NSCISC
National Spinal Cord Injury Statistical Center
Spinal Cord Injury Model System

Traumatic Spinal Cord Injury Facts and Figures at a Glance

2022 SCI Data Sheet

The Spinal Cord Injury Model Systems was created in 1970 as a prospective longitudinal multicenter study on demographics and the use of services by people with traumatic spinal cord injury in the United States.

This data sheet is a quick reference on demographic and condition statuses for 35,675 persons with SCI. Data were collected through 2021 by federally funded SCI Model Systems and five Form II (follow up) centers and entered into the National SCI Database.

National SCI Statistical Center
515 Spain Rehabilitation Center
1717 6th Avenue South
Birmingham, AL 35233-7330

For Statistics: 205-934-3342
TDD: 205-934-4642
FAX: 205-934-2709
E-mail: NSCISC@uab.edu
Website: uab.edu/NSCISC

Incidence

The 2021 population size in the United States was estimated to be about 333 million people. The most recent estimate of the annual incidence of traumatic spinal cord injury (SCI) is approximately 54 cases per one million people in the United States, which equals about 18,000 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 299,000 persons, with a range from 253,000 to 378,000 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

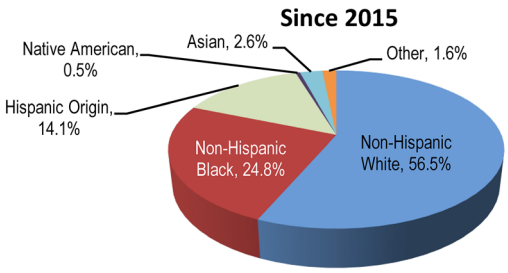
The average age at injury has increased from 29 years during the 1970s to 43 since 2015.

Sex

About 78% of new SCI cases since 2015 are male.

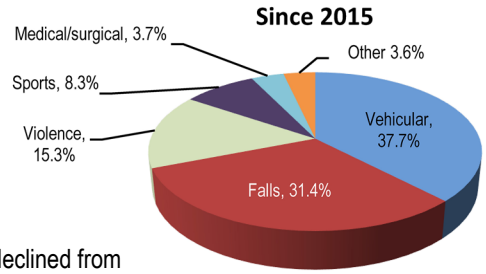
Race/Ethnicity

Recently, about 25% 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.
A customizable Leading Causes of SCI tool is at uab.edu/NSCISC.

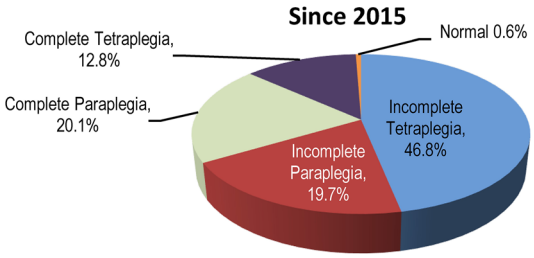


Lengths of Stay

Lengths of stay in the hospital acute care unit have declined from 24 days in the 1970s to 12 days since 2015. Rehabilitation lengths of stay have also declined from 98 days in the 1970s to 32 days since 2015.

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.



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Education

Since 2015, about a quarter of persons with SCI have a college degree at the time of their injury, compared with 45% of people who survived 40 years of injury.

Education (%)	At Injury	Year 1	Year 10	Year 20	Year 30	Year 40
High School Only	51.8	52.3	49.3	47.4	41.8	34.8
College or Higher	23.5	25.8	28.4	26.9	34.5	45.4

Occupational Status

Since 2015, 18% of persons with SCI are employed at year 1 post-injury. The employment rate increases over time to 31% at 30 or more years post injury.

Status (%)	At Injury	Year 1	Year 10	Year 20	Year 30	Year 40
Employed	68.5	18.4	25.3	29.5	31.9	31.2
Student	7.8	6.4	2.7	0.7	0.3	0.1

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	42.5	37.9	35.9	33.6	24.7
Married	36.9	37.2	33.9	34.4	35.4	43.9
Divorced	8.4	10.2	18.7	20.2	22.3	21.7

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 18 days. Diseases of the genitourinary system are the leading cause of re-hospitalization, followed by disease of the skin. Respiratory, digestive, 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 $82,329 per year in 2021 dollars).

	Average Yearly Expenses (in 2021 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	$1,218,106	$211,528	$5,404,774	$2,970,372
Low Tetraplegia (C5–C8) AIS ABC	$880,188	$129,763	$3,949,065	$2,429,028
Paraplegia AIS ABC	$593,660	$78,642	$2,642,911	$1,734,463
Motor Functional at Any Level AIS D	$397,544	$48,287	$1,805,650	$1,274,478

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. A customizable Life Expectancy Calculator tool is at uab.edu/NSCISC.

		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 (Any Level)	AIS ABC Para	AIS ABC Low Tetra (C5–C8)	AIS ABC High Tetra (C1–C4)	Ventilator Dependent (Any Level)	AIS D Motor Functional (Any Level)	AIS ABC Para	AIS ABC Low Tetra (C5–C8)	AIS ABC High Tetra (C1–C4)	Ventilator Dependent (Any Level)
20	59.5	52.1	44.8	39.4	32.6	10.5	52.5	45.3	40.1	33.7	17.6
40	40.8	34.9	29.6	24.8	20.7	8.8	35.2	30.0	25.5	21.6	13.2
60	23.3	19.3	16.0	13.0	11.1	3.7	19.5	16.4	13.7	12.2	7.9

Historical Causes of Death

Persons enrolled in the National SCI Database have now been followed up to 48 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 over the past 48 years, and there has only been a slight decrease in mortality due to respiratory diseases.

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