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Unlocking DMSO — The Forgotten Molecule That Makes Drugs Work Better, Safer, and Faster

Analysis by A Midwestern Doctor | May 28, 2026

STORY AT-A-GLANCE

- DMSO is an "umbrella remedy" capable of treating a wide range of challenging ailments due to its combination of therapeutic properties (e.g., reducing inflammation, improving circulation, and reviving dying cells)
- One of DMSO's unique properties is its ability to enter through the skin and carry anything it dissolves with it as it rapidly travels throughout the body, greatly enhancing the potency and viability of many pharmaceutical drugs
- Because of this, numerous preparations over the years have combined DMSO with a commonly used medication, and in many cases, demonstrated safety and efficacy of the combination to drug regulators
- Some of these DMSO combination therapies are able to treat challenging illnesses, such as significant musculoskeletal injuries, antibiotic resistant infections, persistent fungal and viral infections, chemotherapy resistant cancers, and chronic pain
- More creative DMSO combinations (which can be produced at home) have been frequently used to successfully treat many challenging conditions (e.g., tinnitus, a wide range of eye issues, cancers, and uncomfortable scars)

DMSO is a remarkable naturally occurring substance that (provided it's used correctly[1]) safely and rapidly improves a variety of conditions medicine struggles with — particularly chronic pain. For example, thousands of studies show DMSO treats a wide range of:

- Injuries such as sprains, concussions, burns, surgical incisions, and spinal cord injuries (discussed here).
- Strokes, paralysis, many neurological disorders (e.g., Down syndrome and dementia), and numerous circulatory disorders (e.g., Raynaud's, varicose veins, or hemorrhoids), which were discussed here.
- Chronic pain (e.g., from a bad disc, bursitis, arthritis, or complex regional pain syndrome), which was discussed here.
- Many autoimmune, protein, and contractile disorders, such as scleroderma, amyloidosis, and interstitial cystitis (discussed here).
- Head conditions, such as tinnitus, vision loss, dental problems, and sinusitis (discussed here).
- Internal organ diseases such as pancreatitis, infertility, liver cirrhosis, and endometriosis (discussed here).
- A wide range of skin conditions, such as burns, varicose veins, acne, hair loss, ulcers, skin cancer, and many autoimmune dermatologic diseases (discussed here).
- Many challenging infections, such as shingles, herpes, chronic ear or dental infections, and osteomyelitis (discussed here).
- Cancers and many complications from the illness and its treatments (discussed here).

In turn, since I started this series, it struck a chord, and I have received over 2,000 reports of remarkable responses to DMSO, and many readers have had for a variety of "incurable conditions."

This begs an obvious question — if a substance capable of doing all of that exists, why does almost no one know about it? Simply put, like many other promising therapies, it fell victim to a pernicious campaign by the FDA, which kept it away from America

despite decades of scientific research, congressional protest, and thousands of people pleading for the FDA to reconsider its actions. Consider for example, this 60 Minutes program about DMSO that aired on March 23, 1980:

Video Link

Understanding DMSO's Combination Potential

DMSO's effectiveness in treating a wide range of illnesses stems from its unique and diverse properties, many of which appear to target the root causes of disease — such as enhancing parasympathetic activity, improving circulation, regenerating senescent cells, providing potent anti-inflammatory effects, and blocking pain conduction. Sadly, despite hundreds of studies demonstrating these promising characteristics, the FDA has refused to recognize all but one property of DMSO.

In pharmacology, DMSO is often referred to as a "vehicle" that helps other drugs get into the body. Because of this, while DMSO only has one approved (intravesical) use in the United States, a variety of drugs are on the market that use DMSO as a "vehicle" to transport them in the body.

In short, when DMSO is given alone, it is "unsafe" and "unproven" but when combined with a patentable drug, it suddenly becomes "safe and effective." Likewise, in package inserts, DMSO is typically described as a safe and inert ingredient (despite it often being the primary "active ingredient").

DMSO's ability to serve as a drug delivery system is due to its being a potent solvent with a variety of unique properties.

- **Membrane permeability —** DMSO will pass through biological membranes without damaging them, which is extremely unusual.[2] This property is believed to be due to its exchange and interchange with water in biological membranes.[3] In addition to

not harming the skin, when tested with other substances that could enter the brain, DMSO was not observed to alter the cells lining the blood-brain barrier or the brain tissue.[4]

- **Rapid distribution —** Once it contacts the skin, DMSO rapidly spreads throughout the body. Within an hour of being applied to the skin, it can be found within the bones and teeth.[5] Interestingly, DMSO does not penetrate tooth enamel or nails, which may explain why certain conditions affecting these structures require different approaches.[6]

- **Solvent properties —** DMSO is a highly potent solvent that can dissolve a wide range of polar and non-polar substances (and hence is sometimes used to solubilize other drug products). If a substance is dissolved within DMSO, DMSO can typically bring it into the body. While a few other substances can also serve as vehicles, DMSO is the most potent in pharmacology (e.g., DMSO is more effective than propylene glycol at delivering topical steroids into the body[7]).

- **Enhanced circulation and cellular transport —** Beyond simply transporting substances into the body, DMSO also greatly increases circulation. By taking the place of water (as it is small, can form hydrogen bonds, and is relatively polar) while being both fat and water soluble, it changes the permeability of the cell membrane, allowing new things to enter the cell and waste products to leave the cells.

  As a result, DMSO is able to both spread what it transports throughout the body and significantly enhance the body's innate ability to circulate what has already been absorbed (including to previously inaccessible areas).

  This combination of properties enables the topical administration of drugs that would normally require injection, and in many cases, can significantly increase their potency because it penetrates deep regions of the body that pharmaceuticals typically have difficulty entering, or because it bypasses the cellular barriers that normally exclude foreign substances.

In turn, lower doses of drugs can frequently be used (reducing their toxicity) because they become more potent, and because DMSO combinations can be locally applied to bring a drug to a target region, rather than taking a standard oral dose that raises the entire body's target concentration.

- **Specialized DMSO pharmaceuticals —** These properties allow well established drugs to be combined with DMSO. For example, NSAIDs (which are also used to treat pain and musculoskeletal injuries) **have a variety of side effects when consumed orally** (e.g., fatal NSAIDs gastric bleeds killed over 16,000 Americans in 1999[8]). However, when combined with DMSO, NSAIDs can be applied topically to the site of injury, thereby avoiding the risks of oral NSAID consumption.

  One FDA-approved drug (Pennsaid) does just that, and in clinical trials, it was found to have minimal systemic toxicity. DMSO significantly enhances the efficacy of diclofenac (Pennsaid's NSAID) while exhibiting much lower toxicity compared to oral diclofenac.[9,10,11,12]

  Many other FDA approved pharmaceutical products utilizing DMSO further demonstrate its therapeutic versatility:

  - Mekinist, a targeted cancer therapy, uses DMSO to stabilize the drug and enhance its water solubility, possibly increasing tumor penetration.[13]
  - Prochymal, a stem cell product for preventing tissue rejection, uses 10% DMSO to preserve stem cells, as do many other stem cell products.[14]
  - Onyx, a liquid injected into blood vessels to seal leaks, uses DMSO to dissolve the polymer so it remains liquid until reaching problem areas. DMSO is chosen because it's a uniquely safe substance capable of this function.[15]
  - Viadur is a non-degradable implant for prostate cancer containing Lupron dissolved in DMSO, designed to slowly release Lupron over a year.[16] DMSO is essential because Lupron is otherwise difficult to dissolve, and DMSO preserves its stability while being nontoxic.

> ***Note:*** *Lupron is* ***an incredibly toxic hormone eliminating drug*** *used for prostate cancer which was adopted by urologists due to it being incredibly lucrative (which then led to it being repurposed for many other areas of medicine such as gynecology and blocking puberty in transgender children).*

Critical Considerations

DMSO's function as a vehicle and potentiator has enabled a variety of innovations for common medical therapies (e.g., pain-killers, antibiotics, and chemotherapy), which has inspired many others to experiment with these combinations. However, for anyone planning to do this, it is critical to understand the safety precautions that need to accompany using DMSO in this manner.

- **Contamination risk —** One of the major risks of DMSO is its potential to exacerbate the effects of a toxic substance already present in the skin, so it is crucial to clean the skin thoroughly before applying DMSO. The original investigator of DMSO learned this lesson the hard way when researching toxic pesticides.[17]

  [Herschler] wanted to investigate whether certain highly toxic pesticides were soluble in DMSO. The researcher felt how soluble they were when he sprayed some of the solution onto his skin. DMSO transported the poison into the body within minutes. The poison worked: Herschler temporarily suffered from impaired consciousness and shortness of breath.

  Remarkably, despite the immense potential harm, serious incidents are extremely rare, suggesting either that users are consistently careful about cleaning skin prior to DMSO applications or that the actual risk is limited to highly toxic substances.

- **Potentiation effects —** Many agents become significantly more potent when mixed with DMSO, and in a few reports made rare side effects typically seen at higher doses manifest (something which has occasionally been reported with the more toxic antibiotics like fluoroquinolones or certain chemotherapy drugs).

With natural substances, this is generally not problematic (as their potency and toxicity are typically much less than pharmaceuticals). Still, it remains a real consideration (although I have not come across any reports of this injuring someone).

- **Size limitations —** While DMSO can draw things inside the body, it can only do so for smaller molecules, with the size limit thought to be around 500 daltons (although there are numerous examples of larger drugs also being transported).

  For this reason, DMSO tends to work well as a vehicle for individual drugs or chemicals but not larger proteins (e.g., peptides). Likewise, pathogenic organisms are far too big for DMSO to transport, so areas of application do not need to be disinfected prior to application.

  Note: *Below the skin, the transportation limit is much higher (e.g., evidence suggests DMSO can bring molecules larger than 70,000 Da through the blood-brain barrier, opening even wider possibilities for intravenous applications).*[18]

- **Purity requirements —** When making DMSO combinations, it's essential to obtain pure ingredients, as many pharmaceutical and supplement preparations contain multiple ingredients beyond the primary active compound.

  Note: *One of DMSO's most promising combinations is with a common dye (hematoxylin) as* ***this combination selectively targets tumors*** *with no toxicity to normal tissue and* ***has remarkable efficacy against a wide range of cancers****. Unfortunately, hematoxylin is often mixed with heavy metals (to better stain tissues), illustrating the need to ensure pure substances with DMSO.*

- **Leaching —** As a solvent, DMSO can leach toxic chemicals (e.g., those added to the surfaces of plastics) and hence later bring them into the body. For this reason, it is advisable to avoid storing DMSO in plastic that is not DMSO resistant and to avoid mixing or preparing DMSO with plastic tools.

In most cases, DMSO only leaches plastic at concentrations about 20%, so if DMSO is diluted before putting it in contact with plastic many of these issues can be avoided. Likewise, many DMSO compatible materials exist for preparing DMSO combinations — all of which is discussed further here.

Note: *Most implanted medical devices are not at risk of DMSO leaching them as it dilutes far below 20% by the time it reaches them and can contact their plastic components. The one exception are within dental implants, and for that reason,* ***DMSO mouthwashes should always be sufficiently diluted****.*

DMSO Drug Interactions

Given DMSO's ability to potentiate pharmaceuticals, a critical question arises: is it safe to take alongside other drugs? The answer is nuanced:

- **What we know —** Most pharmaceutical interactions, unfortunately, have not been studied. Fortunately (particularly since over 61% of Americans are on at least one medication[19]), significant reactions are rarely reported.

  Generally speaking, the risk for potentiation is stronger the closer they are taken together (particularly when mixed together in an IV infusion) so it is generally advised to space DMSO and a pharmaceutical by at least two hours, and in the case of more toxic ones (e.g., fluoroquinolones and certain chemotherapies) by at least two days.

  Note: *DMSO can also mitigate many pharmaceutical toxicities, such as gentamicin's kidney toxicity*[20] *or* ***many injuries caused by chemotherapy****.*

  Most of the research into DMSO's interactions was conducted during the initial trials in the 1960s, where it was discovered DMSO significantly potentiated alcohol and also potentiated barbiturates, corticosteroids, insulin, digitalis, nitroglycerin, quinidine sulfate, and chemotherapy[21] (leading to lower doses sometimes being needed).

Since then, DMSO has also been observed to potentiate certain opioids (e.g., morphine patches), NSAIDs, anticonvulsants (e.g., gabapentin), and certain sedatives (e.g., trazodone). Users typically do not report potentiation of anticoagulants; however, as a serious risk might exist, it is advisable to monitor your coagulation parameters when using both concurrently.

Note: *Insulin potentiation is hypothesized to result from DMSO's* ***protein refolding capacity*** *restoring the functionality of insulin receptors.*[22]

Conversely, DMSO has also been observed to reverse the effects of Botox, likely by neutralizing the toxin induced paralysis.

Therapeutic Synergies

Over the years, many remarkable pharmaceutical DMSO combinations have been developed for a wide range of medical applications. These include:

- **Antibiotics —** Antibiotic resistance is a major problem in medicine. However, when combined with DMSO, many organisms that are chronic and debilitating or life threatening (e.g., tuberculosis) **lose their resistance to antibiotics**.

  DMSO also makes it possible to reach infections such as those within the bones that are normally difficult to reach and otherwise require maintaining very high blood concentrations of the drugs to ensure this result. Finally, in many cases (both for cost and to protect the gut microbiome) being able to topically apply an oral or IV antibiotic can be immensely advantageous (e.g., **for mastitis or Lyme disease**).

- **Antifungals —** Fungal infections are often located in areas that topical and oral antibiotics have difficulty penetrating. However, research shows **combining an antifungal with topical DMSO can reach those infections** and there are many reports of multiyear fungal infections quickly resolving from this combination.

- **Herpes and shingles —** Some of the most potent antiviral medications have difficulty penetrating through a lesion to where the virus resides. However, once combined with DMSO they do, and many clinical trials have proven the efficacy of these antiviral combinations.

- **Corticosteroids —** For issues within the body, steroids (which have significant systemic toxicity) have to be injected or taken orally. When combined with DMSO, this is often no longer needed, and as DMSO potentiates steroids, much lower and far less toxic doses can be taken to address an autoimmune or musculoskeletal issue.

- **Chemotherapy —** By potentiating chemotherapy, DMSO has been proven to cure chemotherapy resistant cancers, and in many cases does so with much lower doses being needed.

  Owing to the emerging popularity of using ivermectin for treating cancer (which sometimes produces spectacular results but typically fits best as a complementary therapy), physicians have begun combining ivermectin with DMSO into a paste and topically applying it over tumors. While data is limited, this appears to consistently work, and sometimes produces dramatic responses like this one James Miller MD shared with me:

  > *"I had a patient with a thoracic sarcoma that was debilitatingly painful with growth through a couple of ribs and metastases to his skull base that became basically pain free after 2 days of topical DMSO-ivermectin. At his 2.5 week follow up, he was completely pain free and had returned to playing racketball."*

  Note: *Nothing comparable to do this can be done with conventional cancer options (and given the severity of that situation, what would be used is also fairly toxic).*

Conclusion

As so many things can be combined with DMSO, the incredible things we've seen so far are only the tip of the iceberg, and only the most preliminary (but highly encouraging) data exists on many of them, as there is so much to research. For example, DMSO combinations have been shown to effectively treat **a wide range of eye issues** (e.g., eye strain, macular degeneration, glaucoma, and cataracts), **traumatic injuries** (e.g., whiplash), **tinnitus**, **uncomfortable scars**, **neuropathic pain**, and **Lyme disease**.

Likewise, DMSO combination therapies are not restricted to pharmaceuticals, and as such, over the years, the DMSO community has discovered hundreds of incredible natural DMSO combinations that revolutionize natural medicine.

Stanley Jacob, the father of DMSO who devoted his career to advancing the science of it, was driven by the recognition DMSO was not a new drug, but rather, like penicillin, a new therapeutic principle which redefined how medicine could be practiced. Fortunately, due to an extraordinary confluence of circumstances, we have now arrived in an era where it is at last (after more than a century) no longer possible to suppress natural healing methods.

People around the world are at last awakening to the **Forgotten Sides of Medicine** and the realization that the ways to find the cures we need is not "more research" but rather rediscovering what was already found (but not possible to profit off of). This is an incredibly exciting time and I am immensely grateful to be part of it with you.

Author's Note: *This is an abridged version of* ***a longer article*** *about DMSO combination therapies which goes into greater detail on the points mentioned here, many of the other combinations not covered (e.g., for tinnitus or vision loss), and provides guidance for preparing the combination therapies. That article, along with resources and protocols for obtaining and using DMSO can be read* ***here****.*

A Note from Dr. Mercola About the Author

A Midwestern Doctor (AMD) is a board-certified physician from the Midwest and a longtime reader of Mercola.com. I appreciate AMD's exceptional insight on a wide range of topics and am grateful to share it. I also respect AMD's desire to remain anonymous since AMD is still on the front lines treating patients. To find more of AMD's work, be sure to check out **The Forgotten Side of Medicine** on Substack.

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