

New findings could help speed recovery, alleviate pain associated with spinal cord injury

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Research released today demonstrates how new scientific knowledge is driving innovative treatments for spinal cord injuries. Spinal cord damage is debilitating and life-altering, limiting or preventing movement and feeling for millions worldwide, and leading to chronic health conditions and pain. The new studies suggest potential therapies for managing the aftermath of pain and pressure sores, repairing nervous system damage, and speeding recovery. The findings were presented at Neuroscience 2012, the annual meeting of the Society for Neuroscience and the world's largest source of emerging news about brain science and health.

In the United States, approximately 12,000 people are hospitalized for spinal cord injury (SCI) each year, and at least 270,000 people live with it. The initial injury is usually compounded by a wave of immune activity that can extend the initial nervous system damage, and complications of SCI may include pain and pressure sores that compromise the quality of life. New research is tackling all of these dimensions of SCI.

Today's new findings show that:

- Nervous system tracts that are left intact but nonfunctioning following SCI appear to be reactivated through [deep brain](#)

[stimulation](#), speeding recovery of walking in a [rodent model](#) (Brian Noga, PhD, abstract 678.12, see attached summary).

- Painful and sometime life-threatening pressure sores due to immobilizing nervous system injuries may be prevented by underwear wired to deliver tiny electrical currents that contract the paralyzed buttocks muscles, mimicking the natural fidgeting of able-bodied people (Sean Dukelow, MD, PhD, abstract 475.09, see attached summary).
- Carbon monoxide's anti-inflammatory effects appear to accelerate healing in rats with spinal cord injury, possibly by altering the balance of immune cells and limiting the damage caused by molecules called free radicals (Yang Teng, MD, PhD, abstract 450.11, see attached summary).
- Social contact appears to lessen the pain that follows [peripheral nerve](#) injury. A new mouse study correlates the healing social behavior with biochemicals in the brain and spinal cord (Adam Hinzey, abstract 786.04, see attached summary).

"While the damage of SCI can appear to be immediate and dramatic, the biological events that lead to extensive nerve and tissue damage are complex, and injuries evolve over time," said press conference moderator Jacqueline Bresnahan, PhD, of the University of California, San Francisco, an expert on nervous system trauma caused by [spinal cord injuries](#). "Today researchers are finding ways to intervene in the cascade of molecular changes that follow SCI. From understanding immune cell responses to the healing power of social contact, researchers are finding new ways to treat and rehabilitate patients."

Provided by Society for Neuroscience

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