

Author, Year Country Study Design Sample Size	Population Intervention Outcome Measure	Results
<p>(Zonfrillo et al., 2014) USA Observational N=13,798 (2,952=SCI)</p>	<p><b>Population:</b> Age: 7-18 yr. % Males by injury etiology: TBI=70.0%, Tetraplegia=77.7%, Paraplegia=73.7%, Other=58.4%. Injury etiology: 1) TBI (n=6297); 2) tetraplegia (n=946); 3) paraplegia (n=1244); or 4) other (which included combinations of TBI and SCI, TBI and multiple fracture/ amputation, SCI and multiple fracture/amputation, burns, or other multi-trauma) (n=5311). <b>Intervention:</b> None. <b>Outcome Measures:</b> Functional Independence Measure (FIM) cognitive subscore.</p>	<ol style="list-style-type: none"> <li>Subjects with tetraplegia and paraplegia as their main injury code had higher levels of cognitive functionality on admission compared with the TBI group.</li> <li>Median admission FIM cognitive subscore for those with tetraplegia or paraplegia was 6, and the majority of these patients improved to 7 on discharge.</li> <li>All injury groups demonstrated improvements in FIM cognitive subscores on discharge from rehabilitation (<math>p &lt; 0.0001</math> for each); children with TBI had more severe discharge cognitive disability compared with those with SCI, burns, or multiple injuries.</li> <li>Subjects with SCI had longer length of stays than those without SCI (<math>p &lt; 0.0001</math>).</li> <li>When examining trends over time, there was an overall slight decrease in length of stay (median 15 days in 2002 [IQR 5-29] to median 13 days in 2011 [IQR 8-25 days], <math>p = 0.02</math>).</li> <li>The discharge cognitive stages over time have remained stable (median 5 [IQR 4-6]) for 2002-2011.</li> </ol>
<p>(Harder et al., 2013) USA Observational N=24</p>	<p><b>Population:</b> Age: <math>11.5 \pm 3.4</math> (5-18) yr; Gender: males=9, females=15; Injury etiology: Transverse Myelitis; Age of Onset: <math>9.7 \pm 4.8</math> (1-17) yr; Level of injury: cervical (N=13); Ambulation: normal=46%, abnormal but ambulated independently=79%, bilateral support (i.e., crutches) =29%, wheelchair-bound=8.3%. <b>Intervention:</b> None. Neuropsychological evaluation, patient and caregiver surveys. <b>Outcome Measures:</b> California Verbal Learning Test, Children's Version (CVLT-C; 5-16 yr and 17-18 yr), Digit Span subtest from the Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV; 6-16 yr), Wechsler Adult Intelligence Scale, Third Edition (WAIS-III; 17-18 yr), Symbol Search subtest from the WISC-IV/WAIS-IV, Symbol-Digit Modalities Test (SDMT; 8-18 yr), Oral Version, Beery Developmental Test of Visual-Motor Integration, Fifth Edition (VMI-5; 5-18 yr), The Grooved Pegboard (5-18 yr), Trail-Making Test (TMT; 9-18 yr), Letter Fluency subtest from the Delis-Kaplan Executive Function System (DKEFS; 8-18 yr), Pediatric Quality of Life (PedsQL; 5-18 yr) Multidimensional Fatigue Scale, Behavior Assessment System for Children, Second Edition (BASC-2; 5-18 yr), Hauser Ambulation Index, school function, medication use.</p>	<p>Note: Mildly Impaired (<math>\leq 1.0</math> SD from the mean or 16<sup>th</sup> percentile); Moderately Impaired (<math>\leq 1.5</math> SD from the mean or 5<sup>th</sup> percentile); Severely Impaired (<math>\leq 2.0</math> SD from the mean or 2<sup>nd</sup> percentile).</p> <p><i>Fine Motor/Visual-Motor Skills</i></p> <ol style="list-style-type: none"> <li>For the non-dominant hand, mild deficits were observed in 45.5% of subjects, with severe deficits noted in 36.4%; for the dominant hand, mild, moderate, and severe deficits were revealed in 40.9%, 22.7%, and 13.6% of participants, respectively.</li> <li>For graphomotor (i.e., paper/pencil) skills, mild, moderate, and severe deficits in visual-motor integration were observed in 28.6%, 19%, and 4.8%, respectively.</li> <li>The lowest rate of impairment was observed in the area of visual perception (only 4.5% were mildly impaired, none were moderate or severe).</li> </ol> <p><i>Attention and Executive Function</i></p> <ol style="list-style-type: none"> <li>Approximately 18.2% of participants showed moderate impairment in auditory attention and working memory (i.e., Digit Span), while 40.9% had at least a mild deficit.</li> <li>Parents reported "at-risk" or subclinical attention problems in approximately 30% of participants although no patients demonstrated severe problems in this area, nor did participants' parents report clinically significant attention problems.</li> <li>While 5.6% of participants showed severe deficits in simple attention (i.e., Trail-</li> </ol>

		<p>Making Test A), 11.1% showed severe deficits in complex attention and sequencing (i.e., Trail-Making Test B).</p> <p>7. Mild and moderate deficits were noted in the area of verbal fluency for 25% and 20% of the sample, respectively.</p> <p><i>Verbal Memory</i></p> <p>8. Deficits in initial free recall (i.e., CVLT-C/II Trial 1) were mildly and moderately impaired at rates of 33.3% and 20.8%, respectively; rates of deficits in free recall decreased with opportunities for rehearsal.</p> <p>9. Long delay free recall was mildly, moderately, and severely impaired in 25%, 8.3% and 4.2% of participants, respectively.</p> <p><i>Processing speed</i></p> <p>10. Mild and moderate deficits in motor-based processing speed were observed at rates of 20% and 10%, respectively; however, when the motor component was removed, moderate and severe impairment were observed at rates of 10% and 5%, respectively.</p>
--	--	---