

TABLE 21-2

## COMMON SURGICAL INTERVENTIONS

### Orthopedic surgery (McCarthy, 2001)

- Muscle and tendon lengthening, shortening or transfer: tendon Achilles lengthening, adductor release, split tendon transfer, rectus femoris transfer, splint anterior tendon transfer
- Bony osteotomy: periacetabular osteotomy, femoral derotation osteotomy, varus derotation osteotomy, pelvic osteotomy
- Single-event multiple-level surgery: combination of soft tissue and bony surgical procedures performed at the same time; this procedure has become increasingly common for clients with CP

### Spinal Correction: Neurogenic Scoliosis

- Spinal fusion: rod placement
- Vertical expandable prosthetic titanium rib; metal rod curved to fit the back of the chest and spine placed in an up-and-down position, can be expanded as child grows (Campbell, 2013)

### Neurosurgery

- Baclofen pump: A pump is implanted in the child's abdomen to deliver continuous baclofen into the fluid surrounding the spine to reduce spasticity (Albright & Ferson, 2006)
  - Intrathecal baclofen
  - Intraventricular baclofen
- Selective dorsal rhizotomy: A procedure in which the nerves are cut to decrease spasticity (Grunt, Fieggen, Vermeulen, Becher, & Langerak, 2014)

acutely after surgery to allow for immediate adjustments to the current equipment, or provide loaner equipment and set a schedule for delivery of new positioning equipment. It is important for the seating recommendations and authorization process to be part of the surgical intervention protocol. This allows the funding sources to understand the significant contributions that seating and positioning have on postsurgical outcome. Our experience has suggested that insurance companies and other funding sources will approve a new seating system as it relates to the change that will likely affect the musculoskeletal system as a result of the surgical intervention.

We additionally recommend that the nonsurgical candidates be referred for complex seating evaluations to explore alternative options to promote neutral positioning, reduce pressure over bony prominences, improve comfort, and inhibit progression of orthopedic distortions. Orthopedic conditions that are not addressed properly in a timely manner can lead to detrimental effects for the client, increasing the level of disability and decreasing life expectancy. Inadequately supported joints experience continued stress, torque, and pull. This can shift the client's center of gravity and promotes pressure points over bony prominences. These joints may become painful, ROM is often lessened, and the surrounding area can be at risk of skin breakdown. This may lessen a client's functional ability; decrease his or her tolerance to remain in upright postures, subsequently

reducing ability to participate; and decrease overall health. Often, with aging, muscle mass decreases, and bony prominences become more prominent, particularly in the pelvic area. This can place pressure on the sciatic nerve, resulting in increased pain and discomfort to maintain upright sitting. Using pressure mapping during the evaluation process for any seating system, particularly for clients with orthopedic complications, can decrease future pain and tissue breakdown and assist with product recommendation (Hanson, Thompson, Langemo, Hunter, & Anderson, 2012).

## FUNCTIONAL CONSIDERATIONS

The client with severe complex orthopedic considerations will often present with spinal rotation, pelvic obliquity, and lower extremities windswept to one side, which affects the client's ability to interact with technology or participate in his or her environment. What is the priority and why? It is important to remember the reasons behind our recommendations. There are several additional questions that need to be considered. What is the functional task or goal to be achieved? Does he or she need to be supported in a comfortable, manageable position? Does he or she need to have pressure relief over bony prominences? Does he or