

Early Clinical Assessment of Balance
Version 1 (1/27/11)

Name: _____
Test Date: _____
Birthdate: _____
Sex: ___ Boy ___ Girl
Gross Motor Function Classification System (GMFCS) level: _____

PART I: Head and Trunk Postural Control TOTAL SCORE PART I (MAX 36): _____

PART II: Sitting & Standing Postural Control TOTAL SCORE PART II (MAX 64): _____

TOTAL ECAB SCORE (MAX 100): _____

Acknowledgement: This measure was created with use of items from the Movement Assessment of Infants (Chandler LS, Andrew MS, Swanson MW. *Movement Assessment of Infants: A Manual*. Rolling Bay, WA98061: P.O Box 4631; 1980) and the Pediatric Balance Scale (Franjoine MR, Gunther JS, Taylor MJ. Pediatric balance scale: a modified version of the berg balance scale for the school-age child with mild to moderate motor impairment. *Pediatr Phys Ther.* 2003;15(2):114-128).

Start testing the child with item 1 if the child is classified as GMFCS level III, IV or V. If the child is classified as GMFCS Level I or II, start with Part II, item 8. If the child has hemiplegia, start with Item 5. Continue testing until it is apparent that the child is not able to do the items.

PART I: Head and Trunk Postural Control

Circle the answer that most represents the child's ability. If you are unsure, then err to the lower score. Score both left and right side if indicated.

ECAB 1 HEAD RIGHTING - LATERAL

Hold the child in sitting on your lap, facing away from you. Support at the sides of the trunk and tilt the child slowly to one side to a 45-degree angle. Observe the response of the head. Repeat this procedure at least twice to each side; between trials, pause to stabilize the child in midline

(a) Left (b) Right

- | | | |
|---|---|-----------------------------------------------------------------------------------------------------------------------|
| 3 | 3 | Child consistently corrects head to vertical position |
| 2 | 2 | Child holds head in alignment with body; if moved gently, child may correct to vertical position |
| 1 | 1 | Child momentarily tightens muscles through the neck but does not consistently bring head into alignment with the body |
| 0 | 0 | Child does not attempt to align head with body |

ECAB 2 HEAD RIGHTING – EXTENSION

Place the child prone and observe from the side for at least 30 seconds

- 3 Child easily raises head in midline to face vertical and maintains this position
- 2 Child lifts head to face vertical but cannot sustain this position
Head may not be held in midline
- 1 Child lifts head but does not achieve face vertical position
- 0 Child does not lift head or makes futile attempts

ECAB 3 HEAD RIGHTING – FLEXION

Place the child supine with feet towards you. Hold the child at the wrists. If instability or weakness of the shoulder girdle is suspected, hold at the upper arms. Slowly pull the child to a sitting position; allow maximum active participation by the child. Observe the response of the head. If the child's fear of strangers appears to be interfering, ask a parent to perform this item

- 3 Child tucks chin in towards chest through the entire movement from supine to sitting. There may be a slight initial head lag.
- 2 Child does not tuck chin but holds head in line with body throughout the entire movement. There may be a slight initial head lag.
- 1 Child holds head in line with body through only a portion of the Movement
- 0 Child may momentarily tighten muscles through the neck but does not align head with body

ECAB 4 ROTATION IN TRUNK

Place the child supine with feet toward you and encourage the child to roll to prone. If the child rolls independently, look for distinct rotation between pelvis and shoulder girdle followed by realignment. If the child does not demonstrate definite trunk rotation or does not roll independently, try to rotate the trunk by flexing the child's hip and knee and bringing the leg across the body. Note limited or excessive mobility in trunk rotation as well as the child's ability to realign the shoulders with the pelvis by rolling to prone. The emphasis in this item is on quality of trunk rotation and not on the skill of rolling.

(a) Left (b) Right

3	3	When the child rolls independently from supine to prone, there is distinct rotation between pelvis and shoulder girdle, followed by realignment
2	2	When the examiner rotates the child's trunk, the child actively realigns the pelvis and shoulder girdle and rolls to prone
1	1	When the examiner rotates the child's trunk, the child cannot realign the pelvis and shoulder girdle, but normal mobility is present
0	0	Examiner cannot passively rotate the child's trunk

ECAB 5 EQUILIBRIUM REACTIONS IN SITTING

Place the child in sitting. If the child is unable to sit independently, support at the sides of the trunk as low as possible. Tilt the child to one side so as to shift the weight over one hip; push gently at one shoulder, push sideways at the hip, or encourage the child to reach for an object held out to the side at shoulder level. Observe the response of the head, trunk, and extremities on the non-weight bearing side. The focus of attention is on the trunk and extremities. Repeat this procedure at least twice to each side.

(a) Left (b) Right

3	3	Child exhibits incurvation of the trunk on the non-weight bearing side, righting of the head, and abduction of the arm and the leg on the concave side of the trunk. Child must be able to sit independently.
2	2	Child exhibits incomplete trunk incurvation and incomplete extremity counterbalancing with some degree of head righting
1	1	Child exhibits minimal trunk incurvation with head righting but no extremity counterbalancing
0	0	Child makes no correction of trunk or extremities

ECAB 6 PROTECTIVE EXTENSION – SIDE

Place the child in sitting. If the child is unable to sit independently, support at the sides of the trunk as low as possible. Push child gently but rapidly to one side. Observe the response of the child's arm on the side to which the child is pushed.

(a) Left (b) Right

3	3	Child prevents a fall with abduction of the arm, extension of the elbow, and support on open hand
2	2	Child abducts arm and extends elbow but supports on fist or does not consistently prevent a fall
1	1	Child abducts arm but does not extend elbow. Child may land on forearm
0	0	Child makes no attempt to prevent a fall by abduction or extension of the arm

ECAB 7 PROTECTIVE EXTENSION – BACKWARD

Place child in sitting. If child is unable to sit independently, support at the sides of the trunk as low as possible. Push child gently but rapidly backwards. Observe the child's ability to prevent a fall backwards.

(a) Left (b) Right

3	3	Child prevents a fall either by rotating the trunk and supporting weight on open hand or by extending both arms backwards and supporting on open hands
2	2	Child either rotates trunk and extends one arm or extends both arms backwards; however, weight is supported on fist or child does not consistently prevent a fall
1	1	Child partially rotates trunk but does not extend elbow. Child may land on forearm
0	0	Child makes no attempt to prevent a fall

PART 1: TOTAL SCORE PART I (MAX 36): _____

PART II: Sitting and Standing Postural Control:

Circle the answer that most represents the child’s ability. If you are unsure, then err to the lower score. Some items have a place to record the time for the activity. This information is used to determine the ordinal score, but can be used for more sensitive documentation of the child’s abilities.

In this section, demonstrate each task and/or give instructions as written. A participant may receive a practice trial on each item. If the participant is unable to complete the task based on their ability to understand the directions, a second practice trial may be given. Verbal and visual directions may be clarified through use of physical prompt.

ECAB 8 SITTING WITH BACK UNSUPPORTED BUT FEET SUPPORTED ON FLOOR OR ON A STOOL

“Please sit with arms folded on your chest for 30 seconds”

(Child may be engaged in non-stressful conversation to maintain attention span for 30 seconds. Time should be stopped if protective reactions are observed in trunk or upper extremities.)

	Ordinal Score	Summary score	
(a)	4	6	Able to sit safely and securely 30 seconds
	3	4.5	Able to sit 30 seconds under supervision (spotting) or may require definite use of upper extremities to maintain sitting position
	2	3	Able to sit 15 seconds
	1	1.5	Able to sit 10 seconds
	0	0	Unable to sit without support 10 seconds
(b)	Time in seconds _____		

ECAB 9 SITTING TO STANDING

“Hold arms up and stand up”

(Use a bench of appropriate height to allow the child’s feet to rest supported on the floor with hips and knees maintained in 90 degrees of flexion.)

BEST OF Three Trials

Trial 1: _____; Trial 2: _____; Trial 3: _____

	Ordinal Score	Summary score	
	4	6	Able to stand without using hands and stabilize independently
	3	4.5	Able to stand independently using hand
	2	3	Able to stand using hands after several tries
	1	1.5	Needs minimal aid to stand or to stabilize
	0	0	Needs moderate or maximal assist to stand

ECAB 10 STANDING UNSUPPORTED WITH EYES CLOSED

“When I say close your eyes, I want you to stand still, close your eyes, and keep them closed until I say open”

(The subject is asked to stand still with feet shoulder width apart. If necessary, a blindfold may be used. Weight shifting and equilibrium responses in the feet are acceptable; movement of the foot in space (off the support surface) indicates end of timed trial. A taped line or footprints may be placed on the floor to help the subject maintain a stationary foot position.)

BEST OF Three Trials

(Record seconds, then use BEST to mark ordinal score)

Trial 1: _____; Trial 2: _____; Trial 3: _____

Ordinal Summary

Score score

4	10	Able to stand 10 seconds safely
3	7.5	Able to stand 10 seconds with supervision
2	5	Able to stand 3 seconds
1	2.5	Unable to keep eyes closed 3 seconds but stays steady
0	0	Needs help to keep from falling

ECAB 11 STANDING UNSUPPORTED WITH FEET TOGETHER

“Place your feet together and stand still without holding on.”

(A taped line or footprints may be placed on the floor to help the subject maintain a stationary foot position. The child may be engaged in non-stressful conversation to maintain attention span for 30 seconds. Weight shifting and equilibrium responses in feet are acceptable; movement of the foot in space (off the support surface) indicates end of the times trial.)

Ordinal Summary

Score score

(a)	4	10	Able to place feet together independently and stand 30 seconds safely
	3	7.5	Able to place feet together independently and stand for 30 seconds with supervision (spotting)
	2	5	Able to place feet together independently but unable to hold for 30 seconds
	1	2.5	Needs help to attain position but able to stand 30 seconds feet together
	0	0	Needs help to attain position and unable to hold for 30 seconds

(b) Time in seconds _____

ECAB 12 TURNS 360 DEGREES

“Turn completely around in a full circle, STOP, and then turn a full circle in the other direction.”

Ordinal Summary

Score score

- | | | | |
|-----|---|----|-----------------------------------------------------------------------------------------------------------------------|
| (a) | 4 | 16 | Able to turn 360° safely in 4 seconds or less each way (total ≤ 8 sec) |
| | 3 | 12 | Able to turn 360° safely in one direction only in 4 seconds or less; completes turn in other direction in > 4 seconds |
| | 2 | 8 | Able to turn 360° safely, but slowly |
| | 1 | 4 | Needs close supervision (spotting) or constant verbal cueing |
| | 0 | 0 | Needs assistance while turning |
- (b) Time in seconds- **total (Turn left + Turn right)** _____

ECAB 13 PLACING ALTERNATE FOOT ON THE STEP WHILE STANDING UNSUPPORTED

“Place each foot alternately on the step stool, continue until each foot touches the step 4 times.”

Ordinal Summary

Score score

- | | | |
|---|----|--------------------------------------------------------------------------|
| 4 | 16 | Stands independently and safely and complete 8 steps in 20 seconds |
| 3 | 12 | Able to stand independently and complete 8 steps > 20 seconds |
| 2 | 8 | Able to complete 4 steps without assistance, but with supervision |
| 1 | 4 | Able to complete 2 steps; needs minimal assistance |
| 0 | 0 | Needs assistance to maintain balance or keep from falling; unable to try |

Two scores are listed, the ordinal scores (0-4) and the summary scores that adjust for the difficulty of the items. Add the Summary scores in the second column for the Part 2 Total score, ignoring the values for time in seconds recorded for administrative purposes.

PART 2: TOTAL SCORE PART II (MAX 64): _____