

in children with SCI. Mechanical or robotic orthoses may be used in conjunction with FES to enable ambulation in persons with SCI (To, Kirsch, Kobetic, et al, 2005). Gait training may be achieved with a number of different modalities, including a stationary cycle; however, no specific method has proved superior to the others. FES has also been effective in reducing complications from bladder and bowel incontinence and in assisting males in achieving penile erection.

Surgical interventions for SCI include early cord decompression (decompression laminectomy) and cervical or thoracic fusion. Crutchfield, Vinke, or Gardner-Wells tongs and skeletal traction may be used for early cervical vertebral stabilization. A halo vest may be suited for ambulation after the acute phase (see also discussion of cervical traction in Chapter 29). After cervical spinal fusion, a hard cervical collar or sterno-occipital-mandibular immobilizer brace may be worn until the fusion is solidified. When SCI occurs in young children and preteens, scoliosis develops over time and often requires surgical consideration (Parent, Mac-Thiong, Roy-Beaudry, et al, 2011).

## **Nursing Care Management**

The nursing care of the child affected by SCI is complex and challenging. A multidisciplinary SCI team is equipped to manage the acute phase of the injury, and some members, including the nurse, may follow the patient to eventual recovery. Nursing management is concerned with ensuring adequate initial stabilization of the entire spinal column with a rigid cervical collar with supportive blocks on a rigid backboard. The traumatic event causing the injury may or may not be recalled if the child lost consciousness; such events are extremely frightening to the child. The young child may also be frightened by the immobilization process and the inability to move the extremities; therefore, it is important to reassure and comfort the child during this process.

During the acute phase of the injury, it is imperative that airway patency be ensured, complications prevented, and function maintained. Evaluate the extent of the neurologic damage early to establish a baseline for neurologic function. Continual assessment of sensory and motor function should occur to prevent further deterioration of neurologic status as a result of spinal cord edema.