



# Caring for the Student after spinal cord injury

By Amy R. Sutara, BSN, RN, CSN

## Case Scenario

A.S. was a high school football player. He enjoyed playing, and hoped to continue playing football through college. However, during a game, he and another player collided, knocking him unconscious. As the team physician and coaches rushed to his side, A.S. awoke, unable to move or feel his legs. The paramedics carefully transported A.S. to the nearest hospital for further evaluation. Several tests and examinations proved that A.S. had suffered a spinal cord injury leaving him paralyzed from the waist down. Devastated, A.S. began treatment to learn how to deal with his disability. After months of rehabilitation, he was discharged and ready to return to school. Anxious and afraid, A.S. wondered how he would endure hours at school without the assistance of his family; he wondered how his classmates would react to him. Additionally, A.S. now had to rely on the school nurse for intermittent catheterization.

This article will focus on the care of the student, like A.S., who has returned to school following a spinal cord injury. After a brief overview of spinal cord injury, discussion will include preparations for the return to school. Then, the areas of mobility, psychosocial issues, bowel and bladder management, spasticity, skin care, and autonomic dysreflexia will be explored. Finally, preventing spinal cord injury will be discussed.

## Introduction

Although overwhelming at any age, a spinal cord injury (SCI) is particularly difficult for children and adolescents. Learning to live with a disability at an early age is traumatic and frustrating. Children and adolescents with a SCI must adapt physically, emotionally, and socially. Following the spinal cord injury, children and adolescents undergo hours of therapy and medical evaluation, but eventually the time comes to return to school. While considered a milestone, returning to school is also a challenge. For example, new routes must be explored in the wheelchair. The student must depend on others for assistance. Socializing with other youngsters may change. Finally, dealing with health problems presents a barrier to excelling academically. Thus, the school nurse becomes an important person in assisting the student with a SCI.

## Background

**Etiology.** According to Vogel, Hickey, Klaas, and Anderson (2004), spinal cord injury affects approximately 10,000 individuals per year, with 20% occurring at less than 20 years of age. A SCI occurs from damage to the spinal cord and results in permanent disability or, potentially, death. Motor vehicle accidents are the most common cause of SCI in children. However, falls, injury during birth, sports injury, and violence are also causes of pediatric SCI (Vogel et al., 2004).

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**Symptoms.** Symptoms may vary depending on the level and type of injury to the spinal cord. However, one can assume that the higher the level of injury, the more severe the symptoms. Cervical SCIs (quadriplegia) cause loss of function in the arms and legs. Thoracic SCIs affect the chest and legs, resulting in paraplegia. Injuries to the lumbar area (L1 – L5) and the sacral area (S1 – S5) usually result in decreased functioning in the hips and legs (Grundy, 2002).

The two basic types of SCI are *complete* and *incomplete*. With a complete SCI, there is no function below the level of the injury. An incomplete SCI means there is some sensation or some movement in parts of the body (Grundy, 2002).

## Care of the Student with Spinal Cord Injury

Caring for the student with SCI involves several areas. As mentioned above, these include mobility, emotional support, bowel and bladder management, skin care, spasticity prevention, and autonomic dysreflexia prevention. Although treatment depends on the age and developmental level of the student, the goal for all children and adolescents with SCI is to maintain an active, healthy, and safe life style at home, school, and in the community.

**Preparing to return to school.** Before returning to school, and with permission from the student's parents, it is often helpful for the school nurse to meet with the student's rehabilitation team. The physical therapists, occupational therapists, and nurses can provide suggestions and teach skills specific for the student and answer questions the school nurse may have (McGinnis & Lunn, 2004). For instance, the student and family have already learned a particular mode of transfer from wheelchair to bed, and to continue this technique and perform it safely is beneficial for both the student and the school nurse. In addition, maintaining continuity of care makes the transition less frustrating for the student.

Although ideal, it is not always feasible for the school nurse to leave school and meet with the rehabilitation team. Therefore, upon return to school, the student and family must then meet with the school nurse and support staff. During such a meeting, the family, student, and staff will devise an Individualized Healthcare Plan (IHP) specific to the student. Anticipate the student's anxiety and apprehensions about returning to school. Adolescents, especially, desire independence and can perform a lot of self-care. Remember, though, safety is a priority and the student should not hesitate to seek help. The IHP should contain a medical history, list of medications

and allergies, and phone numbers for parents or guardians and physicians in case of emergency. Additionally, medical needs such as catheterization and possible emergencies, e.g., autonomic dysreflexia, need to be addressed. Furthermore, assigning a classmate to assist the student with SCI during an emergency situation (fire, tornado, or any other crisis situation) may help the teacher and student.

**Mobility.** Under The Individuals with Disabilities Act (IDEA) of 1990, schools must provide appropriate and accessible services to

students with disabilities. The student must not only safely navigate around the classroom and school halls but also the playground, restroom, and cafeteria. A wheelchair-accessible school bus or van must be available to a student with SCI. The school nurse has the role of ensuring wheelchair accessibility and that the student knows the routes and can move safely around the school. When an issue arises involving wheelchair accessibility, the school nurse must alert the appropriate school staff to make the necessary changes.

The student should have the opportunity to have an escort or the opportunity to leave class early to arrive on time for the next class. As children grow and mature, motorized wheelchairs become more common and useful, but in the event the wheelchair would malfunction, it is important to have a mobility emergency plan.

Finally, the school nurse must learn proper transfer techniques and teach them to others.

**Psychosocial issues.** Emotionally, students require close observation to assure effective coping mechanisms are being used. After an injury, anxiety and depression are common. Children and adolescents have concerns about how peers will react or how to socialize as before. Anger and sadness frequently occur, since the ability to participate in activities has changed. Older adolescent victims may fear relationships and intimacy. By offering open and confidential communication, the school nurse can assist the student in expressing feelings. The student may need reminding that engaging in many activities may still be possible, as well as the option of exploring new activities.

The school nurse can also help educate the peers of the student with SCI, especially young children. Once again, before the student returns to school (and with permission from the parents), provide a presentation to the class regarding some of the physical changes the student with SCI has sustained. Invite all staff directly involved to gain knowledge on SCI and its care. Younger children ask many questions and fear a SCI could happen to them. Answering questions honestly helps alleviate many anxieties among children. Additionally, the presentation will ease anxieties for the teacher and staff. Encourage the student with the SCI to demonstrate the use of

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the wheelchair. Most importantly, treat the student with SCI as little differently as you can.

**Bowel and bladder management.** Another aspect of the care of the student with SCI is bladder and bowel management. The school nurse should provide an area in the restroom for the student's supplies and encourage a routine, but also regard the student's privacy. Depending on the age and developmental level of the student, self-catheterization can be learned. However, for the student who has not mastered the technique or needs assistance, the school nurse can perform intermittent catheterization.

Managing the bowel includes providing regular emptying. Incontinence is a source of embarrassment. To help avoid accidents, students with SCI should maintain a routine. However, when accidents occur, the school nurse can assist; but, again, regard the student's privacy and feelings. Keeping an extra change of clothes and supplies for the student will expedite the process.

**Spasticity.** The school nurse has an important role in preventing the muscle spasticity commonly seen in SCI. Baclofen is typically prescribed to reduce the number and severity of muscle spasms (*Nursing06 Drug Handbook*, 2006). Because Baclofen must be taken three times a day and not discontinued abruptly, the school nurse administers the medication once daily during the school hours and monitors for side effects. Side effects include drowsiness, dizziness, weakness, confusion, and upset stomach (*Nursing06 Drug Handbook*, 2006).

Performing range-of-motion exercises and stretching at various times of the day will also help prevent spasticity and contractures. Table 1 explains several passive range-of-motion exercises the school nurse can do with the student.

**Skin care.** To prevent skin breakdown, the student must frequently change position. Additionally, the use of cushions can decrease the incidence of pressure sores. The school nurse can assist with transfers, but encourage proper lifting techniques to avoid shearing of the skin.

In the event a pressure sore develops, the nurse must assess the skin; dressing changes may become a daily routine. Follow the same process the student follows at home. In addition, assess the skin for healing and note redness, swelling, and drainage. Report any changes to parents or guardians.

**Autonomic Dysreflexia.** Autonomic Dysreflexia (AD) is a life-threatening medical emergency for the student with SCI. A result of over-activity of the autonomic nervous system, AD causes a sudden increase in blood pressure. If not treated immediately, AD can lead to seizures, stroke, or death. The most common cause of AD is a full bladder. Therefore, complying with intermittent catheterization (IC) is critically important. Additional causes of AD include bowel distention, pressure areas, ingrown toenails, insect bites, and menstrual cramps (Mokha, 2005). (Table 2 describes signs and symptoms of AD.)

Alert the school that AD is a medical emergency and prepare the staff by teaching the signs and symptoms associated

**TABLE 1**

**Passive Range of Motion Exercises**

**Ankles**

Have the student lie flat with the legs straight.  
Grab the heel of the foot and flex and point the foot.  
Repeat 10 times with each foot.

**Knee extensions**

Have the student lying flat, with bent knees.  
Position one hand on the knee and one hand behind the calf.  
Extend the leg and return the leg to bent knee position.  
Repeat 10 times on each leg.

**Hip extensions**

Have the student lying flat, with bent legs.  
Position one hand on the knee and one hand under the calf.  
Push the leg toward the chest, holding for a 10 count.  
Repeat 10 times on each leg.

(Dittmar, 1989)

**TABLE 2**

**Signs and Symptoms of Autonomic Dysreflexia**

Profuse sweating  
"Goose" bumps  
Flushing  
Headache  
Nasal congestion  
Blotching of the skin  
Restlessness  
High blood pressure  
Slow pulse

(Mokha, 2005)

with AD. Treatment of AD must occur quickly to prevent complications. Have another staff member notify the parent/guardian of the situation while the school nurse stays with the student. The student should remain in a sitting position. If a transfer onto a cot must be done, maintain head elevation. Continuously monitor blood pressure. Because a full bladder is the most common cause, check for bladder distention and perform IC. If bowel distention is suspected, have the student

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lie on the left side and gently disimpact the stool from the rectum with a lubricated gloved finger. Assess the skin for pressure sores and loosen clothing. Finally, if symptoms persist, summon the ambulance.

## Resources

For students and families who need further assistance, the school nurse can provide several resources. The following organizations, as provided by the National Center for Injury Prevention and Control, are excellent resources for the child with SCI.

- American Spinal Injury Association (ASIA); (404) 355-1826
- Foundation for Spinal Cord Injury Prevention, Care, and Cure; (800) 342-0330
- National Spinal Cord Injury Association (NSCIA); (800) 962-9629
- Spinal Cord Injury Network Hotline; (800) 548-2673

## Prevention

The school nurse can play an important role in injury prevention. Education for prevention of SCI can occur through bulletin boards, newsletters, or direct contact with students and staff. With motor vehicle accidents as the chief cause of SCI, the National Center for Injury Prevention and Control recommends the following:

- Always wear a seatbelt.
- Children under 12 years of age need to ride in the back seat to avoid air bag injuries.
- Children under 80 pounds require booster seats.

Because 18% of all SCIs are a result of sports and recreational activities (National Center for Injury Prevention and Control), teach students the following:

Always wear a helmet when:

1. Riding a bike, motorcycle, scooter, or skateboard
2. In-line skating and roller-skating
3. Skiing, snowboarding, or horseback riding
4. Playing football, ice hockey, or baseball

- Make sure the water is deep enough before diving into water.
- Avoid headfirst moves, such as tackling with the top of your head or sliding headfirst into a base.
- Insist on spotters when performing gymnastics.
- Keep firearms unloaded in a locked cabinet or safe.

Additionally, as an advocate for safety, the school nurse should frequently inspect the playground surface and equipment for safety violations. The National Program for Playground Safety (2006) suggests that surfaces be properly

cushioned. Hard surfaces, such as asphalt, "blacktop," concrete, grass, packed dirt, or rocks, are not acceptable surfaces to support falls; instead, wood fiber/mulch, pea gravel, sand, and shredded rubber are what is needed. Furthermore, the area should be free of foreign objects (National Program for Playground Safety, 2006).

## Conclusion

Following a spinal cord injury, a student's life changes. However, the return to school may be the biggest challenge the student will endure. The school nurse has a valuable role to play in helping the student adapt to the disability.

In the scenario of A.S., he finally returned to school. Although he was anxious at first, the school nurse helped him adjust to a comfortable routine. Together they managed his health needs. As time passed, A.S. became involved with football once again as the coach's

student assistant and began to prepare for college.

With careful planning by the school nurse, a smooth transition from rehabilitation to school is possible. By incorporating physical, emotional, and social needs, the school nurse can successfully care for the student with SCI and assist that student in the academic setting. 🐾

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