



### **Movement (EMI) Scoring Definitions**

Scoring procedures are designed to record gross motor behavior of the target child. Discrete behavior of the target child is coded as a discrete event. Scoring of these key element behaviors includes Postural Stability, Transitional Movements, Locomotion, Throwing/Rolling, and Catching/Trapping.

Each element is coded separately as it occurs in a situation. All elements are coded using a frequency count. Each instance of a behavior is counted and recorded with a tally mark. Coding forms have different sections for each key element and are separated into each minute of testing.

**Definitions of Movement Key Elements**

**Transitional Movements**

Transitional Movements are motions used by a child to achieve a new position within a posture or to a new posture. This can include movement within a stable posture (changing the primary weight bearing surface), or moving from one distinct posture (lying in supine or prone, sitting, kneeling, stooping, standing) to another. An episode begins when a child begins moving from a stable position to a new position. The episode ends when the child has regained a stable position or begins locomotion.

Includes:	Excludes:
<ul style="list-style-type: none"> <li>• Rolling to stomach from back.</li> <li>• Rolling to back from stomach.</li> <li>• Rolling to side from back or stomach.</li> <li>• Moving in and out of sitting position.</li> <li>• Standing up.</li> <li>• Kneeling down on knees.</li> <li>• Stooping (bending at knees).</li> <li>• Rocking back and forth in crawling position (counts as one episode unless child changes into a new position; e.g., two episodes would be counted when the child is in crawl position and rocks back and forth, then sits down and then moves back to the crawl position and rocks again).</li> <li>• Bouncing up and down by bending knees, in a standing position (counts as one episode unless child changes into a new position; e.g., two episodes would be counted when the child holds onto table and bounces knees while standing, then stoops down and stands again to bounce).</li> <li>• Child lying on stomach holding self up on arms (either forearms or extended arms) for at least 3 seconds.</li> <li>• Movement within a stable posture, a child shifts weight in a very obvious way to lean forward or sideways from a stable position into another stable position. The weight bearing surface must change, it is not enough to simply lean forward or to one side (e.g., child is leaning on one hand, and changes position to lean on other hand; child is kneeling and moves body weight to the side to push a ball to a partner).</li> </ul>	<ul style="list-style-type: none"> <li>• Adult helps child roll over.</li> <li>• Child attempts to roll over and not making it all the way over, and ends up in original position.</li> <li>• Adult helps child move to sitting, kneeling, stooping, or standing.</li> <li>• Child lifting head up in prone position (must lift up on arms to be counted).</li> <li>• Bouncing with feet.</li> <li>• Rolling over and over repeatedly across the floor.</li> <li>• Any movement coded under locomotion.</li> </ul>

**Locomotion**

Locomotion involves movements that transport the body forward/backward/ sideways or upward from one point in space to another. Locomotion consists of the following sub-categories. All are coded in the locomotion key element category.

**Grounded Locomotion**

Grounded locomotion is horizontal to the ground, and does not use upright postures when moving. It is movement that is used by children to propel the body forward, backward or sideways.

Includes:	Excludes:
<ul style="list-style-type: none"> <li>• Moving on belly from one location to the next, either forward, backward or sideways (pivot in prone).</li> <li>• Thrusting arms forward and then subsequently flexing them in a movement that leads to a slight forward or backward movement.</li> <li>• Scooting by sitting on bottom and wiggling legs and bottom to move forward or backward.</li> <li>• Crawling, stopping, but not changing position and then continuing to crawl.</li> <li>• Crawling on 4 or 3 limbs (Either hands and knees or hands and feet).</li> <li>• If child stops for more than 3 seconds count as a new episode.</li> <li>• Rolling over and over across the floor (more than rolling from one position to another, e.g., rolling once from back to stomach).</li> </ul>	<ul style="list-style-type: none"> <li>• Lying on stomach and making swimming-like movements.</li> <li>• Lying on stomach and lifting up on arms to view an object.</li> <li>• Rolling over once.</li> </ul>

**Vertical Locomotion**

Vertical locomotion is movement in an upright position intended to move the child forward, backward, or sideways.

Includes:	Excludes:
<ul style="list-style-type: none"> <li>• Cruising – walking while holding on to furniture for support.</li> <li>• Walking is alternating feet and one foot is always on the floor. Walking must stop for at least 3 seconds before occurring again in order to be coded as 2 separate occasions (unless a child engages in a different motor behavior).</li> <li>• Walking up or down stairs.</li> <li>• Walking sideways.</li> <li>• Walking while hanging on to an object such as a push walker.</li> <li>• Running is alternating feet and involves a brief period of no contact with the floor.</li> <li>• Jumping up when throwing a ball.</li> <li>• Jumping off of an object.</li> <li>• Taking off on one foot and landing on the same foot.</li> <li>• Climbing on an object or apparatus in which the child moves upward alternating arms and legs (e.g., lifting self on top of a foam tunnel, using arms and legs to crawl on top).</li> </ul>	<ul style="list-style-type: none"> <li>• Walking while supported by an adult (adult hangs on to child’s hands).</li> <li>• Walking while supported by a walker in which the child sits in a seat that supports the child’s weight.</li> <li>• Adult lifting child up on top of apparatus or furniture (even if child had been attempting to lift self up).</li> </ul>

**Throwing/Rolling**

Throwing is propelling an object through the air. Rolling is pushing a circular object so it rolls away from the child’s body.

Includes:	Excludes:
<ul style="list-style-type: none"> <li>• Throwing an object using an over-arm, underarm, or sidearm throw</li> <li>• Can throw backward</li> <li>• Object does not have to hit what child was aiming at</li> <li>• Rolling an object toward a person, a target, or to experience the movement</li> <li>• Pushing an object away from the child’s body that may fly through the air for a short distance and then roll on the ground</li> </ul>	<ul style="list-style-type: none"> <li>• Bringing back arm, but dropping an object before releasing it</li> <li>• Pushing at an object, but it does not move forward</li> </ul>

**Catching/Trapping**

Catching is bringing an airborne object under control using hands and arms. Trapping is stopping a moving object (moving through the air or rolling on the ground) with hands, arms, legs, body.

Includes:	Excludes:
<ul style="list-style-type: none"> <li>• Catching an object with hands or arms or trapping it against the body</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>