

SPINAL CORD INJURIES



DEFINITIONS:

Spinal cord injury (SCI) results in the impairment or loss of motor or sensory function (or both) in the trunk and/or extremities due to damage of neural elements within the spinal canal. The lesion can either be complete or incomplete. Incomplete lesions are more conducive to sport and activity success than complete lesions. Persons with SCI are usually referred to as Paraplegics or Quadriplegics.

Paraplegia: Caused by injury to thoracic segments T2-T12. Impairment is in the trunk, legs and/or pelvic region.

Quadriplegia: Caused by injury to cervical segments (C1-C8) or the highest thoracic segment (T1). Impairment occurs in the arms, trunk, legs and pelvic organs (bladder, bowel and sexual organs).

There are approximately 7,000 to 10,000 new cases of SCI in the United States every year.

CAUSES OF SCI:

- Motor vehicle accidents
- Falls
- Violence
- Sport injuries

**Diving causes 10 times more SCI than any other sport.*

**Age of onset for about 50% of all SCI is persons under the age of 25.*

MEDICAL CONCERNS FOR SCI:

- Contractures (abnormal shortening of the muscles)
- Atrophy of limbs - decrease in size due to loss of muscle tone
- Muscle spasms
- Bowel and bladder dysfunction
 - bowel and bladder management program
 - provide area for privacy in toileting/dressing
 - remind Individual to empty external collection bag
- Spasticity of muscles that prevent effective movement
- Scoliosis
- Urinary infections

- Overweight because of low energy expenditures
- Heterotopic bone formation (laying down of new bone in soft tissue around joint)
- Sensation and skin breakdown (impaired feelings of touch, pressure, heat and cold) check skin frequently for abrasions; encourage weight shifting and position changes
- Abnormally low resting heart rates
- Pooling of blood in the veins of paralyzed body parts
- Low blood pressure for persons with lesions above T6
- Poor temperature control, inability to sweat below the level of injury

TEACHING TIPS:

- Develop a program of exercise for all usable body parts.
- Include activities to develop strength, flexibility, muscular endurance, cardiovascular endurance and coordination.
- Enable the student to use the wheelchair in a variety of environments.
- Emphasize functional movement skills.
- Teach wheelchair mobility.
- Teach parachute games and target games (both require very few modifications).
- Include aquatic activities.
- Develop stretching exercises to improve flexibility.
- Introduce wheelchair sports to the student.
- Adapt activities for use with mobility aids.
- Teach upper body activities, but avoid overuse which could cause injuries to arms and hands.
- Plan activities for limited mobility (quad rugby).
- Educate regarding: hygiene (i.e., showering after physical activity, proper workout clothing).

Information on this sheet contains only guidelines. Each student must be considered individually, and in many cases, a physician's written consent should be obtained.