



## Pupils with Physical Disabilities

### Spinal Cord Injury



## Spinal Cord Injury



### Classroom-based tips (focus on instructional methods)

1. **Inform the pupils about the presence of a colleague with spinal cord injury** (e.g. through project, discussion, parental participation, storytelling, involvement of the child himself/herself, depending on the age of the class), taking care not to stigmatise the pupil or make her/him feel uncomfortable.
2. **Provide activities promoting acceptance and support in order to avoid marginalisation.**
3. **Be aware and watch for changes in symptoms and/or for signs of abnormal fatigue throughout the day.**
4. **Take notice and address the specific emotional or behavioural problems** these pupils may experience as a result of their condition and always encourage them to express their feelings.
5. **Take into consideration the pupil's physical needs when designing the class schedule.**
6. **Encourage pupils with SCI to participate in all classroom activities at their own pace and comfort level.**
7. **Provide options for tutoring or extra time to make up assignments and complete tasks.**
8. **Decrease written demands and homework assignments**, and be less demanding when it comes to written work, taking into account extra time needed for therapy sessions.
9. **Be understanding with such issues as lateness, absences, shortened school days, fatigue, change in mood, and missed homework due to therapy sessions.**
10. **Provide a specific set of teaching materials in digital form** so that pupils with SCI do not have to carry heavy books in and out of school and the classroom.
11. **Provide copies of teachers' notes or recorded lectures**, as well as digital notes for pupils using technology.
12. **Differentiate testing and assessment** by providing options according to individual needs of a pupil. These could be extra time or untimed tests, one-on-one evaluation, alternate response mode, and use of a laptop and/or other assistive technology.
13. **Allow pupils to leave classes early to give them adequate time to get to their next class.**
14. **Allow preferential seating of a pupil with SCI near the door**, to ensure his/her easy access to and from the classroom, as well as well as near electrical outlets, in case of the need to plug-in and charge various devices including electric wheelchairs.

15. **If pupils use wheelchairs, where possible place yourself at their eye level when talking to them.**
16. **The board in the classroom may have to be lowered if the pupil is in a wheelchair.**
17. **Make arrangements in sitting and positioning in the classroom** to facilitate safely moving around and participating in activities. Consult physiotherapist for specific seating needs.



## School-based practical tips (focus on instructional methods)

### Community

**Find and have available contact details of local/national associations for SCI.**

### Curricular Adaptations

Devise individualised learning plans for pupils with SCI in collaboration with other professionals and family.

### Discipline

Monitor the safety of the pupils during their curricular and extra-curricular activities during their classes, breaks and other types of activities.

### Educational Visits / Field Trips / Camps / School Exchanges / Trips Abroad

When organising field trips and school events, make arrangements by considering the following, based on individual pupil's needs: **How far will this pupil with SCI have to walk? Is there a wheelchair lift on the bus? Is there enough space in the bus for a wheelchair? Is the field trip destination accessible for wheelchairs? Have the teachers accompanying the group of pupils been informed of this pupil's needs?**

### Parents / Parents' Associations

1. Arrange meetings between the parents and the staff, **including other professionals working with the pupil, such as the physiotherapist, so as to learn as much as possible about the diagnosis, their observations about the pupil's current level of ability, and possible needs during the course of the school year. Design a school project in order to increase the level of awareness of the teachers, other pupils and parents about SCI.**
2. **Facilitate family support and confidence in parenting a child suffering from spinal cord injury.**

## Safety

1. When organising field trips and school events, make arrangements by considering the following, based on individual pupil's needs: **How far will this pupil with SCI have to walk? Is there a wheelchair lift on the bus? Is there enough space in the bus for a wheelchair? Is the field trip destination accessible for wheelchairs? Have the teachers accompanying the group of pupils been informed of this pupil's needs?**
2. **Provide access and facilities in order to develop inclusive school projects, events and celebrations for all pupils**, providing facilities for pupils with SCI to be able to participate (e.g. safety conditions, hall accommodation, traffic in the corridors).
3. **Make sure that, in case of an emergency, the evacuation plan allows pupils with SCI to safely get out of the building.**
4. Monitor the safety of the pupils during their curricular and extra-curricular activities during their classes, breaks and other types of activities.
5. **Provide for medical attention at school whenever concerns over breathing or heart rate may emerge**, or the pupil complains of other symptoms s/he did not have previously, such as eye disease, fatigue, or stiffness.

## School Breaks

Monitor the safety of the pupils during their curricular and extra-curricular activities during their classes, breaks and other types of activities.

## School Celebrations / Events / Activities

**Provide access and facilities in order to develop inclusive school projects, events and celebrations for all pupils**, providing facilities for pupils with SCI to be able to participate (e.g. safety conditions, hall accommodation, traffic in the corridors).

## School Purchases

1. **Make arrangements for assistive technology assessment**, and provisions for personal use, for example for completing class activities.
2. **Equip the building of the school institution with accessibility and safety adaptations** such as elevator, ramps and special desks.
3. Allow pupils with SCI to use assistive technological devices that help them perform tasks and improve performance. **A favourable classroom accommodation and the adaptive equipment mentioned above may improve the pupil's physical abilities.**

## Pupil Support

1. **Ensure that further provision is provided for pupils who may need support during class,** such as the presence of a teaching assistant.
2. **Provide pupils extra support where possible,** including financial, individual teaching support, such as by scheduling extra instruction time, and providing a supportive relationship.
3. **Provide for medical attention at school whenever concerns over breathing or heart rate may emerge,** or the pupil complains of other symptoms s/he did not have previously, such as eye disease, fatigue, or stiffness.
4. **Allow time for mobility for pupils who need to change rooms for classes in order to move safely and on time to their next class.** If needed, a classmate, friend or helper may carry books and other materials between classes.
5. **Find and have available contact details of local/national associations for SCI.**

## Teacher Professional Development

**Provide training for teachers who have pupils with spinal cord injuries** in their classrooms so as to ensure they possess adequate and meaningful information on the disability, and know how to act in different contexts.

## Technology

1. **Make arrangements for assistive technology assessment,** and provisions for personal use, for example for completing class activities.
2. **Equip the building of the school institution with accessibility and safety adaptations** such as elevator, ramps and special desks.
3. Allow pupils with SCI to use assistive technological devices that help them perform tasks and improve performance. **A favourable classroom accommodation and the adaptive equipment mentioned above may improve the pupil's physical abilities.**

## Timetabling

**Allow time for mobility for pupils who need to change rooms for classes in order to move safely and on time to their next class.** If needed, a classmate, friend or helper may carry books and other materials between classes.

## Supportive Literature

**Definition:** The **spinal cord** can be generally defined as a group of nerves that runs down the middle of a person's back and carries signals back and forth between the body and the brain, passing through one's neck and back. An injury of the spinal cord, usually referred to as a *spinal cord injury* (SCI), represents damage produced to the spinal cord that causes changes in its function, changes that may be either temporary or permanent. The respective changes generally involve the loss of muscle function, of sensation or of autonomic function in those parts of the human body served by the spinal cord that are below the level of the lesion. As a consequence, patients with SCI commonly experience permanent and often devastating neurologic deficits and disability. Spinal cord injuries can occur at any level of the spinal cord and can be divided into two classes, i.e. *complete* or *incomplete*.

- Complete SCIs: absence of sensory and motor functions “below the level of the injury - neither sensation nor movement - and both sides of the body are equally affected. Complete injuries can happen at any level of the spinal cord.” (*Spinal Cord Injury*, available online)
- Incomplete SCIs: preservation of sensory or motor function below the level of injury, including the lowest sacral segments (Lawrence S Chin, *Spinal Cord Injuries*), or “movement in one limb more than the other, feeling in parts of the body, or more function on one side of the body than the other. Incomplete injuries can happen at any level of the spinal cord” (*Spinal Cord Injury*, available online).

### Types of SCIs

There are the three main types of SCIs:

- Quadriplegia (quad = “four”) means loss of movement and sensation in all four limbs (arms and legs).
- Paraplegia (para = two like parts) means loss of movement and sensation in the lower part of the body, including both legs.
- Triplegia (tri = “three”) means the loss of movement and sensation in one arm and both legs and usually results from incomplete SCI.

### Causes of SCIs

- Bullet or stab wound
- Traumatic injury
- Diving accident
- Electric shock
- Extreme twisting of the middle of the body
- Landing on the head during a sports injury
- Fall from a great height
- Non-traumatic causes: infection, insufficient blood flow, and tumours

### Symptoms of SCIs

Symptoms vary depending on the severity and location of the SCI:

- Head that is in an unusual position
- Numbness or tingling that spreads down an arm or leg
- Weakness
- Difficulty walking
- Paralysis (loss of movement) of arms or legs
- Loss of bladder or bowel control
- Shock (pale, bluish lips and fingernails; acting dazed or semiconscious)
- Lack of alertness or unconsciousness

- Stiff neck, headache, or neck pain (Dennis Ogiela, *Spinal Injury*)
- Muscle spasticity
- Breathing problems
- Problems with heart rate and blood pressure
- Digestive problems
- Sexual dysfunction  
([http://www.hopkinsmedicine.org/healthlibrary/conditions/physical\\_medicine\\_and\\_rehabilitation/spinal\\_cord\\_injury\\_85,P01180/](http://www.hopkinsmedicine.org/healthlibrary/conditions/physical_medicine_and_rehabilitation/spinal_cord_injury_85,P01180/))

A spinal cord injury is a medical emergency, whose immediate treatment can reduce long-term effects. Treatments may include medicines, braces or traction to stabilise the spine, and surgery. Later treatment usually includes medicines and rehabilitation therapy.

## Websites and EU Reports

Spinal Cord Injury: Signs, Causes & Prevention – Healthline: <http://www.healthline.com/health/spinal-injury>

Spinal cord injury - Reeve Foundation: <https://www.christopherreeve.org/living-with-paralysis/health/causes-of-paralysis/spinal-cord-injury>

Spinal Cord Injury Information Pages: <http://www.sci-info-pages.com/>

WHO | Spinal cord injury: <http://www.who.int/mediacentre/factsheets/fs384/en/>

Spinal Cord Injury Resource Center: <http://www.spinalcord.org/>

AANS - Spinal Cord Injury: <http://www.aans.org/patient%20information/conditions%20and%20treatments/spinal%20cord%20injury.aspx>

ASCIP - Academy of Spinal Cord Injury Professionals: <http://www.academyscipro.org/>

Spinal Injuries Association – SIA: <https://www.spinal.co.uk/>

Fundatia Wings for Life <http://www.wingsforlifeworldrun.com/ro/ro/ajuta-nesa-strangem-fonduri-pentru-vindecare-leziunilor-coloanei-vertebrale/>

Fundatia S Trauma: <http://www.arcmed.ro/partener/fundatia-s-trauma>

SPINAL CORD REPAIR Report Summary - [http://cordis.europa.eu/result/rcn/55544\\_en.html](http://cordis.europa.eu/result/rcn/55544_en.html)

EU Accessibility Act - [http://www.europarl.europa.eu/RegData/etudes/IDAN/2016/571382/IPOL\\_IDA\(2016\)571382\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2016/571382/IPOL_IDA(2016)571382_EN.pdf)

## References

A Guide for School Personnel Working with Students with Spinal Cord Injuries [https://www.kennedykrieger.org/sites/default/files/community-related-files/guide\\_for\\_school\\_personnel\\_working\\_with\\_students\\_with\\_spinal\\_cord\\_injuries\\_1.pdf](https://www.kennedykrieger.org/sites/default/files/community-related-files/guide_for_school_personnel_working_with_students_with_spinal_cord_injuries_1.pdf)

Dennis Ogiela, MD, Spinal Injury, <http://umm.edu/health/medical/ency/articles/spinal-injury>

Lawrence S Chin, MD, Spinal Cord Injuries, <http://emedicine.medscape.com/article/793582-overview>

Palmer, Sara, Kriegsman, Kay Harris, Palmer, Jeffrey B., 2000, Spinal Cord Injury: A Guide for Living, Johns Hopkins University Press

Selzer, Michael E., 2010, Spinal Cord Injury, Accessible Publishing Systems PTY LTD.

Spinal Cord Injury,

[http://www.hopkinsmedicine.org/healthlibrary/conditions/physical\\_medicine\\_and\\_rehabilitation/spinal\\_cord\\_injury\\_85,P01180/](http://www.hopkinsmedicine.org/healthlibrary/conditions/physical_medicine_and_rehabilitation/spinal_cord_injury_85,P01180/)

#### Journals

The Journal of Spinal Cord Medicine, <http://www.tandfonline.com/loi/yscm20>

Spinal Cord Journal - International Spinal Cord Society, <http://www.iscos.org.uk/spinal-cord-journal>

Journal of Spinal Cord Medicine, <http://www.spinalcord.org/resource-center/askus/index.php?pg=kb.page&id=664>