



# Spinal Cord Injury Facts

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There are as many as 250,000 people living in the United States with spinal cord injuries (SCIs). Every year, about 11,000 Americans are hospitalized for a SCI. Most SCIs are caused by trauma to the vertebral column, thereby affecting the spinal cord's ability to send and receive messages from the brain to the body's systems that control sensory, motor and autonomic function below the level of injury. Motor vehicles are the leading cause of SCI in the United States for people age 65 and younger, while falls are the leading cause of SCI for people 65 and older. Sports and recreation-related SCI injuries primarily affect people under age 29. Prevention of spinal cord injuries is essential to addressing this major public health concern.

## What is the spinal cord?

The spinal cord is about 18 inches long, extending from the base of the brain to near the waist. Many of the bundles of nerve fibers that make up the spinal cord itself contain upper motor neurons (UMNs). Spinal nerves that branch off the spinal cord up and down the neck and back contain lower motor neurons (LMNs). The spine itself is divided into four sections, not including the tailbone:

- Cervical vertebrae (1-7) located in the neck
- Thoracic vertebrae (1-12) in the upper back (attached to the ribcage)
- Lumbar vertebrae (1-5) in the lower back
- Sacral vertebrae (1-5) in the pelvis

## Types and levels of SCIs

The severity of an injury depends on what part of the spinal cord is affected. The higher the spinal cord injury on the vertebral column, or the closer it is to the brain, the more effect it has on how the body moves and what one can feel. More movement, feeling and voluntary control are generally present with injuries at lower levels.

- **Tetraplegia** (a.k.a. quadriplegia) results from injuries to the spinal cord in the cervical (neck) region with associated loss of muscle strength in all four extremities.
- **Paraplegia** results from injuries in the spinal cord in the thoracic, lumbar, or sacral segments, resulting in paralysis of the legs and lower part of the body.

**Complete SCI** means that there is no function below the level of the injury (no sensation and no voluntary movement). Both sides of the body are equally affected.

**Incomplete SCI** means that there is some functioning below the primary level of the injury. A person with an incomplete injury may be able to move one arm or leg more than the other, or may have more functioning on one side of the body than the other.

## Signs of SCI

- Extreme pain or pressure in the neck, head or back
- Tingling or loss of sensation in the hand, fingers, feet, or toes
- Partial or complete loss of control over any part of the body
- Urinary or bowel urgency, incontinence, or retention
- Difficulty with balance and walking
- Abnormal band-like sensations in the thorax—pain, pressure
- Impaired breathing after injury
- Unusual lumps on the head or spine

## Treatment

While recent advances in emergency care and rehabilitation allow many SCI patients to survive, methods for reducing the extent of injury and for restoring function are still limited. Immediate treatment for acute SCI includes relieving cord compression, drug therapy within eight hours of the injury to minimize cell damage, and stabilization of the vertebrae of the spine to prevent further injury. Medically managing the many health complications of SCI is challenging, and impacts survival and quality-of-life issues.

For more detailed information, visit [www.NeurosurgeryToday.org](http://www.NeurosurgeryToday.org).