MSM: A Remarkable Dietary Supplement

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Where Is MSM Found?
MSM (methylsulfonylmethane)

Upper Atmosphere
DMSO
DMSO₂ (MSM)

Return to Earth in Rain

Root Systems of Plants

Phytoplankton
DMS

Transported Back to Sea Cycle Begins Again
What is MSM?

**MSM (methylsulfonylmethane)**

- Also known as dimethyl sulfone
- Naturally occurring nutrient, a sulfur compound found in all species including humans
Pharmacology of MSM

- Analgesia (pain relief)
- Anti-inflammation
- Vasodilation (improves blood supply)
- Reduces muscle spasm
Pharmacology II

- Softens scar tissue
- Relief of pollen and food allergies
- Reduces constipation
What About Toxicity?

- MSM is one of the least toxic substances known - comparable to water
- MSM has been widely tested as a food ingredient with no allergic reactions documented
- L.D. 50 over 20 gms/kg body weight
- Experience with 18,000 patients for safety
Usual Dosage of MSM

- 2 - 8 gm/day in 2 or 3 divided doses
Current Status of DMSO
Prescriptive

• Interstitial Cystitis
Off Prescriptive

• Use as cryoprotectant for human embryos, stem cells and bone marrow

• Every major medical center in U.S.
Prescriptive Names

- Rimso 50 -- 50% DMSO
- Cryoserv -- 99.9% DMSO
Toxicology

Nuisance side effects (topical DMSO)

- Skin irritation
- Nausea
- Allergic response (rare)
- Odor
Toxicology (Intravenous)

• Hemolysis (DMSO concentration over 10%)
Pharmacology of DMSO

- Analgesia
- Anti Inflammatory
- Effect on collagen
- Anti Bacterial
- Vasodilation
- Reduction of muscle spasm
Topical Administration for Athletic Injuries

- 50%/H$_2$O -- Neck and face
- 70%/H$_2$O -- Below neck
- 90%/H$_2$O -- Feet and legs
Topical Administration

- Wipe off after 5 - 8 minutes
- Apply generously over wide area
Fate and Metabolism of DMSO

- 80 - 85% remains as DMSO
- 15% becomes MSM (Dimethyl sulfone)
- 3% DMS (odor producing)
Topical

- The closer the DMSO application is to face, the greater the odor
- The least odor occurs on application to feet
- No effective odor reducer
Intravenous DMSO in Closed Head Trauma

- 1 gm/kg every 6 hours
Intravenous DMSO in Quadriplegia and Paraplegia

• Must be administered within one hour
Intravenous DMSO in Embolic Stroke

• May be effective up to 16 hours post onset
Oral DMSO with Fructose Diphosphate in Alzheimer’s Disease

• Tablet form