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Modified Ashworth Scale**

<b>Availability:</b>	This instrument is freely available here: <a href="#">Modified Ashworth Scale Instrument Link</a>
<b>Classification:</b>	<p><b>Supplemental – Highly Recommended:</b> Multiple Sclerosis (MS)</p> <ul style="list-style-type: none"> <li>Highly recommended for clinical trials in spasticity.</li> </ul> <p><b>Supplemental :</b> Cerebral Palsy (CP); Amyotrophic Lateral Sclerosis (ALS), Spinal Cord Injury (SCI)</p> <p><b>Exploratory:</b> SCI – Pediatric</p>
<b>Short Description of Instrument:</b>	<p><b>Construct measured:</b> Spasticity</p> <p><b>Generic vs. disease specific :</b> Generic</p> <p><b>Means of administration:</b> Observation, Paper/Pencil</p> <p><b>Intended respondent:</b> Participant</p> <p><b># of items:</b> N/A</p> <p><b># of subscales and names of sub-scales:</b> N/A</p> <p><b># of items per sub-scale:</b> N/A</p>
<b>Comments/Special instructions:</b>	<p><b>Scoring:</b> Scores range from 0–5, plus a 1+ scoring category to indicate resistance through less than half of the movement. A score of 0 indicates no resistance and a score of 4 indicates rigidity.</p> <p><b>Background:</b> The Modified Ashworth Scale (MAS) is the most widely used measure of the hyperreflexia of "spasticity". As such, it is likely to be used as an outcome measure primarily in studies that are intended directly to address muscle tone.</p>

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<p><b>Rationale/ Justification:</b></p>	<p><b>Strengths/Weaknesses (ALS/MS):</b> Assessment technique must be standardized. Some critics question the validity of the Ashworth scale and MAS in measuring spasticity. It may be a description of resistance to passive movement. Therefore, measuring only one aspect of spasticity, not a comprehensive assessment.</p> <p><b>Psychometric Properties (ALS &amp; MS):</b> Adequate training is required to ensure inter-rater reliability. Reliability differs from muscle to muscle. Inter-rater agreements were very good for MAS, with weighted kappa value of 0.868. The highest agreement was observed for grade '0' in applying MAS; on the other hand, the lowest agreement was observed for grade '2' in applying MAS.</p> <p><b>Strengths/Weaknesses (SCI):</b> The MAS is relatively simple to perform and does not require special equipment or extensive training. It measures only one aspect of spasticity, and can be markedly affected by the clinical setting, the positioning of the subject, timing of the examination with reference to anti-spasticity medication dosing and other variables that might influence afferent sensory input to the spinal cord. The use of this clinical scale is thus limited by the episodic, complex and variable nature of the condition, which limits its ability to objectively and reliably measure the 'real world' spasticity phenomenon. Nonetheless, the test has been used successfully as a clinical endpoint in registration trials of anti-spasticity drugs (tizanidine, intrathecal baclofen, nabiximols), hence its recommendation as a Supplemental assessment.</p> <p><b>Administration:</b> Takes less than 5 minutes to administer.</p> <p><b>SCI-Pediatric:</b> The Modified Ashworth Scale is relevant and appropriate, but has only adequate reliability and validity in pediatric SCI.</p>
<p><b>References:</b></p>	<p><b>Key Reference:</b> Bohannon RW &amp; Smith MB. Interrater reliability of a modified Ashworth scale of muscle spasticity. Phys Ther. 1987;67(2):206–207.</p> <p><b>Additional References:</b> Craven BC &amp; Morris AR. Modified Ashworth scale reliability for measurement of lower extremity spasticity among patients with SCI. Spinal Cord. 2010;48(3):207–213. Haas BM, Bergstrom E, Jamous A, Bennie A. The inter rater reliability of the original and of the modified Ashworth scale for the assessment of spasticity in patients with spinal cord injury. Spinal Cord. 1996;34(9):560–564. Tederko P, Krasuski M, Czech J, Dargiel A, Garwacka-Jodzis I, Wojciechowska A. Reliability of clinical spasticity measurements in patients with cervical spinal cord injury. Ortop Traumatol Rehabil. 2007;9(5):467–483.</p>