

2001 Vol 5 No. 1

Winter 2001

MEDICAL WATCH: SPINAL CORD INJURY RESEARCH:

by Dan Thompson, R.R.P., R.V.P.

A December 5th, 2000 article in the Ottawa Citizen noted that researchers are working on vaccines that one day could assist people with spinal cord injuries to regain movement!

According to the article, one centimeter is what separates Christopher Reeve from "the physical world". Twenty years ago, that distance may as well have been light years, the way scientists viewed spinal injuries; however, today they are convinced that getting damaged, or even getting new fibers to grow and act like a bridge to rejoin severed nerves is now a matter of "when" according to Mr. Reeve.

Scientists are making head-way on several key fronts in the race to treat ruined spinal cords. For example, they are testing ways to limit the nerve damage immediately after an injury, and they are trying to coax intact nerve fibers to start working again; however, they are doing the once unimaginable which is to stimulate growth of new axons! Approximately half a dozen drugs and therapies are about to proceed to human clinical trials that could start as early as 2001. The optimistic view among scientists is being fueled by new funds raised by Christopher Reeve and Rick Hansen, and according to Mr. Reeve, scientists are now flocking "in droves" to a field of research that one doctor told him was a "graveyard" of neuroscience.

Researchers try to limit necrosis, or the secondary damage immediately following the accident. Doctors know that cooling anything down reduces the metabolic activity, and some scientists are working on compounds that can trigger the body's own immune cells to mop up any toxic chemicals before they can kill more cells.

Dr. McDonald's team at Washington University recently succeeded in turning embryonic stem cells, which are capable of growing into any cell, into nervous system cells which are called oligodendrocytes. Twenty years ago, Dr. David of the Montreal General Hospital Research Institute took a nerve from a rodent's leg and grafted it into its damaged spinal cord. In 1988, a Swiss team discovered a protein in myelin that blocked growth in the damaged spinal cord. They produced an antibody to the protein which regrew nerves in partially separated spinal cords in rats. Meanwhile researchers in Montreal were able to isolate several molecules in myelin removed from cow brains that stopped nerves from regenerating. Next, they developed a vaccine that stimulated the immune system to generate antibodies against these "inhibitors". The article noted that University of British Columbia researchers are taking a different approach by injecting an antibody that binds to myelin directly into the site of an injury.

No one magical silver bullet will ever be the answer cautioned the article; however, it is clear that a flurry of activity is occurring to hopefully one day mend damaged spinal cords.

A Sensible Solution to the Adversarial Process

