



Understanding Spinal Cord Injury



Tasha, injured in 1997.



What Is Spinal Cord Injury?

The spinal cord is the part of the central nervous system that contains the body's longest nerve fibers. It serves as the pathway for messages from the brain to the rest of the body. A spinal cord injury usually occurs due to a traumatic blow to the spine. Part of the backbone pinches the spinal cord. This causes bruising or swelling. Sometimes the injury may tear the spinal cord or its nerve fibers. When this happens, the nerves from the point of the injury and below cannot send messages to and from the brain like they did before.

Spinal cord injuries are called either complete or incomplete. A complete injury means there is no feeling and no movement below the area of injury. In an incomplete injury, some messages can still get through. Some people with an incomplete injury may have feeling but little or no movement. Others may have movement but little or no feeling. Spinal cord injury differs from person to person.

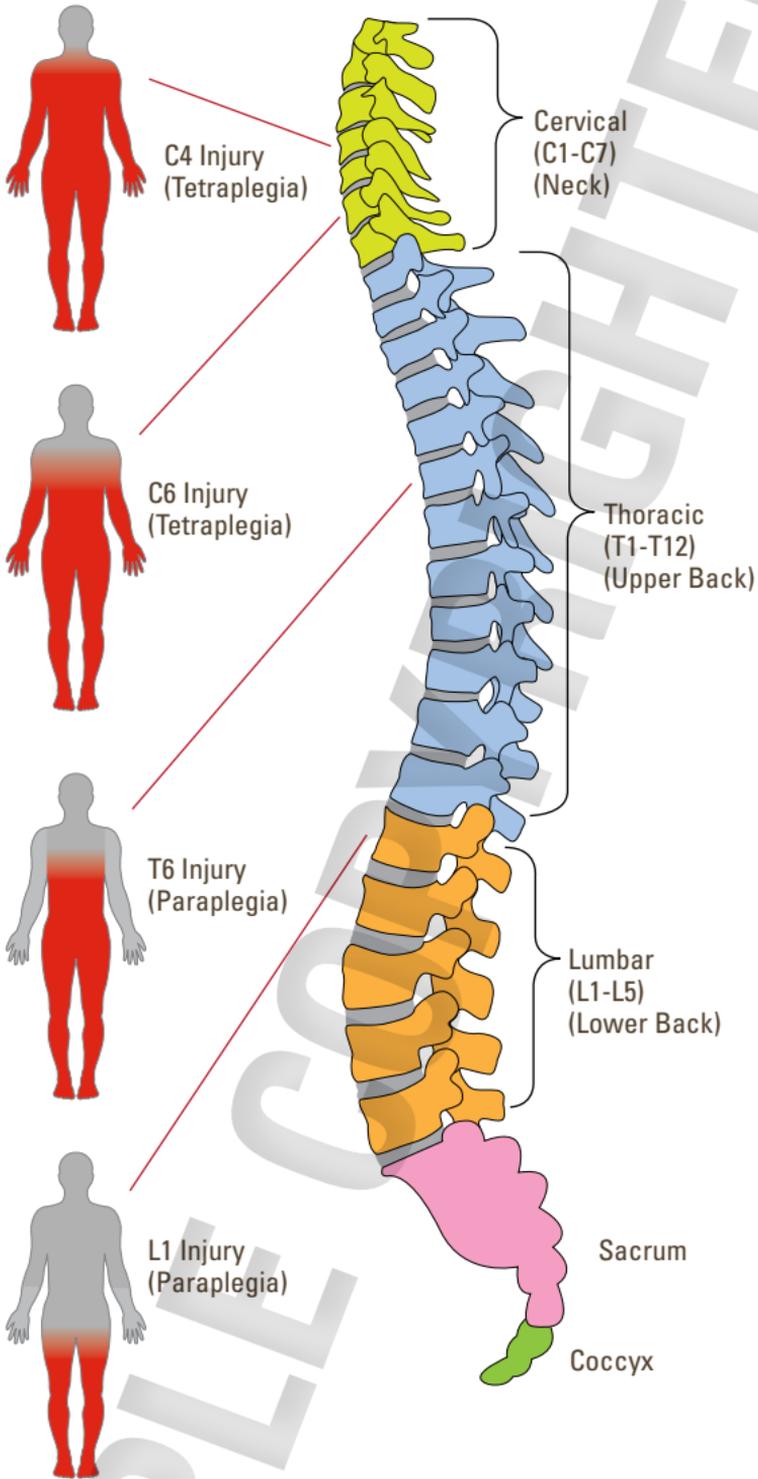
What Causes Spinal Cord Injury?

The most common cause of spinal cord injury is accidents, particularly those involving motor vehicles, sports, and other recreational activities. Falls and violent acts, such as gunshot wounds or knife wounds, also cause many injuries to the spinal cord. Damage to the spinal cord may also be caused by nontraumatic disorders, such as loss of blood supply (stroke of the spinal cord), congenital malformations, infections, and tumors.

What Are the Symptoms?

The symptoms of spinal cord injury vary depending on what level of the spinal cord is injured. In addition to loss of feeling and movement, spinal cord injuries can lead to loss of bowel and bladder control. If the level of injury is high in the neck, the arms are affected and the muscles needed for breathing can be paralyzed. Other problems include pressure sores and sudden spikes in blood pressure that can be dangerous.

Levels of Spinal Cord Injury



Did you know?

Neurologists are medical doctors who specialize in disorders of the brain and nerves. They often diagnose and treat people with spinal cord injury.

How Is Spinal Cord Injury Diagnosed?

In the emergency department, a physician will test the ability to feel and move various parts of the body to help determine what level of the spinal cord has been affected. Tests may include X-rays, computerized tomography (CT) scans, and magnetic resonance imaging (MRI) scans. In some cases, tests are needed again a few days after the injury when the swelling has gone down. It is important to rapidly make a diagnosis because spinal cord injury is a medical emergency, and proper treatment needs to be put in place quickly.

What Are the Treatment Options?

Treatment for spinal cord injury often begins at the scene of the accident. Emergency medical treatment is needed to minimize effects of the trauma and immobilize the neck or spine to prevent further damage. Corticosteroids may be given to reduce swelling. Traction may be used to stabilize the spine.

Surgery may be needed to remove fluid or tissue pressing on the spinal cord. Surgery can also be used to remove bone or disc fragments or to fuse broken spinal bones.

After the injury has stabilized, much of the treatment is focused on rehabilitation. The goal of rehabilitation is to help a person with spinal cord injury function to the best of his or her ability. Occupational and physical therapy will help with daily tasks. Assistive devices can also help. These can be simple devices, such as a “grabber” to get out-of-reach objects, or computerized devices, such as a mouth stick to control a computer.

Treatments are available for problems that can result from the injury, such as bladder and bowel problems, blood clots, muscle spasms, pain, and depression.

Treatments are available for some types of spinal cord damage caused by infections. Such treatments include antibiotics and corticosteroids.

Living with Spinal Cord Injury

It takes time to get used to life after a spinal cord injury. Most people experience grief, and many have symptoms of depression, anxiety, and stress. They are grieving the loss of their sense of touch and the ability to move as they used to. The adjustment time is different for everyone. However, once the grieving period is over, persons with spinal cord injury are no more likely to be depressed than people in the general population. They also do not view their quality of life as worse than non-paralyzed persons do. So it is important not to allow initial feelings to become overwhelming or to interfere with starting a rehabilitation program.

In general, people who adjust well to life after injury are motivated to meet personal goals. These goals differ for each person.

Support groups can be a source of help, comfort, and information. You can ask questions, share stories, and forge friendships with people who understand. Ask your physician about support groups in your area or see **Resources** for organizations to contact.

Partnering with Your Neurologist

To provide the best care, your neurologist needs to know all about your symptoms and medical history. Likewise, you need to get answers to your questions. Keeping a notebook about your condition and bringing a few well-organized questions to your appointments can be helpful.

For Family and Friends

Having a loved one with a spinal cord injury takes a toll on the family and caregiver, too. The effects can be both physically and emotionally exhausting. If you are caring for a family member or friend with a spinal cord injury, take care of yourself, as well. Avoid the feeling that you have to do it all yourself. Get help from family, friends, and professionals. There are many support groups available for caregivers. See **Resources** for organizations to contact.

Help Us Cure Brain Disease

Make a Donation to Research

The American Brain Foundation supports vital research and education to discover causes, improved treatments, and cures for brain and other nervous system diseases. To learn more or to make a donation to support research, visit www.CureBrainDisease.org.

Make Your Voice Heard

To keep research advancing toward future cures and treatments for brain disease, it is important for people affected by neurologic disorders to advocate for more research funding. Contact your members of Congress and ask them to support neurology research by increasing funding for the National Institutes of Health (NIH). Look up your Congressional representatives at www.senate.gov and www.house.gov. Your voice can make a difference.

Take Part in Research

People are needed for clinical trials that can help find new treatments for neurologic disorders. Clinical trials are research studies. They help ensure that new drugs are both safe and effective. Ask your neurologist how to volunteer for a clinical trial. You can also find trials through patient organizations or the American Academy of Neurology website at www.aan.com/view/clinicaltrials.

Resources

American Academy of Neurology

www.aan.com

(800) 879-1960

The American Academy of Neurology website for patients and caregivers offers a wealth of articles, information about events and resources, and links to support groups, clinical trial information, and more.

Neurology Now® magazine

www.neurologynow.com

(800) 879-1960

Free magazine for patients and caregivers, courtesy of the American Academy of Neurology. Stories about people living with neurologic disorders, the latest information on resources and treatments, and more.

Christopher and Dana Reeve Foundation

www.christopherreeve.org

(800) 225-0292

Miami Project to Cure Paralysis/Buoniconti Fund

www.themiamiproject.org

(800) STANDUP (782-6387)

National Rehabilitation Information Center

www.naric.com

(800) 346-2742

National Spinal Cord Injury Association

www.spinalcord.org

(718) 803-3782

Paralyzed Veterans of America (PVA)

www.pva.org

(800) 424-8200

Spinal Cord Society

www.scsus.org

(218) 739-5252

United Spinal Association

www.unitedspinal.org

(800) 962-9629



www.aan.com

(800) 879-1960

The American Academy of Neurology, an association of 25,000 neurologists and neuroscience professionals, is dedicated to promoting the highest quality patient-centered neurologic care. For more information about the American Academy of Neurology, visit *www.aan.com*.

Cover photo by Becky Beissel

©2012 American Academy of Neurology Institute