

ANNEX 2: Scale for the Assessment and Rating of Ataxia (SARA)

1) Gait			2) Stance		
<p>Proband is asked (1) to walk at a safe distance parallel to a wall including a half-turn (turn around to face the opposite direction of gait) and (2) to walk in tandem (heels to toes) without support.</p> <p>0 <input type="checkbox"/> Normal, no difficulties in walking, turning and walking tandem (up to one misstep allowed)</p> <p>1 <input type="checkbox"/> Slight difficulties, only visible when walking 10 consecutive steps in tandem</p> <p>2 <input type="checkbox"/> Clearly abnormal, tandem walking >10 steps not possible</p> <p>3 <input type="checkbox"/> Considerable staggering, difficulties in half-turn, but without support</p> <p>4 <input type="checkbox"/> Marked staggering, intermittent support of the wall required</p> <p>5 <input type="checkbox"/> Severe staggering, permanent support of one stick or light support by one arm required</p> <p>6 <input type="checkbox"/> Walking > 10 m only with strong support (two special sticks or stroller or accompanying person)</p> <p>7 <input type="checkbox"/> Walking < 10 m only with strong support (two special sticks or stroller or accompanying person)</p> <p>8 <input type="checkbox"/> Unable to walk, even with supported</p>			<p>Proband is asked to stand (1) in natural position, (2) with feet together in parallel (big toes touching each other), and (3) in tandem (both feet on one line, no space between heel and toe). Proband does not wear shoes, eyes are open. For each condition, three trials are allowed. Best trial is rated.</p> <p>0 <input type="checkbox"/> Normal, able to stand in tandem for > 10 s</p> <p>1 <input type="checkbox"/> Able to stand with feet together without sway, but not in tandem for > 10s</p> <p>2 <input type="checkbox"/> Able to stand with feet together for > 10 s, but only with sway</p> <p>3 <input type="checkbox"/> Able to stand for > 10 s without support in natural position, but not with feet together</p> <p>4 <input type="checkbox"/> Able to stand for >10 s in natural position only with intermittent support</p> <p>5 <input type="checkbox"/> Able to stand >10 s in natural position only with constant support of one arm</p> <p>6 <input type="checkbox"/> Unable to stand for >10 s even with constant support of one arm</p>		
Score : _____			Score : _____		
3) Sitting			4) Speech disturbance		
<p>Proband is asked to sit on an examination bed without support of feet, eyes open and arms out stretched to the front.</p> <p>0 <input type="checkbox"/> Normal, no difficulties sitting > 10 sec</p> <p>1 <input type="checkbox"/> Slight difficulties, intermittent sway</p> <p>2 <input type="checkbox"/> Constant sway, but able to sit for > 10 s without support</p> <p>3 <input type="checkbox"/> Able to sit for > 10 s only with intermittent support</p> <p>4 <input type="checkbox"/> Unable to sit for >10 s without continuous support</p>			<p>Speech is assessed during normal conversation.</p> <p>0 <input type="checkbox"/> Normal</p> <p>1 <input type="checkbox"/> Suggestion of speech disturbance</p> <p>2 <input type="checkbox"/> Impaired speech, but easy to understand</p> <p>3 <input type="checkbox"/> Occasional words difficult to understand</p> <p>4 <input type="checkbox"/> Many words difficult to understand</p> <p>5 <input type="checkbox"/> Only single words understandable</p> <p>6 <input type="checkbox"/> Speech unintelligible / anarthria</p>		
Score : _____			Score : _____		
5) Finger chase (Rated separately for each side)			6) Nose-finger test (Rated separately for each side)		
<p>Proband sits comfortably. If necessary, support of feet and trunk is allowed. Examiner sits in front of proband and performs 5 consecutive sudden and fast pointing movements in unpredictable directions in a frontal plane, at about 50 % of proband's reach. Movements have an amplitude of 30 cm and a frequency of 1 movement every 2 s. Proband is asked to follow the movements with his index finger, as fast and precisely as possible. Average performance of last 3 movements is rated.</p> <p>0 <input type="checkbox"/> No dysmetria</p> <p>1 <input type="checkbox"/> Dysmetria, under/ overshooting target <5 cm</p> <p>2 <input type="checkbox"/> Dysmetria, under/ overshooting target < 15 cm</p> <p>3 <input type="checkbox"/> Dysmetria, under/ overshooting target > 15 cm</p> <p>4 <input type="checkbox"/> Unable to perform 5 pointing movements</p>			<p>Proband sits comfortably. If necessary, support of feet and trunk is allowed. Proband is asked to point repeatedly with his index finger from his nose to examiner's finger which is in front of the proband at about 90% of proband's reach. Movements are performed at moderate speed. Average performance of movements is rated according to the amplitude of the kinetic tremor.</p> <p>0 <input type="checkbox"/> No tremor</p> <p>1 <input type="checkbox"/> Tremor with an amplitude < 2 cm</p> <p>2 <input type="checkbox"/> Tremor with an amplitude < 5 cm</p> <p>3 <input type="checkbox"/> Tremor with an amplitude > 5 cm</p> <p>4 <input type="checkbox"/> Unable to perform 5 pointing movements</p>		
Score	Right: _____	Left: _____	Score	Right: _____	Left: _____
Mean of both sides (R+L)/2			Mean of both sides (R+L)/2		
7) Fast alternating hand movements (Rated separately for each side)			8) Heel-shin slide (Rated separately for each side)		
<p>Proband sits comfortably. If necessary, support of feet and trunk is allowed. Proband is asked to perform 10 cycles of repetitive alternation of pro- and supinations of the hand on his/her thigh as fast and as precise as possible. Movement is demonstrated by examiner at a speed of approx. 10 cycles within 7 s. Exact times for movement execution have to be taken.</p> <p>0 <input type="checkbox"/> Normal, no irregularities (performs <10s)</p> <p>1 <input type="checkbox"/> Slightly irregular (performs <10s)</p> <p>2 <input type="checkbox"/> Clearly irregular, single movements difficult to distinguish or relevant interruptions, but performs <10s</p> <p>3 <input type="checkbox"/> Very irregular, single movements difficult to distinguish or relevant interruptions, performs >10s</p> <p>4 <input type="checkbox"/> Unable to complete 10 cycles</p>			<p>Proband lies on examination bed, without vision of his legs. Proband is asked to lift one leg, point with the heel to the opposite knee, slide down along the shin to the ankle, and to lay the leg back on the examination bed. The task is performed 3 times. Slide-down movements should be performed within 1 s.</p> <p>0 <input type="checkbox"/> Normal</p> <p>1 <input type="checkbox"/> Slightly abnormal, contact to shin maintained</p> <p>2 <input type="checkbox"/> Clearly abnormal, goes off shin up to 3 times during 3 cycles</p> <p>3 <input type="checkbox"/> Severely abnormal, goes off shin 4 or more times during 3 cycles</p> <p>4 <input type="checkbox"/> Unable to perform the task</p>		
Score	Right: _____	Left: _____	Score	Right: _____	Left: _____
Mean of both sides (R+L)/2			Mean of both sides (R+L)/2		