

SCI Lab Skills
By Karl Lutschewitz, SPT

Motor learning principles that can be applied to all skills:

- **Practice:**
 - Skills can take months to learn
 - Breakdown the skills into parts
 - Practice, practice, practice. . .
 - Motor learning more effective when practice is specific and goal directed, not just repetitions
- **Feedback:**
 - Important to help motivate the patient
 - Visual, demonstrative, verbal, tactile
 - Use clear and concise cues
- **Motivation:**
 - Assess readiness
- **Stage of Learning:**
 - Consider the patient's stage, preferred learning style, and impairments
- **Environment**
 - Create conditions that optimize processes of motor learning

Applicable to all transfers for patients with a SCI at C5-C7:

- Keep fingers flexed during transfers in order to avoid stretching out finger flexors and thereby risking a reduction of tenodesis grasp.
- Maintain patient safety through guarding and use of a gait belt

- 1) Dependent transfers
 - a) High low table
 - b) "airlift" method
 - i) *Use when the patient is unable to bear weight through lower extremities because of increased spasticity, which would make the transfer unsafe.*
 - c) Using a chair/stool
 - i) *Use method that fits your anthropometrics and comfort.*
- 2) Scooting forward in chair 3 ways (C6)
 - a) *Hooking arm and using head/hips, neck extension/posterior deltoids, wrist extensors*
- 3) Supine to long sitting (C5-C6)
 - a) *1st step – rolling onto prone on elbows*
 - b) *2nd step – 1) walking upper body around (need hamstring length) or 2) balancing on one arm and throwing other arm over (need adequate shoulder extension as well as good balance and shoulder stability)*
 - c) *Break up movement into parts*
 - d) *Offer resistance during movements to increase strength*

- 4) Short sitting at edge of mat to long sitting (lifting legs) (C5-C6)
 - a) *Takes a lot of UE strength, balance, and LE flexibility*
 - b) *Shoes can cause resistance on mat*

- 5) Independent transfer from wheelchair to mat (C6)
 - a) *Sliding board may not be feasible for everyday use, but if using a sliding board make sure there is a cutout.*
 - b) *Use scapular depression for transfer*

- 6) Tub transfers (C7-C8)
 - a) *Home visit would be appropriate to work on transfer in home environment*
 - b) *Order proper equipment for patient*

- 7) Teaching wheelies
 - a) Use neck extension during 'pop-up'
 - b) Use head to balance
 - c) After achieving wheelie skills, progression may involve going over door transitions, going up and down curbs, and descending ramps (advanced)

- 1) Floor to chair (T12)
 - a) Start with a block to make transition easier
 - b) Facing the chair, with arms crossed method
 - c) Back to chair method requires adequate shoulder extension and strength (more advanced)

- 2) Sit to stand with long leg braces and lofstrands (T12)
- 3) Ambulation with long leg braces and lofstrands (T12)
- 4) Ascending and descending the stairs (T12)
 - a) Adjust lofstrands and leg braces properly
 - b) Educate the patient on the importance of parastance position