The following pages show electron microscope (EM) pictures, in sequence, represent cross sections of radial nerve mice forelimbs. The first picture is that of radial nerve of mice from control group one, un-poisoned and un-treated. The second picture shows radial nerve of mice poisoned and untreated. The third picture depicts radial nerve of mice from the poisoned group, treated and restored. The treatment used magnetic fields representative of those being utilized with Magnetic Resonance Therapy. The pictures, which follow on the second page, appear in the journal, Medical Hypothesis (2003) 60 (6), 821-836; Elsevier Science Ltd.

An explanation of the studies, follow the pictures.



Picture #1 (Fig. 4) is an electron micrograph (EM) of cross Sections of radial nerve of mice <u>from control group un-poisoned</u> <u>and untreated.</u>



Pictures #2 & #3 (Fig. 4) are electron micrographs (EM) of cross sections of radial nerve of mice from the group poisoned and untreated.



Pictures #4 & #5 (Fig 5) are electron micrographs of cross sections of radial nerve of mice from the group that was <u>poisoned</u>, treated and restored.

Two studies were conducted at the Weill Medical College of Cornell University and then replicated at Fairleigh Dickinson University, Department of Biological Sciences. The studies tested the effect of Jacobson MRT magnetic fields on excised sciatic (leg) nerves of mice in-vitro (culture medium). The findings showed that treated nerve segments maintained normal Schwann cells and a normal myelin sheath structure. The untreated control nerve segments simply degenerated. Additionally, the length and width of exposed nerve segments increased, whereas the untreated nerve segments remained the same. In the first experiment, as an example, there was a 33% increase in length and a 50% increase in width of treated nerve segments. Studies of DNA, the building blocks of genes, extracted from both treated and untreated nerve segments showed no DNA degradation, nor was there uncontrolled cell proliferation.

After completing in-vitro studies, Professor Brij Saxena and Professor Emeritus Anjali Saxena (in collaboration with Prof. Jerry I. Jacobson) conducted in-vivo (in the living system) studies. One study was performed at Cornell and the next replicate study with greater population of mice was accomplished at Fairleigh Dickinson University.

The effect of Jacobson's MRT magnetic fields on the restoration of forelimb grip strength and radial nerve (forelimb) ultra-structure was studied in mice. Motor neuropathy was induced by the administration of a neurotoxin (poison) in drinking water for nine and one-half weeks. Forelimb grip strength of mice declined to 47% compared to the non-poisoned control group. The poisoned group without any MRT treatment persisted to have a 56% decrease in grip strength, and the electron microscope photographs (see attachment) showed loss of myelin, decreased energy production of cells and fragmentation of sub-cellular structures responsible for slow and fast nerve conduction. In contrast, the poisoned group treated with MRT (8-1/2 weeks, twice weekly) showed an 87% recovery of grip strength – which was sustained after termination of treatment at an 82% level until the 27^{the} week of observation. The treated group showed remyelination, active mitochondria, and maintenance of nerve ultra-structure consistent with grip strength recovery.

"These results are the first to demonstrate a biological effect of electromagnetic fields invivo on the restoration of sub-cellular structures required for nerve impulse conduction and metabolism in recovery from motor neuropathy, under controlled experimental conditions", --- said Professor Emeritus Anjali Saxena of Fairleigh Dickinson University.

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