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Quick Review of Model System Research

Tracking Functional Status Across the Spinal Cord Injury Lifespan: Linking Pediatric and Adult Patient-Reported Outcome Scores[1]*

What is the study about?

The goal of this study was to link results from a childhood spinal cord injury (SCI) scale score measuring function with an adult SCI scale score. The hope was that by doing this, it would enable long-term tracking of functional data from children with SCI across their lifetime. Childhood functionality is measured on a different scale than adulthood functionality. Researchers used a new approach inspired by "item response theory" (IRT) to transform data so that it could be reliably compared across measures.

Who participated in the study?

The study examined children (4-21 years of age) and adults (18-92 years of age) with SCI. Some of the data from children were obtained from their caregivers. All participants were English speakers. The children and their caregivers were recruited from within the Shriners Hospital for Children System. Adults were recruited from Spinal Cord Injury Model System centers. Patients with congenital forms of spine dysfunctions such as spina bifida were excluded.

How was the study conducted?

Adult participants completed SCI-Functional Index (SCI-FI) and children completed the Pedi SCI outcome measure scales. Researchers used statistical and mathematical modeling techniques to compare data among the items used in the two scales. By finding similar outcome measurements, researchers were able to link the scores between the adult SCI-FI measure and the Pedi SCI measure.

What did the study find?

The study found that it was possible to compare data on SCI functionality between children and adults. This comparison allows researchers to create models that can provide SCI patients with helpful information across the lifespan. For example, clinicians and researchers can use these data to predict what the functional level of a child with SCI might be like when he or she ages.

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[1] Tian, F., Ni, P., Mulcahey, M. J., Hambleton, R. K., Tulsky, D., Haley, S. M., & Jette, A. M. (2014). Tracking functional status across the spinal cord injury lifespan: linking pediatric and adult patient-reported outcome scores. *Archives of Physical Medicine and Rehabilitation*, *95*(11), 2078–2085.

*The contents of this quick review have not been reviewed by the corresponding author of this study.