

DMSO, a natural remedy with numerous uses

A Short Guide to DMSO

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The latest version is available on the “Autonomie en santé” page of Liège-Décroissance, as well as in translations into other languages (original in French and machine translations):

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1. Introduction

*Modern medicine is a denial of health.
It is not organised to serve human health,
but only itself, as an institution.
It makes more people ill than it cures.*

Ivan Illich
Medical Nemesis. 1975.

An Austrian-born philosopher, Ivan Illich (1926–2002) was one of the leading thinkers in political ecology and regarded as one of the pioneers of the sociopolitical project of degrowth.¹

DMSO (dimethyl sulphoxide) is a natural substance, liquid at temperatures above 18.5 °C, transparent and odourless. In nature, it is found mainly in surface seawater². It is also present in small quantities in certain foods, such as sulphur-rich vegetables (cruciferous vegetables, garlic, onions, etc.), seaweed, seafood, tea, milk, etc.

DMSO has numerous therapeutic properties, which have been the subject of intensive research since the 1960s, starting with the discovery of DMSO's ability to penetrate the skin and biological tissues without damaging them. Subsequently, DMSO's remarkable anti-inflammatory, analgesic, regenerative and cytoprotective effects were very quickly demonstrated, as was its complete lack of toxicity.

DMSO is one of the most remarkable agents ever discovered in the field of drug development. Its wide range of biological effects on plants, animals and humans has given rise to tens of thousands of articles in the scientific literature. Clinical uses of DMSO in humans include osteoarthritis, interstitial cystitis (painful bladder syndrome), inflammatory bowel disease, scleroderma,

respiratory distress, myasthenia gravis, heart disease, traumatic brain injury, stroke, Alzheimer's disease and spinal cord injury.

You've probably never heard of DMSO, and for good reason: it is one of the medicines that have been overlooked – or rather, buried – by public health bodies, starting with the US FDA³, which has managed to persuade the authorities in certain other countries to do the same. Even today, at EU level and in most EU countries, there is no medicine with a marketing authorisation (MA) whose active ingredient is DMSO⁴. Unlike aspirin and paracetamol, which are known to be toxic⁵, DMSO is not authorised as an over-the-counter medicine, with the exception of Poland. However, DMSO can be sold legally, though not as a product for therapeutic use – for example, as a solvent – which explains the caution shown by DMSO sellers, who refuse to respond to any requests for advice on its use.

The fact that DMSO is unpatentable, inexpensive, remarkably safe, indicated for a wide range of conditions and, ultimately, a factor in promoting self-determination in healthcare explains a great deal.

To find out more about the history of DMSO:

- [A versatile medicine discovered on the West Coast](#), a 1963 article from The New York Times (PDF, 1 page).
- [‘Health Pioneers and DMSO’](#), a French translation of the article [‘Early Health Innovators and DMSO’](#) by the ‘Midwest Doctor’, published on 23 March 2026 (PDF, 4 pages).

Who is ‘A Midwestern Doctor’?

‘A Midwestern Doctor’ is the pseudonym of an American author who publishes articles on health and alternative treatments.

Here is how he briefly describes the aims of his [blog](#), hosted on the Substack platform:

‘I run the blog “The Forgotten Side of Medicine” to expose corruption in the pharmaceutical industry and revive remarkable

¹ For further information:

- *Ivan Illich et la société conviviale*. Thierry Paquot. *The Pioneers of Degrowth* series, Le Passager Clandestin, 2020, 128 pages.

“‘Productivity is measured in terms of having; conviviality in terms of being.’”

A philosopher, historian, priest without a parish, nomadic teacher and polyglot, Ivan Illich (1926–2002) was a key figure in the intellectual debates of the 1970s. A relentless critic of industrial society, he demonstrated that, beyond a certain threshold, institutions prove to be counterproductive. He denounced the tyranny of needs dictated by consumer society and warned against the dependence fostered by the excessive tools of capitalism.

He contrasts productivism and the cult of growth with a way of life that blends frugality, simplicity and generosity. The convivial society envisaged by Illich seeks to guarantee human autonomy and creativity.

At a time when technology and the economy are constantly extending their grip on society, Thierry Paquot invites us to rediscover a stimulating and non-conformist way of thinking that today underpins many alternative practices.”

- [An article about Ivan Illich](#) by Romain Felli (in French).

- By Serge Latouche:

1. *La décroissance (Degrowth)*. *Que sais-je?* series, PUF. 2019, 128 pages.

“Our entire economic system is based on the idea of growth. To invest, to develop, to tackle unemployment, to repay debt, to improve our living conditions, we need more growth, ever more growth... But how can we ‘grow’ indefinitely in a finite world? When all natural resources are running out? What if the idea of growth were just one belief amongst many?”

Serge Latouche methodically deconstructs an ideology that is nothing more than a burden on the future. He reminds us that, conversely, the concept of degrowth is not a return to the Stone Age! By challenging productivism and the philosophy of Homo economicus, he aims to lay the groundwork for a profound change in our value system.

Degrowth? ‘An art of living well, simply, in harmony with the world; an art of living with art.’

2. *La décroissance – De l’utopie sociétale à la [re]construction d’un monde commun (Degrowth – From a societal utopia to the [re]construction of a shared world)*. Edisens, 2026, 168 pages.

‘Faced with the steamroller of a mega-machine of lies wielded by the entrepreneurs of chaos and the great predators, this project may seem derisory and the fight for truth a lost cause from the outset. Except that history provides us with numerous examples of the failure of monstrous enterprises founded on hubris and excess, which ultimately crash against the wall of reality.’

² Marine phytoplankton produce significant quantities of dimethyl sulphide (DMS), some of which is oxidised to DMSO in surface seawater through the action of light and bacteria.

³ See further on the article by Dr du Midwest, *‘The FDA’s War on DMSO’*. FDA: U.S. Food and Drug Administration, the US food and drugs agency.

⁴ Germany, Poland and perhaps other countries of the former Eastern Bloc are exceptions, to varying degrees. At EU level, there are a few medicines that contain DMSO as an excipient, and DMSO is used as an active ingredient in some veterinary medicine formulations.

⁵ For example, paracetamol is the leading cause of acute liver failure in developed countries. This may require a liver transplant. In the EU, around 150 requests for liver transplants each year are linked to paracetamol, with two-thirds resulting in an actual transplant.

therapies that have fallen into oblivion, for the good of humanity.’

In early June 2026, this blog had an impressive 347,000 subscribers⁶ – a figure just as impressive as the number of [its posts](#), including around twenty articles on the therapeutic properties of DMSO, all of which are very thorough; you will find a summary of these in a chapter below.

2. Chemical properties

DMSO is an organosulphur compound with the formula C_2H_6OS or $(CH_3)_2S=O$. It is therefore a very simple and very small molecule, consisting of a central sulphur atom bonded to two methyl groups (CH_3) and doubly bonded to an oxygen atom.

In the human body, DMSO is mainly converted (oxidised) in the liver into MSM (methylsulphonylmethane or dimethylsulphone, $DMSO_2$). MSM is a substance that is beneficial for connective tissues: it is used to treat joint problems (osteoarthritis, etc.).

DMSO is an excellent solvent for many hydrocarbons, organic salts and nitrogen-containing compounds, without altering their structure. As a result, since the 1940s, it has been very useful to the chemical industry for all manner of applications. It is also used by the electronics industry for cleaning components.

DMSO is miscible with water in any proportion. Remarkably, it is as compatible with water as it is with the organic compounds (lipids, proteins, carbohydrates) found in our bodies, which is one possible explanation for its exceptional pharmacological properties.

Production

DMSO is produced industrially by the oxidation of DMS (dimethyl sulphide, CH_3-S-CH_3). Today, the main source of DMS is no longer ‘black liquor’, a by-product of the paper industry consisting mainly of lignin⁷: it is more efficient to synthesise DMS from methanol and sulphur (hydrogen sulphide).

The Russian chemist Alexander Zaytsev was the first to synthesise DMSO in 1866, by oxidising DMS produced from black liquor.

3. Physical properties

DMSO is a liquid between 18.5 °C (melting–freezing point) and 189 °C (boiling point at one atmosphere pressure): it is colourless, transparent and odourless, but has a bitter taste, is slightly viscous and has a density slightly higher than that of water (1.1 kg/l). It is combustible but not very flammable compared with other solvents such as acetone.

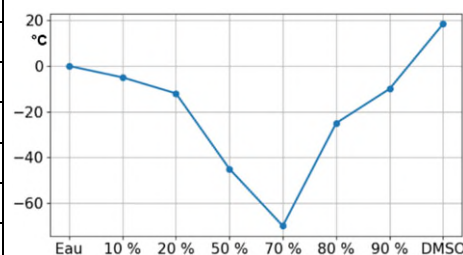
DMSO evaporates only very slightly at normal pressure and at room temperature or skin temperature, which facilitates its topical application (onto the skin).

Unlike water, a bottle filled with pure DMSO does not shatter when the DMSO freezes. DMSO is highly hygroscopic: in a humid

atmosphere and when left in an open container, pure DMSO can absorb water up to half its volume.

The freezing point of water drops sharply when DMSO is added, up to a certain point, before rising again. The behaviour of the freezing point of an aqueous DMSO solution as a function of its concentration is complex and counterintuitive:

	°C
Pure water	0
10% DMSO	-5
20% DMSO	-12
DMSO 50%	-45
DMSO 70%	-70
DMSO 80%	-25
90% DMSO	-10
Pure DMSO	+18.4



This property of DMSO, combined with others – including its ability to penetrate cell membranes and the fact that it limits the formation of ice crystals during cell freezing – makes it a cryoprotectant used for the freezing and preservation of cells, tissues and embryos.

4. Pharmacological properties

Following decades of research, DMSO has emerged as a remedy with a wide range of effects on humans and animals.

Alongside its ability to rapidly cross biological membranes, such as the skin and cell membranes (potentially whilst transporting other medicinal substances), the main properties of DMSO lie in its capacity to modulate biological activity, as well as to protect and regenerate cells, even in the case of severely damaged tissues. Other significant effects – which were also among the first to be discovered in the 1960s and 1970s – include anti-inflammatory, analgesic, antioxidant and immunomodulatory effects.

The list of pharmacological properties below was compiled by Dr Hartmut Fischer⁸ based on the following works:

- *DMSO: Nature's Healer*. Morton Walker. Penguin Publishing Group, 1993, 352 pages.
 - *Metabolism and Effects of Dimethyl sulphoxide*. Gerhards, Gibian. Naturwissenschaften, 1968/55. doi.org/10.1007/BF00602652
 - *Pharmacology of DMSO*. S W Jacob, R Herschler. 1986. Cryobiology. pubmed.ncbi.nlm.nih.gov/3007027/
1. Acts at the membrane level; penetrates biological membranes.
 2. Improves respiratory depth.
 3. Improves tissue oxygen saturation.
 4. Improves cellular function and differentiation.
 5. Analgesic⁹.
 6. Anti-inflammatory.
 7. Anti-sclerotic¹⁰.
 8. Anticoagulant, inhibits platelet aggregation.
 9. Antioxidant (hydroxyl radical scavenger).

⁶ Among them are doctors who comment on the Midwest Doctor's publications using their real names.

⁷ Black liquor is produced by removing lignin from paper pulp. Lignin makes up around 30 per cent of wood, but it compromises the quality of the paper by causing it to yellow rapidly as it oxidises on contact with air and light.

⁸ Helmut Fischer studied chemistry and pharmacy at the University of Würzburg and obtained a doctorate in science (which entitles him to

the title of ‘Doctor’, in Germany at least). He worked for several years as a researcher in the pharmaceutical industry. He is a naturopath (*Heilpraktiker*) and the author of a seminal book on DMSO (see the bibliography).

⁹ Pain reliever.

¹⁰ Combats the hardening of tissues and blood vessels.

10. Softens connective tissues (anti-fibroplastic¹¹).
11. Bacteriostatic¹².
12. Blocks calcium influx (increases myocardial contractility and ventricular function).
13. Reduces scarring, with an effect similar to that of collagenase (release of collagen).
14. Diuretic.
15. Anti-anaemic effect¹³.
16. Parasympathetic effect (inhibits acetylcholinesterase)¹⁴.
17. Promotes wound healing.
18. Promotes the diffusion of other substances.
19. Cellular integration (protects against problems with blood circulation, radiation and hypothermia).
20. Alter permeability (influences tissue permeability).
21. Modulates and amplifies the effect of other medicines.
22. Modulates the cell life cycle, division and apoptosis.
23. Modulates blood lipids.
24. Protects cells (for example, against freezing).
25. Muscle relaxant.
26. Has a relaxing effect and aids concentration.
27. Replaces water in cells.
28. Stabilises the cell membrane, for example against plasma loss.
29. Vasodilator (widens blood vessels).

According to other sources:

30. Has a normalising effect on the immune system.
31. Antimicrobial.
32. Antiviral¹⁵.
33. Antifungal.
34. Antiparasitic.

5. Therapeutic indications

Below is a non-exhaustive list of therapeutic indications taken from Dr Hartmut Fischer's book (see the *Bibliography* section). See also the section on articles by the Midwest Doctor.

1. Accident	2. Acne
3. Tinnitus	4. Allergies
5. Angina	6. Mouth ulcers
7. Arthritis	8. Osteoarthritis
9. Arteriosclerosis	10. Asthma
11. Stroke	12. Sports injuries
13. Boreout/Burnout	14. Lyme disease
15. Burns	16. Bursitis
17. Cataracts	18. Chemotherapy/chronic fatigue
19. Scars	20. Muscle strains
21. Colitis	22. Corticosteroid therapy
23. Sunburn	24. Whiplash
25. Cystitis	26. Atopic dermatitis
27. AMD	28. Pain

¹¹ Or anti-fibrotic: combats excessive collagen production and reduces fibrosis.

¹² Prevents bacteria from multiplying.

¹³ Used to treat anaemia, i.e. a reduction in haemoglobin levels or the number of red blood cells, or both.

¹⁴ The parasympathetic nervous system is the part of the autonomic nervous system that promotes rest and recovery. It releases acetylcho-

29. Sudeck's dystrophy/disease	30. Dementia
31. Embolism	32. Frostbite
33. Epicondylitis	34. Epilepsy
35. Heel spur	36. Gingivitis
37. Gout	38. High blood pressure
39. Hyperactivity	40. Urinary tract infection
41. Heart attack	42. Respiratory infections
43. Infections	44. Baker's cyst
45. Joint inflammation	46. Liver diseases
47. Spinal cord /spinal stenosis	48. Skin diseases
49. Autoimmune diseases	50. Eye diseases
51. Bowel disorders	52. Headaches/migraines
53. Tumour-related diseases	54. Neurodegenerative diseases
55. Dog bites	56. Surgery
57. Neuralgia	58. Ear infections
59. Osteomyelitis	60. Paronychia
61. Pancreatitis	62. Wounds
63. Insect bites	64. Disc problems
65. Polyneuropathy	66. Psoriasis
67. Prostatitis	68. Colds
69. Rheumatism	70. Scleroderma
71. Sciatica	72. Amyotrophic lateral sclerosis
73. Multiple sclerosis	74. PMS (premenstrual syndrome)
75. Sinusitis	76. Shoulder-arm syndrome
77. Down's syndrome	78. Complex Complex regional pain syndrome
79. Restless Legs Restless Legs	80. Withdrawal syndromes
81. Irritable bowel syndrome	82. Thrombotic tendency
83. ADHD	84. Achilles tendonitis
85. Tendinitis	86. Brain function disorders brain function
87. Circulatory disorders	88. Varicose veins
89. Developmental disorders in children	90. Skin ageing
91. Ageing	92. Shingles

6. Toxicity and safety

The table below shows the median lethal dose (LD₅₀) for various substances, in mice, following oral administration. This barbaric indicator measures the dose of a substance that causes the death of 50 per cent of a given animal population under specific experimental conditions. It is the mass of the substance required to kill 50 per cent of the animals in a batch. It is expressed in milligrams of active substance per kilogram of animal (mg/kg).

The higher the LD₅₀, the less toxic the substance is. Based on this indicator, for mice and following oral administration, DMSO

line (a neurotransmitter) to slow the heart rate. Acetylcholinesterase is an enzyme that breaks down acetylcholine.

¹⁵ An antimicrobial is a substance that kills microorganisms or prevents them from multiplying; an antiviral is a substance that prevents a virus from multiplying or reduces its ability to infect cells.

is 30 times less toxic than aspirin and nearly three times less toxic than table salt, as shown in this table:

	LD50*	Ratio to aspirin
Aspirin	250	
Paracetamol	338	1.4
Table salt (NaCl)	3,000	12.0
DMSO	7,700	30.8
Chlorine dioxide (ClO ₂)	10,000	40.0

LD50 in mice, by oral administration¹⁶

Furthermore, in the 1960s, a more ethical experiment was carried out on 40 volunteers, each of whom ingested 1 gram of DMSO per kilogram of body weight per day for 90 days, with no toxic effects observed. On average, each volunteer received 8 kg of pure DMSO over the period.

Finally, Dr Stanley Jacob (the ‘Father of DMSO’) tested it on himself: he *‘took one teaspoon [approximately 5 grams] of DMSO orally every day; by 2000, he had been doing so for 40 years. He says he decided that, if long-term use were to have a harmful effect on the human body, he would prefer it to be his own. Any effects? He hasn’t been ill for years.’* (extract from Daniel Haley’s book, see the bibliography).

There is only one conclusion: DMSO is an extremely safe medicine. If you still have any doubts, read *‘The Remarkable History and Safety of DMSO’* by the Midwest Doctor (summary and link in the ‘Articles by the Midwest Doctor’ chapter).

7. Cases and Testimonials

The books in the bibliography present an astonishing variety of case studies and testimonials regarding medical conditions treated with DMSO. The Midwest Doctor features these in each of his articles and has collected several thousand on his [blog](#).

7.1. Stroke

Excerpt from Archie Scott’s book (see the bibliography).

DMSO possesses a number of properties that make it valuable in the treatment of any condition affecting the brain.

A very important property of DMSO is its ability to cross the blood-brain barrier. It is one of the few substances capable of crossing this protective barrier [...]

A stroke often leads to a build-up of blood or fluid (cerebral oedema) in the brain [...] The build-up of fluid within the skull puts pressure on other brain cells, causing further cells to die. DMSO helps to remove excess fluid from the brain, thereby reducing pressure and limiting brain damage [...]

DMSO helps other blood vessels to take over from the damaged ones, which can save the life of a stroke victim.

DMSO also protects nerve cells from the disruption caused by a stroke. Other products have been used for this purpose, but DMSO offers better protection than the others. Another important aspect is the absence of harmful side effects associated with the use of DMSO [...]

¹⁶ Sources:

- Aspirin: National Toxicology Programme (NTP).
- Paracetamol: Toxicology and Applied Pharmacology 19 (1971).
- Ethanol and DMSO: *Acute toxicity of various solvents in the mouse and rat. LD50 of ethanol, diethylacetamide, dimethylformamide, dimethylsulfoxide, glycerine, N-methylpyrrolidone, polyethylene glycol 400, 1,2-propanediol and Tween 20.* W Bartsch, G Sponer, K Dietmann, G Fuchs. 1976. PMID: 1036956.

When a patient suffers a stroke, treatment with DMSO should begin as soon as possible [...] On arrival at hospital, the patient may be given DMSO added to their intravenous drip [...]

First case (late treatment)

Although early treatment is desirable, good results have been achieved when treatment was started a long time after the stroke. A good example of a patient who was not treated immediately is a woman from Eugene, Oregon, who did not receive DMSO treatment until three months after her stroke. This woman had been in a coma since her stroke. She was given little chance of recovery and was expected to remain in a vegetative state until her death.

When I first examined her, she showed no response to any kind of stimulus. She was alive, but seemed lifeless. It was decided that her treatment would consist of a daily topical application of DMSO to her head, carried out either by her husband or by one of the nurses at the facility.

One month after treatment began, positive signs appeared in this lady. Her brain was beginning to respond to the DMSO. Treatment continued, and four months after it began, she was able to return home. After returning home, this patient began drinking a teaspoon of DMSO in a small glass of water every day, in addition to the daily topical treatment. This treatment continued for several years.

Three years after starting DMSO treatment, the author of this article returned to visit this patient. At that time, the lady was leading a normal life, not that of a stroke victim. She was able to look after the house and walk normally. The only lingering effect of the stroke was a slight slur in her speech. She stated that her memory was better than that of her husband, who had not had a stroke and was considered to be in good health.

Second case (immediate treatment)

A teacher from Los Angeles suffered a severe stroke shortly after the start of the Christmas holidays. She was lying unconscious on the floor of her living room. Treatment with DMSO was started immediately after the stroke. DMSO was first applied topically to her head a few minutes after the stroke.¹⁷ Less than an hour after the stroke, she received an intramuscular injection of DMSO. This patient was never taken to hospital for this stroke. A renowned surgeon, who was a friend of the family, told the patient’s husband that it was important not to admit her to hospital. The surgeon explained that, although the treatment was entirely legal, it would be difficult to obtain authorisation to administer DMSO by injection at his hospital.

This patient made a remarkable recovery. She regained consciousness later that same day. Treatment continued throughout the following week. Every day, she received two topical applications of DMSO, one intramuscular injection of DMSO and two doses of one teaspoon of DMSO mixed with juice. Her condition improved day by day. When school resumed after 1 January, this teacher went back to work, teaching her pupils as if nothing had happened over the Christmas holidays. She never even mentioned it to the other members of the school staff. She continued to teach until she retired. She retired in good health, with no disability whatsoever.

– Chlorine dioxide (ClO₂): according to Shi, X. & Xie, J. (1999), cited by the ATSDR (www.atsdr.cdc.gov).

¹⁷ And probably on the carotid arteries, on either side of the neck, to deliver the DMSO to the brain as quickly as possible. This is a general principle: in an emergency, apply the DMSO to the artery or arteries upstream of the target area.

7.2. Alzheimer's and neurodegenerative diseases

Given the pharmacological properties of DMSO, particularly its ability to remove amyloid deposits, and the studies carried out on laboratory rats and mice¹⁸, it is not surprising to hear accounts of improvements in the condition of patients with Alzheimer's and other neurodegenerative diseases thanks to DMSO. Here are a few extracts from the 'Midwest Doctor's' blog:

[My father](#) has a long history of heart problems. He had his first heart attack in his late thirties. He was also diagnosed with familial hypercholesterolaemia around the same time. He underwent multiple procedures: open-heart surgery, but no transplant. He had been a very active sportsman all his life. He was able to walk several miles every day until the year his cardiologist pressured him – by scaring him – into getting vaccinated (even though he had witnessed the adverse reactions I had suffered following my previous vaccinations). He was 80 years old at the time. Less than a year after the vaccine, he could no longer go hiking and was lucky if he managed to walk 15 metres. His cognitive abilities declined dramatically during this period. He was diagnosed with a rapidly progressing form of Alzheimer's. By the end of the year, he was spending most of his time in bed. I began giving him 5 ml of 70 per cent DMSO orally once a day, mixed with juice. After two weeks, he was smiling at me again and was able to do exercises whilst seated on a chair. He also started walking short distances again, from 15 to 30 metres, after his chair exercises. Over the following two months, he managed to walk up to 100 metres. His decline seems to have stabilised somewhat.

[My uncle's wife](#) suffers from dementia and had been unable to speak for over a year. My mother recently visited them and told them about DMSO. He began giving his wife DMSO orally. After two weeks, she started speaking again.

I started giving my 93-year-old mother DMSO in her fruit juice every morning at the end of November. She has been suffering from a form of dementia for over 15 years. For about a year, she had been suffering from very severe episodes of sundowning¹⁹ and was no longer able to follow instructions.

Since she's been taking DMSO, she no longer suffers from these episodes. She's more alert and can communicate and laugh with us. She's regained her personality. She crosses her legs again and raises her little finger when she drinks her coffee. It's all these little things that make the difference. She now understands when I ask her to go to the toilet. Her cognitive abilities have improved and she has started colouring in her colouring books again. I tell everyone about it.

Ten months ago, I felt I was losing my short-term memory and started taking methylene blue mixed with ascorbic acid, whilst continuing to take high doses of vitamin C for about eight months; I've found that my short-term memory has improved considerably, as have my cognitive abilities. I've just started taking DMSO orally with sodium ascorbate every day for the past week and I'm amazed by the mental and physical well-being I'm experiencing.

¹⁸ For example, in mice genetically modified to develop Alzheimer's disease, it has been shown that DMSO increased neuronal density in the hippocampus (a region of the brain vulnerable to Alzheimer's disease) and improved their spatial memory and sense of smell, whilst reducing their anxiety and normalising neuronal hyperactivity in the hippocampus. doi.org/10.1016/j.neuropharm.2016.10.020

[I am](#) now in my fourth week of trying DMSO to treat Parkinson's disease. The dose I was taking at the start was too high, so I temporarily stopped the treatment. By the second day of the break, my Parkinson's symptoms had almost disappeared and I felt better than I had in ages. The greatest improvement has been the relief from bradykinesia²⁰. Having been sluggish for the past few years, I've suddenly become 'Mr Speed'. At [a lower dose], I experience a slight brain fog for about an hour, then I enjoy the benefits of DMSO for the rest of the day.

As for how my symptoms have responded to DMSO, over these first four weeks, it is pain, speed and range of movement that have improved the most, followed by stiffness. The tremors seem to be taking longer to respond, but there are already subtle signs of improvement. My family and I have also noticed improvements in a whole range of other symptoms: more animated facial expressions, increased comfort in my eyes (better blood flow), a stronger voice, more energy, better coordination between my left and right hands (fewer typing errors on the computer keyboard) and more legible handwriting. Most importantly, I'm experiencing periods where I feel really well, which didn't happen before. I have no doubt that DMSO is having a beneficial effect.

7.3. Cancer

Two extracts from Dr Morton Walker's book (see bibliography).

Adenocarcinoma of the colon

In April 1974, Joe B. Floyd, a fifty-six-year-old executive at Exxon Oil, now living in Spring, Texas, found himself suffering from rectal bleeding. Realising that this was a worrying sign, Mr Floyd consulted his company's occupational health doctor, Dr C. Hunter Montgomery. Dr Montgomery's physical examination revealed that his patient was suffering from a potentially fatal form of colon cancer: adenocarcinoma.

Adenocarcinoma is one of the most aggressive forms of cancer. Every year, it kills around 9,500 Americans. This cancer affects all age groups, but its incidence increases with age [...]

Unfortunately for Mr Floyd, his adenocarcinoma had spread to the lymph nodes. These had become rubbery. The cancer had also metastasised rapidly to the liver. Compression symptoms had developed due to the enlargement of the lymph nodes in the abdominal cavity, causing gastric disturbances. Weight loss, fever, night sweats and general weakness were sapping the patient's strength, indicating that his cancer was progressing.

Dr Montgomery referred Joe Floyd to the colorectal surgeon Wade Harris, M.D., in Houston, who resected 20 centimetres of the patient's large intestine, as well as the lymph nodes in his peritoneum where the cancer had spread. Dr Harris advised Mr Floyd to undergo chemotherapy, as he was certain that, within just a few months, the adenocarcinoma would reappear elsewhere. The surgeon also mentioned that his own wife was suffering from the same condition. Mrs Harris had adenocarcinoma and was undergoing chemotherapy at the M.D. Anderson Cancer Institute, a huge hospital complex in Houston.

Dr Harris would have liked Mr Floyd to follow the same course of chemotherapy as Mrs Harris, but Mr Floyd hesitated for a long time

¹⁹ Sundowning: a state of mental confusion occurring at the end of the day and common in Alzheimer's disease and other neurodegenerative disorders.

²⁰ Bradykinesia: an inability to perform certain simple movements.

before finally refusing [...] Two years earlier, he had seen a television documentary, presented by journalist Ron Stone of KHOU-TV Houston, which described the cancer treatments developed by another Houston doctor, Dr E.J. Tucker. Mr Floyd was determined to find out more about this alternative treatment.²¹

"The following Monday morning, my wife and I visited Dr Tucker and, after much persuasion, he agreed to treat me on an experimental basis," explained Mr Floyd.

"A man on the brink of death can make a very strong case for wanting to live. Within six weeks, Dr Harris's wife had died as a result of the chemotherapy. But I was back at work in downtown Houston, at the Exxon Building, and I was undergoing treatment every other day at the doctor's surgery (I had no nausea or any of the symptoms that usually result from chemotherapy). After about eighteen months, my CEA (carcinoembryonic antigen) levels were well below normal and Dr Tucker declared me cured. I had to return for a check-up every thirty days. Nowadays, we have a check-up every three or four months and my CEA level remains below normal."

Blood CEA levels are used to assess the activity of cancer cells in a person with a malignant tumour. Mr Floyd's CEA level has fallen from a peak of eighteen to zero (the normal range) today.

During our last conversation, on 16 May 1989, J.B. Floyd, then aged seventy-one, had retired from Exxon and was the wealthy owner of twelve oil wells in Texas. He derived great satisfaction from running his small health food shop, providing healthy food for his small Texan town. Being an entrepreneur in the health food sector was his hobby and a source of complete fulfilment; being alive and in good health was the answer to his prayers, which he attributed to the research of Dr E.J. Tucker.

Mr Floyd benefited from a treatment based on a discovery made by Tucker in 1966, which, to date, has been ignored by the medical community specialising in cancer. The M.D. Anderson Hospital, one of the world's leading centres for cancer research and treatment, located a stone's throw from Tucker's practice, is not even trialling this treatment, as *half of its components include DMSO in the therapeutic compound's composition*.

The decision to ignore Tucker's compound is based primarily on political and economic considerations [...]

DMSO and cyclophosphamide (study in Chile)

In Chile, Dr Jorge Cornejo Garrido, head of the oncology department at the military hospital and an oncologist at the 'López Pérez' Foundation in Santiago, together with Dr Raúl Escobar Lagos, head of the radiotherapy department at the 'Caupolicán Pardo Correa' Institute at the University of Chile, used chemotherapeutic agents and DMSO in sixty-five patients with various types of cancer.²² All these patients had been diagnosed as incurable and had already undergone conventional treatments. This combination of drugs and DMSO demonstrated enhanced antineoplastic activity (destruction of cancer cells) thanks to the potentiating and penetrating properties of DMSO. It significantly reduced the toxic side effects of cyclophosphamide, the chemotherapeutic agent used, particularly during prolonged treatment.

²¹ A treatment based on a solution of haematoxylin in DMSO, administered in various ways depending on the type of cancer, as described in Dr Walker's book (see the bibliography and also the articles by Dr du Midwest on cancer). Haematoxylin is a natural dye extracted from logwood and has long been used in histology. The Maya and Aztecs of Central America were already using it as a dye.

The doctors divided their patients into three categories of cancer: lymphomas, breast cancer and other cancers. They reported the following:

The best results in terms of clinical improvement were achieved by the lymphoma group.

The beneficial effect on patients' anaemia was significant; patients appeared more alert and more inclined to resume their usual activities shortly after the start of treatment. Furthermore, a marked reduction in pain was observed and, in many cases, there was no need to resort to morphine.

There is a clear synergy between DMSO and cyclophosphamide when the latter is dissolved in DMSO with amino acids, allowing for lower daily and total doses of cyclophosphamide than those generally used, without compromising therapeutic efficacy.

Patients who cannot tolerate cyclophosphamide in saline solution tolerate DMSO-based treatment well.

Furthermore, a cancer researcher has discovered a way of inducing cancer cells to behave more normally by triggering a mitotic 'reversal': Dr Charlotte Friend, of Mount Sinai Hospital in New York, injected DMSO into mice with leukaemia and was astonished to discover that the cancer cells began to perform normal cellular functions as a result of the injected solvent. She found that 90 per cent of the cancer cells began to produce haemoglobin, something that leukaemia cells do not do.²³

7.4. Whiplash (accident)

Following a rear-end collision or even a sudden change in speed, whiplash is characterised by various, potentially severe problems affecting the neck, head, shoulders and torso, as well as a range of symptoms: stiffness, pain, headaches, dizziness, tinnitus, and visual and hearing problems.

Several of DMSO's pharmacological properties may be beneficial in treating the effects of whiplash: pain relief, muscle relaxation, tissue regeneration, cellular stabilisation, etc.

Extract from Dr Morton Walker's book (see bibliography).

Marvin Combs, a handsome man six feet tall from Bradenton, Florida, doesn't look his sixty-six years. He still works tirelessly in the construction industry as a contractor.

Marvin Combs recounts his accident:

'After being involved in a car accident that left me with a terrible whiplash injury and also exacerbated other pre-existing health problems, DMSO brought about a marked improvement in my back pain and other ailments. The medication prescribed by other doctors had produced no results. But the solicitors handling my accident claim felt I should continue seeing my regular doctors. So I had to stop the DMSO treatment. Once again, the numerous prescribed painkillers produced no results and merely added to the cost of my prescriptions.

Given how I feel today, I will undoubtedly return for a new course of DMSO treatment [once my compensation claim has been settled], as it is the only thing that, in all honesty, has brought me relief, including for the pre-existing problems that worsened following the accident. For me, it's brilliant that there's a way to help people other than making them swallow loads of tablets.'

²² Garrido, J.C., and R.E. Lagos. *Dimethyl sulfoxide therapy as a toxicity-reducing agent and potentiator of cyclophosphamide in the treatment of different types of cancer*, Ann. N.Y. Acad. Sci., 245:412–420, 1975.

²³ Friend, C., and W. Scher. *Stimulation by dimethyl sulfoxide of erythroid differentiation and haemoglobin synthesis in murine virus-induced leukaemic cells*, Ann. N.Y. Acad. Sci., 243:155–163, 1975.

Unfortunately, the cost of products such as DMSO is not covered by insurance, as this substance is not recognised as a medicine. This is despite Combs' medical records stating:

'Admitted with severe pain in the neck, left arm and right forearm, some tenderness in both legs and generalised arthritis. After five days, he was sleeping "like a baby because I have absolutely no pain at all". Relief set in after the third injection. He was able to resume his usual routine immediately after completing the DMSO treatment.'

One way of assessing the progress achieved through the use of DMSO for weakened and arthritic joints is to measure hand grip strength before and after DMSO treatment using a blood pressure cuff identical to that used to measure blood pressure. The patient then grasps the cuff and squeezes it as hard as possible to raise the mercury level on the manometer as high as they can. A man of average strength should be able to exert a pressure of between 200 mm and 300 mm of mercury (Hg).

Before DMSO treatment, Combs could only raise the mercury to 40 mm Hg with either hand. Within three days of intravenous DMSO treatment, he doubled his grip strength, reaching 80 mm with each hand.

Dr Fischer's treatment (page 141 of his book – in English): apply DMSO to the skin and, at the same time, take it orally.

7.5. Herniated and/or protruding disc

A case study by Dr Fischer

Extract from his book, page 173.

M.F., aged 31, was suffering from a problem with an intervertebral disc in the lumbar region, which he attributed to spending too long sitting at work. His condition rapidly worsened and showed the signs of a pinched nerve. His doctor recommended immediate surgery, which was carried out the following week, but the only benefit was an endless series of temporary remissions. Faced with this situation, I advised him to take DMSO both topically and orally on a daily basis, which led to a very positive result within two weeks: *"I was surprised to find that I could move as I used to and was no longer afraid to walk. The scar has also faded considerably."*

My personal case (Francis Leboutte)

Seventeen years before I am writing these lines, following intense pain in my lower back, I underwent a lumbar CT scan and was diagnosed with a disc protrusion at the L4-L5 level, most likely caused by prolonged sitting associated with my work (the radiologist's report stated: *'Left posterolateral disc protrusion coming into contact with the emergence of the left L5 nerve root at the level of the spinal canal'*). The pain was particularly severe and consistent when moving from a sitting to a standing position, to the extent that at times I thought it would be impossible to stand up. This resulted in over a year of full or partial sick leave and the necessary change of job to limit the amount of time I spent sitting. I believe that the treatment I received (physiotherapy, back training) and the recommended measures (walking, exercises) were helpful, although they were not very effective given the time it took to return to a more or less normal level of activity. I did not take any other treatment.

Seventeen years later, I experienced the same symptoms, particularly severe pain when standing up from a sitting position. The big difference was that, in the meantime, I had learnt about DMSO and started using it straight away. What surprised me most was how quickly the pain relief kicked in – from the very first application –

allowing me to sit down and stand up without any real difficulty and to go about my business as usual, whilst taking care, of course.

In the first few days, as the pain would return after a few hours, I applied 70 per cent DMSO two or three times a day to my spine (around 20 to 30 drops in a saucer, taken with my fingers and applied to and on either side of the spine, starting from the sacrum and going as high up as possible). In addition, once a day, I took an oral dose of two millilitres of pure DMSO in a glass of water. After three days, I increased the dose from two to five millilitres.

After about ten days, I switched to a single topical application per day, whilst maintaining the oral dose of 5 ml. By the end of the third week, I felt I was cured, but I continued the treatment for a further two weeks to ensure a full recovery, fully convinced as I was of the absence of toxicity and the risk of side effects from DMSO. After that, I went about my business as usual.

It seems obvious to me that had I used this treatment when my first protrusion appeared, I would have been spared over a year of misery and difficulties of all kinds, particularly at work. But, as is sometimes the case, an unpleasant experience can have a positive side: without it, this document would probably never have seen the light of day.

7.6. Joint disorders (osteoarthritis, arthritis, etc.)

Numerous reports suggest that DMSO is often effective in treating joint conditions: arthritis (inflammation of microbial or autoimmune origin), osteoarthritis (degeneration of cartilage) and other arthropathies (gout, tendinitis, bursitis, sprains, etc.). This is not surprising given the pharmacological properties of DMSO: anti-inflammatory, antimicrobial and immune-modulating effects, as well as regenerative properties enhanced by its ability to transport the nutrients required by cartilage.

Extract from Dr Morton Walker's book (see bibliography).

Ruth P. Lewis, aged sixty-four, from Sarasota, Florida, suffered so severely from rheumatoid arthritis²⁴ that she could no longer walk without the aid of a four-legged walking frame. Having suffered from joint problems for over twenty years, she had also recently sustained a back injury, and her doctors had prescribed complete bed rest for at least six months. This was the only solution, they had insisted.

Mrs Lewis realised that staying in bed for so long might prevent her from ever walking again, even with the aid of her walker. So, rather than spend the rest of her life lying on her back, she asked her son and husband to carry her to the Douglass Preventive Medicine Clinic, then located in Marietta, Georgia (the clinic has since moved to Clayton, Georgia), to undergo a course of DMSO treatment.

"I had already been suffering for many months from severe pain in my hips and legs; I'd consulted specialists, visited diagnostic clinics, been hospitalised for traction and undergone other procedures," said Mrs Lewis. *"When I entered the clinic for the DMSO treatment, I was unable to put both feet on the ground. After two and a half weeks of intravenous DMSO treatment, I walked out of that clinic unaided – without a cane or any other support."*

"I hadn't been able to make a full fist with my right hand for over a year. The intense pain even kept me awake at night. But after treatment with intravenous, topical and oral DMSO, I can now make a firm fist. The arthritis hasn't returned. I cannot find the words to describe what this medicine has done for me. I highly recommend it," said Ruth Lewis.

²⁴ An inflammatory autoimmune (rheumatoid) disease that progressively destroys the joints.

A commonly recommended treatment is to apply 70 per cent DMSO (or perhaps a lower concentration for areas above the waist) to the joint and the surrounding area once a day. If necessary, this can be repeated several times a day, alongside a daily oral dose.

7.7. Achilles tendinitis

Extract from Dr Morton Walker's book (see bibliography).

In 1963, Dr Jacob was conducting his initial research into DMSO as a medicine. Meanwhile, Sam Bell was a coach for top-level university athletes. Here is his testimony before a Senate committee on health chaired by Senator Edward M. Kennedy on 31 July 1980, regarding DMSO and the role of the FDA.

'At that time [in 1963], I had two athletes who were suffering from leg problems.'

The two athletes described by Sam Bell were Morgan Growth and Norman Hoffman, both world-class 800-metre runners. However, Growth had inflammation of the Achilles tendon and Hoffman was suffering from a strained hamstring.

'We'd had a chronic problem with both of them, and whatever we were doing in terms of training wasn't having any effect on them. I'd read in the newspaper about some of the things Dr Jacob had discovered with DMSO, so I rang him at the University of Oregon Medical Centre and asked if I could bring these two athletes to him. We went there. He examined them, gave us some DMSO and told us how to use it. We applied it topically; that is, we put it on the skin.'

Morgan Growth's recovery from his tendon injury was quite simply remarkable. According to Sam Bell, an Achilles tendon injury is a chronic condition that almost never heals on its own when it is severe. But that spring, Growth won the NCAA mile title at the University of New Mexico.

And Norm Hoffman's hamstring problem, which had been preventing him from training, was completely resolved. Hoffman went on to become the 1963 NCAA champion in the 880 metres.

Treatment according to Dr Fischer (page 142 of his book): apply a generous amount of 70 per cent DMSO to the affected area. In severe cases, do this two to three times a day.

8. Precautions and contraindications

8.1. Allergy test

One in 2,000 people is allergic to DMSO²⁵. Before using DMSO, check that you are not allergic by having a patch test.

Patch test

Apply two or three drops of DMSO (70 per cent solution – see the 'Dilution' section below) to a small *area of skin that is completely clean and free from any traces of soap or cosmetic products*, particularly non-natural ones, on the forearm, for example. Leave *to air-dry* (without any contact with clothing or anything else) for 20 minutes, then wait several hours:

- Itching, tingling, redness or a sensation of warmth may occur. You may also feel nothing at all.
- If you experience redness beyond the area of application, swelling or pustules: rinse with clean water; DMSO is probably not suitable for you. However, you can repeat the test us-

ing a less concentrated solution (50 per cent) and on the skin of your leg (which is less sensitive to DMSO than the skin on the upper body). It is possible that this sensitivity to DMSO may decrease over time.

8.2. Other precautions

DMSO can irritate mucous membranes. If you experience any problems, rinse with clean water. If it comes into contact with the eye, rinse for several minutes, keeping the eye wide open (remove contact lenses if necessary).

To avoid any unpleasant surprises, take care not to spill DMSO on your clothes, furniture, flooring, etc., as DMSO may damage them.

As pure (i.e. undiluted) DMSO is a flammable liquid, it must be stored away from any open flames.

8.3. Contraindications

The pharmacological properties of DMSO may mean it is contraindicated in certain medical conditions: consult your doctor, read the following section (*Interactions with other medicines*) and read the chapter on the pharmacological properties of DMSO carefully.

Like other drugs and medicines, the effects of alcohol are potentiated by DMSO, and its toxicity is therefore increased by DMSO: avoid alcohol whilst using DMSO.

8.4. Interactions with other medicines

The simultaneous administration of DMSO with other substances, including medicines and others (alcohol, tobacco, etc.), often leads to an enhancement of their effects, as DMSO, acting as a molecular channel opener and transporter, facilitates or enables the passage of substances through biological membranes. This property can be utilised to reduce the dose of poorly tolerated medicines and to enhance the potency of active ingredients.

Following absorption, DMSO has an average half-life of nearly two days in the body. Both unchanged DMSO and its main metabolite, MSM, are primarily excreted via the kidneys.

Caution is advised when taking other medicines, as DMSO can transport them more efficiently throughout the body and significantly enhance their effects (this is, in fact, one of the benefits of DMSO: the possibility of reducing the dose of an allopathic medicine and its side effects²⁶). Seek advice from your doctor in such cases, particularly if you are taking anticoagulants or steroids.

See also Dr Fischer's FAQs below.

8.5. Side effects

These are rare and minor.

When applied topically, some people may experience sensations on the skin, usually mild (tingling, itching and slight redness), which last only a few minutes or hours. If necessary, rinse with water or apply pure aloe vera gel to soothe the sensations, and subsequently use a less concentrated DMSO solution.

Generally, sensitivity increases from the lower to the upper part of the body, which means that some people will apply 70 per cent DMSO, or even undiluted DMSO, to their legs and 50 per cent DMSO to their head: it is up to each individual to find what suits them best. Sensitivity is sometimes greater in skin folds. Generally, people with blonde or red hair have skin that is more sensitive to DMSO.

²⁵ It appears that this often affects people who are already allergic to certain other substances, such as eggs.

²⁶ For example, the benefit of combining DMSO with steroids (see the article by Dr du Midwest below, 'DMSO-based drug combinations'): 'DMSO significantly increases the efficacy of steroids; studies have shown that a 0.025 per cent concentration of fluocinolone in DMSO is

as effective as 0.2 per cent fluocinolone on its own, representing a tenfold increase in efficacy. This increased efficacy allows for the use of much lower doses of steroids whilst achieving equivalent therapeutic results, thereby avoiding many of the serious side effects associated with higher doses of steroids and prolonged systemic use.'

After use, some people may give off a smell reminiscent of garlic or the sea. Nothing unbearable, however...²⁷

9. Use

DMSO is most commonly used in diluted form, to a greater or lesser extent, and via all possible routes of administration: topical (external) use, oral administration and other routes, injection and infusion. Only the first two routes are discussed in this document (topical and oral) – see the articles by Dr du Midwest and the bibliography below for the other routes.

There is considerable variation in how individuals respond to DMSO, whether applied topically or taken orally. It is therefore recommended to start with a very low dose, which should be increased gradually until the desired effect is achieved.

9.1. General recommendations

For actual use:

- 1) Start using DMSO at a low concentration and in small doses. Increase gradually as necessary.
- 2) It is recommended to start with external use only, before possibly adding oral intake. Oral administration may be used on its own.
- 3) When taken orally, the concentration of the DMSO solution must not exceed 5 per cent, otherwise it may irritate the mucous membranes of the throat. For example:
 - 5 ml of pure DMSO in 100 ml of water (at least).
 - 10 ml of pure DMSO in 200 ml of water (at least).
 - 15 ml of pure DMSO in 300 ml of water (at least).
- 4) For topical application, Dr Fischer recommends never using pure DMSO, *unlike some others*.

9.2. Handling DMSO

To avoid the risk of contaminating the bottle (stock) of DMSO, open it as little as possible and do not draw DMSO directly from it. It should only be used to pour the appropriate amount into a vial or container for daily use.

9.3. Topical application (local use)

Application to the skin or into body orifices, such as the ears and nostrils. Absorption is rapid: DMSO can be detected in the blood just a few minutes after application, reaching a peak level after around five hours before then declining slowly over several days (plasma half-life of 20 hours when administered orally, 12 hours when applied topically)²⁸. This shows that any external use will have a systemic effect (on the whole body) and on areas of the body distant from the application site. This can sometimes lead to pleasant surprises: it is not uncommon to see a health problem disappear even though that was not the primary objective.

- As a general rule:
 - DMSO should not be used in its pure (undiluted) form.
 - The DMSO solution should be applied once or twice a day.
- The skin's sensitivity to DMSO²⁹ increases from the lower to the upper parts of the body. Some people with very sensitive

skin cannot tolerate DMSO at concentrations of more than 30 per cent, or even lower on the face. Others apply pure DMSO (99.9 per cent) to their legs, feet or hands without experiencing any tingling or other sensations. Consequently, always start with DMSO diluted to 30–40 per cent – or even 20 per cent on the head – before moving on to higher concentrations.

- The area to be treated, which may be larger or smaller, must be perfectly clean³⁰ and free from any traces of soap, cosmetics – particularly those containing synthetic ingredients – and any other substances that could be absorbed by the DMSO and thus enter the body³¹ (clean with a damp, neutral cotton cloth).
- Given the fluidity of aqueous DMSO solutions, in some cases the amount to be used will be minimal, around one millilitre.
- How to apply the DMSO solution to the affected area:
 - Use your fingers or the palm of your hand, taking care to spread the solution evenly. You may find it handy to pour the solution into a saucer or a glass or porcelain bowl (for several days' use) and scoop some out with your fingers. Don't forget to rinse your fingers with water before moving on to something else.
 - Using a natural-bristle brush (not synthetic!). For example, a glue-free hog's-hair brush. Dab or brush on.
 - Using a cotton pad (100% pure, preferably organic).
 - For small areas of skin, use a cotton bud (organic and glue-free).
 - Do not use gloves! Very few are resistant to DMSO.
- Leave to air-dry for 20 minutes before allowing the skin to come into contact with clothing or any other material, particularly if the garment is made of synthetic fabric or is new³².

To treat the nostrils, whilst lying down, use a dropper to apply two or three drops of 25% DMSO, then press both nostrils closed with your fingers and massage gently to distribute the solution. If necessary, increase the concentration afterwards.

The same technique applies to the ear canals, but whilst lying on your side, for example, to treat inflammation of the ear canal, eczema or tinnitus. One or two drops are sufficient.

Recommended concentrations depending on the treatment required

According to Dr Fischer, the recommended concentrations and quality standards for aqueous DMSO solutions are as follows:

- Feet and legs: 60–80 per cent.
- Joints and muscles of the torso and arms: 40–70 per cent.
- Muscle and tendon injuries to the arms and legs resulting from physical exertion: 60–75 per cent.
- Neck and head: 30–50 per cent.
- Ear and nose (drops): 25–50 per cent (³³ e isotonic solution).
- Open wounds: 30–60 per cent (sterilised, isotonic solution).³⁴
- Warts: 80–90 per cent (apply the solution with a cotton bud).

substances, particularly any pollutants on the skin. Secondly, DMSO penetrates the skin very rapidly, entering the bloodstream and spreading throughout the body.

³¹ When applying it to the head, care should be taken to avoid any residues that may come from glasses, hair dyes, make-up, etc.

³² General advice (not specific to DMSO): all new clothing should be washed at least once before being worn.

³³ Solution prepared with saline solution (water with a salt concentration of 0.9 per cent).

³⁴ May be used in combination with a chlorine dioxide solution.

²⁷ This odour is caused by dimethyl sulphide (DMS, CH₃–S–CH₃), a derivative of DMSO excreted through the skin and breath; this effect varies from person to person and lasts from a few hours to two or three days. The doctor from the Midwest offers suggestions for [reducing this odour](#) (in English), as does Dr Fischer (see his FAQ below).

²⁸ DMSO toxicological data sheet, INRS (French National Research and Safety Institute) database, inrs.fr/dam/ficheTox/FicheFicheTox/FICHETOX_137-1.pdf.

²⁹ This manifests as a tingling and burning sensation that subsides after a few minutes.

³⁰ In this regard, two characteristics of DMSO must be taken into account: firstly, it is a very powerful solvent capable of dissolving many

- Eye: 0.5 per cent (sterilised, isotonic).
- To administer large quantities of DMSO through the skin of the legs, a 60–80 per cent solution may be used. For example, 20 ml of an 80 per cent solution (approximately 17.5 g of DMSO) applied in several instalments.

Dr du Midwest's recommendations, which differ from those of Dr Fischer:

- Eye: 3 per cent, or even higher. The eyelids can tolerate a higher concentration and the application will also have an effect on the eyes.
- Warts and boils: 75 per cent.
- Mouth ulcers and cold sores: dab directly with highly concentrated DMSO (up to 100 per cent).
- Gum inflammation: 5–15 per cent mouthwash, for approximately 3 minutes. A higher concentration may be used if the patient has no dental implants.
- Rectal and vaginal use: 10 per cent or less.

Advice and comments from Dr du Midwest

Only use DMSO at concentrations above 70% if you are certain you are among those who can tolerate a 100% concentration, or if you are using it for a specific application that warrants a high concentration (for example, collagen contracture, a scar, internal adhesions or an acute stroke).

Start by applying DMSO to small areas before moving on to larger areas, as this will allow you to determine the amount of DMSO that is suitable for you and avoid any overdose. However, some conditions only respond if DMSO is applied to a large area of skin.

Sometimes, topical application is not sufficient. In such cases, injections may be required, or DMSO may need to be mixed with another medication.

The best results are achieved when a large amount of DMSO is used and applied not only to the target area but also more widely. For example, for osteoarthritis of the knee, apply DMSO from the thigh down to the ankle.

To quote Dr Stanley Jacob: *"In cases of acute pain, such as a severe sprain or a burn, we apply DMSO every two or three hours."*

Apply DMSO to the artery that directly supplies the targeted area. For example, you can apply it to the back, near the pulmonary arteries, whilst the person is lying on their stomach, to help it reach the lungs, or on the carotid arteries (in the neck) whilst the person is lying on their back, to direct the DMSO to the brain (which is useful in the event of a stroke).

If I hadn't managed to persuade people very close to me to use DMSO as soon as their stroke occurred, they would probably have had to live with a lifelong disability.

DMSO gel

Aloe vera-based DMSO gel is another way of using DMSO topically.

Advantages: – easier to apply; – no risk of leakage; – effect spread over a longer period.

Disadvantages: – much slower absorption of DMSO (problematic for certain conditions); – some of the DMSO will not be absorbed; – less potent than in liquid form.

9.4. Oral administration (systemic use)

Start with a low dose, ranging from a few drops³⁵ to 1 ml of DMSO in a glass of water (for measuring, see the 'Equipment' section below). Please note that as DMSO is denser than water, it will settle at the bottom of the glass: mix thoroughly with a spoon (stainless steel, not plastic). If, after two or three days, you do not notice any improvement in your condition, increase the dose.

Even when applied externally to the skin, DMSO has a systemic effect, which may offer an alternative to oral administration. The notable difference is that DMSO absorbed orally and reaching the intestine will first pass through the liver (via the portal venous system). However, it does appear that the route of administration of DMSO (oral, topical, intravenous) makes no difference to the final blood DMSO level. That said, the distribution of DMSO via the topical route is faster (and, logically, the half-life of DMSO is therefore slightly shorter).

As DMSO has an unpleasant taste, some people recommend taking it with a sugary drink (fruit juice, lemonade, etc.). This seems to me to be bad advice: on the one hand, you will be consuming sugar, a substance whose toxicity is widely underestimated and denied; on the other hand, the unpleasant taste of DMSO serves as a reminder that it is a medicine and not a sweet treat.

Advice from the Midwest Doctor

Until you feel comfortable with topical application, do not take it orally, and only do so if you think you need to.

Start small, as described above, and, if necessary, to achieve a greater effect, increase the dose to one teaspoon in a glass of water, which is a common optimal dose (i.e. 4 to 5 grams of pure DMSO).

Generally recommended doses based on body weight: 0.05 to 0.1 g of pure DMSO (99.9 per cent) per kilogram of body weight.

In an emergency (heart attack, cancer, etc.), the dose may be increased to a maximum of 2 g of DMSO per kilogram of body weight.

Please note: more than three teaspoons of pure DMSO in a glass of water [approximately 15 ml or 16 g of DMSO] is too much, and in this case, it is better to spread the dose throughout the day. If more than 15 ml of DMSO is added to 300 ml of water, the DMSO solution becomes irritating to the mucous membranes of the throat.

As a reminder, in an experiment conducted in the 1960s, 40 people were given 1 gram of DMSO per kilogram of body weight per day for 90 days, with no toxic effects observed (see the section on *Toxicity and Safety* above).

³⁵ Generally, one drop is approximately 0.05 ml (20 drops per 1 ml). See the dropper manufacturer's instructions.

However, various factors come into play: the type of dropper, the viscosity of the liquid and the temperature. Expect marked differences between water, pure DMSO and DMSO solutions; similarly, expect differences between pipettes, even those from the same manufacturer.

It is best to base your measurements on the weight of a single drop of the solution in question for the pipette you intend to use: this can be determined by weighing 20 or 30 drops on a balance accurate to at least one-tenth of a gram.

Recommended doses

Recommended doses in grams of pure DMSO based on body weight:

Body (kg)	Start with	0.05 g/kg	0.1 g/kg	Maximum (in an)
50	0.7	2.5	5.0	50
60	0.8	3.0	6.0	60
70	1.0	3.5	7.0	70
80	1.1	4.0	8.0	80
90	1.3	4.5	9.0	90

DMSO should be diluted in a sufficient volume of water to ensure the concentration remains below 5 per cent (a maximum of 14 ml of pure DMSO in 300 ml of water)

When should you take DMSO?

Many people take it after breakfast or another meal, but you can take it at any time of day. Bear in mind, however, that DMSO has a diuretic effect, which means you'll need to urinate more frequently within two or three hours of taking it. You should therefore avoid taking it before going to bed or before a meeting.

10. Dilution

Generally, you'll start with pure DMSO (99.9% – see the 'Purchasing' section), which is diluted with water to produce an aqueous DMSO solution at the desired concentration.

DMSO dissolves perfectly in water. You can use water in one of the following forms:

1. Sterile saline solution for medical use (a sterilised aqueous solution containing 0.9 per cent sodium chloride – NaCl). Around €3 for a 100 ml glass bottle, available from pharmacies.
2. Sterilised water for injection. Around €2.50 for a 100 ml glass bottle, available from pharmacies.
3. Distilled water sterilised by boiling.
4. Distilled water.
5. Good-quality water.

Applying a DMSO solution made with non-sterilised water to healthy skin is not a problem. However, using sterilised water is necessary for certain applications and preferable for a preparation that is to be kept for some time, as this will ensure it is suitable for all types of use.

To store DMSO solutions, use amber (non-transparent) glass containers – see the 'Containers' section.

Diluting DMSO generates heat: the solution and the bottle heat up during dilution.

Once the diluted DMSO solution has been prepared, label the container appropriately (dilution percentage, type of water and date) and keep it upright to minimise contact between the DMSO and the stopper and, where applicable, the dropper.

If you do not feel confident about preparing a dilution, your pharmacist can do so according to your instructions, particularly in the case of sterile or highly diluted preparations, such as eye drops, which are more delicate to prepare.

To prepare a sterile DMSO solution for topical application, sterile DMSO should ideally be used, although microorganisms and viruses are unlikely to survive in pure DMSO (99.90 per cent or,

better still, 99.99 per cent). However, for injections, sterilised DMSO is essential.

Dr Fischer suggests other types of dilution (see the FAQ below).

10.1. Dilution calculator

On the website dmsocalculator.com, there is an easy-to-use dilution calculator.

This tool calculates the volumes required to obtain a specific volume of DMSO solution at a given concentration, using either pure DMSO (99.9%) or a non-pure form as the starting material. Please note that this calculator does not take into account the difference in density between water and DMSO; whilst this is not entirely accurate, it is of little significance as the density of DMSO is close to that of water. See the 'Equipment' section below for an example of dilution.

11. Containers

The preferred material for DMSO vials is amber glass:

- Glass, as it is more chemically stable than plastic (as DMSO is an excellent solvent, it is capable of absorbing manufacturing residues from the plastic present on the surface and can even attack certain plastics). Preferably choose Type I glass (borosilicate), better known under the brand name 'Pyrex'.
- Amber-coloured, as DMSO reacts to light.

However, HDPE (high-density polyethylene) may be suitable for the bottle, particularly as the DMSO will be of low concentration and not intended for long-term storage (several months or years).

Ideally, plastic stoppers should be made of HDPE. LDPE (low-density polyethylene) and PP (polypropylene) are generally considered to be compatible with DMSO, particularly if the DMSO is diluted.³⁶ Glass vials fitted with a plastic stopper should be stored upright and prepared appropriately (see below).



Laboratory-grade ground-neck (polished) vials (with glass stoppers) are ideal (see the image opposite), particularly for long-term storage (several years), whether the DMSO is pure or not (but, of course, not for transport). For long-term storage, a diluted solution must be prepared using sterilised water, taking great care and observing the highest standards of hygiene.

Store DMSO solutions in a cool, dark place, or even in the fridge (DMSO freezes at 18.5 °C: there is no risk of the glass vial breaking, unlike water freezing in a glass bottle)³⁷.

Finally:

- Please also note that DMSO is compatible with steel, aluminium, porcelain and PTFE (polytetrafluoroethylene, better known by its trade name Teflon – a PFAS!), but not with silicone.
- If in doubt about the compatibility of a plastic item, place it in a glass, pour pure DMSO over it and leave it to stand for 24 hours or more: the DMSO must remain clear and colourless and, of course, the plastic must remain unaffected.
- Materials, including plastics, are marked with a number (code) inside a black triangle with three arrows, as shown below.



³⁶ The quality of manufacture matters. Other plastics are compatible. Primarily, PTFE (polytetrafluoroethylene [code 7], the substance from which Teflon is derived), which is not recommended from an environmental perspective as it contains PFAS and is also more expensive.

³⁷ It is not uncommon for DMSO to crystallise or freeze in its bottle: it will return to a liquid state at room temperature of 20 °C or above. If necessary, you can place it on a radiator, wrapped in an opaque cloth, until it returns to a liquid state.

Polyethylene terephthalate	PET	1
High-density polyethylene	HDPE or PEHD	2
Polyvinyl chloride	PVC	3
Low-density polyethylene	LDPE or PELD	4
Polypropylene	PP	5
Polystyrene	PS	6
Other plastics	OTHER	7

Plastics that do not fall into the first six groups are categorised under code 7.

11.1. Preparation of containers



Plastic parts that will come into contact with DMSO, such as caps and dropper tops (see photo opposite), should be immersed in pure DMSO (99.9 per cent) for 24 hours or more.

It is a good idea to rinse new glass bottles with a little DMSO. Finally, in the case of a new glass bottle with a plastic stopper, you can kill two birds with one stone by pouring pure DMSO into the bottle and standing it upside down for 24 hours or more, after shaking it.

If you absolutely must use plastic bottles, choose ones made of HDPE and treat them in the same way.

11.2. Sterilising containers

For certain topical applications (see above, ‘Topical application’), it is preferable to sterilise the containers.

Glass bottles with plastic caps and droppers should first be thoroughly washed and rinsed.

Next, the glass bottles should be immersed in boiling water for more than 5 minutes or placed in an oven for 1 hour at 160 °C. Of course, if the bottle has a screw-on neck (glass stopper), the stopper should undergo the same treatment.

For plastic parts:

- PP withstands temperatures of 100 °C well. HDPE does too, but to a lesser extent (deformation possible). LDPE, on the other hand, is highly likely to deform.
- These plastics can be sterilised by immersing them in 70 per cent ethyl or isopropyl alcohol for a few minutes.

Alternatively, for a glass bottle or one made of a recommended plastic (HDPE, LDPE, or PP):

1. Wash and rinse the bottle.
2. Disinfect it with a 3% hydrogen peroxide solution (3% H₂O₂) for a few minutes (for 15 minutes if the bottle’s origin is uncertain).
3. Rinse with sterile water.
4. Allow to dry.

After sterilization, handle the bottles with care. When using a DMSO solution for the eyes, to maintain its sterility, you can add one drop of 3% hydrogen peroxide or CDS³⁸ every other day (just as in the initial preparation of eye drops for an eye infection).

12. Purchasing

12.1. DMSO

DMSO must be of good quality and comply with the ‘Ph. Eur.’ standard (European Pharmacopoeia³⁹): you can buy it in its pure form, i.e. with a purity of between 99.90% and 99.99%, or diluted

with water to various concentrations (70%, 50%, etc.). DMSO is often sold diluted to 70 per cent for convenience, as 70 per cent DMSO is suitable for most uses. Of course, buying it in its pure form and diluting it yourself will work out cheaper.

There are several methods for manufacturing pharmaceutical-grade DMSO; as a result, the DMSO produced may have varying degrees of purity (from 99.90% to 99.99%). The main impurity is water, which is difficult to remove entirely, as DMSO is highly hygroscopic.⁴⁰

As well as pure or diluted DMSO, there are various DMSO-based preparations available: DMSO gels in aloe vera, melatonin in DMSO solution, etc.

e cost of DMSO

For pure DMSO (99.90%–99.99%) complying with the specifications of the European Pharmacopoeia (**Ph. Eur.**) and supplied in an amber glass bottle, expect to pay around €15–20 for a 100 ml bottle and €40–50 for a 1 litre bottle (prices as of 2026).

There is also much more expensive DMSO, costing around €250 per litre, which meets GMP standards (*Good Manufacturing Practice*), for very specific purposes (clinical trials, for example).

Where can you buy it?

DMSO (Ph. Eur.) is available in pharmacies in Belgium and Switzerland, but not in France. DMSO is not widely known amongst pharmacists: in Belgium, some pharmacies only stock DMSO that meets GMP standards, which is too expensive and of no use here.

There are numerous online retailers of DMSO, who all too often provide scant information about the DMSO they sell (exact purity level, impurity analysis, manufacturing and purification processes, etc.). Avoid Amazon and DMSO that does not meet the Ph. Eur. standard.

Three examples of online sellers:

- 1) [Alchemist](#) is a German laboratory specialising in DMSO and other natural substances. Alchemist offers a wide range of natural products and preparations based on Ph. Eur.-grade DMSO (melatonin, magnesium chloride, biotin [vitamin B8], ivermectin, etc.) as well as equipment. The pure DMSO on offer is graded at 99.9 per cent, either to the Ph. Eur. standard or to the GMP standard (which is much more expensive and of no interest).
- 2) [La Fabrique Pour Tous](#) is a French online shop that sells Chemworld’s ultra-pure DMSO (99.99 per cent) as well as equipment. It also stocks reagents and equipment for making CDS.
- 3) [Chemworld Poland](#) offers ultra-pure DMSO (99.99%), DMSO gels and DMSO-based preparations. Recommended sales channel: [allegro.pl](#).

Note

Chemworld Poland’s 99.99% DMSO does not meet the Ph. Eur. standard but complies with a Polish standard known as ‘CZDA’ (‘Pure for Analysis’). However, its very high degree of purity and the recognition it enjoys in Poland – being available in a large number of natural product outlets, clinics and pharmacies – appear to constitute a sufficient guarantee.

³⁸ CDS: aqueous solution of chlorine dioxide (ClO₂) at 3,000 ppm (0.3%).

³⁹ The European Pharmacopoeia (Ph. Eur.) is a set of regulatory standards for the 46 countries of the Council of Europe, including EU mem-

ber states, governing the quality control of medicines for human and veterinary use.

⁴⁰ Other main impurities apart from water: DMS and DMSO₂, which are also nothing to be concerned about. Other impurities are present in trace amounts.

12.2. Equipment

For dilutions, a graduated glass measuring cylinder can be used to measure volumes of DMSO and water (see image opposite). Choose a measuring cylinder with a capacity slightly greater than the volumes to be measured. A small glass funnel will be useful.

To measure volumes of just a few millilitres, a 5- or 10-millilitre graduated pipette fitted with a suction bulb ('propipette') is useful and practical (2^e image opposite)⁴¹. Recommendation: avoid the bulb coming into contact with the solution.

Alternatively, you can prepare a dilution using a sufficiently accurate balance (accurate to a tenth of a gram rather than to the nearest gram). For example, to make 30 g of a 30 per cent DMSO solution: in an amber glass bottle of 30 ml or more, weigh out nine grams of pure DMSO (just under 9 ml) and add 21 g of water (21 ml).

Finally, there is nothing to stop you from making the simplest dilutions by eye (for example, from 99.9 per cent to 70 or 50 per cent).

Other equipment that may be useful

- Amber glass screw-top bottles.
- For these screw-top bottles:
 - HDPE caps, with a dropper insert that acts as a seal (dropper cap) – see the image above, in the section on *Preparing containers*.⁴²
 - HDPE caps, with a sealing ring⁴³.
- Glass pipettes fitted with a dropper tip, to be screwed onto the bottle (see image opposite), either in place of the cap or not.
Take care not to allow the tip to come into contact with the DMSO, even if it is made of high-quality silicone (i.e. medical-grade – which is preferable), and all the more so as the solution is close to 100 per cent: keep the bottle upright if the pipette remains permanently attached to the bottle.
- Glass funnel (diameter: ± 50 mm).
- Amber glass bottles with ground (polished) necks and glass stoppers ('emery-sealed bottles'). For long-term storage (up to several years, in a cool, dark place). See the image above in the 'Containers' section.

In summary, to get started with

To get started, in addition to a 200–300 millilitre bottle of pure DMSO, the following equipment will suffice:

- Two or three 20 or 50 ml amber glass vials. The stoppers can be plain or dropper stoppers. If using plain stoppers, consider purchasing a pipette or dropper.
- A 50 ml graduated cylinder accurate to 0.5 ml. Optionally, to measure small volumes accurately, a ^{second} graduated cylinder



or a graduated pipette with a suction bulb, of 5 or 10 ml (accuracy: 0.1 ml).

However, see above for the two alternatives for carrying out a dilution.

- A small glass funnel.

13. Articles by the Midwest Doctor

Since September 2024, the *Midwestern Doctor* has published more than twenty articles on the use of DMSO for all manner of conditions.

Below you will find translations of the summaries ('Story at a Glance') and links to these articles on the *Midwestern Doctor's* website. See also the article mentioned in the introduction, which has been fully translated and annotated: [Health Pioneers and DMSO](#).

13.1. Stroke, brain, spine

Evidence that DMSO could save millions of people from brain and spinal cord injuries

Stroke, head injuries, spinal cord injuries, developmental delays, Down's syndrome and numerous circulatory

Decades of evidence showing that DMSO is revolutionising the treatment of numerous 'untreatable' circulatory and neurological conditions.

16 September 2024, www.midwesterndoctor.com/p/dmsocouldsave-millions-from-brain

- DMSO is a remarkably safe chemical that protects cells from potentially fatal stressors, such as freezing, burns, shock waves and ischaemia. Consequently, as the heart, brain and spinal cord are particularly vulnerable to these factors, DMSO can produce miraculous results.
- The use of DMSO completely transforms the management of strokes (including cerebral haemorrhages), heart attacks and spinal cord injuries. As I shall show here, had the FDA not sabotaged the adoption of DMSO, countless lives would have been saved and millions of people could have avoided a life of paralysis or disability.
- DMSO possesses many other remarkable properties. For example, it stabilises proteins and can therefore be used to treat numerous difficult-to-treat protein disorders (such as amyloidosis⁴⁴ and many genetic diseases).
- Many of the conditions treated with DMSO are generally considered incurable. In this article, I shall focus on the remarkable utility of DMSO for conditions that respond best to intravenous DMSO (for example, a variety of circulatory disorders, such as varicose veins or Raynaud's disease) and complex neurological disorders (e.g. Down's syndrome, developmental delay, ALS⁴⁵, Alzheimer's disease, Parkinson's disease), as well as how to administer IV DMSO⁴⁶ and DMSO protocols for stroke.

⁴¹ There are suction bulbs fitted with two or three valves, which are more sophisticated (and more expensive) than the one shown in the picture, but this one is sufficient. Instead of a suction bulb, you could use the old method of suction by mouth, controlling the flow with your index finger. However, this is not recommended for safety reasons and to avoid contaminating the liquid being drawn up with saliva. That said, DMSO is not sulphuric acid...

⁴² There is a wide variety of dropper caps available. The dropper insert is often long, but there are compact models that do not protrude from the cap (as shown in the image above in the 'Preparing containers' section). The plastic will be HDPE, PHLD or PP. Note that PP is the most resistant to temperatures of 100 °C, with the lowest risk of warping. To remove the insert from a bottle, 'dropper removers' are available,

but a knife with a thin, smooth blade will do the job: slide the blade between the edge of the bottle and the insert, and lift gently.

⁴³ Avoid polyethylene foam (EPE, expanded polyethylene) seals, which are soft and compressible.

⁴⁴ Amyloidosis or amyloidosis: a serious disease linked to the formation of abnormal (misfolded) proteins that accumulate in tissues and organs in the form of fibres, disrupting their function. There are several forms, some of which are considered incurable and others treated with chemotherapy.

⁴⁵ ALS: amyotrophic lateral sclerosis, known as Charcot's disease in French and Lou Gehrig's disease in English. A degenerative neurological disease affecting motor neurons.

⁴⁶ IV: intravenous injection.

See also [*The Great Alzheimer's Scam and The Proven Cures They've Buried for Billions*](#), 6 October 2025.

13.2. Chronic pain, musculoskeletal injuries.

DMSO is a miracle treatment for chronic pain and musculoskeletal injuries.

Decades of evidence that DMSO is revolutionising medical practice

30 Sept. 2024 – www.midwesterndoctor.com/p/dms0-is-a-miraculous-therapy-for

- The standard approach to treating pain and musculoskeletal injuries generally involves administering NSAIDs⁴⁷ and, in the most severe cases, opioids. Unfortunately, these drugs are extremely dangerous (each kills tens of thousands of people every year), yet they have remained the standard of care for decades.
- DMSO is a remarkably effective pain-relieving agent, which in many cases enables people who have been disabled by pain for years (for example, following a botched spinal operation or suffering from severe arthritis – the most common use of DMSO) to regain control of their lives. Furthermore, it can treat many types of pain for which other therapies are ineffective (for example, complex regional pain syndrome).
- DMSO is a highly effective treatment for healing wounds and promoting healthy scar formation, making it particularly useful for recovery from surgery.
- DMSO is incredibly effective at treating a wide range of acute and chronic musculoskeletal conditions (for example, arthritis, headaches, neck and back tension, restless legs syndrome, sprained ankles, trigeminal neuralgia and many traumatic injuries). The success rate is generally 80–90 per cent, and the effect is often immediate and dramatic. This treatment was particularly popular amongst professional athletes, as it enabled many of them to return to the field quickly rather than being sidelined for the rest of the season.
- In this article, I will review the scientific literature explaining how DMSO relieves pain and promotes healing, the extensive body of evidence (involving thousands of patients) showing that this is indeed the case, and our preferred protocols for home treatment with DMSO for pain, arthritis and musculoskeletal injuries (as well as the best sources for obtaining DMSO).

13.3. The remarkable history and safety record of DMSO

13 October 2024 – www.midwesterndoctor.com/p/the-remarkable-history-and-safety

Dimethyl sulphoxide (DMSO) is a simple chemical that is remarkably effective at treating a wide variety of health problems (e.g. chronic pain, injuries, arthritis, strokes, spinal cord injuries and a range of autoimmune conditions). That is why, once discovered, it spread rapidly across America like wildfire, backed by incredible (and almost unbelievable) data. Similarly, after sparking renewed interest in DMSO through this series, I've received hundreds of almost unbelievable testimonials that were virtually identical to what people were reporting 60 years ago.

Note: these testimonials can be found in the comments section at the bottom of this article. If you'd like to share a story, please feel free to add it.

This raises a fairly simple question. If such an effective product had been discovered and the medical community and the public had backed it, why has nobody heard of it? In short, for various

political reasons (which I have detailed [here](#)), the FDA realised it stood to gain everything from having DMSO banned. In turn, the FDA was prepared to go to war against America (for example, the agency fought subpoenas and congressional hearings for over a decade) to keep it away from us. To justify this stance, the FDA has consistently claimed that DMSO is incredibly dangerous, when in reality the data show that it is one of the safest substances in existence.

As renewed interest in DMSO is emerging, the aims of this article are to present all the data on DMSO toxicity (so that everyone can be better informed about the risks of the therapy) and to provide a means of collecting readers' testimonials about their experiences with DMSO.

13.4. Autoimmune and connective tissue disorders

How DMSO treats 'incurable' autoimmune and connective tissue disorders. Decades of research that could have prevented immense suffering.

20 October 2024 – www.midwesterndoctor.com/p/how-dms0-treats-incurable-autoimmune

- DMSO is a remarkably safe substance that effectively treats a whole range of conditions (chronic pain, acute injuries and strokes) which have baffled medicine for decades. Many readers have already experienced profound benefits from using it.
- DMSO is a powerful (yet safe) anti-inflammatory agent that is often extremely helpful for autoimmune diseases. For example, it is frequently used to treat asthma, inflammatory bowel diseases (such as ulcerative colitis and irritable bowel syndrome), interstitial cystitis (painful bladder syndrome), PTI⁴⁸, lupus, multiple sclerosis, myasthenia gravis, scleroderma, Sjögren's syndrome and uveitis.
- DMSO is also remarkably effective at stabilising and refolding proteins⁴⁹. This enables it to treat a variety of 'untreatable' genetic disorders and conditions characterised by the abnormal accumulation of misfolded proteins in the body (e.g. amyloidosis) or chronic deposits of excessive contractile collagen (e.g. surgical scars, abdominal adhesions, Dupuytren's contracture and Peyronie's disease). Two of the most spectacular examples are scleroderma and progressive ossifying fibrodysplasia, two 'incurable' conditions for which DMSO can truly save lives.
- In this article, I will present the wealth of evidence supporting each of these uses, share my theory on how DMSO's unusual antimicrobial properties explain some of these benefits, and outline DMSO treatment protocols for many of these conditions. Furthermore, as many readers have requested, I have put together a simplified guide on how to use DMSO orally or topically.

13.5. The FDA's War on DMSO

The forgotten story that has led the FDA to repeatedly keep the very things we most desperately need out of our reach.

28 Oct 2024 – www.midwesterndoctor.com/p/the-fdas-war-against-dms0-and-america

Over the past month, I have been working diligently to alert the public to the decades of evidence demonstrating the remarkable therapeutic potential of DMSO. In turn, several of my colleagues have told me that patients are asking them questions about DMSO and that some are changing their practice to focus on this

⁴⁷ NSAIDs: non-steroidal anti-inflammatory drugs. For example, ibuprofen and high-dose aspirin.

⁴⁸ ITP: immune thrombocytopenic purpura. A rare autoimmune disease: the immune system attacks the blood platelets, thereby causing abnormal bleeding.

⁴⁹ A misfolded protein is a protein that does not have its normal three-dimensional structure.

product (for example, [Pierre Kory](#)⁵⁰, who is already achieving many astonishing results).

Similarly, I have received hundreds of (often incredible) reports that DMSO has changed people's lives (which can be read [here](#)), and it now appears that there is a temporary shortage of DMSO because so many people (and their friends) have [bought the brands I recommended](#).

For those who haven't read the series, I have so far demonstrated that:

- DMSO treats numerous circulatory and neurological disorders (for example, Raynaud's disease and varicose veins) and profoundly transforms the outcomes of some of the most difficult conditions to treat in medicine (for example, strokes and spinal cord injuries), to the extent that millions of people would have been spared a life of disability or paralysis had it been adopted (see [here](#)).
- DMSO is a miracle treatment for chronic pain, injuries (e.g. burns or surgical incisions), trauma (e.g. sports injuries) and all types of chronic pain (see [here](#)).
- DMSO is highly effective in treating a variety of difficult autoimmune disorders (see [here](#)).
- DMSO is highly effective in treating a variety of connective tissue problems, such as scars and adhesions, collagen contractures [muscle fibrosis], scleroderma and FOP [fibrodysplasia ossificans progressiva] (discussed [here](#)).
- DMSO is capable of treating a variety of diseases linked to misfolded proteins (e.g. amyloidosis), including genetic disorders (e.g. Down's syndrome) that are traditionally considered untreatable (see [here](#)).
- DMSO [is incredibly safe](#), with only a limited number of known and manageable side effects, and no risk of toxicity or death.
- Thousands of studies demonstrate the safety and efficacy of DMSO (making it one of the most extensively studied medical substances in history).
- In contrast, most of the aforementioned conditions have only poor conventional treatment options available, many of which are highly toxic, kill tens of thousands of Americans every year and simultaneously cause a far greater number of non-fatal injuries. Worse still, many of them are simply deemed 'untreatable', with no treatment options whatsoever.

13.6. Eyes, ears, nose, throat and teeth

How DMSO treats eye, ear, nose, throat and dental conditions

31 October 2024 – www.midwesterndoctor.com/p/how-dmsO-cures-eye-ear-nose-throat

Many of these so-called 'incurable' diseases respond remarkably well to DMSO

- DMSO can often significantly improve vision, treat conditions such as macular degeneration and retinitis pigmentosa, and sometimes enable blind people to regain their sight. It is also often very helpful for sore and strained eyes and relieves excessive irritation and inflammation, as well as many other eye conditions (e.g. cataracts).
- DMSO frequently treats various ear conditions such as tinnitus, hearing loss, air travel-related ear pressure and various ear infections (e.g. otitis media).
- DMSO is often very helpful for sinusitis and various infections of the nose and throat. Similarly, it is extremely useful in dentistry, both for cleansing the mouth (for example, by preventing bleeding gums) and for promoting rapid healing of the mouth following dental surgery.
- In this article, I will review the evidence supporting each of these uses, as well as the data demonstrating the safety of these methods of administering DMSO and instructions on how to use them.

⁵⁰ Please refer instead to the clinic's website (in English) for information on DMSO treatment (drpierrekory.com/dmsO-care/) and, in

13.7. Internal organ disorders

How DMSO protects and heals internal organs

Evidence of DMSO's usefulness for a myriad of difficult-to-treat conditions.

17 November 2024 – www.midwesterndoctor.com/p/how-dmsO-protects-and-heals-the-internal

- The therapeutic effects of DMSO make it suitable for treating difficult conditions throughout the body, including in many internal organs.
- In this article, we will examine how DMSO protects organs from damage (e.g. poisoning or blood loss) and some of the specific conditions that DMSO has been used to treat.
- These include the following conditions: heart attacks, cirrhosis, gallstones, ARDS [acute respiratory distress syndrome], lung damage caused by smoke inhalation, pulmonary fibrosis, pancreatitis, diabetes, nephritis, kidney stones, polycystic kidney disease, cystitis, epididymitis, genital pain, prostatitis, urethral syndrome, enlarged prostate, tubal infertility, and endometrial inflammation and fibrosis.
- This article reviews DMSO treatment protocols for these conditions (as well as the non-DMSO approaches we use for them) and provides general information on DMSO for those seeking to use it for their own health.

13.8. Skin conditions

DMSO is revolutionising skincare and dermatology

Exploring how skin health goes hand in hand with the health of the whole body.

1 December 2024 – midwesterndoctor.com/p/dmsO-revolutionizes-skin-care-and

- DMSO possesses a variety of unique therapeutic properties that enable it to tackle the root causes of many diseases, including skin conditions.
- DMSO effectively protects the skin against damage (e.g. radiation, chemotherapy, frostbite, blood loss) and rapidly heals skin injuries (e.g. burns, chronic wounds or surgical incisions).
- DMSO treats numerous circulatory disorders such as haemorrhoids, varicose veins, venous and diabetic ulcers, and Raynaud's disease.
- DMSO also effectively treats many common (but often difficult-to-treat) skin conditions, such as hair loss, psoriasis, shingles, herpes, skin cancer, lichen sclerosus, skin infections, nail problems, acne, eczema, itching, mastitis, insect and animal bites, sunburn and skin growths.
- This article reviews DMSO treatment protocols for these conditions (as well as the non-DMSO approaches we use for them) and provides general information on DMSO for those seeking to use it for their own health.

13.9. Infectious diseases

DMSO is transforming the treatment of infectious diseases

How DMSO Can Treat Many Drug-Resistant Infections

30 Dec 2024 – midwesterndoctor.com/p/dmsO-transforms-the-treatment-of

- DMSO is a remarkably safe natural substance that possesses a variety of remarkable properties, making it well-suited to the treatment of a range of difficult-to-treat medical conditions (e.g. pain, injuries, wounds, strokes, spinal cord injuries, autoimmune conditions, cancer and diseases of the internal organs).

the FAQs, the section on DMSO (drpierrekory.com/frequently-asked-questions).

- DMSO possesses extensive antimicrobial properties, protects the body from microbial toxins (e.g. *C. diff*⁵¹), eliminates antibiotic resistance and acts as a vehicle to deliver antimicrobials deep into the body to treat infections that would otherwise be inaccessible.
- DMSO significantly enhances the treatment of many common bacterial infections (e.g. of the head, mouth and skin) and many serious bacterial infections requiring hospitalisation (e.g. tuberculosis, septicaemia, peritonitis, severe lung infections, osteomyelitis). In many cases, this has enabled a person requiring amputation of a chronically infected area to make a full recovery.
- DMSO possesses significant antiviral properties, which have been studied primarily in relation to herpes and shingles (two conditions it is particularly effective at treating), but also in a variety of other conditions (e.g. feline panleucopenia, one of the most deadly conditions affecting cats).
- DMSO is very useful for treating difficult fungal and parasitic infections. Furthermore, evidence suggests that its usefulness in the treatment of cancer and autoimmune disorders stems from DMSO's unique antimicrobial properties.
- In this article, we will review the body of evidence demonstrating DMSO's remarkable contributions to the treatment of infectious diseases and provide guidance on how DMSO can be used to treat several of the conditions listed in this article.

13.10. Cancer (I)

Hundreds of studies show that DMSO is revolutionising cancer treatment

A remarkable cancer treatment has been in plain sight for decades.

16 March 2025 – www.midwesterndoctor.com/p/hundreds-of-studies-show-dms-transforms

- Dimethyl sulphoxide (DMSO) effectively treats a wide range of conditions, including strokes, pain, tissue damage, autoimmune inflammation and cancer.
- DMSO inhibits cancer growth and systematically restores cancer cells to their normal state.
- DMSO makes cancer more visible to immune cells, enabling the body to eliminate tumours that had previously gone undetected by the immune system.
- DMSO effectively alleviates the main challenges posed by conventional cancer care, such as radiation damage, the toxicity of chemotherapy and the pain caused by 'incurable' metastatic cancer.
- DMSO significantly enhances the effectiveness of many chemotherapy drugs, allowing lower and safer doses to be used to achieve the same results.
- When combined with certain natural therapies, DMSO often results in highly effective cancer treatments, thereby revolutionising cancer management.

13.11. Cancer (II)

The forgotten cancer cure, hidden in plain sight

How DMSO transforms a common dye into a highly potent anti-cancer treatment that is harmless to normal tissue.

12 April 2025 – www.midwesterndoctor.com/p/the-forgotten-cancer-cure-hiding

- DMSO is a safe, natural substance that is remarkably effective against a wide range of conditions, including pain, injuries and strokes.
- DMSO effectively dissolves a variety of drugs and can transport them throughout the body. This increases their potency, allows them to be administered through the skin and

- enables them to target elements deep within the body (such as resistant infections) that other therapies struggle to reach.
- Through various mechanisms, DMSO selectively targets cancer cells whilst simultaneously mitigating the side effects of anti-cancer therapies. It also delivers both conventional and natural anti-cancer therapies directly to tumours, thereby significantly increasing the effectiveness of these therapies (whilst allowing for the use of a much lower and less toxic dose).
- When DMSO is combined with haematoxylin (a dye widely used in pathology), it becomes a highly potent anti-cancer treatment, which harnesses the intrinsic anti-cancer properties of DMSO and directly destroys cancer cells. It is also highly specific in targeting cancers without affecting normal cells, enabling it to dissolve tumours at doses that have virtually no toxicity for the patient.
- Although its ingredients are relatively easy to obtain and it produces remarkable results, this therapy (like many other alternative cancer treatments) has been almost completely forgotten. Fortunately, a tenuous thread of knowledge has kept this sixty-year-old discovery alive, most recently thanks to a doctor who has spent the last fifteen years refining this forgotten therapy and successfully treating cancer patients.
- This article covers everything we know about haematoxylin combined with DMSO, including its mechanisms of action, the cancers to which it is effective (for example, it is highly effective against leukaemias and associated anaemias and can often treat advanced cancers for which no other treatment is effective), as well as how to use it at home and in a medical setting.

13.12. DMSO-based drug combinations

DMSO-based drug combinations that are revolutionising medicine

How DMSO, when combined with many common medicines, opens up a multitude of remarkable therapeutic possibilities

21 June 2025 – www.midwesterndoctor.com/p/therapeutic-dms-combinations-revolutionize

- DMSO is a 'multi-purpose remedy' capable of treating a wide range of difficult conditions thanks to its combination of therapeutic properties (for example, reducing inflammation, improving circulation and revitalising dying cells).
- One of DMSO's unique properties is its ability to penetrate the skin and carry with it whatever it dissolves as it moves rapidly through the body, thereby significantly enhancing the potency and viability of many pharmaceutical drugs.
- This is why, over the years, many pharmaceutical formulations have combined DMSO with a commonly used drug and, in many cases, have demonstrated the safety and efficacy of the combination to medicines regulatory authorities.
- Some of these DMSO-based combination therapies are capable of treating difficult conditions, such as severe musculoskeletal injuries, antibiotic-resistant infections, persistent fungal and viral infections, chemotherapy-resistant cancers and chronic pain.
- More creative combinations (which can be produced at home) have frequently been used to successfully treat tinnitus, a wide range of eye problems (including many 'incurable' eye conditions), cancers and troublesome scars (which often lead to chronic conditions) – all of these topics will be examined in detail in this article.
- Most of the most promising uses of DMSO result from combining it with another natural or conventional therapy, as, in many cases, a combination can achieve what DMSO cannot on its own. This article examines the principles for effectively combining DMSO with other therapies in order to maximise their potential in the treatment of complex conditions.

⁵¹ *C. diff*: *Clostridioides difficile*. Causes a bacterial infection of the colon (intestinal inflammation, diarrhoea, etc.) which often develops following a course of antibiotics.

13.13. Respiratory problems

DMSO supports lung health and helps treat chronic respiratory conditions. How DMSO treats asthma, COPD, pneumonia, ARDS and pulmonary fibrosis.

6 July 2025 – www.midwesterndoctor.com/p/dms-heals-the-lungs-and-cures-chronic-35a

- Chronic respiratory diseases, although highly lucrative, remain an area where medicine struggles to find solutions; as a result, many people who suffer from them are condemned to a life marked by high healthcare costs, reduced stamina and, in many cases, a painful decline until they succumb to the disease.
- DMSO is a ‘multi-purpose remedy’ capable of treating a wide range of complex conditions thanks to its many therapeutic properties (for example, reducing inflammation, improving blood circulation and revitalising dying cells).
- Many of these properties (for example, reducing fibrosis and inflammation, restoring damaged organs, and improving blood circulation) are particularly well-suited to treating the underlying causes of chronic respiratory diseases.
- DMSO is also very useful for treating the infections that frequently accompany these conditions, as it possesses antimicrobial activity, reduces harmful pulmonary inflammation and potentiates many antimicrobial treatments (for example, many resistant and untreatable respiratory infections respond rapidly to DMSO mixed with an antibiotic, and many people have been cured of a chronic condition by combining DMSO with a natural antimicrobial).
- A wealth of published data and numerous user testimonials show that DMSO often produces remarkable results for a wide range of respiratory conditions, including asthma, chronic obstructive pulmonary disease, pulmonary fibrosis and pneumonia, which will be discussed here.
- This article will review the evidence demonstrating the efficacy of DMSO in the treatment of lung diseases, whilst examining the most commonly used protocols for these conditions as well as other natural approaches that also contribute to their treatment (for example, for asthma, COPD [chronic obstructive pulmonary disease] and pulmonary fibrosis). It will also provide general recommendations regarding the sourcing and use of DMSO.

13.14. DMSO is revolutionising natural medicine

Many natural therapies, when combined with DMSO, are capable of rejuvenating the body and treating a variety of complex and difficult conditions.

2 August 2025 – <https://www.midwesterndoctor.com/p/dms-mix-ures-transform-natural-medicine>

- DMSO is a ‘multi-purpose remedy’ capable of treating a wide range of difficult conditions thanks to its combination of therapeutic properties (such as reducing inflammation, improving circulation and revitalising dying cells). It also rapidly transports substances dissolved in it through the skin and throughout the body.
- DMSO therefore significantly enhances the potency and viability of many medicines, and numerous approved pharmaceutical preparations contain DMSO. Similarly, ‘unapproved’ combinations have been used to successfully treat difficult conditions, including antimicrobial-resistant infections, chemotherapy-resistant cancers and ‘incurable’ chronic pain.
- These benefits are also observed when DMSO is combined with essential oils, herbs, vitamins, oxidative therapies, minerals, antioxidants, biological metabolites, amino acids, colourants and detoxifying agents. Similarly, many holistic therapies (for example, acupuncture, meditation, physiotherapy, hypnotherapy and heavy metal detoxification) are greatly enhanced by DMSO.
- Combined natural therapies based on DMSO are often highly restorative and rejuvenating for the body. For example, there

are numerous cosmetic combinations that significantly improve the body’s health and appearance. Others rapidly treat various skin conditions, such as acne, eczema and hair loss. Yet another restores joints affected by osteoarthritis.

- These combinations can also be used to treat many difficult conditions, such as chronic fatigue syndrome, cancer, a myriad of infections (for example, Lyme disease or toenail fungus), chronic pain, Down’s syndrome, loss of smell, vision problems, persistent migraines, COPD, and prostate or thyroid problems.
- This article reviews the known DMSO combinations and the accompanying literature, their mechanisms of action, and how to prepare and administer each one. I hope this will empower you to create your own natural DMSO combinations, as this is one of the most viable ways available to you to truly ‘take charge of your own health’.

13.15. Gastrointestinal disorders

How DMSO heals the gut and treats gastrointestinal disorders

Many common and debilitating gastrointestinal conditions respond rapidly and dramatically to DMSO.

7 Sept. 2025 – www.midwesterndoctor.com/p/how-dms-heals-the-gut-and-cures

- Inflammatory bowel diseases, due to a reluctance to examine their root causes, remain an area where medicine is struggling. As a result, many people who suffer from them are subjected to a life of costly medical expenses and debilitating complications.
- DMSO is a ‘multi-purpose remedy’ capable of treating a wide range of difficult conditions thanks to its combination of therapeutic properties (for example, reducing inflammation, improving circulation and revitalising dying cells).
- Several of these properties (for example, reducing inflammation, improving circulation, restoring damaged organs and normalising parasympathetic function) are particularly well-suited to treating the underlying causes of gastrointestinal disorders (for example, DMSO can help regenerate insulin-producing cells in the pancreas).
- A wealth of published data and numerous user reports show that DMSO often produces remarkable results for a wide range of inflammatory bowel disorders (e.g. Crohn’s disease, ulcerative colitis, irritable bowel syndrome, diverticulitis, leaky gut syndrome or SIBO).
- Similarly, there is substantial evidence supporting the use of DMSO to treat conditions affecting the rest of the digestive tract (e.g. gastritis, gastroduodenal ulcers, cirrhosis, cholecystitis, pancreatitis, peritonitis, amyloidosis) and common but frustrating problems such as haemorrhoids, enlarged prostate and prostatitis.
- This article reviews the evidence demonstrating the efficacy of DMSO for gastrointestinal diseases, whilst examining the most common protocols used for these conditions and other natural approaches that also contribute to the treatment of these common disorders. It will also provide guidelines for the general procurement and use of DMSO.

13.16. Eyes – Ophthalmology

DMSO treats eye conditions and is transforming ophthalmology

The unique therapeutic properties of DMSO highlight the common denominator among many so-called ‘incurable’ eye diseases.

25 Oct 2025 – www.midwesterndoctor.com/p/dms-heals-the-eyes-and-transforms

- DMSO is a ‘multi-purpose remedy’ capable of treating a wide range of complex conditions thanks to its multiple therapeutic properties (for example, reducing inflammation, improving blood circulation and revitalising dying cells).
- DMSO has a particular affinity for the eyes, enabling it to treat (often spontaneously) a wide range of visual disorders

that cannot usually be managed by conventional therapeutic options.

- DMSO's ability to restore blood circulation, revitalise dying cells and stabilise misfolded proteins enables it to treat various retinal diseases (for example, macular degeneration, diabetic retinopathy or retinitis pigmentosa – in some cases reversing permanent blindness), to eliminate visual obstructions (such as floaters and cataracts), reverse glaucoma or Fuchs' dystrophy, and restore clear vision (often eliminating the need for spectacles).
- The anti-inflammatory and antimicrobial properties of DMSO enable it to treat dry eye, inflammatory conditions around the eye (e.g. blepharitis, styes and psoriasis) or inside the eye (e.g. iritis, uveitis, conjunctivitis, keratitis), as well as bacterial, fungal, parasitic or viral eye infections such as shingles.
- The healing properties of DMSO also enable it to treat various eye injuries (including the most severe ones that would otherwise require removal of the eye), skin problems around the eye (e.g. burns, skin tags and bags under the eyes), and to relieve eye muscle spasms.
- This article reviews the extensive evidence demonstrating the effectiveness of DMSO in the treatment of eye conditions, and examines the most commonly used protocols as well as other natural approaches that also contribute to the treatment of common eye disorders.

13.17. Spine and paralysis

How DMSO treats the spine and helps to cure paralysis

The wealth of evidence demonstrating DMSO's ability to regenerate spinal cord injuries, treat 'incurable' back pain and revolutionise spinal medicine – and how to use it.

16 May 2026 – www.midwesterndoctor.com/p/how-dms0-heals-the-spine-and-reverses

- DMSO is a 'multi-purpose remedy' whose range of therapeutic properties (improved circulation, reduced inflammation, cell protection and revitalisation of dying cells) makes it a treatment particularly well-suited to 'incurable' neurological disorders, with particularly spectacular results in the case of spinal cord conditions.
- DMSO is one of the most powerful known promoters of microtubule assembly (the supportive structure that cells need to divide and develop new extensions)⁵² and encourages various stem cells to differentiate into neurons, which may explain the regeneration of the spinal cord that has been documented numerous times throughout this article.
- Extensive data from animal experiments and remarkable human clinical cases show that DMSO can prevent or reverse paralysis resulting from strokes, head injuries and spinal cord injuries *when administered rapidly*, and can enable significant rehabilitation *even for long-standing injuries*. Veterinarians have been using intravenous DMSO for decades to help paralysed animals recover, but this knowledge has never been applied to human medicine.
- DMSO is widely used in clinical practice for degenerative spinal conditions (disc herniation, radiculopathy, stenosis, osteochondrosis), with hundreds of readers reporting that it has transformed their chronic back pain, sciatica, neck pain and post-surgical spinal pain, often after years of unsuccessful conventional treatments.
- This article will summarise the extensive evidence demonstrating the effectiveness of DMSO for spinal conditions (around 400 studies and 300 relevant reader testimonials), the findings we have made over the years regarding neurological conditions, and will conclude with practical advice on DMSO protocols and complementary approaches that also

contribute to the treatment of common neurological and spinal disorders.

Contents of this article:

- Nerve regeneration
- Spinal cord injuries
- Arachnoiditis
- Spasticity
- Musculoskeletal disorders of the spine
- Back pain (dorsalgia)
- Neck pain and stiffness
- Cervical and lumbar disc problems
- Enzymatic iontophoresis for disc herniation
- Sixty years of preventable suffering
- DMSO dosage
- Treatment of neurological disorders
- Clinical dosage protocols for the cervical spine
- Conclusion

Treating back pain and putting an end to the spinal surgery industry

19 July 2026 – www.midwesterndoctor.com/p/healing-back-pain-and-ending-the

- Modern medicine is a well-oiled economic system: patients are examined for only as long as is strictly necessary to refer them to lucrative services, rather than to determine the root cause of their condition.
- As back pain has multiple causes, 90 per cent of lower back pain cases are simply classified as 'non-specific'; the most common causes are not identified, and patients are instead directed towards a standardised care pathway, where almost every step either misses the real cause or exacerbates it (for example, all common painkillers present serious problems).
- Certain spinal surgeries are necessary or offer tangible benefits. Spinal fusion procedures⁵³, which are the most lucrative, have repeatedly been shown to be less effective than non-surgical treatments in randomised trials, whilst leading to a host of common and serious complications. Yet they are increasingly favoured – a trend illustrated by an in-depth investigation into a hospital that generated record revenues through a high volume of neurosurgical procedures, whilst its own doctors resigned and left the institution in protest against what they described as inappropriate surgery and dangerous working conditions.
- At the same time, countries lacking the financial resources to maintain a medical monopoly have actively explored low-cost alternatives; Russia and Eastern Europe, for instance, have produced a wealth of literature on the treatment of herniated discs and radiculopathies⁵⁴ using topical DMSO, including a placebo-controlled trial and national treatment guidelines. Hundreds of readers of this website have independently observed the same results, including people recovering from failed spinal fusion surgery.
- This article will explain in detail why each stage of the conventional treatment pathway is dangerous, present the forgotten approaches that my colleagues and I have relied on for decades to relieve neck and back pain without surgery, and describe how DMSO can be used specifically in these cases.

13.18. Sinuses and respiratory tract

Sinus and respiratory tract treatments you've never been told about

31 May 2026 – www.midwesterndoctor.com/p/the-respiratory-and-sinus-treatments

- Since 1976, the year in which a mild flu was turned into an imminent national disaster and a disastrous experimental vaccine was administered to the public, the CDC and the media have made a big fuss about a new pandemic almost every

⁵² Microtubules are microscopic 'tubes' that form the internal framework of the cell (the cytoskeleton). They are present in almost all eukaryotic cells (animal, plant and fungal).

⁵³ Vertebral fusion.

⁵⁴ Nerve compression.

year. Yet, as I shall show here, almost all of these alerts have served only to secure the annual budget for the biodefence industry, with the hantavirus being the latest iteration of this cycle.

- A key factor behind these budgetary allocations is the belief that viral pandemics cannot be treated, whereas in reality, many highly effective broad-spectrum treatments have been developed but suppressed to ensure that new generations of patented treatments can continue to be developed.
- Most respiratory viruses first colonise the upper respiratory tract before migrating to the lungs (as has recently been demonstrated in detail for COVID-19). One of the simplest and most effective ways to treat respiratory infections quickly is therefore to disinfect the upper respiratory tract at an early stage; yet this approach is remarkably little known, even though traditional medical systems have independently arrived at models with many parallels.
- A key element of these protocols is sinus cleansing, an area in which conventional medicine consistently falls short. Consequently, although there are many highly effective and readily available therapies for sinusitis, a considerable number of patients continue to suffer from sinus problems that their doctors are unable to resolve.
- DMSO, for example, has been shown in dozens of studies to be capable of rapidly relieving various complex sinus conditions, and a large number of readers here have reported improvements in chronic and acute sinusitis, sinus headaches, allergies, congestion, post-nasal drip, breathing difficulties, nasal polyps and Eustachian tube dysfunction. Yet, once again, these approaches are virtually unknown.
- This article will explore the little-known causes and treatments for sinus, Eustachian tube and nasal disorders, as well as the specific protocols for some of the most effective methods I have come across, whether or not they involve DMSO.

13.19. Nerves and neuropathic pain

How DMSO heals nerves and eliminates neuropathic pain

Why can a single agent, thanks to its little-known biophysical effects, reverse the progression of a surprisingly wide range of ‘incurable’ neurological disorders?

14 June 2026 – www.midwesterndoctor.com/p/how-dms0-heals-nerves-and-eliminates

- DMSO is a ‘multi-purpose remedy’ whose range of therapeutic properties (improved circulation, reduced inflammation, cell protection and the restoration of dying cells) makes it particularly well-suited to treating a wide variety of conditions, including so-called ‘incurable’ neurological disorders and the chronic pain associated with them.
- Through its action on water, DMSO temporarily alters the phase⁵⁵ of cell membranes and cytoskeletons, which then reconstitute themselves in a strengthened configuration, which
 - facilitates DMSO’s valuable ability to transport substances across biological barriers without damaging them
 - creates a cellular ‘reset’ capable of resolving the malfunctions in the neural circuits that underlie various neurological disorders.
- DMSO selectively blocks the small nerve fibres (C-fibres) responsible for transmitting chronic pain whilst sparing the larger fibres, producing ‘⁵⁶’ analgesia lasting approximately 6 hours (compared with 2 hours for morphine) via mechanisms independent of opioid receptors. Hundreds of readers have reported that it has transformed chronic neuropathic pain, migraines, fibromyalgia and nerve damage caused by diabetes, chemotherapy, vaccines and surgery, often after years of unsuccessful conventional treatments.

⁵⁵ Phase transition or transition between physical states: from a more structured state of water, similar to a gel (found near biological membranes), to a less structured liquid state (as in freely flowing water). The idea is that physiological processes depend on this transition.

- DMSO promotes peripheral nerve regeneration through multiple converging mechanisms (microtubule stabilisation, Schwann cell proliferation, differentiation of stem cells into neurons and improved axonal reconstruction), with readers reporting a return of sensation and motor function in nerves that had been damaged for years or even decades.
- DMSO is widely used in clinical practice for peripheral neuropathies, with Level 1 evidence [the highest level of evidence] for complex regional pain syndrome (CRPS)⁵⁷ and demonstrated benefits for facial nerve paralysis, trigeminal neuralgia, postherpetic neuralgia, compression neuropathies, diabetic neuropathy and fibromyalgia, whilst its unique interactions with the opioid system (enhancement of endogenous enkephalin signalling, upregulation of opioid receptors and neutralisation of opioid-induced hyperalgesia) suggest broader implications for the chronic pain crisis.
- This article summarises the extensive evidence demonstrating the efficacy of DMSO for peripheral neurological conditions (approximately 600 studies and 400 relevant reader testimonials), and concludes with practical advice on DMSO protocols and the most effective DMSO formulations for pain relief.

13.20. Carpal tunnel syndrome

The little-known history of carpal tunnel syndrome

Causes and treatments for repetitive strain injury of the wrist

15 June 2026 – www.midwesterndoctor.com/p/the-forgotten-history-of-carpal-tunnel-2ee

Topical application of DMSO has for decades been supported by publications attesting to its effectiveness in treating neuropathies of the canals (including official Russian clinical guidelines on carpal tunnel syndrome), and many of the reader testimonials I have received regarding wrist problems (including following carpal tunnel surgery) have been remarkable.

Note

In this article, the Midwest Doctor offers advice on how to minimise the risk of developing carpal tunnel syndrome as a result of using a computer keyboard or similar equipment, including the use of a more ergonomic keyboard layout than QWERTY and AZERTY. Having developed this condition myself in 2001, I have implemented a series of measures which you can read about on this website, ‘*Ergonomic Keyboard Layout (Dvorak) for the French Language – Computer Workstation Ergonomics*’ (www.algo.be/dvorak-fr). Among these measures is the design of an ergonomic layout of characters on the keys of a keyboard. The corresponding keyboard drivers (which can be used with any keyboard) are available free of charge, along with a learning guide and various tips.

13.21. Men’s sexual health

Simple ways to restore good sexual health

27 June 2026 – midwesterndoctor.com/p/the-simple-ways-to-restore-sexual

The therapeutic properties of DMSO address many complex disorders of the reproductive system affecting both men and women, which conventional medicine struggles to manage:

- Benign prostatic hyperplasia, prostate stones, prostatitis and prostate cancer .
- Testicular lesions, epididymitis and scrotal lesions.
- Erectile dysfunction, genital infections (warts, herpes, etc.), Peyronie’s disease, priapism, pelvic floor dysfunction and sexual disorders resulting from other genitourinary problems.

⁵⁶ Analgesia: suppression or reduction of sensitivity to pain.

⁵⁷ SDRC or algodystrophy, a chronic condition characterised by pain that is disproportionate to the triggering factor.

14. FAQ by Dr Harmut Fischer

Source: medizinzumselbermachen.de/dmso-co/faqs-dmso (30 March 2026).

For more information on Dr Fischer, see the bibliography.

14.1. Common uses of DMSO

For external use, in the form of aqueous dilutions with proven liquids, such as, for example, a 12% magnesium chloride (MgCl_2) solution, isotonic seawater, colloidal silver water, a 1 or 2 per cent procaine solution, the patient's own urine, isotonic saline, 1–3 per cent hydrogen peroxide, CD [chlorine dioxide] solution, etc. The choice of dilution/mixing liquid, as well as the mixing ratio, depends on the intended use or the symptoms to be treated. As regards DMSO, concentrations ranging from 15 to 60 per cent are generally used for external application. For eye drops, concentrations of 1–3 per cent DMSO are used. Similarly, DMSO is often used as an extraction agent for medicinal plants and herbs, and the liquid extracts thus obtained are then also used externally or as drops for internal use.

For internal use, DMSO is generally taken either as a diluted oral solution (approximately 1 to 6 teaspoons in 300 ml of a drink), or as an infusion (approximately 1.5 per cent) or an injection (approximately 7.5 per cent). It is often combined with other substances such as procaine, oxidising agents (hydrogen peroxide, chlorine dioxide, etc.), vitamin C, chelating agents, B vitamins, galactose, curcumin, amygdalin, strophanthin, etc.

14.2. Method of administration

What are the possible methods of administration for correctly diluted DMSO?

In principle, DMSO can be used in every conceivable way: for local external use (by spraying, rubbing or dabbing), orally, by injection or infusion, as an enema, in the form of drops for the ears, nose or eyes, as a mouthwash, in a foot bath, or even by injection into the joints, to name but a few.

14.3. Buying DMSO

What should I look out for when buying DMSO?

I strongly recommend, even for domestic use, that you buy only pharmaceutical-grade DMSO. It is available from many online shops; it is supplied in standard bottles – i.e. non-sterile – and is labelled 'DMSO Ph. Eur.'

This means it is certified as complying with the European Pharmacopoeia. The percentage alone – for example, 99.9 per cent – is not enough to judge the quality of the DMSO contained within! The same applies to claims such as 'natural origin' or any other similar statements. You'll regularly find suppliers online who claim to offer pharmaceutical-grade purity but, when asked, are unable to provide a Ph. Eur. certificate. Even in 99.9 per cent DMSO, there may logically be up to 0.1 per cent of a toxic substance that you would prefer not to find there... Given that the price differences between pharmaceutical-grade certified DMSO and dubious products of unknown origin are minimal, the decision on which to buy seems very straightforward to me.

Ph. Eur.-certified sterile DMSO, used for infusions and injections, is available in ampoules as a compounded preparation at the Viktoria Pharmacy in Saarbrücken.

14.4. The smell of DMSO

Is there any DMSO that doesn't leave a particularly strong odour after ingestion? I've heard there's a new product on the market, offered by a publisher?

Two things are being confused here.

On the one hand, there is the odour of the liquid itself, when smelled directly from the bottle. We now know that some manufacturers or suppliers add a patented chemical mixture to mask the smell of traces of dimethyl sulphide present in the DMSO. These chemicals are, of course, only needed in very small quanti-

ties, so they do not exceed the declaration threshold and therefore do not have to be listed on the bottle. But it is, of course, unpleasant to know. That is why I prefer DMSO with its characteristic odour, and I buy it from the reliable sources listed in the 'DMSO and Co.' section.

The second issue, which is entirely different from the previous one, concerns the odour released when DMSO, which has been applied to or ingested by the body, is metabolised and subsequently exhaled into the ambient air. This odour varies considerably from one person to another, depending on metabolism, and cannot be avoided; it therefore persists to a greater or lesser extent for around 1.5 to 2 days after application. This odour is entirely unrelated to the 'variety' or manufacturer of the DMSO. There are, however, a few tips for minimising or even preventing it, such as eating parsley, chlorophyll or other 'green vegetables' as a side dish, adding blended organic lemon, taking diluted essential oils or mixing them directly into the DMSO, amongst other things. It should be noted, however, that the formation of odours indicates that the body's reducing capacity is intact and should therefore be regarded as a positive sign.

14.5. How does DMSO work?

DMSO acts within the body at both the biophysical and biochemical levels. As a small-molecule dipolar substance, DMSO interacts intensively with bodily water, the most abundant component in all living beings. At the same time, DMSO acts as a bridge between the fat-soluble and water-soluble compartments and the substances present in the body. This can be thought of as an electromagnetic exchange of information at the molecular level, which enables the layers of water surrounding all biochemical structures ('shell water'), such as enzymes, transport proteins, cell membranes, glycoproteins, etc., to reorient themselves. Within the human metabolism, DMSO is primarily oxidised to methylsulfonylmethane (MSM), also known as organic sulphur. MSM is known for its anti-inflammatory and tissue-regenerating effects. DMSO's ability to provide substrates can also be utilised in a reductive manner in hypoxic tissues, thereby releasing oxygen equivalents. Furthermore, DMSO is a specific and therefore extremely effective hydroxyl radical scavenger, which also explains its anti-inflammatory and regenerative effects. In summary, the natural substance DMSO is therefore both a highly effective remedy, a source of organic sulphur and a specific radical scavenger.

14.6. Combination with other medicines

Can I combine DMSO with other active ingredients?

The simultaneous administration of DMSO with other substances often results in a potentiation of their effects, as DMSO, acting as a molecular channel opener and transporter, facilitates or enables the passage of other substances through biological membranes, much like a taxi. This can, on the one hand, be used to reduce the dose of poorly tolerated medicines and, on the other hand, to enhance the potential of many active ingredients used in naturopathy. In principle, therefore, it is important to take into account both accompanying and underlying treatments, particularly in cases of multimorbidity. Once absorbed, DMSO has an average half-life of around two days in the body. Both unchanged DMSO and its main metabolite, MSM, are primarily excreted via the kidneys.

What other natural remedies can be combined with or used alongside DMSO?

My 'DMSO & Co Health Toolkit' includes many other pure substances, all of which combine or mix perfectly with DMSO. They meet one essential criterion: they occur naturally! Although, for reasons of scale, some of them are now produced industrially, they are found in their natural state in both living and non-living parts of the natural world. These include, in particular, salts, plants and their constituents, fats, bacterial metabolic products, etc. Here are a few examples: dextrorotatory lactic acid, magnesium chloride, vitamin C, sodium bicarbonate, hydrogen peroxide, urine, potassium bicarbonate, amino acids, iodine/Lugol's

solution, progesterone, Aloe arborescens, propolis, Artemisia annua (annual wormwood), mosses, borax, Bengal red, haematoxylin, caesium chloride, dimercaptosuccinic acid (DMSA), galactose, furfural, diatomaceous earth, seawater, MSM, petroleum, vitamin D3, sulphur, zinc, selenium. This toolkit allows you to vary the combinations as you wish and to use it in a personalised way. The 'ingredients' are generally available at an affordable price and have a long track record of proven effectiveness; they can be used in their pure form, without additives or diluents.

Can DMSO also be combined with other therapies and treatment methods?

DMSO has been used for years in combination with every conceivable therapeutic method. Acupuncturists spray it along the meridians before inserting the needles; manual therapists apply it as an oily mixture before treatment; in chelation therapy, it is used to enhance efficacy; in 'beauty treatments', it is added to injections; psychotherapists and addiction specialists also use DMSO to unblock channels; orthopaedic surgeons use it for cartilage regeneration or to dissolve bone stenosis in injectable mixtures prior to shockwave therapy; hypnotherapists report 'deeper' sessions with DMSO; ozone therapy and oxygenation methods benefit from DMSO; and many others besides... There's plenty of scope for creativity!

14.7. Drug interactions

What interactions with other medicines are known or have been studied?

The potentiating effect of DMSO on glucocorticoids (cortisone), opiates, antibiotics/penicillins, alcohol (several PhD theses have been devoted to this subject...), gold-based medicines, pyrazolone derivatives (NSAIDs, Novalgin, etc.) and insulin is frequently observed and has been the subject of numerous studies. I assume, however, that this latter effect occurs at the receptor level, as the insulin molecule is too large to be directly influenced by DMSO.

14.8. Side effects

What are the possible side effects?

Due to its vasodilatory properties, the use of DMSO may, in some cases, initially lead to circulatory symptoms such as dizziness, a feeling of pressure in the head or fatigue, which, in our experience, subside quickly. Furthermore, increased salivation has been observed following the application of DMSO. This is logical, as it is scientifically proven that DMSO stimulates the parasympathetic nervous system and thereby enhances healing processes.

DMSO is best known for causing, following application, a smell of garlic, oysters or vegetables in exhaled air. This phenomenon, which stems from the reduction product dimethyl sulphide (also produced by marine plankton as a precursor to natural DMSO), disappears approximately 1.5 days after application.

Other typical symptoms include, for example, redness and itching in the areas of skin treated topically with DMSO, which generally subside after about 20 to 30 minutes. This is partly due to the stimulating effect on blood circulation. A sensation of fullness or pressure in the liver region has also been reported following the intake of DMSO. The available evidence does not allow for a clear conclusion regarding a link with pre-existing liver disorders. Scientific studies involving human subjects have shown that liver function parameters, when compared with a placebo group, remained statistically unchanged even after the administration of high doses of DMSO (1 g per kg of body weight per day!) for 90 days. Overall, various medical and scientific studies have confirmed that DMSO is a very safe medicine – its LD₅₀ value is significantly higher than that of all known substances used as medicines, including table salt.

14.9. Dilution

What liquids can be used to dilute DMSO?

Depending on the purpose, I am happy to use either a magnesium chloride solution of around 12 per cent, isotonic seawater,

colloidal silver solution (all these solutions are available at www.alchemist.de), a 2 per cent procaine solution, or my own urine. These diluted solutions can, of course, be used in combination.

[Note: other options include: saline solution, distilled or ultra-pure water, and water for medical use (distilled, filtered and sterilised)].

How do you prepare general-purpose dilutions with DMSO?

Firstly, you need to determine the total volume of the DMSO mixture you wish to prepare for the intended application. At the lower end of the range, for example, you can mix 2 drops of DMSO and 2 drops of the chosen diluent in a porcelain egg cup, then apply the mixture using a wooden cotton bud or a pipette. At the approximate upper end of the dosage range, you can mix 1 litre of DMSO with 1 litre of the chosen diluent, for example to take an intensive foot bath in a glass, metal or porcelain bowl. In both cases – whether using drops in the egg cup or the foot bath mixture – a 50% DMSO solution is obtained, as equal quantities of DMSO and diluent have been mixed.

Once you have determined the total volume of the desired DMSO mixture, you can then choose the concentration of the resulting mixture. This refers to the DMSO concentration expressed as a percentage by volume. The simplest method is to prepare a 50% DMSO mixture. To do this, mix 1 part DMSO with 1 part diluent. If, on the other hand, you wish to prepare a 70% mixture, use 7 parts DMSO and 3 parts diluent. To obtain a 30 per cent DMSO mixture, add 3 parts DMSO and 7 parts diluent. Example: mixing 60 ml of DMSO with 40 ml of 12 per cent magnesium chloride solution produces a very popular 'sports spray'.

After mixing the two liquids, it is essential to stir or shake the mixture thoroughly, as DMSO, due to its higher density, tends to 'settle' at the bottom in a highly concentrated form.

Can pure, undiluted DMSO also be used?

Pure DMSO (99.9 per cent) is only used as it is in exceptional cases. For example, to treat warts, mouth ulcers, fungal nail infections or cold sores.

[Note: Others, such as Dr du Midwest, do not share this view and advocate a wider use of pure DMSO]

14.10. Equipment (containers, etc.)

What tools or items can be used to measure, mix and store DMSO and its dilutions?

For measuring and mixing, I often use common household items such as metal teaspoons, glasses or egg cups. If you wish to use plastic items, such as pipettes, syringes or spray bottles, you should rinse or spray them beforehand with a small amount of pure DMSO, then discard this initial contents before pouring or measuring the actual mixture.

Can plastic items also be used for handling or storing DMSO?

With the exception of HDPE, industrial plastic items often contain significant quantities of plasticisers, UV stabilisers, release agents, etc. These small-molecule substances are rapidly dissolved by DMSO – this process can be observed with the naked eye, for example, when drawing up pure DMSO into a freshly unpacked syringe and streaks form on the inner surface. This 'dissolution' is generally confined to the surface of the plastic, extending to a depth of just a few molecular layers that come into contact with the DMSO, and is only observed with high-concentration DMSO solutions. At concentrations below 20 per cent DMSO, plastic surfaces remain largely unchanged.

There is no 'dissolution' of the plastic itself, in the sense that the bottles would dissolve or become perforated, as they are composed of macromolecules.

Consequence: if it is not possible to use glass, metal or porcelain containers instead, it is advisable either to rinse the plastic mate-

rials beforehand with pure DMSO or to use pre-diluted DMSO mixtures of < 20 per cent. In the case of the sterile DMSO mixtures from the Viktoria Pharmacy in Saarbrücken, the concentration in the ampoules has been set at 15 per cent DMSO for this reason, so that they can be handled directly with a plastic syringe, as is customary and desirable in practice.

14.11. DMSO in everyday use?

In principle, a 'toolkit' comprising the 'basic remedy' DMSO is intended to help the body regain its balance in the short to medium term, that is to say, to stimulate its self-healing abilities. I consider prolonged use – sometimes for life – as is common in conventional medicine, to be absurd. This approach runs counter to the natural principle of healing processes. You take a tool out of the box and, once 'the problem' has been fixed, or at least 'patched up', you put it back until the next time you need it. That is why I do not take DMSO daily, or as a preventative measure, so to speak, even though this is, in a way, what many readers of the DMSO handbook expect... I use DMSO when I have an urgent need for it, or rather when it occurs to me 😊.

As there is an in-depth, long-term study spanning 120 days on the use of DMSO, which I cited in the book, it can be used without concern from a scientific point of view at least for that period, if symptoms do not improve before then. In this study, which involved a group of around 100 participants, numerous biological parameters, nervous system functions, ocular functions and other parameters were monitored on a daily basis. No significant side effects were observed compared with the placebo group. However, as very high doses were administered – five to ten times higher than the usual doses – it can be assumed that DMSO is very well tolerated at normal doses, even over long periods.

14.12. Effects on the liver and kidneys

Why, for example, does Wikipedia state that DMSO is harmful to the liver and/or kidneys?

To my knowledge, none of the clinical trials or human studies ever conducted with DMSO mention any such evidence. Only two references are cited on Wikipedia. One concerns the effect of DMSO on turkey sperm components and comes from a journal specialising in poultry farming. The other concerns the effect of DMSO on isolated colon carcinoma cell cultures. In my view, their interpretation has been misrepresented here: concentrations of DMSO above 10 per cent are harmful to cancer cell cultures! That's good news...

As for the claim that DMSO could be harmful to the liver, kidneys or nervous system, no bibliographical references are cited on Wikipedia...!?

On a personal note, I would like to point out here that when we supply the body with an agent which, as a 'clearing agent', also enables a significant improvement in detoxification mechanisms, it stands to reason that the main detoxification organs – namely the liver and kidneys – will respond, for example in the form of temporarily higher specific laboratory values – wouldn't you agree? I believe, however, that this will only occur in cases of a pre-existing high toxic load. This is not to glorify DMSO, but there is no clear evidence of such side effects, even after nearly 60 years of research into DMSO.

14.13. Origin and general uses

Where is DMSO commonly found, or what is it generally used for?

DMSO is listed among the medicines included in the AMVV [Arzneimittelverschreibungsverordnung] and the DAC/NRF [Deutscher Arzneimittel-Codex / Neues Rezeptur-Formularium, <https://dacnrf.pharmazeutische-zeitung.de/>].

DMSO is an ingredient in numerous ready-to-use medicines worldwide (e.g. CPPharma, Abtei Schmerzgel, DMSO Roll-on, etc.).

DMSO is prescribed as a treatment option in German cancer centres for lesions caused by chemotherapy or radiotherapy.

DMSO in the form of a 50% pure solution is authorised in the United States for the treatment of [interstitial] cystitis (Rimso®). DMSO is a well-known and widely used home remedy in Eastern European countries and in the countries of the former Soviet Union. In Poland, for example, it is available in pharmacies without a prescription, in its pure form and labelled as a ready-to-use medicine.

DMSO is the subject of research into Alzheimer's disease.

In Japan, DMSO is commonly used by dentists as a mouthwash following tooth extraction. DMSO is the (main) component of culture and preservation media in cell biology, biotechnology, transplant medicine, etc.

DMSO is a widely used and valued solvent in the life sciences, capable in particular of dissolving cytokines, growth factors and hormones.

DMSO is valued for the same reason in the production of solutions and extracts from natural substances and plants, such as propolis, frankincense and herbs. DMSO has a molecular polarity more than twice that of water or alcohol (ethanol), which allows for significantly more complete extracts, as even salts are dissolved.

14.14. retention time of DMSO

DMSO has an average half-life of 36 hours in the body and is mainly excreted via the kidneys. The relevant kinetic and metabolic data have been the subject of extensive research carried out by Schering AG (now Bayer Pharma AG).

14.15. Implants (compatibility)

Can I use DMSO if I have implants, artificial lenses, artificial ligaments, mesh, sutures, prostheses, stents, a pacemaker, clips or any other metallic or synthetic components in my body?

There are no interactions between DMSO and metals. Interactions between highly concentrated DMSO and plastics are due to the fact that DMSO readily extracts small-molecule industrial processing aids contained within the polymer material. These include, for example, UV stabilisers, plasticisers, release agents, etc. This effect does not in any way cause holes to appear in the plastic material or lead to its complete dissolution, but is limited to a certain number of layers of polymer molecules from the surface. Similarly, this effect is only noticeable at DMSO concentrations above 20 per cent.

With regard to the question asked, it is therefore necessary to take into account the actual concentration at the site where these biomaterials are located and, secondly, to assume that the implanted plastics are not comparable, in terms of their composition, to plastic syringes or spoons, for example.

All methods of applying DMSO to or within the body have in common the fact that an administered dose is immediately distributed throughout the body's water, blood and tissues, resulting in significant immediate dilution, during which, as explained, there are no 'dissolution phenomena'. In the case of DMSO eye drops and the issue of contact lenses, it is important to note that the eye drops themselves are already highly diluted, to around 0.5–3 per cent.

14.16. Cosmetic products (compatibility)

Can I use DMSO as a regenerative agent in cosmetic care, anti-ageing or wrinkle treatment, and if so, how?

DMSO quickly smooths and firms the skin. It is also effective in treating spots and scars. In the field of wrinkle treatment, DMSO can be combined with hyaluronic acid, polylactic acid, etc. It also blends very well with all natural vegetable oils. For many readers, this has become an enjoyable hobby, and for some, even a profession. You can make gels, ointments, creams, etc. It is also possible to inject sterile DMSO mixtures from ampoules under the

skin. Personally, I like to use a 10 per cent DMSO solution mixed with sea water for my skin. Many people also order the 15 per cent DMSO gel from Viktoria Pharmacy in Saarbrücken for their skin and face.

14.17. To 'carry' microorganisms?

To understand this, it helps to visualise the orders of magnitude involved. DMSO is a small-molecule substance, with a diameter of around 0.3 nm (nanometres). Viruses, of whatever type, have been estimated to be at least 50 nm in diameter. Bacteria, fungi and parasites are, of course, much larger still. Let's stick with the example of viruses: if you were faced with an object, such as a football, that is 150 times larger than you, could we then assume there is a risk that you might 'carry' it?

14.18. During pregnancy and breastfeeding?

These days, nobody answers this question regarding any active ingredient unless it has been specifically authorised for this purpose...

I can answer as follows: many mothers have already written to me to say that they have used DMSO successfully during pregnancy and whilst breastfeeding. For example, to treat varicose veins, mastitis, back pain, etc.

Both mother and child have always been in very good health. As usual, DMSO is found everywhere on our planet...

14.19. To prepare extracts or tinctures?

DMSO is ideal for all dissolution applications, as, with a dipole moment of 3.96 Debye, it has a dipole moment more than twice that of alcohol (1.74 D) or water (1.84 D)! This means, for example, that a significantly more complete extract of plant material can be obtained than with alcohol, which, in any case, hinders healing and is harmful. DMSO also absorbs salts and fat-soluble substances much more effectively. This is why DMSO is often used in the production of propolis and frankincense solutions, as well as for all plant and herb extracts that are best harvested or picked using a ceramic knife. As DMSO has a boiling point of over 180 °C, there is no change in concentration due to evaporation, even during prolonged use or storage of these mixtures, and the components are furthermore 'enhanced' by the DMSO.

15. Bibliography

Note: Since 2025, numerous books of very poor quality on DMSO have appeared, particularly on Amazon, and have been written using what is commonly referred to as artificial intelligence.

Das DMSO-Handbuch – Verborgenes Heilwissen aus der Natur.

Dr Hartmut Fischer.

Publisher: daniel-peter-verlag.de. 267 pages.

One of the best recent books on DMSO.

Helmut Fischer studied chemistry and pharmacy at the University of Würzburg and obtained a doctorate in science (which entitles him to the title of 'Dr', in Germany at least). He worked for several years as a researcher in the pharmaceutical industry. He is a naturopath (Heilpraktiker).

[Dr Fischer's website.](#)

Available in English, Spanish and Portuguese:

- [The DMSO Handbook](#): A New Paradigm in Healthcare.
- La Guía del DMSO: El conocimiento oculto de la naturaleza para la sanación.
- DMSO – Um Manual: O potencial terapêutico da natureza.

Healing with DMSO

Amandha Vollmer.

Ulysses Press, 2020, 208 pages. The book's [website](#).

Dimethyl Sulphoxide (DMSO) in Trauma and Disease

Stanley W. Jacob, Jack C. de la Torre.

[CRC Press](#), 2018, 272 pages.

About the Authors

Dr Stanley W. Jacob, MD, is the discoverer of the medicinal properties of dimethyl sulphoxide (DMSO). This discovery has led to more than 20,000 publications in fields such as pain, inflammation, scleroderma, interstitial cystitis, arthritis, drug-resistant tuberculosis, cancer, cryobiology, free radicals, stroke and neuroprotection. Dr Jacob received his MD from Ohio State University and completed his surgical training at Beth Israel Hospital in Boston. He was chief resident in surgery at Harvard Surgical Services and an instructor in surgery at Harvard Medical School before being appointed to the faculty at Oregon Health Sciences University, where he became director of the Organ Transplant Programme and later rose to the rank of Gerlinger Professor of Surgery. Dr Jacob received numerous honours during his career, primarily for his research into DMSO, including the Kemper Foundation Research Scholar, Markle Scholar in Medical Sciences, the Governor's Award for Outstanding Northwest Scientist, and Humanitarian of the Year from the National Health Foundation.

Dr Jacob has chaired or co-chaired 16 international research conferences on DMSO held around the world. He is the author of a dozen medical textbooks, including the classics *Elements of Anatomy and Physiology* (WB Saunders, 1989) and *Structure and Function in Man* (WB Saunders, 1978). His list of publications includes more than 170 peer-reviewed articles, dozens of book chapters, and entries in the Encyclopaedia Britannica. Dr Jacob is currently Professor Emeritus of Surgery at Oregon Health Sciences University. Dr Stanley Jacob passed away on 17 January 2015. His legacy lives on.

Jack C. de la Torre, MD, PhD, began his work on dimethylsulfoxide (DMSO) in the early 1970s, shortly after his appointment as assistant professor of neurosurgery at the University of Chicago. Dr de la Torre's research revealed DMSO's ability to rapidly reduce intracranial pressure, restore cerebral blood flow, and stabilise respiration in non-human primates suffering from lethal traumatic brain injuries. Over the next eight years, he expanded on his findings regarding brain trauma and demonstrated that intravenous administration of DMSO was effective in treating primary and secondary damage following experimental ischaemic stroke and spinal cord trauma. These neuroprotective properties of DMSO have been widely confirmed by other researchers over the past three decades.

The DMSO Handbook for Doctors

Archie Scott. [iUniverse](#), 2013, 140 pages.

Available in French

Politics In Healing – Suppression and Manipulation in American Medicine

Daniel Haley. Potomac Valley Press. 2000, 501 pages.

Chapter 6 of this book is devoted to DMSO and **Dr Stanley Jacob** (the 'father of DMSO').

It is available as a PDF, in English and French:

- [DMSO – The Persecuted Drug.](#)
- [Le DMSO : un médicament persécuté.](#)

DMSO: Nature's Healer

Dr Morton Walker.

[Penguin Publishing Group](#), 1993, 352 pages.

Read an [excerpt from the book](#).

DMSO – Its Use in Medicine

Jacob, S.W., Herschler, R.J., Schmellenkamp, H.

[Springer](#), Berlin, 1985, 153 pages.

Proceedings of an international symposium on DMSO in medicine held in October 1984 in Neu-Ulm.

[Read the foreword](#) by **Robert J. Herschler** and **Stanley W. Jacob**.