SCl Standing and Walking Assessment
TOOLKIT FOR SCI STANDING AND WALKING ASSESSMENT

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Numerous other experts in the field of ambulation involving individuals with SCI were consulted in the development of these assessment tools. This initiative would not have been possible without the diligence and tenacity of those involved.

For questions or comments on this toolkit, please contact clinical@rickhanseninstitute.org.
About RHSCIR

The RICK HANSEN SPINAL CORD INJURY REGISTRY (RHSCIR) is a pan-Canadian prospective observational registry located at 31 major Canadian acute care and rehabilitation facilities. Of these 31 facilities, 13 offer rehabilitation services, 16 offer acute services and two offer combined services. Across Canada, RHSCIR is collecting comprehensive SCI data for the purpose of improving SCI care and clinical outcomes. Using standardized research protocols and data collection forms, RHSCIR tracks the experiences and outcomes of people with traumatic SCI during their journey from injury, through acute care, rehabilitation to community reintegration and beyond. Details about participants' spinal cord injuries including extent of injury and level of paralysis, recovery, and success of various treatments are among the data recorded.

The data collected in RHSCIR contains powerful information that will help track the effectiveness of specific treatments, practices or programs for improving functional outcomes and quality of life after SCI. RHSCIR promotes, encourages and supports the pursuit of excellence in all areas of SCI health care management.

To learn more about RHSCIR, please visit www.rickhanseninstitute.org.

RHSCIR sites are located in 15 cities across Canada.
The ability to stand and walk is a very important goal for many individuals with spinal cord injury. This toolkit focuses on various levels or thresholds of functional abilities and then links appropriate outcome measures to use when patients reach these thresholds. These outcome measures allow clinicians to test the patient’s readiness for walking, as well as to assist in identifying areas of deficit that need to be addressed clinically.

The information collected in these modules will be added to RHSCIR. Our team of clinical and data experts will provide you and your program with data entry, analysis services and nationally-benchmarked reports available free of charge. This information will assist in providing validated and supported evidence-based practice with the potential to improve efficiencies in the health care system and ultimately improve outcomes for individuals living with spinal cord injury.

Benefits to Patients and Clinicians

Collection and reporting of this data can benefit patients, physical therapists and clinicians by:

- Setting realistic, timely goals with the patient.
- Monitoring a patient’s progress.
- Directing therapeutic interventions and priorities.
- Determining whether the patient is ready for progression in standing and walking skills.
- Determining whether patients are able to stand or ambulate independently and safely.
- Improving patient’s knowledge and confidence of what they are currently safe to do in standing or walking.
- Evaluating when it might be advisable to use a wheelchair or some other form of mobility aid for safety or energy conservation reasons.
- Understanding the meaningfulness of walking ability for the home, workplace and community.
- Identifying patients have the most potential for walking recovery. This ensures proper outpatient follow-up to develop the skills which lead to community ambulation.
- Resourcing walking rehabilitation programs over the life course for fitness purposes.
- Implementing physical therapy interventions customized to specific patient’s goals in the context of their potential capabilities.
Benefits to Program

Collection and reporting of this data can benefit the Program by:

➤ Implementing standardized assessment tools for functional walking to ensure safe and effective mobility and mobility treatments at your facility.

➤ Ensuring the utilization of walking programs for health benefits as part of clinical practice.

➤ Determining required equipment and supplies to optimize clinical practice and safety (e.g. walking aids, transfer aids, body weight support treadmills, orthoses, robot aided gait training devices etc.).

➤ Guiding falls prevention programs and meeting Accreditation Canada’s Required Organizational Practice regarding falls.

➤ Continuity between health care providers with regard to standing and walking mobility.

➤ Offering comparators to national data to ensure your facility is providing a high standard of care.

➤ Reporting metrics to facility administrators which may assist with determining staffing allocation and budget priorities.

➤ Assisting in development of standardized standing and walking therapy protocols.

Benefits to Research

Collection and reporting of this data can benefit research by:

➤ Providing a larger sample size of data from the SCI population across Canada which will allow for more accurate and meaningful interpretation and analysis.

➤ Developing and participating in clinical trials designed to evaluate the efficacy of interventions to optimize walking capacity.

➤ Evaluating the effectiveness of various treatment approaches.

➤ Assisting with the creation of best practice guidelines in walking assessment with the SCI population.

➤ Assisting in identifying research priorities and work with clinicians to develop research questions and proposals.
What Happens Once I Collect the Data?

Providing invaluable data to RHSCIR: Once you collect the data, your facility’s Rick Hansen Spinal Cord Injury Registry (RHSCIR) coordinator will collect this information and input the data into the registry database along with additional relevant clinical information. The national RHSCIR team has developed a number of practices to ensure patient confidentiality is maintained and strict privacy policies and procedures are adhered to.

Providing a baseline for walking management across Canada: The de-identified data from your site will be aggregated and reported back on a biannual basis and will provide information on your hospital’s RHSCIR patients who stand and walk.

To access your site’s data reports, log into the Supporting Clinical Initiatives in SCI (SCI²) resource site at http://sci2.rickhanseninstitute.org. Please see your local RHSCIR Coordinator, or designated representative, to receive log in information that’s required for data access. You can also email us at clinical@rickhanseninstitute.org.

You can also access SCI² by visiting www.rickhanseninstitute.org.
In order to implement this Standing and Walking Initiative there are environmental, personnel and knowledge requirements that are outlined below. Along with the material and resources in this toolkit, each RHSCIR site will have an assigned clinical lead that will be a resource to the clinical staff regarding the details of completing and collecting the data in the module. Any additional questions can be sent to us by email at clinical@rickhanseninstitute.org.

**Equipment/Time/Personnel**

Each outcome measure will have detailed instructions as well as equipment requirements and time requirements. The Outcome Measures selected for this module are:

- Berg Balance Scale (BBS)
- Modified Timed Up and Go (mTUG)
- Activities Specific Balance Confidence Scale (ABC - discharge only)
- Modified Spinal Cord Injury Functional Ambulation Profile (mSCI - FAP - advanced only)
- Modified MiniBESTest (mMiniBESTest - research only)
- Modified 6 Minute Walk Test (m6MWT)
- 10 metre walk test (10MWT)

Any of these forms can be used by your facility to collect data on non-RHSCIR participants and promote ongoing best practice.

**How Do I Decide Which Outcome Measures to Use and When to Use It?**

A flow sheet has been developed to direct when to administer the various outcome measures with your patients.

See next page.
[ ASSESSMENT GUIDELINE ]
Canadian SCI Standing and Walking Assessment Tool

Stage 0: Non-independent sitting capacity (no assessments required)

Stage 0.5: Independent sitting capacity (no assessments required)

Stage 1: Standing capacity
- 1A
- 1B: BBS
- 1C

Stage 2: Therapeutic walking capacity (indoors)
- 2A
- 2B: mMini-BESTest
- 2C

Stage 3: Functional walking (outdoors)
- 3A
- 3B: m6MWT
- 3C: 10MWT

Stage 4: Full walking capacity

Canadian SCI Standing & Walking Measures (SWM)
- SWM
- Advanced SWM
- Research SWM

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Clinical Data Collection Form

There are data collection forms for each specific outcome measure as well as a Standing and Walking Tracking Form. This tracking form is used to collect data regarding what stage each patient is at during their rehabilitation stay. This information is to be collected at least at admission and upon discharge. The definitions of the various stages identified on the tracking form are outlined in detail in the following pages.

The Canadian Standing and Walking Measures (SWM) are being collected by eight RHSCIR rehabilitation facilities.

There are three levels of collection:

- The SWM. This includes:
  - Berg Balance Scale (BBS)
  - modified Timed Up and Go (mTUG)
  - Activities Specific Balance Confidence Scale (ABC)
  - 10 metre walk test (10MWT)
  - modified 6 minute walk test (m6MWT)

- The Advanced SWM. This includes:
  - all of the SWM above; AND
  - modified Spinal Cord Injury Functional Ambulation Profile (mSCI-FAP)

- The Research SWM. This includes:
  - all of the SWM AND Advanced SWM; AND
  - modified Mini-BESTest

On admission the patient is assessed and it is determined what stage he or she is at. The first Standing and Walking Outcome Measure is not required until the patient reaches Stage 1B (patient has voluntary but non-functional lower extremity movement).

These forms meet the minimum requirements for data collection; please add any additional facility specific information to the forms. If you would like assistance with incorporating your facility information on any of the forms, please contact us at clinical@rickhanseninstitute.org.
###患儿站立和行走评估工具

####阶段定义

<table>
<thead>
<tr>
<th>阶段</th>
<th>定义</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>0.0 无独立坐姿能力</strong></td>
<td>患者无法在坚固的表面上独立坐直，髋关节和膝关节处于90度，脚放在地板上，持续60秒，不使用手臂以稳定。</td>
</tr>
<tr>
<td><strong>0.5 独立坐姿能力</strong></td>
<td>患者能够独立坐直，没有背部支持，髋关节和膝关节处于90度，脚放在地板上，持续60秒，不使用手臂以稳定。</td>
</tr>
<tr>
<td><strong>1.0 无行走能力</strong></td>
<td>患者无法行走，但可能在完全协助下能够站立。</td>
</tr>
</tbody>
</table>

####1A. 跟踪L/E运动 - 无法独立站立，需要全面使用助行器/矫形器/物理治疗师的协助。

无自动L/E功能性运动（L/E MMTs 1或更低在：胫骨、趾长肌、股四头肌和臀大肌。）为了作为1A阶段，患者必须已经尝试站立。

**例子**
- 患者在平行杠或床边，全体重通过上肢，主要通过脚。 
- 患者在平行杠或助行器或双侧膝踝足矫形器（KAFOs）的支持下，由双侧物理治疗师或矫形师提供完全协助。

####1B. 自愿非功能性L/E运动 - 需要部分使用助行器/矫形器/物理治疗师的协助。

自愿L/E运动（L/E MMTs 1+/2-到3-在反重力肌肉群*）。

**例子**
- 患者在平行杠或床边，仅部分通过上肢，主要通过脚。患者可能有L/E矫形器，但除了双侧KAFOs外。

####1C. 自愿功能性L/E运动 - 能够独立站立，但有少量时间（小于30秒）。

**例子**
- 患者在平行杠或床边，有偶尔的上肢接触。患者可能有L/E矫形器，但除了双侧KAFOs外。
2. Therapeutic Walking Capacity (Indoors)

Patient is starting to ambulate with Therapist Assistance and Gait Aids/Orthoses and progresses toward Minimal Assistance.

2A) Max Assist - ability to stand and initiate reciprocal steps through voluntary L/E movement but requires maximal physical assistance (>50% of total effort) of at least one person and may include use of assistive devices/parallel bars/suspension harness and/or orthoses with the exception of bilateral KAFOs.

Examples of ‘Maximal Physical Assistance’:
- Physical assistance provided to prevent a fall during most attempts at walking.
- Physical assistance of 2 people required to complete gait cycle.
- Physical assistance required for 1 leg PLUS continuous physical assistance at trunk/safety belt to steady.

2B) Mod Assist - ability to stand and initiate reciprocal steps through voluntary L/E movement but requires moderate physical assistance (25-50% of total effort) of one person and may include use of assistive walking aids and/or orthoses with the exception of the bilateral KAFOs.

Examples of ‘Moderate Physical Assistance’:
- Physical assistance required for 1 leg only
- Continuous physical assistance required at trunk/safety belt to steady
- Intermittent physical assistance at trunk/safety belt to steady PLUS assistance with placement of assistive device (e.g., guiding walker).

2C) Min Assist - ability to stand and initiate reciprocal steps through voluntary L/E movement but requires minimal physical assistance (<25% of total effort) of one person and may include use of assistive devices and/or orthoses with the exception of the bilateral KAFOs. (Cannot use parallel bars or suspension harness.)

Examples of ‘Minimal Physical Assistance’:
- Assistance with placement of assistive device (e.g., guiding walker).
- Intermittent physical assistance required at trunk/safety belt to steady.
3. Functional Walking Capacity (Outdoors)

Patient is starting to ambulate without Therapist Assistance but still requires Gait Aids/Orthoses. Patient progresses to ambulating in the Community.

3A) Supervised Household Ambulator - ability to ambulate daily using reciprocal steps over ground for short distances (10-100m) with supervision. Person may use assistive devices and /or orthoses with the exception of bilateral KAFOs).

Examples of ‘Supervision’:

- Verbal cueing
- Standing close-by in case of a loss of balance, but no physical contact

3B) Independent Household Ambulator - ability to ambulate daily using reciprocal steps over ground for short distances (10-100m) independently. Person may use assistive devices and/or orthoses with the exception of the bilateral KAFOs.

3C) Community Ambulator - ability to ambulate daily using reciprocal steps over ground for long distances (>100m) independently. Person may use assistive devices and/or orthoses with the exception of the bilateral KAFOs.

4. Full Walking Capacity

Patient ambulates independently without Therapist Assistance or Gait Aids/Orthoses.

Independent Ambulator - ability to ambulate full time daily at home and in the community without assistive devices, orthoses, or physical assistance.

Notes: ‘Ability to stand’ refers to a patient’s ability to maintain static standing, NOT go from sitting to standing. The ability to go from sit to stand is evaluated in a number of the measures.

If a person meets all the criteria of a higher stage without meeting all the requirements of the lower stage, move them up and test them at the higher stage.

(This can typically happen when someone cannot achieve static standing but can walk short distance with maximal assistance.)

If a person does not meet ALL the criteria for one phase (e.g. 3B) drop them down to the phase below.

Do not score them for a phase if they only meet some of the requirements.

*ANTI-GRAVITY MUSCLE EXAMPLES: Tib Ant, Soleus, Quads, Glutei.
STAGE DEFINITIONS

When determining the stage of a patient, please remember:

1. The Staging system is simply indicative of functional capacity, it points the clinician to which measures should be done/considered at that time but the Stage a patient achieves does not direct the clinician as to how or where to do the measures.

2. The measures have standards and conventions that should be adhered to as closely as possible in every case (this is the how/where).

A patient may achieve a threshold stage (as per the definitions) but may not be able to complete the measure associated with that stage as per the standardized method. 80% of the time the measures associated with a stage will be able to be completed for 80% of the cases but there will always be exceptions. In these cases, a patient’s record should reflect that they have achieved stage ‘x’ but that they were unable to complete the associated measure for reason ‘y’.

For example: A patient requires physical assistance of 1 person and the use of parallel bars to prevent a fall during most attempts at walking.

- the patient is staged as a 2A because their functional level matches the definition of 2A.

- The SCI-FAP or mTUG (whichever your site is collecting) conventions don’t allow for the use of parallel bars so the scoring form would be completed with an assistance rating of 6 and the maximum time recorded. Once the patient is able to attempt walking outside of the parallel bars, the TUG/SCI-FAP should be attempted and the scoring form completed again.

The same scenario can happen at any threshold stage – where patient meets the definition for the stage, but can’t complete the measure in a way that is compliant with the standards for that measure.
# Standing and Walking

## Mobility Tracking Form

<table>
<thead>
<tr>
<th>Stage</th>
<th>Stage at Admission</th>
<th>Stage(s) achieved between Admission and Discharge Assessments</th>
<th>Stage at Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>No Independent Sitting Capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.0) Unable to sit independently hands free on firm surface for 60 sec.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td>Independent Sitting Capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5) Able to sit independently on firm surface hands free for 60 sec.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Pre-walking stages

1. Standing Capacity

   1A) Trace L/E Movement
   
   1B) Voluntary Non-Functional L/E Movement
   
   1C) Voluntary Functional L/E Movement

## Walking stages

2. Therapeutic Walking Capacity (Indoors)

   2A) Max Assist

   2B) Mod Assist

   2C) Min Assist

3. Therapeutic Walking Capacity (Indoors)

   3A) Supervised Household Ambulator

   3B) Independent Household Ambulator

   3C) Community Ambulator

4. Therapeutic Walking Capacity (Indoors)

   4) Independent Ambulator
FACILITY NAME

Berg Balance Scale

Only completed if patient achieves the following threshold stage:

1B) Voluntary Non-Functional L/E Movement – unable to stand independently/Needs partial assistance of gait aid and/or orthoses and/or therapist(s) to stand. The use of Bilateral KAFOs is not allowed.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sitting to Standing</td>
</tr>
<tr>
<td>2</td>
<td>Standing unsupported</td>
</tr>
<tr>
<td>3</td>
<td>Sitting with back unsupported but feet supported on floor or on a stool</td>
</tr>
<tr>
<td>4</td>
<td>Standing to sitting</td>
</tr>
<tr>
<td>5</td>
<td>Transfers</td>
</tr>
<tr>
<td>6</td>
<td>Standing with eyes closed</td>
</tr>
<tr>
<td>7</td>
<td>Standing with feet together</td>
</tr>
<tr>
<td>8</td>
<td>Reaching forward with outstretched arm</td>
</tr>
<tr>
<td>9</td>
<td>Retrieving object from floor</td>
</tr>
<tr>
<td>10</td>
<td>Turning to look behind</td>
</tr>
<tr>
<td>11</td>
<td>Turning 360 degrees</td>
</tr>
<tr>
<td>12</td>
<td>Placing alternate foot on stool</td>
</tr>
<tr>
<td>13</td>
<td>Standing with one foot in front</td>
</tr>
<tr>
<td>14</td>
<td>Standing on one foot</td>
</tr>
</tbody>
</table>

TOTAL: /56 /56 /56
### Form: Standing and Walking Assessment

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Standing Unsupported with Feet Together</td>
<td>8.</td>
<td>Reaching Forward with Outstretched Arm While Standing</td>
</tr>
<tr>
<td></td>
<td>Place your feet together and stand without holding on.</td>
<td></td>
<td>Lift arm to 90 degrees. Stretch out your fingers and reach forward as far as you can. (Examiner places a ruler at the end of fingertips when arm is at 90 degrees. Fingers should not touch the ruler while reaching forward. The recorded measure is the distance forward that the fingers reach while the subject is in the most forward lean position. When possible, ask subject to use both arms when reaching to avoid rotation of the trunk.)</td>
</tr>
<tr>
<td>2.</td>
<td>Standing Unsupported</td>
<td>9.</td>
<td>Pick Up Object from the Floor from a Standing Position</td>
</tr>
<tr>
<td></td>
<td>Please stand for two minutes without holding on. If a subject is able to stand 2 minutes unsupported, score full points for sitting unsupported. Proceed to item #4.</td>
<td></td>
<td>Pick up the shoe/slipper, which is in front of your feet.</td>
</tr>
<tr>
<td>3.</td>
<td>Sitting With Back Unsupported but Feet Supported on Floor or on a Stool</td>
<td>10.</td>
<td>Turning to Look Behind Over Left and Right Shoulders While Standing</td>
</tr>
<tr>
<td></td>
<td>Please sit with arms folded for 2 minutes.</td>
<td></td>
<td>Turn to look directly behind you over the left shoulder. Repeat to the right. (Examiner may pick an object to look at directly behind the subject to encourage a better turn.)</td>
</tr>
<tr>
<td>4.</td>
<td>Standing to Sitting</td>
<td>11.</td>
<td>Turn 360 Degrees</td>
</tr>
<tr>
<td></td>
<td>Please sit down.</td>
<td></td>
<td>Turn completely around in a full circle. Pause. Then turn a full circle in the other direction.</td>
</tr>
<tr>
<td>5.</td>
<td>Transfers</td>
<td>12.</td>
<td>Place Alternate Foot on Step or Stool While Standing Unsupported</td>
</tr>
<tr>
<td></td>
<td>Arrange chair(s) for pivot transfer. Ask subject to transfer one way toward a seat with armrests and one way toward a seat without armrests. You may use two chairs (one with and one without armrests) or a bed and a chair.</td>
<td></td>
<td>Place each foot alternately on the step/stool. Continue until each foot has touched the step/stool four times.</td>
</tr>
<tr>
<td>6.</td>
<td>Note: Items 6 - 14 are Tested in a Standing Position</td>
<td>13.</td>
<td>Standing Unsupported One Foot in Front</td>
</tr>
<tr>
<td></td>
<td>Standing Unsupported with Eyes Closed</td>
<td>(Demonstrate to Subject) Place one foot directly in front of the other. If you feel that you cannot place your foot directly in front, try to step far enough ahead that the heel of your forward foot is ahead of the toes of the other foot. (To score 3 points, the length of the step should exceed the length of the other foot and the width of the stance should approximate the subject’s normal stride width.)</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Standing Unsupported with Feet Together</td>
<td>14.</td>
<td>Standing on One Leg</td>
</tr>
<tr>
<td></td>
<td>Place your feet together and stand without holding on.</td>
<td></td>
<td>Stand on one leg as long as you can without holding on.</td>
</tr>
</tbody>
</table>

**Scoring:**
- Item 1: able to stand independently and hold 15 seconds
- Item 2: able to stand independently and hold 30 seconds without supervision
- Item 3: able to stand independently and hold 30 seconds with supervision
- Item 4: able to stand independently and hold 10-15 seconds
- Item 5: able to stand independently and hold 15-20 seconds
- Item 6: able to stand independently and hold 20-30 seconds
- Item 7: able to stand independently and hold 30 seconds
- Item 8: able to stand independently and hold 40 seconds
- Item 9: able to stand independently and hold 60 seconds
- Item 10: able to stand independently and hold 90 seconds
- Item 11: able to stand independently and hold 120 seconds
- Item 12: able to stand independently and hold 180 seconds
- Item 13: able to stand independently and hold 240 seconds
- Item 14: able to stand independently and hold 300 seconds

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**Modified Timed Up and Go (TUG) Test**

Only completed if patient achieves the following threshold stage:

2A) Requires Maximal Assist (>50% of total effort) during therapeutic walking

<table>
<thead>
<tr>
<th></th>
<th>ADMISSION</th>
<th>DISCHARGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Within 7 days)</td>
<td>(Within 7 days)</td>
</tr>
<tr>
<td></td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>THRESHOLD (Within 2 days of meeting threshold)</td>
<td></td>
</tr>
</tbody>
</table>

- **Date**
  - (If completed over multiple sessions, enter date of completion.)
  - YYYY - MM - DD

- **Therapist Name/Initials**
  - YYYY - MM - DD

**General Instructions:**
- The tester provides physical assistance if needed. The tester provides feedback/encouragement only after the task is completed. Each participant is given a rest period between tasks long enough for the tester to explain and demonstrate the next task.
- The tester records the performance time and assistance rating in the data collection table below.
- If the participant cannot attempt the test, or does not complete the test, he/she is assigned the maximum time (455 sec.), and an assistance rating of 6 (‘unable to complete’). Participants can use gait aids for all tasks if required.
- If the participant takes longer than the maximum time to complete the test, he/she is assigned the maximum time, and the assistance rating that corresponds to the devices/assistance used for that task.

**Assistance Ratings:** Each participant is instructed to use an assistive device and/or brace(s) as needed.

1. **Independent** (walking without any walking aids or assistance)
2. 1 cane/crutch/roll
3. 2 canes/crutches/rolling aids
4. **Walker** (standard walker or 2- or 4-wheeled walker)
5. **Assist of 1** (physical assistance of 1 person whether minimum, moderate or maximum assist)
6. **Unable to complete**

**1. Up & Go (Max time: 455s)**

Setup: Standard armchair with a 44-cm seat height (from floor) is placed on the hard, non-carpeted floor. Three meters away from the start line, a 1-m strip of masking tape is placed on the floor.

<table>
<thead>
<tr>
<th></th>
<th>ADMISSION (Within 7 days)</th>
<th>DISCHARGE (Within 7 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>THRESHOLD (Within 2 days of meeting threshold)</td>
<td></td>
</tr>
</tbody>
</table>

- **A. Time (seconds)**
- **B. Assistance Rating (1-6)**
- **C. = A x B**
- **D. 9.1 sec. (mean time of able-bodied individuals)**

**Task Score (Up & Go) = C + D**
### Activities Specific Balance Confidence Scale (ABC)

**FACILITY NAME**

**ADDRESSOGRAPH**

**Activities Specific Balance Confidence Scale (ABC)**

**Sample size version only.**

To print out the full size version, visit [http://sci2.rickhanseninstitute.org](http://sci2.rickhanseninstitute.org).

<table>
<thead>
<tr>
<th>DISCHARGE (Within 7 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>_ _ _ _ _ _ _ _ _ _ _ _ _ _ _</td>
</tr>
<tr>
<td>Y Y Y Y - M M - DD</td>
</tr>
</tbody>
</table>

**Date**

(If completed over multiple sessions, enter date of completion.)

**Therapist Name/Initials**

Did patient meet threshold criterion at discharge?

2A) Requires Maximal Assist (>50% of total effort) during therapeutic walking

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

If patient met threshold criterion, but test not performed, specify reason:

Reason:

**Activities Specific Balance Scale (ABC) – Completed by interview**

For each of the following activities, please indicate your level of self-confidence by choosing a corresponding number from the following rating scale:

0% 10 20 30 40 50 60 70 80 90 100%

no confidence completely confident

**Patient Instructions**

For each of the following, please indicate your level of confidence in doing the activity without losing your balance or becoming unsteady. Choose one of the percentage points on the scale from 0% to 100%.

If you do not currently do the activity in question, try and imagine how confident you would feel if you had to do the activity. If you normally use a walking aid to do the activity or hold onto someone, rate your confidence as if you were using these supports.

If you have any questions about answering any of these items, please ask your therapist.

<table>
<thead>
<tr>
<th>&quot;How confident are you that you will not lose your balance or become unsteady when you...&quot;</th>
<th>Discharge (Within 7 days)</th>
<th>Patient Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ...walk around the house?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>2. ...walk up and down the stairs?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>3. ...bend over and pick up a slipper from the front of a closet floor?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>4. ...reach for a small can off a shelf at eye level??</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>5. ...stand on your tiptoes and reach for something above your head?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>6. ...stand on a chair and reach for something?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>7. ...sweep the floor?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>8. ...walk outside the house to a car parked in the driveway?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>9. ...get into or out of a car?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>10. ...walk across a parking lot to the mall?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>11. ...walk up or down a ramp?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>12. ...walk in a crowded mall where people rapidly walk past you?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>13. ...are bumped into by people as you walk through the mall?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>14. ...step onto or off an escalator while you are holding onto a railing?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>15. ...step onto or off an escalator while holding onto parcels such that you cannot hold onto the railing?</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>16. ...walk outside on icy sidewalks?</td>
<td>%</td>
<td></td>
</tr>
</tbody>
</table>
**FACILITY NAME**

**10 Meter Walk Test**

Only completed if patient achieves the following threshold stage:

3B) **Independent Household Ambulator**: ability to ambulate daily using reciprocal steps over ground for short distances (10-100m) independently for functional walking.

- **□ ADMISSION**
  - (Within 7 days)
- **□ THRESHOLD**
  - (Within 2 days of meeting threshold)

**Date**
(If completed over multiple sessions, enter date of completion.)

```
__ __ __ __ __
Y Y Y Y - M M - D D
```

**Therapist Name/Initials**

**Number of sessions test completed over**

Note: Test can be completed over multiple sessions during the time period indicated if required.

| 1. 10 Meter Walk Test (10MWT) at preferred speed | Time: ____ (sec) | Speed: ____ (m/sec) | Time: ____ (sec) | Speed: ____ (m/sec) |
| 2. 10 Meter Walk Test (10MWT) at maximum speed | Time: ____ (sec) | Speed: ____ (m/sec) | Time: ____ (sec) | Speed: ____ (m/sec) |

| 3. Walking Aid Used: (and circle right/left/both if applicable to indicate the side on which the aid is used) |
| None |
| Parallel bars |
| Standard walker |
| 2 wheeled walker |
| 4 wheeled walker |
| Crutches - Right / Left / Both |
| Quad cane |
| Standard cane - Right / Left / Both |
| Knee Ankle Foot Orthosis (KAFO) - Right / Left (if required bilaterally, patient does not meet threshold criteria for test) |
| Ankle Foot Orthosis - Right / Left / Both |
| Other Aid (specify): ____________________ |

**□ ADMISSION**
- (Within 7 days)

**□ THRESHOLD**
- (Within 2 days of meeting threshold)

**Sample size version only.**
To print out the full size version, visit [http://sci2.rickhanseninstitute.org](http://sci2.rickhanseninstitute.org).

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# Modified 6 Minute Walk Test

Only completed if patient achieves the following threshold stage:

**3B) Independent Household Ambulator:** ability to ambulate daily using reciprocal steps over ground for short distances (10-100m) independently for functional walking.

☐ **ADMISSION** (Within 7 days)

☐ **OR**

☐ **THRESHOLD** (Within 2 days of meeting threshold)

<table>
<thead>
<tr>
<th>Date (If completed over multiple sessions, enter date of completion.)</th>
<th>Admission (Within 7 days)</th>
<th>Discharge (Within 7 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>YYYY-MM-DD</td>
<td>YYYY-MM-DD</td>
<td>YYYY-MM-DD</td>
</tr>
</tbody>
</table>

**Therapist Name/Initials**

1. 2 Minute Distance (m)

2. 4 Minute Distance (m)

3. 6 Minute Distance (m)

4. Total Distance Achieved (m)

5. Total time for the test (if less than 6 minutes) _____min. _____sec. _____min. _____sec.

6. **Borg RPE® Scale of Perceived Exertion at end of test**

   (6-20)

   - No exertion at all
   - Extremely light
   - Very light
   - Light
   - Somewhat hard
   - Hard (heavy)
   - Very hard
   - Extremely hard
   - Maximal exertion

7. **Walking Aid Used:**

   (and circle right/left/both if applicable to indicate the side on which the aid is used)

   - None
   - Parallel bars
   - Standard walker
   - 2 wheeled walker
   - 4 wheeled walker
   - Crutches – Right/Left/Both
   - Quad cane
   - Standard cane – Right/Left/Both
   - Knee Ankle Foot Orthosis (KAFO)
   - Right/Left (if required bilaterally, patient does not meet threshold criteria for test)
   - Ankle Foot Orthosis – Right/Left/Both
   - Other Aid (specify):

   ____________________________
## Modified Spinal Cord Injury Functional Ambulation Profile (mSCI-FAP)

Only completed if patient achieves the following threshold stage:

2A) Requires Maximal Assist (> 50% of total effort) during therapeutic walking.

### General Instructions:

- The tester provides physical assistance if needed. The tester provides feedback/encouragement only after the task is completed. Each participant is given a rest period between tasks long enough for the tester to explain and demonstrate the next task.
- The tester records the performance time and assistance rating for all 4 tasks in data collection table below.
- If the participant cannot attempt a task, or does not complete a task, he/she is assigned the maximum time for that task, and an assistance rating of 6 (‘unable to complete’). Maximum times are listed for each task below. Participants can use gait aids for all tasks if required.
- If the participant takes longer than the maximum time to complete a task, he/she is assigned the maximum time, and the assistance rating that corresponds to the devices/assistance used for that task.

### Assistance Ratings:

Each participant is instructed to use an assistive device and/or brace(s) as needed.

1 = independent (walking without any walking aids or assistance)

2 = 1 cane/crutch/rail

3 = 2 canes/crutches/rails

4 = walker (standard walker or 2- or 4-wheeled walker)

5 = assist of 1 (physical assistance of 1 person whether minimum, moderate or maximum assist)

6 = unable to complete
### Modified Spinal Cord Injury Functional Ambulation Profile (mSCI-FAP)

<table>
<thead>
<tr>
<th>TASK</th>
<th>ADMISSION (Within 7 days) OR</th>
<th>DISCHARGE (Within 7 days)</th>
<th>INSTRUCTIONS</th>
</tr>
</thead>
</table>
| #1 Carpet (Max time: 220s) | | | 1. Tester explains while demonstrating the Carpet task: "When I say 'go,' walk at your normal, comfortable pace until I say 'stop.'"  
2. Tester assists participant as needed in placing toes on starting line tape.  
3. Tester says "go," and presses stopwatch to begin timing.  
4. Participant walks toward the end point. Tester walks alongside the participant as the participant traverses the 5-m distance.  
5. Tester presses stopwatch to stop timing once both of the participant’s feet have crossed the end point. Tester tells the participant to stop when he or she is beyond the end point.  
6. Tester records time and assistance rating required for task. |

Setup: Carpeted area or a piece of short pile carpet, no less than 7-m long and 2-m wide, securely taped to the floor. Starting point is marked with a 1-m strip of masking tape. End point is marked exactly 5-m from the starting point with a 2-cm piece of masking tape. Both starting point and end point are at least 1-m from the edge of the carpet.

- A. Time (seconds)  
- B. Assistance Rating (1-6)  
- C. = A x B  
- D. 4.4 sec. (mean time of able-bodied individuals)  

**Task Score (Carpet)**  
= C + D

| #2 Up & Go (Max time: 455s) | | | 1. Tester explains while demonstrating the Up & Go task: "You will sit in this chair with your back against the back of the chair and your arms resting on the armrests. When I say 'go,' you will stand up from the chair, walk at your normal comfortable pace past this line, turn around, walk back to the chair, and sit down, making sure your back is against the back of the chair. You may use the arms of the chair if needed."

Setup: Standard armchair with a 44-cm seat height (from floor) is placed on the hard, non-carpeted floor. Three meters away from the start line, a 1-m strip of masking tape is placed on the floor.

- A. Time (seconds)  
- B. Assistance Rating (1-6)  
- C. = A x B  
- D. 9.1 sec. (mean time of able-bodied individuals)  

**Task Score (Up & Go)**  
= C + D
**Modified Spinal Cord Injury Functional Ambulation Profile (mSCI-FAP)**

<table>
<thead>
<tr>
<th>TASK</th>
<th>ADMISSION (Within 7 days)</th>
<th>DISCHARGE (Within 7 days)</th>
<th>INSTRUCTIONS</th>
</tr>
</thead>
</table>
| #3 Obstacles (Max time: 570s) | | | 1. Tester explains while demonstrating the Obstacles task: “When I say ‘go,’ walk forward at your normal, comfortable pace and step over each brick. Then, walk around the trash can from either the left or right. Then walk back stepping over the bricks again. Do not hit the bricks or bin with your body or walking aid, if possible. Continue walking until I say ‘stop.’”
| Setup: A 1-m piece of masking tape is placed on a hard, non-carpeted floor to mark the starting point. A standard brick is placed on the floor at the 1.5-m mark and the 3-m mark. A trash can (diameter 56cm, height 70cm) is placed at the 5-m mark. | | 2. Tester assists participant as needed in placing toes on starting line.
| A. Time (seconds) | | | 3. Tester says “go,” and presses stopwatch to begin timing.
| B. Assistance Rating (1-6) | | | 4. Tester walks with participant.
| C. Hit Obstacle (+1) | | | 5. When both of the participant’s feet have crossed the end line, tester presses stopwatch to stop timing. Tester tells the participant to “stop” when he or she is beyond the end line.
| D. \( = \ A \times (B+C) \) | | | 6. Tester records time, assistance rating required for task, and completes the ‘C: Hit Obstacle’ row (by entering a “1” if the participant hit any obstacles with his/her body or walking aid while completing the task or a “0” if no obstacle was hit).
| E. 11.4 sec. (mean time of able-bodied individuals) | | |
| Task Score (Obstacles) \( = \ D + E \) | | |

| #4 Step (Max time: 185s) | | | 1. Tester explains while demonstrating the Step task: “When I say ‘go’, walk towards the step, up and over, and continue walking until I say stop.”
| Setup: A 1-m piece of masking tape is placed on a hard, non-carpeted floor to mark the starting point. A standard brick is placed on the floor at the 1.5-m mark and the 3-m mark. A trash can (diameter 56cm, height 70cm) is placed at the 5-m mark. | | 2. Tester assists participant as needed in placing toes on the starting point.
| A. Time (seconds) | | | 3. Tester says “go” and presses stopwatch to begin timing.
| B. Assistance Rating (1-6) | | | 4. Participant walks toward the end point. Tester follows participant through the task for safety.
| C. \( = \ A \times B \) | | | 5. Tester presses stopwatch to stop timing when both of the participant’s feet have crossed the end point.
| D. 3.7 sec. (mean time of able-bodied individuals) | | | 6. Tester records time and assistance rating required for task.
| Task Score (Step) \( = \ C + D \) | | |
| Total abbreviated SCI-FAP score: \( = \) Sum the 4 task scores above. | | |
Modified Mini-BESTest- of Dynamic Balance
Balance Evaluation Systems Test
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Only completed if patient achieves the following threshold stage:
2B) Requires Moderate Assist (25-50% of total effort) during therapeutic walking.

□ ADMISSION (Within 7 days) or □ THRESHOLD (Within 2 days of meeting threshold)

Date: (If completed over multiple sessions, enter date of completion)

Therapist Name/Initials:

Number of sessions test completed over:
Note: Test can be completed over multiple sessions during the time period indicated if required.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Patient should remove foot/ankle bracing for entire test.</th>
<th>PATIENT INSTRUCTIONS</th>
<th>THERAPIST INSTRUCTIONS</th>
</tr>
</thead>
</table>
| 1. SIT TO STAND | | "Cross arms across your chest. Try not to use your hands unless you must. Do not let your legs lean against the back of the chair when you stand. Please stand up now."
| (2) Normal: Comes to stand without use of hands and stabilizes independently. | | Note the initiation of the movement, and the use of the subject’s hands on the seat of the chair, the thighs, or the thrusting of the arms forward. |
| (1) Moderate: Comes to stand WITH use of hands on first attempt. | | |
| (0) Severe: Impossible to stand up from chair without assistance, OR several attempts with use of hands. | | |
| 2. RISE TO TOES | | "Place your feet shoulder width apart. Place your hands on your hips. Try to rise as high as you can onto your toes. I will count out loud to 3 seconds. Try to hold this pose for at least 3 seconds. Look straight ahead. Rise now." |
| (2) Normal: Stable for 3 s with maximum height. | | Allow the subject two attempts. Score the best attempt. (If you suspect that subject is using less than full height, ask the subject to rise up while holding the examiners’ hands.) Make sure the subject looks at a non-moving target 4-12 feet away. |
| (1) Moderate: Heels up, but not full range (smaller than when holding hands), OR noticeable instability for 3 s. | | |
| (0) Severe: < 3 s. | | |
| 3. STAND ON ONE LEG | | "Look straight ahead. Keep your hands on your hips. Lift your leg off the ground behind you without touching or resting your raised leg upon your other standing leg. Stay standing on one leg as long as you can. Look straight ahead. Lift now."
| Use the trial with the longest time to determine score below on each side. Normal: 20 s. | | Allow the subject two attempts and record the times. Record the number of seconds the subject can hold up to a maximum of 20 seconds. Stop timing when the subject moves hands off of hips or puts a foot down. Make sure the subject looks at a non-moving target 4-12 feet ahead. Repeat on other side.
| (2) Normal: | | |
| (1) Moderate: < 20 s. | | |
| (0) Severe: Unable. | | |

Left Side (Standing Leg) Right Side (Standing Leg) Left Side (Standing Leg) Right Side (Standing Leg)
Trial 1: Trial 1: Trial 1: Trial 1:
sec. sec. sec. sec.
Trial 2: Trial 2: Trial 2: Trial 2:
sec. sec. sec. sec.

L SCORE: L SCORE: R SCORE: R SCORE:

Only use the side with the lowest score to calculate sub-score and total score. Only use the side with the lowest score to calculate sub-score and total score.

LOWEST SCORE: LOWEST SCORE:
## Modified Mini-BESTest- of DYNAMIC BALANCE

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<table>
<thead>
<tr>
<th>ITEM</th>
<th>ADMISSION (Within 7 days) OR THRESHOLD (Within 2 days of meeting threshold)</th>
<th>DISCHARGE (Within 7 days)</th>
<th>PATIENT INSTRUCTIONS</th>
<th>THERAPIST INSTRUCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACTIVE POSTURAL CONTROL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SUB SCORE: /6</td>
<td>SUB SCORE: /6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. COMPENSATORY STEPPING CORRECTION-FORWARD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Normal: Recovers independently a single, large step (second realignment step is allowed)</td>
<td></td>
<td>“Stand with your feet shoulder width apart, arms at your sides. Lean forward against my hands beyond your forward limits. When I let go, do whatever is necessary, including taking a step, to avoid a fall.”</td>
<td>Stand in front of the subject with one hand on each shoulder and ask the subject to lean forward (Make sure there is room for them to step forward). Require the subject to lean until the subject’s shoulders and hips are in front of toes. After you feel the subject’s body weight in your hands, very suddenly release your support. The test must elicit a step. NOTE: Be prepared to catch subject.</td>
<td></td>
</tr>
<tr>
<td>(1) Moderate: More than one step used to recover equilibrium.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(0) Severe: No step, OR would fall if not caught, OR falls spontaneously.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 5. COMPENSATORY STEPPING CORRECTION-BACKWARD | | | |
| (2) Normal: Recovers independently a single, large step (a second realignment step is allowed and not counted). | | “Stand with your feet shoulder width apart, arms at your sides. Lean backward against my hands beyond your backward limits. When I let go, do whatever is necessary, including taking a step, to avoid a fall.” | Stand behind the subject with one hand on each scapula and ask the subject to lean backward (Make sure there is room for the subject to step backward). Require the subject to lean until their shoulders and hips are in back of their heels. After you feel the subject’s body weight in your hands, very suddenly release your support. Test must elicit a step. NOTE: Be prepared to catch subject. |
| (1) Moderate: More than one step used to recover equilibrium. | | |
| (0) Severe: No step, OR would fall if not caught, OR falls spontaneously. |

| 6. COMPENSATORY STEPPING CORRECTION-LATEROAL | Left | Right | Left | Right |
| | | | | |
| (2) Normal: Recovers independently with 1 step (crossover or lateral OK as a second realignment step). | | Only use the side with the lowest score to calculate sub-score and total score. | Only use the side with the lowest score to calculate sub-score and total score. |
| (1) Moderate: Several steps to recover equilibrium. | | |
| (0) Severe: Falls, or cannot step. | LOWEST SCORE: | LOWEST SCORE: |

<table>
<thead>
<tr>
<th>SENSORY ORIENTATION</th>
<th>SUB SCORE: /6</th>
<th>SUB SCORE: /6</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. STANCE (FEET TOGETHER); EYES OPEN, FIRM SURFACE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Normal: 30 s.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Moderate: &lt; 30 s.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(0) Severe: Unable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Modified Mini-BESTest - Dynamic Balance

Balance Evaluation Systems Test  
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<table>
<thead>
<tr>
<th>ITEM</th>
<th>PATIENT INSTRUCTIONS</th>
<th>THERAPIST INSTRUCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. STANCE (FEET TOGETHER); EYES CLOSED, FOAM SURFACE</td>
<td>“Step onto the foam. Place your hands on your hips. Place your feet together until almost touching. Be as stable and as still as possible, until I say stop. I will start timing when you close your eyes.”</td>
<td>Use medium density Temper® foam, 4 inches thick. Assist subject in stepping onto foam. Record the time the subject was able to stand in each trial to a maximum of 30 seconds. Have the subject step off the foam between trials. Flip the foam over between each trial to ensure the foam has retained its shape. If the subject is able to achieve a time of 30 seconds in the first trial, a second trial is not required.</td>
</tr>
<tr>
<td>(2) Normal: 30 s.</td>
<td>Score: Score:</td>
<td></td>
</tr>
<tr>
<td>(1) Moderate: &lt; 30 s.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(0) Severe: Unable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 9. INCLINE- EYES CLOSED | “Step onto the incline ramp. Please stand on the incline ramp with your toes toward the top. Place your feet shoulder width apart and have your arms down at your sides. I will start timing when you close your eyes.” | Aid the subject onto the ramp. Once the subject closes eyes, begin timing and record time. Note if there is excessive sway. If the subject is able to achieve a time of 30 seconds in the first trial, a second trial is not required. |
| (2) Normal: Stands independently 30 s and aligns with gravity. | Score: Score: | |
| (1) Moderate: Stands independently <30 s OR aligns with surface | | |
| (0) Severe: Unable. | | |

### Dynamic Gait

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SUB SCORE /10</th>
<th>THERAPIST INSTRUCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. CHANGE IN GAIT SPEED</td>
<td>“Begin walking at your normal speed, when I tell you ‘fast’ walk as fast as you can. When I say ‘slow’, walk very slowly.”</td>
<td>Allow the subject to take 3-5 steps at normal speed, and then say “fast”. After 3-5 fast steps, say “slow”. Allow 3-5 slow steps before the subject stops walking.</td>
</tr>
<tr>
<td>(2) Normal: Significantly changes walking speed without imbalance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Moderate: Unable to change walking speed or signs of imbalance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(0) Severe: Unable to achieve significant change in speed AND signs of imbalance.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 11. WALK WITH HEAD TURNS – HORIZONTAL | “Begin walking at your normal speed, when I say “right”, turn your head and look to the right. When I say “left” turn your head and look to the left. Try to keep your weight walking in a straight line.” | Allow the subject to reach normal speed, and give the commands “right”, “left” every 3-5 steps. Score if you see a problem in either direction. If subject has severe cervical restrictions allow combined head and trunk movements. |
| (2) Normal: performs head turns with no change in gait speed and good balance. | | |
| (1) Moderate: performs head turns with reduction in gait speed. | | |
| (0) Severe: performs head turns with imbalance. | | |
### Modified Mini-BESTest - of DYNAMIC BALANCE

Balance Evaluation Systems Test  
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<table>
<thead>
<tr>
<th>ITEM</th>
<th>PATIENT INSTRUCTIONS</th>
<th>THERAPIST INSTRUCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. WALK WITH PIVOT TURNS</td>
<td>“Begin walking at your normal speed. When I tell you to 'turn and stop', turn as quickly as you can, face the opposite direction, and stop. After the turn, your feet should be close together.”</td>
<td>Demonstrate a pivot turn. Once the subject is walking at normal speed, say “turn and stop.” Count the number of steps from “turn” until the subject is stable. Imbalance may be indicated by wide stance, extra stepping or trunk motion.</td>
</tr>
<tr>
<td>13. STEP OVER OBSTACLES</td>
<td>“Begin walking at your normal speed. When you come to the box, step over it, not around it and keep walking.”</td>
<td>Place the box (9” or 23 cm height) 10 feet away from where the subject will begin walking. Two shoeboxes taped together works well to create this apparatus.</td>
</tr>
<tr>
<td>14. TIMED UP &amp; GO WITH DUAL TASK</td>
<td>TUG: “When I say ‘Go’, stand up from chair, walk at your normal speed across the tape on the floor, turn around, and come back to sit in the chair.”</td>
<td>TUG: Have the subject sitting with the subject’s back against the chair. The subject will be timed from the moment you say “Go” until the subject returns to sitting. Stop timing when the subject’s buttocks hit the chair bottom and the subject’s back is against the chair. The chair should be firm with arms.</td>
</tr>
</tbody>
</table>

**TUG:**

<table>
<thead>
<tr>
<th>Normal:</th>
<th>Moderate:</th>
<th>Severe:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal:</td>
<td>No noticeable change in sitting, standing, or walking while backward counting when compared to TUG without Dual Task.</td>
<td>Dual task affects either counting OR walking (&gt;10%) when compared to the TUG without Dual Task. (this can be affected by errors or decrease in speed)</td>
</tr>
<tr>
<td>Moderate:</td>
<td>Dual task affects either counting OR walking (&gt;10%) when compared to the TUG without Dual Task. (this can be affected by errors or decrease in speed)</td>
<td>TUG with Dual Task: “Count backwards by threes starting from a number between 100-90. Then, ask the subject to count from a different number and after a few numbers say “Go”. Time the subject from the moment you say “Go” until the subject returns to the sitting position. Score dual task as affecting counting or walking if speed slows (&gt;10%) from TUG and or new signs of imbalance.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TUG With Dual Task:</th>
<th>Dual Task TUG:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SCORE:**

<table>
<thead>
<tr>
<th>SCORE:</th>
<th>SCORE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ 28</td>
<td>/ 28</td>
</tr>
</tbody>
</table>
1. At admission, determine what stage your patient is at according to the Canadian SCI Standing and Walking Stage Definitions sheet &/or Decision tree.

2. Record the stage your patient is at on the Canadian SCI Standing and Walking Mobility Tracking Form.

3. If your patient is at Stage 1B or greater, perform the outcome measure(s) indicated on the Canadian SCI Standing and Walking Assessment Tool. If not, continue to step 4.

4. Regularly reassess your patient’s stage during their inpatient stay. If the stage changes, record it on the Canadian SCI Standing and Walking Mobility Tracking Form and perform a baseline ‘threshold’ assessment for any new outcome measure(s) indicated. *Note: any outcome measures where a baseline threshold assessment was completed previously do not need to be reassessed at this time.*

5. At discharge, determine what stage your patient is at according to the Canadian SCI Standing and Walking Stage Definitions sheet &/or Decision tree.

6. Record the stage your patient is at on the Canadian SCI Standing and Walking Mobility Tracking Form.

7. If your patient is at Stage 1B or greater, perform the outcome measure(s) indicated on the Canadian SCI Standing and Walking Assessment Tool. *Note: any outcome measures where a baseline threshold assessment has been completed previously should be reassessed at this time.*

More detailed Instructions for each specific outcome measure, including equipment requirements, and drawings of the set-up for each test are available on [http://sci2.rickhanseninstitute.org](http://sci2.rickhanseninstitute.org), as is a copy of this toolkit with all of the instructions included.

The instruction sheets also include interpretation values, as well as references.
**BERG BALANCE SCALE (BBS) INSTRUCTIONS**

Completed at threshold 1B): Standing Capacity - Voluntary non-functional LE movement: unable to stand independently/needs partial assistance of gait aid and/or orthoses (except bilateral KAFOs) and/or therapist(s) to stand. The use of Bilateral KAFOs is not allowed. Voluntary L/E Movement (L/E MMTs of Gr 1+/2- to Gr3- in anti-gravity muscles which are Tib Ant, Soleus, Quads, Glutei).

**Example of Standing with Assistance:**

- Patient stands in parallel bars/walker/bedside without total assistance of another person or walking aid and therapist assistance to maintain upright posture. Patient may have only partial weight bearing through the U/Es with weight bearing through the feet. Patient may have L/E orthoses on except for Bilateral KAFOs.

**Time**

Approximately 20 minutes.

**Equipment**

- Stopwatch or wristwatch with a second hand.
- A ruler or other indicator of 2, 5, and 10 inches (5, 13 and 25 cm).
- Two standard chairs (one with armrests, one without).
- Either a step or a stool (of average step height).

**Therapist Instructions**

- Please document each task and/or give instructions as written. When scoring, please record the lowest response category that applies for each item. Each item is scored on a 5 point scale (0 = cannot perform) to 4 (normal performance). The total of the 14 questions is calculated.
- Subject should understand that they must maintain their balance while attempting the tasks. The choices of which leg to stand on or how far to reach are left to the subject. Poor judgment will adversely influence the performance and the scoring. Subjects can wear their usual shoes and braces, if necessary, during testing. Assessments are conducted without the subjects’ walking assistive device if they use one.

**Patient Instructions**

Described on test sheet for each task.
Scoring

The scores for all questions are added up to give a total score.

Clinical Reference Values:
Not available for SCI. In older adults:

Interpretation:
- 41-56 = low fall risk
- 21-40 = medium fall risk
- 0 –20 = high fall risk


Minimal Detectable Change:
“A change of 4 points is needed to be 95% confident that true change has occurred if a patient scores within 45-56 initially, 5 points if they score within 35-44, 7 points if they score within 25-34 and, finally, 5 points if their initial score is within 0-24 on the Berg Balance Scale.”


In individuals living with SCI:

Norms (AIS D only):

<table>
<thead>
<tr>
<th>Population</th>
<th>BBS score: mean (SD), range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals with SCI (n=32)</td>
<td>47.9 (10.7), 17-56</td>
</tr>
<tr>
<td>Paraplegia (n=15)</td>
<td>44.8 (13.0), 17-56</td>
</tr>
<tr>
<td>Tetraplegia (n=17)</td>
<td>50.7 (7.5), 31-56</td>
</tr>
</tbody>
</table>

MODIFIED TIMED UP AND GO TEST (MTUG) INSTRUCTIONS

Perform this test only if patient meets the following threshold criteria: 2A) Therapeutic Walking Capacity – Maximum Assist: ability to stand and initiate reciprocal steps through voluntary L/E movement but requires maximal physical assistance (>50% of total effort) of at least one person and may include use of assistive devices and/or orthoses with the exception of bilateral KAFOs.

<table>
<thead>
<tr>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5 minutes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modified Timed Up and Go test: standard armchair with a 44-cm seat height (from floor), stopwatch, a 3 metre distance measured out and marked on the floor with tape (from chair).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Therapist Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Each participant is instructed to use an assistive device and/or brace(s) as needed. The tester provides instructions and answers the participant’s questions.</td>
</tr>
<tr>
<td>&gt; The tester provides physical assistance if needed. The tester times the participant during the task. The tester provides feedback/encouragement only after the task is completed.</td>
</tr>
<tr>
<td>&gt; If the participant cannot attempt the mTUG, or does not complete the test, he/she is assigned the maximum time (455s), and an assistance rating of 6 (‘unable to complete’) (see scoring table on test sheet). If the participant takes longer than the maximum time, he/she is assigned the maximum time, and the assistance rating that corresponds to the devices/assistance used.</td>
</tr>
<tr>
<td>&gt; Prior to performance of the TUG, the tester explains and demonstrates the task. The participant is informed that performance of the task is timed and is instructed to ask for clarification at any time.</td>
</tr>
<tr>
<td>&gt; The individual is instructed to stand up from an arm chair, walk 3 meters, return to the chair and sit down at their preferred walking speed.</td>
</tr>
</tbody>
</table>

*Note: the time recorded should be the time in seconds taken from the time the tester says “go” and presses stopwatch to begin timing to the time the participant is fully seated with their back against the chair.*

<table>
<thead>
<tr>
<th>Patient Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>“When I say ‘go’ I want you to stand up and walk to the line, turn and then walk back to the chair and sit down again. Walk at your normal pace.”</td>
</tr>
</tbody>
</table>
Scoring

**Clinical Reference Values:**

**Cut-off values:** 13.5s for community dwelling older adults, 14s for older stroke patients indicates a risk of falls.


**Smallest Real Difference** = 10.8 seconds or 30%, found to detect significant clinical change in the TUG in SCI patients


**Normative, SCI (AIS D):**

- Mean (SD) TUG score; 17.0 (18.7), range = 6.4 to 111.3
- Mean (SD) TUG for Paraplegia; 19.7 (25.9), range = 6.4 to 111.3
- Mean (SD) TUG for Tetraplegia; 14.6 (8.8), range = 6.5 to 36.7

ACTIVITIES-SPECIFIC BALANCE CONFIDENCE SCALE (ABC) INSTRUCTIONS

Perform this test if patient meets the following stage: 2A) Therapeutic Walking Capacity – Maximum Assist: ability to stand and initiate reciprocal steps through voluntary L/E movement but requires maximal physical assistance (>50% of total effort) of at least one person and may include use of assistive devices/parallel bars/suspension harness and/or orthoses with the exception of bilateral KAFOs.

<table>
<thead>
<tr>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-20 minutes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper survey includes the visual analogue scale from 0-100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Therapist Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The patient is given the form and the instructions below are reviewed. If the patient is not able to fill out the form independently assistance is given. The score is calculated by adding the total score and dividing by the number of items in the test.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>For each of the following, please indicate your level of confidence in doing the activity without losing your balance or becoming unsteady from choosing one of the percentage points on the scale form 0% to 100%. If you do not currently do the activity in question, try and imagine how confident you would be if you had to do the activity. If you normally use a walking aid to do the activity or hold onto someone, rate your confidence as if you were using these supports. If you have any questions about answering any of these items, please ask the administrator.</td>
</tr>
</tbody>
</table>
Perform this test if patient meets the following stage: 2A) Therapeutic Walking Capacity – Maximum Assist: ability to stand and initiate reciprocal steps through voluntary L/E movement but requires maximal physical assistance (>50% of total effort) of at least one person and may include use of assistive devices and/or orthoses with the exception of bilateral KAFOs.

**Time**

15-45 minutes.

**Equipment**

- Masking tape
- Stopwatch
- Carpet – no less than 7m long and about 2m wide (5m are timed)
- Standard armchair (44cm seat height)
- 2 standard bricks
- A trash can
- A step, 81-cm width, 122-cm length, 21-cm height

**Therapist Instructions**

- The modified SCI-FAP is composed of 4 tasks: (1) Carpet, (2) Up & Go, (3) Obstacles, and (4) Step. Each participant is given a rest period between tasks long enough for the tester to explain and demonstrate the next task. Each participant is instructed to use an assistive device and/or brace(s) as needed. The tester provides instructions and answers the participant’s questions.
- The tester provides physical assistance if needed. The tester times the participant during each task. The tester provides feedback/encouragement only after the task is completed.
- The tester records the performance time for all 4 tasks on a data collection table (see scoring table on testing sheet). If the participant cannot attempt a task, or does not complete a task, he/she is assigned the maximum time for that task, and an assistance rating of 6 (‘unable to complete’) (scoring table for assistance rating is below as well as on the testing sheet). If the participant takes longer than the maximum time to complete a task, he/she is assigned the maximum time, and the assistance rating that corresponds to the devices/assistance used for that task. Upon completion of all tasks, the tester calculates a total abbreviated SCI-FAP score (see Scoring the Spinal Cord Injury Functional Ambulation Profile below).

**Patient Instructions**

The tester provides an explanatory overview of the 4 tasks comprising the abbreviated SCI-FAP. Prior to performance of each task, the tester explains and demonstrates the task. The participant is informed that performance of each task is timed and is instructed to ask for clarification at any time.
# Instructions per test

## #1 Carpet

**Setup:** Carpeted area or a piece of short pile carpet, no less than 7-m long and 2-m wide, securely taped to the floor. Starting point is marked with a 1-m strip of masking tape. End point is marked exactly 5-m from the starting point with a 2-cm piece of masking tape. Both starting point and end point are at least 1-m from the edge of the carpet.

**Instructions:** Tester explains while demonstrating the Carpet task: “When I say ‘go,’ walk at your normal, comfortable pace until I say ‘stop.’” Tester assists participant as needed in placing toes on starting line tape. Tester says “go,” and presses stopwatch to begin timing. Participant walks toward the end point. Tester walks alongside the participant as the participant traverses the 5-m distance. Tester presses stopwatch to stop timing once both of the participant’s feet have crossed the end point. Tester tells the participant to stop when he or she is beyond the end point. Tester records time and assistance rating required for task.

## #2 Up and Go

**Setup:** Standard armchair with a 44-cm seat height (from floor) is placed on the hard, non-carpeted floor. Three meters away from the start line, a 1-m strip of masking tape is placed on the floor.

**Instructions:** Tester explains while demonstrating the Up & Go task: “You will sit in this chair with your back against the back of the chair and your arms resting on the armrests. When I say ‘go,’ you will stand up from the chair, walk at your normal comfortable pace past this line, turn around, walk back to the chair, and sit down, making sure your back is against the back of the chair. You may use the arms of the chair if needed.” Participant assumes sitting position in the chair. Tester assists participant as needed in placing toes on starting line tape. Tester stands beside the chair and prepares to walk with the participant. Tester says “go,” and presses stopwatch to begin timing. Tester monitors line to ensure both of participant’s feet cross the line before turning around. Tester stops timing when participant is fully seated with back against the chair. Tester records time and assistance rating required for task.

## #3 Obstacles

**Setup:** A 1-m piece of masking tape is placed on a hard, non-carpeted floor to mark the starting point. A standard brick is placed on the floor at the 1.5-m mark and the 3-m mark. A trash can (diameter 56cm, height 70cm) is placed at the 5-m mark.

**Instructions:** Tester explains while demonstrating the Obstacles task: “When I say ‘go,’ walk forward at your normal, comfortable pace and step over each brick. Then, walk around the trash can from either the left or right. Then walk back stepping over the bricks again. Do not hit the bricks or bin with your body or walking aid, if possible. Continue walking until I say ‘stop.’” Tester assists participant as needed in placing toes on starting line tape. Tester says “go,” and presses stopwatch to begin timing. Tester walks with participant. When both of the participant’s feet have crossed the end line, tester presses stopwatch to stop timing. Tester tells the participant to “stop” when he or she is beyond the end line. Tester records time, assistance rating required for task, and completes the ‘C: Hit Obstacle’ row (by entering a “1” if the participant hit any obstacles with his/her body or walking aid while completing the task or a “0” if no obstacle was hit).
#4 Step

**Setup:** A step with the measurements shown in the diagram below is used. Two pieces of masking tape are placed on the floor to indicate the start and finish points. The first, 1-m in length, is placed 1-m in front of the step. The second piece, 2-cm in length, is placed 1-m behind the step.

![Diagram showing the setup of the step with measurements](image)

**Instructions:** Tester explains while demonstrating the Step task: “When I say ‘go’, walk towards the step, up and over, and continue walking until I say stop.” Tester assists participant as needed in placing toes on the starting point. Tester says “go” and presses stopwatch to begin timing. Participant walks toward the end point. Tester follows participant through the task for safety. Tester presses stopwatch to stop timing when both of the participant’s feet have crossed the end point. Tester records time and assistance rating required for task.

**Scoring**

**Assistance Ratings:** Each participant is instructed to use an assistive device and/or brace(s) as needed.

1. **independent** (walking without any walking aids or assistance)
2. 2 = 1 cane/crutch/rail
3. 3 = 2 canes/crutches/ rails
4. 4 = walker (standard walker or 2- or 4-wheeled walker)
5. 5 = assist of 1 (physical assistance of 1 person whether minimum, moderate or maximum assist)
6. 6 = unable to complete

**Clinical Reference Values:**

In SCI:

Minimal Detectable Change: Carpet: 9.0; Up & Go: 14.0; Obstacles: 14.7; Step: 36.1 (total score reference values are not available because the full SCI-FAP includes seven items, whereas this version has only four)


Mean times from the able-bodied data are used to normalize the task scores for the SCI-FAP.

MODIFIED BALANCE EVALUATION SYSTEMS TEST (MMINI-BESTEST) INSTRUCTIONS

Perform this test if patient meets the following stage: 2B) Therapeutic Walking Capacity - Moderate Assist: ability to stand and initiate reciprocal steps through voluntary L/E movement but requires moderate physical assistance (25-50% of total effort) of one person and may include use of assistive walking aids and/or orthoses with the exception of the bilateral KAFOs.

Time

Can be completed over multiple sessions. Approximate time will be included for each subtest.

Equipment

Temper® foam (also called T-foam™ 4 inches thick, medium density T41 firmness rating), chair with arm rests or wheels, incline ramp, stopwatch, a box (9” height) and a 3 meter distance measured out and marked on the floor with tape [from chair].

Therapist Instructions

Subject Conditions: Subject should be tested with flat-heeled shoes OR shoes and socks off. They should not be wearing any foot or ankle bracing.

Scoring: The test has a maximum score of 28 points from 14 items that are each scored from 0-2.

**0** indicates the lowest level of function and **2** the highest level of function.

If a subject must use an assistive device for an item, score that item one category lower.

If a subject requires physical assistance to perform an item, score “0” for that item.

For Item 3 (stand on one leg) and Item 6 (compensatory stepping-lateral) only include the score for one side (the worse score).

For Item 3 (stand on one leg) select the best time of the 2 trials [from a given side] for the score.

For Item 14 (timed up & go with dual task) if a person’s gait slows greater than 10% between the TUG without and with a dual task then the score should be decreased by a point.

1. **SIT TO STAND**

Note the initiation of the movement, and the use of the subject’s hands on the seat of the chair, the thighs, or the thrusting of the arms forward.

2. **RISE TO TOES**

Allow the subject two attempts. Score the best attempt. (If you suspect that subject is using less than full height, ask the subject to rise up while holding the examiners’ hands.) Make sure the subject looks at a non-moving target 4-12 feet away.

3. **STAND ON ONE LEG**

Allow the subject two attempts and record the times. Record the number of seconds the subject can hold up to a maximum of 20 seconds. Stop timing when the subject moves hands off of hips or puts a foot down. Make sure the subject looks at a non-moving target 4-12 feet ahead. Repeat on other side.

4. **COMPENSATORY STEPPING CORRECTION-FORWARD**

Stand in front of the subject with one hand on each shoulder and ask the subject to lean forward (Make sure there is room for them to step forward). Require the subject to lean until the subject’s shoulders and hips are in front of toes. After you feel the subject’s body weight in your hands, very suddenly release your support. The test must elicit a step. NOTE: Be prepared to catch subject. A small readjustment step is allowed and not counted.
5. COMPENSATORY STEPPING CORRECTION - BACKWARD

Stand behind the subject with one hand on each scapula and ask the subject to lean backward (Make sure there is room for the subject to step backward.) Require the subject to lean until their shoulders and hips are in back of their heels. After you feel the subject’s body weight in your hands, very suddenly release your support. Test must elicit a step. NOTE: Be prepared to catch subject. A small readjustment step is allowed and not counted.

6. COMPENSATORY STEPPING CORRECTION - LATERAL

Stand to the side of the subject, place one hand on the side of the subject’s pelvis, and have the subject lean their whole body into your hands. Require the subject to lean until the midline of the pelvis is over the right (or left) foot and then suddenly release your hold. NOTE: Be prepared to catch subject. A small readjustment step is allowed and not counted.

7. STANCE (FEET TOGETHER); EYES OPEN, FIRM SURFACE

Record the time the subject was able to stand with feet together up to a maximum of 30 seconds. Make sure subject looks at a non-moving target 4-12 feet away.

8. STANCE (FEET TOGETHER); EYES CLOSED, FOAM SURFACE

Use medium density Temper® foam, 4 inches thick. Assist subject in stepping onto foam. Record the time the subject was able to stand in each condition to a maximum of 30 seconds. Have the subject step off of the foam between trials. Flip the foam over between each trial to ensure the foam has retained its shape.

9. INCLINE EYES CLOSED

Aid the subject onto the ramp. Once the subject closes eyes, begin timing and record time. Note if there is excessive sway.

10. CHANGE IN SPEED

Allow the subject to take 3-5 steps at normal speed, and then say “fast”. After 3-5 fast steps, say “slow”. Allow 3-5 slow steps before the subject stops walking.

11. WALK WITH HEAD TURNS- HORIZONTAL

Allow the subject to reach normal speed, and give the commands “right, left” every 3-5 steps. Score if you see a problem in either direction. If subject has severe cervical restrictions allow combined head and trunk movements. Veering from the intended direction is considered an imbalance.

12. WALK WITH PIVOT TURNS

Demonstrate a pivot turn. Once the subject is walking at normal speed, say “turn and stop.” Count the number of steps from “turn” until the subject is stable. Imbalance may be indicated by wide stance, extra stepping or trunk motion.

13. STEP OVER OBSTACLES

Place the box (9 inches or 23 cm height) 10 feet away from where the subject will begin walking. Two shoeboxes taped together works well to create this apparatus.
Therapist Instructions cont’d

14. TIMED UP & GO WITH DUAL TASK
Use the TUG time to determine the effects of dual tasking. The subject should walk a 3 meter distance.

TUG: Have the subject sitting with the subject’s back against the chair. The subject will be timed from the moment you say “Go” until the subject returns to sitting. Stop timing when the subject’s buttocks hit the chair bottom and the subject’s back is against the chair. The chair should be firm with arms. TUG

With Dual Task: While sitting determine how fast and accurately the subject can count backwards by threes starting from a number between 100-90. Then, ask the subject to count from a different number and after a few numbers say “Go”. Time the subject from the moment you say “Go” until the subject returns to the sitting position. Score dual task as affecting counting or walking if speed slows (>10%) from TUG and or new signs of imbalance. Counting is considered affected by either increased errors or slower speed.

Patient Instructions

Instructions given for each specific test by therapist included on Mini-BESTest form.
MODIFIED 6 MINUTE WALK TEST (M6MWT) INSTRUCTIONS

Perform this test if patient meets the following stage: 3B) Functional Walking Capacity – Independent Household Ambulator: ability to ambulate daily using reciprocal steps over ground for short distances (10-100m) independently. Person may use assistive devices and/or orthoses with the exception of bilateral KAFOs).

<table>
<thead>
<tr>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-10 minutes for set-up, 6 minutes for the test.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stopwatch, course with distances marked at least every 5m; vital signs monitoring equipment, Borg Scale.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Set Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>A flat, smooth, non-slippery surface, with no disturbing factors, is required and the pathway should contain as few turns as possible (preferably a large round or oval shaped path). Distances should be marked at least every 5 meters.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Therapist Instructions</th>
</tr>
</thead>
</table>
| • Monitor vital signs before and after each test if indicated. Allow the patient to initiate the start of the test. At each minute, inform the patient about the time that is left, ask whether the patient feels fine, and motivate the patient by providing standardized encouragement using the phrases, “You’re doing well!” or “Keep up the good work!”. The patient is allowed the use of walking aids but no physical assistance is permitted. You may walk behind the patient but you may not be in their field of vision. The patient is allowed to stand and rest but is not allowed to sit down or lean against a support to rest during the test so once the patient needs to sit down or lean against a support, record that distance and time as the “total distance achieved” and “total time for the test”.

• Scoring: total distance walked, time of test if less than 6 minutes, and walking aid(s) used. If the patient is walking with multiple walking aids and is independent with one but requires supervision with another, the test should be done with the walking aid where the patient is independent. For the purposes of the Standing and Walking data collection, please record the distance the participant has walked at each of the following time points that the participant reaches: 2 minutes, 4 minutes, and 6 minutes. The therapist may want to record the number of rests but this is not required on the data collection form. Physiological measures such as dyspnea and the level of fatigue can be reported using the Borg Scale.

• Stop testing based on the following criteria:

1. Any of the following symptoms:
   a. Angina (chest pain or tightness)
   b. Light-headedness
   c. Confusion
   d. Ataxia, staggering unsteadiness
   e. Pallor
   f. Cyanosis
   g. Nausea
   h. Marked dyspnea
   i. Unusual fatigue
   j. Signs of peripheral circulatory insufficiency
   k. Claudication or other significant pain
   l. Facial expressions signifying distress

2. Abnormal cardiac responses
   a. Systolic blood pressure drops < 10mmHg
   b. Systolic blood pressure rises > 250 mmHg
   c. Diastolic blood pressure rises to > 120 mmHg
   d. Heart rate drops more than 15 beats per minute (given the subject was walking the last minute of the test vs. resting)

Notify physician if test is terminated for any of the above reasons.
Patient Instructions

“The goal of this test is to assess the distance you can cover during 6 minutes. I will inform you every minute about the time you have left. If you feel uncomfortable, you can stop at any time. If you need to sit down or lean against a support that will be the end of the test. Although I will clock the time, perform this test at your own preferred speed.”

Scoring

**Clinical Reference Values:**

**Minimal Detectable Change** = 45.8 meters (150 feet) or a 22% change in Incomplete SCI; C2-L1; < 12 months post injury


**Norms:**

<table>
<thead>
<tr>
<th>AIS D patients, N= 18</th>
<th>Experimental environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>382.39m</td>
</tr>
<tr>
<td>Median</td>
<td>371.75</td>
</tr>
<tr>
<td>Min</td>
<td>151</td>
</tr>
<tr>
<td>Max</td>
<td>560</td>
</tr>
</tbody>
</table>


**Comparison of Walking Speed With Upper Motor Neuron Lesions During the SCI Locomotor Trial (SCILT):**

<table>
<thead>
<tr>
<th>Months after entry to trial</th>
<th>Metres in 6MWT</th>
<th>Walking Speed in m/s (SD), over 6 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>230.4 (21.6)</td>
<td>0.64 (0.06)</td>
</tr>
<tr>
<td>6</td>
<td>284.4 (18)</td>
<td>0.79 (0.05)</td>
</tr>
<tr>
<td>12</td>
<td>302.4 (21.6)</td>
<td>0.88 (0.06)</td>
</tr>
</tbody>
</table>

n = 66, AIS-C and D; with lesions between C-5 and L-3

# 10 METRE WALK TEST (10MWT) INSTRUCTIONS

Perform this test if patient meets the following stage: 3B) Functional Walking Capacity – Independent Household Ambulator: ability to ambulate daily using reciprocal steps over ground for short distances (10-100m) independently. Person may use assistive devices and/or orthoses with the exception of bilateral KAFOs).

## Time

Less than 5 minutes.

## Equipment

Stopwatch with a 14m walkway marked on a smooth floor, with the middle 10m marked as well.

## Therapist Instructions

The patient should be instructed to walk 14m. The measurement starts when the patient’s lead foot crosses a mark on the floor that indicates the onset of the 10m pathway (a “flying start”). After the toe of the leading leg crosses the line at the end of the 10m, the timing is stopped but the patient continues until her or she has reached the end of the 14m track. Allow the patient to initiate the start of the test. The patient is allowed the use of walking aids but no physical assistance is permitted. The patient should be wearing shoes. You may walk behind the patient but you may not be in their field of vision.

**Note:** A special condition occurs when the patient requires the use of parallel bars, as these are rarely 14m long. If parallel bars are used, please record the middle 5m between the parallel bars twice. The first and second 5m times are summed and written down.

## Patient Instructions

“The goal of this test is to assess the time you need to walk 10 meters. Please walk in a straight line without any breaks to the end point.” The test be administered twice. On one test the instructions will include asking him/her to walk at their preferred speed and on a second test to ask him/her to walk at his/her maximal speed.

## Scoring

The time to the nearest second is recorded. Distance m/s can be calculated.

### Clinical Reference Values:

In SCI:

Minimal detectable change = 0.13 m/s


http://www.scireproject.com/outcome-measures-new/10-meter-walking-test-10-mwt#
A Standing and Walking Module Overview video is available on the SCI² site under ‘RHSCIR toolkits’.

Videos for the following outcome measures can be found on the Spinal Cord Injury Rehabilitation Evidence (SCIRE) website: 10MWT, 6MWT (though not with the Borg) and the Berg Balance Scale: www.scireproject.com/outcome-measures/video.

Instructional videos for the mSCI-FAP tasks are available on the Rick Hansen Institute Youtube channel: https://www.youtube.com/user/RickHansenInstitute (See the “Clinical Guides” section). You can also find the videos on the SCI² site.

mMiniBESTest, an extended version of the miniBESTest video will be provided to the sites performing this measure. Instructions can be found at: http://bestest.us/learn/portal/.


Questions or comments regarding this guideline? Email clinical@rickhanseninstitute.org.
Rehabmeasures.org contains more information on each measure, along with more normative values. Search for each test at: www.rehabmeasures.org.

SCIRE has training materials on many other outcome measures:
www.scireproject.com/outcome-measures/list.

SCIRE also has evidence based guidelines for lower limb rehabilitation:
