

## PHYSICAL FUNCTION

A brief guide to the PROMIS<sup>®</sup> Physical Function instruments:

ADULT	ADULT CANCER	PEDIATRIC	PARENT PROXY
PROMIS Bank v1.0 - Physical Function*	PROMIS-Ca Bank v1.0 – Physical Function*	PROMIS Pediatric Bank v1.0 – Mobility*	PROMIS Parent Proxy Bank v1.0 – Mobility*
PROMIS Short Form v1.0 – Physical Function 4a*	PROMIS-Ca Bank v1.1 – Physical Function	PROMIS Pediatric Bank v1.0 – Upper Extremity*	PROMIS Parent Proxy Bank v1.0 – Upper Extremity*
PROMIS Short Form v1.0-Physical Function 6a*		PROMIS Pediatric Short Form v1.0 – Mobility 8a*	PROMIS Parent Proxy Short Form v1.0 – Mobility 8a*
PROMIS Short Form v1.0-Physical Function 8a*		PROMIS Pediatric Short Form v1.0 – Upper Extremity 8a*	PROMIS Parent Proxy Short Form v1.0 – Upper Extremity 8a*
PROMIS Short Form v1.0 – Physical Function 10a*		PROMIS Pediatric Bank v2.0 – Mobility	PROMIS Parent Proxy Bank v2.0 – Mobility
PROMIS Short Form v1.0 – Physical Function 12a		PROMIS Pediatric Bank v2.0 – Upper Extremity	PROMIS Parent Proxy Bank v2.0 – Upper Extremity
PROMIS Short Form v1.0 – Physical Function 20a*		PROMIS Pediatric Short Form v2.0 – Mobility 8a	PROMIS Parent Proxy Short Form v2.0 – Mobility 8a
PROMIS Bank v1.0 – Physical Function for Samples with Mobility Aid Users		PROMIS Pediatric Short Form v2.0 – Upper Extremity 8a	PROMIS Parent Proxy Short Form v2.0 – Upper Extremity 8a
PROMIS Short Form v1.0 – Physical Function Samples with Mobility Aid Users 11a			
PROMIS Bank v1.1 - Physical Function*			
PROMIS Bank v1.2 – Physical Function*			
PROMIS Short Form v1.2 – Physical Function 6b*			
PROMIS Short Form v1.2 – Physical Function 8b*			
PROMIS Bank v1.2 – Mobility*			
PROMIS Bank v1.2 – Upper Extremity*			
PROMIS Bank v2.0 - Mobility			
PROMIS Bank v2.0 - Physical Function			
PROMIS Short Form v2.0 – Physical Function 4a			
PROMIS Short Form v2.0 – Physical Function 6b			
PROMIS Short Form v2.0 – Physical Function 8b			
PROMIS Short Form v2.0 – Physical Function 10a			
PROMIS Short Form v2.0 – Physical Function 10b			
PROMIS Short Form v2.0 – Physical Function 20a			
PROMIS Bank v2.0 – Upper Extremity			
PROMIS Short Form v2.0 – Upper Extremity 7a			

\*retired measure

### ABOUT PHYSICAL FUNCTION

PROMIS Physical Function instruments measure self-reported capability rather than actual performance of physical activities. This includes the functioning of one’s upper extremities (dexterity), lower extremities (walking or mobility), and central regions (neck, back), as well as instrumental activities of daily living, such as running errands. A single Physical Function capability score is obtained from a short form. Each Physical Function instrument is appropriate for the adult general population and adults with chronic health conditions.



The forms are universal rather than disease-specific. Each form assesses current function rather than function over a specified time period.

Physical Function instruments are available for adults (ages 18+), pediatric self-report (ages 8-17) and for parents serving as proxy reporters for their child (youth ages 5-17). Adult instruments (18+) include: Physical Function, Mobility, Upper Extremity, Physical Function – Cancer, and Physical Function for Samples with Mobility Aid Users instruments. Pediatric and parent proxy instruments were developed for each Physical Function sub-domains of Mobility and Upper Extremity.

## **MOBILITY**

Focuses on activities of physical mobility such as getting out of bed or a chair to activities such as running. The adult Mobility measures include selected items from the full Physical Function item bank.

## **UPPER EXTREMITY**

Focuses on activities that require use of the upper extremity including shoulder, arm, and hand activities. Examples include writing, using buttons, or opening containers. The adult Upper Extremity measures include selected items from the full Physical Function item bank.

## **PHYSICAL FUNCTION FOR SAMPLES WITH MOBILITY AID USERS**

This item bank and short form include screening items about one's ability to stand and walk. Based upon one's response, some items may be skipped. These measures are intended for samples that may include those who use mobility aids like wheelchairs. It is not restricted for use to only those that use mobility aids.

For complete list of all PROMIS definitions, go to: <http://www.healthmeasures.net/explore-measurement-systems/promis/intro-to-promis/list-of-adult-measures>

## **INTRODUCTION TO ASSESSMENT OPTIONS**

There are two administration options for assessing Physical Function: short forms and computerized adaptive tests (CATs). When administering a short form, instruct participants to answer all of the items (i.e., questions or statements) presented. With a CAT, participant responses guide the system's choice of subsequent items from the full item bank (165 items in total in adult bank). Although items differ across respondents taking CAT, scores are comparable across participants.

Some administrators may prefer to ask the same question of all respondents or of the same respondent over time, to enable a more direct comparability across people or time. In these cases, or when paper administration is preferred, a short form would be more desirable than CAT. This guide provides information on all Physical Function short form and CAT instruments.

Whether one uses a short form or CAT, the score metric is Item Response Theory (IRT), a family of statistical models that link individual questions to a presumed underlying trait or concept of physical function represented by all items in the item bank. When choosing between CAT and a short form, it is useful to consider the demands of computer-based assessment, and the psychological, physical, and cognitive burden placed on respondents as a result of the number of questions asked.

Figure 1 illustrates the correlations (strength of relationship) of the full v1.0 Physical Function bank with CAT and with v1.0 short forms of varying length. The correlation of CAT scores with the full bank score is greater than a short form of any length. A longer CAT or longer short form offers greater correlation, as well as greater precision. When evaluating precision, not all questions are equally informative. The flexibility of CAT to choose more informative questions offers more precision.

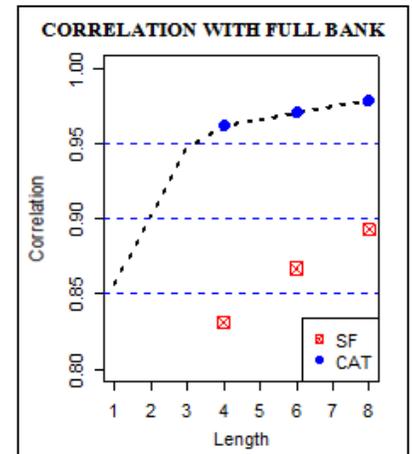


Figure 1

## VERSION DIFFERENCES

Some PROMIS domains have multiple versions of instruments (i.e. v1.0, v1.1, v2.0). Generally, **it is recommended that you use the most recent version available which can be identified as the instrument with the highest version number.** In most cases, an instrument that has a decimal increase (v1.0 to v1.1) retains the same item-level parameters as well as instrument reliability and validity. In cases where a version number increases by a whole number (e.g., v1.0 to v2.0), the changes to the instrument are more substantial.

### Adult

The PROMIS adult Physical Function v1.0 item bank included 124 items. Later, during translation into multiple languages, some items were modified (e.g., metric equivalents to measurements such as “over 10 pounds/5kg” were added). These 19 modifications resulted in the creation of a v1.1 item bank. Later, v1.2 was created by eliminating three items due to restrictions in use. This also resulted in replacing items in two short forms. PROMIS short form v1.0 – Physical Function 6a was replaced by PROMIS short form v1.2 – Physical Function 6b. One item is different. PROMIS short form v1.0 – Physical Function 8a was replaced by PROMIS short form v1.2 – Physical Function 8b. One item is different. The Mobility v1.2 and Upper Extremity v1.2 banks include the modifications for improved translations. Calibrations are identical in v1.0, v1.1, and v1.2 adult measures. The PROMIS-Ca v1.0 measure was also replaced by a v1.1 with items removed due to restrictions in use.

The Physical Function item bank v2.0 has 165 items. All item parameters were changed to match the Rose et al. (2014) publication. New items were added from three sources: 1) Global06 was added from the PROMIS Global-10; 2) 35 items were added from the PASTOR (Pain Assessment Screening Tool and Outcomes Registry) project; and 3) eight items originally excluded from v1.0 were re-introduced because they had acceptable measurement properties once the PASTOR items were added. One of PASTOR’s subprojects developed new content to measure “elite” physical function. Finally, two items were substituted out for similarly-worded items with better measurement properties. The Mobility v2.0 item bank was also updated to match the Rose et al. (2014) item calibrations, but no new content was added to it.

Scores across PROMIS Physical Function versions can be compared to each other. On a set of common items (between v1.2 and v2.0) we observed a maximum difference in an impaired sample of ¼ T-score point using old and new parameters. That could rise to 1 T-score point in rare circumstances. Thus the Physical Function scores on v1.0, v1.1, v1.2, and v2.0 are comparable.

Scores across PROMIS Upper Extremity versions cannot be compared to each other. When the item bank was revised to v2.0, additional items were added to the item bank and all of them were re-calibrated so that the scores reflect only upper extremity function, whereas the v1.2 items were calibrated to reflect overall physical function. All items included in the v1.2 item bank are also included in the v2.0 item bank. For users interested in



comparing scores over time and desiring to switch Upper Extremity versions, we recommend rescoring the v1.2 administrations via HealthMeasures Scoring Service ([https://www.assessmentcenter.net/ac\\_scoring-service](https://www.assessmentcenter.net/ac_scoring-service)) using the v2.0 calibrations. This will treat the previous administrations as a custom short form from the v2.0 item bank and allow score comparability over time.

Concurrently, the Upper Extremity v2.0 item bank was revised. Additional items that were sufficiently related to upper extremity function were added, allowing creation of a 46-item bank and a 7-item short form. This item bank was also moved to its own metric to improve measurement properties for individuals with known or suspected upper extremity limitations (though it remains centered on the USA general population). All Upper Extremity items continue to appear in the overall Physical Function v2.0 item bank, but with different calibrations.

### **Pediatric and Parent Proxy**

For Pediatric and Parent Proxy Mobility and Upper Extremity function, v2.0 measures replaced v1.0. The v2.0 measures 1) changed from using response scores of 0-4 to use 1-5 (item IDs amended with an “r”) and 2) added new items (item IDs start with 7000). The calibrations between v1.0 and v2.0 are identical as is the item content on short forms.

*Rose, M., Bjorner, J.B., Gandek, B., Bruce, B., Fries, J.F., & Ware Jr, J.E. (2014). The PROMIS Physical Function Item Bank Was Calibrated to a Standardized Metric and Shown to Improve Measurement Efficiency. Journal of Clinical Epidemiology, 67(5), 516-526. <http://dx.doi.org/10.1016/j.jclinepi.2013.10.024>*

## **SHORT FORM DIFFERENCES**

### **Adult Profile Short Forms**

There are 6 Physical Function short forms for adults; three (4a, 6b, and 8b) are included in the PROMIS Profiles. Items in the 4a, 6b, and 8b short forms were selected based on rankings using two psychometric criteria: 1) maximum interval information; and 2) CAT simulations. Item rankings were similar for both criteria. For the maximum interval criterion, each item information function was integrated (without weighting) for the interval from the mean to 2 SDs worse than the mean. For the CAT simulations, responses to all items in each bank were generated using a random sample of 1,000 simulees drawn separately for each bank (centered on 1.0 SD worse than the general population mean). Items were rank ordered based on their average administration rank over the simulees. Content experts reviewed the items and rankings and made cuts of 4, 6, and 8 items. For each domain, 8-items, 6-items, and 4-items have been selected so that the items are nested/overlap (e.g., the 8-item form is the 6-item form plus two additional items). The 4a, 6b, and 8b short forms can be administered with short forms of similar length from other domains (Depression, Pain Interference, Fatigue, Sleep Disturbance and Ability to Participate in Social Roles and Activities) as part of a PROMIS Profile (see PROMIS-29, 43, or 57 Profile v2.0), though they can also be administered individually.

### **Other Adult Short Forms**

Starting with the PROMIS pool of universal physical function items, members of the PROMIS-Cancer team created a PROMIS Physical Function Cancer item bank using cancer-specific focus groups, expert reviewers and large-scale field-testing. The PROMIS-Cancer team subsequently selected 10 candidate items from this bank for a short form that were reviewed by multidisciplinary panels of clinical experts working in oncology (consisting of psychologists, nurses, physicians, and pharmacists). All of these items were confirmed to be clinically relevant for use in assessment of patient concerns regarding physical function, particularly in terms of content coverage and identifying cases in need of intervention. Items in PROMIS Physical Function Short Form 10b assess universal



physical function. That is, no item refers to specifically to cancer. The measure is appropriate for use across chronic conditions.

The original adult short forms (10a and 20a) were constructed by the domain team with a focus on representing the range of the trait and also representing the content of the item bank. Domain experts reviewed short forms to give input on the relevance of each item. Each domain group worked independently. Psychometric properties and clinical input were both used and likely varied in importance across domains.

### **Pediatric and Parent Proxy Short Forms**

There are two 8-item Pediatric and two 8-item Parent Proxy short forms, one pediatric and one parent proxy each for Mobility and Upper Extremity. Items were selected based on content and psychometric characteristics.

### **Selecting a Short Form**

In selecting between short forms, the difference is instrument length. The reliability and precision of the short forms within a domain is highly similar. If you are working with a sample in which you want the most precise measure, select the longest short form. If you have little room for additional measures but really wanted to capture something as a secondary outcome, select one of the shorter instruments (e.g., 4-item short form).

## **SELECTING THE PHYSICAL FUNCTION FOR SAMPLES WITH MOBILITY AID USERS INSTRUMENTS**

The Physical Function for Samples with Mobility Aid Users instruments are intended for samples in which some participants utilize mobility aids such as wheelchairs. There are two screening questions that ask about one's ability stand and to walk. Based on responses to the screening items, the following questions are tailored. Specifically, if an individual is not able to walk or stand, items in the item bank asking about being able to walk specific distances or jog are not eligible for administration in the CAT. Likewise, short forms will have respondents skip not applicable items. Note that this is not a bank intended only for those who use mobility aids. No items ask specifically about mobility aid use.

## **SELECTING THE ADULT CANCER INSTRUMENTS**

In selecting whether to use the adult cancer instrument (PROMIS-Ca) for this domain, it is important to consider the patient population being studied. All PROMIS-Ca instruments were developed for use with any cancer patient. This was done by having content experts review the adult PROMIS item bank to determine if there was a need to develop additional items or remove items because they conveyed a different meaning in cancer. Next, calibration testing with cancer patients with different diagnoses and treatments was conducted and data were analyzed to determine the final set of items and calibrations. The PROMIS-Ca Physical Function item bank contains a total of 45 items, 33 of which are also in the PROMIS Physical Function item bank. When scoring PROMIS-Ca items, we recommend using the default cancer calibrations. There are no short form instruments created specifically for an adult cancer population in Assessment Center.

## **SELECTING A PEDIATRIC OR PARENT PROXY INSTRUMENT**

In selecting whether to use the pediatric versus parent proxy instrument for this domain, it is important to consider both the population and the domain which you are studying. Pediatric self-report should be considered the standard for measuring patient-reported outcomes among children. However, circumstances exist when the child is too young, cognitively impaired, or too ill to complete a patient-reported outcome instrument. While information derived from self-report and proxy-report is not equivalent, it is optimal to

assess both the child and the parent since their perspectives may be independently related to healthcare utilization, risk factors, and quality of care.

## WHICH CALIBRATION SAMPLE SHOULD I USE?

Some PROMIS Parent Proxy instruments (Anxiety, Depressive Symptoms, Fatigue, Mobility, Pain Interference, Peer Relationships) have two calibration samples – “Parent Proxy” and “Parent Proxy Without Local Dependence.” The former (Parent Proxy) includes calibrations for all items. This is the default calibration sample. If you aren’t sure which calibration sample to use, utilize this one. The Parent Proxy Without Local Dependence does not include calibrations for some items. The items without calibrations are enemy items. That is, a dyad or triad of items was identified in which there are psychometric reasons to only administer one of those items to a given respondent. For example, item Pf1mobil1r and Pf1mobil3r are enemy items. A participant should only see one of these items in a CAT.

The PROMIS Pediatric v2.0 Upper Extremity instrument also includes two calibration samples – “Pediatric” and “Pediatric Without Local Dependence.” The Pediatric Without Local Dependence calibration sample is selected as the default. It does not include calibrations for enemy items.

## SCORING THE INSTRUMENT

Short Forms: PROMIS instruments are scored using item-level calibrations. This means that the most accurate way to score a PROMIS instrument is to use the HealthMeasures Scoring Service ([https://www.assessmentcenter.net/ac\\_scoring-service](https://www.assessmentcenter.net/ac_scoring-service)) or a data collection tool that automatically calculates scores (e.g., Assessment Center, REDCap auto-score). This method of scoring uses responses to each item for each participant. We refer to this as “response pattern scoring.” Because response pattern scoring is more accurate than the use of raw score/scale score look up tables included in this manual, it is preferred. Response pattern scoring is especially useful when there is missing data (i.e., a respondent skipped an item), different groups of participants responded to different items, or you have created a new questionnaire using a subset of questions from a PROMIS item bank.

To use the scoring tables in this manual, calculate a summed score. Each question usually has five response options ranging in value from one to five. To find the total raw score for a short form with all questions answered, sum the values of the response to each question. For example, for the v2.0 adult 4-item form, the lowest possible raw score is 4; the highest possible raw score is 16 (see all short form scoring tables in Appendix 1). **All questions must be answered in order to produce a valid score using the scoring tables.** If a participant has skipped a question, use the HealthMeasures Scoring Service ([https://www.assessmentcenter.net/ac\\_scoring-service](https://www.assessmentcenter.net/ac_scoring-service)) to generate a final score.

Within the PROMIS v1.0 Pediatric Upper Extremity 8-item short form, there are two items (3880R2 and 3881R1) with collapsed response categories. These items have response options scored as 3=With no trouble, 2=With a little trouble, 1=With some trouble, 0=With a lot of trouble, 0=Not able to do. This scoring should be implemented prior to summing up all responses. The PROMIS v2.0 Pediatric Upper Extremity short form has already made this modification to response scores in the PDF version of the measure.

With the total raw score for a measure, locate the applicable score conversion table in Appendix 1 and use this table to translate the total raw score into a T-score for each participant. The T-score rescales the raw score into a standardized score with a mean of 50 and a standard deviation (SD) of 10. Therefore a person with a T-score of 40 is one SD below the mean.

For the adult PROMIS Physical Function 4a short form v2.0, a raw score of 10 converts to a T-score of 34.4 with a standard error (SE) of 2.3 (see scoring table for the 4a v2.0 short form in Appendix 1). Thus, the 95% confidence interval around the observed score ranges from 29.9 to 38.9 (T-score  $\pm$  (1.96\*SE) or 34.4  $\pm$  (1.96\*2.3)).

**CAT:** A minimum number of items (4 for adult and adult cancer CATs and 5 for peds and parent proxy CATs) must be answered in order to receive a score for Physical Function CAT. The response to the first item will guide the system’s choice of the next item for the participant. The participant’s response to the second item will dictate the selection of the following question, and so on. As additional items are administered, the potential for error is reduced and confidence in the respondent’s score increases. CAT will continue until either the standard error drops below a specified level (on the T-score metric 3.0 for adult and adult cancer CATs and 4.0 for peds and parent proxy CATs), or the participant has answered the maximum number of questions (12), whichever occurs first.

For most PROMIS instruments, a score of 50 is the average for the United States general population with a standard deviation of 10 because calibration testing was performed on a large sample of the general population. You can read more about the calibration and centering samples on HealthMeasures.net (<http://www.healthmeasures.net/score-and-interpret/interpret-scores/promis>). The T-score is provided with an error term (Standard Error or SE). The Standard Error is a statistical measure of variance and represents the “margin of error” for the T-score.

**Important:** A higher PROMIS T-score represents more of the concept being measured. For positively-worded concepts like Physical Function, Mobility, and Upper Extremity function, a T-score of 60 is one SD better than average. By comparison, a Physical Function T-score of 40 is one SD worse than average.

## STATISTICAL CHARACTERISTICS

There are four key features of the score for Physical Function:

- **Reliability:** The degree to which a measure is free of error. It can be estimated by the internal consistency of the responses to the measure, or by correlating total scores on the measure from two time points when there has been no true change in what is being measured (for z-scores, reliability =  $1 - SE^2$ ).
- **Precision:** The consistency of the estimated score (reciprocal of error variance).
- **Information:** The precision of an item or multiple items at different levels of the underlying continuum (for z-scores, information =  $1/SE^2$ ).
- **Standard Error (SE):** The possible range of the actual final score based upon the scaled T-score. For example, with a T-score of 52 and a SE of 2, the 95% confidence interval around the actual final score ranges from 48.1 to 55.9 (T-score  $\pm$  (1.96\*SE) = 52  $\pm$  3.9 = 48.1 to 55.9).

The final score is represented by the T-score, a standardized score with a mean of 50 and a standard deviation (SD) of 10.

In Figure 2 (v1.0 adult 10a and v1.0 adult 20a short form), the two dotted horizontal lines each represent a degree of internal consistency

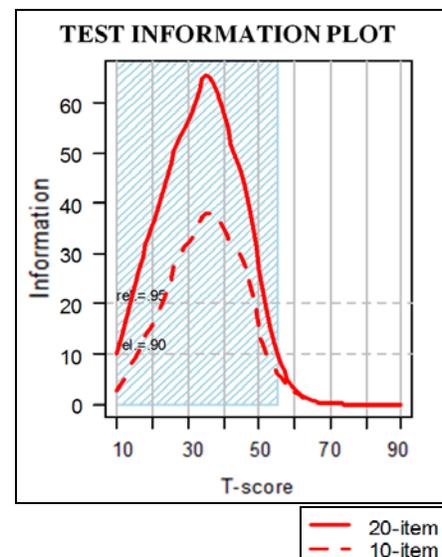


Figure 2  
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reliability (i.e., .90 or .95) typically regarded as sufficient for an accurate individual score. The shaded blue region marks the range of the scale where measurement precision is comparable to the reliability of .90 for the 20-item form. Figure 2 also tells us where on the scale the forms are most informative based upon the T-score: the 20-item form is more informative than the 10-item form, and the 20-item form offers sufficient reliability over a wider range of T-scores than the 10-item form.

Figure 3 (v1.0 Adult 4a, 6a & 8a short forms) also tells us where on the scale the form is most informative based upon the T-score: the 8-item form is more informative than the 6-item form, which is more informative than the 4-item form. See additional test information figures for Pediatric and Parent Proxy instruments in Appendix 3.

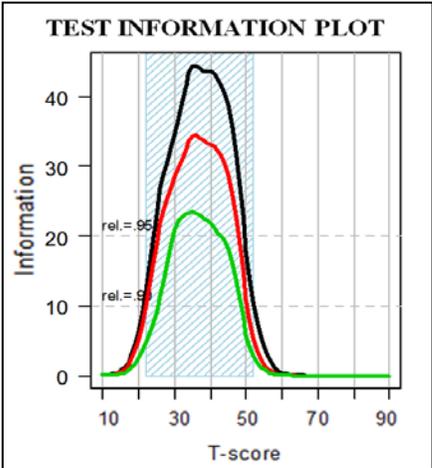


Figure 3

		Without any difficulty	With a little difficulty	With some difficulty	With much difficulty	Unable to do
PFA19r1	Are you able to run or jog for two miles (3 km)?.....	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
PFA20	Are you able to cut your food using eating utensils?.....	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

**PREVIEW OF SAMPLE ITEM**

Figure 4 is an excerpt from the paper version of the v2.0 adult item bank. This is the paper version format used for all Physical Function instruments. It is important to note, CAT is not available for paper administration.

Figure 4



## FREQUENTLY ASKED QUESTIONS (FAQ)

Q: I am interested in learning more. Where can I do that?

Review the HealthMeasures website at [www.healthmeasures.net](http://www.healthmeasures.net).

Q: Do I need to register with PROMIS to use these instruments?

No.

Q: Are these instruments available in other languages?

Yes! Look at the HealthMeasures website (<http://www.healthmeasures.net/explore-measurement-systems/promis/intro-to-promis/available-translations>) for current information on PROMIS translations.

Q: Can I make my own short form?

Yes, custom short forms can be made by selecting any items from the item bank. This can be scored using the Scoring Service ([https://www.assessmentcenter.net/ac\\_scoring-service](https://www.assessmentcenter.net/ac_scoring-service)).

Q: How do I handle multiple responses when administering a short form on paper?

Guidelines on how to deal with multiple responses have been established. Resolution depends on the responses noted by the research participant.

- If two or more responses are marked by the respondent, and they are next to one another, then a data entry specialist will be responsible for randomly selecting one of them to be entered and will write down on the form which answer was selected. Note: To randomly select one of two responses, the data entry specialist will flip a coin (heads - higher number will be entered; tails – lower number will be entered). To randomly select one of three (or more) responses, a table of random numbers should be used with a statistician's assistance.
- If two or more responses are marked, and they are NOT all next to one another, the response will be considered missing.

Q: What is the minimum change on a PROMIS instrument that represents a clinically meaningful difference?

To learn more about research on the meaning of a change in scores, we suggest conducting a literature review to identify the most current information. The HealthMeasures website (<http://www.healthmeasures.net/score-and-interpret/interpret-scores/promis>) has additional information on interpreting scores.

Q: Can I compare adult PROMIS Physical Function v1.2 and v2.0 scores if the calibrations changed?

Across versions, a user can compare Physical Function. That is, if you utilized v1.0, v1.1, or v1.2 Physical Function in a study and replaced it with v2.0 Physical Function, the scores from all versions are comparable. In our analyses, the difference between versions is less than 0.5 T-score points which we consider negligible.

However, across versions you cannot compare Upper Extremity scores. For Upper Extremity, the scoring system has been moved off of the generic Physical Functioning metric and onto its own metric. Accordingly, to compare Upper Extremity- v1.2 to the v2.0 CAT or short form would require rescoring the v1.2 items to the v2.0 metric using HealthMeasures Scoring Service [https://www.assessmentcenter.net/ac\\_scoring-service](https://www.assessmentcenter.net/ac_scoring-service).



## APPENDIX 1-SCORING TABLES

<b>Adult v2.0 - Physical Function 4a</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	T-score	SE*
4	22.5	4.0
5	26.6	2.8
6	28.9	2.5
7	30.5	2.4
8	31.9	2.3
9	33.2	2.3
10	34.4	2.3
11	35.6	2.3
12	36.7	2.3
13	37.9	2.3
14	39.2	2.4
15	40.5	2.4
16	41.9	2.5
17	43.5	2.6
18	45.5	2.8
19	48.3	3.3
20	57.0	6.6
*SE = Standard Error on T-score metric		

<b>Adult v2.0 – Physical Function 6b</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	T-score	SE*
6	21.0	3.8
7	25.0	2.7
8	27.1	2.4
9	28.8	2.2
10	30.1	2.1
11	31.3	2.0
12	32.3	2.0
13	33.2	1.9
14	34.2	1.9
15	35.0	1.9
16	35.9	1.9
17	36.8	1.9
18	37.6	1.9
19	38.5	1.9
20	39.3	1.9
21	40.2	1.9
22	41.2	1.9
23	42.1	1.9
24	43.2	2.0
25	44.3	2.0
26	45.6	2.2
27	47.1	2.3
28	48.9	2.7
29	51.3	3.0
30	59.0	6.2
*SE = Standard Error on T-score metric		

<b>Adult v2.0 – Physical Function 8b</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	T-score	SE*
8	20.3	3.7
9	23.9	2.5
10	26.0	2.2
11	27.5	2.1
12	28.8	2.0
13	29.8	1.9
14	30.8	1.8
15	31.7	1.8
16	32.5	1.7
17	33.2	1.7
18	34.0	1.7
19	34.7	1.7
20	35.4	1.6
21	36.1	1.6
22	36.7	1.6
23	37.4	1.6
24	38.1	1.6
25	38.8	1.6
26	39.5	1.6
27	40.1	1.6
28	40.8	1.6
29	41.6	1.7
30	42.3	1.7
31	43.1	1.7
32	43.9	1.7
33	44.7	1.8
34	45.7	1.8
35	46.7	1.9
36	47.8	2.1
37	49.2	2.3
38	50.8	2.6
39	53.0	3.0
40	60.1	5.9
*SE = Standard Error on T-score metric		



<b>Adult v2.0 – Physical Function 20a</b>					
<i>Short Form Conversion Table</i>					
RS	TS	SE	RS	TS	SE
20	9.2	3.2	60	32.7	1.3
21	11.7	2.5	61	33.1	1.4
22	13.2	2.3	62	33.5	1.4
23	14.3	2.1	63	33.9	1.4
24	15.3	2.0	64	34.4	1.4
25	16.2	1.9	65	34.8	1.3
26	16.9	1.9	66	35.1	1.3
27	17.6	1.8	67	35.5	1.3
28	18.3	1.8	68	35.9	1.4
29	18.9	1.7	69	36.3	1.4
30	19.5	1.7	70	36.8	1.4
31	20.1	1.7	71	37.2	1.3
32	20.6	1.7	72	37.6	1.3
33	21.2	1.6	73	38.0	1.3
34	21.7	1.6	74	38.4	1.4
35	22.2	1.6	75	38.8	1.4
36	22.6	1.6	76	39.3	1.4
37	23.1	1.6	77	39.7	1.4
38	23.6	1.6	78	40.2	1.4
39	24.1	1.5	79	40.6	1.4
40	24.5	1.5	80	41.1	1.5
41	24.9	1.5	81	41.6	1.5
42	25.4	1.5	82	42.1	1.5
43	25.8	1.5	83	42.6	1.5
44	26.2	1.5	84	43.1	1.5
45	26.7	1.5	85	43.7	1.6
46	27.1	1.4	86	44.2	1.6
47	27.5	1.4	87	44.8	1.6
48	27.9	1.4	88	45.4	1.7
49	28.3	1.5	89	46.1	1.7
50	28.7	1.5	90	46.8	1.8
51	29.2	1.4	91	47.5	1.8
52	29.6	1.4	92	48.3	1.9
53	30.0	1.4	93	49.2	2.1
54	30.3	1.4	94	50.3	2.2
55	30.7	1.4	95	51.5	2.5
56	31.2	1.4	96	53.0	2.8
57	31.6	1.4	97	54.9	3.3
58	32.0	1.4	98	57.0	3.6
59	32.4	1.3	99	62.7	5.7

RS = Raw Score  
 TS = T-score  
 SE = Standard Error on T-score metric

<b>Adult v1.0 – Physical Function 12a</b>					
<i>Short Form Conversion Table for People Who Can Walk (answered 12 items)</i>					
Raw Summed Score	Scale Score	SE*	Raw Summed Score	Scale Score	SE*
12	13.3	3.3	37	37.8	1.7
13	16.1	2.9	38	38.5	1.7
14	18.1	2.7	39	39.2	1.7
15	19.6	2.5	40	39.9	1.7
16	20.9	2.4	41	40.6	1.7
17	22.1	2.3	42	41.3	1.8
18	23.1	2.3	43	42.0	1.8
19	24.1	2.2	44	42.8	1.8
20	25.1	2.2	45	43.5	1.9
21	26.0	2.2	46	44.3	1.9
22	26.8	2.1	47	45.2	2.0
23	27.7	2.1	48	46.1	2.0
24	28.5	2.1	49	47.0	2.1
25	29.3	2.0	50	47.9	2.2
26	30.0	2.0	51	48.9	2.2
27	30.8	2.0	52	50.0	2.3
28	31.5	1.9	53	51.1	2.5
29	32.3	1.9	54	52.4	2.6
30	33.0	1.9	55	53.8	2.9
31	33.7	1.9	56	55.8	3.6
32	34.4	1.8	57	57.3	3.7
33	35.1	1.8	58	59.5	4.1
34	35.8	1.8	59	61.7	4.5
35	36.5	1.8	60	66.1	5.8
36	37.1	1.7			

\*SE = Standard Error on T-score metric

<b>Adult v1.0 – Physical Function 12a</b>		
<i>Short Form Conversion Table for People Who Cannot Walk (answered 6 items)</i>		
Raw Summed Score	Scale Score	SE*
6	13.8	3.5
7	16.8	3.1
8	19.0	2.9
9	20.7	2.8
10	22.3	2.7
11	23.7	2.7
12	25.0	2.6
13	26.2	2.6
14	27.4	2.6
15	28.6	2.6
16	29.8	2.6
17	31.0	2.6
18	32.2	2.6
19	33.4	2.6
20	34.6	2.6
21	35.9	2.6
22	37.3	2.7
23	38.8	2.7
24	40.4	2.8
25	42.2	3.0
26	44.7	3.7
27	46.9	3.9
28	49.8	4.2
29	52.8	4.4
30	59.9	6.5

\*SE = Standard Error on T-score metric



**Adult v1.0 - Respondents Who Can Walk 25 Feet 11a (answered 11 items)**

Summary Score	Theta Score	SD (Theta)	T-Score	Estimated Proportion	Summary Score	Theta Score	SD (Theta)	T-Score	Estimated Proportion
0	-3.81	0.32	11.90	0.00007	23	-1.86	0.2	31.40	0.00394
1	-3.56	0.28	14.40	0.0001	24	-1.8	0.2	32.00	0.00444
2	-3.39	0.26	16.10	0.00014	25	-1.74	0.2	32.60	0.00499
3	-3.27	0.25	17.30	0.00019	26	-1.68	0.2	33.20	0.00561
4	-3.15	0.24	18.50	0.00023	27	-1.62	0.2	33.80	0.0063
5	-3.06	0.23	19.40	0.00029	28	-1.56	0.21	34.40	0.00708
6	-2.97	0.22	20.30	0.00035	29	-1.49	0.21	35.10	0.00797
7	-2.89	0.22	21.10	0.00042	30	-1.43	0.21	35.70	0.00898
8	-2.82	0.21	21.80	0.0005	31	-1.36	0.21	36.40	0.01015
9	-2.74	0.21	22.60	0.00059	32	-1.29	0.22	37.10	0.01151
10	-2.67	0.21	23.30	0.00069	33	-1.22	0.22	37.80	0.0131
11	-2.6	0.21	24.00	0.00081	34	-1.14	0.23	38.60	0.01501
12	-2.54	0.2	24.60	0.00094	35	-1.06	0.24	39.40	0.01734
13	-2.47	0.2	25.30	0.00109	36	-0.97	0.25	40.30	0.02023
14	-2.41	0.2	25.90	0.00125	37	-0.88	0.26	41.20	0.02382
15	-2.35	0.2	26.50	0.00144	38	-0.77	0.28	42.30	0.02865
16	-2.29	0.2	27.10	0.00164	39	-0.64	0.31	43.60	0.03557
17	-2.22	0.2	27.80	0.00187	40	-0.46	0.4	45.40	0.04722
18	-2.16	0.2	28.40	0.00213	41	-0.36	0.37	46.40	0.05582
19	-2.1	0.2	29.00	0.00242	42	-0.2	0.39	48.00	0.07547
20	-2.04	0.2	29.60	0.00274	43	0.04	0.41	50.40	0.12106
21	-1.98	0.2	30.20	0.0031	44	0.79	0.67	57.90	0.44923
22	-1.92	0.2	30.80	0.0035					



<b>Adult v1.0 - Respondents Who Cannot Walk 25 Feet (answered 8 items)</b>				
<b>Raw Summed Score</b>	<b>Theta Score</b>	<b>SD (Theta)</b>	<b>T-Score</b>	<b>Estimated Proportion</b>
0	-3.78	0.32	12.20	0.00008
1	-3.52	0.29	14.80	0.00012
2	-3.35	0.27	16.50	0.00017
3	-3.21	0.26	17.90	0.00022
4	-3.1	0.25	19.00	0.00029
5	-2.99	0.25	20.10	0.00037
6	-2.9	0.24	21.00	0.00047
7	-2.81	0.24	21.90	0.00058
8	-2.72	0.24	22.80	0.00071
9	-2.63	0.23	23.70	0.00087
10	-2.55	0.23	24.50	0.00106
11	-2.47	0.23	25.30	0.00129
12	-2.39	0.23	26.10	0.00155
13	-2.31	0.23	26.90	0.00187
14	-2.24	0.23	27.60	0.00224
15	-2.16	0.23	28.40	0.00267
16	-2.08	0.24	29.20	0.00318
17	-2	0.24	30.00	0.00379
18	-1.92	0.24	30.80	0.00451
19	-1.84	0.24	31.60	0.00536
20	-1.75	0.25	32.50	0.00638
21	-1.67	0.25	33.30	0.00761
22	-1.58	0.26	34.20	0.00912
23	-1.48	0.27	35.20	0.01101
24	-1.38	0.28	36.20	0.01342
25	-1.27	0.3	37.30	0.01658
26	-1.15	0.32	38.50	0.02084
27	-1.01	0.36	39.90	0.02695
28	-0.79	0.49	42.10	0.03768
29	-0.75	0.4	42.50	0.04442
30	-0.57	0.41	44.30	0.0558
31	-0.29	0.44	47.10	0.1187
32	0.59	0.72	55.90	0.59009



<b>Adult v2.0 Upper Extremity 7a</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	Scale Score	SE*
7	16.3	3.0
8	19.3	2.7
9	21.1	2.5
10	22.6	2.4
11	23.9	2.4
12	25.0	2.3
13	26.1	2.3
14	27.0	2.3
15	27.9	2.3
16	28.8	2.3
17	29.7	2.3
18	30.5	2.3
19	31.4	2.3
20	32.2	2.3
21	33.0	2.3
22	33.9	2.3
23	34.7	2.4
24	35.6	2.4
25	36.6	2.5
26	37.5	2.6
27	38.6	2.6
28	39.7	2.8
29	40.9	2.9
30	42.3	3.1
31	43.9	3.4
32	45.6	3.6
33	47.7	3.9
34	50.9	4.5
35	58.2	6.7

\*SE = Standard Error on T-score metric

<b>Adult v2.0 – Physical Function 10a</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	T-score	SE*
10	13.5	3.6
11	16.6	2.8
12	18.3	2.7
13	19.7	2.5
14	20.9	2.4
15	22.1	2.3
16	23.1	2.2
17	24.1	2.2
18	25.0	2.1
19	26.0	2.0
20	26.9	2.0
21	27.7	1.9
22	28.6	1.9
23	29.4	1.9
24	30.2	1.8
25	31.0	1.8
26	31.8	1.8
27	32.5	1.8
28	33.3	1.7
29	34.0	1.7
30	34.8	1.7
31	35.5	1.7
32	36.3	1.7
33	37.0	1.7
34	37.8	1.7
35	38.5	1.8
36	39.3	1.8
37	40.1	1.8
38	40.9	1.9
39	41.7	1.9
40	42.6	1.9
41	43.5	2.0
42	44.4	2.1
43	45.5	2.1
44	46.6	2.3
45	47.9	2.5
46	49.4	2.8
47	51.2	3.2
48	53.4	3.6
49	55.8	3.9
50	61.9	5.9

\*SE = Standard Error on T-score metric

<b>Adult v2.0 – Physical Function 10b</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	T-score	SE*
10	13.8	3.9
11	17.2	3.1
12	19.3	2.8
13	21.0	2.6
14	22.4	2.4
15	23.6	2.3
16	24.7	2.2
17	25.7	2.1
18	26.6	2.0
19	27.4	2.0
20	28.2	1.9
21	28.9	1.9
22	29.6	1.9
23	30.3	1.8
24	31.0	1.8
25	31.7	1.8
26	32.3	1.8
27	32.9	1.8
28	33.5	1.8
29	34.2	1.8
30	34.8	1.8
31	35.4	1.8
32	36.0	1.8
33	36.7	1.8
34	37.3	1.8
35	37.9	1.8
36	38.6	1.8
37	39.3	1.8
38	40.0	1.8
39	40.7	1.9
40	41.5	1.9
41	42.3	2.0
42	43.2	2.0
43	44.2	2.1
44	45.2	2.2
45	46.5	2.4
46	48.1	2.8
47	50.0	3.2
48	52.5	3.7
49	55.0	4.0
50	61.3	6.1

\*SE = Standard Error on T-score metric



<b>Pediatric v2.0 – Upper Extremity 8a</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	Scale Score	SE*
8	10	4
9	12	4
10	14	3
11	15	3
12	17	3
13	18	3
14	19	3
15	20	3
16	21	3
17	22	3
18	23	3
19	24	3
20	24	3
21	25	3
22	26	3
23	27	3
24	28	3
25	29	3
26	30	3
27	31	3
28	32	3
29	33	3
30	34	3
31	35	4
32	37	4
33	39	4
34	40	4
35	42	5
36	45	5
37	49	5
38	57	7

\*SE = Standard Error on T-score metric

<b>Pediatric v2.0 – Mobility 8a</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	Scale Score	SE*
8	14	4
9	17	3
10	19	3
11	20	3
12	21	3
13	22	3
14	23	3
15	24	3
16	25	3
17	26	3
18	27	3
19	28	3
20	28	3
21	29	3
22	30	3
23	31	3
24	32	3
25	33	3
26	33	3
27	34	3
28	35	3
29	36	3
30	37	3
31	38	3
32	39	3
33	40	3
34	41	3
35	43	4
36	45	4
37	46	4
38	48	4
39	52	5
40	59	7

\*SE = Standard Error on T-score metric



<b>Parent Proxy v2.0 – Upper Extremity 8a</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	Scale Score	SE*
8	13	3
9	16	3
10	17	3
11	18	2
12	19	2
13	20	2
14	21	2
15	22	2
16	22	2
17	23	2
18	24	2
19	24	2
20	25	2
21	25	2
22	26	2
23	26	2
24	27	2
25	28	2
26	28	2
27	29	2
28	30	2
29	30	2
30	31	2
31	32	2
32	33	2
33	34	3
34	35	3
35	37	3
36	38	4
37	40	4
38	42	4
39	45	5
40	55	8

\*SE = Standard Error on T-score metric

<b>Parent Proxy v2.0 – Mobility 8a</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	Scale Score	SE*
8	14	4
9	17	3
10	20	3
11	21	3
12	22	3
13	23	2
14	24	2
15	25	2
16	26	2
17	27	2
18	27	2
19	28	2
20	29	2
21	29	2
22	30	2
23	31	2
24	31	2
25	32	2
26	33	2
27	33	2
28	34	2
29	35	2
30	35	2
31	36	2
32	37	2
33	38	3
34	39	3
35	40	3
36	42	4
37	43	4
38	45	4
39	48	4
40	56	7

\*SE = Standard Error on T-score metric

All scoring tables based on default Parent Proxy calibrations.



## APPENDIX 2- SCORING TABLES FOR RETIRED MEASURES

Adult v1.0 – Physical Function 4a		
Short Form Conversion Table		
Raw Summed Score	T-score	SE*
4	22.9	3.9
5	26.9	2.7
6	29.1	2.4
7	30.7	2.2
8	32.1	2.2
9	33.3	2.1
10	34.4	2.1
11	35.6	2.1
12	36.7	2.1
13	37.9	2.2
14	39.1	2.2
15	40.4	2.2
16	41.8	2.3
17	43.4	2.4
18	45.3	2.6
19	48.0	3.1
20	56.9	6.7
*SE = Standard Error on T-score metric		

Adult v1.0 – Physical Function 6a		
Short Form Conversion Table		
Raw Summed Score	T-score	SE*
6	20.8	3.6
7	24.4	2.4
8	26.5	2.2
9	28.0	2.0
10	29.4	1.9
11	30.5	1.9
12	31.6	1.8
13	32.5	1.8
14	33.5	1.8
15	34.3	1.8
16	35.2	1.8
17	36.0	1.8
18	36.9	1.8
19	37.7	1.8
20	38.6	1.8
21	39.4	1.8
22	40.3	1.8
23	41.3	1.8
24	42.2	1.8
25	43.3	1.9
26	44.4	2.0
27	45.7	2.1
28	47.4	2.4
29	49.7	2.9
30	57.8	6.4
*SE = Standard Error on T-score metric		

Adult v1.0 – Physical Function 8a		
Short Form Conversion Table		
Raw Summed Score	T-Score	SE*
8	20.2	3.5
9	23.7	2.4
10	25.6	2.1
11	27.0	1.9
12	28.2	1.8
13	29.3	1.8
14	30.3	1.7
15	31.2	1.7
16	32.0	1.6
17	32.7	1.6
18	33.5	1.6
19	34.2	1.6
20	34.9	1.6
21	35.5	1.5
22	36.2	1.5
23	36.9	1.5
24	37.5	1.5
25	38.2	1.5
26	38.9	1.5
27	39.5	1.5
28	40.2	1.6
29	40.9	1.6
30	41.6	1.6
31	42.4	1.6
32	43.1	1.6
33	43.9	1.6
34	44.8	1.7
35	45.7	1.8
36	46.8	1.9
37	48.0	2.1
38	49.6	2.5
39	51.8	2.9
40	59.2	6.1
*SE = Standard Error on T-score metric		



Adult v1.0 – Physical Function 10a		
Short Form Conversion Table		
Raw Summed Score	T-score	SE*
10	14.1	3.3
11	17.0	2.8
12	18.7	2.7
13	20.1	2.5
14	21.3	2.4
15	22.4	2.3
16	23.4	2.2
17	24.4	2.2
18	25.3	2.1
19	26.2	2.0
20	27.1	2.0
21	28.0	1.9
22	28.8	1.9
23	29.6	1.9
24	30.4	1.8
25	31.2	1.8
26	32.0	1.8
27	32.7	1.7
28	33.5	1.7
29	34.2	1.7
30	35.0	1.7
31	35.7	1.7
32	36.4	1.7
33	37.2	1.7
34	37.9	1.7
35	38.7	1.7
36	39.4	1.7
37	40.2	1.8
38	41.0	1.8
39	41.8	1.8
40	42.6	1.8
41	43.5	1.9
42	44.4	2.0
43	45.4	2.0
44	46.4	2.2
45	47.7	2.4
46	49.1	2.6
47	50.8	3.0
48	53.0	3.4
49	55.3	3.7
50	61.7	5.9

\*SE = Standard Error on T-score metric

Adult v1.0 – Physical Function 20a					
Short Form Conversion Table					
RS	TS	SE	RS	TS	SE
20	12.1	1.5	60	32.9	1.4
21	12.8	1.8	61	33.3	1.4
22	13.7	1.9	62	33.7	1.3
23	14.7	2.0	63	34.1	1.3
24	15.6	2.0	64	34.5	1.3
25	16.4	1.9	65	34.9	1.3
26	17.2	1.9	66	35.3	1.3
27	17.9	1.9	67	35.7	1.3
28	18.5	1.8	68	36.1	1.3
29	19.2	1.8	69	36.5	1.3
30	19.8	1.7	70	36.9	1.3
31	20.3	1.7	71	37.3	1.3
32	20.9	1.7	72	37.7	1.3
33	21.4	1.7	73	38.1	1.3
34	21.9	1.6	74	38.5	1.4
35	22.4	1.6	75	38.9	1.4
36	22.9	1.6	76	39.3	1.4
37	23.4	1.6	77	39.8	1.4
38	23.8	1.6	78	40.2	1.4
39	24.3	1.6	79	40.7	1.4
40	24.7	1.5	80	41.1	1.4
41	25.2	1.5	81	41.6	1.4
42	25.6	1.5	82	42.1	1.5
43	26.0	1.5	83	42.6	1.5
44	26.5	1.5	84	43.1	1.5
45	26.9	1.5	85	43.6	1.5
46	27.3	1.5	86	44.2	1.5
47	27.7	1.5	87	44.7	1.6
48	28.1	1.5	88	45.3	1.6
49	28.5	1.4	89	46.0	1.7
50	28.9	1.4	90	46.6	1.7
51	29.3	1.4	91	47.4	1.8
52	29.7	1.4	92	48.2	1.9
53	30.1	1.4	93	49.0	2.0
54	30.5	1.4	94	50.0	2.1
55	30.9	1.4	95	51.2	2.4
56	31.3	1.4	96	52.6	2.7
57	31.7	1.4	97	54.4	3.1
58	32.1	1.4	98	56.5	3.5
59	32.5	1.4	99	62.5	5.6

RS = Raw Score  
 TS = T-score  
 SE = Standard Error on T-score metric

Adult v1.2 – Physical Function 6b		
Short Form Conversion Table		
Raw Summed Score	T-score	SE*
6	21.6	3.6
7	25.4	2.6
8	27.5	2.3
9	29.1	2.1
10	30.4	2.0
11	31.5	1.9
12	32.5	1.9
13	33.4	1.8
14	34.3	1.8
15	35.1	1.8
16	36.0	1.8
17	36.8	1.8
18	37.6	1.8
19	38.5	1.8
20	39.3	1.8
21	40.2	1.8
22	41.1	1.8
23	42.1	1.8
24	43.1	1.9
25	44.2	1.9
26	45.4	2.0
27	46.8	2.2
28	48.7	2.6
29	50.9	2.9
30	58.7	6.2

\*SE = Standard Error on T-score metric

Adult v1.2 – Physical Function 8b		
Short Form Conversion Table		
Raw Summed Score	T-score	SE*
8	20.9	3.5
9	24.4	2.5
10	26.4	2.2
11	27.9	2.0
12	29.1	1.9
13	30.1	1.9
14	31.1	1.7
15	31.0	1.7
16	32.7	1.6
17	33.4	1.6
18	34.1	1.6
19	34.8	1.6
20	35.5	1.6
21	36.2	1.5
22	36.8	1.5
23	37.5	1.5
24	38.1	1.5
25	38.8	1.5
26	39.4	1.5
27	40.1	1.6
28	40.8	1.6
29	41.5	1.6
30	42.2	1.6
31	43.0	1.6
32	43.7	1.6
33	44.6	1.7
34	45.5	1.7
35	46.4	1.8
36	47.5	1.9
37	48.8	2.1
38	50.4	2.5
39	52.5	2.9
40	59.7	5.9

\*SE = Standard Error on T-score metric



<b>Pediatric v1.0 – Upper Extremity 8a</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	Scale Score	SE*
0	12.6	2.2
1	13.6	2.5
2	14.7	2.8
3	15.7	2.9
4	16.8	3.0
5	17.9	3.0
6	18.9	2.9
7	19.9	2.9
8	20.8	2.9
9	21.7	2.9
10	22.6	2.9
11	23.5	2.9
12	24.4	2.9
13	25.3	2.9
14	26.1	2.9
15	27.0	2.9
16	27.9	2.9
17	28.8	3.0
18	29.8	3.0
19	30.8	3.1
20	31.8	3.1
21	32.9	3.2
22	34.1	3.3
23	35.4	3.5
24	36.8	3.7
25	38.5	4.0
26	40.4	4.4
27	42.3	4.5
28	44.9	4.7
29	49.0	5.4
30	56.7	7.3
*SE = Standard Error on T-score metric		

<b>Pediatric v1.0 – Mobility 8a</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	T-score	SE*
0	15.2	3.0
1	17.1	3.1
2	18.6	3.1
3	19.9	3.1
4	21.1	3.0
5	22.2	2.9
6	23.2	2.9
7	24.2	2.8
8	25.1	2.8
9	25.9	2.7
10	26.8	2.7
11	27.6	2.7
12	28.4	2.7
13	29.2	2.7
14	30.0	2.7
15	30.9	2.7
16	31.7	2.7
17	32.5	2.7
18	33.3	2.7
19	34.2	2.7
20	35.0	2.8
21	36.0	2.8
22	36.9	2.9
23	37.9	3.0
24	39.0	3.1
25	40.1	3.2
26	41.4	3.3
27	42.8	3.5
28	44.4	3.9
29	46.1	3.9
30	48.4	4.2
31	51.6	4.8
32	58.5	6.7
*SE = Standard Error on T-score metric		



<b>Parent Proxy v1.0 – Upper Extremity 8a</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	Scale Score	SE*
0	13	3
1	16	3
2	17	3
3	18	2
4	19	2
5	20	2
6	21	2
7	22	2
8	22	2
9	23	2
10	24	2
11	24	2
12	25	2
13	25	2
14	26	2
15	26	2
16	27	2
17	28	2
18	28	2
19	29	2
20	30	2
21	30	2
22	31	2
23	32	2
24	33	2
25	34	3
26	35	3
27	37	3
28	38	4
29	40	4
30	42	4
31	45	5
32	55	8

\*SE = Standard Error on T-score metric

<b>Parent Proxy v1.0 – Mobility 8a</b>		
<i>Short Form Conversion Table</i>		
Raw Summed Score	Scale Score	SE*
0	14	4
1	17	3
2	20	3
3	21	3
4	22	3
5	23	2
6	24	2
7	25	2
8	26	2
9	27	2
10	27	2
11	28	2
12	29	2
13	29	2
14	30	2
15	31	2
16	31	2
17	32	2
18	33	2
19	33	2
20	34	2
21	35	2
22	35	2
23	36	2
24	37	2
25	38	3
26	39	3
27	40	3
28	42	4
29	43	4
30	45	4
31	43	4
32	56	7

\*SE = Standard Error on T-score metric

### APPENDIX 3 – ADDITIONAL FIGURES

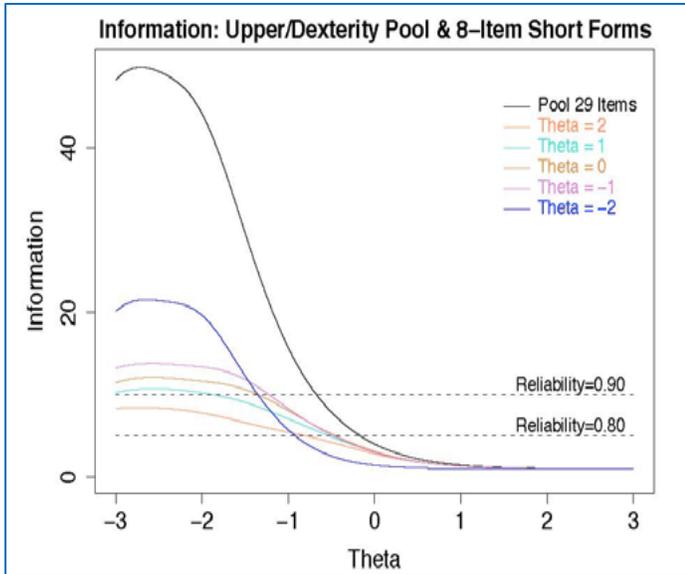


Figure 5 Pediatric Test Information Upper Extremity

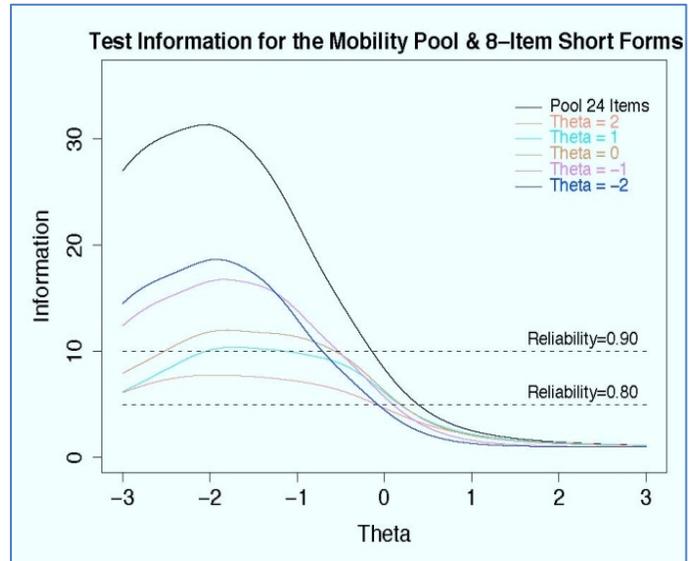


Figure 6 Pediatric Test Information Mobility