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How DMSO Protects and Heals Internal Organs

Analysis by A Midwestern Doctor | December 06, 2024

STORY AT-A-GLANCE

- The therapeutic actions of dimethyl sulfoxide (DMSO) make it well suited to treat challenging conditions throughout the body, including many of the internal organs
- DMSO effectively protects organs from injury, such as poisoning or blood loss, and has been shown to treat many life threatening conditions (e.g., heart attacks, ARDS, or pancreatitis)
- DMSO has been shown to treat disorders of the urogenital tract and reproductive system, such as kidney stones, nephritis, enlarged prostates, prostatitis, cystitis, epididymitis, genital pain, urethral syndrome, tubal infertility, and endometrial inflammation or fibrosis
- DMSO has also been shown to repair damaged organs (e.g., liver cirrhosis, pulmonary fibrosis, smoke inhalation damage) and improve blood sugar control

Dimethyl sulfoxide (DMSO) is a remarkably safe[1] naturally occurring compound that can treat a variety of challenging conditions. Since DMSO is incredibly effective for treating chronic pain, arthritis, and injuries like sprains or burns[2] (discussed further here), it quickly spread across America as a miracle drug.

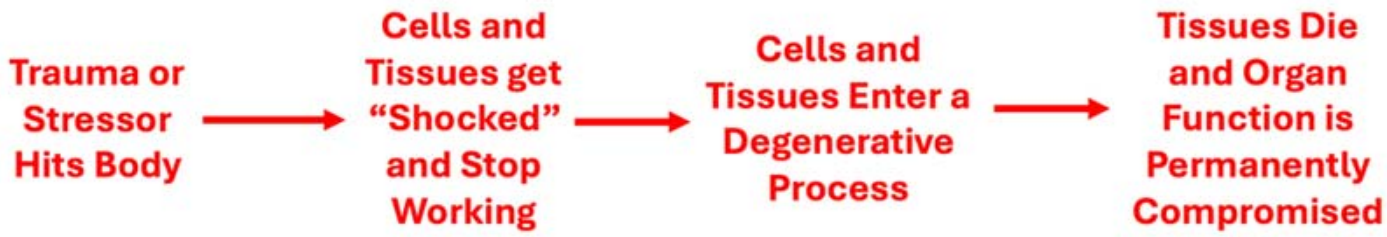
Thousands of studies were conducted to confirm its value, and before long, hundreds of thousands of people considered it to be the most important therapeutic ever discovered. Unfortunately, due to politics, the FDA turned against DMSO and refused to relent[3] even once:

- DMSO was shown to effectively treat strokes, traumatic brain injuries, spinal cord injuries, and many circulatory disorders (discussed here).
- DMSO was shown to cure a variety of "incurable" autoimmune and connective tissue disorders (discussed here).
- DMSO was shown to treat a variety of challenging (and often incurable) eye, ear, sinus, and dental conditions such as tinnitus and blindness (discussed here).

Since publishing those articles, I've received over a thousand reports from people of the remarkable effects DMSO has had on them (which can be read here), that while unbelievable, are almost identical to what people across America reported before the FDA buried DMSO.

Reversing Organ Degeneration

The following process underlies many disease states:



In rapid cases, this is easy to recognize (as cells will rapidly die after a traumatic injury or having their blood supply cut off), whereas in slower cases (e.g., those arising from a chronic illness or toxicity), the issue often is that the cellular repair process becomes frozen and unable to bring the cells back to normal functioning.

Many regenerative medical therapies in turn, seek to "unfreeze" this cell danger response so that the normal function of the cells can be restored.

DMSO is uniquely suited to reversing this process as, especially when done early in the rapid cases following a severe injury (whereas the more gradual and chronic ones we often see frequently require systemic regenerative therapy). This is because:

1. DMSO protects the blood supply of the body,[4] and disperses the microclotting, which often follows injury (e.g., burns) and leads to tissue death.[5] Simultaneously, it also protects tissues from dying during periods of inadequate blood supply (ischemia) or being injured when that blood supply is rapidly restored (reperfused).

   Numerous animal studies have demonstrated DMSO's protective effect in organs that rapidly die once they lose their blood supply, such as the heart[6,7,8,9,10,11,12] and brain[13,14,15,16,17,18,19,20,21,22,23] (and even DMSO maintaining their function[24,25,26] during periods of ischemia).

   Likewise, DMSO has also been shown to prevent ischemia and reperfusion injuries to the liver[27,28] kidney,[29,30,31,32] lungs,[33,34] ovaries[35] and small intestine.[36]

2. DMSO protects organs from toxins that would otherwise be lethal to them or permanently damage them. This has been shown with the heart,[37] kidneys,[38,39,40] liver[41,42,43,44] lungs,[45] pancreas.[46,47,48] Additionally, DMSO has also been repeatedly shown to mitigate radiation damage to tissues (e.g., in the kidneys).[49]

3. DMSO has been shown to protect the brain[50,51] liver,[52] and lungs[53] from the tissue damage that develops after blunt trauma or surgical excisions.

   Note: *This was also repeatedly demonstrated in humans with severe blunt head trauma.*[54,55,56]

4. DMSO dampens the destructive autoimmune process and swelling that often follows tissue trauma.[57,58] In addition to protecting organs from injury, and reversing that degenerative process, DMSO has also been shown to help with a variety of challenging medical conditions.

Heart

The majority of the pertinent studies evaluating DMSO's interactions with the heart (e.g., the previously mentioned ones) evaluated its ability to protect the heart from ischemic events like heart attacks and to improve the circulation within the body.[59]

Gastrointestinal Tract

Numerous randomized controlled trials conducted in Iraq found DMSO was highly beneficial for gastrointestinal diseases:

One evaluated 136 patients with recurrent attacks of proctosigmoid ulcerative colitis that were not being prevented by their prophylactic medical regimen. For those receiving standard care, 51% recovered in two weeks compared to 84% of those also receiving DMSO. Over the next year, 25% of those continuing to receive standard care had a relapse rate, whereas only 5% of those receiving DMSO did.[60]

One evaluated hospitalized patients with pelvic fractures or hypovolemic shock who were at risk for a stress induced gastric ulcer. Of the 58 controls, 22% developed an ulcer, whereas of the 57 receiving DMSO, only 4% did. Additionally, none of those receiving DMSO deteriorated or required emergency surgery, whereas 8 controls and 1 allopurinol recipient did (of whom 3 then died).[61]

One evaluated 302 consecutive patients with previous symptomatic duodenal ulceration that was shown to have healed, and who were smokers and social drinkers, to receive four different treatments. Of the 220 available for evaluation, 65% who received a placebo had a recurrence of the ulcer, 30% of those who received cimetidine, and 13% of those who received oral DMSO.[62]

Note: *Similar results have been obtained by American physicians in a smaller number of patients.*[63]

One evaluated 363 consecutive patients whose duodenal ulcers that did not heal despite 3 months of treatment with cimetidine (and who were cigarette smokers or social drinkers), were given either cimetidine twice a day alone or with DMSO or allopurinol. In 315 patients who were evaluable for analysis, at 8 weeks, 60% of those who had cimetidine recovered, whereas 100% of those who received DMSO recovered.

Additionally, the one year relapse rate was 29% for cimetidine alone and 7% in those who took DMSO.[64]

One evaluated 238 patients with symptomatic acute duodenal ulceration who were smokers and social drinkers were randomized to receive for 8 weeks cimetidine or 8 weeks of a half dose of cimetidine plus oral DMSO (400mg two times a day) or allopurinol. After 8 weeks, 69 of the 87 (79%) who only received cimetidine recovered, whereas all of the 85 who received DMSO did.

Additionally, 67% of those who received cimetidine over the next year relapsed, compared to 6% of those who took DMSO.[65]

One evaluated 101 patients presenting with hematemesis (coughing up blood) due to erosive gastritis (a fairly dangerous condition). It gave them either saline or oral allopurinol and DMSO orally every 6 hours for 5 days.

Of the 50 controls and 48 who were treated (along with 2 who left because they could not tolerate the treatment), 29% of the controls and 8% of who were treated had further episodes of hematemesis (with three of the controls requiring subsequent surgery — one of whom died). Of those who remained stable, a subsequent endoscopy showed evidence of hemorrhagic inflammation in 44% of controls and 9% of those who were treated.[66]

Finally, DMSO also has been shown to help with irritable bowel syndrome, acute or chronic gastritis, peptic ulcers, enterocolitis, and mucomembranous colitis.[67]

Liver

In addition to DMSO protecting the liver from injury, DMSO can sometimes heal the liver. For example, 12 patients who had terminal liver cirrhosis who agreed to stop drinking all alcohol for the duration of the program were put on daily DMSO program.

Of the 8 who chose to continue the program for 6 months, all had improved health, significantly reduced vomiting, and improved liver function tests, and rather than all being dead within one year as expected, they were in better condition than they had been at the start of the study.[68]

Gallbladder

- A rat study created obstructive jaundice by ligating (cutting off) the common bile ducts and found that laboratory values showed DMSO mitigated the expected pathologic effects.[69]
- A Japanese study found that injecting 90% DMSO mixed with 5% hexametaphosphate into the biliary tract effectively dissolved gallstones within the liver and was safe for the patients.[70]

Lungs

Additional data supports the protective role of DMSO for the lungs:

- After sheep experienced a lung injury from inhaling smoke, nebulized DMSO (with heparin) was found to reduce the damage to their lungs significantly.[71]

  Note: *Some unresolved questions exist regarding the safety of long term DMSO nebulization.*[72]

- DMSO was found to prevent oxygen deprivation and inability to exchange gasses through the lungs which results from an Ehrlichia ruminantium infection (which is typically fatal).

DMSO has also been shown to treat acute respiratory distress syndrome (ARDS), a challenging condition that frequently results in being placed on a ventilator (e.g., this happened throughout COVID-19).

In a hamster study and a mouse study, where a toxin was used to induce ARDS, DMSO significantly reduced the resulting lung damage and fluid leakage (which effectively drowns ARDS patients).[73,74] A third mouse study found DMSO prevented all of them from dying (whereas 58% of controls died).[75]

In the one human study where IV DMSO was used for ARDS (given intravenously at concentrations under 10%) it was found to produce a dramatic improvement in all three patients who received it (e.g., one patient's lungs were completely normal after a week) and prior to receiving DMSO all three were near death.[76]

TABLE 1

Patient		pH	$paCO_2$	paO_2	HCO_3^-	% O_2 Sat.
1	pre-DMSO	7.37	50	60	29	89.0
	1 h post-DMSO	7.35	43*	91*	26	95.0*
2	pre-DMSO	7.36	51	58	29	87.6
	8-h post-DMSO	7.33	52	86*	27	94.5*
	5 days into therapy	7.37	34*	84*	19	94.5*
3	pre-DMSO	7.32	48	66	24	89.9
	8-h post-DMSO	7.27	45	95*	20	94.9*

*Asterisks used for emphasis.

Note: *In the one case when DMSO was nebulized, the improvement occurred in 1 hour.*

Finally, DMSO can help chronic lung conditions.

- One study found DMSO reduces chronic pulmonary fibrosis, and this beneficial effect was increased when it was mixed with zinc.[77]
- For older patients with chronic respiratory insufficiency (leading to chronically low blood oxygen levels, elevated carbon dioxide levels and an abnormal acid base balance, especially during exercises) due to issues in the lungs or bronchi, DMSO was found to bring about a recovery without the need for hospitalization in 35/43 (81%).[78]
- Human studies also have shown DMSO can treat asthma.[79]

Pancreas and Diabetes

Diabetics have reported that DMSO reduces (but does not eliminate) their need for insulin and that DMSO is particularly helpful for the condition since it can also alleviate the pain from diabetic peripheral neuropathy.[80] Studies in this area include:

- Alloxan is toxic to the insulin producing cells of the pancreas and can be used to induce diabetes. A 1977 study found that DMSO prevented alloxan from causing diabetes.[81]
- DMSO has been shown to prevent the immune system from attacking transplanted insulin secreting cells (suggesting DMSO has significant potential for Type 1 diabetes).[82]
- GLP-1 is a key hormone the body uses to regulate satiety and blood sugar (and which diabetes drugs like Ozempic mimic). One study found that 0.5% to 2.5% DMSO increased GLP-1's production of insulin by 2 to 2.5 times. This suggests DMSO could help treat diabetes or allow GLP-1 users to use a lower dose of the medication.[83]
- Exposing insulin secreting cells to DMSO was found to enhance glucose-induced and tolbutamide-stimulated insulin secretion without significant effects on basal secretion or potassium responsiveness.[84]

DMSO (along with **ultraviolet blood irradiation**) has also been shown to help pancreatitis, a challenging and dangerous condition[85] (as there are no conventional treatments besides supportive care for most types of pancreatitis). For example, three rat and mice studies found DMSO significantly improved experimentally induced pancreatitis.[86,87,88]

Additionally, a randomized double-blind trial took 78 patients with chronic recurring pancreatitis (and no other confounding gastrointestinal disorders) who presented within 2 hours with signs of pancreatitis but did not have signs of generalized peritonitis. Of them, 26 received 10% DMSO rectally, and at least 57% were free of pain after 12 hours

(compared to 17% of controls), and all were free of pain after 24 hours (whereas 48% of controls were still in pain).

As a result, all DMSO subjects were discharged within 3 days, whereas only 22% of controls were discharged after 5 days of hospitalization.[89]

Kidneys

In most circumstances, DMSO has been shown to be safe for the kidneys, to function as a potent diuretic, and to increase the kidney flow rate.[90] In addition to protecting the kidneys from ischemia and toxins like mercury, many studies have also shown DMSO protects the kidneys from amyloidosis.[91]

Many kidney autoimmune diseases result from immune deposits in the kidneys (one of which is Heymann nephritis, an experimentally induced form of nephritis[92] where antibodies that target the kidneys are injected causing immune deposits on the glomerular walls). In three rat studies of Heymann nephritis, DMSO was found to protect the kidneys and their function.[93,94,95]

Similarly, a study of 56 DMSO treated rats (and 48 controls) with lupus nephritis found that those who received DMSO had nearly normal kidneys, whereas the controls had significant damage to their kidneys.[96] DMSO, likely due to its effects on zeta potential,[97] has also shown promise for kidney stones:

- A study fed rats a diet designed to create kidney stones, and found that after two months, 40 of the 45 water-drinking rats had developed stones in the kidney, bladder or ureter, while only 11 of the 46 DMSO group did.[98]
- A study of 6 patients with kidney stones (5 of which were confirmed by ultrasound) found IV DMSO[99] resolved the condition in 2 to 3 treatments (although one patient had a complete resolution after a single infusion).[100]

Note: *We have had a great deal of success treating kidney stones by* ***improving the physiologic zeta potential****.*

Genitourinary Disorders

DMSO is extremely helpful for inflammation of the bladder, particularly "interstitial cystitis" (also known as painful bladder syndrome), a challenging condition which results in very frequent, painful (and often bloody) urination. DMSO, however can also help many other parts of the urinary tract. For example one study found:[101]

TABLE 1
TOPICAL THERAPY WITH DMSO IN VARIOUS GENITOURINARY DISORDERS

Disease Entity	No Pts Treated	No Pts Improved
Peyronie's disease	13	6
Interstitial cystitis	15	2*
Epididymitis	12	7
Herpes progenitalis	5	2
Polycystic kidneys	2	2
Incisional pain, flank	3	3
Vague genital pain	14	1

*Intravesical instillation of definite value in some pts, not responding to topical therapy.

Likewise, a study of inflammatory conditions of the urinary tract, in addition to showing significant benefit for interstitial cystitis, also found:[102]

- Of the 12 patients with radiation cystitis (e.g., from prostate cancer therapy) 50% had a good response to it.
- Of the 35 patients with chronic prostatitis, 75% benefited significantly, with 12 having an "excellent" response, 14 a "good" response, and in 90% of cases, inflammation of the prostatic urethra improved.
- Another study gave 4 men with chronic excessive (and untreatable) urination due to bladder or prostate issues DMSO, 3 of whom had an excellent response.[103]

- A Polish study found urethral syndrome (chronic irritation of the urethra without signs of an infection) responds to DMSO being put into the urethral tract.[104]

Note: *Many other remarkable reports exist of DMSO's value for prostatitis (e.g., one DMSO doctor recently shared that it treated 40 out of 40 cases of bacterial prostatitis).*[105]

Additionally, while no formal studies have been conducted on prostate enlargement many anecdotal reports (including from readers of the Forgotten Side of Medicine) have found DMSO is remarkably beneficial for this condition.[106]

Reproductive Disorders

- A 1975 Chilean study at a Navy hospital took 69 women who were infertile due to an obstruction in their fallopian tubes and injected a DMSO mixture into their fallopian tubes six separate times (and then repeated the series if the tubes had not opened). Out of 47 patients, 27 (57.4%) subsequently became pregnant, including one who got pregnant twice (without any further assistance).

  Of the 27 pregnancies, 12 resulted in successful deliveries, 7 had a normal pregnancy at the time of publication, 4 patients chose to have abortions, and 3 had spontaneous abortions, and 1 had an abnormal pregnancy requiring a surgical intervention, and 0 had ectopic pregnancies (one of the risks of surgically opening the fallopian tubes).

  Additionally, out of the 426 DMSO hydrotubations which were performed, only 7 (1.5%) had side effects all of which were minor.[107]

  Note: *25% to 35%*[108] *of infertility is due to tubal obstructions (typically from inflammation there). The current surgical approach for opening a tubal obstruction and restoring fertility (which bears some risks) has a 10% to 30%*[109,110] *success rate.*

- One study administered 10% to 30% DMSO into the uteruses of horses that could not get pregnant. It found no harm occurred to the lining of the uterus and that 18 out of 27 had significant improvement to the lining of their uterus (compared to 2

out of 18 who received a saline placebo), such as a reduction of chronic inflammatory cell infiltrates and reduction of periglandular fibrosis.

Additionally, there were signs their fertility improved, but the trial's design made it impossible to be sure this improvement occurred.[111]

A New Therapeutic Principle

When DMSO was discovered, Stanley Jacob quickly realized that it represented a new therapeutic principle since it made so many things which had previously seemed impossible in medicine suddenly possible — and even more remarkably, 60 years later, many of the things DMSO can address the medical system still struggles to deal with.

For example, in the same way DMSO could significantly improve surgical outcomes,[112] the data here makes good case that DMSO should be a mainstay therapy whenever someone is at risk of organ failure from being poisoned (e.g., due to a drug overdose). Likewise, the data here shows how numerous immensely challenging diseases that require a hospital or intensive care admission could be dramatically improved with DMSO.

However, **while the FDA's war against DMSO** was immensely unfortunate, I am extremely hopeful the unprecedented political climate we are now entering we will at last make it possible to reform a medical system that has always put profits before people.

Much of that is thanks to the incredible work many of you have done throughout the pandemic to bring awareness to the crimes of the medical industrial complex and I am profoundly grateful to each of you for helping to make it happen and giving me the voice to as well.

Author's note: *This is an abridged version of* ***a longer article*** *that goes into greater detail on the data discussed here, how DMSO is used for each of the conditions mentioned (along with other approaches we've seen help them), and provides guidance for personal DMSO use (e.g., dosing, therapeutic precautions and where to obtain it). That article and its additional references 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.

Sources and References

- [1] See all references