90y	12 weeks - Placebo 3375 mg/day MSM	WOMAC score Joint stiffness Joint pain Joint function	MSM supplementation for 12 weeks significantly improved markers of joint function
Kim LS, et al., Osteoarthritis Cartilage 2006; 14(3): 286-294.	Randomized, double-blind, placebo-controlled trial N=50 M/F w/ OA, age 40-76y	12 weeks - Placebo 6000 mg/day MSM	WOMAC score Joint pain Joint function Activities of daily living	MSM supplementation significantly improved markers of joint comfort and physical function
Lubis AMT, et al., Acta Med Indones 2017; 49(2): 105-111.	Randomized, double-blind, placebo-controlled trial N=147 M/F w/ OA; mean age = 61y	3 months - Placebo 1500 mg GS + 1200 mg CS/day 1500 mg GS + 1200 mg CS + 500 mg MSM/day	WOMAC score VAS	Supplementation with GS + CS + MSM significantly improves markers of joint health and comfort
Pagonis TA, et al., Int J Orthopaed 2014; 23(1): 19-24.	Randomized, double-blind, placebo-controlled trial N=100 M/F w/ OA	26 weeks - Placebo 6000 mg/day MSM	WOMAC score Quality of life	MSM supplementation significantly improved performance in activities of daily living and overall health-related quality of life
Usha PR & Naidu MUR. Clin Drug Invest 2004; 24(6): 353-363.	Randomized, double-blind, placebo-controlled trial N=118 M/F w/ OA; age 40-70y	12 weeks - Placebo 1500 mg GS/day 1500 mg MSM/day 1500 mg GS + 1500 mg MSM/day 	Joint pain Joint swelling VAS pain	GS + MSM supplementation significantly improved functional ability of joints

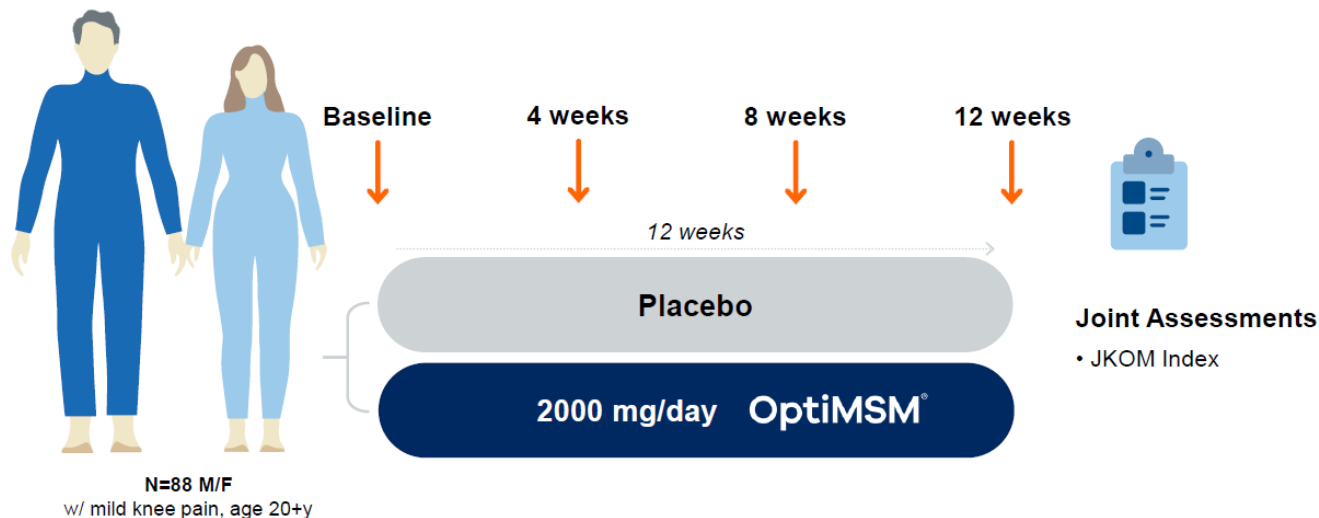
BA = boswellic acid | GS = glucosamine sulfate | CS = chondroitin sulfate | OA = Osteoarthritis | Osteoarthritis | JKOM = Japanese Knee Osteoarthritis Measure
WOMAC = Western Ontario and McMaster University Osteoarthritis Index scale | VAS = visual analogue scale

Does OptiMSM Support Joint Health in Healthy Subjects?

Toguchi (2023)

Study Goal

To determine the efficacy of **OptiMSM[®]** supplementation on joint function and comfort in healthy participants.



Toguchi A, et al., Nutrients 2023; 15: 2995

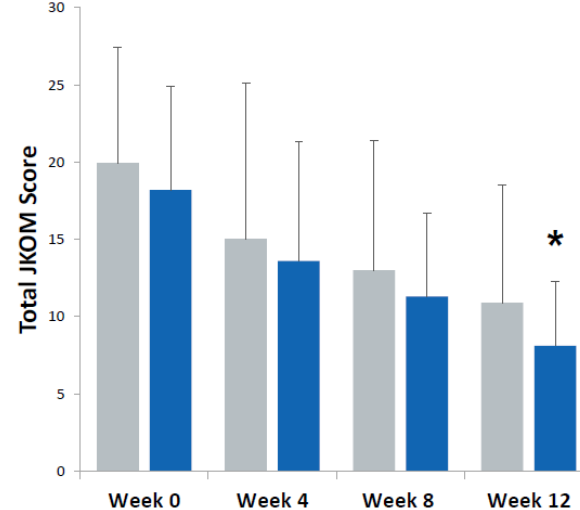
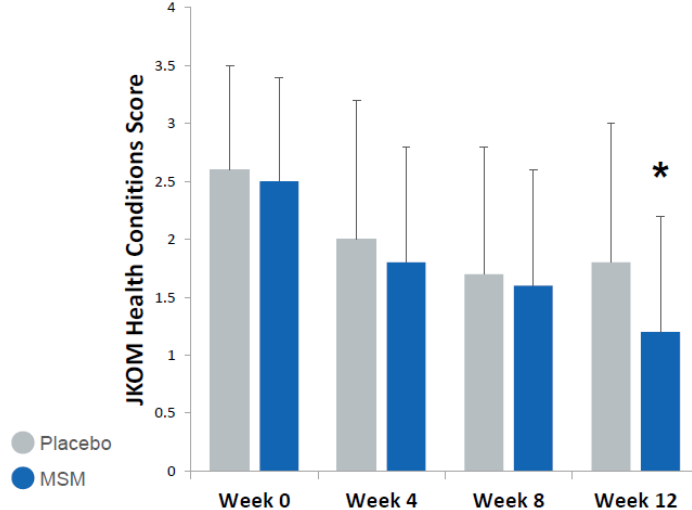
OptiMSM Supplementation Improves Measures of Joint Health

Toguchi (2023)

Study key Results

OptiMSM® supplementation

- Significantly improved self-reported systemic health.
- Significantly improves markers of joint health, function & comfort.



Toguchi A, et al., *Nutrients* 2023; 15: 2995

*Significant difference between groups, $p \leq 0.05$ Mean $\pm$ SD

Importance of OptiMSM® in Joint Health

OptiMSM® is a source of sulphur, a nutrient that:

- Acts as a key component of healthy joints¹.
- Helps maintain healthy joint function¹.
- Provides your joints with the nutrients they need¹.

MSM supplementation has been shown to ...

... Improve joint and physical function²

... Improve quality of life²

Sources: 1) Food and Nutrition Board, Institute of Medicine, 2005
2) Debbi EM, et al., BMC Comp Alt Med 2011; 11:50;





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