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Focus on... Spinal Cord Injury

What is a Spinal Cord Injury?

Spinal Cord Injury (SCI) is damage to the spinal cord that results in a loss of function, either mobility or feeling. Frequent causes of damage are trauma (car accident, gunshot, falls, etc.) or disease (polio, spina bifida, etc.). The spinal cord does not have to be severed in order for a loss of functioning to occur. A person can "break their back or neck" yet not sustain a SCI if only the bones around the spinal cord (the vertebrae) are damaged, but the spinal cord is not affected. In these situations, the individual may not experience paralysis after the bones are stabilized.

What Is The Spinal Cord And The Vertebra?

The spinal cord is about 18 inches long and extends from the base of the brain, down the middle of the back, to about the waist. Nerves carry messages back and forth from the brain to the spinal nerves along the spinal tract. Spinal nerves exit and enter the spinal cord at each vertebral level, and communicate with specific areas of the body. The sensory portions of the nerves carry messages about sensation from the skin and other organs to the brain, while the motor portions send messages from the brain to the various body parts to initiate actions, such as muscle movement. The spinal cord is the major bundle of nerves that carries nerve impulses to and from the brain to the rest of the body. The brain and the spinal cord constitute the Central Nervous System.

The spinal cord is surrounded by rings of bone called vertebra, the spinal column.

The higher in the spinal column the injury occurs, the more dysfunction a person will experience. The vertebra are named and numbered according to their location.

Eight Cervical Vertebra (causing loss of function in the arms and legs—quadriplegia), twelve Thoracic Vertebra (causing loss of function in the chest and the legs—paraplegia.), 5 Lumbar and 5 Sacral vertebrae result in loss of functioning in the hips and legs.

What Are The Effects Of SCI?

The effects of SCI depend on the type of injury and the level of the injury. SCI can be divided into two types of injury - complete and incomplete. A complete injury 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. An incomplete

injury 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 limb more than another, may be able to feel parts of the body that cannot be moved, or may have more functioning on one side of the body than the other.

Individuals with SCI also experience other changes. For example, they may experience dysfunction of the bowel and bladder.. Sexual functioning is frequently affected : men with SCI may have their fertility affected, while women's fertility is generally not affected. Very high injuries (C-1, C-2) can result in a loss of many involuntary functions including the ability to breathe, necessitating breathing aids. Other effects of SCI may include low blood pressure, inability to regulate blood pressure effectively, reduced control of body temperature, inability to sweat below the level of injury, muscle spasms and chronic pain.

Do People With Sci Ever Get Better?

When a SCI occurs, there is usually swelling of the spinal cord. This may cause changes in virtually every system in the body. After days or weeks, the swelling begins to go down and people may regain some functioning. With many injuries, especially incomplete injuries, the individual may recover some functioning as late as 18 months after the injury. In very rare cases, people with SCI will regain some functioning years after the injury. However, only a very small fraction of individuals sustaining SCIs recover all functioning.

Does Everyone Who Sustains SCI Use A Wheelchair?

No. Wheelchairs are a tool for mobility. High C-level injuries usually require that the individual use a power wheelchair. Low C-level injuries and below usually allow the person to use a manual chair. However, for the person who needs a powerchair, the independence afforded by them is worth the limitations. Some people are able to use braces and crutches for ambulation. These methods of mobility do not mean that the person will never use a wheelchair. Many people who use braces still find wheelchairs more useful for longer distances. However, the therapeutic and activity levels allowed by standing or walking briefly may make braces a reasonable alternative for some people.

Of course, people who use wheelchairs aren't always in them. They drive, swim, fly planes, ski, and do many activities out of their chair. If you hang around people who use wheelchairs long enough, you may see them sitting in the grass pulling weeds, sitting on your couch, or playing on the floor with children or pets. And of course, people who use wheelchairs don't sleep in them, they sleep in a bed. No one is "wheelchair bound."

Do People With SCI Have Jobs?

People with SCI have the same desires as other people. That includes a desire to work and be productive. Of course, people with disabilities may need some changes to make their workplace more accessible, but oftentimes these accommodations are fairly simple. It is important to remember that the person's spinal cord has been injured - the brain itself is unaffected and people with spinal cord injuries are of normal intelligence.

