eAppendix.
Modified Dynamic Gait Index (mDGI)[a]

1. **Gait on Level Surface**

   Equipment: measuring tape, masking tape for floor, stopwatch.

   Setup: A 23-ft distance is needed for this test. Mark the beginning of the walking course with a piece of tape. Place a piece of tape at the 10-ft and 20-ft points; participant should be instructed to continue walking another 3 ft past the 20-ft point another.

   Instructions to Participant: Begin with your toes on this line. When I tell you "Begin," start walking at your normal pace from here to past this line (point out the 20-ft line to the participant). Make sure you continue to walk past this line. Do you understand what I want you to do? Are you ready? Begin.

   Examiner Instructions and Grading: Timing begins when the tester says "Begin." Stop timing when the first foot crosses the 20-ft line. Circle ordinal score for level of assistance and gait pattern. Mark the lowest category that applies.

   Time: _____s

   Ordinal Time Level: _____
   (3) <6.0 s
   (2) 6.0–7.6 s
   (1) 7.7–15.2 s
   (0) >15.2 s or unable

   Gait Pattern:
   (3) Normal: Walks 20 ft, normal gait pattern, no evidence for imbalance.
   (2) Mild Impairment: Walks 20 ft, mild gait deviations or mild imbalance.
   (1) Moderate Impairment: Walks 20 ft, moderate gait deviations, clear evidence for imbalance, but recovers independently.
   (0) Severe Impairment: Cannot walk 20 ft, walks with severe gait deviations, or cannot maintain balance independently.

   Level of Assistance
   (2) No assistance
   (1) Used an assistive device (excludes orthosis or brace)
   (0) Required the physical assistance of another person (includes contact guard)

2. **Change in Gait Speed**

   Setup: Same as item 1.

   Instructions to Participant: Begin with your toes on this line. When I tell you "Begin," start walking at your normal pace. When I say "Go fast," I want you to walk as quickly and safely as you can until I tell you to stop. Do you understand what I want you to do? Are you ready? Begin.

   Examiner Instructions and Grading: Timing begins when the tester says "Begin." Stop timing when the first foot crosses the 20-ft line. At 10 ft, tell the participant to "go fast." Observe whether the participant is able to significantly change speed, evidence for gait or balance problems. Circle the score for level of assistance and gait pattern. Mark the lowest category that applies.

   Time: _____s

   (Continued)

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Ordinal Time Level: _____
(3) <4.9 s
(2) 4.9–6.8 s
(1) 6.9–11.7 s
(0) >11.7 s or unable

Gait Pattern:
(3) Normal: Able to smoothly change walking speed without loss of balance or gait deviation. Shows a significant difference in walking speeds between normal and fast speeds.
(2) Mild Impairment: Is able to change speed but demonstrates mild gait deviations or mild imbalance.
(1) Moderate Impairment: Makes only minor adjustments to walking speed with significant gait deviations or loses balance but is able to recover and continue walking.
(0) Severe Impairment: Cannot change speeds or loses balance and is unable to recover independently.

Level of Assistance
(2) No assistance
(1) Used an assistive device (excludes orthosis or brace)
(0) Required the physical assistance of another person (includes contact guard)

3. Gait With Horizontal Head Turns

Setup: Same as item 1.

Instructions to Participant: Begin with your toes on this line. When I say "Begin," start walking at your normal pace. When I tell you "Look right," keep walking straight but turn your head to the right. Keep looking right until I tell you "Look left," then keep walking straight and turn your head to the left until I tell you "Look straight," then keep walking straight but return your head to the center. Do you understand what I want you to do? Are you ready? Begin.

Examiner Instructions and Grading: Timing begins when the tester says "Begin." Stop timing when the first foot crosses the 20-ft line. After the participant has walked about 3 steps, ask him or her to look right; after about 3 more steps, ask him or her to look left; and after about 3 steps ask him or her to look straight. Circle ordinal score for level of assistance and gait pattern. Mark the lowest category that applies.

Time: _____s

Ordinal Time Level: _____
(3) <6.2 s
(2) 6.2–8.5 s
(1) 8.6–14.5 s
(0) >14.5 s or unable

Gait Pattern:
(3) Normal: Performs head turns smoothly with no change in gait pattern or evidence of imbalance.
(2) Mild Impairment: Mild reduction in head motion or performs head turns with mild changes in gait pattern, or minor disruption to gait path or mild imbalance.
(1) Moderate Impairment: Moderate reduction in head motion or performs head turns with moderate change in gait pattern, or moderate imbalance but recovers independently.
(0) Severe Impairment: Unable to turn head or performs head turns with severe disruption of gait (ie, staggers outside 15-in path) or stops, or loses balance and is unable to recover independently.

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Level of Assistance
(2) No assistance
(1) Used an assistive device (excludes orthosis or brace)
(0) Required the physical assistance of another person (includes contact guard)

4. Gait With Vertical Head Turns

Setup: Same as item 1.

Instructions to Participant: Begin with your toes on this line. When I tell you "Begin," start walking at your normal pace. When I tell you "Look up," keep walking straight but tilt your head and look up to the ceiling. Keep looking up until I tell you "Look down," then keep walking straight and tilt your head down and look at the floor until I tell you "Look straight," then keep walking straight but return your head to the center. Do you understand what I want you to do? Are you ready? Begin.

Examiner Instructions and Grading: Timing begins when the tester says "Begin." After the participant has walked about 3 steps, ask him or her to look up; after about 3 more steps, ask him or her to look down; and after about 3 steps, ask him or her to look straight. Stop timing when the first foot crosses the 20-ft line. Circle ordinal score for level of assistance and gait pattern. Mark the lowest category that applies.

Time: _____s

Ordinal Time Level: _____
(3) <6.0 s
(2) 6.0–8.2 s
(1) 8.3–13.9 s
(0) >13.9 s or unable

Gait Pattern:
(3) Normal: Performs head turns smoothly, with no change in gait pattern or evidence of imbalance.
(2) Mild Impairment: Mild reduction in head motion or performs head turns with mild changes in gait pattern or minor disruption to gait path or mild imbalance.
(1) Moderate Impairment: moderate reduction in head motion or performs head turns with moderate change in gait pattern, or moderate imbalance but recovers independently.
(0) Severe Impairment: Unable to turn head or performs head turns with severe disruption of gait (ie, staggers outside 15-in path) or stops, or loses balance and is unable to recover independently.

Level of Assistance
(2) No assistance
(1) Used an assistive device (excludes orthosis or brace)
(0) Required the physical assistance of another person (includes contact guard)

5. Gait and Pivot Turn: _____

Setup: Place a piece of tape at the end of the 10 ft; participant will be asked to turn around at the 10-ft point.

Instructions to Participant: Begin with your toes on this line. When I tell you "Begin," start walking at your normal pace. When I tell you "Turn around," turn around as quickly and safely as you can and walk back to the starting point. Do you understand what I want you to do? Are you ready? Begin.

Examiner Instructions and Grading: Timing begins when the tester says "Begin." Ask the participant to turn around at the 10-ft mark. Stop timing when the first foot crosses the line at the start of the course. Circle ordinal score for level of assistance and gait pattern. Mark the lowest category that applies.

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Time: _____s

Ordinal Time Level: _____
(3) <6.9 s
(2) 6.9–9.4 s
(1) 9.5–16.9 s
(0) >16.9 s or unable

Gait Pattern:
(3) Normal: Pivot turns safely using ≤3 steps and continues walking in opposite direction with no gait deviations and no imbalance.
(2) Mild Impairment: Turns using 4 to 5 steps and shows mild gait deviations or imbalance before, during, or after turning.
(1) Moderate Impairment: Turns using >5 steps and has moderate gait deviation or imbalance before, during, or after turning but is able to recover independently.
(0) Severe Impairment: Cannot turn safely, loses balance, and is unable to recover independently.

Level of Assistance
(2) No assistance
(1) Used an assistive device (excludes orthosis or brace)
(0) Required the physical assistance of another person (includes contact guard)

6. Step Over Obstacle: _____

Equipment: Measuring tape, masking tape for floor, stopwatch, 2 semirigid pieces of foam rectangles (dimensions: 76 cm long, 12 cm wide, 5 cm thick).

Setup: A 23-ft distance is needed for this test. Mark the beginning of the walking course with a piece of tape. Place the first obstacle with the 12-cm side flat on the floor at 8 ft from the start. Place the second obstacle with the 12-cm side up 8 ft past the first obstacle (about 16 ft from the start). Place a piece of tape at the end of the 20-ft distance.

Instructions to Participant: Begin with your toes on this line. When I tell you "Begin," start walking at your normal pace. When you come to each obstacle, step over and keep walking to past this line (point out the 20-ft line on the floor). Do you understand what I want you to do? Are you ready? Begin.

Examiner Instructions and Grading: Timing begins when the tester says "Begin." Stop timing when the first foot crosses the 20-ft line but make sure the participant keeps walking 3 ft past the 20-ft mark. Make sure to observe whether the participant clears both obstacles completely without touching them with either the lead or trailing foot. Circle an ordinal score for level of assistance and gait pattern. Mark the <u>lowest</u> category that applies.

Time: _____s

Ordinal Time Level: _____
(3) <6.0 s
(2) 6.0–8.5 s
(1) 8.6–17.4 s
(0) >17.4 s or unable

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Gait Pattern:

(3) Normal: Is able to step over and clear both obstacles without changing gait speed, no evidence for gait deviations or imbalance.

(2) Mild Impairment: Is able to step over and clear both obstacles but with mild gait deviations (eg, slowing down and adjusting steps to clear obstacles) or mild imbalance.

(1) Moderate Impairment: Is able to step over the obstacles but must stop, then step over, or strikes an obstacle or is significantly unsteady when crossing but able to recover without assistance.

(0) Severe Impairment: Cannot step over one or both obstacles or loses balance and is unable to recover independently.

Level of Assistance

(2) No assistance

(1) Used an assistive device (excludes orthosis or brace)

(0) Required the physical assistance of another person (includes contact guard)

7. Steps Around Obstacles: _____

Equipment: Measuring tape, masking tape for floor, stopwatch, 2 semirigid foam cylinders (dimensions: 76 cm long, 12 cm diameter).

Setup: A 23-ft distance is needed for this test. Mark the beginning of the walking course with a piece of tape. Place the first foam cylinder upright 8 ft from start. Place the second foam cylinder upright 8 ft past the first cylinder (about 16 ft from the start). Place a piece of tape at the end of the 20-ft distance but make sure there is another 3 ft of walking distance past this line.

Instructions to Participant: Begin with your toes on this line. When I tell you "Begin," start walking at your normal pace. When you come to the first obstacle, walk around it to the left. When you come to the second obstacle, walk around it to the right and keep walking till I tell you to stop. Do you understand what I want you to do? Are you ready? Begin.

Examiner Instructions and Grading: Timing begins when the tester says "Begin." Stop timing when the first foot crosses the 20-ft line but make sure the participant keeps walking 3 ft past the 20-ft mark. Make sure to observe whether the participant touches or brushes the foam cylinders as he or she walks by. Circle an ordinal score for level of assistance and gait pattern. Mark the lowest category that applies.

Time: _____s

Ordinal Time Level: _____

(3) <6.0 s

(2) 6.0–8.2 s

(1) 8.2–14.5 s

(0) >14.5 s or unable

Gait Pattern:

(3) Normal: Is able to walk around both cylinders with normal gait pattern and no evidence of imbalance.

(2) Mild Impairment: Is able to walk around both cylinders but shows mild gait deviations (ie, may need to slow down and adjust steps) or shows mild imbalance.

(1) Moderate Impairment: Is able to walk around both cylinders but shows moderate gait deviations (ie, must stop, then step around), or touches one or both cylinders, or has moderate imbalance but is able to recover independently.

(0) Severe Impairment: Cannot step around one or both cylinders, or loses balance and is unable to recover independently.

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Level of Assistance
(2) No assistance
(1) Used an assistive device (excludes orthosis or brace)
(0) Required the physical assistance of another person (includes contact guard)

8. Up Stairs: _____

Equipment: 10 steps with railing, stopwatch.

Setup: Position participant at the bottom of the stairs.

Instructions to Participant: When I tell you "Begin," start walking up the stairs as you would at home or in the community. If you normally use a rail, do so. Walk to the top of the stairs and stop. Do you understand what I want you to do? Are you ready? Begin.

Examiner Instructions and Grading: Timing begins when the tester says "Begin." Stop timing when both of the participant's feet are on the 10th step (or landing). Circle an ordinal score for level of assistance and gait pattern. Mark the lowest category that applies.

Time: _____

Ordinal Time Level: _____
(3) <6.1 s
(2) 6.1–9.0 s
(1) 9.1–19.7 s
(0) >19.7 s or unable

Gait Pattern:
(3) Normal: Alternating feet, no rail.
(2) Mild Impairment: Alternating feet, must use rail.
(1) Moderate Impairment: Two feet to a stair, must use rail.
(0) Severe Impairment: Cannot do safely.

Level of Assistance
(2) No assistance
(1) Used an assistive device (excludes orthosis or brace)
(0) Required the physical assistance of another person (includes contact guard)

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mDGI Score Sheet

	Time (0–3)	Gait Pattern (0–3)	Level of Assistance (0–2)	Total Task Score (0–8)
Task Scores				
Usual Pace Task				
Change Pace Task				
Horizontal Head Turns Task				
Vertical Head Turns Task				
Pivot Turn Task				
Stepping Over Obstacles Task				
Stepping Around Obstacles Task				
Stairs Task				
	Time (0–24)	Gait Pattern (0–24)	Level of Assistance (0–16)	
Performance Scores				
mDGI total score (0–64)				

[a] 1 ft=0.3048 m, 1 in=2.54 cm. Modified Dynamic Gait Index score sheet used with permission from Dr Shumway-Cook.