NSCISC
NATIONAL SPINAL CORD INJURY STATISTICAL CENTER

Spinal Cord Injury (SCI) Facts and Figures at a Glance

2016 SCI Data Sheet

This data sheet is a quick reference on demographics and the use of services by people with spinal cord injury (SCI).

Incidence

Given the current population size of 314 million people in the U.S., the recent estimate showed that the annual incidence of spinal cord injury (SCI) is approximately 54 cases per million population in the U.S. or approximately 17,000 new SCI cases each year.

- New SCI cases do not include those who die at the scene of the accident.
- Estimates are obtained from several studies and not derived from the National SCI Database.

Prevalence

The number of people in the U.S. who are alive in 2016 who have SCI has been estimated to be approximately 282,000 persons, with a range from 243,000 to 347,000 persons.

- Estimates are obtained from several studies and not derived from the National SCI Database.

The National SCI Database is a prospective longitudinal multicenter study that currently captures data from an estimated 6% of new SCI cases in the U.S. The database has demographic and condition status data through 2015 for 31,255 people with SCI.

Age at Injury

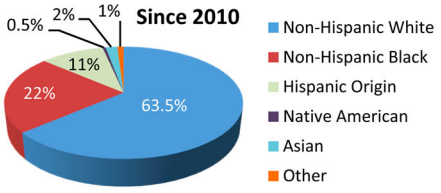
The average age at injury has increased from 29 years during the 1970s to 42 years currently.

Gender

Males account for approximately 80% of new SCI cases.

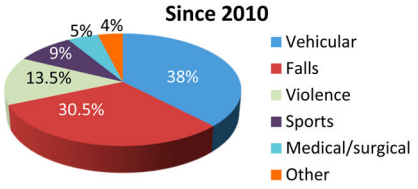
Race/Ethnicity

About 22% of injuries have occurred among non-Hispanic blacks since 2010, which is higher than the proportion of non-Hispanic blacks in the general population (12%).



Etiology

Vehicle crashes are currently the leading cause of injury, followed by falls, acts of violence (primarily gunshot wounds), and sports/recreation activities.



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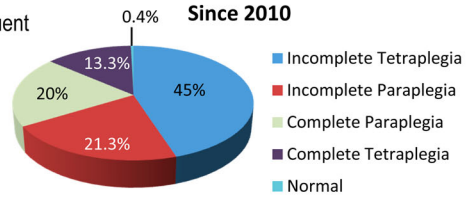
Lengths of stay

Lengths of stay in the hospital acute care unit have declined from 24 days in the 1970s to 11 days currently. Rehabilitation lengths of stay have also declined from 98 days in the 1970s to 35 days currently.

Neurological level and extent of lesion

Incomplete tetraplegia is currently the most frequent neurological category followed by incomplete paraplegia, complete paraplegia, and complete tetraplegia. Less than 1% of persons experienced complete neurological recovery by hospital discharge.



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DOI 10.1080/10790268.2016.1253912

Marital status

More than half of persons with SCI are single/never married at time of their injury. The percentage of persons who are married slowly increases over time, as does divorce.

Status (%)	At injury	Year 1	Year 10	Year 20	Year 30	Year 40
Single	51.4	50.2	41.4	35.3	29.5	21.3
Married	32.8	32.3	33.8	35.8	39.1	43.4
Divorced	9.5	11.2	19.1	23.5	24.6	21.3

Occupational status

At one year after injury, 12% of persons with SCI are employed, and by 20 years post-injury, about one third is employed.

Status (%)	At injury	Year 1	Year 10	Year 20	Year 30	Year 40
Employed	58.1	12.4	27.7	34.3	32.7	25.9
Student	15.1	15.8	6.9	2.6	0.7	0.0

Education

Over half of persons with SCI are high school graduates at time of their injury. Level of education slowly increases over time.

Education (%)	At injury	Year 1	Year 10	Year 20	Year 30	Year 40
High school only	51.5	54.1	51.1	46.5	43.9	33.3
College or higher	10.9	12.2	21.8	29.1	35.7	43.7

Re-hospitalization

About 30% of persons with SCI are re-hospitalized one or more times during any given year following injury. Among those re-hospitalized the length of hospital stay averages about 22 days. Diseases of the genitourinary system are the leading cause of re-hospitalization, followed by disease of the skin. Respiratory, digestive, circulatory, and musculoskeletal diseases are also common causes.

Lifetime costs

The average yearly expenses (health care costs and living expenses) and the estimated lifetime costs that are directly attributable to SCI vary greatly based on education, neurological impairment, and pre-injury employment history. These estimates do not include any indirect costs such as losses in wages, fringe benefits, and productivity (indirect costs averaged $72,047 per year in 2015 dollars).

	Average Yearly Expenses (in 2015 dollars)		Estimated Lifetime Costs by Age At Injury (discounted at 2%)	
Severity of Injury	First Year	Each Subsequent Year	25 years old	50 years old
High Tetraplegia (C1–C4) AIS ABC	$1,065,980	$185,111	$4,729,788	$2,599,411
Low Tetraplegia (C5–C8) AIS ABC	$770,264	$113,557	$3,455,879	$2,125,674
Paraplegia AIS ABC	$519,520	$68,821	$2,312,846	$1,517,851
Motor Functional at Any Level AIS D	$347,896	$42,256	$1,580,148	$1,115,312

Data Source: Economic Impact of SCI published in the journal *Topics in Spinal Cord Injury Rehabilitation,* Volume 16, Number 4, in 2011.
ASIA Impairment Scale (AIS) is used to grade the severity of a person's neurological impairment following spinal cord injury.

Life expectancy

The average remaining years of life for persons with SCI have not improved since the 1980s and remain significantly below life expectancies of persons without SCI. Mortality rates are significantly higher during the first year after injury than during subsequent years, particularly for persons with the most severe neurological impairments.

Life expectancy (years) for post-injury by severity of injury and age at injury											
	For persons who survive the first 24 hours						For persons surviving at least 1 year post-injury				
Age at Injury	No SCI	AIS D—Motor Functional at Any Level	Para	Low Tetra (C5–C8)	High Tetra (C1–C4)	Ventilator Dependent Any Level	AIS D—Motor Functional at Any Level	Para	Low Tetra (C5–C8)	High Tetra (C1–C4)	Ventilator Dependent-Any Level
20	59.5	52.6	45.1	40.0	35.7	19.3	52.9	45.5	40.7	36.9	25.3
40	40.6	34.2	27.7	23.5	20.1	8.9	34.5	28.1	24.1	21.0	12.6
60	23.1	17.9	13.1	10.3	8.1	2.2	18.2	13.4	10.6	8.7	4.0

Cause of death

Persons enrolled in the National SCI Database since its inception in 1973 have now been followed for 40 years after injury. During that time, the causes of death that appear to have the greatest impact on reduced life expectancy for this population are pneumonia and septicemia. Mortality rates are declining for cancer, heart disease, stroke, arterial diseases, pulmonary embolus, urinary diseases, digestive diseases, and suicide. However, these gains are being offset by increasing mortality rates for endocrine, metabolic and nutritional diseases, accidents, nervous system diseases, musculoskeletal disorders and mental disorders. There has been no change in the mortality rate for septicemia in the past 40 years, and only slight decrease in mortality due to respiratory diseases.

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Data from the National SCI Database is from 28 federally funded SCI Model Systems since 1973. Presently, there are 14 systems and 5 Form II (follow up) centers sponsored by NIDILRR. For a complete list of current SCI Model Systems, go to www.msktc.org/sci/model-system-centers.

Citation: National Spinal Cord Injury Statistical Center, Facts and Figures at a Glance. Birmingham, AL: University of Alabama at Birmingham, 2016.