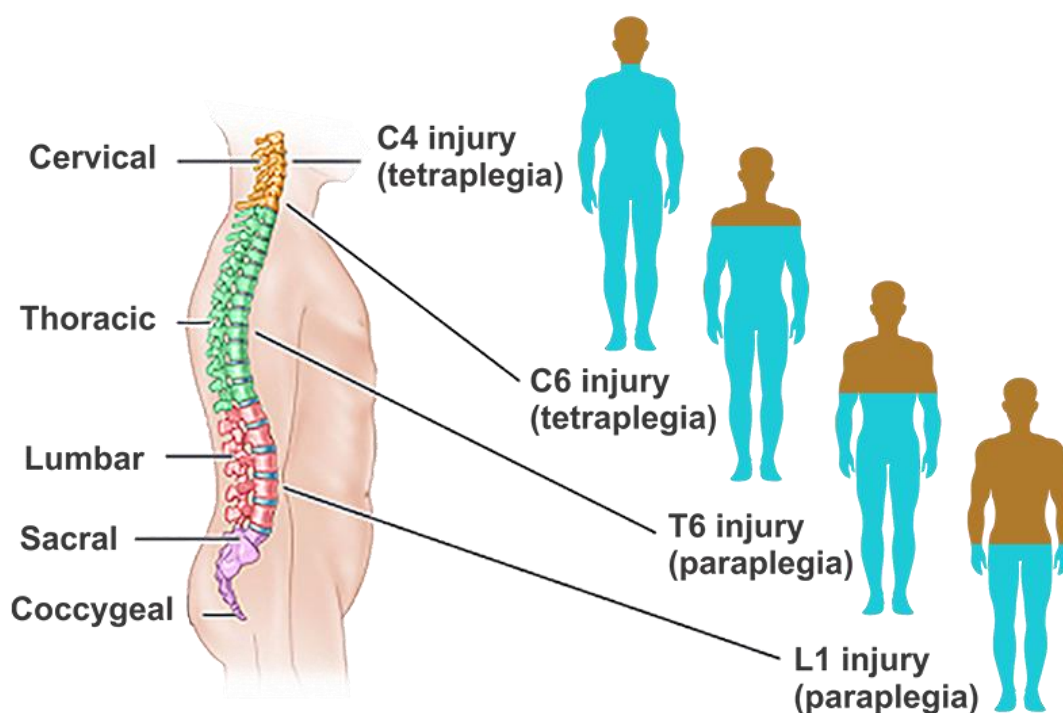


Coaching Athletes with Spinal Cord Injury (SCI)

Definition

Spinal cord injury (SCI) is damage to the spinal cord that results in a loss of function such as mobility or feeling. The injury usually occurs as a result of a trauma such as a fall or car accident, or as a result of other back and spine conditions.

- Quadriplegia (also known as tetraplegia) is loss of function below the neck.
- Paraplegia is loss of function below the chest (arms have full function)



Ref; neurogen.in

Degrees of Spinal Cord Injury

The medical degree of function after injury can be measured according to the five-level [ASIA Impairment Scale](#). They are:

ASIA A = Complete

No motor or sensory function below the level of the SCI.

ASIA B = Sensory Incomplete

Sensory function below neurologic level is normal (ie they can feel some touch, heat/cold and pain) but no motor function (movement) below neurologic level.

ASIA C = Motor Incomplete

Motor function is preserved below neurologic level and more than half of the key muscle groups below neurologic level have a muscle grade less than 3 (ie very weak).

ASIA D = Motor Incomplete

Motor function is preserved below neurologic level and at least half of the key muscle groups below neurologic level have a muscle grade of 3 or more.

ASIA E = Normal

Sensory and motor function is normal.

Coaching Considerations

Athletes will predominantly compete in wheelchair events – ensure the wheelchair equipment is optimised to the requirements for the individual athlete and be aware of the sporting body regulations for equipment.

Be aware of the level of spinal injury of the athlete and what this means for available movements and muscle groups.

Develop training, strengthening and performance goals according to this. For instance, if someone has T4 SCI with no trunk muscle strength, work on adaptive strategies for core stability, i.e. strapping, seating support etc (as rules allow).

Medical Risk Factors

Autonomic dysreflexia (AD)

Sudden high blood pressure that can cause brain haemorrhage or fits. Can start as a pounding headache and profuse sweating. Immediate medical attention is required *as this is a life-threatening situation*. Know whether your athlete has ever had Autonomic Dysreflexia before, ask about what triggered this and what the normal treatment routine is. Sometimes AD can occur in response to urinary tract infection, so it is important for the athlete to look for warning signs of this (eg cloudiness or discoloration of urine). Seek early medical support.

Pressure injury

Lack of sensation and tissue bulk loss leave the athlete at high risk of pressure injury. Ensure regular checks of the seated equipment (sporting and day use) occur and that the athlete has clear pathways on how to have seating reviewed and modified/replaced as required (eg via NDIS or state health service, regular OT or Physio). When the athlete reports a skin injury, make sure they seek early care from a doctor or nurse.

Thermoregulation

Some athletes (not all) might have issues with thermoregulation. This might mean that sweating is not possible and that athletes can't lose body heat using convection. They can overheat quickly and become very unwell. This is a serious health issue and coaches need to be aware of this risk (ask your athlete about their ability to sweat). Pre-cooling, frequent rests, timing of training and exercise in the shade are all helpful strategies.

Urinary Tract Infection (UTI)

Can be a frequent issue for athletes who use a catheter to empty their bladder. Infection leads to symptoms like high pulse, increased temperature and general malaise. Many athletes take antibiotics with them when they travel in case they are required to treat UTI.

In summary, it is useful for coaches to know

- What level is the SCI and what muscles function (ie is there any function in hands, upper abdominals, lower abdominals, back extensors, hips/legs)? How does this influence performance?
- Is the SCI complete or incomplete?
- Is there any history of autonomic dysreflexia?
- Is there history of frequent UTI, skin injury?
- Can the athlete thermoregulate (sweat)?
- What adaptive equipment is used by the athlete?
- How does the athlete transfer (e.g. in/out of car)?
- Are there any long-term issues with pain or injury (e.g. shoulder pain)?

If you have content to add, please contact keren.faulkner@paralympic.org.au

Resources

Spinal Cord Injuries Australia. <https://scia.org.au>

Paralympics Australia. Urinary Tract Infection Protocol (see p. 4).

Urinary Tract Infection Prevention & Management

