

**APPENDIX 3: Unified Dystonia Rating Scale (UDRS)**

Factor/area	Criteria
<b>Duration</b>	
0	None
0.5	Occasional (<25% of the time); predominantly submaximal
1.0	Occasional (<25% of the time); predominantly maximal
1.5	Intermittent (25–50% of the time); predominantly submaximal
2.0	Intermittent (25–50% of the time); predominantly maximal
2.5	Frequent (50–75% of the time); predominantly submaximal
3.0	Frequent (50–75% of the time); predominantly maximal
3.5	Constant (>75% of the time); predominantly submaximal
4.0	Constant (>75% of the time); predominantly maximal
<b>Motor severity</b>	
<b>Eyes and upper face</b>	
0	None
1	Mild: increased blinking or slight forehead wrinkling ( $\leq 25\%$ maximal intensity)
2	Moderate: eye closure without squeezing or pronounced forehead wrinkling ( $>25\%$ but $\leq 50\%$ maximal intensity)
3	Severe: eye closure with squeezing, able to open eyes within 10 seconds or marked forehead wrinkling ( $>50\%$ but $\leq 75\%$ maximal intensity)
4	Extreme: eye closure with squeezing, unable to open eyes within 10 seconds or intense forehead wrinkling ( $>75\%$ maximal intensity)
<b>Lower face</b>	
0	None
1	Mild: grimacing of lower face with minimal distortion of mouth ( $\leq 25\%$ maximal)
2	Moderate: grimacing of lower face with moderate distortion of mouth ( $>25\%$ but $\leq 50\%$ maximal)
3	Severe: marked grimacing with severe distortion of mouth ( $>50\%$ but $\leq 75\%$ maximal)
4	Extreme: intense grimacing with extreme distortion of mouth ( $>75\%$ maximal)
<b>Jaw and tongue</b>	
0	None
1	Mild: jaw opening or tongue protrusion $\leq 25\%$ of possible range or forced jaw clenching without bruxism
2	Moderate: jaw opening or tongue protrusion $>25\%$ but $\leq 50\%$ of possible range or forced jaw clenching with mild bruxism secondary to dystonia
3	Severe: jaw opening and/or tongue protrusion $>50\%$ but $\leq 75\%$ of possible range or forced jaw clenching with pronounced bruxism secondary to dystonia
4	Extreme: jaw opening or tongue protrusion $>75\%$ of possible range or forced jaw clenching with inability to open mouth
<b>Larynx</b>	
0	None
1	Mild: barely detectable hoarseness or choked voice or occasional voice breaks
2	Moderate: obvious hoarseness or choked voice or frequent voice breaks
3	Severe: marked hoarseness or choked voice or continuous voice breaks
4	Extreme: unable to vocalize
<b>Neck</b>	
0	None
1	Mild: movement of head from neutral position $\leq 25\%$ of possible normal range
2	Moderate: movement of head from neutral position $>25\%$ but $\leq 50\%$ of possible normal range
3	Severe: movement of head from neutral position $>50\%$ but $\leq 75\%$ of possible normal range
4	Extreme: movement of head from neutral position $>75\%$ of possible normal range

## APPENDIX 3: (Continued)

Factor/area	Criteria
Shoulder and proximal arm (right and left)	
0	None
1	Mild: movement of shoulder or upper arm $\leq 25\%$ of possible normal range
2	Moderate: movement of shoulder or upper arm 25% but $\leq 50\%$ of possible normal range
3	Severe: movement of shoulder or upper arm 50% but $\leq 75\%$ of possible normal range
4	Extreme: movement of shoulder or upper arm 75% of possible normal range
Distal arm and hand including elbow (right and left)	
0	None
1	Mild: movement of distal arm or hand $\leq 25\%$ of possible normal range
2	Moderate: movement of distal arm or hand 25% but $\leq 50\%$ of possible normal range
3	Severe: movement of distal arm or hand 50% but $\leq 75\%$ of possible normal range
4	Extreme: movement of distal arm or hand 75% of possible normal range
Pelvis and proximal leg (right and left)	
0	None
1	Mild: tilting of pelvis or movement of proximal leg or hip $\leq 25\%$ of possible normal range
2	Moderate: tilting of pelvis or movement of proximal leg or hip 25% but $\leq 50\%$ of possible normal range
3	Severe: tilting of pelvis or movement of proximal leg or hip 50% but $\leq 75\%$ of possible normal range
4	Extreme: tilting of pelvis or movement of proximal leg or hip 75% of possible normal range
Distal leg and foot including knee (right and left)	
0	None
1	Mild: movements of distal leg or foot $\leq 25\%$ of possible normal range
2	Moderate: movements of distal leg or foot 25% but $\leq 50\%$ of possible normal range
3	Severe: movements of distal leg or foot 50% but $\leq 75\%$ of possible normal range
4	Extreme: movements of distal leg or foot 75% of possible normal range
Trunk	
0	None
1	Mild: bending of trunk $\leq 25\%$ of possible normal range
2	Moderate: bending of trunk 25% but $\leq 50\%$ of possible normal range
3	Severe: bending of trunk $> 50\%$ but $\leq 75\%$ of possible normal range
4	Extreme: bending of trunk $> 75\%$ of possible normal range

## APPENDIX 4A. Fahn Marsden rating scale

Region	Provoking factor	Severity factor	Weight	Product
Eyes	0-4	$\times 0-4$	0.5	0-8
Mouth	0-4	$\times 0-4$	0.5	0-8
Speech and swallow	0-4	$\times 0-4$	1.0	0-16
Neck	0-4	$\times 0-4$	0.5	0-8
Arm (R)	0-4	$\times 0-4$	1.0	0-16
Arm (L)	0-4	$\times 0-4$	1.0	0-16
Trunk	0-4	$\times 0-4$	1.0	0-16
Leg (R)	0-4	$\times 0-4$	1.0	0-16
Leg (L)	0-4	$\times 0-4$	1.0	0-16
Sum				Max 120