



# 1. Understanding Inclusive Education

## 1.5 Understanding spinal cord injury

## Introduction

This section provides a brief overview of spinal cord injuries. It is important to understand the medical requirements of those who have spinal cord injuries, but it is equally crucial to recognise that each person will be affected individually and have unique physical, social, emotional and academic requirements dependent on their situation.

## Other content

At Back Up we understand that a spinal cord injury can be devastating, but we believe that it should not prevent anyone from getting the most out of life. With the right support most people will cope and adjust well to the new requirements of their lives in the long term. For children and young people, re-connecting to their education and social lives is a critical piece of this support.

There are an estimated 40,000 people in the UK living with a spinal cord injury. Every eight hours, someone's life will change forever. Spinal cord injury affects people of all ages and backgrounds; it can happen to anyone at any time.

Spinal cord injury is sudden and the impact on an individual can be huge. It is not just about a loss of mobility but also the effect on bodily functions. Aside from the physical impact, spinal cord injury can have a significant psychological impact on the person with the injury and their family.

Depression and anxiety are not uncommon in those affected by spinal cord injury. Many people feel that the things most important to them in life may never be the same (whether family, relationships, hobbies and recreation, work, social life, travel, or any area of life). It is common to feel uncertain about the future.

## Children and young people with spinal cord injuries

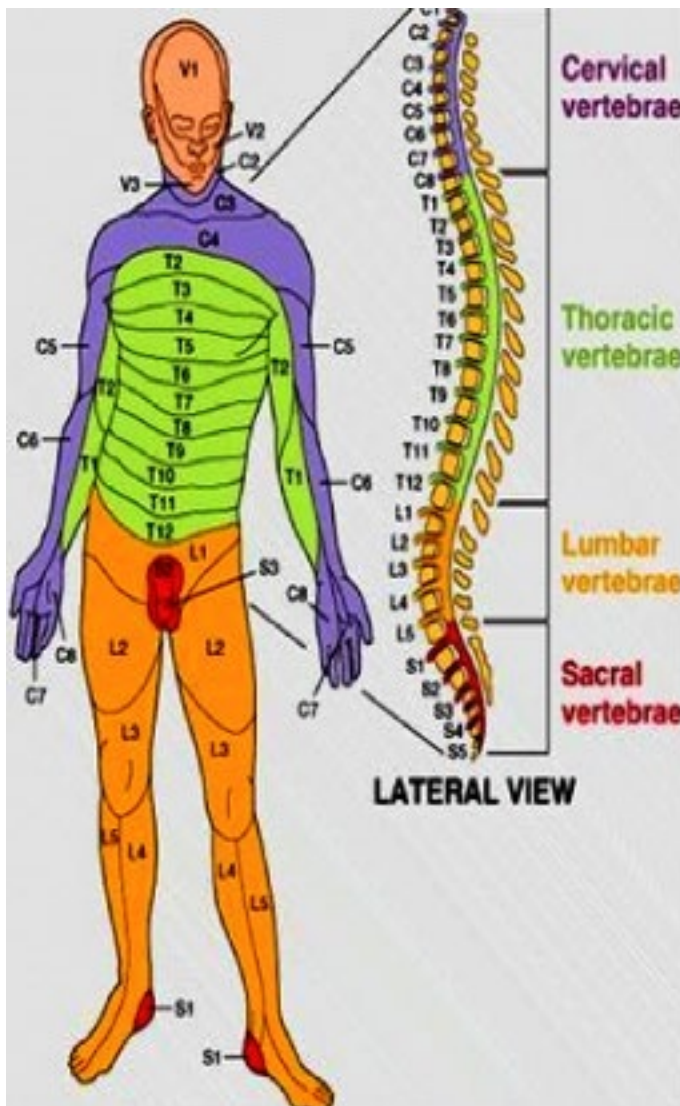
While spinal cord injuries for children and young people are rare, the causes of spinal cord injuries are also very varied. The most common causes leading to a spinal cord injury are falls and road traffic accidents. Some spinal cord injuries can be the result of a virus, such as Transverse Myelitis, or a tumour on the spine. Other, rarer, aetiologies include those arising from violence, such as gun shots or stab wounds, and birth injuries.

Spinal cord injuries are usually classified into two main groups: tetraplegic and paraplegic. Quadriplegic is the American term for tetraplegic.

A tetraplegic injury means damage has occurred to the spinal cord at the level of the cervical vertebrae. This will involve the loss of movements and sensation in all four limbs. A paraplegic injury occurs from the thoracic vertebrae down and involves loss of movement and sensation in the lower half of the body. Please see the diagram for more detailed information on functions for different levels of injury.

The symptoms of a spinal cord injury depend on the severity of the injury but include: muscle weakness and spasms, breathing problems, loss of feeling in the chest, arms and legs, and loss of bowel and bladder function.

The extent of the paralysis also depends on whether injury to the spinal cord is complete, or incomplete. If an injury is incomplete, only part of the spinal cord is damaged and some messages still get through. This means that some or all sensation



- C1-3 Limited head control
- C4 Breathing and shoulders shrug
- C5 Lift arm with shoulder, elbow flex
- C6 Elbow flex and wrist extension
- C8 Finger flexion
  
- T1 Finger movement
- T2-T12 Deep breaths, deep breathing
- T6-L1 Deep exhale of breath, stability while sitting
  
- L1-L2 Hip flexion
- L2-L3 Hip movement toward middle of body
- L3-L4 Knee extension
- L4-L5 Ankle extension
- L5 Extension of big toe
  
- S1 Movement of foot and ankle
- S1-S2 Toe movement
- S2-S4 Function of bladder and bowel

and movement can exist from below the point of injury. If someone has a complete lesion, however, total paralysis will result below the point of injury and there will be no movement or sensation from this level.

Having a spinal cord injury is likely to mean having mobility difficulties though these vary considerably. Some people are able to walk a little; some need help to walk with crutches or a walking frame, while others need to use a wheelchair permanently. A spinal cord injury affects bladder and bowel control, so children and young people with a spinal cord injury may use urology aids such as a catheter or sheath and may need help managing this.

There is more information on the health issues after a spinal cord injury in section 2.1 Knowing what to expect.

“ At Stoke Mandeville, we have a strong research and clinical background, and from that are able to say that most people adjust and cope really well in the long term and do go on to do really well and get back to school and education and create relationships. This is a really important message to get across. It’s not the norm that people with spinal cord injury have long-term psychological trauma and difficulty. It’s more normal to cope and make adjustments.

Zoe Chevalier, Clinical Psychologist, Stoke Mandeville Spinal Injury Unit

## Reference

- Knight, A, Petrie, P, Potts, P and Zuurmond, M. (2008) [The school lives of children and young people with a spinal cord injury](#). Thomas Coram Research Unit, Institute of Education, University of London, Report to Back Up