

# Spinal Injury Information



## About Spinal Cord Injury

Almost one hundred Queenslanders incur a spinal cord injury each year, and the majority of those injured are between the ages of 19 and 25.

Such a diagnosis is a traumatic and devastating experience for the newly injured individual, their family and friends; which will change their lives forever.

A spinal cord injury is permanent and prevention is the only cure.

The continued support of the Spinal Injuries Association assists some people to live in their own homes, find and maintain meaningful employment and live a fulfilling life.

### ANATOMY AND PHYSIOLOGY

The Spine, Spinal Cord and Spinal Cord Injury

The spine is central to the skeletal system, it supports the head and encloses the spinal cord. It consists of 33 vertebrae which are classified into 5 regions:

1. Cervical Vertebrae: There are 7 cervical vertebrae in the neck region
2. Thoracic Vertebrae: There are 12 thoracic vertebrae in the upper back region
3. Lumbar Vertebrae: There are 5 lumbar vertebrae in the lower back region
4. Sacral Vertebrae: The 5 sacral vertebrae are fused together to form the sacrum
5. Coccygeal Vertebrae: The 4 small coccygeal vertebrae are fused together to form the coccyx or tailbone

Running down the centre of the spine is the spinal cord. The spinal cord is made up of millions of nerves which are the communication link between the brain and all other parts of the body.

Messages about feeling or sensation are transmitted to the brain via the spinal cord and the brain transmits movement or functional messages to the body, also via the spinal cord.

The diagram to the left illustrates the various levels of the spine and the extent of paralysis which occurs to the body when the spine is injured at a certain level.

When the vertebrae of the spine are displaced or injured, the spinal cord, which is housed inside the spine, may also be injured.

Damage to the spinal cord through crushing, bruising or severing is permanent and irreversible. The millions of nerve fibres which make up the spinal cord cannot regenerate after injury. When the spinal cord is damaged the messages to and from the brain cannot get through. For many, a damaged spinal cord will mean permanent paralysis. However, spinal cord injury research continues throughout the world, including Australia. Research focuses on nerve reconnection.

The damage to the spinal cord may be complete or incomplete depending on the degree of injury to the nerve fibres. Incomplete injury results in movement and sensation abnormalities and complete injury means total loss of movement and sensation - permanent paralysis.

The level and degree of injury to the spinal cord will determine the extent and areas of paralysis. A person with paraplegia will always have full use of their hands, arms and shoulders. The damage to their spinal cord will have occurred in the upper or lower back i.e. thoracic, lumbar or sacral regions.

Spinal cord damage can occur at the sacral or coccygeal levels. When this occurs the bowel, bladder and the leg area below the knee will be affected. However, many people with spinal cord injury at this level will be able to walk with the assistance of special aids eg. walking stick, foot splints.

Commonly Asked Questions and Their Answers

**For further information, contact the Information Service on (07) 3391 2044 or 1800 810 513 (outside Brisbane) or via e-mail [info@spinal.com.au](mailto:info@spinal.com.au)**

