

Appendix E: Scoring Criteria Definitions

Each criterion was scored dichotomously as 0 (absent) or 1 (present). Greater task totals indicate more observed deviations; interpretation of rolling scores requires caution because controls received greater scores than the scoliosis groups. The task maxima were rolling 4, crawling 6, knee-walking 6, tall-kneeling to half-kneeling 6, and half-kneeling to standing 8.

Rolling

Both criteria were scored separately for supine-to-prone and prone-to-supine rolling (maximum score 4).

- **Difficulty initiating movement:** Multiple attempts or distinct shifts in momentum needed to complete the movement.
- **Uncontrolled descent:** Fast completion of the movement due to momentum or gravity; may be characterized by a “plop” during descent.

Crawling

- **Sway:** Lateral movement of the hips in the frontal plane outside shoulder width.
- **Lack of reciprocal pattern:** The left upper extremity does not move in association with the right lower extremity, and vice versa.
- **Upper extremity moves outside shoulder width:** One or both upper extremities move outside shoulder width, increasing the base of support.
- **Upper extremity instability:** Buckling, oscillation, or wavering of either upper extremity to prevent loss of balance.
- **Multiple attempts at hand placement:** A hand touches the floor in two or more distinct places before the lower extremities advance.
- **Lower extremity moves outside hip width:** One or both lower extremities move outside hip width.

Knee-walking

- **Trunk lateral lean:** Deviation of the shoulders and upper trunk from vertical in the frontal plane during lower-extremity advancement.
- **Trunk instability:** Abrupt deviation or wavering of the trunk to prevent loss of balance.
- **Inconsistent path of arm swing:** Either upper extremity deviates from a consistent path of movement or side-to-side asymmetry is present.
- **Use of outside support:** Contact with an external object or person for support, including an upper extremity touching the floor.
- **Upper extremity instability:** Oscillation or wavering of either upper extremity to prevent loss of balance.
- **Inconsistent stride length:** Variable distance of knee placement when advancing forward or backward.

Tall-kneeling to half-kneeling

- **Trunk lateral lean:** Deviation of the shoulders and upper trunk from vertical in the frontal plane between tall-kneeling and final foot placement.
- **Upper extremity instability:** Oscillation or wavering of either upper extremity to prevent loss of balance.
- **Upper extremity touches the floor:** Either upper extremity touches the floor between tall-kneeling and final foot placement.
- **Use of outside support:** Contact with an external object or person for support, including hand-holding or use of furniture.
- **Multiple attempts at foot placement:** The foot touches the floor in two or more distinct places during the transition from tall-kneeling to half-kneeling.
- **Lower extremity instability:** Oscillation or wavering of either lower extremity during the transition from tall-kneeling to half-kneeling.

Half-kneeling to standing

- **Trunk lateral lean:** Deviation of the shoulders and upper trunk from vertical in the frontal plane during the transition from half-kneeling to standing.
- **Use of outside support:** Contact with an external object or person for support, including an upper extremity touching the floor.
- **Upper extremity used to push off knee:** Either upper extremity pushes on a knee to assist the transition to standing.
- **Upper extremity instability:** Oscillation or wavering of either upper extremity to prevent loss of balance.
- **Knee valgus:** The patella of either weight-bearing lower extremity moves medial to the great toe.
- **Knee varus:** The patella of either weight-bearing lower extremity moves lateral to the fifth toe.
- **Multiple attempts at foot placement:** Either foot touches the floor in two or more distinct places during the transition from half-kneeling to standing.
- **Lower extremity instability:** Oscillation or wavering of either lower extremity during the transition to upright standing and final foot placement.