Shoulder Preservation after SCI: Bed Positioning/ Mobility

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Fact Sheet

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Bed Positioning and Mobility

Bed positioning and mobility is often a particular challenge for upper limb preservation due to the frequent need for use of high velocity head and arm movements at the arms in order to achieve position changes, such as rolling and transitioning from supine to long sit. Extreme end ranges of motion at the shoulder are also often utilized to achieve stability in positions such as long sitting and supine on elbows. Therefore, strategies to preserve upper limb integrity are important considerations for these activities.

Movement Optimization

Positioning:

In people with upper extremity (UE) weakness and/or pain, suboptimal bed positioning can contribute to contractures and worsening of pain. To correctly position the UEs, use pillows to support the UEs in positions that avoid muscle shortening as well as extreme, end-range postures. For example:

- Positioning one or both shoulders in mid-range abduction and external rotation as pictured (Figure 1) can help avoid limitations in external rotation range of motion (ROM). Equal amounts of time should be spent with the left and right shoulder in an abducted and externally rotated position.

Figure 1: Images show examples of positioning the left shoulder in mid-range abduction and external abduction.

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Movement Optimization (continued)

Supine to Sit:

Avoid extreme, end-range positions and periods of prolonged weight-bearing. For example:

- During side lying to long-sit, avoid stress at the shoulder joint by training adequate dynamic response from the thoracohumeral, rotator cuff, and scapular musculature during weightbearing through the UE.
- Avoid resting longer than needed in reclined long sitting on extended arms or in supine on elbows as these positions may stress anterior shoulder and/or wrist structures.

Adaptive Equipment

Loops:

- Bed or leg loops can assist with the transition from side-lying to long-sitting, reducing or eliminating the need for weight-bearing on elbows.
- Commercially available range of motion loops are effective. Also, effective alternatives include use of gait belts or yoga straps.
- To avoid unwanted pressure or shear when pulling on loops, consider padding straps with foam padding (e.g. forearm or shin pads from sporting goods stores) or sheepskin covering (e.g. seat belt padding from auto parts stores).

Bed Rail:

- Use of a portable bed rail may greatly improve bed mobility while reducing overall demand on shoulders and wrists.

References:

1. Paralyzed Veterans of America Consortium for Spinal Cord Medicine. Preservation of upper limb function following spinal cord injury: a clinical practice guideline for health-care professionals. *J Spinal Cord Med*. 2005;28:434-470.

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