The Stanford Partnership for Spinal Cord Injury and Repair

Breakthrough Strategies for Restoring Function and Independence

THE STANFORD CHALLENGE

Seeking Solutions, Educating Leaders

"So many of our dreams at first seem impossible, then they seem improbable, and then when we summon the will, they soon become inevitable."

Christopher Reeve
ACTOR, PRODUCER, DIRECTOR, WRITER, AND ACTIVIST

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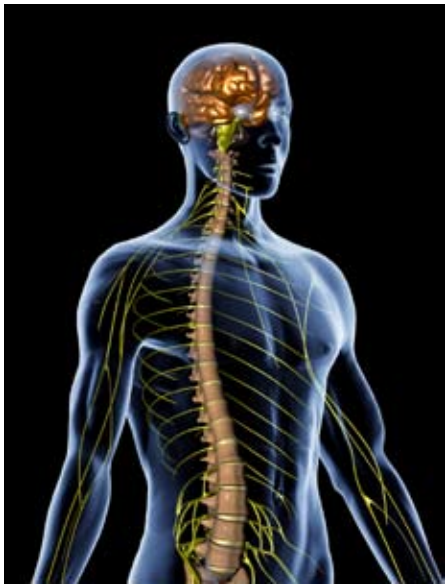


PASIEKA / PHOTO RESEARCHERS, INC.

Damage to the spinal cord could happen in the blink of an eye—from a car accident, a fall, or a sports injury. It can also develop gradually from multiple sclerosis or an aging spine. The result is often catastrophic, permanent disability.

People ages 16 to 30, veterans, and senior citizens are most often affected. Motor vehicle crashes are the leading cause of spinal cord injury for young people, while falls and degenerative joint diseases cause most injuries in older adults. In addition to traumatic injury, damage may be caused by arthritis, multiple sclerosis, spinal tumors, and blood vessel disorders that affect the spinal cord.

According to the National Spinal Cord Injury Statistical Center, a spinal cord injured person will incur between $500,000 and $3.1 million in lifetime medical expenses, depending on the type of injury and age of onset. The cost to our nation's economy from spinal cord injury is well over $9.7 billion each year. The full human cost is beyond calculation: education, career, marriage, and independence are disrupted and sometimes never restored.

The Stanford Partnership for Spinal Cord Injury and Repair (SPSC), a program of the Stanford Institute for Neuro-Innovation & Translational Neurosciences (SINTN), aims to reduce the costs—personal, social, and financial—of spinal cord injury and dysfunction through a formidable network of collaborations employing breakthrough strategies for repair and restoration of function.

COVER: Physical therapist **Kelli Manring, MSPT,** works with a patient at the VA Palo Alto Health Care System. They are using an arm ergometer to improve strength and function in his arms, which have been impacted by tetraplegia. *Photo: courtesy of VA Palo Alto Health Care System.*

DOUG CODY/BAY AREA EVENT PHOTOGRAPHY

SPSC HAS ALREADY ATTRACTED A NUMBER OF NEW BACKERS. FORMER SAN FRANCISCO 49ERS PLAYERS **STEVE YOUNG** (LEFT) AND **BRENT JONES** (RIGHT) STRONGLY SUPPORT **ROMAN REED'S** EFFORTS TO PROMOTE RESEARCH AND AWARENESS ON BEHALF OF THOSE WITH SPINAL CORD INJURY.

HARNESSING A UNIQUE ENVIRONMENT

Accelerating the development of new methods to restore function after spinal cord injury is the core mission of the SPSC. This will require an unparalleled intersection of basic science, translational, and clinical research. Stanford University is one of the few institutions nationally that has this capability. In addition, our location in the heart of Silicon Valley, with its rich history of innovation, strategically positions SPSC to accelerate both discovery and application.

ACCELERATING DISCOVERY BY NETWORKING

The more robust a network is, the faster the pace of its work. SPSC will harness the critical mass of Stanford faculty members who are national and international leaders in neurorestorative research and the development of new treatments. The program will leverage scientific and clinical partnerships with industry leaders, nationally recognized rehabilitation centers at the VA Palo Alto Health Care System and Santa Clara Valley Medical Center, respected academic centers worldwide, and new programs such as the Healthcare Institute for Neuro-Recovery and Innovation (HNRI) Translational Labs.

With these unique partnerships and collaborations, the goals of SPSC are to:

- Advance understanding of the mechanisms underlying diseases of the spinal cord
- Develop new methods to repair the spinal cord, such as stem cell transplantation
- Pursue innovative strategies to restore function, such as nerve pacemakers and brain-computer interface implants
- Establish rigorous measures of functional recovery to improve treatment outcomes
- Lead the development of clinical trials in partnership with industry
- Empower the spinal cord injury community through active public outreach and advocacy

Exciting collaborations are planned, including a consortium being considered as a site for the world's first human stem cell clinical trial for repairing acute spinal cord injury. The SPSC will be a world leader in placing new treatment solutions into the hands of those treating and providing hope to people with spinal cord injury.

THE ROMAN REED STORY

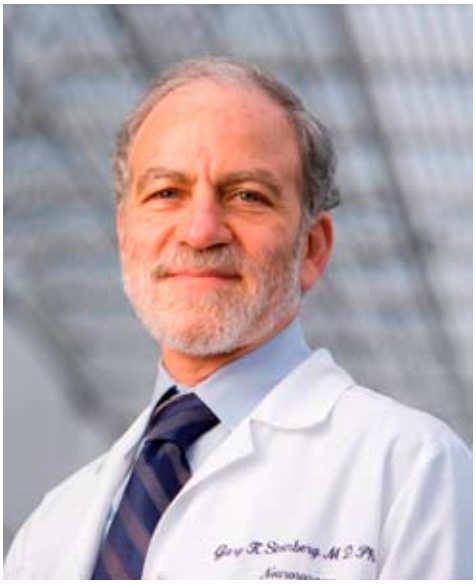
It was the first game of the college football season, and Roman Reed was playing exceptionally well. Then fate intervened. The tackle only took a few seconds, a vertebra was crushed, and his dream of playing in the NFL ended.

"I tried to give a thumbs-up to the crowd, but my hand didn't work. I went from being able to bench press 430 pounds to not being able to lift my arms or move my legs."

The doctor's prognosis was bleak, and Reed was told that he would never walk again, never use his arms, and never father a child. His response? "Never tell me never!" Today, Reed can bench press 225 pounds and is the proud father of three!

Reed and his father Don have worked tirelessly to have the Roman Reed Spinal Cord Injury Research Act passed in California. As a result, more than $12.5 million in state funds has been awarded to scientists conducting research in spinal cord regeneration. An additional $50 million has been leveraged from outside sources.

Reed joined the SPSC to promote research and awareness on behalf of all those with spinal cord injury and dysfunction. President Obama invited him to the March 9, 2009, ceremony commemorating the historic reversal of the government's ban on the use of federal funding for embryonic stem cell research. Reed is not only back in the game, he is also calling plays.



MARK TUSCHMAN

GARY K. STEINBERG, MD, PHD, IS DIRECTOR OF THE STANFORD INSTITUTE FOR NEURO-INNOVATION & TRANSLATIONAL NEUROSCIENCES (SINTN) AND THE BERNARD AND RONNI LACROUTE—WILLIAM RANDOLPH HEARST PROFESSOR OF NEUROSURGERY AND NEUROSCIENCES. SPSC IS A PROGRAM OF SINTN, WHICH IS DESIGNED TO ENABLE HIGHLY INNOVATIVE RESEARCH PROGRAMS TO THRIVE.

DOUG CODY/BAY AREA EVENT PHOTOGRAPHY

GRAHAM H. CREASEY, MD, FRCSED, (SECOND ROW LEFT) IS A LEADER OF THE STANFORD PARTNERSHIP FOR SPINAL CORD INJURY AND REPAIR (SPSC). **STEPHEN EZEJI-OKOYE, MD,** DEPUTY CHIEF OF STAFF, VA PALO ALTO HEALTH CARE SYSTEM (SECOND ROW RIGHT) AND **GENE A. CRAYTON** (FRONT LEFT) AND **RICHARD A. KRATT**, LEADERS OF PARALYZED VETERANS OF AMERICA (PVA), JOINED CREASEY TO CELEBRATE HIS APPOINTMENT AS THE PARALYZED VETERANS OF AMERICA PROFESSOR OF SPINAL CORD INJURY MEDICINE. INDIVIDUAL AND ORGANIZATIONAL DONORS LIKE PVA ARE A CRITICAL PART OF SPSC.

GIVING OPPORTUNITIES

Today, Stanford, along with members of a national network of clinical and research centers, is mobilizing efforts to push the boundaries of spinal cord research and to bring discoveries to useful application in the lives of those with spinal cord injury. You can help by becoming part of the philanthropic foundation of this exciting and challenging endeavor. Contributions can come in many forms, including expendable (for current use) funds, term endowments that span a period of years, or permanently endowed funds that create a lasting legacy.

INVESTING IN THE BEST AND THE BRIGHTEST

Gifts are sought to develop an educational curriculum and training program to foster future leaders in spinal cord injury medicine.

SUPPORTING WORLD-CLASS PROGRAMS

Your support can provide critical assistance to a wide variety of research and teaching programs. Gifts of expendable funds are sought to support staff and research in spinal cord injury medicine and to expand select new programs that promise to have broad and far-reaching impact. The earliest stages of innovative medical research hold the biggest challenge for funding; seed money to support these new programs is central to SPSC's progress. A variety of donor naming opportunities is available for research and education funding.

COMMUNITY OUTREACH AND EDUCATION

SPSC can have a wide-ranging impact on the lives of individuals with spinal cord dysfunction and their families. Funds can help us develop patient and family networks, events, and Web- and print-based information.

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CONTACT US

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