Movement Disorder Childhood Rating Scale from 0 to 3 years (MD-CRS 0-3)

Classification of MD

<table>
<thead>
<tr>
<th>Prevalent* MD</th>
<th>Other MD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypokinetic-rigid syndrome</td>
<td>□</td>
</tr>
<tr>
<td>Chorea/Ballism</td>
<td>□</td>
</tr>
<tr>
<td>Dystonia/Athetosis</td>
<td>□</td>
</tr>
<tr>
<td>Myoclonus</td>
<td>□</td>
</tr>
<tr>
<td>Tic</td>
<td>□</td>
</tr>
<tr>
<td>Tremor</td>
<td>□</td>
</tr>
</tbody>
</table>

*sign only a type of prevalent MD

Part I: General Assessment

A. Motor function

1 Head control
- 0 normal
- 1 mildly affected by the MD and/or control longer than 30s
- 2 moderately affected by the MD and/or control between 15s and 30s
- 3 severely affected by the MD and/or control shorter than 15s
- 4 absent

2 Sitting position
- 0 normal
- 1 mildly affected by the MD and/or control longer than 30s
- 2 moderately affected by the MD and/or control between 15s and 30s
- 3 severely affected by the MD and/or control shorter than 15s
- 4 absent

3 Standing position
- 0 normal
- 1 maintained for >30sec even with abnormal posture
- 2 maintained for >15sec <30sec even with abnormal posture
- 3 maintained for <15sec or for long periods with support
- 4 absent or for brief periods with support

4 Walking
- 0 normal
- 1 walks alone for >3metres even with abnormal posture
- 2 walks alone for <3metres even with abnormal posture or needs support
- 3 only few steps with support and with very abnormal pattern
- 4 absent

5 Reaching
- 0 normal
- 1 possible for age-adequate tasks even if qualitatively abnormal
- 2 moderately abnormal, only possible to approach the object
- 3 severely abnormal, only inefficient efforts
- 4 absent

6 Grasping
- 0 normal
- 1 mildly abnormal, but pincer grasp possible
- 2 moderately abnormal, only possible for reachable rattles very close to the hand
- 3 severely abnormal, only inefficient efforts
- 4 absent

B. Oral/verbal function

<table>
<thead>
<tr>
<th>1 Swallowing</th>
<th>2 Drooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 0 normal</td>
<td>□ 0 absent</td>
</tr>
<tr>
<td>□ 1 occasional dysphagia</td>
<td>□ 1 occasional</td>
</tr>
<tr>
<td>□ 2 frequent dysphagia, swallowing difficulties</td>
<td>□ 2 mild</td>
</tr>
<tr>
<td>□ 3 swallowing of solid food is not possible</td>
<td>□ 3 moderate</td>
</tr>
<tr>
<td>□ 4 severe difficulty in swallowing semi-solid and liquid food</td>
<td>□ 4 severe</td>
</tr>
</tbody>
</table>

D. Attention/Alertness

1 Attention/Alertness during the observation

□ 0 constantly alert, can answer all age and mental-adequate questions
□ 1 sometimes (1/3 of the observation) inattentive
□ 2 often (2/3 of the observation) inattentive
□ 3 attention needs to be constantly drawn by the examiner
□ 4 constantly scarce reaction to external stimuli

2 Attention/Alertness at home

□ 0 constantly alert during day hours, good response to the environment
□ 1 sometimes (1/3 of day hours) difficult to maintain attention
□ 2 often (2/3 of day hours) the child is hypo-attentive
□ 3 the child is constantly sleepy even during day hours
□ 4 constantly scarce reaction to external stimuli

Part II: MD Assessment

MD Severity

1 Eye and periorbital region

□ 0 MD is absent
□ 1 MD is intermittent
□ 2 MD is constant

2 Face (see item 1)

□ 0
□ 1
□ 2

3 Tongue and perioral region (see item 1)

□ 0
□ 1
□ 2

4 Neck (see item 1)

□ 0
□ 1
□ 2

5 Trunk (see item 1)

□ 0
□ 1
□ 2

6 Upper limb (see item 1)

□ 0
□ 1
□ 2

7 Lower limb (see item 1)

□ 0
□ 1
□ 2
**MD-CRS 0-3: Protocol of video recording**

<table>
<thead>
<tr>
<th>Video perspective</th>
<th>Activity</th>
<th>Part I Area (items)</th>
<th>Part II (items)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Full body view</strong></td>
<td>Supine position for 1 min</td>
<td></td>
<td>(4,5,6,7)</td>
</tr>
<tr>
<td></td>
<td>Sitting position for 1 min supporting the trunk, if necessary</td>
<td>Motor (1,2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standing position for 2 min with support, if necessary</td>
<td>Motor (3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walking for 3 metres with aids of support, if necessary</td>
<td>Motor (4)</td>
<td></td>
</tr>
<tr>
<td><strong>Upper part of the body</strong> (including arms)</td>
<td>Sitting position (on a chair, on mother’s lap or in his/her own postural system).</td>
<td>Motor (1,2,5,6)</td>
<td>(4,5,6)</td>
</tr>
<tr>
<td><strong>Full body view</strong></td>
<td>Present a reachable rattle to the child and observe his/her reaching and grasping.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Face</strong></td>
<td>At rest or during spontaneous behaviour</td>
<td></td>
<td>all</td>
</tr>
<tr>
<td><strong>Entire video</strong></td>
<td></td>
<td>Attention/Alertness (1)</td>
<td></td>
</tr>
<tr>
<td><strong>Audio recording</strong></td>
<td>Parental interview</td>
<td>Oral/verbal (1,2) Attention/Alertness (2)</td>
<td></td>
</tr>
</tbody>
</table>

*(Battini et al. Ped Neurol. 2009)*