Transfer Techniques for Patients with Spinal Cord Injury: Level Surfaces

- Fundamental Skill: “Head-Hips” Relationship
  - The head-hips relationship is a compensatory movement strategy used to perform almost all functional skills such as transfers, bed mobility, and even standing and ambulation in individuals with complete and incomplete spinal cord injuries.
  - When using the strategy of the head-hips relationship, the individual utilizes *voluntary head and/or shoulder movement in one direction to cause movement of the buttocks in the opposite direction*. When using the head-hips relationship, the individual’s shoulders and upper trunk act as the fulcrum for a first class lever.
  - Prior to initiating functional mobility following a spinal cord injury, this in an important concept that must be both understood as well as mastered functionally. This strategy serves to save the individual both time and energy when performing various functional tasks.

- Transferring Without Equipment
  - Set-Up: Position the wheelchair at a 45° angle to the surface to be transferred to (90° angle if transferring to a drop arm commode), remove both leg rests, remove the arm rest that is in the direction of the transfer.
  - Move buttocks forward on the sitting surface
  - Position hands in front of the trunk – one hand on the sitting surface or arm rest of the wheelchair, the other hand on the seat of the destination of the transfer
  - The individual then locks the elbows using muscle substitution (*level of injury C7 or higher – shoulder ER, Elbow/wrist extension, Forearm supination*) or supports his/her body weight using the triceps
  - Lean forward onto both upper extremities and tuck the chin downward
  - The individual then quickly and forcefully moves his/her head and shoulders down and away from the destination of the transfer – thus lifting your buttocks up and moving it towards the destination (*Head-Hips Relationship*)

  *(See video that accompanies the above description)*

- Transferring With a Transfer Board
  - *This transfer is usually mastered before a transfer without equipment (see above) is utilized. Using a transfer board requires less strength and control to perform, and therefore may be safer for many patients.*
  - Set-Up: Position the wheelchair at a 45° angle to the surface to be transferred to (90° angle if transferring to a drop arm commode), remove both leg rests, remove the arm rest that is in the direction of the transfer.
- Move buttocks forward on the sitting surface
- Position the transfer board by holding on to the far end of the board (often there is a “handle” at this end) and pushing the closer end under the proximal thigh and buttocks by leaning laterally away from the board
- Position hands in front of the trunk – one hand on the sitting surface or arm rest of the wheelchair, the other hand on the transfer board, as far down the board as the individual can reach (making sure he/she leaves room for his/her buttock to move during the transfer)
- The individual then locks the elbows using muscle substitution (see above) or supports his/her body weight using the triceps
- Lean forward onto both upper extremities and tuck the chin downward
- The individual then quickly moves/twists the head and shoulders down and away from the destination of the transfer, thus allowing the buttocks to move down the transfer board.
- If the first movement of the head/shoulders is not forceful enough to get the patient to the new sitting surface, he/she may need to re-adjust the upper extremities and perform multiple twists of the head/shoulders to move down the transfer board

(See video that accompanies the above description)

After the above level transfers are mastered to and from a wheelchair to a bed, a commode, a mat, or another chair, the individual can begin practicing transfers that are unlevel – i.e. one sitting surface is a few inches above or below the other sitting surface. These transfers require more skill, precise timing, and control of movements to perform safely.

As the individual masters both level and unlevel transfers, advanced transfer skills such as floor transfers can be taught and practiced.

Resources for Patients and Families: