Chapter6: DMSO - The Persecuted Drug by Dr. Stanley Jacob [from the book: Politics In Healing by Daniel Haley] 27 Feb 2011

A New York Times editorial on April 3, 1965 called DMSO the closest thing to a wonder drug produced in the 1960's. There was a great deal of publicity and controversy about DMSO in the 1960's and 1970's. On March 23 and July 6, 1980, Mike Wallace had two 60 Minutes programs on DMSO.

The Persecuted Drug - The Story of DMSO (from which the title of this chapter was borrowed) was written in 1972 by the late Pat McGrady Sr. In the opening of his book he wrote:

This is the story of a drug which was glorified briefly as having almost panacean properties for the ailments of man and beast and diseases of plant life and then was banished by high United States authorities (the FDA) as dangerous and without merit.

This is also the story of a mild-mannered scientist (Dr Stanley Jacob) who challenged the law and defied the officials and their police in a soul-searing struggle to make the drug available wherever there is life.

The drug is known as DMSO, or dimethyl sulfoxide (a liquid). It has been championed by reputable physicians as capable of healing or palliating many ailments. It has been represented as a "wonder drug" or a "miracle drug". It is abundant; it can be extracted from such sources as coal, oil, or most commonly lignin, the material nature uses to cement cells together in trees; it is cheap; it is most often administered by simply dabbing it on the skin, and, alone or as a carrier for other drugs, which DMSO often potentiates, it penetrates the skin to enter the blood stream where it is borne to all parts of the body.
Scientists contend that the (thousands of) papers published in professional journals refute virtually all the FDA charges.

On July 31. 1980, Senator Mark Hatfield of Oregon testified at a hearing of Senator Edward Kennedy's sub-committee on health:

I cannot make an absolute statement that DMSO is indeed the wonder drug of our century; but every bit of evidence I encounter reinforces the premise that it is. After 1,200 scientific publications on the merits of DMSO, after international symposia in Germany, the U.S., and Austria - all concluding that DMSO is safe and effective - after three separate pharmaceutical firms have submitted for new drug applications to the FDA (all rejected), DMSO is still not available to Americans, although it is available in many other countries. I have urged the Senate to support my legislation (to approve DMSO) on behalf of all Americans who are suffering from diseases untreatable by any other known substance and those who may have need of this drug in the future.

Strokes are the third biggest killer in the U.S., causing over 150,000 deaths a year. They are also "the primary cause of serious disabilities", U.S. News reported on March 30, 1998, "leaving 3,000,000 people annually unable to work or take care of themselves". If given soon after a stroke, DMSO, one of the world's greatest solvents, has been shown to dissolve the clot that causes the stroke, thus restoring circulation and avoiding paralysis. How soon? Dr. Stanley Jacob says within the first few hours is best and intravenously is better than oral, but oral works too. Once DMSO gets into the body either daubed on the skin, given I.V., or by mouth, it permeates the body and crosses the brain barrier, so even taken orally it can improve circulation. One man who had a stroke at 7:30 AM refused to go to the hospital until after his wife had spoken with Dr. Stanley Jacob, which didn't happen until 6:30 PM. Starting at 7 PM the day of the stroke, she gave him one ounce of 50% DMSO in a little orange juice every 15 minutes for two hours and then every half hour for two hours. The next day, her husband was better and soon returned to normal. A substance that can stop a stroke as it's happening is something many might want in their home medicine chest.

Neurosurgeon Dr. Jack de Ia Torre is professor of physiology and neurosurgery at the University of New Mexico in Albuquerque. He and Dr. Jacob believe that DMSO should be in every ambulance and emergency room so as to start giving it intravenously to stroke victims in the ambulance as soon as picked up or, at the latest, as soon as the patient arrives at an emergency room. If such were the established practice, the number of people dying or incapacitated from strokes would plummet.

Not only would many lives be saved, but also the awful hardship of paralysis or loss of speech might be prevented. A stroke, even survived, can often bring a person's effective life to an abrupt halt. The savings to the medical system would be astronomical. The cost of the product: pharmaceutical grade DMSO retails at $30-40 a gallon.

DMSO's ability to stop strokes is only its most dramatic and unappreciated attribute, and the one which would save the most lives, the most suffering, and the most money.

A close second is DMSO's effectiveness with head and/or spinal cord injuries. Dr. de la Torre states there are around 1,000,000 head injuries each year. Of these about 500,000 are hospitalized with 50-80,000 being severe, another 50,000 moderate, and the rest less serious. Of the 50,000 severe, 60-70% either die or have severe continuing neurological problems (i.e., paralysis), a multi-billion dollar a year expense.

Research in animals indicates to Dr. de la Torre that if Christopher Reeve had been given DMSO intravenously immediately after his accident, he might never have been paralyzed. Dr. Jacob first has given DMSO intravenously to people who were already paralyzed - paraplegics - and little by little they regained use of limbs. One man, quadriplegic, recovered enough to go through college and then to work in a bank.

A recent study in Turkey combined DMSO with fructose diphosphate. In 20 patients with head injuries, the combination proved very effective in decreasing intracranial pressure. De la Torre declares that in his experience, nothing reduces intracranial pressure faster than DMSO. Animal tests in the 1960's and then human tests on prisoners in 1967 demonstrated that DMSO is non-toxic, indeed, less toxic than aspirin.
In Dr. de la Torre's tests on dogs, injuries that normally would have caused paralysis healed completely when DMSO was given. The mechanisms of action by DMSO are much the same in both strokes and spinal cord injuries. In DMSO, Nature's Healer, Dr. Morton Walker summarizes Dr. de Ia Torre's testimony to Congress in 1980 on DMSO's methodology, based on his research with the drug which began in 1971:

DMSO permits and promotes better blood flow by dilating blood vessels, thus increasing the delivery of oxygen and by reducing blood platelet stickiness.

Because DMSO dilates blood vessels, carotid artery blood flow to the brain increases after DMSO is given intravenously.

After I.V. administration of DMSO, there is an elevation in the amount of spinal cord blood flow to the region of trauma. One of the first things that happens after spinal cord trauma is that a reduction of oxygen and blood flow sets in, inasmuch as the blood vessels constrict or shut down... Without some treatment, the tissue swells. Eventually, this leads to paralysis. In a cerebral stroke, the animal will either become comatose or lethargic or die. With DMSO infusion immediately after injury (or stroke) all this is prevented.

Thirty minutes after giving DMSO I.V., there is an increase in the flow of cortisone, a natural body substance which helps fight off effects of trauma, even though the animal being tested had already stopped secreting cortisone.

DMSO crosses the blood-brain barrier, enters the brain, picks up water from an injury, and rushes it out of the system, thus relieving intracranial pressure.

In animal tests, the animals are brought to a point where the electroencephalogram reading becomes flat, just preceding brain death... Ten minutes after injection of DMSO, the electroencephalogram returns and the brain becomes active again.
Dr.Walker adds, "DMSO tends to protect nerve cells... following injury. It provides better protection than any other treatments. Scientists have verified this by observation with the electron microscope and the light microscope. Thus DMSO prevents the paralysis that may ensue following trauma; it alters the severe effects seen after a brain stroke".

Drs. Jacob and de la Torre believe that DMSO is the treatment of choice in strokes and note that de la Torre's work has been confirmed by at least three different groups of investigators in other parts of the country. They also believe that the combination of DMSO with fructose disphosphate should be the treatment of choice in spinal cord and closed head injuries, where the fructose diphosphate provides energy to help restore damaged tissue.

Dreaded Alzheimer's disease will also be another area, they expect, where the combination of DMSO and fructose diphosphate (patented by Dr. De La Torre) will become the treatment of choice, the fructose diphosphate being carried across the blood brain barrier by the DMSO to help restore energy to a deteriorating brain.

In experiments with rats, Dr. de la Torre has combined L-dopa with DMSO, which carries the L-dopa across the blood brain barrier into the brain where it becomes dopamine and turns off the part of the brain which causes the trembling and other symptoms of Parkinson's.

While strokes are the third largest killer in the US, heart attacks kill the most people - about 3/4 of a million per year. Remembering DMSO's ability to dilate blood vessels and improve blood flow, it is not surprising that South American research indicates that DMSO is effective in heart attacks and angina; prompt use of it in heart attacks has been credited with preventing damage to heart muscle. Reporting this in his book, Dr. Morton Walker says, "There is a crying need for research on the use of massive doses of DMSO (2 grams per kilogram of body weight) in the treatment of heart attacks".

If DMSO is that good, then where is it? Why can't we get it? Why isn't it used?

That is another story, and a sad one when one thinks of the suffering that could have been relieved or avoided if research in DMSO had not been stifled by the FDA. But this story isn't over yet. DMSO, in addition to being a very safe and effective non-toxic drug, is also a commercial solvent used in many industrial processes.

Unlike Koch, Rife, or Krebiozen, it cannot be stamped out since it can easily be bought in many hardware stores. Everyone involved in DMSO research is upset at private use of commercial grade DMSO for any medical purpose, and with good reason since it contains impurities. However, people suffering from arthritis or other pains have taken matters into their own hands. There is a large underground market in the substance, and pharmaceutical grade can frequently be found, not sold for healing purposes, of course.

Cutting in half or less the time to heal sprains, many athletes count on it. It's legal for veterinarians to use in dogs, cats, and horses.

It should have been otherwise.

DMSO should be a prescription drug available to doctors for general use, as it is in Europe. Instead, it is approved by the FDA for use in humans in just one rare disease, a painful bladder condition called interstitial cystitis. The health uses of DMSO make it one of the most versatile substances ever found - a wonder drug indeed. It was discovered in 1866 by Russian scientist Dr Alexander Saytzeff, who noted in a paper he published in a German medical journal the following year that it would dissolve virtually anything combined with it.

Entering the body either painted on the skin, taken orally, or via I.V., DMSO rapidly penetrates the cells and cleans them of toxins, a desirable mechanism which may explain much of its versatility.

Athletes still know about DMSO. June Jones, once quarterback and later coach of the Atlanta Falcons pro-football team, knows of DMSO. His career almost didn't happen, he told the House of Representatives Committee on Aging in 1980, which was investigating why the FDA was still telling people that DMSO was dangerous. With a bursitis calcification in his right shoulder, he could hardly lift his arm, let alone throw a football.

From Oregon, he was aware of DMSO and of Dr. Stanley Jacob, and had used DMSO for sprains, like thousands of others. So he went to Dr. Jacob, who gave him a shot of DMSO in the shoulder and told him that the calcification might disappear if he used DMSQ for 30 days straight. He followed instructions and it did disappear. The FDA still has not approved DMSO for sports medicine.

Former Oregon Governor Tom McCall knows about DMSO. Stricken suddenly by bursitis in 1963, two daubings of DMSO on his shoulder put an end to the problem as the DMSO dissolved the calcification that caused the painful condition.

A byproduct of wood pulp production, this "tree juice" as the late Pat McGrady called it, helps so many human problems that one is reminded of the Book of Genesis, where God said that He had placed on the Earth something for every human condition. It takes us awhile to figure some of them out, and then even longer to clear away the man-made obstacles to their use.

In 1960, Robert Herschler, chemist and chief of research at Crown Zellerbach, a huge paper and pulp manufacturer near Portland, found an inexpensive way to produce DMSO as a byproduct of the pulp industry. He noted that the chemical had a remarkable ability to penetrate the skin and spread throughout the body very quickly. By itself not toxic, Herschler learned that when DMSO is put together with something toxic, there can be problems if the combination is put on the skin or ingested. Since DMSO is a solvent, he and an assistant regularly washed their hands in it until the day he did so after having handled pesticides and became quite sick.

To this day, after many hundreds of thousands, probably even millions of people have been treated with DMSO and thousands of studies have been done, this is the only danger associated with DMSO, beware of what you mix it with.

Realizing there could be medical possibilities in DMSO, in 1961 Herschler got permission from his superiors to check with the University of Oregon Medical School in Portland, and was introduced to Stanley Jacob.

The meeting made medical history.

Dr. Stanley Jacob, brilliant graduate (in surgery) of Harvard Medical School and professor of surgery on the faculty of the University of Oregon Medical School, had published 40 papers in prestigious medical journals before he heard of DMSO. Holder of numerous academic and professional honors, he was already a pioneer. Heart transplants were still the stuff of science fiction in 1961, but even then Jacob and his associates were getting puppy hearts to beat in mature dogs for several days, and he was looking for ways to preserve them. He found it in DMSO, which is now used worldwide for storage of organ transplants.

After hearing about DMSO from Robert Herschler, Jacob painted some on his arm and within moments became aware of its oysterish taste in his mouth. He knew that this meant that the substance had not only quickly penetrated his skin but that it had gone into his bloodstream and permeated his entire system. He realized that this could mean an entirely new medical principle for delivering medicines. As Pat McGrady put it, DMSO "was to change Stanley Jacob's life and what he learned about it was to change the lives of many others and had the capacity to change many more".

Dr. Jacob and Herschler devised numerous experiments, one showing that mice which had sustained burns were more comfortable after being daubed with DMSO. Herschler soon profited from this knowledge. After an accidental chemical burn on his hands, arms, and forehead, he called Jacob. "Apply DMSO on one side and see what happens", Jacob told him. Herschler called him back in 15 minutes, "The pain stopped. Now I'm going to do the other side". A few weeks later, one of Herschler's assistants sprained an ankle. In 15 minutes after DMSO was applied, the pain was gone and in 30 minutes the swelling as well.

Someone complained to Dr. Jacob of a splitting headache and gave him permission to apply some DMSO after hearing of its capabilities. The headache was gone in minutes, came back in four hours, and left for good after DMSO was applied a second time. Used for one purpose, sometimes it did another; put on a cold sore, within a few hours it cleared up a woman's sinusitis. A woman who had had a stroke found after DMSO was painted on her painful jaw that she could now write with her paralyzed hand and could walk better. Dr. Jacob found that it could also suppress inflammation.

The tree juice worked in trees, too. Withered old apple trees became youthful and full of leaves after DMSO was injected under the bark.

Applying DMSO where it hurt to a six-year-old wasted from rheumatoid arthritis, in a half hour the child could move her shoulder and turn her head for the first time in two years. Persuaded to try walking, she managed a few steps and then burst into tears. "Why are you crying?" Dr Jacob asked her. "Because it doesn't hurt anymore", she replied.

DMSO was very cheap, Herschler told Jacob. "I could pipe it down here. You could have it by the barrel or the tank!"

Impressed with what he was seeing but wanting someone skeptical to play devil's advocate, Dr. Jacob sought out Dr. Edward Rosenbaum, a physician in private practice in Portland. Rosenbaum did not pay much attention until a patient with severe bursitis started laughing, proclaiming his pain gone 15 minutes after his shoulder was painted with DMSO. Another colleague poopooed DMSO until after one of his bursititis patients had recovered via the chemical. He then declared that obviously the case must have been misdiagnosed - and asked if he should buy some stock in Crown Zellerbach (which produced DMSO).

In 1963, Dr. Jacob and Robert Herschler submitted two papers on DMSO to medical journals. Before the articles were published, the press broke the DMSO story on December 10, 1963 when Crown Zellerbach and the University of Oregon filed at the state capital a contract in which they became partners in the patented uses of DMSO. The patents were requested in the names of Herschler and Jacob and spelled out the major results seen from DMSO research, so the news was now public. On December 18, the New York Times carried the story on its front page and Crown Zellerbach's stock jumped 10%.

The January and March 1964 issues of Northwest Medicine published articles by Jacob and Rosenbaum on bursitis and arthritis. This gave some legitimization to DMSO in scientific circles but stirred up animosity as well among those who resented hearing about DMSO first in the popular press. When Jacob presented his work to the University of Oregon Medical School faculty, there were a few jeers of "liar, charlatan, quack". It was hard for many to believe that something as versatile as DMSO could exist. Dr. Jacob sent a memo describing 20 of his cases to his immediate superior and friend, who replied with a note saying "This smacks of Andrew Ivy!" A few months later, the same friend told Jacob that he had dreamed the previous night that the DMSO affair had been turned over to the National Academy of Sciences. Then Stan Jacob remembered his father's dream. A week before he died, his father said he had dreamed that Stan would find some

wonderful chemical from wood, and people all over the world would be holding out their hands for it!

That dream was coming true. It would be eight years before his colleague's dream came true, and a lot of fur would fly before then.

In 1965 Merck, Syntex, and Squibb Pharmaceutical all submitted New Drug Applications (NDA's) to the FDA, stating that DMSO was ready to be a prescription drug. The FDA turned all of them down. In July 1965, the first international symposium on DMSO was held in Berlin.

What happened to DMSO (and Krebiozen before it) is hard to understand without recalling the crisis atmosphere in the early 1960's surrounding the sleeping medication thalidomide. The request for approval of the drug was assigned to Dr. Frances Kelsey, Chief of the Investigational Drug Branch. She processed the application by doing nothing at all with it for about two years. During that time a number of babies were born in Europe without arms or other limbs and the cause was traced back to thalidomide. Since Dr. Kelsey had not processed the application and thus "saved" Americans from the drug, she got a medal from President Kennedy, (The truth, Dr. Morton Walker tells in DMSO, Nature's Healer, was somewhat different: 1,200 doctors in the U.S. had access to thalidomide through the FDA and there were thalidomide babies in the U.S. Some were children of doctors.)

After Dr. Kelsey was honored, every other FDA bureaucrat was on the lookout for ways to show vigilance and for things to stop. On February 8, 1981, Robert Herschler appeared on David Hartmann's Good Morning America show and told his host about DMSO's reception at the FDA. "They complained bitterly in 1964 that DMSO was both a commercial solvent and a drug. They could not control it. Frances Kelsey raised her hands and said 'We simply cannot cope with a product like DMSO. We envision hundreds of (new drug) applications coming in and we simply don't have budget or staff'. After that, the FDA took a hard line on DMSO".

Remembering thalidomide, the FDA apparently was looking for things to stop, and found its chance in late 1965. The FDA learned that tests in rabbits, dogs, and pigs (but not humans) had shown some problems. When quantities of DMSO equal to about ten times the maximum human dose (i.e., equal to 350 grams a day for a 175 pound man) were given every day over a period of six months, slight changes in the lenses of the animals' eyes would result, enough to produce a slight nearsightedness. The lens changes were not enough to cause dogs difficulty when running - they didn't bump into things - and in some cases, the changes disappeared after the massive DMSO doses were stopped. In no test at that time or since has DMSO ever caused cataracts, either in animals or in humans.

The FDA decided that DMSO was the dangerous drug it was looking for. The first Dr. Jacob and his colleagues knew of the animal tests was on November 10, 1965. On that crucial date, the FDA sent notices to all the drug companies involved in DMSO research (Squibb, Syntex, Merck) that "administration of the drug must be discontinued and the drug recalled from all clinical investigation". In addition, the FDA put out a series of press releases carried by media all over the world warning of the blinding effects of DMSO, and leading people to believe that DMSO caused cataracts. But no animals were blinded, and the FDA knew that. The "spin" was designed to show that once again the FDA had "saved" us.

Thus research was stopped in its tracks on a drug which was stopping pain (when nothing else could) from bursitis, arthritis (including rheumatoid), and gout, which was cutting at least in half the time needed for recovery from athletic injuries, and which had even saved a boy's life when his neck was broken in an accident. DMSO prevents swelling and rapid injection of the chemical soon after the accident prevented the swelling which otherwise would have choked him to death.

Drs. Jacob and Rosenbaum and Robert Herschler had constantly been looking for any indication of DMSO toxicity and had found none. Learning of the animal data, as quickly as could be arranged they brought past and current patients to the ophthalmologists at the University of Oregon to look for lens changes of any sort. After months of testing, absolutely no lens problems were found. To the contrary, several reported they could see

better after using DMSO (on other parts of the body). So the order to stop research had been based on an inaccurate pretext.

Informed of the tests by Dr. Jacob and others showing that humans were not experiencing the same lens changes as the three animal species, the FDA at first seemed to have second thoughts. Had they overreacted?

An FDA less eager to play "gotcha" might have handled the situation quite differently. Upon receiving the initial lens data, they might have immediately informed the drug companies and Dr. Jacob and asked them urgently to check if any humans were experiencing the same problems as the animals, which is what Jacob and his team did anyway, being responsible scientists.

Or, after its first release, the FDA could have announced that it was good to be vigilant but that DMS0 was not causing the same results in humans as had been seen in some animals. It could then have said quietly to the researchers, "watch very carefully for human problems because if such occur, DMSO will have to be withdrawn". If the FDA had done that, everybody would have been happy. The FDA would have shown its vigilance for drug dangers, which is what it's supposed to do. And nobody would want to work with a medicine that caused eye problems.

Finally, FDA adopted an all too human attitude; they did not want to admit they had made a mistake. They apparently arrived at a decision that DMSO must be another thalidomide and that if FDA agents only looked hard enough, they would find the evidence and all would be heroes. If it had turned out that way, they would have been, but it didn't.

In 1965, the JAMA printed an article by Dr. Jacob on DMSO. Interestingly, his trouble has only been with the FDA, not the AMA. The JAMA has never turned down one of his articles, and he regularly writes its book reviews.

Before freedom in DMSO research was withdrawn, orthopedic surgeon Dr. Forrest Riordan saw DMSO save a frostbite patient's limbs. Arriving home after midnight on a -15

degree F night, a 59-year-old woman slipped on the ice outside her garage, hit her head, lost consciousness, and lay beside her car for six hours. By the time Dr. Riordan saw her, her feet and hands were purple, and her fingers were turning black. Having already treated 50 patients with DMSO and being aware of its use in preserving and restoring tissue, Dr. Riordan decided to give it a try. Pat McGrady describes what happened. "The question was, would DMSO give new life to the lady's dying fingers and restore blood to her limbs? Ten minutes after Riordan had swabbed DMSO on the patient's hands and lower legs, the treated areas reddened with the return of blood. The DMSO odor was on her breath, showing that the drug was permeating the woman's system. On the second day, blisters had popped out on the frozen areas and that evening she regained consciousness... On the third day, sensation began returning to some of the toes and later the tips of the fingers began to have feeling again. By Day Seven, she was able to flex her joints. For an entire month, the patient was sloshed, swabbed, and dabbed with DMSO. Almost a gallon of it was used, but side effects amounted only to an occasional rash, a bit of burning and itching... By Day Fourteen, it was clear that all tissues were viable... Riordan concluded that the drug should be applied within 12 hours of freezing and that 24 hours may mark the critical point in reversing damage to the involved blood vessels".

This is the sort of experimentation that was going on before FDA halted DMSO research, a freedom to "try it since nothing else is working" approach, which in this case probably saved one lady her life and certainly her four limbs. How many others today might have saved limbs if the knowledge of this one case had been broadcast and DMSO's use encouraged instead of discouraged?

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Planning had been going on for some time for a Symposium on DMSO to be held in March 1966 at the New York Academy of Sciences. On November 9, 1965, a top FDA official told Dr. Jacob that he had it on good authority that the Symposium would never be held, not explaining that he would announce the DMSO ban the next day.

He was wrong. Dr. Chauncey Leake of the University of California Medical Center, who had agreed to chair the Symposium, told Dean Baird, Dr. Jacob's superior at the Medical School, that he'd been asked to drop plans for the symposium on the grounds that it would be embarrassing for both the drug companies and the FDA. Baird replied "Chauncey, when have you and I as deans and educators ever let political or economic considerations compromise the search for scientific truth?" Baird also told Jacob that Crown Zellerbach, unused to such controversy, had urged him to call off the symposium. The New York Academy of Sciences, a large, prestigious organization founded in 1828 with over 25,000 members, made their displeasure at political interference evident by putting up the $60,000 cost of the meeting when pharmaceutical companies refused to do so.

Undeterred by the FDA, over 1,000 people from the world scientific community were in attendance when the symposium opened at the Waldorf Astoria on March 14, 1966, to go on for three days. When one of the FDA officials spoke, stating "this symposium is a measure of the freedom of investigation.., prevailing in this country", people wondered if he was being ironic.

The papers presented showed great enthusiasm for DMSO and its unusual medical properties. Its ability to protect living cells from cold and radiation was discussed, and its lack of toxicity was stressed. Pat McGrady who attended, wrote, "the studies covered a spectrum of diseases probably far greater than any ever before considered in relation to a single drug".

McGrady called special attention to an extraordinary paper presented by Dr. Eduardo Ramirez and Dr. Segisfredo Luza of the Ayetano Heredia University in Lima, Peru. After extensive tests on animals and then on normal humans, Dr. Ramirez reported "injecting 50% or 80% DMSO intramuscularly into patients with acute and chronic schizophrenia" and that "of the 14 acute cases, every single one was discharged from the hospital within 45 days after the start of DMSO treatment... He said that 4 of the 11 chronic cases, one of whom has been ill for 14 years, were discharged eventually, and the other 7 improved a great deal and were given occupational therapy... He observed rapid decrease in

agitation... recession of persecution feeling, a relatively sudden tendency to communicate and to stay clean.., the wane of obsessions, return to alertness, and a calmness where there had been restlessness and anxiety". The only side effects were the characteristic garlic-like odor of DMSO.

At the end of the symposium, after an almost dazzling presentation of papers, McGrady reported that "an FDA agent turned to Ann Sullivan of the Portland Oregonian and said 'DMSO is through'. Ann looked at the man in amazement and asked 'Where did you ever get that idea?' 'My boss told me', the agent answered."

Meanwhile, the drug companies who had been doing clinical trials were reexamining patients and gathering data regarding possible eye damage. Squibb collected 3,000 cases, Merck 17,000 cases, and Syntex 7,000. No eye changes or damage or any other sign of toxicity were found. By this time, DMSO had been used in 100,000 people, and there had been no complaints of eye problems anywhere. Additionally, sufficient animal tests had been carried out to make it clear that the lens changes that had been observed were "species specific", i.e., they only occurred in dogs, rabbits, and pigs, and not in monkeys, other primates, or any other animals.

Neither the pharmaceutical reports nor the new animal tests seemed to have much effect on the FDA's new commissioner, Dr. James Goddard. Goddard soon showed that he intended to use the police powers that Congress had given him to investigate scientists, who had never before been treated that way by federal regulators. Quickly adopting a tough line, he took the FDA into some surprising new areas. Speaking to an AMA convention, he announced that "the FDA is now a third party to the practice of medicine", to the general consternation of the doctors. It began to look as though Dr. Goddard was out to prove he too could stop a thalidomide and that he suspected maybe DMSO was it.

DMSO patients, however, did not agree. Those who had found DMSO a veritable WD-40 for arthritis were furious when their pain returned after the FDA stopped DMSO. They talked to the press, they called their senators and congressmen, and wrote angry letters to the FDA. Pat McGrady provides a few samples:

My brother has arthritis of the spine. He is in pain and bedridden more than half the time. When he is treated with DMSO, he is able to lead a normal, active life... Just ONE application of this cheap, safe DMSO changed my brother from a grimacing patient into an active, pain-free man in exactly 30 minutes! Multiply him and my family by thousands of times, then think what the FDA's Divine Right of Kings Law is doing to thousands and thousands of patients and their families.

I had arthritis for four years, gradually getting worse until I was in such agony day and night. I was almost at my wit's ends... I heard of Dr Jacob and went to visit him... Almost from the first I began to get relief. Now I am on my feet, well and active... I have never in my life wished ill of anyone but experiencing the caliber of this agency (FDA) I wish every last one of them would suddenly have an attack of acute arthritis so painful that you could hear them yell from there to here and have to beg for the only drug discovered that could give them real help.

FDA statements continued to refer to DMSO's dangerous side effects but gave no specifics, no who, when, where. Pat McGrady pressed four consecutive FDA commissioners for data on the "dangerous effects". They all replied that the information was in their files. He asked them to produce it - four times. They promised to send it to him - four times, but it never came. While Official Medicine had stopped DMSO research in the U.S., at least it could go on freely elsewhere. A Third International Symposium on DMSO was held in Vienna in November 1966 and 250 scientists from 12 countries attended. Dr. Chauncey Leake, as keynoter, said, "Fortunately, members of the health professions throughout the world are not all bound by the bureaucratic regulations and judgments of the U.S. Food and Drug Administration". Pat McGrady, who also attended, commented "It was strange hearing this statesman of science in this hall and this city, which less than a generation ago had been occupied by one of the bloodiest regimes in history, now apologize for regimentation in America".

He also reported, "As at the Berlin and New York symposia, scientists said they had failed to induce eye damage with DMSO in any animal species close to the human, and they could find no evidence of eye troubles attributable to DMSO in any patient".

Some of the interesting papers presented, McGrady wrote, showed that DMSO benefited 77% of patients with rheumatoid arthritis and 84% with osteoarthritis, controlled many kinds of pain, sped healing, offset injurious effects of radiation therapy, and proved superior to all other therapy for winter and sports injuries. Experiments in animals showed that when given to mice ten days before infection, DMSO prevented typhus, and that DMSO tended to stabilize collagen, a possible anti-aging effect. McGrady noted that "scores of scientists confirmed the majority of claims Jacob had made... Distinguished scientists clustered around him and congratulated him for what some called a classical contribution to science and medicine". It was learned at the conference that Germany quietly was restoring DMSO to drugstores as a prescription medicine.

Dr. Richard Brobyn, while a consultant for Merck, had devised a plan for human toxicity experiments in prisoners. After the FDA crackdown, Merck lost interest but Squibb liked his idea. Squibb proposed to the FDA that Squibb and FDA split the cost for Brobyn's plan and the FDA agreed. Arrangements were made for Dr. Brobyn to carry out the trials at the state prison in Vacaville California in the fall of 1967.

By this time, all research with prisoners was carried out in accordance with the ethical principles worked out by Dr. Andrew Ivy when he was the American medical ethics adviser at the Nuremberg trials. Years later, Dr. Brobyn told Pat McGrady that he himself took the amount of DMSO to be given to the prisoners "because I wouldn't expect a patient or experimental subject to do something I wouldn't do myself".

Brobyn's plan was for 67 male prisoners to cover themselves with ten times the permissible human dose of DMSO every day for two weeks, after which they were closely examined. Finding no trace of any effects other than a rash (an occasional result of DMSO applied to the skin), the second, 90-day phase of the test started. Forty prisoners similarly doused themselves each day with DMSO, which quickly penetrated the skin. Regularly put to numerous exams with special attention to eyes, at the end of 90 days no evidence of toxicity had been seen in the prisoners and the attending ophthalmologist saw no effect at all on the prisoners' eyes. Dr. Morton Walker observed in DMSO, Nature's Healer that "if sugar, salt, coffee, or tea had been taken by the prisoners over three months in quantities equal to the DMSO they absorbed, it would have killed them".

Pat McGrady later asked Dr. Brobyn what if he had given the prisoners ten times the permissible dose of aspirin ever day for three months. Brobyn replied, "You're asking ... is aspirin more toxic than DMSO? My answer: Certainly".

Brobyn was right. The classic test for toxicity is known as the LD-50 test, which measures the lethal dose (LD) at which half of a group of test animals is killed. The LD-50 tests for aspirin and DMSO show that aspirin is seven times as toxic as DMSO.

A year after the Vacaville tests, the FDA lifted its ban on clinical testing in humans and approved tests of DMSO in rheumatoid arthritis and scleroderma and, separately, in sprains, bursitis, and tendinitis. This did not release it to doctors for general use in these conditions, but only permitted drug companies to prepare complicated applications for testing in them.

In 1970, Dr. M. Brandsma of Los Angeles reported that a case of systemic lupus erythematosus, which had not responded to prednisone, had gone into remission for three years (at the time of reporting) from DMSO. The same year, British scientists found in two double-blind studies that DMSO combined with idoxyuridine stopped the suffering from painful shingles in from 2 to 9 days.

Various pieces of research had shown DMSO to be effective against viruses and an important clue as to why this happened was given in 1971 by Dr. M. Kunze and associates in Vienna. Their study checked the production of interferon in mice following infection of the mice by the scientists with certain viruses. They reported that when DMSO was injected 10 minutes after the mice were infected with viruses, "the animals produced anywhere from 2 to 16 times as much interferon as they would have, had no DMSO been given after their being infected".

The very significant fact that DMSO would cross the blood brain barrier had been evident from Dr. Jacob's early research. For those interested in "smart pills", the early 1970's work which John L. Brink and Donald G. Stein of Clark University published in Volume 158 of Science magazine is relevant. Magnesium pemoline (PMH) had already been noted to improve learning in rats and in humans. Brink and Stein reported that PMH dissolved in

100% DMSO greatly increased rats' learning abilities over what was achieved with pemoline alone. Injecting into rats a solution of radioactive PMH or a solution of radioactive PMH dissolved in DMSO, they noted that the DMSO/PMH solution was from 50%-100% more successful in crossing the blood-brain barrier than the PMH+water solution alone.

Pat McGrady once asked Dr. Stanley Jacob who would gain the most from DMSO. Here is Dr. Jacob's answer. "Quadraplegia is the saddest thing that happens to people. It occurs most often to the young and healthy, to soldiers fighting our wars, to youngsters driving, to athletes in personal contact games. As a quadraplegic, you lie in bed, a total vegetable. Your mind functions but you cannot pass urine or have a bowel movement without help... So many of them eventually say to me 'Dr. Jacob, I couldn't even commit suicide'." Jacob told McGrady about one such patient, a case where he was called in almost immediately following an accident. "A 16-year-old girl, a fine athlete, who dove off a board and landed on her neck on the bottom of the pool. Her doctor was pessimistic but willing to try almost anything that offered a glimmer of hope. She was a complete quadraplegic, utterly helpless. She was on DMSO for an entire year. Gradually - one by one, it seemed - her organs began to function again. Eventually, she walked. And now she is in college, doing very well."

This was accomplished with the medicine on which FDA banned research in the U.S. in 1965. It was 13 years later before the FDA approved DMSO as a prescription drug for use in interstitial cystitis.

Grey Keinsley of Littleton, Colorado, is the one-time quadraplegic mentioned earlier by Dr. Jacob, who went on to college and to ajob in a bank. But Keinsley did not start DMSO until February 1965, two years after his accident. By August 1965, he lifted both arms over his head and put on a T-shirt unassisted. A little later sensation began to return to his lower chest and his right hip. Then the FDA banned DMSO, and he was deprived of it for three years, starting again only in 1968. The next year, he received his bachelor of arts degree in economics. His mother told McGrady that Dr. Jacob not only did not charge for his services, but paid bills for extensive medical examinations which were done in Colorado. McGrady reported that as of 1973, Grey Keinsley could move both of his legs.

Grey Keinsley is the only known case of a quadraplegic regaining movement of the lower limbs when therapy was started two years after the accident. Dr. Jacob has seen two quadraplegic patients recover completely when DMSO was started within one hour after the accident.

In 1971, Squibb Pharmaceutical again filed an NDA, stating once more that DMSO was ready to become a prescription drug, and again was turned down by the FDA.

In 1972, the prediction in 1964 of Stanley Jacob's colleague came true; the FDA asked the National Academy of Sciences (NAS), through its National Research Council to make an "independent review" of all information on the effectiveness and toxicity of DMSO. However, the NAS got much of its funding at that time from the FDA. An NAS officer told Pat McGrady "we have been asked to wash the FDA's dirty linen, and we have agreed."

McGrady learned that the NAS intended to take 4 months just to plan how it would read the 1,200 papers (at that time) on DMSO, and then to take 18-24 months to do so. At a press conference, McGrady told the NAS president that, having read all the papers, he calculated that he, as a slow reader, could read them all in three weeks, or a fast reader could go through them all in two weeks.

Instead of taking two years to read the material, McGrady challenged, why not set three fast readers to go over the papers in two weeks and then free the drug for medical use if no reason was found to continue the ban. This would be preferable, he pointed out, to holding up research on DMSO, since the published studies seemed to show no toxicity to humans. He further suggested that the FDA be required to provide solid evidence of toxicity, if they had any, while Dr. Jacob and his colleagues be invited to provide all favorable and unfavorable reports.

These suggestions were apparently far too sensible to be taken seriously. When the report came out in 1974, it seemed as though the Official Medicine of the FDA was speaking through the mouth of the NAS. The report stated (despite 1,200 papers to the contrary) that "there was inadequate scientific evidence of effectiveness of DMSO for the treatment of any disease, and that the toxicity potential was sufficiently great that the

drug should remain an investigational drug". Thus DMSO would not be released for doctors to use in general practice, but would remain bottled up.

In 1974, another symposium on DMSO was held at the New York Academy of Sciences. In 1975, the universally liked Pat McGrady, once science advisor to the American Cancer Society, died of cancer. His DMSO, the Persecuted Drug is a classic on the early years of DMSO.

Meanwhile, in Houston, Dr. Eli Jordon Tucker, an elderly and highly respected orthopedic surgeon, was treating cancer with a combination of DMSO and hematoxylon, a non-toxic dye sometimes used as a medicine. In experiments in cancerous mice conducted by Thomas D. Rogers, PhD, under the supervision of Vernon Scholes MD at North Texas State University, the mixture was seen to go directly to tumors and nowhere else, where it effectively starved them. Hematoxylon without DMSO was found to have no effect at all on cancer. In 1972, Houston KHOU TV newsman Ron Stone did a documentary on Dr. Tucker's achievements in cancer. Dr. Tucker himself never published his DMSO-hematoxylon results after 1968 out of concern over losing his license for using an unapproved drug. Dr. Morton Walker devoted 30 pages of his DMSO, Nature's Healer to the fascinating story of Dr. Tucker. (With Dr. John Sessions, Dr. Walker has also written Coping with Cancer, a further discussion of DMSO therapy for cancer; both books are available from Freelance Communications, 484 High Ridge Road, Stamford, CT 06904-3095.)

Finding his DMSO-hematoxylon mix effective in large cell lymphosarcoma and adenocarcinoma in dogs, Dr. Tucker worked out a human dosage which he gave only to terminal patients.

One who remembers the DMSO combination and Dr. Tucker very well is Alva Ruth Wilson in the Houston area. She qualified for his treatment because when she sought him out (after hearing the TV program), she had been given six months to live from lymphosarcoma. Starting in January 1973, she took an intravenous drip of the DMSO-hematoxylon mixture five days a week. Before requesting Dr. Tucker's treatment, Mrs. Wilson had maximum amounts of chemotherapy and radiation, but neither helped - the

tumors kept on spreading. Chemotherapy had to be stopped because its side effects were giving her leukopenia, a disease in which her white cells had dropped to way below normal, leaving her with almost no immunity. While she was on Dr. Tucker's program, her conventional doctor wanted to give her more radiation. Dr. Tucker told her that since she was on DMSO, the radiation would not hurt her, a fact well established by clinical studies in various countries and virtually ignored in the United States. Although no primary source of her cancer was ever found, some cloudiness in X-rays of the stomach aroused suspicion, so that was where the radiation was directed. Another woman (not one of Dr. Tucker's patients) who started radiation of the stomach the same day returned for the second treatment in a wheelchair, so ill had the radiation made her, and for the third on a stretcher as a patient in the hospital. But Mrs. Wilson, taking her daily DMSO I.V., took the same radiation and felt great. By January 1974, after a year on Dr. Tucker's program, no more tumors could be found and she continues in fine health in 2000.

As far as Dr. Jacob knows, DMSO was not used on those who suffered radiation damage at Chernobyl.

Another of Dr. Tucker's success stories, Joe Floyd of Spring, Texas, was 71 and in good health when interviewed by Dr. Walker in 1989. In 1974, Floyd was stricken with deadly adenocarcinoma. By coincidence, his doctor's wife had the same kind of cancer and the doctor urged Floyd to take the chemotherapy his wife would take. Floyd demurred and sought out Dr. Tucker.

Six months later, he was back at work, but the doctor's wife was dead.

Clyde Robert Lindsay knows about DMSO. At 3 years of age, in 1966, he was given up for dead with cancer. Dr. Tucker gave his mother a dropper bottle of DMSO+hematoxylon and told her to give him 5 drops in distilled water every morning on an empty stomach. In 1992, Dr. Walker found him to be a big, strong young man of 29.

While researching for DMSO, Nature's Healer, Dr. Walker visited Dr. Tucker, who gave him his formula. Then, as Walker explains, "Dr. Tucker himself came down with a form of cancer that would have responded to his DMSO+hematoxylon treatment, but before he

could administer it to himself, he fell into a coma". No one had access to the formula, and Dr. Walker did not know that Dr. Tucker needed it until after Dr. Tucker died.

To make sure Dr. Tucker's formula does not get lost, Dr. Walker printed it in DMSO, Nature's Healer, with comp1ete instructions for preparation and dosage. Walker notes that the treatment solution can be taken orally (the way Clyde Robert Lindsay took it).

Dr. Tucker's remarkable work, as yet unnoticed by conventional medicine, should not be considered surprising since there have been numerous studies indicating that DMSO either by itself or in combination with other drugs can be helpful in cancer. As mentioned earlier, DMSO is known to stimulate the body's production of interferon which, synthesized, has been used in cancer treatment. DMSO has been found to potentiate certain chemotherapies while rendering them less toxic, and this has been reported in the medical literature. DMSO would permit safer and more effective use of radiation in cancer treatment, because of its protective action (as noted in Mrs. Wilson's case). This was originally reported in 1961. The March 1985 Russian radiological journal Meditsinkaya Radiologia reported on the use of DMSO with radiation in cancer treatment.

Pat McGrady noted that the late Dr. Florence Seibert, one of the researchers in pleomorphic organisms, observed that "organisms frequently found in cancer and leukemia patients suspected as a cause for cancer (the sort that Royal Rife and Dr. Gruner of Montreal saw) stopped growing when exposed to 25% DMSO... Dr. Robert Schrek and associates of the Veterans Hospital in Hines, Illinois, found that two per cent DMSO, which had no effect on normal cells after two days, killed 90% of the leukemic cells in a single day... Noted virologist Dr. Charlotte Friend of New York's Mount Sinai School of Medicine transformed leukemic cells back to normal, hemoglobin manufacturing cells with a very weak concentration of (2%) DMSO added to the medium in which cells were growing... In April 1973, Drs. Etienne and Jennie Lasfargues of the Institute of Medical Research in Camden, NJ, reported that while DMSO increased the number of virus-infected mouse breast cancer cells sixfold for a while, by the end of three months, DMS0 had completely rid the cultures of infected cancer cells".

McGrady also noted that "Dr. Leo Stjernvall, a University of Helsinki pathologist, and his associate Dr. K. Setala... reported that cancer cells.., build a protective 'cytoplasmic barrier' which prevents the poisons of (various cancer drugs) from seeping inside the cells and killing them or arresting their growth. Stjernvall dissolved the anti-cancer drug vinblastine sulfate in DMSO and dabbed it on cancer that he had induced with chemicals applied to a mouse's skin. The fibrous cytoplasmic barriers melted away and other structures changed so that the cancer cells took on the appearance of benignly overgrown but otherwise normal cells. Other common anti-cancer drugs became equally effective when dissolved in DMSO. The experiments showed that DMSO transported-drugs can alter the malignant cell toward normal." The fibrous barrier referred to by Dr. Stjernvall is the fibrin cover described in the Hoxsey chapter. Whatever will dissolve that cover opens up a cancer tumor to attack by the body's immune system - if it is healthy - or by cancer cell killing (cytotoxic) drugs so much in current use.

How did the National Cancer Institute's "War on Cancer" overlook the extensive research on DMSO and cancer?

Heart attack, cancer and stroke - the three greatest killers in the U.S. - and DMSO has relevance to them all, but how many people know this?

The FDA, at least, knew about Dr. Tucker. Invited to New York in 1978 by doctors wanting to learn about his cancer treatment, he asked Joe Floyd to go along. While planning the trip, Tucker received a call from Dr. K. C. Pani, the FDA official in charge of DMSO since 1968. Pani had heard of Tucker's work and invited him to stop in Washington en route to New York. Tucker visited Pani, showing him various patient records, X-rays, and slides. Dr. Morton Walker tells the story, "When they came to Floyd's record, Dr. Pani asked 'How long did this one last?' Tucker replied 'He's sitting down in the lobby'. Pani said 'I want to meet this dead man'. They sought out Mr. Floyd, who told his story. Then the FDA official, visibly impressed, said he would be in touch with Tucker soon. He also mentioned that he was in contact with Dr. Stanley Jacob of Oregon and that he was monitoring the use of DMSO."

About one week later, the FDA approved the use of DMSO in the treatment of interstitial cystitis. This 1978 action was the first time FDA had approved DMSO as a prescription drug for any human ailment. Considering that it had been 13 years since the crackdown, it was a major breakthrough, and it certainly seemed that Dr. Tucker had had something to do with precipitating it.

Unbelievably, as we enter the 21St century all these years later, it is still the only FDA approved human use for DMSO. It is also approved for the preservation of frozen human tissues, the first use to which Stanley Jacob put DMSO. Ironic to think that surgeons soak in DMSO tissues such as the bone marrow which they will later place in human bodies. This chemical is famous for its penetrating abilities, so such transplants are obviously drenched in DMSO. It's considered safe enough to be approved for that, but not for general medical use, for doctors to use in any of the hundreds of ways where DMSO can be effective.

What does the FDA think it is saving us from?

The FDA used the bogus issue of eye damage for several decades to hold back DMSO. Dr. Walker points out that "adverse eye findings have been reported with all the arthritis drugs, such as Anaprox, Naprosyn, and Motrin (as per their package inserts) yet no one has suggested that these minimally effective drugs be taken off the market."

As far as eyes are concerned, the evidence on DMSO is quite to the contrary. When several patients treated with DMSO for muscular problems reported to Dr. Jacob that their vision had improved, he sent them to Dr. Robert O. Hill, ophthalmologist at the University of Oregon Medical School. Confirming the favorable changes, Dr. Hill began his own experiments with DMSO (after it was known that the lens changes did not happen in humans). His research showed drops of 50% DMSO to be effective in retinitis pigmentosa and macular degeneration, and presented a report on this at the New York Academy of Sciences symposium in 1971.

In the 1970's, my late mother developed macular degeneration. Having read Dr. Hill's study, I called him. In addition to what he had written, he added that one should use

cold compresses after using the drops. I relayed this to my mother and when she was at home one summer, her housekeeper put two drops of 50% DMSO in each eye twice a day. When my mother was getting ready to return to Florida for the winter, she said, "Those DMSO drops worked. When I came home in June, lying in bed I could not see the individual slats on the venetian blinds in my bedroom and now I can".

Deise, a friend from Brazil (where DMSO is legal), told me that a New York eye doctor had told her she was developing macular degeneration, so I told her the above story. A year later, she informed me that the same doctor had told her that her signs of macular degeneration had disappeared. The previous year, she had persistently put DMSO drops in her eyes several times a day.

Telling another friend with macular degeneration of Deise's experience, she looked for DMSO at a health food store and then balked. The bottle of DMSO, she pointed out, was clearly labeled "Do not get into the eyes. Do not touch the skin. If gets on skin, call a physician". The label also read "This is sold only as a solvent". Calling the 800 number on the label, I learned that the product was pure DMSO, not industrial grade. With that sort of warning on the label, how could anyone guess that the liquid in that bottle is used on the skin of many athletic teams when there are muscular injuries. Such is the result of FDA's policy of censoring truthful health claims, preventing Americans from learning what this and other products can do for them.

In 1978, Dr. Arthur Scherbel, then chief of Rheumatology at the Cleveland Clinic, carried out a study of the use of DMSO intravenously in scleroderma, a particularly miserable disease affecting around 150,000 Americans. Parts of the body increasingly calcify and become rigid, an eventually fatal condition for which there was then and still is no cure. Dr. Scherbel found clear evidence of DMSO's efficacy in scleroderma and submitted his trial with a New Drug Application (NDA) to the FDA, which turned him down. DMSO is approved for use in scleroderma in Canada.

Something else happened in 1978 that opened windows in the overregulated U.S. medical system. The chemical EDTA has long been on the "GRAS" list (Generally Regarded As Safe) and is FDA approved for use intravenously for the removal of lead, in

cases of lead poisoning. Reasoning that if EDTA could remove lead it might also remove calcium, certain medical pioneers tried EDTA to deal with calcified arteries, and saw patients' circulation improve. The late Dr. Ray Evers was one of the foremost of those pioneers. Soon the FDA came down on him for his "unapproved" use of EDTA. Instead of caving in, Dr. Evers sued the FDA in Federal Court, asking for an injunction to stop the agency from interfering in his practice of medicine. This was not their business, he declared, but rather making sure that drugs are safe. Since FDA had long since declared that EDTA was safe for use in humans, he told the court that as a licensed physician it was his right to use a safe drug in whatever way he found to be useful. The FDA's interpretation of current law was then and still is that it requires them to control every usage of every drug. To their chagrin, the Court agreed with Dr. Evers, stating, "Congress did not empower the FDA to interfere with medical practice by limiting the ability of physicians to prescribe according to their best judgment". The FDA appealed, and he won again. The FDA did not appeal a second time, letting the ruling stand.

The Evers Ruling thus makes it legal for a doctor to use an FDA approved drug in any way he/she thinks fit. Combined with the FDA's 1978 approval for use in interstitial cystitis, this meant that since DMSO had been approved for one human use, doctors could now use it for other human uses, and many did.

In 1979, just to make sure the FDA didn't interfere, the Oregon legislature passed a bill protecting Dr. Jacob's right to use DMSO within the state.

In September 1979, the FDA published a regulation abolishing its 1965 regulation which had banned general research in DMSO, but its posture was still suspicious. The unbending bureaucracy was beginning to bend a bit, but it was a little late. FDA had said no so many times that drug companies were beginning to believe they meant it and medical studies began to slow down. It was taking the patience of Job to persist with DMSO against such opposition, a repeat of the pattern with Dr. Ivy. The FDA had put out so much static that the scientific community began to back off.

Still, the Evers Ruling had opened things up considerably, and certain bold doctors proceeded to use DMSO intravenously, often seeing dramatic results. One of those

pioneers was Dr. William Campbell Douglass, a person used to making his own decisions. Mrs. Ruth Lewis of Sarasota, Florida, told Dr. Morton Walker of her experiences with Dr. Douglass. Rheumatoid arthritis caused her so much pain she could not walk without a cane. After a back injury, she was told she had to remain in bed for six months. Realizing that if she did so she might never walk again, even with canes, she decided to try something else. Her son and husband literally carried her into Dr. Douglass' office, then in Marietta, Georgia, "unable to put both feet on the ground", she told Dr. Walker. "After 2 1/2 weeks of DMSO treatment, I walked out of that office without any help whatsoever or a cane. I had been unable to close my right hand completely for over a year. It kept me awake at night with pain. But after the I.V., topical, and oral treatments, I can now close my hand tightly. The arthritis has not returned."

In DMSO, Nature's Healer, Dr. Walker explains DMSO's action in arthritis, "DMSO is a scavenger of hydroxy radicals, and this chemical ION is dominant in arthritis. Hydroxy radicals are responsible for breaking down the synovial fluid and the cartilage of the joints. [DMSO is] one of the few known substances responsible for detoxifying this radical... Neutralizing this highly toxic free radical causes the reduction of inflammation and the diminishing of pain in arthritis. It is probably the primary mechanism that allows DMSO to work effectively against arthritis".

Dr. Douglass told Dr. Walker of another startling case. Penelope Pappas of Sarasota, Florida, then six years old, put her index finger into a live light socket. Before she could withdrew it, it was "cooked through and burned ash white at the tip". Within 30 minutes, Dr. Douglass was able to have the finger soaking in full-strength DMSO as the child screamed with pain. By the end of 20 minutes immersion in the liquid, the child had stopped crying because she felt no more discomfort. She slept undisturbed all night and the next day showed a pink and healing index finger. At the time... it was felt that she would probably lose the tip of her finger from gangrene. The finger healed completely.

In 1980, Mike Wallace featured DMSO on two programs, first on March 23. and then on July 6. Dr. Richard Crout of the FDA appeared on the March show, insisting that there could be no FDA approval of DMSO without double-blind studies. He knew as well as anybody that this is virtually impossible with DMSO because of its smell; anyone who

takes DMSO either orally, topically, or via I.V., will soon exude a characteristic garlic-like odor, and if it is taken orally, it has an oyster-like taste. In a double-blind test, neither doctor nor patient is supposed to know who is getting the drug being tested, and who is getting a placebo. How could this be done with DMSO? And how could it be done with chemotherapy, with its sometimes burning and poisoning effects? For similar reasons, double-blind tests are impossible with many chemotherapies, but the FDA allows the use of these very costly drugs, which are so profitable to the pharmaceutical companies.

Mike Wallace presented Sandy Sherrick of Riverside, California, on the March show. She had lived for two years in constant pain following a whiplash injury from an auto accident. "The pain was extremely bad. I was to the point where I cried continuously. I did not cook meals. I did not clean. I barely got myself dressed."

Learning of DMSO in November 1979, she flew to Portland and Mike Wallace filmed her treatment. Dr. Walker describes the program, "By the third day of I.V. and topical applications, the patient began to feel somewhat better, reported Wallace