



This data sheet is a quick reference on demographics and the use of services by people with spinal cord injury in the United States (U.S.). Much of the information reflects recent data collected since 2015. Historical information reflects data collected since the early 1970s.

The National Spinal Cord Injury Database is a prospective longitudinal multicenter study that currently captures data from an estimated 6% of new SCI cases in the United States. The database has demographic and condition status data through 2018 for 33,406 people with SCI.

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Incidence

Given the current U.S. population size of 328 million people, a recent estimate showed that the annual incidence of spinal cord injury (SCI) is approximately 54 cases per one million people in the United States, or about 17,730 new SCI cases each year. New SCI cases do not include those who die at the location of the incident that caused the SCI.

- **Data Source:** Jain NB, Ayers GD, Peterson EN, et al. Traumatic spinal cord injury in the United States, 1993-2012. *JAMA*. 2015;313(22):2236-2243.

Prevalence

The estimated number of people with SCI living in the United States is approximately 291,000 persons, with a range from 249,000 to 363,000 persons.

- **Data Source:** Lasfargues JE, Custis D, Morrone F, Carswell J, Nguyen T. A model for estimating spinal cord injury prevalence in the United States. *Paraplegia*. 1995;33(2):62-68.

Age at Injury

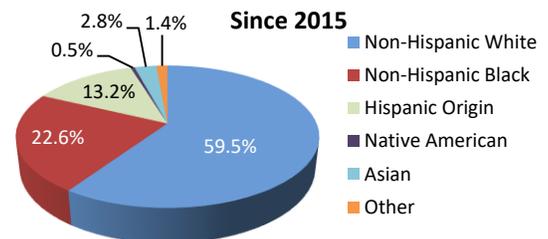
The average age at injury has increased from 29 years during the 1970s to 43 years recently.

Gender

About 78% of new SCI cases are male.

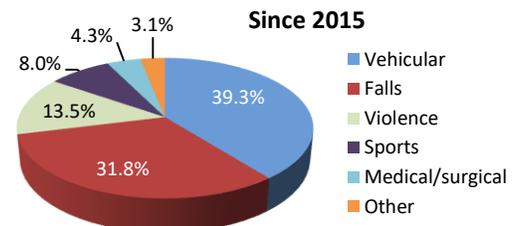
Race/Ethnicity

Recently, about 23% of injuries have occurred among non-Hispanic blacks, which is higher than the proportion of non-Hispanic blacks in the general population (13%).



Cause

Vehicle crashes are the most recent leading cause of injury, closely followed by falls. Acts of violence (primarily gunshot wounds) and sports/recreation activities are also relatively common causes.

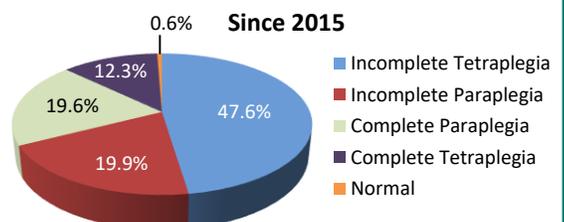


Lengths of Stay

Lengths of stay in the hospital acute care unit have declined from 24 days in the 1970s to 11 days recently. Rehabilitation lengths of stay have also declined from 98 days in the 1970s to 31 days recently.

Neurological Level and Extent of Lesion

Recently, incomplete tetraplegia is the most frequent neurological category. The frequency of incomplete and complete paraplegia is virtually the same. Less than 1% of persons experienced complete neurological recovery by the time of hospital discharge.



Education

Since 2015, about a quarter of persons with SCI have a college degree at the time of their injury, compared with 46% of people who survived 40 years of injury.

| Education (%) | At Injury | Year 1 | Year 10 | Year 20 | Year 30 | Year 40 |
|--------------------------|-----------|--------|---------|---------|---------|---------|
| High School Only | 51.7 | 52.7 | 51.3 | 48.2 | 40.5 | 33.9 |
| College or Higher | 24.4 | 26.2 | 26.6 | 24.7 | 35.8 | 46.3 |

Occupational Status

Since 2015, 17% of persons with SCI are employed at year 1 post-injury. The employment rate increases over time to 32% at 30 years post injury.

| Status (%) | At Injury | Year 1 | Year 10 | Year 20 | Year 30 | Year 40 |
|-----------------|-----------|--------|---------|---------|---------|---------|
| Employed | 66.0 | 17.4 | 23.0 | 28.8 | 31.8 | 31.8 |
| Student | 8.1 | 7.5 | 3.1 | 1.0 | 0.3 | 0.0 |

Marital Status

Since 2015, the percentage of people who are married is relatively consistent up to year 30 post-injury, with single/never married status slowly decreasing and divorce status slowly increasing.

| Status (%) | At Injury | Year 1 | Year 10 | Year 20 | Year 30 | Year 40 |
|-----------------|-----------|--------|---------|---------|---------|---------|
| Single | 44.9 | 44.0 | 37.6 | 39.4 | 33.9 | 24.6 |
| Married | 37.3 | 36.1 | 34.0 | 31.7 | 35.3 | 45.5 |
| Divorced | 8.6 | 10.9 | 20.1 | 21.0 | 21.7 | 20.2 |

Re-Hospitalization

Since 2015, 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 19 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.

Historical 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. The below estimates do not include any indirect costs such as losses in wages, fringe benefits, and productivity (indirect costs averaged \$76,327 per year in 2018 dollars).

| Severity of Injury | Average Yearly Expenses (in 2018 dollars) | | Estimated Lifetime Costs by Age at Injury (discounted at 2%) | |
|--|--|----------------------|---|--------------|
| | First Year | Each Subsequent Year | 25 years old | 50 years old |
| High Tetraplegia (C1–C4) AIS ABC | \$1,129,302 | \$196,107 | \$5,010,748 | \$2,753,822 |
| Low Tetraplegia (C5–C8) AIS ABC | \$816,019 | \$120,303 | \$3,661,165 | \$2,251,944 |
| Paraplegia AIS ABC | \$550,381 | \$72,909 | \$2,450,234 | \$1,608,015 |
| Motor Functional at Any Level AIS D | \$368,562 | \$44,766 | \$1,674,012 | \$1,181,564 |

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.

Historical 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.

| Age at Injury | Life Expectancy (years) for Post-Injury by Severity of Injury and Age at Injury | | | | | | | | | | |
|---------------|---|--|------|-------------------|--------------------|--------------------------------|---|------|-------------------|--------------------|--------------------------------|
| | No SCI | For Persons Who Survive the First 24 Hours | | | | | For Persons Surviving at Least 1 Year Post-Injury | | | | |
| | | 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 | 60.6 | 52.6 | 45.5 | 40.1 | 33.7 | 11.2 | 53.0 | 46.0 | 40.9 | 34.9 | 18.7 |
| 40 | 41.7 | 35.0 | 29.6 | 24.8 | 20.8 | 8.8 | 35.3 | 30.0 | 25.5 | 21.9 | 13.3 |
| 60 | 24.1 | 19.3 | 15.9 | 13.1 | 11.1 | 3.7 | 19.5 | 16.4 | 13.8 | 12.4 | 7.9 |

Historical Causes of Death

Persons enrolled in the National SCI Database since its inception in 1973 have now been followed for 45 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 45 years, and there has only been a slight decrease in mortality due to respiratory diseases.

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Data from the National SCI Database is from 29 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.

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