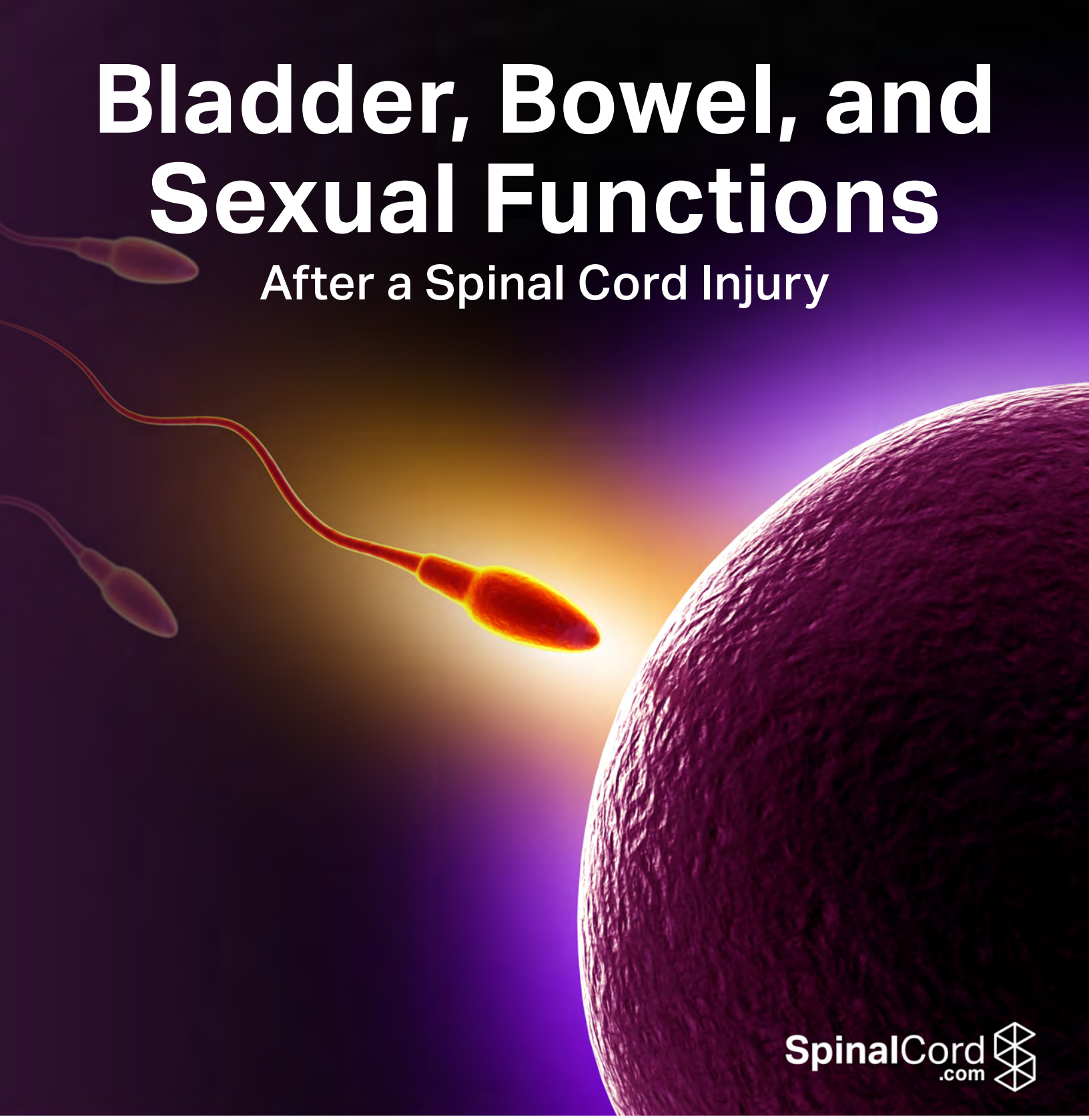
Bladder, Bowel, and Sexual Functions

After a Spinal Cord Injury



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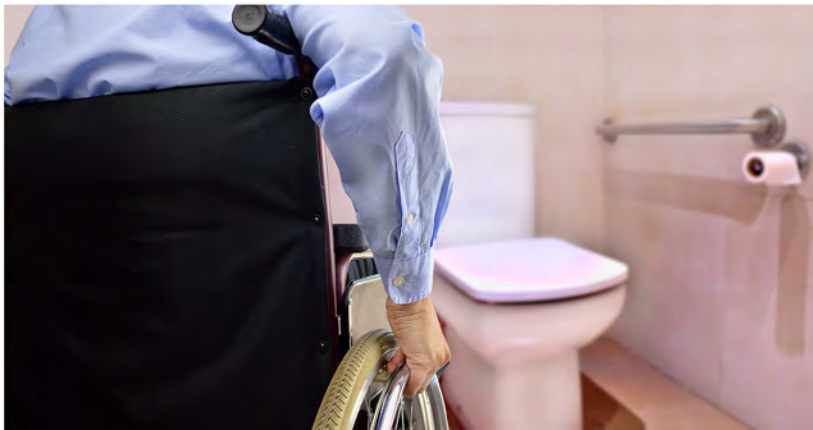

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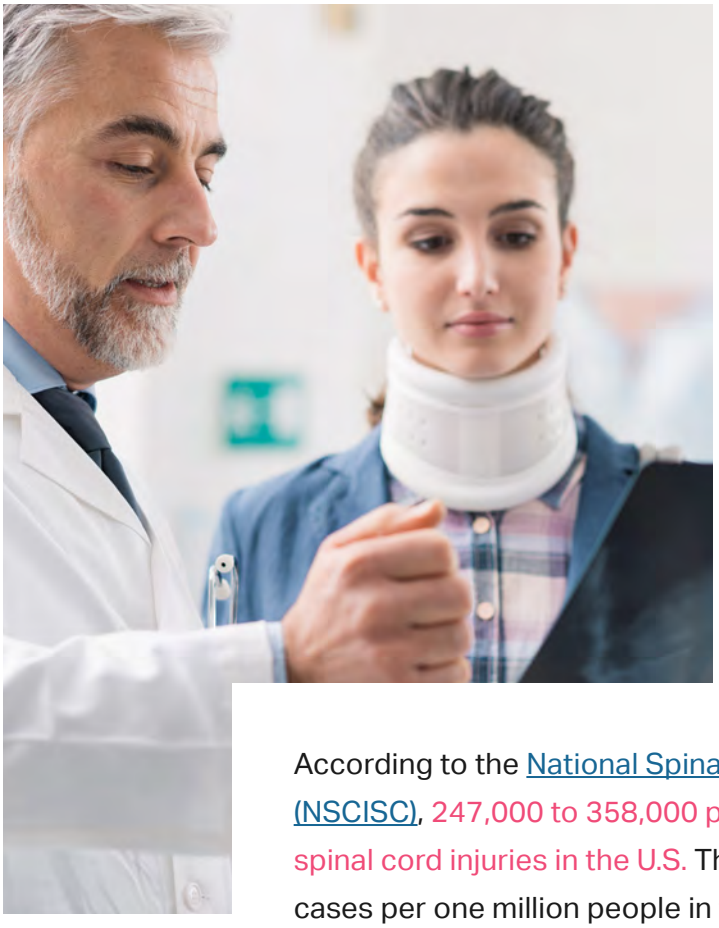
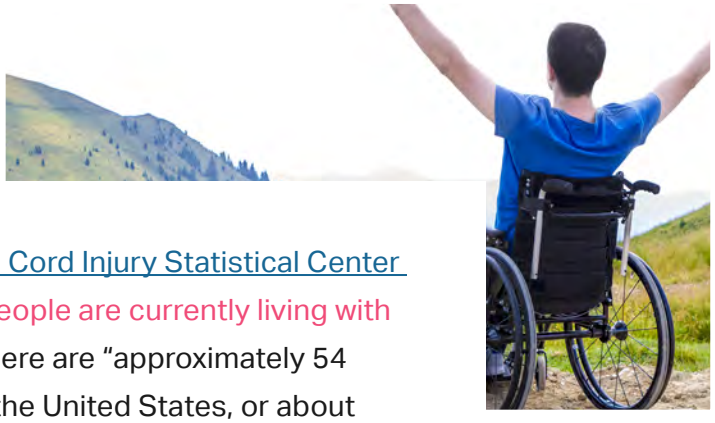
Introduction

If you are reading this, it likely means that you or someone you love has sustained a traumatic spinal cord injury (SCI). No two injuries are the same, and the impacts of those injuries can vary from one person to the next. Two people with similar injuries can experience idiosyncratic symptoms. However, there are some similarities that we can address regarding the impacts of those injuries on specific bodily functions, as well as tips we can provide for daily processes and assistive technologies that can help.





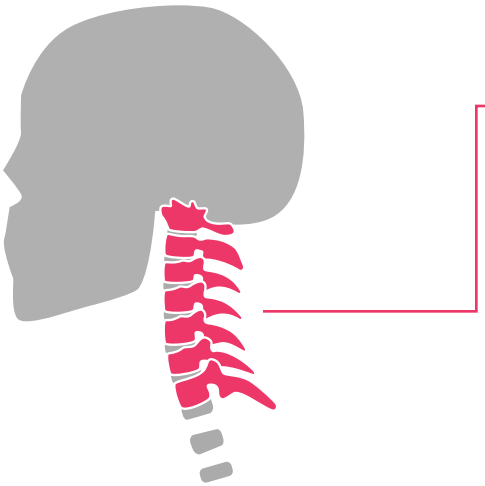
According to the National Spinal Cord Injury Statistical Center (NSCISC), 247,000 to 358,000 people are currently living with spinal cord injuries in the U.S. There are "approximately 54 cases per one million people in the United States, or about 17,700 new SCI cases each year" — not including those who die at the location where the SCI occurred.

Research shows that more than 80% of individuals with spinal cord injuries exhibit at least some degree of bladder dysfunction. According to the United Spinal Association, 80-90% of spinal cord injury survivors experience "some type of change in sexual function and response." Furthermore, the majority of people with spinal cord injuries also lack normal bowel function and experience as well. These vast numbers demonstrate that you and your loved one are not alone.

Some Basics to Know about Spinal Cord Injuries

Spinal cord injuries are those that impact or cause damage to the spinal cord, which is a delicate group of 31 nerve bundles that run lengthwise through the vertebrae of the spinal column. These nerve bundles, along with the brain, comprise the central nervous system and are commonly identified by their corresponding vertebral regions of the spinal column.

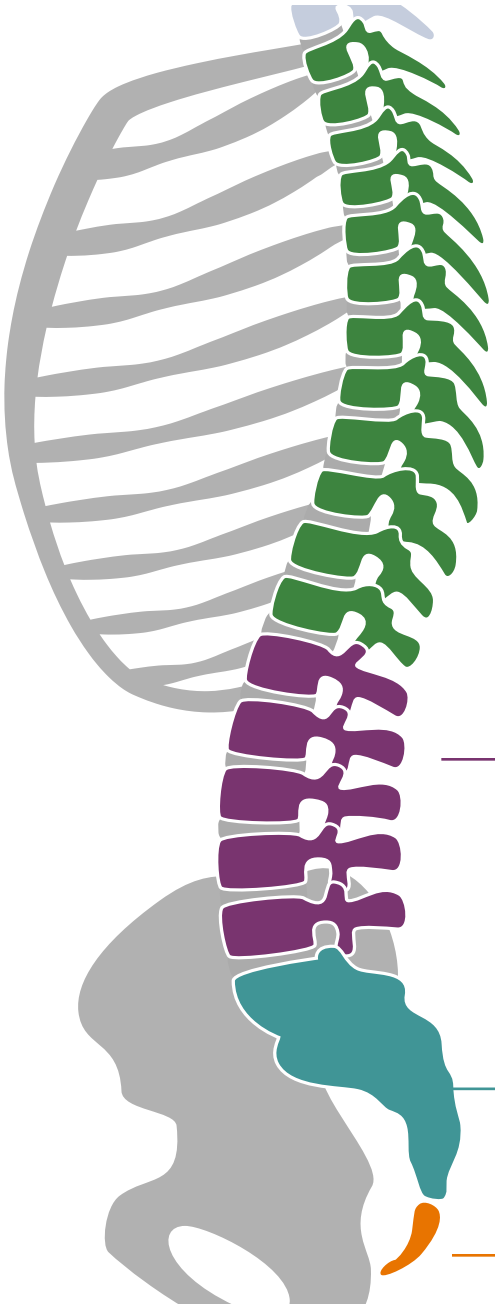
When talking about spinal cord injuries, these nerve bundles are divided into five major sections:



The Cervical Spinal Cord

There are eight nerve bundles in the first seven vertebrae of the spine. These are listed as the C1-C8 nerves, and the start at the top of the spinal cord at the skull.

Some Basics to Know about Spinal Cord Injuries



The Thoracic Spinal Cord

The next 12 vertebrae in the spinal column below the cervical vertebrae contain the thoracic spinal cord. These vertebrae have 12 nerve bundles and are labeled T1-T12.

The Lumbar Spinal Cord

There are five large vertebrae near the base of the spine, known as L1-L5. Although the spinal cord itself ends at the L2 vertebrae, nerve bundles extend from the spine below that point.

The Sacral Spinal Nerves

The next five vertebrae below the lumbar vertebrae, together, are called the sacrum. While technically five separate vertebrae, they are fused and don't move. There are five nerve segments here, labeled S1-S5.

The Coccygeal Spinal Nerve

This part of the spine has two vertebrae that are typically fused. However, there is only one spinal nerve in this area.

The higher the injury occurs on the spinal cord, the more dangerous or deadly the injury can be. Injuries that occur in lower regions, such as when they affect the sacral spinal nerves or the lumbar spine, pose fewer limitations. However, location isn't the only factor in play.

Some Basics to Know about Spinal Cord Injuries

All spinal cord injuries are divided into two categories:

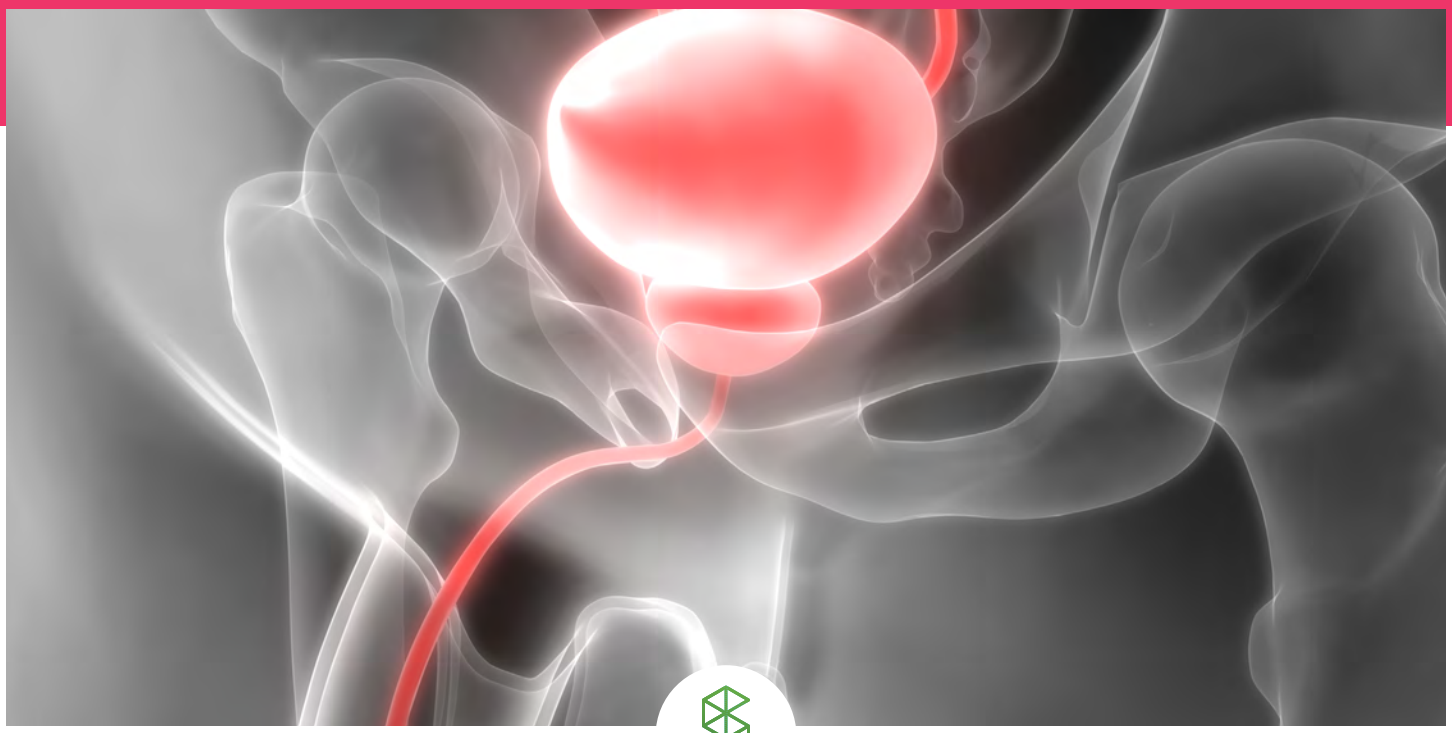
Incomplete Injuries

An incomplete spinal cord injury means that the spinal cord is only partially severed or damaged, which allows you or your loved one to retain some sensory and motor functions below the injury site. However, the degree of functionality depends on the extent of the injuries.

Complete Injuries

A complete spinal cord injury, on the other hand, occurs when the spinal cord is completely severed, which eliminates sensory and motor function below the damaged area. While this definition conveys finality, treatment and physical therapy may help in regaining some sensory and motor function below the injury.

Paralysis at any level typically will impact bladder function and control because the nerves controlling the organ and corresponding necessary muscles attach at the S2-S4 level of the spinal cord. Any injuries above that level of the spinal cord will essentially cut off communication to and from the brain. Sexual functions are also commonly impacted by injuries at the sacrum and thoracolumbar (thoracic and lumbar) regions of the spinal cord.



How a Spinal Cord Injury Affects Bladder Function

When most people think about bladder functionality, they think in terms of it affecting the bladder, not necessarily realizing all of the different components that go along with it. The urinary system, which makes urination possible, is comprised of the kidneys, ureters, bladder, and urethra.

The primary function of the bladder that is affected by a spinal cord injury is its ability to control when it empties. The bladder, unlike the kidneys and ureters, is controlled through transmitted messages from the brain — a process that is limited or eliminated after an SCI. The sphincter muscles surrounding the urethra help to keep it closed to retain urine in the bladder.

When a spinal cord injury occurs, the kidneys continue to produce urine that the ureters transport to the bladder where it is stored. However, since the ability to control the sphincter muscles is compromised, this can lead to bladder dysfunctions that result in issues that include incontinence, retention, and a variety of secondary effects, including urinary tract infections (UTIs).

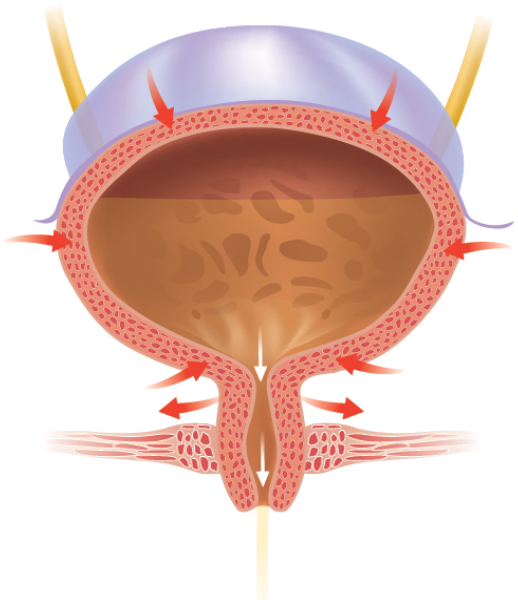
Neurogenic Bladder

Neurogenic bladder, which is spastic or flaccid bladder dysfunction that results from neurological damage, can cause many issues and secondary complications that can affect the quality of life and health of the spinal cord injury survivor, including:

- Incontinence.
- Bladder pressure.
- Renal Impairment.
- Urinary Tract Infection (UTI).
- Bladder Stones.
- Diminished quality of life.

These conditions, which rest at opposite ends of the spectrum, can result in equally frustrating circumstances.

Spastic Bladder



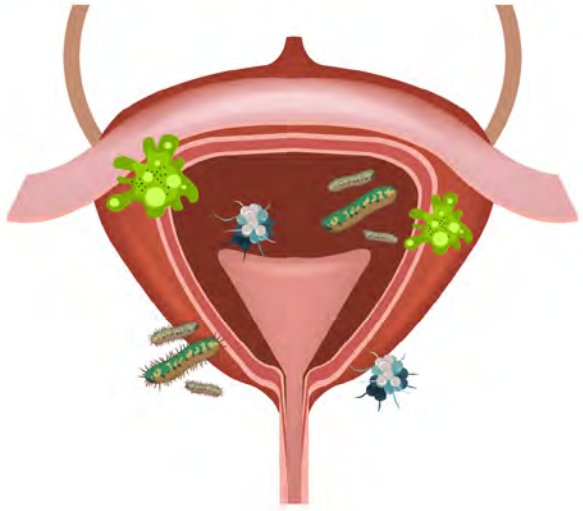
On the one hand is spastic bladder, which is more commonly known as overactive bladder. This unpredictable functioning of the bladder can lead to uncertainty about when it will empty and can lead to leakage accidents. This is caused when the stretch receptors of the bladder wall (detrusor) are unnecessarily triggered, stimulating the motor nerves that are responsible for telling the muscle to empty the bladder.

Medication, such as Oxybutynin, can be used to relax the bladder but may result in some side effects (mainly a dry mouth). The U.S. Food and Drug Administration (FDA) has also approved the use of botox in the bladder for detrusor overactivity, as it does not cause any known side effects in other areas.

How a Spinal Cord Injury Affects Bladder Function

Flaccid Bladder

On the other hand is flaccid bladder, which is significantly less active and very lethargic. Unlike the spastic bladder, this holds more urine than usual, causing the bladder to stretch and result in loss of muscle tone. This condition also can damage the bladder wall, leading to an increased risk of infection.



Treatment options include medication and surgery. A medication like terazosin is used to relax the sphincter, and a sphincterotomy is performed to relieve sphincter pressure, which allows urine to flow more easily from the bladder, through the urethra.

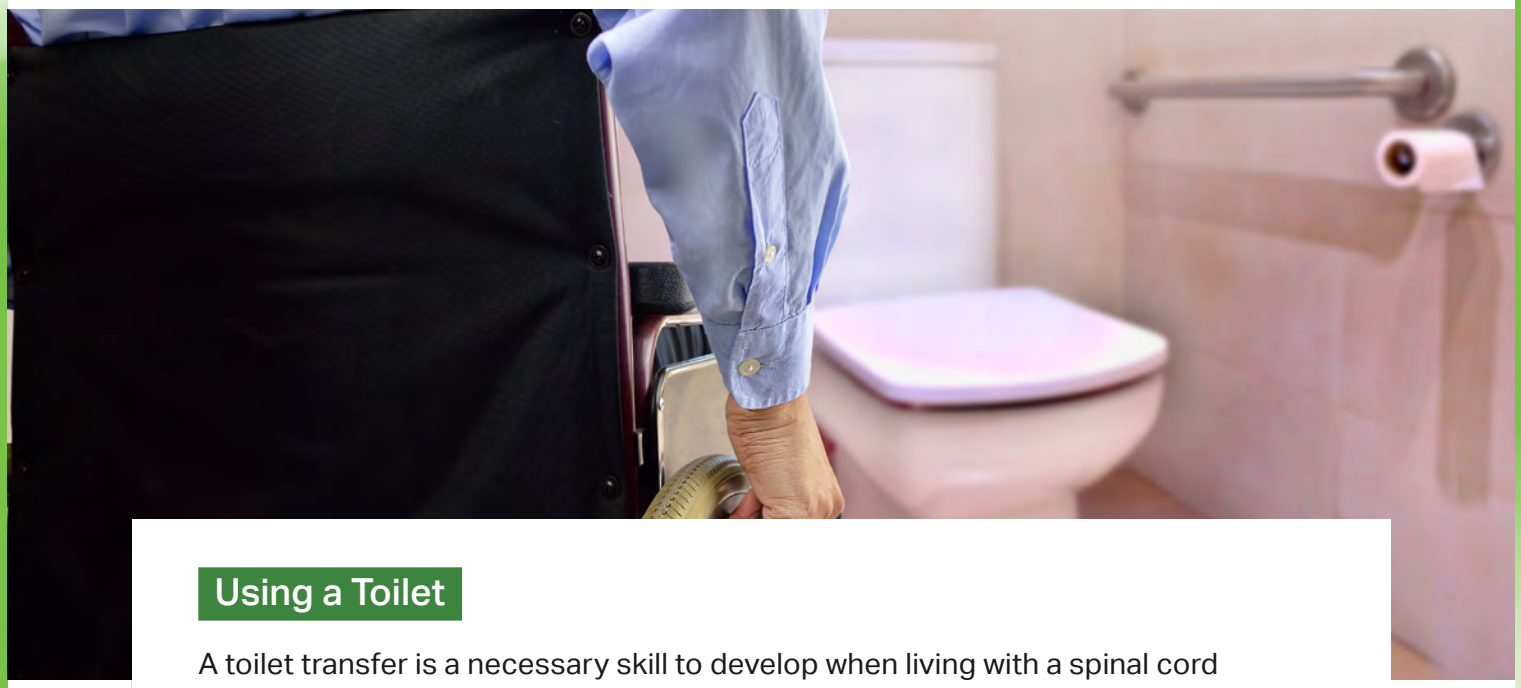
These conditions can make it challenging for spinal cord injury survivors, who opt to use an intermittent catheterization program (ICP) or bladder management program to help them control and plan when they urinate. More about ICP, bladder, and bowel management programs will be discussed in the next chapter.

Speak with your healthcare provider about any concerns you may have about bladder function after a spinal cord injury. There is no reason to feel embarrassment; they are here to help and can create a solution that meets your individual needs.

Tips for Using the Restroom

The process of using a toilet to relieve oneself changes dramatically after a spinal cord injury. For individuals with lower spinal cord injuries, they tend to retain more upper body mobility and strength, which means that they often can maneuver a restroom and transfer to and from a toilet on their own. For individuals with injuries impacting higher areas of the spine, they may require the help of a personal care assistant (PCA) to assist with planned restroom breaks.

Using catheters was once a messy, cumbersome, and unattractive solution. However, thanks to medical growth and development, this process has been transformed into a simple and convenient strategy for dealing with bladder control issues for many SCI survivors.



Using a Toilet

A toilet transfer is a necessary skill to develop when living with a spinal cord injury. This ability is commonly taught to recent SCI survivors during physical or occupational therapy, who can use that knowledge to develop routines for using their home bathroom.

However, using a restroom outside the home is less predictable and can present a number of challenges due to:

- Tight and diverse spaces,
- Lack of necessary upper body strength or mobility,
- Wet floors and slippery surfaces, and
- Lack of any necessary equipment, such as a padded toilet seat.

Tips for Using the Restroom

When you have a spinal cord injury, practice transferring on and off toilets in a variety of bathroom conditions — large and small, with and without an assistive toilet seat, and with and without handrails — to ensure that you are able to confidently use a toilet when you're out and about or traveling. When transferring onto a standard toilet:

STEPS TO TRANSFERRING

Onto a Standard Toilet:

Step 1

Wheel your chair into position in front of the toilet.

Step 2

Check the toilet seat for cleanliness and stability by wiping it and pressing down on it with both hands.

Step 3

Shift your body to the edge of your wheelchair.

Step 5

When transferring, keep your trailing hand low on the wheelchair, pushing down (not sideways) to anchor yourself. Pushing sideways can force your wheelchair to move when on a slick surface and cause you to fall.

Step 4

Using your leading hand, lift your legs individually and set each foot on the floor.

Step 6

Using your leading hand on the toilet seat (if a handrail is not available or is out of reach) and use it to support your weight as you lift and swing your hips to rotate your body into a sitting position on the toilet seat.

Step 7

Once seated, reposition your body and each leg individually.

Step 8

To avoid pressure sores, lean forward or side to side by placing your hands on the toilet seat or rail, and periodically lifting each side of the body alternately to allow blood flow.

Bladder and Bowel Management Programs

Bladder and bowel management programs are frequently implemented by spinal cord injury survivors to control when they relieve themselves. These programs aim to minimize complications and provide a way to take care of base bodily functions in a way that matches your lifestyle. In the case of bowel management methods, a combination solution is frequently needed for evacuation, and sticking to a regular schedule is crucial.

Intermittent Catheterization Program

> For many SCI survivors, the use of bladder management catheters is a crucial part of life. This process allows you to drain your bladder on a set schedule — commonly every four to six hours for conventional catheter methods — by inserting a catheter into the urethra to empty the bladder. A Foley catheter, on the other hand, is an indwelling catheter that drains the bladder continuously.
>
> Men also have the option of using a condom catheter, which allows continuous drainage without requiring insertion into the urethra. However, due to the continuous drainage, a collection device, such as a leg bag, is needed

Suprapubic Catheter

> Some individuals may not feel comfortable depending on a catheter and may choose to bypass the urethra altogether through a stoma, or a surgically-created opening in the pubic bone area of the abdomen.

Mitrofanoff Procedure

> This type of surgery allows catheterization to be accomplished via a stoma in the abdomen that connects directly to the bladder by constructing a new passageway for urine via the appendix. This may serve as a great alternative for women or individuals with limited hand function or mobility issues.

Tips for Using the Restroom

Use of Laxatives

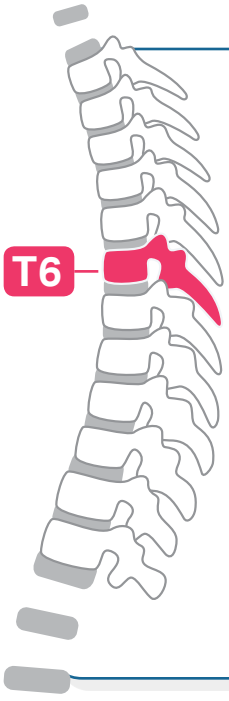
Research shows that oral laxatives are frequently used as part of a bowel management program for spinal cord injury survivors to promote regularity. However, a drawback of these stimulants is that they can cause unplanned bowel movements and extend the time it takes to complete bowel evacuation.

Bowel Management Surgery and Enemas

People with spinal cord injuries who struggle with bowel management sometimes try transanal irrigation methods and surgeries to deal with their condition with solutions such as a Malone antegrade continence enema (MACE), sacral nerve stimulation, or a colostomy.

Employing Digital Stimulation

Digital stimulation, sometimes referred to as "dil," is a method used to empty the reflex bowel. It involves inserting a finger into the rectum and moving it in around in a circular motion to stimulate and open the rectal muscles to promote evacuation.



What is Autonomic Dysreflexia?

If you or someone you love has a spinal cord injury that affects the T6 level of the spinal cord or higher, it's likely you have heard this term. Autonomic dysreflexia (AD) is a dangerous and potentially lethal syndrome that affects blood pressure and can result in acute, life-threatening hypertension. If left untreated, *it can cause critical medical conditions that include pulmonary edema, myocardial infarction, cerebral or retinal hemorrhaging, seizures, and death.*

Bowels is one of the "6 Bs" used to identify AD triggers: Bladder, bowels, boils, bones, babies, and back passage.

Technological Advances That Assist with Using the Restroom

When using bladder and bowel management programs, some technologies can come in handy for helping with these processes. Some bladder management technologies, such as catheters, were mentioned in the previous chapter. However, other types can be useful for helping people with spinal cord injuries.

Functional Electrical Stimulation

Functional electrical stimulation (FES) technology has shown promise in helping to improve and restore bladder and bowel function. Using a computer and electrodes that are either external or surgically inserted to affect the spinal nerves, small bursts of electricity are applied at varying frequencies and pulses to paralyzed muscles to cause contractions. The goal is to restore muscle function after a spinal cord injury.

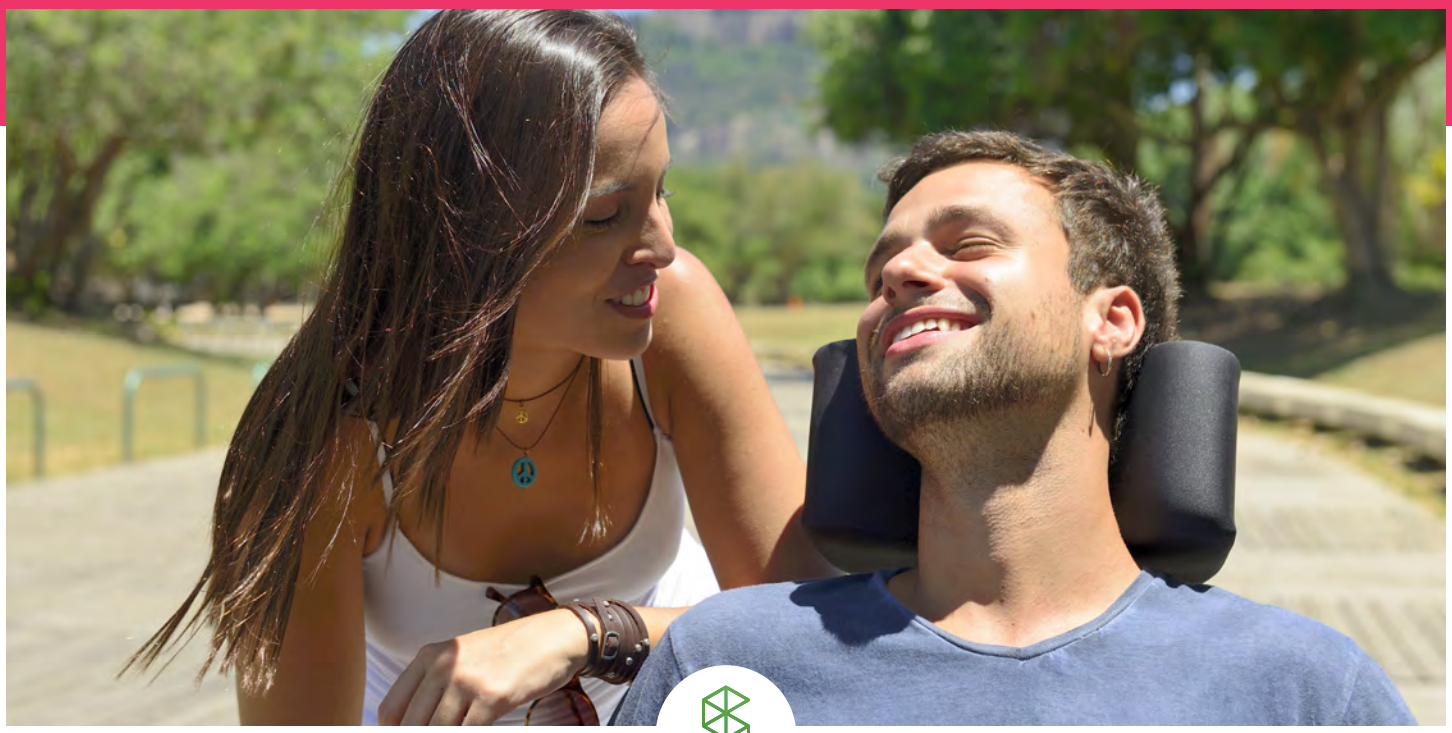
In the case of bladder and bowel treatment, some patients have shown promising results in regaining some bladder and bowel control.

One study, which summarized many years of research, showed that the use of an FES sacral anterior root stimulator (what is known as a Brindley device) achieved continence in 83% of patients and *decreased occurrences of UTIs from 6.3% to 1.2% per year* post-operatively.

Slings and Lifts

Although these technologies can be expensive, they are incredibly useful to both caregivers and SCI survivors. They come in several varieties, including permanent rail systems, mobile floor lifts, tension-mounted overhead bars, and gantry-style lifts. If you're living with a spinal cord injury and want to retain your independence, then lifts can be a great option for you. They can be used to assist with toileting as well as transferring between the bed and the bathroom.

If you're a caregiver who has difficulty lifting and transferring your loved one to and from the toilet, a sling or lift can be incredibly beneficial. These devices for transfers can save your back and body a lot of strain by eliminating the need to manually move them to and from the toilet, bed, or bathroom in general.

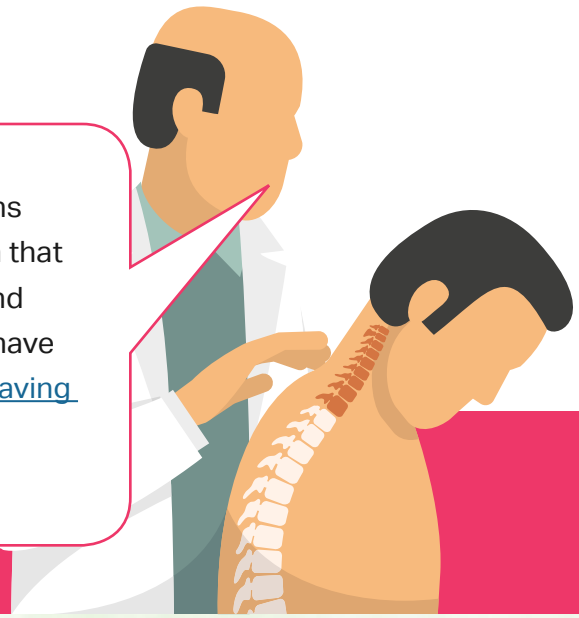


Sexual Functions after a Spinal Cord Injury

A spinal cord injury can have a significant impact on sexual functions of the body, including libido, fertility, lubrication, and the ability to have an erection or ejaculate. This change in function can result in changes to a person's overall quality of life and their psychological well-being. However, having a spinal cord injury does not automatically preclude people with these injuries from living full lives as sexual human beings and having children.

One of the most significant concerns for SCI survivors and their partners is whether they will be able to engage in and enjoy sexual intercourse.

Thankfully, the answer is yes. Although sexual dysfunctions are common following a spinal cord injury, it doesn't mean that your sex life and ability to experience sexual enjoyment and fulfillment with your partner are "over." Many people who have lived with an SCI for years have rediscovered the joys of having intimate relations — even with lessened sensations.



Finding New Means of Pleasure and Intimacy

There is more to sex than penetration — it's also about feeling sexy, connecting with the one you love, and giving and receiving pleasure. If you have lost sensation in your genitalia, there are other ways to achieve satisfaction and orgasms. Many couples have found ways to sexually engage and experience pleasure even after one of them has suffered a debilitating injury through experimentation, touch, and other sensory stimulations.

Some of these initiatives entail:

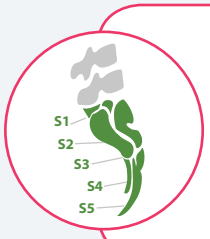
- Setting the mood: Create a sensual environment of scented candles, music, and verbal expressions.
- Being open-minded about sexual activities.
- Communicating about each others likes and dislikes.
- Taking the time to discover new erogenous zones.
- Engaging in foreplay.
- Experimenting with new positions and methods of stimulation.

These alternative forms of sexual stimulation and arousal can include kisses on the ears and neck, nipple stimulation, light touches along the skin of the arms or ribs, and other even using some limited sensations of pain for pleasure.

Understanding Erectile Functionality

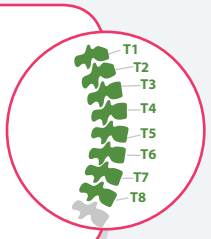
Men and women both have vascular erectile tissue (penis and clitoris), and there are three types of genital erections: Psychogenic impulses (sexual thoughts), reflexogenic tactile stimulation (physical touch), and nocturnal (rapid eye movement, or REM sleep), or what is sometimes referred to as "spontaneous" erection. The two main types of erections discussed in spinal cord injury research are psychogenic and reflexogenic.

Much like how an injury to the sacral spinal nerves affects bladder control, injuries to different regions of the spinal cord also affect sexual functions. For example:



The autonomic nuclei located in the sacral spinal nerves S2-S4 affect nerve activation, erectile engorgement, and smooth muscle relaxation.

The sympathetic nerves at T11-L2 facilitate the ability to engage in reflexogenic arousal by preventing the transmission of sensory perception to the brain.



Reflex erections, which occur when there is physical stimulation to erogenous zones, are still possible for paralyzed men so long as their S2-S4 nerves aren't damaged. Men with complete injuries are less likely to experience psychogenic erections.

Electrical Stimulation

In addition to helping improve bladder and bowel functions, electrical stimulation technology is also useful in the bedroom when it comes to improving sexual function and helping men to achieve erections. Some research suggests that "early insertion of sacral nerve modulators into the S3 nerve roots can… help achieve erection in patients with complete SCI."

The Truth about Orgasms after an SCI

Research shows that various forms of orgasms are still possible for men and women with spinal cord injuries. In fact, in one study, scientists even used magnetic resonance imaging (MRI) technology to study the brains of women with and without SCIs during orgasms. The study involved some women using stimulator devices and others being touched on areas of their body above their injuries. The orgasmic activity lit up areas of the brain that are commonly activated by addictive substances like nicotine and cocaine for those using the devices. For those being touched above their injuries, their orgasms on the brain scan looked virtually indistinguishable from other orgasms.

Can I Have Children after a Spinal Cord Injury?

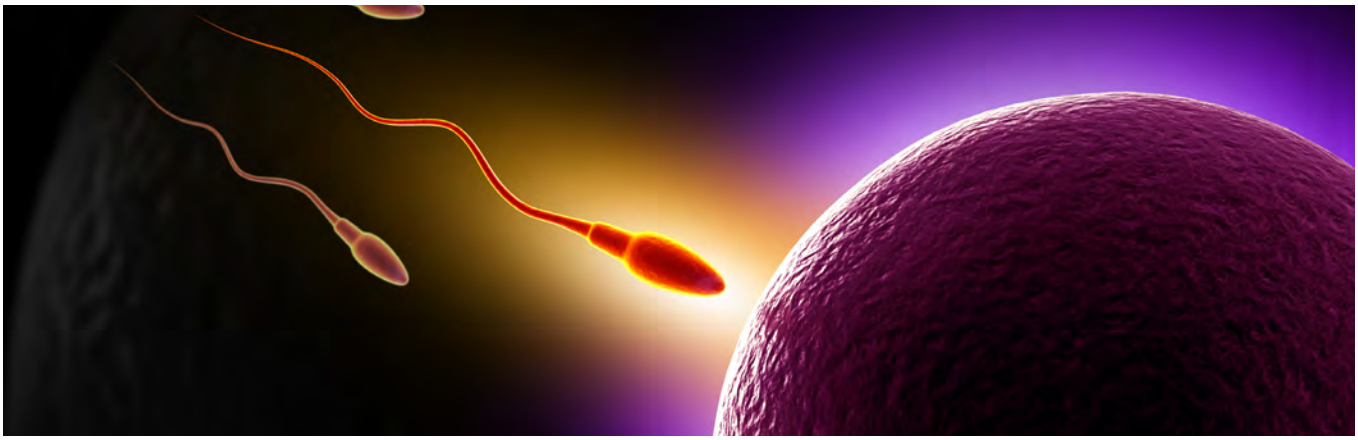
Fertility is always one of the top concerns for men and women after a spinal cord injury. Contrary to popular belief, however, starting a family or having additional children post-injury is still possible. Although you or your loved one may experience a loss of mobility or sensory functions, fertility will frequently remain unaffected.

In fact, medical advances have made it so that many men and women with SCIs have been able to have children. Although women with spinal cord injuries may have issues with self-lubrication, they are still able to become pregnant and carry their child to term (unless there is another underlying fertility issue, such as polycystic ovarian syndrome [PCOS]).

Menstrual Periods

It is not uncommon for menstrual periods to stop for several months after a spinal cord injury due to the shock of the trauma the body has sustained. When it returns, you can use sanitary pads or tampons, depending on your preferences. Some women prefer using tampons to reduce moisture retention and skin irritation that can result from using pads and lead to skin breakdown.

Semen and Ejaculation



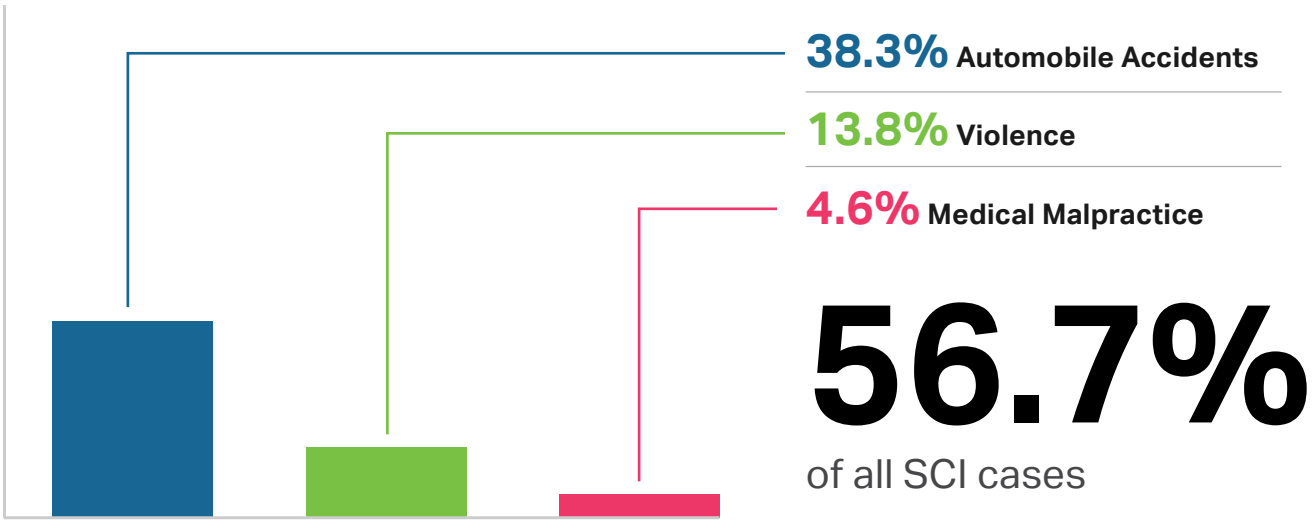
Much like other functions, a man's ability to ejaculate can be affected by a spinal cord injury. For some, they can still ejaculate but may not feel anything. For others, they may or may not feel it, but the seminal fluid will eject into the bladder rather than out through the urethra in a process known as retrograde ejaculation.

Although their ability to ejaculate is affected, their sperm production is frequently not impacted. When trying to have a biological child, men can inseminate their partners through a few different methods:

- Penile vibratory stimulation (PVS).
- Intrauterine insemination (IUI).
- In vitro fertilization (IVF).

Legal Options Following a Spinal Cord Injury

While it isn't always the case, many spinal cord injuries are the direct result of the negligence (or outright malevolence) of others. According to data from NSCISC, automobile accidents (38.3%), violence (13.8%), and medical malpractice (4.6%) are among the leading causes of spinal cord injury — accounting for 56.7% of all SCI cases when combined.



Getting Compensation for Your Injuries

Spinal cord injuries are expensive. In fact, according to data from NSCISC, the estimated average yearly expenses for someone with high tetraplegic (a C1-C4 injury) is $1.1 million. The costs for each subsequent year is $191,436, with estimated lifetime costs for someone who is injured at age 25 to reach nearly $5 million.

If you were injured as the result of someone else's actions or inactions, it's only natural to want compensation in return. After all, they should be held liable for your medical bills, lost work and income, and other impacts from your injury, such as the loss of relationships or delays in starting a family.

The good news is that it may be possible to recover some of your expenses if it was the result of someone else's accidental or malicious actions (or inactions). A lawyer that specializes in traumatic injuries will know precisely the questions to ask, the statute of limitations for your state, and can perform an in-depth analysis of your specific situation. There may be details associated with the cause of your injury that you may not even realize could quality for a case.

Collecting compensation for your injuries can lead to an improved quality of life post-injury by giving you the resources needed for better care and treatment, technology, home modifications, and more. With proper compensation, you'll have the resources to help you adapt to your condition.

However, many legal issues that must be considered before filing a spinal injury claim.

Statute of Limitations

After you've been injured, you only have a limited amount of time to file a claim against the responsible party. This statute of limitations varies from state to state, frequently averaging two years, but missing this deadline can cause a case to be dismissed out of hand.

This means missing out on compensation that would otherwise help pay for expensive medical care. It's regrettable when a case could have been made sooner.

Collecting Evidence

Proving a spinal cord injury case often involves a small mountain of paperwork and evidence. Without sufficient evidence, it can be difficult to receive proper compensation for your injuries. However, it takes time to collect this evidence.

Some of the evidence you'll need to collect includes:

- The extent of the injury
- The cause of the injury
- Damages incurred as a result of the injury (medical bills, lost wages, etc.)
- Tortfeasor's (person/organization being sued) liability for the injury

Determining the Feasibility of a Lawsuit

Personal injury cases involving spinal cord injuries are complex and have a lot of considerations. Not only do you need evidence, but it's also essential 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 crucial 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 involving a drunk driver, it's possible that the restaurant serving the alcohol could be held liable because they overserved a patron who then drove drunk and hit you. Or, maybe a tree that fell should have been removed by the local government earlier to prevent such an incident.

These are some non-obvious instances of negligence that could be cause for legal action that an experienced spinal cord injury 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. Contact a lawyer as soon as possible.

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