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# Spinal Cord Injuries

An Overview



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Over 276,000 Americans are currently living with spinal cord injuries according to the National Spinal Cord Injury Statistical Center. However, only 12,500 new cases occur each year, making spinal cord injuries relatively rare. If you or someone you love is living with a spinal

cord injury, you may not know anyone else who has survived such a disastrous trauma, and you may be unsure where to turn to get help. While a spinal cord injury (SCI) can change your life forever, it doesn't have to ruin your life.



## Introduction

The spinal cord is like the body's switchboard, carrying messages to and from the brain about virtually everything you do. From the itch on your toe to flicking away the spider who caused the itch, your spinal cord receives the message, sends it to your brain, then processes the signal your brain sends in response, ensuring a quick reaction. When you have a reflexive response, the signal doesn't even have to go to your brain; the spinal cord takes care of it for you. This is why spinal cord injuries sometimes destroy reflexive responses.

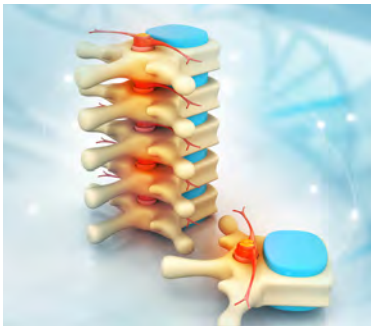
When your spinal cord is injured, your ability to receive signals from your body and send them from your brain is diminished. Most spinal cord injury survivors have some mobility impairments and many end up paralyzed.

Generally speaking, the higher up the injury is in your spinal column, the worse its consequences will be, since higher injuries inhibit your spine's ability to send and receive more signals.

This can be scary, but consider this: since the 1970s, the prognosis for spinal cord injury survivors has markedly improved. Back then, an injury sufferer could expect to spend 24 days in the hospital and 98 days in intensive rehabilitation. Today, the figure is 11 days in the hospital followed by 36 days in rehabilitation. For many injury sufferers, some movement and sensation even returns over time.

### Basic SCI Vocabulary

To help them better assess the severity and significance of spinal cord injuries, doctors rely on a host of terminology. Some of the terms you can expect to hear as you navigate the re-recovery process include:



#### **Vertebra:**

The vertebrae (singular: vertebra) are the column of butterfly-shaped bones surrounding your spinal cord. You can feel them when you run your hands up the center of your back. Your doctor will tell you the site of your spinal cord injury by giving you a letter indicating the region (cervical, thoracic, lumbar, or sacral) and a number indicating the specific vertebra implicated (i.e. C1 or T2).



#### **Incomplete spinal cord injury:**

Thanks to better medical management, incomplete spinal cord injuries, which result in a partially compressed—rather than fully severed—spinal cord are now more common than complete injuries. The prognosis for recovery from these injuries is generally better.



#### **Complete spinal cord injury:**

A complete spinal cord injury occurs when the spinal cord is either fully severed or fully compressed, significantly limiting sensation and movement. These injuries can improve over time, particularly as swelling goes down, but generally have a worse prognosis.



#### **Quadriplegia/Tetraplegia:**

Resulting from injuries relatively high on the spine, quadriplegia and tetraplegia inhibits movement and sensation in all four limbs



#### **Paraplegia:**

The product of lower spinal cord injuries, paraplegia inhibits movement and sensation in the legs, and may also undermine bowel and bladder function.



### Potential SCI Complications

In addition to paralysis and mobility impairments, spinal cord injuries often lead to a number of complications and nervous system issues. There is no such thing as a “typical” spinal cord injury, so you should not rely on someone else’s experience as a guide for what might happen to you.

Talk to your doctor, and know that with hard work and a little luck, your prognosis can change. Some of the complications you can expect as a result of your injury include:

- ☑ Changes in your emotions, including anxiety and depression
- ☑ Phantom pain below the injury
- ☑ Infections near the injury, or in other injured areas
- ☑ Bedsores and other skin problems, particularly if you are bedridden
- ☑ Sexual function issues
- ☑ Difficulty controlling your own bowels and bladder
- ☑ Difficulty breathing on your own
- ☑ Changes in sensations in your arms and legs, even if you retain some feeling



## Emergency Interventions When a Spinal Cord Injury is Suspected

Two generations ago, a spinal cord injury was a death sentence, and a generation ago, it inevitably meant paralysis. Today, even severely injured people are sometimes able to walk, run, and even play sports again. There's no guarantee that good medical care will produce these outcomes, but prompt intervention when a spinal cord injury is suspected is of the utmost importance

If you suspect you or someone you love has suffered a spinal cord injury:

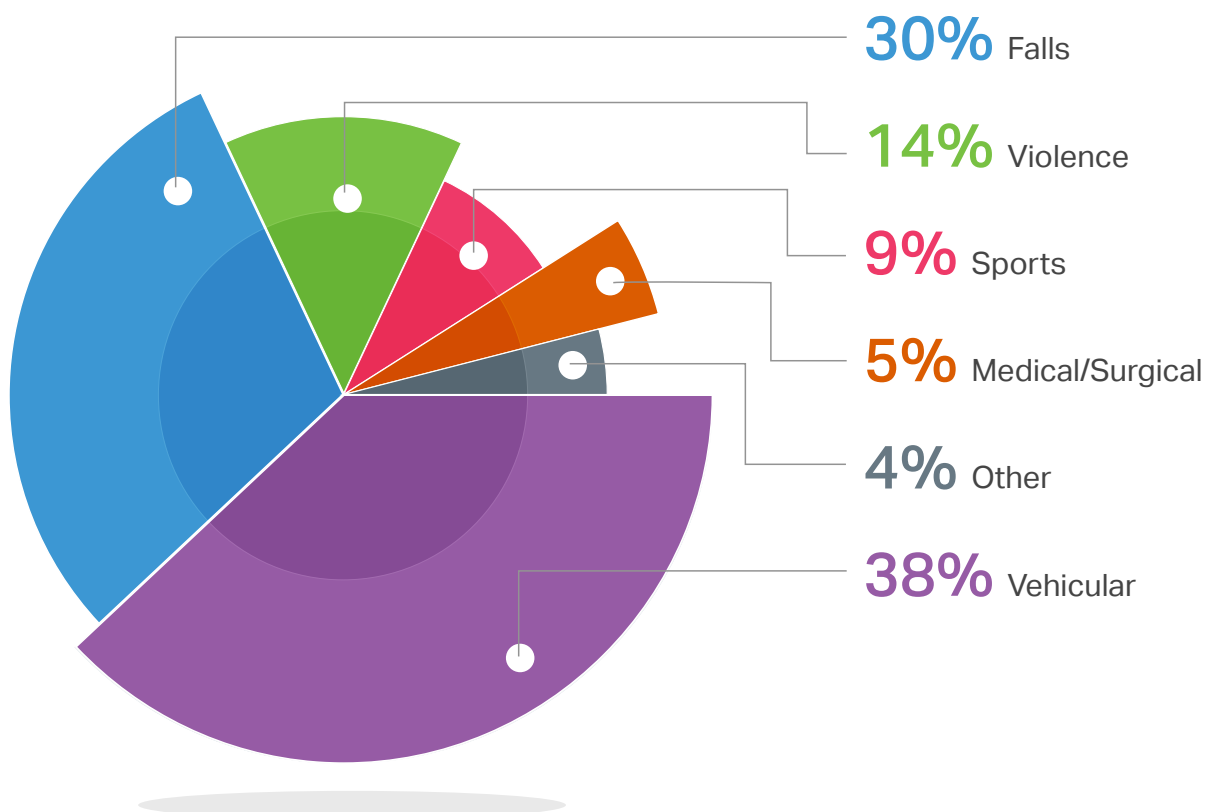
- ☑ Call 911 for emergency assistance.
- ☑ Do not move the person. Instead, try placing heavy towels on either side of the neck and body to keep them still, but do not prop up the neck or any other part of the body.
- ☑ Offer reassurance, and encourage the person to take slow, deep breaths.
- ☑ If you must move the person, do so in one smooth motion, with the assistance of at least one other person.
- ☑ Do not allow the person to go to sleep or to return to regular physical activities until he or she has been examined by a doctor.



## What Causes Spinal Cord Injuries?

Any activity that can cause trauma to the back or neck can damage your spinal cord. Spinal infections can also cause spinal cord injuries, as is the case with an untreated hemorrhage (cauda equina syndrome). For this reason, it's critically important to seek prompt medical care if you suffer from unexplained back pain, decreased sensation in your spine, or any other unusual symptoms. For most spinal cord injury survivors, though, the injury was caused by a physical trauma.

The leading causes of spinal cord injuries are:





## Understanding Spinal Anatomy

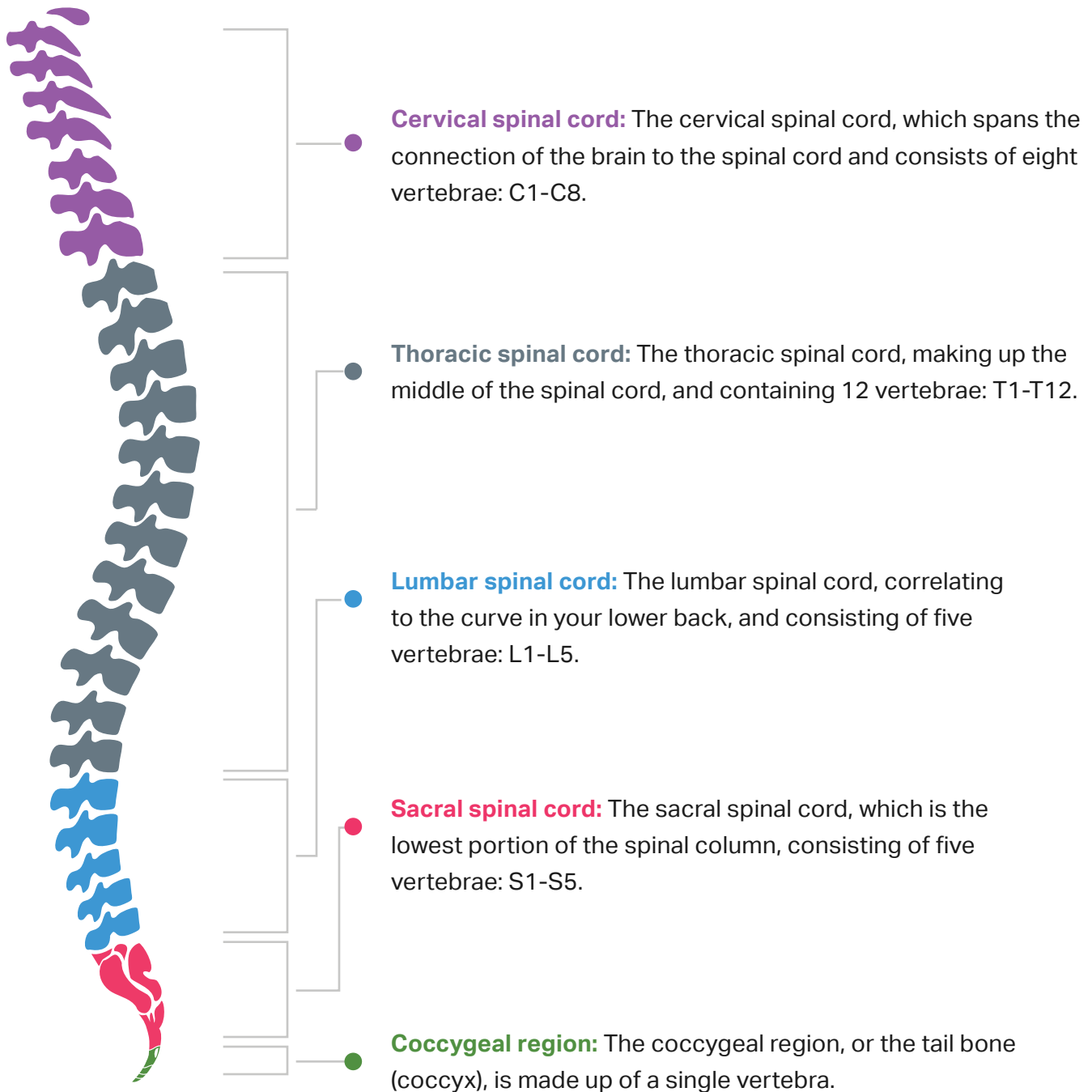
If you don't know the basics of spinal cord anatomy, you may struggle to understand even the most basic of information from your physician. The spinal cord is a complex organ, consisting of a bundle of nerves protected by a sheath of myelin.

The cord is then encased in 31 vertebrae, which you can easily feel when you touch your back. Doctors divide the spinal cord into four distinct regions, from top to bottom, and assign to most injuries a letter indicating the region and a number indicating the affected vertebra. For instance, an injury to C1 is an injury to the topmost vertebra in the cervical spinal cord.



## Understanding Spinal Anatomy (cont.)

The leading causes of spinal cord injuries are:



Spinal cord injuries can also affect bundles of nerves. For instance, injuries to the cauda equina result in cauda equina syndrome, which can inhibit sexual, bladder, and bowel function, but which does not typically interfere with movement.

Lower injuries are generally better because they result in less diminished function. Higher injuries are more difficult to recover from, and may even be fatal. Injuries to C1-C3 are rarely survivable.



## Treatment for Spinal Cord Injuries

Unlike most other injuries and illnesses, there is no single “preferred” treatment for spinal cord injuries, and no pill or surgery that will cure all spinal cord injury survivors. Indeed, in many cases the symptoms cannot be cured at all, but can only be managed. Thus every spinal cord injury survivor should work alongside his or her doctor or develop a personalized treatment plan that is reflective of your values and treatment goals, ambitious enough to give you a shot at full recovery, and backed by the latest research.

Some options for spinal cord injury recovery include:

### **Palliative care to manage your pain and other symptoms.**

This includes the use of painkillers to dull pain, as well as assistance devices such as wheel-chairs and catheters. In some cases, your medical team may encourage you to use assistance devices even when they’re no longer absolutely necessary, since doing so can help you focus on other aspects of

your recovery. For instance, if controlling your bowels and bladder is a challenging process for you, your doctor might encourage you to continue to use a catheter during physical therapy sessions.

### Antibiotic care to prevent infections.

Depending on the source of your spinal cord injury, you may need antibiotics to treat swelling and infections, or to reduce the risk of these symptoms. For instance, a gun shot wound survivor is at a heightened risk of infection, particularly if the wound is open and exposed to the air.



### Surgery to address your individual treatment needs.

In some cases, such as a bullet lodged in or near the spine, you may have surgery immediately to reduce your risk. In other cases, you may need surgery to cope with symptoms as they arise, such as when a spinal cord injury causes a bulging disc. Some surgeries may help eliminate symptoms, as when spinal decompression surgery endeavors to reverse cauda equina syndrome.

### Experimental treatments.

Nanotechnology, artificial intelligence, and other exciting developments are changing the landscape of spinal cord injury recovery. Your doctor may refer you to an experimental treatment program, or you may be a good candidate for an assistance device offered at your hospital or rehabilitation center. Let your doctor know you're interested in experimental treatments. Keep abreast of spinal cord injury news, since you may find the media reporting on a promising new treatment even before your doctor learns of it.

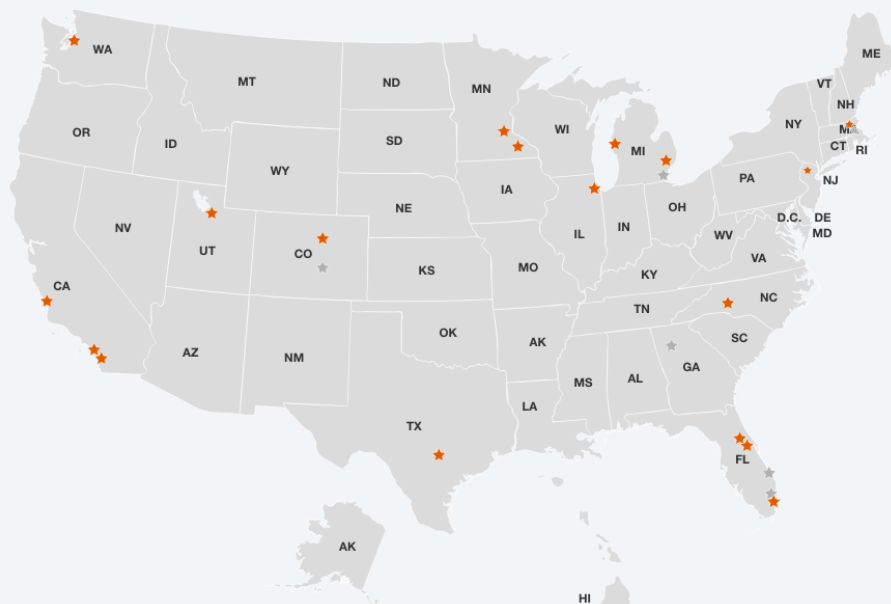


### Physical and rehabilitative therapy.

The spine and brain are remarkable organs that can recover from even the most catastrophic injuries. Physical therapy isn't just exercise; it works to rewire your brain and spinal cord to work around your injury. The more physical therapy you can do, the better. Don't be afraid to push yourself, even when things get tough. In the first weeks, physical therapy may be painful and difficult, but it gets easier over time; it's also a key ingredient in the recovery recipe.

Research consistently shows that a positive attitude can increase your odds of recovery. Of course, remaining positive in the face of a potentially permanently altered life isn't easy—especially in the early weeks after your injury. For this reason, mental health care figures prominently in the treatment journey. Consider therapy, and invite your family to participate in family support sessions, too. The more support you and your family have, the more your stress will be reduced and your odds of recovery will be increased.

### Activity Based Therapy Centers



## Activity Based Therapy

Activity-based therapy (or ABT) is a therapeutic activity used in recovery and rehabilitation to improve strength and regain motor function after a traumatic injury.

Learn more about Activity Based Therapy Centers across the United States.



## Choosing a Treatment Provider

The treatment provider you choose will heavily influence your treatment options and prognosis. It's not enough to just select a doctor you like. Your family doctor might be perfectly nice, but without access to the latest research, a high-tech hospital, and other tools, he or she won't be able to provide you with adequate treatment.

The Model Systems Knowledge Transition Center publishes a list of spinal cord injury facilities that are "model systems." Hallmarks of these systems include holistic treatment that addresses emotional, physical, and lifestyle needs, as well as cutting-edge treatment and treatment protocols that are supported by extensive research. Pursuing treatment at a model systems facility is your best option for long-term recovery.

## Choosing a Treatment Provider (cont.)

The list of model systems may change from time to time, so check with the Model Systems Knowledge Transition Center for an updated list. As of 2015, the best places to pursue treatment for a spinal cord injury according to that list are:

✔ University of Alabama at Birmingham Spinal Cord Injury Model System

✔ Spaulding-Harvard Spinal Cord Injury System

✔ Southern California Spinal Cord Injury Model System

✔ New England Regional Spinal Cord Injury Center Network

✔ The Rocky Mountain Regional Spinal Injury System

✔ University of Michigan Spinal Cord Injury Model System

✔ South Florida Spinal Cord Injury Model System

✔ Northern New Jersey Spinal Cord Injury System

✔ Southeastern Regional Spinal Cord Injury Care System

✔ Regional Spinal Cord Injury Center of the Delaware Valley

✔ Midwest Regional Spinal Cord Injury Care System

✔ University of Pittsburgh Model Center on Spinal Cord Injury

✔ Kentucky Regional Model Spinal Cord Injury System

✔ Northwest Regional Spinal Cord Injury System

You should select a treatment facility where you feel comfortable, welcomed, and that your values are respected. For instance, a transgender person with a spinal cord injury should not have to put up with his or her gender identity being questioned.

[See our full list of hospital and rehabilitation centers](#)

### Do Your Research

No matter how good the hospital or doctor is, do your research and seek insight from other patients. Some questions to consider asking include:



- ✔ Is there anything I can do to improve my prognosis?  
\_\_\_\_\_
- ✔ What is my prognosis?  
\_\_\_\_\_
- ✔ What are the worst and best case scenarios?  
\_\_\_\_\_
- ✔ Will I ever walk again?  
\_\_\_\_\_
- ✔ How certain are you about the prognosis?  
\_\_\_\_\_
- ✔ Can you work with my other providers?  
\_\_\_\_\_
- ✔ Are there any experimental treatments or programs that can help me?  
\_\_\_\_\_
- ✔ Is there anything that would cause you to refer me to another doctor or facility?  
\_\_\_\_\_
- ✔ What portion of my treatment will be covered by insurance?  
\_\_\_\_\_
- ✔ Can you work with my family to keep them informed?  
\_\_\_\_\_

Consider also whether you feel respected and cared for by the doctor. No matter how good a doctor is, if he or she makes you feel discarded or uncared for, your recovery will be slower.



## Legal Issues for Spinal Cord Injury Survivors

Spinal cord injury survivors face a number of legal issues. For this reason, it's wise to consult with a lawyer if you have any questions regarding your rights. Every situation is different, and the advice below should not be construed as legal advice. Generally speaking, though, spinal cord injury survivors have the following rights:



### **You have a right to be free from discrimination.**

A number of laws, including the Americans With Disabilities Act, prohibit discrimination on the basis of disability, including spinal cord injuries. Your employer cannot fire you because of your injury, nor can an educational institution refuse to accept you solely because of the injury. Additionally, most workplaces and educational institutions must make "reasonable accommodations" to enable you to continue your work. For instance, your boss might be required to give you time off to attend doctor's appointments, or your school might be required to provide you with a note-taker if you cannot take notes on your own.





### **You have the right to inclusive, accessible housing, workplaces, and educational institutions.**

Federal law requires that most buildings be accessible to people with disabilities, through an elevator, ramp, or some other adjustment. The law does not specifically state which adjustments a building must offer, but if you cannot get into a building, you have a right to request an accommodation—such as a ramp or handicapped parking space—to make it accessible.



### **You have the right to quality medical care.**

Everyone has a right to quality medical care, even when full recovery is not possible. A doctor who ignores your pain, does not offer standard treatment, or who injures you may have committed medical malpractice. If a doctor's negligence is the cause of your injuries, you may be able to sue.



*"I decided that day, that I didn't want to do anything else, that I was going to be the champion, of people - like my brother - who had been catastrophically injured in bad accidents. I was going to be the guy that would take cases that nobody else would take and figure out a way to win them. And I've been doing it ever since."*

*~ Dale Swope*



### You have the right to health insurance.

There is no fundamental right to have your health insurance covered, but the Affordable Care Act removes the ability of insurers to decline you based on a preexisting condition. Even if you do not currently have health insurance, a health insurer cannot turn you down solely because of your spinal cord injury.

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### You have the right to seek compensation for another person's negligence.

If your spinal cord injury is due in part or full to the negligence of someone else, you have the right to sue him or her for your pain, suffering, lost wages, medical bills, and other expenses. If the responsible party is an individual, he or she may not have much money, but if it is a company, insurance may kick in to cover the costs. You'll need to act quickly, since most states have a two-year statute of limitations on personal injury claims. Talk to a lawyer before you file a claim and before you accept any settlement from an insurance company.

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### You retain all of your other rights.

A spinal cord injury may interfere with your ability to move, feel things, or even maintain your relationships. But it does not rob you of your humanity or your citizenship. You are still legally entitled to all the rights you had before your injury, including the right to vote, make medical decisions, do as you see fit with your finances, and decline medical treatment. If a caregiver is abusing you or attempting to undermine your full expression of your human rights, contact a lawyer or talk to your doctor. Most medical providers are legally required to report caregiver abuse.

Speak to a Spinal Cord  
**Injury Specialist**

Contact Us Now 





## Resources for Spinal Cord Injury Survivors and Their Loved Ones

You are your own best advocate. Good advocates have clear information, so remaining educated is key to your ongoing recovery. To get up-to-date research and news on spinal cord injuries, consider subscribing to the blog on [SpinalCord.com](http://SpinalCord.com).

### Some other resources that may help you include:



**The Christopher and Dana Reeve Foundation**, which offers research, advocacy, and other information to spinal cord injury survivors and their loved ones.



**Foundation for Spinal Cord Injury Prevention, Care, and Cure**, which publishes new research and maintains a detailed list of resources.



**United Spinal Association Spinal Cord Resource Center**, which culls research and information from around the web.



**The National Spinal Cord Injury Statistical Center**, which maintains up-to-date statistics on spinal cord injury survivors.



## Legal Options Following a Spinal Cord Injury

### Determining if a Lawsuit is Feasible

Personal injury cases involving spinal cord injuries are incredibly complicated, with a lot of moving parts that have to be considered. Not only do you need evidence, it's important to be familiar with spinal cord injury claim law and recent legal rulings that might create new precedents.

Determining whether or not you have a feasible case can be difficult, which is why it's so important to talk to a lawyer who specializes in SCI cases—one who is willing to go into the minor details of your case to determine if there was negligence on the part of anyone involved.

For example, in an auto accident, it's possible that the guard rail that was hit was actually supposed to have been removed by the state.

Or, maybe a tree that fell should have been removed earlier to prevent such an incident. These are some non-obvious instances of negligence that could be cause for legal action that an experienced attorney might be able to uncover.

Getting some input from an experienced spinal cord injury attorney is crucial for determining whether or not you have a case for filing a personal injury claim.

Don't wait until it's too late. Speak to a spinal cord injury specialist lawyer as soon as possible.

## Our Client Success Stories



Client Success Story:

### Todd Cabral

[▶ Watch Video Now](#)



Client Success Story:

### Terry Dossey

[▶ Watch Video Now](#)



Client Success Story:

### Dana Guest

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