

Research Summary – 6-Minute Arm Test (6-MAT) – Upper Limb

Author Year Research Design Setting (country)	Demographics and Injury Characteristics of Sample	Validity	Reliability	Responsiveness Interpretability
<p>Totosy de Zepetnek et al. 2016</p> <p>Cohort Study</p>	<p>N=52 Age range: 18-65 years Traumatic SCI Time post-injury: 13±10 years 31 tetraplegia 21 paraplegia</p>	<p>6-MAT VO₂ and VO₂ peak: r=0.91, 95% CI: 0.85-0.95</p>		
<p>Hol et al. 2007</p> <p>Prospective, exploratory, methodologic study</p>	<p>N=30 (83% male) Mean age: 36.3±9.3y Time since injury: 12.0±9.8y</p> <p>>1 year post-injury 17 tetraplegic, 13 paraplegic AIS grade: A – 22 B – 7 C – 0 D – 1</p>	<p>6-MAT VO₂ and VO₂peak: r=0.92 6-MAT power output and VO₂peak: r=0.73 6-MAT heart rate and VO₂peak: r=0.63</p>	<p>Test-retest, Inter-rater, Intra-rater 6-MAT performed 1 week apart.</p> <p>Heart rate: ICC=0.90 VO₂: ICC=0.81</p>	<p>Standard Error of Measurement: Heart rate during 6-MAT SEM =7.12 beats/min (95% CI, 0.75-0.96) VO₂ during 6-MAT SEM = 1.62 mL/kg/min (95% CI, 0.58-0.92)</p> <p>MDC (Calculated from Hol et al. 2007): Heart rate MDC = 19.74 beats/min VO₂ MDC = 4.49 mL/kg/min</p>

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				6-MAT Physiologic values during the VO2-peak test Please see table below.																											
	<table border="1"> <thead> <tr> <th data-bbox="472 686 926 727">Variables</th> <th data-bbox="926 686 1396 727">Mean±SD</th> <th data-bbox="1396 686 1858 727">Range</th> </tr> </thead> <tbody> <tr> <td data-bbox="472 727 926 776">Peak PO (W)</td> <td data-bbox="926 727 1396 776">60.2±36.0</td> <td data-bbox="1396 727 1858 776">20-160</td> </tr> <tr> <td data-bbox="472 776 926 824">Heart rate (beats/min)</td> <td data-bbox="926 776 1396 824">129±29</td> <td data-bbox="1396 776 1858 824">75-183</td> </tr> <tr> <td data-bbox="472 824 926 873">%heart rate max</td> <td data-bbox="926 824 1396 873">70.1±14.0</td> <td data-bbox="1396 824 1858 873">43.6-97.3</td> </tr> <tr> <td data-bbox="472 873 926 922">Peak VE (L/min)</td> <td data-bbox="926 873 1396 922">42.8±19.5</td> <td data-bbox="1396 873 1858 922">18.0-113.1</td> </tr> <tr> <td data-bbox="472 922 926 971">VO2 peak (mL/kgmin)</td> <td data-bbox="926 922 1396 971">18.6±8.4</td> <td data-bbox="1396 922 1858 971">6.5-38.1</td> </tr> <tr> <td data-bbox="472 971 926 1019">VO2 peak (L/min)</td> <td data-bbox="926 971 1396 1019">1.33±0.52</td> <td data-bbox="1396 971 1858 1019">0.74-2.81</td> </tr> <tr> <td data-bbox="472 1019 926 1068">Peak RER</td> <td data-bbox="926 1019 1396 1068">1.14±0.09</td> <td data-bbox="1396 1019 1858 1068">0.97-1.34</td> </tr> <tr> <td data-bbox="472 1068 926 1107">Blood lactate (mmol/L)</td> <td data-bbox="926 1068 1396 1107">6.6±2.8</td> <td data-bbox="1396 1068 1858 1107">2.3-15.1</td> </tr> </tbody> </table>	Variables	Mean±SD	Range	Peak PO (W)	60.2±36.0	20-160	Heart rate (beats/min)	129±29	75-183	%heart rate max	70.1±14.0	43.6-97.3	Peak VE (L/min)	42.8±19.5	18.0-113.1	VO2 peak (mL/kgmin)	18.6±8.4	6.5-38.1	VO2 peak (L/min)	1.33±0.52	0.74-2.81	Peak RER	1.14±0.09	0.97-1.34	Blood lactate (mmol/L)	6.6±2.8	2.3-15.1			
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