

**Research Summary – 6-Minute Push Test (6-MPT) – Upper Limb**

<p><b>Author Year Country Research Design Setting</b></p>	<p><b>Demographics and Injury Characteristics of Sample</b></p>	<p><b>Validity</b></p>	<p><b>Reliability</b></p>	<p><b>Responsiveness Interpretability</b></p>
<p><a href="#">Damen et al. 2020</a></p> <p>Reliability and observational study to determine reliability and the physiologic response of the 6-MPT in youth with spina bifida who self-propel a wheelchair</p> <p>University Medical Center Utrecht (Utrecht, the Netherlands)</p>	<p>N = 53 youth with spina bifida Mean (SD) age 13 years, 7 months (3 years, 10 months) 32M, 21F Injury level: thoracic (n = 11), lumbar (n = 41), sacral (n = 1) Ambulation level: Community ambulation (n = 5), household ambulation (n = 6), therapeutic ambulation (n = 4), and no ambulation (n = 38)</p>		<p><b>Test-retest reliability:</b></p> <ul style="list-style-type: none"> <li>• Excellent test-retest reliability of peak heart rate between first and second assessments (ICC = 0.81)</li> <li>• Excellent test-retest reliability of total distance between first and second assessments (ICC = 0.95)</li> <li>• Excellent test-retest reliability of 6 minutes of work between first and</li> </ul>	<p><b>SEM:</b></p> <ul style="list-style-type: none"> <li>• SEM for Heart Rate: 8.5 bpm</li> <li>• SEM for Total Distance: 21.9 m</li> <li>• SEM for 6 min of work: 1.41 kg/km</li> </ul> <p><b>MDC:</b></p> <ul style="list-style-type: none"> <li>• MDC for Heart Rate: 23.5 bpm</li> <li>• MDC for Total Distance: 60.7 m</li> <li>• MDC for 6 min of work: 7.45 kg/km</li> </ul> <p><b>Normative Data:</b></p> <ul style="list-style-type: none"> <li>• Mean (SD) peak heart rate on first and second assessments:</li> </ul>

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			second assessments (ICC = 0.97)	158 (19) bpm, 152 (20) bpm <ul style="list-style-type: none"> <li>• Mean (SD) total distance on first and second assessments: 424.9 (101.5) meters, 406.7 (100.2) meters</li> <li>• Mean (SD) 6 minutes of work on first and second assessments: 30.5 (8.2) kg/km, 29.4 (8.4) kg/km</li> </ul>
<a href="#">Baattaiah et al. 2017</a>	N = 15 participants with SCI who reported an inability to lift their legs against gravity Mean (SD) age 34.5 (10.5) years Mean (SD) BMI 25.5 (3.6) kg/m <sup>2</sup> Level of injury:	<b>Predictive validity:</b> 6MPT distance is correlated with several measures of cardiovascular fitness: <ul style="list-style-type: none"> <li>• Adequate correlation with VO<sub>2peak</sub> (r = 0.58)</li> </ul>		

<b>Author Year</b> <b>Country</b> <b>Research</b> <b>Design</b> <b>Setting</b>	<b>Demographics and</b> <b>Injury</b> <b>Characteristics of</b> <b>Sample</b>	<b>Validity</b>	<b>Reliability</b>	<b>Responsiveness</b> <b>Interpretability</b>
	Paraplegia (n = 12), tetraplegia (n = 3), incomplete injury (n = 5), and complete injury (n = 10)	<ul style="list-style-type: none"> <li>• Excellent correlation with respiratory exchange ratio (r = 0.70)</li> <li>• Excellent correlation with peak exercise time (r = 0.70)</li> <li>• Excellent correlation with peak workload (r = 0.66)</li> </ul>		
<a href="#">Van der Westhuizen et al. 2017</a>  Exploratory cross-sectional survey  Greater Tshwane Metropolitan City, South Africa	N = 60 participants with SCI 50M, 10F Mean age 38.4 years ASIA A (n = 49), ASIA B (n = 6), ASIA C (n = 4), ASIA D (n = 1) Level of injury: Paraplegia (n = 39), tetraplegia (n = 21)	<b>Predictive validity</b> of the 6MPT in predicting scores on the RNLI (r = 0.637)		

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<p><a href="#">Solanki et al. 2016</a></p>	<p>N = 47 participants with SCI</p> <p>N = 35 participants with paraplegia: Mean (SD) age 42.6 (12.34) years 29M, 6F</p> <p>N = 12 participants with tetraplegia: Mean (SD) age 39.5 (9.81) years 9M, 3F</p>	<p><b>Predictive validity</b> of 6MPT distance in predicting heart rate recovery: <math>r = 0.87</math></p>		
<p><a href="#">Cowan et al. 2012</a></p> <p>University of Miami</p>	<p>N = 40 participants with SCI Mean (SD) age 34 (10) years Traumatic (n = 38), non-traumatic (n = 2) 63% Paraplegia, 37% Tetraplegia</p>		<p><b>Inter-rater, Intra-rater reliability:</b> ICC (95% CI) for the whole sample: 0.97 (0.94–0.98) ICC (95%) for participants with tetraplegia: 0.93 (0.80–0.98) ICC (95% CI) for participants with paraplegia: 0.97 (0.93–0.99).</p>	<p><b>Cut-off scores:</b></p> <ul style="list-style-type: none"> <li>• Tetraplegia: 6MPT distance less than 445 meters indicates low fitness</li> <li>• Paraplegia: 6MPT distance less than 604 meters indicates low fitness</li> </ul>