

Appendix – Trunk Impairment Scale (TIS)

The starting position for each item is the same. The patient is sitting on the edge of a bed or treatment table without back and arm support. The thighs make full contact with the bed or table, the feet are hip width apart and placed flat on the floor. The knee angle is 90°. The arms rest on the legs. If hypertonia is present the position of the hemiplegic arm is taken as the starting position. The head and trunk are in a midline position.

If the patient scores 0 on the first item, the total score for the TIS is 0.

Each item of the test can be performed three times. The highest score counts. No practice session is allowed.

The patient can be corrected between the attempts.

The tests are verbally explained to the patient and can be demonstrated if needed.

Item			
	Static sitting balance		
1	Starting position Patient crosses the unaffected leg over the hemiplegic leg	Patient falls or cannot maintain starting position for 10 seconds without arm support Patient can maintain starting position for 10 seconds If score = 0, then TIS total score = 0	<input type="checkbox"/> 0 <input type="checkbox"/> 2
2	Starting position Therapist crosses the unaffected leg over the hemiplegic leg	Patient falls or cannot maintain sitting position for 10 seconds without arm support Patient can maintain sitting position for 10 seconds	<input type="checkbox"/> 0 <input type="checkbox"/> 2
3	Starting position Patient crosses the unaffected leg over the hemiplegic leg	Patient falls Patient cannot cross the legs without arm support on bed or table Patient crosses the legs but displaces the trunk more than 10 cm backwards or assists crossing with the hand Patient crosses the legs without trunk displacement or assistance	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
		Total static sitting balance	/7
	Dynamic sitting balance		
1	Starting position Patient is instructed to touch the bed or table with the hemiplegic elbow (by shortening the hemiplegic side and lengthening the unaffected side) and return to the starting position	Patient falls, needs support from an upper extremity or the elbow does not touch the bed or table Patient moves actively without help, elbow touches bed or table If score = 0, then items 2 and 3 score 0	<input type="checkbox"/> 0 <input type="checkbox"/> 1
2	Repeat item 1	Patient demonstrates no or opposite shortening/lengthening Patient demonstrates appropriate shortening/lengthening If score = 0, then item 3 scores 0	<input type="checkbox"/> 0 <input type="checkbox"/> 1
3	Repeat item 1	Patient compensates. Possible compensations are: (1) use of upper extremity, (2) contralateral hip abduction, (3) hip flexion (if elbow touches bed or table further than proximal half of femur), (4) knee flexion, (5) sliding of the feet Patient moves without compensation	<input type="checkbox"/> 0 <input type="checkbox"/> 1
4	Starting position Patient is instructed to touch the bed or table with the unaffected elbow (by shortening the unaffected side and lengthening the hemiplegic side) and return to the starting position	Patient falls, needs support from an upper extremity or the elbow does not touch the bed or table Patient moves actively without help, elbow touches bed or table If score = 0, then items 5 and 6 score 0	<input type="checkbox"/> 0 <input type="checkbox"/> 1
5	Repeat item 4	Patient demonstrates no or opposite shortening/lengthening Patient demonstrates appropriate shortening/lengthening If score = 0, then item 6 scores 0	<input type="checkbox"/> 0 <input type="checkbox"/> 1

Item			
6 Repeat item 4	Patient compensates. Possible compensations are: (1) use of upper extremity, (2) contralateral hip abduction, (3) hip flexion (if elbow touches bed or table further than proximal half of femur), (4) knee flexion, (5) sliding of the feet Patient moves without compensation	<input type="checkbox"/> 0 <input type="checkbox"/> 1	
7 Starting position Patient is instructed to lift pelvis from bed or table at the hemiplegic side (by shortening the hemiplegic side and lengthening the unaffected side) and return to the starting position	Patient demonstrates no or opposite shortening/lengthening Patient demonstrates appropriate shortening/lengthening If score = 0, then item 8 scores 0	<input type="checkbox"/> 0 <input type="checkbox"/> 1	
8 Repeat item 7	Patient compensates. Possible compensations are: (1) use of upper extremity, (2) pushing off with the ipsilateral foot (heel loses contact with the floor) Patient moves without compensation	<input type="checkbox"/> 0 <input type="checkbox"/> 1	
9 Starting position Patient is instructed to lift pelvis from bed or table at the unaffected side (by shortening the unaffected side and lengthening the hemiplegic side) and return to the starting position	Patient demonstrates no or opposite shortening/lengthening Patient demonstrates appropriate shortening/lengthening If score = 0, then item 10 scores 0	<input type="checkbox"/> 0 <input type="checkbox"/> 1	
10 Repeat item 9	Patient compensates. Possible compensations are: (1) use of upper extremities, (2) pushing off with the ipsilateral foot (heel loses contact with the floor) Patient moves without compensation Total dynamic sitting balance	<input type="checkbox"/> 0 <input type="checkbox"/> 1	/10
Co-ordination			
1 Starting position Patient is instructed to rotate upper trunk 6 times (every shoulder should be moved forward 3 times), first side that moves must be hemiplegic side, head should be fixated in starting position	Hemiplegic side is not moved three times Rotation is asymmetrical Rotation is symmetrical If score = 0, then item 2 scores 0	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2	
2 Repeat item 1 within 6 seconds	Rotation is asymmetrical Rotation is symmetrical	<input type="checkbox"/> 0 <input type="checkbox"/> 1	
3 Starting position Patient is instructed to rotate lower trunk 6 times (every knee should be moved forward 3 times), first side that moves must be hemiplegic side, upper trunk should be fixated in starting position	Hemiplegic side is not moved three times Rotation is asymmetrical Rotation is symmetrical If score = 0, then item 4 scores 0	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2	
4 Repeat item 3 within 6 seconds	Rotation is asymmetrical Rotation is symmetrical Total co-ordination	<input type="checkbox"/> 0 <input type="checkbox"/> 1	/6
	Total Trunk Impairment Scale		/23