COMPASS
(Consensus Outcome Measures for Prosthetic and Amputation ServiceS)
User Guide

International Society of Prosthetics and Orthotics

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Introduction

The COMPASS (Consensus Outcome Measures for Prosthetic and Amputation Services) is a set of outcome measures intended to be performed with people with lower limb absence (LLA) before and after an episode of rehabilitation care. By using the same outcome measures before and after treatment (e.g., the provision of a new prosthesis) it is possible to determine the effect of the treatment on outcomes. The COMPASS is made up of three Performance Based Outcome Measures (PerfOMs) and three Patient reported Outcome Measures (PROMs). To complete the COMPASS, all six outcome measures should be administered before and after treatment.

The COMPASS is intended to be used with all people with LLA and is ideal for use before and after undertaking rehabilitation to measure change, but can also be used at any time to determine functional status. The COMPASS+ contains additional PerfOMs that may be completed for people who are highly active. The COMPASS Adjunct consists of one outcome measure highly relevant in clinical practice. There is a further recommendation to use a generic health related quality of life (HRQoL) measure relevant to the place of use.

The protocols and instructions contained in the COMPASS User Guide should be followed precisely to ensure the reliability of each outcome measure.

COMPASS	
PerfOMs	• The Amputee Mobility Predictor (AMP) • Timed Up and Go (TUG) • Two Minute Walk Test (2MWT)
PROMs	• Prosthesis Evaluation Questionnaire (PEQ) – Residual Limb Health (PEQ-RL) • PEQ – Utility (PEQ-UT) • Trinity Amputation and Prosthesis Experience Scales-Revied (TAPES-R)

COMPASS+ *(optional for people who are high functioning)*	
PerfOMs	• Comprehensive High-Level Activity Mobility Predictor (CHAMP) • Six-minute Walk Test (6MWT)

COMPASS Adjunct *(optional but recommended to direct participants and clinicians towards rehabilitation goals that are relevant to the individual)*	
PROM	• Patient Specific Functional Scale (PSFS)

Health Related Quality of Life Measure	
PROM	• A HRQoL measure relevant to the place of use

COMPASS

COMPASS		
PerfOMs	•	The Amputee Mobility Predictor (AMP)
	•	Timed Up and Go (TUG)
	•	Two Minute Walk Test (2MWT)
PROMs	•	Prosthesis Evaluation Questionnaire (PEQ) – Residual Limb Health (PEQ-RL)
	•	PEQ – Utility (PEQ-UT)
	•	Trinity Amputation and Prosthesis Experience Scales-Revied (TAPES-R)

Amputee Mobility Predictor (AMP)

The Amputee Mobility Predictor (AMP) is a PerfOM and designed specifically for people with lower limb loss. The AMP can assist with determining sitting and standing ability, standing balance, dynamic balance, and gait attributes.

Resources / equipment: Timer or stopwatch, 2 hard chairs one with arm rests, a 30cm ruler, a 10cm high obstacle such as a box, pencil (i.e. object to pick up from the floor) and scoring form. Access to a set of stairs with at least 2 steps and a handrail, and a 4.5m walkway are also required. A walker or walking aid should be prepared for individuals that may require it.

Set up: See below under each individual test

Information for the administrator: The AMP is a 21-item performance-based functional test designed specifically for people with lower limb loss with a simple scoring system. The score can differentiate between people of different functional levels (e.g. the DMERC Medicare Functional Categories Levels [MFCL]) and is strongly correlated to other measure such at the 6-MWT. The AMP can assist with determining sitting and standing ability, standing balance, dynamic balance, and gait attributes. Items that an individual has difficulty achieving a maximum score, contain specific exercises that will assist in improving the strength, balance, coordination, or skills required to perform the task. The AMP can be a viable measure of change in function especially during early rehabilitation. The AMP can be performed by a person with limb loss, either without a prosthesis (AMPnoPro) or with a prosthesis (AMPPro)[1]. The AMP testing protocol is designed to be administered by a clinician independently and should not require help from an assistant.

Practice: No practice is needed but if participants wish to repeat a test it can be completed a second time.

Validated Languages other than English: French[2].

Administration time: Approximately 10 to 15 minutes, with additional time for setup.

Test instructions:

1. AMP Item 1: Sitting

Task: The amputee sits upright in a chair; the patient's buttocks are slightly forward so that there is no support from the back of the chair and his/her arms are folded comfortably in the lap.

Score 0: The amputee cannot sit independently for 60 seconds and or requires support or guarding from the observer.

Score 1: The amputee sits independently for 60 seconds and does not require support or guarding from the observer.

2. AMP Item 2: Sitting Reach

Task: Seated as in item 1, the amputee reaches forward and grasps a ruler held by the observer midline to the patient's sternum and 12 inches beyond the patient's dominant hand or sound limb side (the patient's choice)

Score 0: Does not attempt or verbally refuses because of fear or lack of confidence that they may complete the task.

Score 1: Cannot grasp or requires arm support of either the chair or assistive device.

Score 2: Reaches forward and successfully grasps the ruler.

3. AMP Item 3: Chair to Chair Transfer

Task: The amputee sits upright in an armless chair and is asked to transfers from one chair to another at a 90 degree angle. The amputee may choose direction to the amputated side or non-amputated side. Use of hands is permitted.
Score 0: Cannot do independently or requires physical assistance to complete the task.

Score 1: Performs independently, but appears unsteady or requires contact guarding.

Score 2: Performs independently, appears to be steady and safe.

4. AMP Item 4: Arises from a Chair

Task: The amputee sits upright and forward in a chair, arms folded comfortably across their chest. Ask the amputee to stand without using the assistance of their arms unless they feel it is necessary and then they may use the chair or assistive device.

Score 0: Unable without physical assistance, this includes contact guarding.

Score 1: Able to rise from chair but requires the use of their arms, the chair or an assist device.

Score 2: Able, without using arms, or in other words, they stand hands free.

5. AMP Item 5: Attempts to Arise from a Chair

Task: If the amputee attempted in item 4 to rise without using his/her arms but failed in that attempt to arise from the chair, then ignore item 4 and allow another attempt without penalty. However, if the amputee has difficulty and

may require additional attempts or physical assistance or guarding, he/she must graded accordingly in item 5, with the following scores.

Score 0: Unable without the help of physical assistance or contact guarding.

Score 1: The amputee is able to stand independently but requires greater than one attempt to come to standing.

Score 2: Able to rise to standing in one attempt.

6. AMP Item 6: Immediate Standing Balance

Task: Have stopwatch ready and begin timing the first 5 seconds that transpire immediately after the amputee achieves upright standing posture in front of the chair, with or without support of an assistive device. Be sure to check that the amputee is not leaning against the chair with their legs.

Score 0: Unsteady posture causes amputee to stagger, move foot quickly in an attempt to maintain balance or sways excessively. A steady posture with normal foot movement to adjust for comfortable standing is permitted without penalty.

Score 1: Steady standing posture using walking aid or other support such as a chair back that has been provided to assist with the testing task.

Score 2: Steady without walker or other support.

7. AMP Item 7: Standing Balance

Task: Standing balance is timed for 30 seconds by stopwatch. First attempt is without assistive device. If during the task the tester believes an assistive device will help the amputee to stand safely then repeat items 6 and 7 with an assistive device.

Score 0: The amputee is unsteady or unable to achieve a satisfactory upright posture that does not require contact guarding or support.

Score 1: Steady but uses walking aid or other support.

Score 2: Stands without assistive device or physical support.

8. AMP Item 8: Single Limb Standing Balance

Task: Using the stopwatch, the observer asks the amputee subject to stand first on the sound limb and then on the prosthesis for 30 seconds each. The observer grades the amputee's performance on both sides unless the amputee is being tested without the prosthesis, in which case scoring of the prosthetic side is ignored.

Score 0: If unable to demonstrate single limb standing for 30 seconds even with an assistive device the amputee is considered unsteady.

Score 1: Once the amputee grasps, even for a moment, a walking aid or requires support they are considered steady but requires support.

Score 2: If the amputee can maintain single limb standing without support for 30 seconds.

Note: For AMPnoPro only test single limb balance on the sound limb.

9. AMP Item 9: Standing Reach

Task: The amputee stands with his/her feet 2 to 4 inches apart and reaches forward to grasp a ruler that is held by the observer midline to the amputee's sternum and 12 inches beyond his/her dominant hand or sound limb side (the amputee's choice). The amputee may not take a step forward, but may place prosthetic limb in a position of comfort if the socket brim interferes with performance.

Score 0: Does not attempt or verbally refuses because of fear or lack of confidence that they may complete the task.

Score 1: Cannot grasp or requires arm support of assistive device.

Score 2: Reaches forward and successfully grasps the ruler.

10. AMP Item 10: Nudge Test

Task: The amputee stands with feet together as comfortably possible, the examiner pushes lightly on subject's sternum with palm of hand 3 times quickly with a consistent pressure that would cause body weight to move towards the heels but not typically cause them to loose balance in a normal situation.

Score 0: The amputee begins to fall and require assistance by the tester.

Score 1: If the amputee cannot or will not stand without the use of the assistive device or if the amputee stands independently and when nudged staggers, grabs or catches self.

Score 2: The amputee remains steady with independent standing free of assistive device.

11. AMP Item 11: Eyes closed

Task: The amputee stands with his/her feet 2 to 4 inches apart. Stopwatch ready, the observer asks the amputee to close his/her eyes and maintain standing posture for 30 seconds.

Score 0: The amputee is unable to complete the 30 seconds standing either independently without the use of an assistive device.

Score 1: The amputee remains steady with independent standing without the use of an assistive device.

12. AMP Item 12: Picking Objects Up from the Floor

Task: The amputee stand with his/her feet 2 to 4 inches apart. The observer places a pencil (or similar object of same height) on the floor midline form the amputee and 12 inches from the toe of the amputee's shoe. The observer asks the amputee to pick up the object off the floor without moving their feet and if safely possible without using any support.

Score 0: The amputee is unable to pick up object and return to standing safely.

Score 1: The amputee performs task with some support from an assistive device, chair or person.

Score 2: Performs task independently without any help from object or person.

13. AMP Item 13: Sitting Down

Task: The examiner asks the amputee to fold his/her arms across the chest and sit down in a controlled manner. If the amputee is unable to perform the task or is unsure, the examiner suggests the amputee use his/her arms or an assistive device.

Score 0: The amputee misjudges distance to the chair, falls into chair or requires contact guarding and is scored as unsafe.

Score 1: The amputee chooses for security or necessity to use their arms or cannot sit in a smooth and controlled motion.

Score 2: The amputee sits in a safe, smooth and controlled motion.

******To ensure safe ambulation in items 14 to 20, walking aids are permitted and encouraged whether or not the amputee wears a prosthesis. Item 21 compensates for the decision to use an assistive device on the ambulation tasks.***

14. AMP Item 14: Initiation of Gait

Task: From a standing posture with or without an assistive device as the amputee prefers and that which the clinician feels is safe the amputee is asked to begin walking.

Score 0: If the amputee demonstrates any hesitancy, multiple attempts to start or appears to be consciously organizing in their minds the process of initiating walking beyond that of normal ambulation.

Score 1: No hesitancy with a smooth transition from standing to walking.

15. AMP Item 15: Step Length and Height

Task: The amputee walks a minimum distance of 12 feet (3.66 meters) twice (up and back) for a total of 24 feet (7.32 meters). Four scores are required or two scores (a & b) for each leg.

"Marked deviation" is defined as extreme substitute movements to permit clearing the floor.

a. Swing Foot

Score 0: The prosthetic and/or sound limb does not advance a minimum of 12 inches. If ambulating without the prosthesis and with an assistive device the same applies, the swing limb must advance a minimum of 12 inches.

Score 1: Advances a minimum of 12 inches with the prosthetic limb and/or the sound limb.

b. Floor Clearance

Score 0: Foot does not completely clear floor with step or deviation. This description includes foot shuffling, sliding and marked deviations such as circumduction that require significant substitution for clearing the floor.

Score 1: Foot completely clears floor without marked deviation.

******Note: For the AMPnoPro, only test single limb balance on the sound limb***

16. AMP Item 16: Step Continuity

Task: As the amputee performs the ambulation task described in item 15 the tester observes the quality of gait. Step continuity is defined as continuous steps that are void of hesitation, marked differences in step length that require adjustment for loss of balance between steps, additionally, marked difficulty in maneuvering the assistive device would interrupt step continuity.

Score 0: Stopping or discontinuity between steps that interrupts a smooth continuous gait.

Score 1: Steps appear to be continuous.

17. AMP Item 17: Turning

Task: As the amputee complete the first 12 feet of ambulation and turns to return to the chair the tester notes the quality of the movement.

Score 0: Unable to turn therefore requires intervention to prevent falling such as contact guarding and verbal instructions.

Score 1: The amputee requires greater than three steps but completes task but requires no contract or verbal intervention.

Score 2: No more than three continuous steps with or without an assistive aid.

18. AMP Item 18: Variable Cadence

Task: Walk a distance of 12 feet fast as possible safely four times for a total of 48 feet (14.63 meters). Speeds may vary from slow to fast and fast to slow varying cadence. This task may also be completed with an assistive device although care must be observed so that the amputee does not extend themselves beyond the capabilities.

Score 0: The amputee is unable to vary cadence in a controlled manor.

Score 1: Asymmetrical increase with cadence in a controlled manor is observed, where step length markedly differs between limb and/or balance must be re-established with each step.

Score 2: Symmetrical increase in speed in a controlled manor where step lengths are equal and balance is maintained.

19. AMP Item 19: Stepping Over Obstacle

Task: Place a movable, 4-inch high box or hurdle (length (18-24in) in the walking path. The object must be a design that will not cause the amputee to stumble or fall should he/she be unable to complete the task. The amputee is asked to step over the obstacle without interrupting step continuity. This task may be performed en route to or from the stair-climbing task. The amputee is penalized if he/she attempts to circumvent the obstacle by swinging the prosthetic limb to the side of the obstacle.

Score 0: The amputee cannot step over the box.

Score 1: The amputee catches his/her foot on the obstacle, circumducts it, or interrupts stride by stopping in front of obstacle to prepare physically or mentally to clear it.

Score 2: The amputee steps over the obstacle without interrupting stride.

20. AMP Item 20: Stairs

Task: The examiner instructs the amputee to try to go up and down stairs without holding on to the railing. However, to ensure safety, do not hesitate to permit the amputee to grasp the rail. The stairs must have a minimum of 2 steps, 3 to 4 steps preferred.

a. Ascending

Score 0: Unsteady, can't ascend stairs or verbally states fear or inability to attempt.

Score 1: Ascends stairs one step at a time, or must hold on to railing or assistive device.

Score 2: Ascends stairs step-over-step and does not hold onto the railing or assistive device.

b. Descending

Score 0: Unsteady, can't descend stairs or verbally states fear or inability to attempt.

Score 1: Descends stairs one step at a time, or must hold on to railing or assistive device.

Score 2: Descends stairs step-over-step and does not hold onto the railing or assistive device.

21. AMP Item 21: Assistive Device

Task: Points are awarded based on the use of an assistive device for items 14 to 20. If the amputee required an assistive device because the stairs lacked a railing, but he/she did not use an assistive device for ambulation, then award points based on the performance on items 14 to 19.

Score 0: Bed bound

Score 1: Wheelchair

Score 2: Walker

Score 3: Crutches (axillary or forearm)

Score 4: Cane (straight or quad)

Score 5: None

Scoring: There are two configurations of the AMP; the AMPPRO is for individuals *with* a prosthesis, while the AMPnoPRO is for those *without* a prosthesis, the results of the two versions are not directly comparable [1]. Both versions may be used with an assistive device as needed. Scoring is considered to be relatively simple, with possible total scores ranging from 0 to 47 for the AMPPRO and 0 to 43 for the AMPnoPRO. Higher scores on both the AMPPRO and AMPnoPRO indicate better mobility. You can download a scoring form here. (pp 622-623)

Timed Up and Go (TUG)

The Timed Up and Go (TUG) is a single-task generic PerfOM originally for elderly people but widely used in a variety of populations and designed to assess several physical manoeuvres that comprise basic mobility including balance, transfers, walking and turning.

Resources / equipment: Stopwatch or timer, measuring tape, or measuring wheel; a standard chair with arms (height between 40 to 50cm); coloured adhesive tape to mark the turning point; and a clear walkway of 3.5 meters with additional space of the chair (see image below). The use of assistive devices should be documented.

Set up: The chair is placed with a clear 3.5-meter walkway in front of it. A line should be clearly marked on the floor 3 meters in front of the chair. See Figure 1.

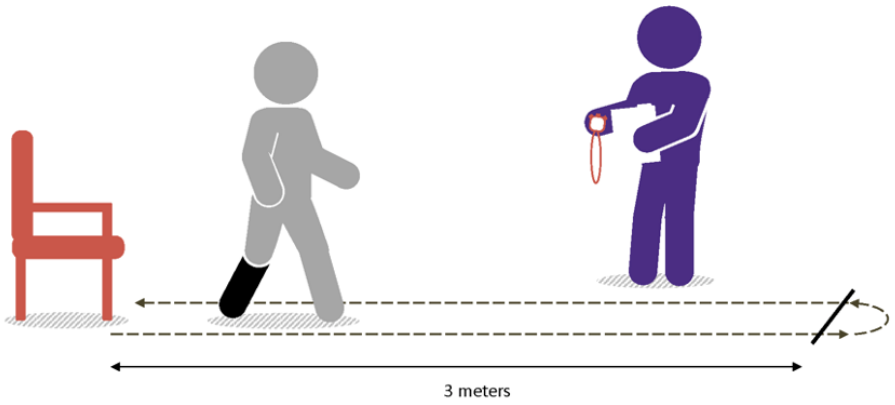


Figure 1. TUG Set Up

Information for the administrator: The test is conducted with the participant rising from the chair, walking until they pass the mark on the floor, turning and walking back to the chair and sitting down again. The participant should walk at a normal, comfortable pace. Administer the test twice. Begin timing when you say "Go". Stop timing when the participants' buttocks touch the chair[3].

Practice: Administer one practice trial. Do not time the practice trial[3].

Languages: Given the simplicity of the instructions, the TUG can be administered in different languages with informal translations[4].

Test instructions: "The goal of this test is to rise from the chair, walk to the mark on the floor, walk back to the chair, and sit down again. You should walk at your normal, comfortable pace. I will time you while you perform the test"[3].

"Begin the test sitting with your back against the back of the chair and your arms resting on the armrests. When I say go, please stand up and walk fully across the line on the floor, turn, walk back to the chair, and sit down again. Please walk at your normal, comfortable pace."[3,5]

Scoring: Select the faster of the two-timed trials as the TUG score[3]. A lower TUG time/score indicates better mobility.

Administration time: Less than 1-minute, with additional time for set up, demonstration and practice trails.

Two-minute Walk Test (2MWT)

The Two-minute Walk Test (2MWT) is a single-task PerfOM, widely used in a variety of populations and designed to measure walking ability.

Resources / equipment*:* Stopwatch or timer, measuring tape or measuring wheel, two cones or small objects. The test should be conducted indoors, along a quiet, uncarpeted hallway or corridor with a chair available for resting if required.

Set up: The test should be conducted on a straight, indoor, uncarpeted 30 meters track with a small cone or other visible object to mark the turnaround points[6,20]. See figure 2. The person should be able to walk freely and not be interrupted by objects or other people. If the track needs to be adapted or shortened due to lack of space, ensure that the participant walks the same course on each re-test and that this deviation from the standard set up is noted.

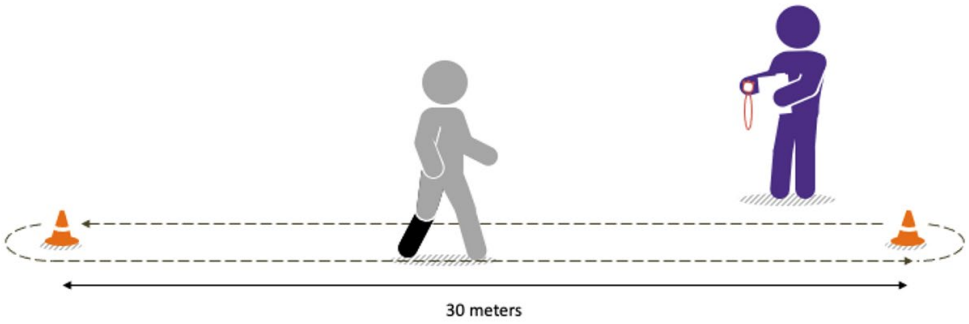


Figure 2. 2MWT Set Up

Information for the administrator: The goal of this test is for the participant to walk as far as possible in 2 minutes along the marked course, without running, jumping or hopping. Count the number of laps and distance covered in the final lap to calculate total distance covered in 2 minutes[7].

At the beginning say "3, 2, 1, Go". After 1-minute has elapsed say, "You are doing well. You have 1-minute left."[7]

A chair should be available for rests if needed with the participant able to recommence walking if they want to after a rest within the 2 minutes (time is not paused for rests). Walk behind the participant if safety is a concern rather than beside them, to avoid setting or changing their pace. The participant should avoid talking. It should be clinically determined that the participant has sufficient cardiovascular fitness to perform this test and that they have no other contraindications for exercise[7]. The use of assistive devices should be documented, as should any deviations from the above set up (e.g., performing testing outdoors or with a different length walking track).

Practice: No practice should be given.

Languages: N/A

Administration time: Less than 5 minutes, with additional time for set up.

Test instructions: I will give you a countdown of 3, 2, 1, Go. When I say "Go", commence walking along the marked track without talking. A chair is available for a rest if needed and you can rest and resume the test as needed. If you are unable to continue, please indicate this and we will measure the distance covered. I will time you while you perform the test.[7]

Scoring: Scoring is done by calculating the total distance covered within 2 minutes (by counting the laps and the extra distance covered within 2 minutes). Distance walked is the primary outcome of interest, but average walking speed can also be calculated. An increase in the distance walked (post-intervention distance minus pre-intervention distance) indicates an improvement in mobility.

Prosthesis Evaluation Questionnaire (PEQ) – Utility (UT) and Residual Limb Health (RL) Subscales

The Prosthesis Evaluation Questionnaire (PEQ) is a PROM which is a multidimensional questionnaire designed to assess prosthetic function and aspects of prosthesis-related quality of life in individuals with LLA [8].

If you plan to use the PEQ or if you have suggestions for improvement, please let the developers know. They will do their best to answer any questions you may have about using the PEQ. Please e-mail to info@orthocareinnovations.com. The PEQ may be used free of charge, however, all portions are copyrighted © by Prosthetics Research Study. Use of any part of the PEQ must be accompanied by appropriate acknowledgement of Prosthetics Research Study.

Resources / equipment: PEQ-UT and PEQ-RL questionnaires and a ruler or measuring tape. The PEQ-UT and PEQ-RL subscales are included as Appendix 1 and 2 in this User Guide and should be filled in as a self-reported survey.[8]

The PEQ may be completed as a postal survey or in written form. The PEQ, in English, is available in an electronic format through Google Play or the Apple Store: https://orthocareinnovations.com

The guide for scoring and analysis of the PEQ in its entirely is available online: http://analisedemarcha.com/papers/o_p/peq/EN/peq-Evaluation_Guide.pdf

Information for the administrator: The PEQ as a whole consists of 82 items, divided into 9 subscales addressing 4 major areas of concern including prosthetic function, mobility, psycho-social aspects, and well-being. 40 (of the 82) items are scored individually, covering concerns such as satisfaction, pain, prosthetic care, and experience with the prosthesis.

Two of the 9 PEQ Subscales have been included in the COMPASS; PEQ Utility (UT) subscale consisting of 8 items assessing the fit, weight, comfort, and general use of the prosthesis; and PEQ Residual Limb Health (RL) subscale, consisting of 6 items assessing the state and functions of the residual limb skin while wearing the prosthesis.

The PEQ Scales (UT and RL)

Validated Subscale	*Questions for each subscale by page number and question letter*
Utility (UT)	1B, 1C, 1D, 2E, 2F, 2G, 2H, 2I
Residual Limb Health (RL)	4Q, 4R, 4S, 5T, 5U, 5V

Validated Languages other than English: Arabic[9], Spanish[10], Italian[11], Turkish[12], and Danish[13]

Administration time: Not reported (estimated less than 5 minutes for each of these subscales), with additional time for scoring.

Test Instructions: Included within the instructions in the Appendices 1 and 2. Questions for each subscale begin with the common stem “Over the past 4 weeks…”. Respondents are required to indicate their response on a 100 mm visual analogue scale (VAS), framed by anchors such as ‘never’ and ‘all the time’ equivalent to scores of 0 and 100, respectively.

Scoring: The *PEQ Guide for Scoring and Analysis* can be found in its entirety by accessing the following link: http://analisedemarcha.com/papers/o_p/peq/EN/peq-Evaluation_Guide.pdf

The following is an adapted from the *PEQ Guide for Scoring and Analysis,* relevant to the PEQ-UT and PEQ-RL.

Most questions in the PEQ use a VAS format. Each VAS is scored as a continuous numerical variable measured as the distance in millimetres (mm) from the left endpoint of the line to the point at which the respondent's mark crosses the line. Each line is 100mm long and is always measured from the left (0 mm) to right (100 mm). The questions are all worded so that a higher number (toward the right) will correspond with a more positive response. Be careful when duplicating (i.e. printing) the questionnaire that the lines remain 100 mm in length.

Coding instructions for questions - the questions that offer the option of making a check mark to indicate that the question is "not applicable" (NA) to the respondent, are sometimes coded "100" and sometimes "no response" (NR). Any question that is left blank is scored NR and is treated as missing.

Calculating the subscale scores – manually measure each response on the VAS, with each score ranging from 0 mm to 100 mm. Calculate the average (arithmetic mean) of all the questions answered by the respondent that make up the individual subscale (i.e. PEQ-UT or PEQ-RL). For example, if a respondent only answered 5 questions of a 6-item subscale, make sure to divide by 5 when calculating the mean. At least half of the questions of a subscale should be answered, with a number score not NR for the scale to be valid (round up if the number of items is odd). Higher scores indicate 'better utility' for the PEQ-UT subscale and 'better residual limb health' for the PEQ-RLH subscale.

Trinity Amputation and Prosthesis Experience Scales-Revised (TAPES-R)

The Trinity Amputation and Prosthesis Experience Scales-Revised (TAPES-R) is a PROM which is a multidimensional assessment designed to facilitate examination of the psychosocial processes involved in adjusting to a prosthesis and the specific demands of wearing a prosthesis.

It consists of 64 items divided into four sections[14]:

1. *Psychosocial Adjustment Scale*: consists of three, 5-item subscales assessing general adjustment, social adjustment, and adjustment to limitation.
2. *Activity Restriction Scale*: consists of 10 items addressing athletic activity restriction, social restriction, mobility restriction, and occupational restriction.
3. *Satisfaction with Prosthesis Scale*: comprises 8 items divided into two scales assessing the aesthetic satisfaction (3 items) and functional characteristics (5 items) of the prosthesis.
4. Additional items exploring the experience of phantom limb pain, residual limb pain, and other medical conditions not related to the amputation.

The TAPES-R was developed by the Dublin Psychoprosthetics Group www.psychoprosthetics.ie and is reproduced with permission.

Resources / equipment: The TAPES-R questionnaire and a pen. The TAPES-R questionnaire is included as Appendix 3.

Information for the Administrator: This is a paper questionnaire designed to investigate different aspects of having a prosthesis.

Validated Languages other than English: Arabic[15], French[16], Persian[17], and Turkish[18].

Administration time: 15 minutes, with additional time for scoring.

Test instructions: Included in Appendix 3

Scoring: Scoring of the TAPES-R should be completed manually using the scoring sheet supplied in Appendix 4.

The following scoring information is from the *Guide to the TAPES-R.*

There are six subscale scores, which do not include the pain questions in Part II. Each of the TAPES-R subscales are scored individually to produce six individual scores (i.e. is it not appropriate to sum scores across the six subscales). While the use of the complete TAPES-R provides a comprehensive picture, each subscale can be used individually. Some items are positively loaded and some are negatively loaded. You can tell this by the direction of the scoring.

The TAPES-R subscale scores are calculated as follows:

Psychosocial Adjustment subscales:

- General Adjustment: Add the values corresponding to items 1 to 5 in Part I and divide by the number of items that were deemed applicable/answered

- Social Adjustment: Add the values corresponding to items 6 to 10 in Part I and divide by the number of items that were deemed applicable/answered
- Adjustment to Limitation: Add the values corresponding to items 11 to 15 in Part I and divide by the number of items that were deemed applicable/answered
- High scores on these subscales are indicative of adjustment

Activity Restriction Scale:

- Add the values corresponding to items a to j in Part I and divide by the number of items that were deemed applicable/answered
- A high score is indicative of activity restriction

Satisfaction with Prosthesis subscales:

- Aesthetic Satisfaction: Add the values corresponding to items i to iii in Part I
- Functional Satisfaction: Add the values corresponding to items iv to viii in Part I
- High scores on these subscales are indicative of satisfaction with prosthesis

The full *Guide to the TAPES-R* can be found here or at www.psychoprosthetics.ie

COMPASS+

COMPASS+ *(optional for people who are high functioning)*	
PerfOMs	• Comprehensive High-Level Activity Mobility Predictor (CHAMP) • Six-minute Walk Test (6MWT)

Comprehensive High-Level Activity Mobility Predictor (CHAMP)

The CHAMP is a PerfOM designed to measure high-level mobility in individuals with LLA. It contains four advanced physical tests providing an overall assessment of balance, coordination, speed, power, and multidirectional agility.

Resources / equipment: A stopwatch; 2 chairs or a walker; 1 cone with a height of 15.2 cm (6 in); 18 cones, 1 countdown timer, 1 roll of tape; a clipboard; and pencil. Space required (minimum 13 meters by 10 meters).

Set up: See below under each of the four individual tests

Information for the administrator: The CHAMP aims to measure high-level mobility in individuals with LLA, quantified as a score of 37 or above on the AMP. It consists of four advanced physical tests providing an overall assessment of balance, coordination, speed, power, and multidirectional agility:

1. *Single-limb Stance test:* length of time (in seconds) standing on each leg unassisted, with opposite foot raised at least 15.2 cm off the floor.
2. *Edgren sidestep test*: Stepping sideways back and forth along 5 cones, placed in a line 1 meter apart, crossing as many cones as possible within a 10 second period.
3. *T-test*: time taken (in seconds) to complete a T-shaped course requiring the individuals to move forward, sideways and backward in an area of 10 meters x 10 meters
4. *Illinois Agility Test*: time taken (in seconds) to complete a course beginning with prone to standing transfer, moving forward, turning and weaving through several points placed 3.3 meters apart.

Each test only needs to be performed once, if however, the participant cannot complete a test or feels they could do better they can be given a chance to complete it a second time. 60 seconds of rest should be given if a second trial is necessary and 60 seconds rest should be provided before moving to the next test.

The following five rules for testers were established in order to maintain the CHAMP's reliability and keep its validity intact:

1. Do not motivate or give suggestions to the participant;

2. The tester will read the instructions word for word and provide a walk through demonstration of each of the four items;
3. Each participant is given at least 2 trials to complete each of the four items;
4. If the participant is unable to complete the item in two trials because of a disqualification or fall during testing, a third trial is offered
5. No more than 3 trials are to be offered for any of the items.

More information on the CHAMP can be found here and in the appendix to this article here.

Practice: No practice is needed but if participants wish to repeat a test it can be completed a second time.

Validated Languages other than English: N/A

Administration time: 15 minutes

Test instructions:

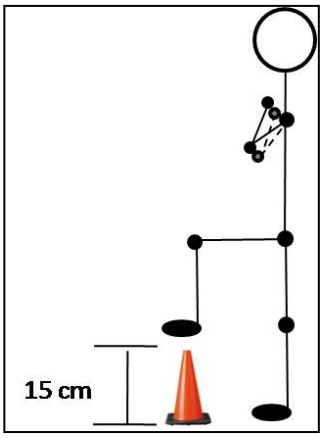
1. Single Limb Stance (SLS)

Equipment: 1 stopwatch; 2 chairs or a walker; and 1 x 15.2 cm (6 inch) high cone (box).

SLS area layout: For safety, two chairs are set on either side of the participant or one walker is set in front of the participant. The participant stands behind a 15.2 cm (6 inch) cone or block in order to see their raised foot is at the proper height.

SLS Test Description:

- Stand on a flat surface feet comfortably apart.
- For optimal balance the stance limb may be adjusted prior to raising the foot off the floor.
- On the command "Ready", the participant folds their arms across the chest.
- The participant initiates the test when one foot leaves the floor and the stopwatch is started.
- The foot must remain 15.2 cm off the floor, once lowered the watch is stopped.
- Stand-by assistance for safety is provided by the administrator.
- The test position is maintained for a maximum of 30 seconds.
- Both lower limbs are tested.



Single Limb Stance (SLS)

SLS Scoring:

- The participant performs one successful trial for each lower limb.
- A maximum of 3 trials for each lower limb may be attempted.
- The time recorded for each trial is recorded to the closest 0.1 seconds for a maximum time of 30 seconds.
- The stopwatch starts when the foot comes off the floor.
- When 30 seconds with one limb is achieved, no further trials are required for that limb.
- The trial is concluded if the foot touches the floor, the stationary foot loses contact with the floor (hopping), or a hand touches a chair back or walker.
- The best SLS time for the left and right lower limbs are added together to produce a "Best Combined Time" and converted to a "CHAMP Score". *(see scoring information and conversion table link below)*

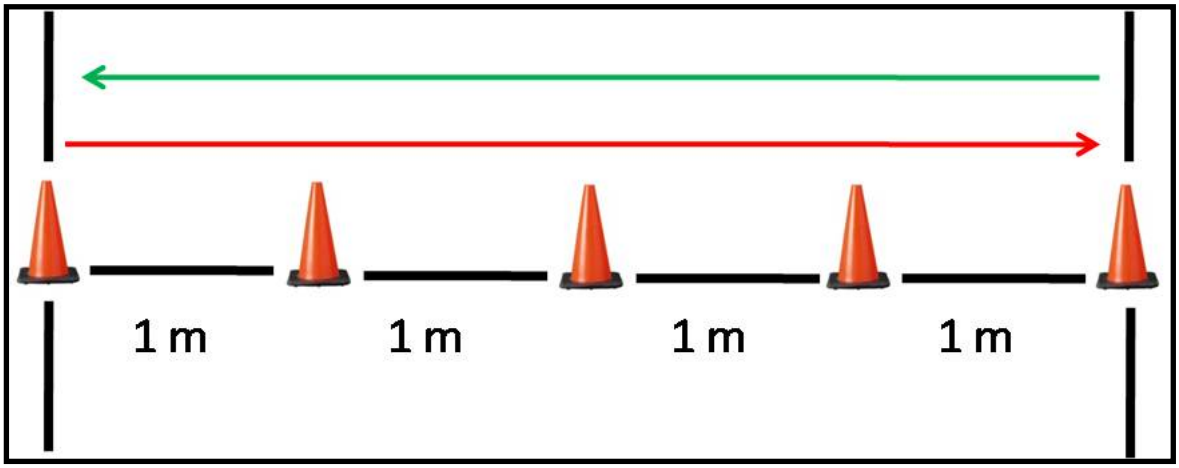
SLS Verbal Instructions:

- On the command "Ready", fold your arms across your chest.
- When you are ready, lift your foot above the 15 cm cone or box.
- If your foot falls below the 15 cm cone or box, you will be asked to raise it.
- Time will be stopped if:
    - Your foot touches the floor.
    - You do not maintain your foot above the 15 cm cone or box.
    - Arms come un-crossed.
    - The stationary foot loses contact with the floor (i.e., hopping).
    - You achieve 30 seconds.
- You will take a 30-second rest period after each trial.

2. Edgren Side Step Test (ESST)

Equipment: 5 cones (or marking tape); 1 countdown timer; 1 counter; and 1 tape measure.

ESST area layout: The length of the course is 4 meters (13.12 ft), with four intervals separated every 1-meter by a cone (see diagram below). Intervals are measured from the centre of each cone. The Tester is positioned either in front or behind the participant.



Edgren Side Step Test (ESST)

ESST Test Description:

- The participant begins in a standing position behind the far-left cone.
- The participant is instructed NOT to cross their feet while sidestepping.
- On the command "Go", by the Tester, the participant sidesteps to the right until their right foot has touched or crossed the outside cone or tape mark.
- The participant then sidesteps to the left until his left foot has touched or crossed the left outside cone or tape mark.
- The participant sidesteps back and forth to the outside cones as rapidly as possible for 10 seconds.
- A 60-second rest period is taken between each trial.

ESST Verbal Instructions:

- The diagram above illustrates the path you will complete for this test.
- On the command "Ready" you will assume a standing position outside the far left cone.
- On the command "Set", prepare to sidestep.
- On the command "Go", you will sidestep to the right.
- Sidestep to the right until your right foot has touched or crossed the right outside tape mark.

- Then sidestep to the left until your left foot has touched or crossed the left outside tape mark.
- Repeat this procedure as fast as possible in 10 seconds.
- Points are awarded based on the number of cones you cross in 10 seconds.
- If you fail to reach the outside cones, 1 point will not be awarded.
- You will score a 0 (zero) and be asked to repeat the test, if:
    - You fail to keep your trunk and feet pointing forward at all times.
    - You cross your legs.
    - You will take a 60 second rest period after each trial.

ESST Scoring:

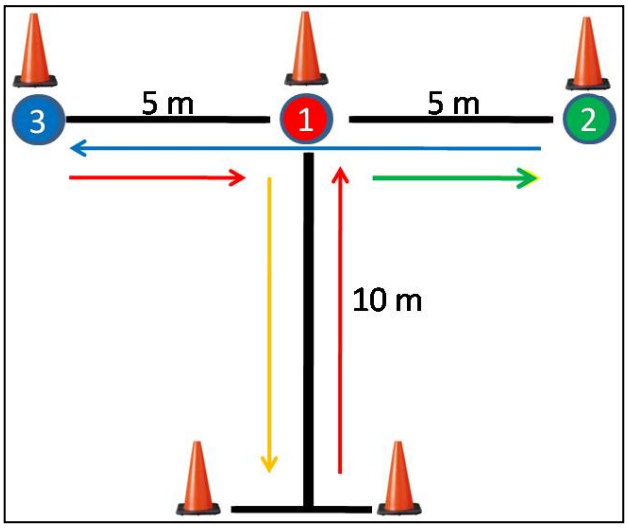
- The participant is given one point for each 1-meter segments passed during the 10 seconds.
- If a participant falls, crosses legs, or stops, a score of 0 is given.
- The best Edgren Side Step Test performance (greatest number of points/meters) is chosen for the "Best Points" and converted to a "CHAMP Score". *(see scoring information and conversion table link below)*

3. T-Test

Equipment: 5 cones; a stopwatch; and 1 roll of tape.

T-Test area Layout (see diagram): The dimension of the T-Test is 10 meters x 10 meters (32.8 ft x 32.8 ft) and designated by 5 cones. A 3-meter deceleration area is required directly behind the finish line to avoid deceleration prior to the finish line or prevent injury if a wall is present.

The course layout: the start and finish line is marked with tape between two cones, the first mark/centre cone (cone #1) is set 10 meters from the starting line, and the other two cones (cone #2 and cone #3) are set 5 meters from the centre cone forming a "T" shape course. Intervals are measured from the centre of each cone or mark.



T-Test

T-Test Description:

- The participant stands at the starting line.
- On the command "Go", by the Tester, the participant runs or moves as quickly as possible:
    - Forward to the centre cone or mark (cone #1);
    - Sidesteps to the right 5 meters to the right cone or mark (cone #2);
    - Sidesteps to the left 10 meters to the left cone or mark (cone #3);
    - Sidesteps 5 meters back to the centre cone or marks (cone #1) and runs or moves as quickly as possible backwards past the finish line.
- The Tester starts the stopwatch on "Go" and stops when the participant breaks the plane of the finish line.
- The participant is given a 60 second rest period between each trial, if an additional trial is required.

T-Test Verbal Instructions:

- The diagram illustrates the path you will complete for this test (see below).
- On the command "Ready" you will assume a standing position behind the starting line.
- On the command "Set", prepare to start.

- On the command “Go”, you will run or move as quickly as possible forward to the centre cone (cone #1).
- Facing forward sidestep right to the right cone without crossing your feet (cone #2).
- One foot must touch or cross the tape mark.
- Facing forward sidestep left to the left cone without crossing your feet (cone#3).
- One foot must touch or cross the tape mark.
- Facing forward sidestep right back to the centre cone without crossing your feet (cone #1).
- One foot must touch or cross the tape mark.
- Facing forward run or move as quickly as possible backwards to the finish line.
- You will take a 60-second rest period after each trial, if an additional trial is required.

T-test Scoring:

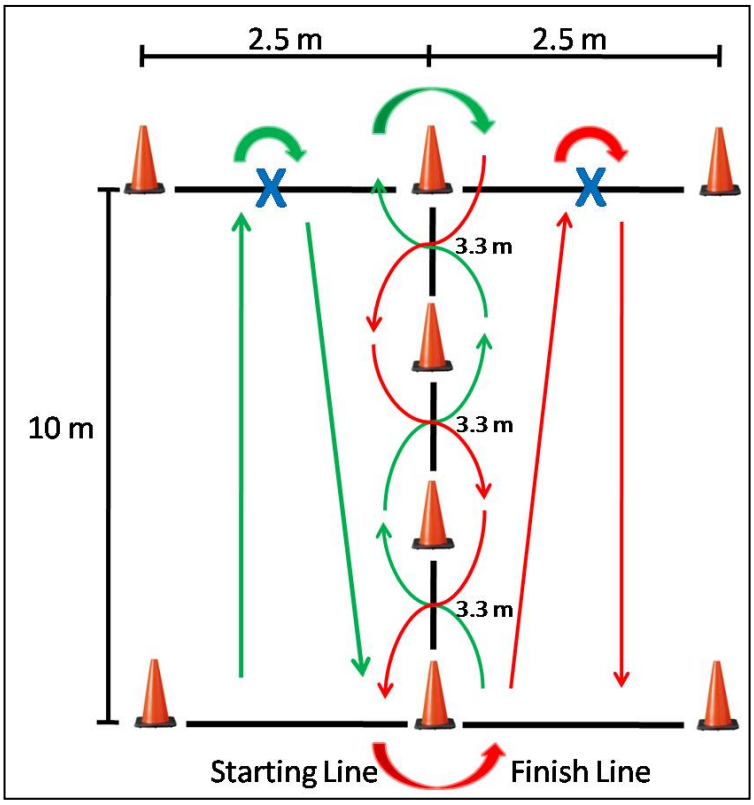
- Your total time of completion of the T-Test will be recorded
- You will score a 0, and be asked to repeat the test, if:
    - You fail to run the course as instructed.
    - You fail to reach the end lines.
    - You fail to complete the course.
    - You move any cones.
    - You fail to keep your trunk and feet pointing forward at all times or you cross your legs more than once.
- The fastest performance is recorded in “Best Test Time” and converted to “CHAMP Score”. *(see scoring information and conversion table link below)*

4. Illinois Agilist Test (IAT)

Equipment: 8 cones; a stopwatch; and 1 roll of tape.

IAT area layout (see diagram below):

- The dimension of the IAT is 10 meters x 5 meters (32.8ft x 16.4 ft) and designated by 8 cones.
- The four centre cones are spaced 3.3 meters (10.9 ft) apart.
- The four corner cones are positioned 2.5 meters (8.2ft) from the centre cones.
- Intervals are measured from the centre of each cone or mark.
- Directly behind the finish line, a 3-meter deceleration area is required to avoid deceleration prior to the finish line or prevent injury if a wall is present.
- In the event that the floor is not suitable for lying prone, an optional non-slip carpet or mat may be used.



Illinois Agility Test (IAT)

IAT Test Description:

- The participant will begin the test lying prone on the floor behind the starting line with their arms at their side and their head turned to the side or facing forward.
- On the command “Go” the stopwatch is started; the participant rises to their feet and runs or moves as quickly as possible:
    - Forward to the first floor mark 10 meters away and returning 10 meters to the first centre cone weave up and back around the four centre cones.
    - Forward to the second floor mark 10 meters away and returning 10 meter to the finish line.
- The Tester starts the stopwatch on “Go” and stops when the participant breaks the plane of the finish line.
- The participant takes a 60-second rest period between each trial.

IAT Verbal Instructions:

- The diagram illustrates the path you will complete for this test.
- On the command “Ready” lie on your stomach behind the starting line with your arms at your side and your head turned to the side or facing forward.
- On the command “Set”, prepare to start, but you may NOT move your hands from your side.
- On the command “Go”, get up and run or move as quickly as possible to the first tape mark.
- One foot must touch or cross the tape mark.
- Turn around and run or move as quickly as possible back to the first centre cone.
- Weave up and back through the 4 centre cones.
- Run or move as quickly as possible to the second tape mark on the far line.
- One foot must touch or cross the tape mark.
- Turn around and run or move as quickly as possible across the finish cone.
- Your total time for completion will be recorded.

- You will score a 0, and be asked to repeat the test if:
    - You fail to run the course as instructed.
    - You fail to reach the end lines.
    - You fail to complete the course.
    - You move any cone.
    - You will take a 60-second rest period after each trial.

IAT Scoring:

- If a participant falls, crosses legs or stops, a score of 0 (zero) is given.
- The fastest performance is recorded in "Best Test Time" and converted to "CHAMP Score". *(see scoring information and conversion table link below)*

Scoring: Overall scores for the CHAMP range from 0 to 40 and are determined by adding the best score of each of the four items (converted into a 0 to 10 scoring system) using the scoring form (p1) and scoring system (p2) found here. Higher scores indicate better performance.

Six-minute Walk Test (6MWT)

The Six-minute Walk Test (6MWT) is a single task PerfOM, widely used in a variety of populations designed to measure walking ability, aerobic capacity and endurance.[19]

Resources / equipment*:* Stopwatch or timer, measuring tape or measuring wheel, two cones or small objects. The test should be conducted indoors, along a quiet, uncarpeted hallway or corridor with a chair available for resting if required.

Set up: The test should be conducted on a straight 30 metre track with a cone or other visible object to mark the turnaround points.[20] See figure 3. If the track needs to be adapted or shortened due to lack of space, ensure that the participant walks the same course on each re-test and that this deviation from the standard set up is noted.

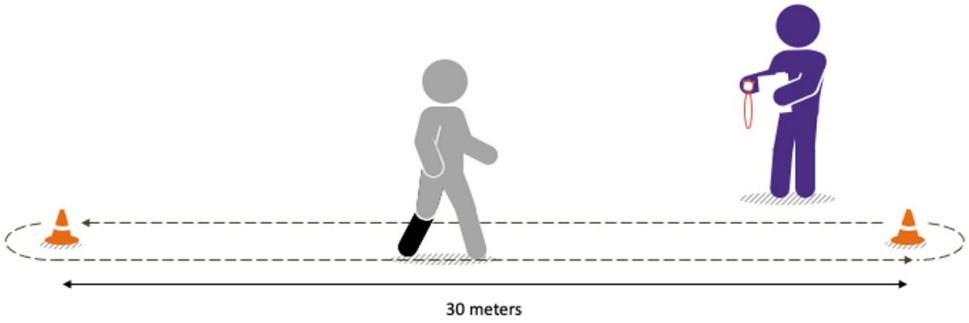


Figure 3. Set up for the 6MWT

Information for the administrator: The goal of this test is for the participant to walk as far as possible in 6 minutes along the marked course, without running, jumping or hopping. Count the number of laps and distance covered in the final lap to calculate total distance covered in 6 minutes**.** If the participant stops during the test, allow the participant to rest or sit in a chair if they wish. Ask the participant why they stopped. Keep the stopwatch running and advise the participant to, "Please resume walking whenever you feel able."

Record the total distance walked.

Record recovery time to gain additional information. The participant should remain in a clinical area for at least 15 minutes following an uncomplicated test.

Prior to walking say to patient, "The object of this test is to walk as FAR AS POSSIBLE for 6 minutes. You will walk back and forth along this course (demonstrate one lap) for 6 minutes. You may slow down if necessary. If you stop, I want you to continue to walk again as soon as possible. You will be informed of the time and encouraged each minute. Please do not talk during the test unless you have a problem or I ask you a question. You must let know if you have any chest pain or dizziness. When 6 minutes is up, I will ask you to stop where you are. Do you have any questions?"

Full instructions can be found here, including precautions that should be taken for people with cardiopulmonary limitation.

Practice: A practice test is not needed in most clinical settings but should be considered. If a practice test is done, wait for at least one-hour before the second test and report the highest 6MWT as the participant's 6MWT baseline.

Validated Languages other than English: N/A

Administration time: less than 10 minutes, with additional time for set up.

Test instructions: To begin say to participant, “Start now, or whenever you are ready”. Start stopwatch when walking starts. During the test, provide the following standard encouragements in even tones. Do not use other words of encouragement or body language to speed up.

- At 1 minute, “You are doing well. You have five minutes to go.”
- At 2 minutes, “Keep up the good work. You have four minutes to go.”
- At 3 minutes, “You are doing well. You are halfway done.”
- At 4 minutes, “Keep up the good work. You have only two minutes left.”
- At 5 minutes, “You are doing well. You have only one minute to go.”
- At 6 minutes, “Please stop where you are.”

Scoring: Can be measured in several ways. The most common is absolute change (post-intervention distance minus pre-intervention distance).

COMPASS Adjunct

COMPASS Adjunct *(optional but recommended to direct participants and clinicians towards rehabilitation goals that are relevant to the individual)*	
PROM	• Patient Specific Functional Scale (PSFS)

Patient Specific Functional Scale (PSFS)

The Patient Specific Functional Scale (PSFS) is a generic PROM used in variety of populations and designed to identify important activity limitations, and to measure functional outcomes of an individual.

The PSFS is copyrighted: © 1995, P. Stratford, reprinted with permission.

Resources / equipment: A copy of the PSFS can be found in Appendix 5 and should be printed and filled in with a pen.

Information for the administrator: Included within the instructions in Appendix 6. To complete the PSFS, individuals are asked to nominate up to five activities that they are currently having difficulty with or are unable to do, and are then asked to rate the current level of difficulty associated with each activity using an 11-point scale (0 = 'Unable to perform', 10 = able to perform the same level as before injury or problem). Ratings are collected at two or more time-points (e.g. at baseline/initial assessment and at follow-up).

Following the intervention, or at the follow-up appointment(s), individuals are again asked to rate the activities previously identified from 0 to 10 (and are given the chance to nominate new problematic activities that might have arisen during that time). Individuals are to select a value that best describes their current level of ability on each activity assessed, with the possibility of selecting and scoring new goals once they are achieved.

Validated Languages other than English: Arabic[21], Turkish[22], and Nepali[23].

Administration time: 5 to 10 minutes

Test instructions: Included in Appendix 6.

Scoring: Total score = sum of the activity scores divided by the number of activities.

A Health-Related Quality of Life (HRQoL) measure relevant to the place of use

Health Related Quality of Life Measure	
PROM	• A HRQoL measure relevant to the place of use

A HRQoL instrument should be chosen that is locally relevant for comparison across health conditions. Examples of HRQoL instruments are the EQ-5D-5L or PROMIS-29© and these can be used to supplement the COMPASS and provide information for economic evaluations. Rather than recommend a single generic HRQoL measure within the COMPASS, it was decided by the consensus participants to make a general recommendation that a generic measure relevant to the context of use should be adopted. This allows within-country comparisons to be made more easily to other parts of the local health service with the results being readily understandable to policy makers. Instructions for the specific HRQoL instrument chosen should be carefully and consistently followed.

Frequently Asked Questions (FAQs)

1. *Outcome measures take time that is limited in my work, how can these outcome measures be completed in routine care?*

PROMs can be completed without the involvement of clinical staff (in a waiting area or online) although they should be reviewed by the treating clinician. Results of a PROM can guide the assessment towards areas of concern for the user and highlight topics that should be discussed with the clinician before treatment starts.

PerfOMs can be incorporated into the clinician's physical assessment (e.g., a clinician can perform observational gait analysis while the 2MWT is being performed or ability to balance and transfer can be assessed during administration of the AMP).

In this way it is hoped that the COMPASS can be embedded into routine clinical care rather than being seen as an extra amount of time that must be devoted to these outcome measures.

2. *What are the benefits of using the COMPASS list of outcome measures?*

Outcome Measures in the COMPASS can be useful in a variety of ways:

For the person with lower limb absence

- Objective measurement of outcomes can help individuals develop and refine their personal rehabilitation goals, as well as provide feedback on their progress. This can help improve motivation and identify needs that require further consideration or intervention.
- Outcome measures can be used as a tool to educate and empower people, improving communication with rehabilitation professionals and promoting individual patients' involvement in healthcare decisions.

For the treating clinician

- Outcome measures can provide important information that can be used during initial assessment and follow up assessments to help inform and evaluate treatment.
- Clinicians can use outcome measures to track their own performance and improve their treatment outcomes.

For the manager

- Comparison of function at admission and discharge can establish the degree of functional improvement that the rehabilitation service provides as well as help identify areas where improvement is needed and/or evaluate improvement efforts.
- Benchmarking of a service can be undertaken to compare results over time or to compare against best practice.
- Analysis of user characteristics at time of admission can allow service development to cater more adequately to the population accessing services.

For the health policy maker

- Health policy planners and decision makers can use information from outcome measures to measure the impact of investments and to plan for future service expenditures.

3. How was the COMPASS established?

The COMPASS, COMPASS+, COMPASS Adjunct and the recommendation for a HRQoL instrument were established through a global consensus process run in 2021 by ISPO. The process was funded by USAID, in favour of ATScale and managed through UNOPS. Various publications about the process are planned in Prosthetics and Orthotics International.

4. Where should COMPASS be used?

The COMPASS is intended for use in all parts of the world in routine clinical practice. The global consensus that established the COMPASS included users, clinicians, managers, health policy makers and researchers and people from all regions of the world. Particular focus was given to making sure the COMPASS was feasible in low- and middle-income countries and requires minimal equipment.

5. Under what circumstances should I complete COMPASS+?

All people with LLA who are high functioning should complete the COMPASS and have the option of performing the COMPASS+ to overcome ceiling effects and measure improvements not captured by the COMPASS. The cut off score for the AMP used in research to progress to the CHAMP is a score of 37.

6. Which HRQoL measure should I use?

The best HRQoL measure is one that is commonly used in your local health service, country, or region. HRQoL measures allow comparison with other health services, can inform policy decisions, and be used to perform economic evaluations.

7. How do I use the COMPASS Adjunct and the PSFS?

The PSFS asks each participant to nominate activities that are relevant to them **and then measures their** improvement. It does not allow for easy aggregation of results in the way that other outcome measures allow for aggregation. Content analysis of the nominated activities can give insights into what a population of people find meaningful, by noting what it is people want to achieve, and tailoring rehabilitation services to better meet these, e.g. sports, specific activities of daily living, etc.

8. I don't have enough space to use a 15 meter walking track for the 2MWT or 6MWT, what should I do?

Use of a modified track or set up for both the 2MWT and 6MWT is possible but should be noted and used consistently. Comparison within your facility will be possible, but comparison to other facilities that use the standard set up will not be possible.

9. Can I change the outcome measures slightly to make them a better fit for where I work or the people I see?

Outcome measures should be completed in their published and validated formats to yield comparable results. Changing outcome measures may undermine the reliability of the outcome measure.

PerfOMs should be administered in a manner described by the original developers and with a standardised protocol. Inconsistency in the application of the test will introduce error. Such error may produce a slightly

different result for the same measure and introduce increased variability in results, leading to challenges when trying to combine or pool data across sites.

PROMs questions should not be changed from their original format, including translations into different languages. Whilst changing the wording of a question in an outcome measure might seem innocuous, it should be noted that the altered measure cannot be assumed to still possess the same psychometric properties of the original version.

All outcome measures in the COMPASS have been considered by the consensus process to be relevant, understandable, and appropriate for use in clinical practice worldwide.

Appendices

Appendix 1. PEQ-UT

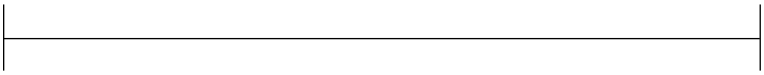
The PEQ may be used free of charge, however, all portions are copyrighted © by Prosthetics Research Study. Use of any part of the PEQ must be accompanied by appropriate acknowledgement of Prosthetics Research Study.

Instructions to participant

- As you read each question, remember there is no right or wrong answer. Just think of YOUR OWN OPINION on the topic and make a mark THROUGH the line anywhere along the line from one end to the other to show us your opinion.
- If you use different prostheses for different activities, please choose the ONE you use more often and answer all the questions as though you were using that prosthesis.
- Make a mark across the line rather than using an X or an O.
- Please answer all the questions.

****** Please note the numbering of questions relates to the full PEQ***

1B. Over the past four weeks, rate the fit of your prosthesis.

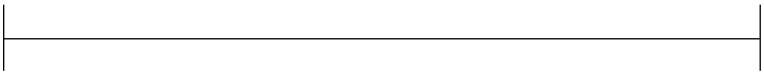


TERRIBLE *EXCELLENT*

1C. Over the past four weeks, rate the weight of your prosthesis.

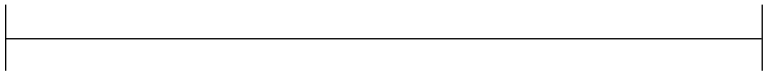
TERRIBLE *EXCELLENT*

1D. Over the past four weeks, rate your comfort while standing when using your prosthesis.



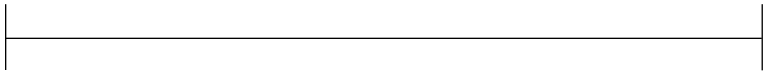
TERRIBLE *EXCELLENT*

2E. Over the past four weeks, rate your comfort while sitting when using your prosthesis.



TERRIBLE *EXCELLENT*

2F. Over the past four weeks, rate how often you felt off balance while using your prosthesis.

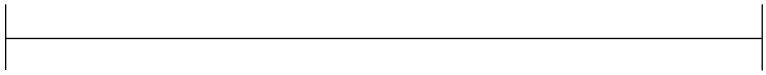


ALL THE TIME *NOT AT ALL*

2G. Over the past four weeks, rate how much energy it took to use your prosthesis for as long as you needed it.

COMPLETELY EXHAUSTING *NONE AT ALL*

2H. Over the past four weeks, rate the feel (such as the temperature and texture) of the prosthesis (sock, liner, socket) on your residual limb (stump).



WORST POSSIBLE *BEST POSSIBLE*

2I. Over the past four weeks, rate the ease of putting on (donning) your prosthesis.

TERRIBLE *EXCELLENT*

Appendix 2. PEQ-RL

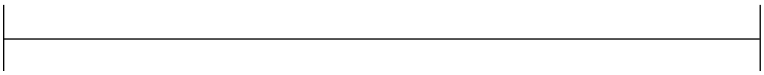
The PEQ may be used free of charge, however, all portions are copyrighted © by Prosthetics Research Study. Use of any part of the PEQ must be accompanied by appropriate acknowledgement of Prosthetics Research Study.

Instructions to participant

- As you read each question, remember there is no right or wrong answer. Just think of YOUR OWN OPINION on the topic and make a mark THROUGH the line anywhere along the line from one end to the other to show us your opinion.
- If you use different prostheses for different activities, please choose the ONE you use more often and answer all the questions as though you were using that prosthesis.
- Make a mark across the line rather than using an X or an O.
- Please answer all the questions.

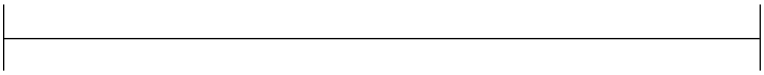
******Please note the numbering of questions relates to the full PEQ***

4Q. Over the past four weeks, rate how much you sweat inside your prosthesis (in the sock, liner, socket).



EXTREME AMOUNT *NOT AT ALL*

4R. Over the past four weeks, rate how smelly your prosthesis was at its worst.

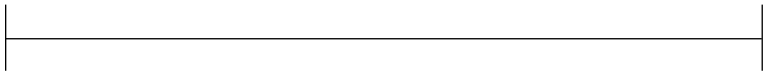


EXTREMELY SMELLY *NOT AT ALL*

4S. Over the past four weeks, rate how much of the time your residual limb was swollen to the point of changing the fit of your prosthesis.

ALL THE TIME *NEVER*

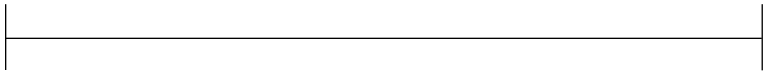
5T. Over the past four weeks, rate any rash(es) that you got on your residual limb.



EXTREMELY BOTHERSOME *NOT AT ALL*

****OR check __ I had no rashes on my residual limb in the last month.*

5U. Over the past four weeks, rate any ingrown hairs (pimples) that were on your residual limb.



EXTREMELY BOTHERSOME *NOT AT ALL*

****OR check __ I had no ingrown hairs on my residual limb in the last month.*

5V. Over the past four weeks, rate any blisters or sores that you got on your residual limb.

EXTREMELY BOTHERSOME *NOT AT ALL*

****OR check __ I had no blisters or sores on my residual limb in the last month.*

Appendix 3. TAPES-R

The TAPES-R was developed by the Dublin Psychoprosthetics Group www.psychoprosthetics.ie and is reproduced with permission.

This is a questionnaire designed to investigate different aspects of having a prosthesis.
Please answer every item as honestly as you can. There are no right or wrong answers.
Your responses will remain confidential.

1. Client Name: _____

2. Client date of birth: _____

3. Are you male.... [ ]
female..[ ]

4. How long ago did you have your amputation?
_____ years _____ months (If you have had more than one amputation surgery please refer to your first amputation surgery).

5. How long have you had a prosthesis?
_____ years _____ months

6. How long have you had the prosthesis that you wear at the moment?
_____ years _____ months

7. What type of prosthesis do you have? *(Please tick the appropriate box)*

Below-Knee	[ ]	Below-elbow	[ ]
Through-Knee	[ ]	Through-elbow	[ ]
Above-Knee	[ ]	Above-elbow	[ ]

Other (please specify) _____

8. What was your amputation a result of? *(Please tick the appropriate box)*
Peripheral Vascular Disorder [ ]
Diabetes [ ]
Cancer [ ]
Accident [ ]
Other (please specify) _____

Part I

Below are written a series of statements concerning the wearing of a prosthesis. Please read through each statement carefully. Then ***tick the box*** beside each statement, which shows how strongly you agree or disagree with it.

		Strongly disagree	Disagree	Agree	Strongly agree	Not applicable
1.	I have adjusted to having a prosthesis.....	[1]	[2]	[3]	[4]	[ ]
2.	As time goes by, I accept my prosthesis more.....	[1]	[2]	[3]	[4]	[ ]
3.	I feel that I have dealt successfully with this trauma in my life	[1]	[2]	[3]	[4]	[ ]
4.	Although I have a prosthesis, my life is full	[1]	[2]	[3]	[4]	[ ]
5.	I have gotten used to wearing a prosthesis.....	[1]	[2]	[3]	[4]	[ ]
6.	I don't care if somebody looks at my prosthesis	[1]	[2]	[3]	[4]	[ ]
7.	I find it easy to talk about my prosthesis	[1]	[2]	[3]	[4]	[ ]
8.	I don't mind people asking about my prosthesis.....	[1]	[2]	[3]	[4]	[ ]
9.	I find it easy to talk about my limb loss in conversation	[1]	[2]	[3]	[4]	[ ]
10.	I don't care if somebody notices that I am limping ..	[1]	[2]	[3]	[4]	[ ]
11.	A prosthesis interferes with the <u>ability</u> to do my work.....	[4]	[3]	[2]	[1]	[ ]
12.	Having a prosthesis makes me more dependent on others than I would like to be	[4]	[3]	[2]	[1]	[ ]
13.	Having a prosthesis limits the <u>kind</u> of work that I can do	[4]	[3]	[2]	[1]	[ ]
14.	Being an amputee means that I can't do what I want to do	[4]	[3]	[2]	[1]	[ ]
15.	Having a prosthesis limits the <u>amount</u> of work that I can do.....	[4]	[3]	[2]	[1]	[ ]

The following questions are about activities you might do during a typical day. Does having a prosthesis limit you in these activities? If so, how much? *Please tick the appropriate box.*

	Yes, limited a lot	**Limited a little**	**No, not limited at all**	
(a) Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports	[2]	[1]	[0]	
(b) climbing several flights of stairs	[2]	[1]	[0]	
(c) running for a bus	[2]	[1]	[0]	
(d) sport and recreation	[2]	[1]	[0]	
(e) climbing one flight of stairs	[2]	[1]	[0]	
(f) walking more than a mile	[2]	[1]	[0]	
(g) walking half a mile	[2]	[1]	[0]	
(h) walking 100 metres	[2]	[1]	[0]	
(i) working on hobbies	[2]	[1]	[0]	
(j) going to work	[2]	[1]	[0]	[Not applicable]

Please *tick the box* that represents the extent to which you are satisfied or dissatisfied with *each* of the different aspects of your prosthesis mentioned below:

		Not satisfied	Satisfied	Very Satisfied
(i)	Colour.	[1]	[2]	[3]
(ii)	Shape	[1]	[2]	[3]
(iii)	Appearance	[1]	[2]	[3]
(iv)	Weight	[1]	[2]	[3]
(v)	Usefulness	[1]	[2]	[3]
(vi)	Reliability	[1]	[2]	[3]
(vii)	Fit	[1]	[2]	[3]
(viii)	Comfort	[1]	[2]	[3]

Please circle the number (0-10) that best describes how satisfied you are with your prosthesis?

0 1 2 3 4 5 6 7 8 9 10

Not at all Satisfied Very Satisfied

Part II

(For the following questions, please tick the appropriate boxes)

1. On average, how many hours a day do you wear your prosthesis? _____ **hours**

2. In general, would you say your health is:

Very Poor [1] Poor [2] Fair [3] Good [4] Very Good [5]

3. In general, would you say your physical capabilities are:

Very Poor [1] Poor [2] Fair [3] Good [4] Very Good [5]

4(a) Do you experience **residual limb (stump) pain** (pain in the remaining part of your amputated limb)? No [0] .... (If no, go to question 5)

Yes [1] .... (If yes, answer part (b), (c), (d) and (e))

(b) During the last week, how many times have you experienced stump pain? _____

(c) How long, on average, did each episode of pain last? _____

(d) Please indicate, the average level of stump pain experienced during the last week on the scale below by ticking the appropriate box:

Excruciating	Horrible	Distressing	Discomforting	Mild
[5]	[4]	[3]	[2]	[1]

(e) How much did stump pain interfere with your normal lifestyle (eg. work, social and family activities) during the last week?

A Lot	Quite a Bit	Moderately	A Little Bit	Not at All
[5]	[4]	[3]	[2]	[1]

5. (a) Do you experience **phantom limb pain** (pain in the part of the limb which was amputated)?

No [0] .... (if no, go to question 6)

Yes [1] .... (If yes, answer part (b), (c), (d), and (e))

(b) During the last week, how many times have you experienced phantom limb pain? _____

(c) How long, on average, did each episode of pain last? _____

(d) Please indicate the average level of phantom limb pain experienced during the last week on the scale below by ticking the appropriate box:

Excruciating	Horrible	Distressing	Discomforting	Mild
[5]	[4]	[3]	[2]	[1]

(e) How much did phantom limb pain interfere with your normal lifestyle (e.g. work, social and family activities) during the last week?

A Lot	Quite a Bit	Moderately	A Little Bit	Not at All
[5]	[4]	[3]	[2]	[1]

6. (a) Do you experience any **other medical problems** apart from stump pain or phantom limb pain? No [0]

Yes [1] (If yes, answer part (b), (c), (d), (e),(f) and (g))

(b) Please specify what problems you experience _____

(c) During the last week, how many times have you suffered from these medical problems? _____

(d) How long, on average, did each problem last? _____

(e) Please indicate the level of pain experienced as a result of these problems during the last week on the scale below by ticking the appropriate box:

Excruciating	Horrible	Distressing	Discomforting	Mild
[5]	[4]	[3]	[2]	[1]

(f) How much did these medical problems interfere with your normal lifestyle (e.g. work, social and family activities) during the last week?

A Lot	Quite a Bit	Moderately	A Little Bit	Not at All
[5]	[4]	[3]	[2]	[1]

(g) Do you experience **any other pain** that you have not previously mentioned?

No [0]
Yes [1]
If yes, please specify _____

7. Did you complete this questionnaire: (please tick the appropriate box)

on your own? [ ]
with assistance? [ ]

8. Date of Completion: _____

Please check that you have answered all the questions.
Thank you for all your help.

TRINITY AMPUTATION AND PROSTHESIS EXPERIENCE SCALES – REVISED (TAPES-R)

Scoring for People with a Prosthesis: (See attached TAPES-R with scoring included).

Name: _____	**Date** __/__/____	**Date** __/__/____	**Date** __/__/____	**Date** __/__/____	**Date** __/__/____	**Date** __/__/____
Psychosocial Adjustment subscales						
General Adjustment: In Part 1 (p3) add the values of: Item 1 + Item 2 + Item 3 + Item 4 + Item 5 and divide by the number of items that were deemed applicable/answered A high score is indicative of positive adjustment						
Social Adjustment: In Part 1 (p3) add the values of: Item 6 + Item 7 + Item 8 + Item 9 + Item 10 and divide by the number of items that were deemed applicable/ answered A high score is indicative of positive adjustment						
Adjustment to Limitation: In Part 1 (p3) add the values of: Item 11 + Item 12 + Item 13 + Item 14 + Item 15 and divide by the number of items that were deemed applicable/ answered A high score is indicative of positive adjustment						
Activity Restriction scale						
In Part 1 (p4) add the values of: Item (a) + Item (b) + Item (c) + Item (d) + Item (e) + Item (f) + Item (g) + Item (h) + Item (i) + Item (j) and divide by the number of items that were deemed applicable/ answered A high score is indicative of activity restriction						
Satisfaction with Prosthesis subscales						
Aesthetic Satisfaction: In Part 1 (p5) add the values of: Item *i* + Item *ii* + Item *iii* A high score is indicative of satisfaction with prosthesis						
Functional Satisfaction: In Part 1 (p5) add the values of: Item iv + Item v + Item v*i* +Item *vii* + Item *viii* A high score is indicative of satisfaction with prosthesis						

Appendix 5. PSFS

The PSFS is copyrighted: © 1995, P. Stratford, reprinted with permission.

Name: _____ Date: _____

Patient-Specific Functional Scale

Please identify at least three important activities that you are unable to do or have difficulty doing as a result of your current problem. Write these down. Then rate your ability to do the activities in the last week by circling the appropriate number.

Activity 1: _____

unable to perform 0 1 2 3 4 5 6 7 8 9 10 able to perform at pre-injury level

Activity 2: _____

unable to perform 0 1 2 3 4 5 6 7 8 9 10 able to perform at pre-injury level

Activity 3: _____

unable to perform 0 1 2 3 4 5 6 7 8 9 10 able to perform at pre-injury level

Activity 4: _____

unable to perform 0 1 2 3 4 5 6 7 8 9 10 able to perform at pre-injury level

Activity 5: _____

unable to perform 0 1 2 3 4 5 6 7 8 9 10 able to perform at pre-injury level

SCORE: Sum of individual #s divided by the total # of activities: ☐

Patient-Specific Function Scale	% Patient Does	G Code
10	100%	0% impaired
9	90%	1-19% impaired
7-8	70-80%	20-39% impaired
5-6	50-60%	40-59% impaired
3-4	30-40%	60-79% impaired
1-2	10-20%	80-99% impaired
0	0%	100% impaired

Stratford P, Gill C, Westaway M, Binkley J. Assessing disability and change on individual patients: a report of a patient-specific measure. Physio Can. 1995; 47: 258-263.

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