

Spinal Cord Injury Fact Sheet

ABOUT SCI: Spinal Cord Injury (SCI) is damage to the spinal cord that results in the loss of function, such as mobility or feeling.

SCI can be divided into three groups, depending on the location of the injury. High Tetraplegia injuries are cervical spine injuries between vertebra C1-C4, Low Tetraplegia injuries are cervical spine injuries between vertebra C5-C8, and Paraplegia are typically vertebra injuries of thoracic, lumbar vertebra or sacrum. All these injuries result in impairment of sensory and motor functions, to varying degrees. The higher the site of injury, the greater the number of nerves affected, which can result in partial or complete Paraplegia. Tetraplegia injuries can affect the arms and legs, and in some instances, breathing, resulting in dependence on a mechanical ventilator. There is currently no cure for SCI.

The majority of SCIs involve males under the age of 30. A 20-year-old Tetraplegia patient with ventilator dependency has a life expectancy that is more than 14 years shorter than a Tetraplegia patient who doesn't use a ventilator. The leading causes of death are pneumonia, pulmonary emboli and septicemia.

As of February 2011, the National Spinal Cord Injury Database estimated that between 232,000 and 316,000 individuals in the United States are living with SCI, and about 12,000 new cases occur each year. Of the new cases, more than 2,700 Tetraplegics will require extended ventilator support because of nerve injury, according to the 2009 Annual Report for the Spinal Cord Injury Model Systems. Ultimately, 2,000 will wean themselves from ventilators after overcoming atrophy of their diaphragms caused by ventilator use. Five hundred High Tetraplegia injuries will result in permanent mechanical ventilator dependency. Physicians determine whether transitional or permanent diaphragm pacing would benefit their patients.

CAUSES: The leading causes of SCI injuries are vehicle crashes (41 percent), falls (28 percent) and violence (15 percent). Other causes are trauma, sports injuries and disease, such as polio or spinal bifida.

COSTS: **Facts & Figures National Spinal Cord Injury Statistical Center, February 2011:**

Injury	1st Yr Expense	Subsequent Yr Expense	Lifetime Costs 25 yr old	Lifetime Cost 50 yr Old
High Tetra	\$985,000	\$171,000	\$4,373,000	\$2,403,000
Low Tetra	\$712,000	\$ 105,000	\$3,195,000	\$1,965,000
Paraplegia	\$480,000	\$ 39,000	\$ 1,461,000	\$1,032,000

**CLINICAL
TRIALS:**

Clinical trials for the use of the NeuRx Diaphragm Pacing System (DPS)[®] on patients with spinal cord injury began in 2000. Synapse Biomedical received FDA approval for treating ventilator dependency as a result of spinal cord injury on June 17, 2008.