

Combination Therapy Targets Chronic Spinal Cord Injury

Community funded, multidisciplinary study combines nerve growth drug plus Estim to target recovery after spinal cord injury in a large animal model.

MINNEAPOLIS, MINNESOTA, USA, October 25, 2022 /EINPresswire.com/ -- A multidisciplinary

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U2FP

study of chronic spinal cord injury (SCI) recovery begins this month, combining a nerve-boosting drug with epidural spinal cord stimulation in a clinically relevant large animal model.

The study, the first of its kind, hopes to show that this combinatorial approach to SCI treatment maximizes the function of residual spinal cord nerve circuitry and encourages formation of new nerve connections to improve function in the chronic stage.

The project was originated by [Unite 2 Fight Paralysis \(U2FP\)](#), an SCI research advocacy group, which assembled a coalition of independent nonprofits to fund the effort. It combines the efforts of scientists from the University of Minnesota, Case Western Reserve University and Emory University, and the biotech company NervGen.

The study is funded by Conquer Paralysis Now, Get Up Stand Up 2 Cure Paralysis, Morton Cure Paralysis Foundation, Bryon Riesch Foundation, and United Paralysis Foundation.

Matthew Rodreick, Executive Director for U2FP, notes the significance of the project. “This well-designed study uses a large animal, chronic injury model applying a combination of interventions already being tested in humans, carried out by the same people testing the therapies in humans. We all want human clinical trials for people living with spinal cord injury, and these are beginning to occur. But it is not likely these trials will deliver the kind of restored function our community wants and needs. Combination therapies, like this one, become necessary.”

The study combines epidural spinal cord stimulation (Estim) therapy with a peptide drug (NVG-291) to enhance nerve growth.

Principal Investigator Candace Floyd, Emory University, explained the interventions:

"Epidural spinal cord stimulation is being studied in many places now and has shown efficacy in SCI human studies in restoring volitional movement and beneficial changes of various autonomic functions, short and long term.

"The drug NVG-291 has been shown to restore function and improve nerve regeneration, both acutely and in long-term SCI. Our research team suggests that combining NVG-291 with Estim could yield an even greater restoration of function."

The peptide was developed by scientist Jerry Silver at Case Western. Said Silver, "Our studies have shown that this small peptide releases axons that are trapped within the inhibitory scar environment in the injured cord. This presents a potential new avenue of non-invasive treatment for SCI, promoting regeneration and functional recovery."

NervGen, a company formed to commercialize Silver's peptide, has already begun human safety studies for NVG-291.

The Estim part of the study is under direction of neurosurgeon-scientist Ann Parr, University of Minnesota, who has many years' experience with human epidural spinal cord stimulation studies. Said Parr, "We will evaluate the efficacy of this combinational strategy and address the critical questions for dosing, targeting and programming optimization necessary to move this strategy toward clinical use."

Floyd's lab specializes in using pigs to test the therapies. Said Floyd, "Pigs offer many advantages over small animals. They match the size and weight of humans over a wide range of developmental periods (e.g. infancy, adolescence, adulthood). The pig nervous system is nearly the same size as that of the human."

Traci Fernandez, whose charity United Paralysis Foundation is the largest donor to the project, notes its relevance to her own lived experience with paralysis: "What is significant about this is that it starts from the community, is funded by the community, and involves academia and industry. The project is on target for what the SCI community wants and needs."

Former race car driver Sam Schmidt, who has a high level spinal cord injury, said the project fits well with the mission of Conquer Paralysis Now, a nonprofit he started to advance spinal cord injury research and treatment. "We are drawn to this combination study because it directly addresses chronic spinal cord injury in a model that will translate more quickly to humans. The research team is collaborative and their approach is unique. We're excited to be part of this."

About Unite 2 Fight Paralysis: Founded in 2005, U2FP is a nonprofit dedicated to unify and empower the international spinal cord injury community to cure paralysis through advocacy, education, and support for research. Contact Executive Director Matthew Rodreick for more

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