



SCI Stem Cell Clinical Trial Awarded \$25 Million Dollars

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The California Institute for Regenerative Medicine (CIRM) has recently awarded \$25 million dollars to “**the first clinical trial** based on cells derived from human embryonic stem cells that has been approved by the Federal Drug Administration (FDA).” This clinical trial has been specifically designed to benefit spinal cord injury (SCI) patients. Every year, 12,000 Americans suffer SCIs that permanently alter the quality of their lives. CIRM has never before funded “stem-cell derived **therapy research**.” The institute will rely on the Geron Corporation to run this trial.

How Legislation Made this Type of Trial Possible

Robert Klein, the chairman of CIRM, has said that when Californians voted in favor of Proposition 71, they made this type of stem cell clinical trial possible. That legislation allows scientists to pursue stem cell research projects that may benefit patients suffering from Parkinson’s disease, diabetes, dementia and various other chronic illnesses and injuries.

Although a number of these early clinical trials may not prove successful, major medical breakthroughs are likely to occur as these trials continue.

Specific Nature of the Current Clinical Trials

Patients are enrolled who have suffered various types and degrees of SCIs, including cervical neck injuries. Some of the participants will be given injections of oligodendrocyte progenitor cells (which come from embryonic stem cells) into their injury sites. Earlier animal studies indicate that these progenitor cells can then turn into oligodendrocytes. When working properly, these central nervous system cells “**surround and insulate the axons** (the long fibers) through which a nerve’s electrical messages are sent.” This protective layer of cells “forms a **myelin sheath** around axons.”

A major goal of this three-year study is to determine how safe it is to inject these types of cells into human beings. Patients have been willing to take part in these clinical trials because they’re hoping to regain specific motor functions, bladder and bowel control or various nerve sensations. After incurring different types of spinal cord injuries, patients often find themselves battling the aftermath of fractured vertebrae, bone fragments and disc material damaging various nerve fibers. Fortunately, healing can still occur since human SCIs usually involve bruises or contusions to the spinal cord – as opposed to any actual “**severance** of the nerve fibers.”

Future Goals of Similar Studies

Hopefully, research scientists will one day be able to help SCI patients more fully heal from their different forms of paralysis. Clinical trials may also lead to improved rehabilitative treatments for improving the quality of SCI patients’ everyday lives.

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