

DMSO

NATURE'S HEALER



How to Use DMSO to Relieve Pain,
Increase Circulation,
Repair Tissue Damage,
and Fight Degenerative Diseases

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Neurological head and spinal cord injuries and stroke are complex medical problems. Nevertheless, DMSO's wide range of action makes it useful in many of these cases. Through a combination of increased diffusion of fluids across body membranes and dehydration, the solvent relieves the damaging swelling and pressure that often accompany head and spinal injury. This relief comes about by the substance crossing both the skin barrier and the blood-brain barrier. The blood-brain barrier is a protective mechanism that exists between circulating blood and the brain, which limits the number of molecules reaching the brain. It prevents certain foreign proteins, natural body proteins, and other substances from entering, some of which may be toxic to nervous tissue.

"At first we thought that this property of DMSO might be a disadvantage," says Dr. de la Torre, "because we assumed that once it penetrated the barrier, it would simply accumulate in the nervous tissue and cause more swelling. What it does in fact is enter the tissue, pick up water madly, and then rush it out of the system, relieving the pressure."

The ability of DMSO to rapidly cross skin and blood-brain barriers enables it to assist in the penetration of other drugs, as was pointed out earlier. "For example, some tumors in the brain must be treated with chemotherapy injections. Huge quantities have to be injected before the drug begins to work, and at that point the toxicity of the drug may kill the patient," said de la Torre. "If you have a drug, such as DMSO, that can transport the anti-cancer agent into the tumor and the immediately surrounding area, you can use decreasing concentrations of the chemotherapy agent."

Because DMSO can penetrate skin barriers with ease, but not damage cells, DMSO is in a class by itself as a new healing principle. Furthermore, it protects the cells from mechanical damage.

Ramon Lim, M.D., Associate Professor of Neurosurgery and Research Associate in Biochemistry at the University of Chicago School of Medicine, has conducted some experiments using DMSO with glial cells. Glial cells comprise the supporting tissue of the brain and spinal cord. Dr. Lim prepares cultures of glial cells and DMSO, which he then subjects to sound vibrations. DMSO prevents cellular membranes from breaking under the vibrations, preserving the contents of each cell. The saclike lysosomes contained within cells, for example, would release enzymes harmful to other cell systems if they escaped the confines of their parent cells, and thus aggravate swelling and pressure. With DMSO instilled within the cells, this enzyme release by lysosomes doesn't take place, as shown by Dr. Lim's experiments on the glial cells.

to be desirable, since it had a positive effect on immunity and antiallergic and reparative action on the injured tissues. The treatment proved most effective in patients with a remitting course of the disease. In patients with a rapidly progressive course, the improvement was unstable. No side effects were observed. The beneficial therapeutic effect of dimexide may be explained by remyelination (new growth of nerve sheaths), a reduction in the edema (swelling), and neurodynamic improvement (improved movement of nerve impulses).¹⁷

NO DMSO TOXICITY IN CENTRAL NERVOUS SYSTEM TREATMENT

In all of his group's studies, Dr. de la Torre found no significant toxicity involved with the drug, even with high intravenous doses. He explained, "We took a series of rhesus monkeys that are phylogenetically very close to man, and injected high doses of DMSO intravenously for nine days. Before and after, we tested these monkeys for their serum chemistries, their cardiovascular responses, their neurological signs, and their ophthalmological changes, if there were any.

"Following the toxicity studies, which took eighteen weeks, we concluded that there were no significant changes in the serum chemistry at any time during the observation period. These changes were compared to a control series of animals.

"There were no changes in the urine, and there were no neurological changes. There were no changes in the cardiovascular responses. There were no ocular changes. We were curious to see if there might have been some changes in the refraction or translucency of the lens, since some years previously this had been reported to have been a problem in rabbits.

"One of the ophthalmologists reviewed these animals before and after DMSO, not knowing which animals had received the drug, and it was concluded that there were no changes at all in the eyes of these animals.

"Then following the experiments, the animals were autopsied and the tissues examined histologically. No pathologic changes in the histology were found.

"So, our conclusion, then, is that DMSO, at least as far as these events were concerned, is an effective and relatively nontoxic drug as used intravenously.

"Our results in spinal cord injury, brain trauma, and stroke have been confirmed by at least three different groups of investigators in other parts of the country for each project," Dr. de la Torre said. "We feel that DMSO is a highly effective drug in central nervous system injuries."