

Spinal Cord Injury: Rebuilding from the Ground Up

(May, 2007) - A team led by McEwen Investigator Dr. Michael Fehlings has demonstrated a new way to reconstruct an essential element in nerve function in the spinal cord in a paper jointly co-first authored by Drs. Eftekhar Eftekharpour and Soheila Karimi.



Like rubber coating on wires, myelin insulates the conduction pathways.

A tissue called myelin functions as an insulating casing around nerve fibers and takes part in conducting signals from the brain to the rest of the body. After transplanting specific neural precursor cells (aNPCs) from the brain of adult transgenic mice into the spinal cords of mice which lack myelin, investigators were able to generate oligodendrocytes—the building blocks of myelin—which traveled down the spinal cord and formed mature myelin.

“This is a major step forward in spinal cord injury research,” says Dr. Fehlings. “The ability to restore the myelin insulation is a key component of a therapeutic strategy, and our study is the first to show this exciting result. Our future work will focus on generating neural precursor cells from alternative sources including embryonic stem cells and in applying this technology in concert with tissue engineering approaches to repair chronic spinal cord injury.”

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